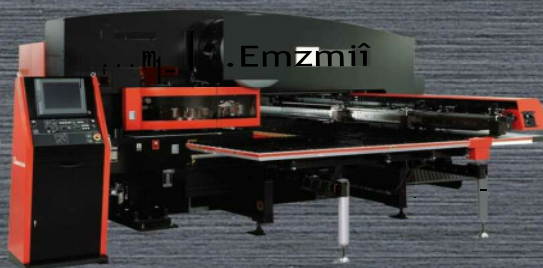


NCT Punching Tool Catalogue

Long: thick turret (03)



CONTENTS

page

Standard shape	●A(1/2"), B(11/4") NEX spring & PV die performance guide	1 ~ 2
	●A(1/2") Tip type round / original ($\Phi 0.8 \sim \Phi 1.5\text{mm}$)	2
	●A(1/2") Round ($\Phi 1.51 \sim \Phi 3.2\text{mm}$)	3~4
	●A(1/2") Round ($\Phi 3.21 \sim \Phi 12.7\text{mm}$)	5~6
	●A(1/2") Shape	7~8
	●B(11/4") Round	9~10
	●B(11/4") Shape	11~12
	●C(2"), D(31/2") & E(41/2") Alpha guide	13~14
	●C(2"), D(31/2") & E(41/2") Large station guide list	15~16
	●C(2") Round & shape	17~18
	●D(31/2") Round & shape solid type & tip type	19~20
	●E(41/2") Round & shape solid type & tip type	21~22

Forming special purpose tool	●B(11/4") Upform burring	23~24
	●B(11/4") Downform burring	25~26
	●B(11/4") BK burring tool	27
	●B(11/4") FP (Flat Positioning) tool	28
	●A(1/2") Upform center punch tool	29
	Downform center punch & High speed marking tool	

■Applicable machine models

- Amada long type tool
EM, EML, AC, APELIO, LIBRA, COMA, PEGA(H), OCTO(H), VELAI(H),
LYRA, ARIES(H), SPINGAR, EUROPE AND ARCADE

- Use Amada's genuine tool on Amada machines.
 - Amada is unable to guarantee maintenance for any trouble resulting from use of other tool.
-

Punch body replacement and height adjustment become so easy by new spring assy mechanisms. Tooling cost is dramatically reduced by spring assy + guide combination and by the grind length increase.

---Tooling recommended for EM & AC series machine---

NEX Spring assy

For long tooling A(1/2") and B(1 1/4")

Max thickness 6.0mm

※Mild steel · aluminum max 6.0mm .
Stainless steel max 3.0mm.



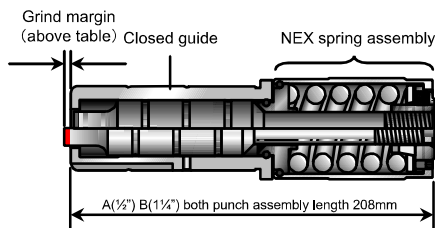
NEX spring assembly can be used for both air-blow and original style punch body.

▶ Grinding amount increased to a maximum of 5.0mm

The grinding amount of the punch is increased to a maximum of 5.0mm. This means that original style punch can now be reground and reused.

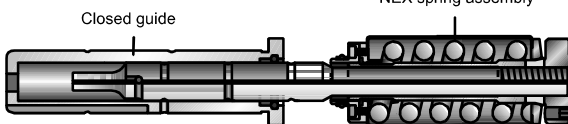
e in in ue※2 (e c e n t i n : 2 . 0)	h i c n e		
	e t h n t		
	t		

※ Not applicable to narrow type and command for bottom position control at 2.5 mm. No tool accuracy is guaranteed more than 2mm reground.
※ When the punch body is ground by 5mm, its punch size becomes about 0.03mm smaller by punch back taper.



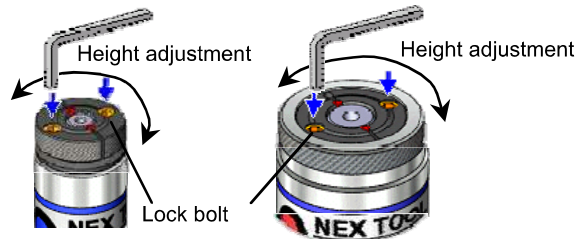
▶ Conventional punch bodies can also be utilized

NEX spring assembly is common to all punches the same size. The existing punch bodies and guides can be directly used as well.



▶ Maintenance time reduced to 1/3

Height adjustment and punch body change can be performed simply by loosening the lock bolt and turning the punch body. Use of QS pliers enables easier removal and installation of stripper plate by "one-touch", and reduces maintenance times up to 1/3 ※. (* by our data)



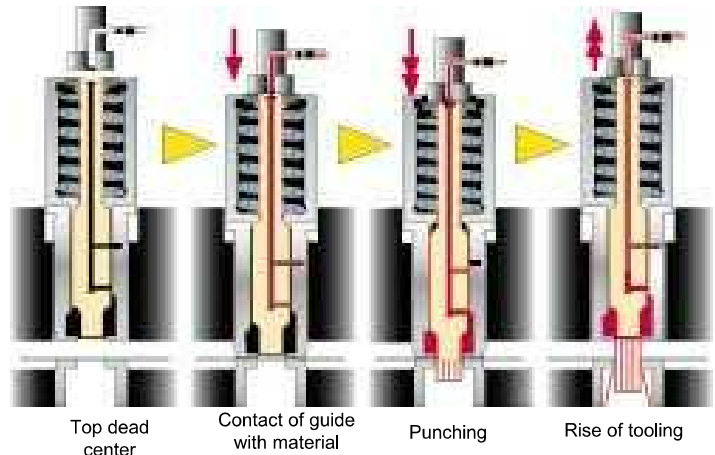
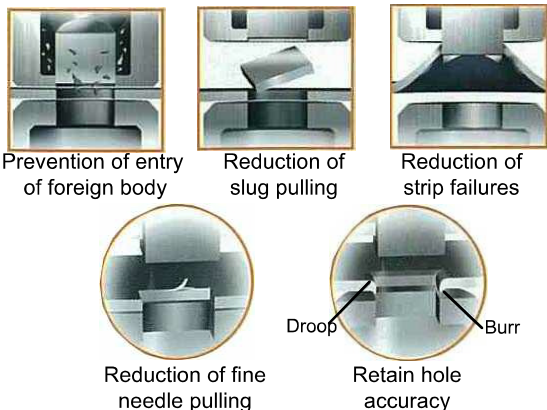
▶ One-piece spring assembly keeps the height constant

The punch head and spring unit are combined into one structure to keep the overall punch assembly height unchanged despite height adjustment.

▶ Optimum benefits of air-blow tooling displayed

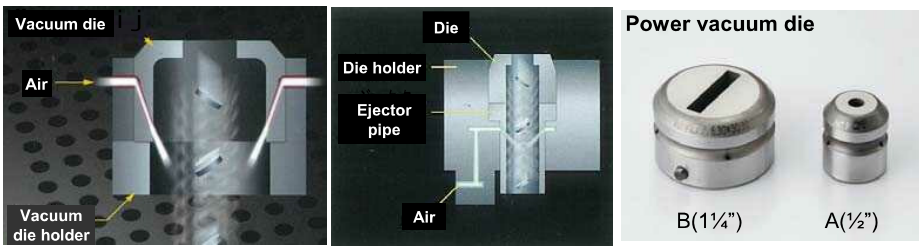
The air-blow system supplies the air-blow tooling with air and an oil mist to prevent deposition, slug pulling and to facilitate maintenance.





Benefit of air-blow tooling



Power Vacuum Die : standard die for EM & AC for A(1/2") & B(1 1/4")

Vacuum suction unit by air jet flowing downwards in the die preventing slug-pulling



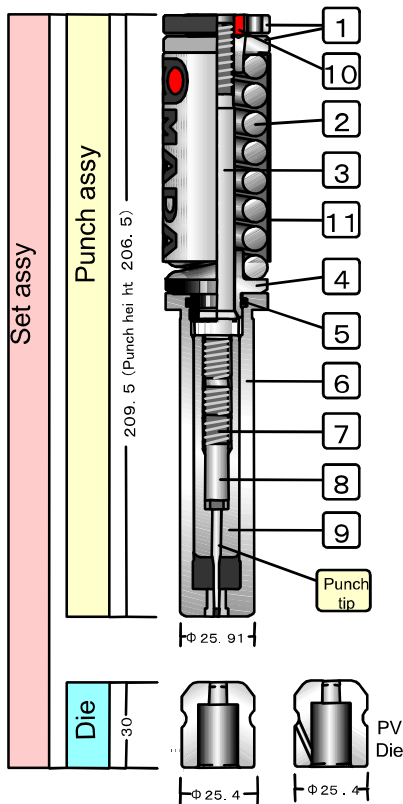
Tooling size	Specification	Vacuum unit	Turret size	Air flow line
A (1/2")	Power vacuum die (PV)	Power vacuum (PV) Die has a small pin holes aiming toward downward , and this creates maximum vacuum effect.	Same diameter turret 	
B (1 1/4")		Air jet vacuum (AJV) Slug vacuum system by strong jet air projected toward downward under the die.	Z turret 	

※1. Power vacuum die cannot be applied on PKK die and back tapered die, because of less effectiveness of slug-pulling prevention.

※2. Z turret uses AJV system, air projected position is different from power vacuum system. (See upper drawing)

※3. Power vacuum system works A(1/2") and B(1 1/4") on the same diameter turret. (except auto index station)

A 1/2" Size Round (Φ0.8~Φ1.5mm) Tip type Original style



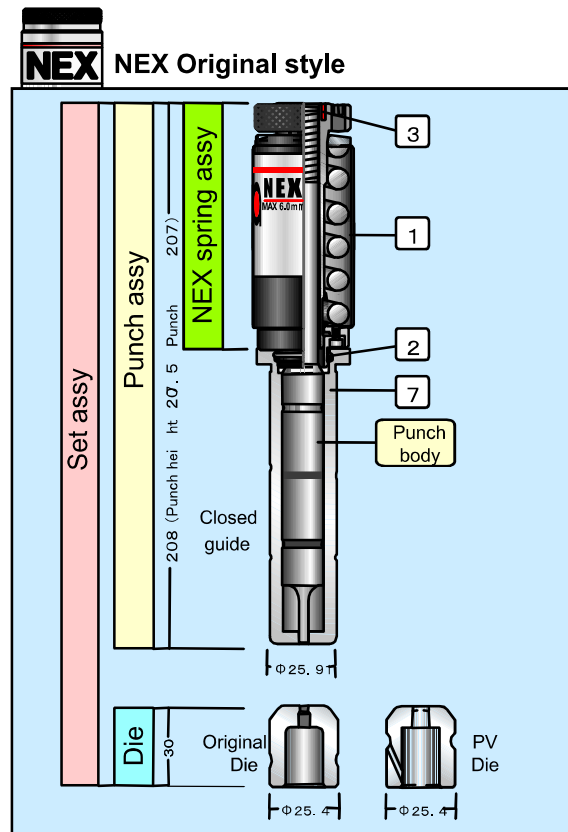
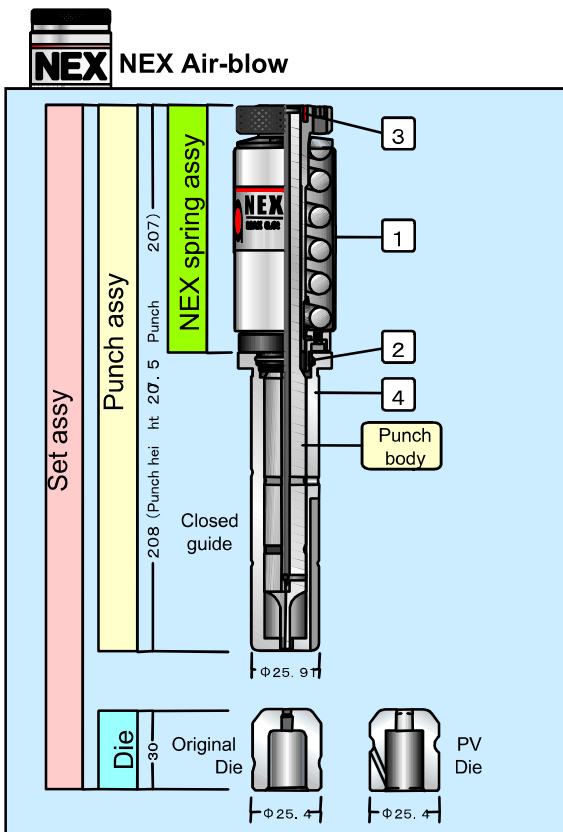
Tooling selection and code

Description	Punch	Die		Code No.
	Punch material	Die grade	Die material	
Set assy	SKH	Original	SKD	311110
Punch assy	SKH			111110
Punch tip	SKH			411110
Die		PV	SKH	261V20
		Original	SKH	261020
			SKD	211020

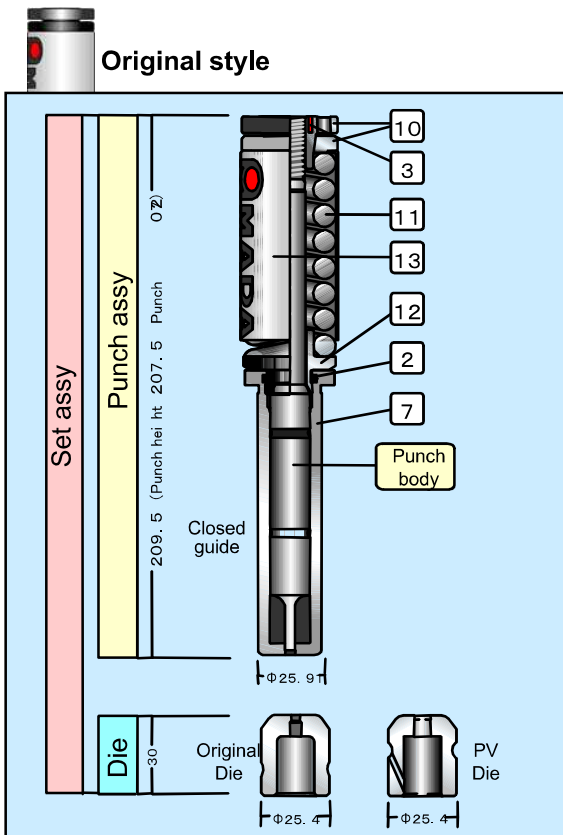
Component parts list

No.	Description	Code No.
1	Double punch head	901400
2	Stripping spring	901300
3	Punch driver	901520
4	Retainer collar	901200
5	O-ring	910060
6	Closed guide with bush & O-ring	901510
7	Lock screw (M10x10)	998600
8	Straight pin	901550
9	Punch body	901530
10	Urethane tube (10pcs.)	-
11	Spring cover (5pcs.)	926220

A 1/2" Size Round ($\Phi 1.51 \sim \Phi 3.2\text{mm}$)



※Closed guide is recommended for EM machine.



■ Tooling selection and code

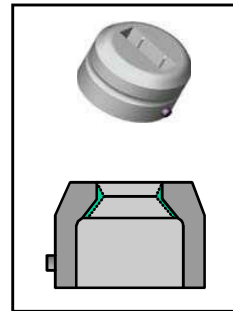
(Code No.)

Description	Punch	Die		NEX Air-blow		NEX Original style		Original style	
	Punch material	Die grade	Die material	Closed guide		Closed guide		Closed guide	
Punch assy	APH			11HY20		11XY20		11X020	
	HSS + TiCN			11GY20		116Y20		116020	
	HSS			11FY20		112Y20		112020	
	HWS					111Y20		111020	
Punch body	APH			41H020		41X020		41X020	
	HSS + TiCN			41G020		416020		416020	
	HSS			41F020		412020		412020	
	HWS					411020		411020	
Die		Original	HSS	261020		261020		261020	
			HWS	211020		211020		211020	
		PV	HSS	261V20		261V20			
			PKK die (Φ2.0mm or more)	HSS	261420		261420		261420
HWS	211420			211420		211420			

■ Component parts list

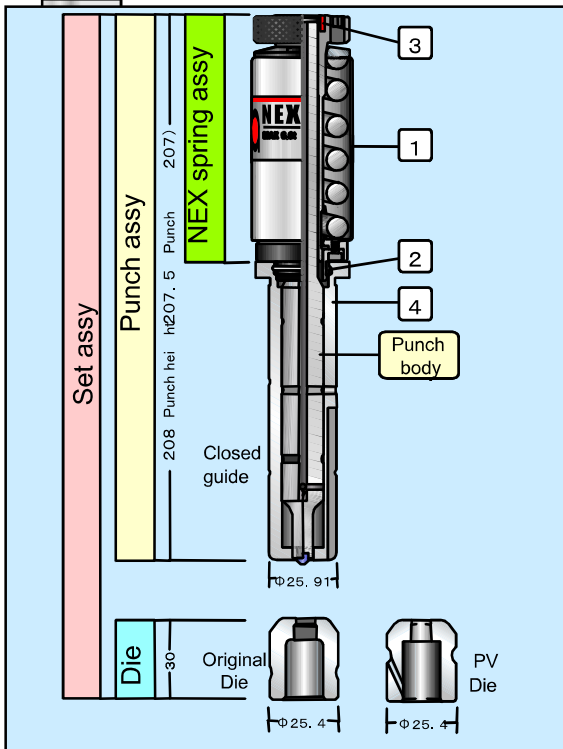
Fig.No.	Description	Code No.	
1	NEX spring assy	980000	
2	O-ring	Closed guide	910060
3	Urethane tube (10pcs.)	-	
4	Closed guide (AB)	51F020	
5			
6			
7	Closed guide (Original style)	511020	
8			
9			
8 + 9			
10	Double punch head	901400	
11	Stripping spring	901300	
12	Retainer collar	901200	
13	Spring cover	926220	
14	QS pliers (5pcs.)	911910	

PKK die



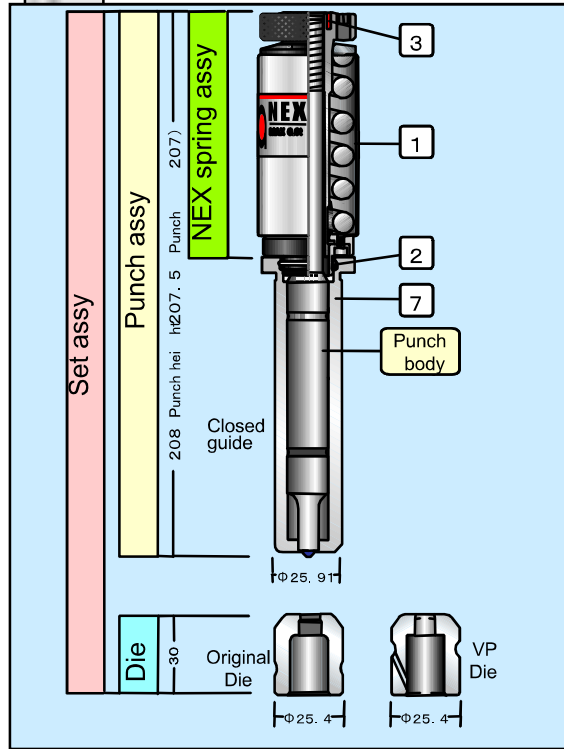
A 1/2" Size Round (Φ3.21~Φ12.7mm)

NEX Air-blow



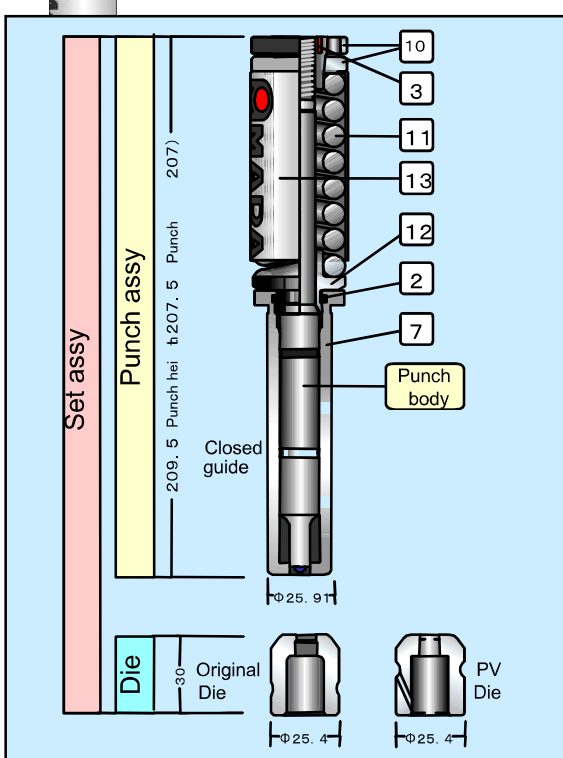
※Closed guide is recommended for EM machine.
 ※Punch bigger than Φ6.0mm diameter has a center hole.

NEX Original style



※Punch bigger than Φ6.0mm diameter has a slug ejector.

Original style



※Punch bigger than Φ6.0mm diameter has a slug ejector.



■ Tooling selection and code

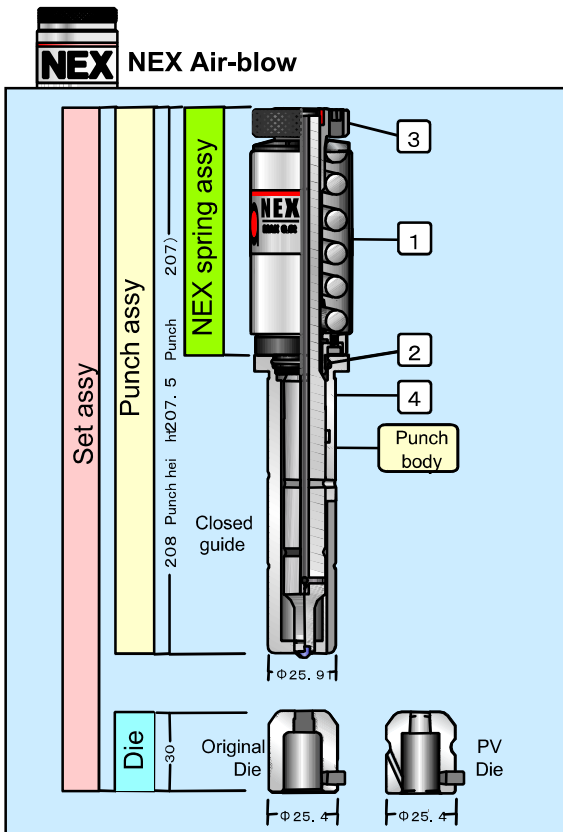
(Code No.)

Description	Punch	Die		NEX Air-blow		NEX Original style		Original style	
	Punch material	Die grade	Die material	Closed guide		Closed guide		Closed guide	
Punch assy	APH			11HY30		11XY30		11X030	
	HSS + TiCN			11GY30		116Y30		116030	
	HSS			11FY30		112Y30		112030	
	HWS					111Y30		111030	
Punch body	APH			41H030		41X030		41X030	
	HSS + TiCN			41G030		416030		416030	
	HSS			41F030		412030		412030	
	HWS					411030		411030	
Die		Original	HSS	261020		261020		261020	
			HWS	211020		211020		211020	
		PV	HSS	261V20		261V20			
		PKK die (Φ2.0mm or more)	HSS	261420		261420		261420	
			HWS	211420		211420		211420	

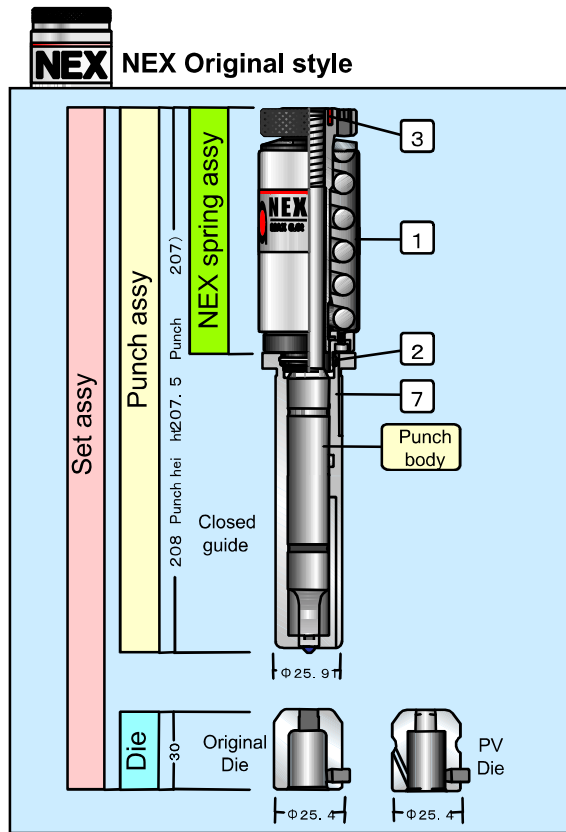
■ Component parts list

Fig.No.	Description	Code No.	
1	NEX spring assy	980000	
2	O-ring	Closed guide	910060
3	Urethane tube (10pcs.)	-	
4	Closed guide (AB)	51F020	
5			
6			
5 + 6			
7	Closed guide (Original style)	511020	
8			
9			
8 + 9			
10	Double punch head	901400	
11	Stripping spring	901300	
12	Retainer collar	901200	
13	Spring cover (5pcs.)	926220	
14	QS pliers	911910	

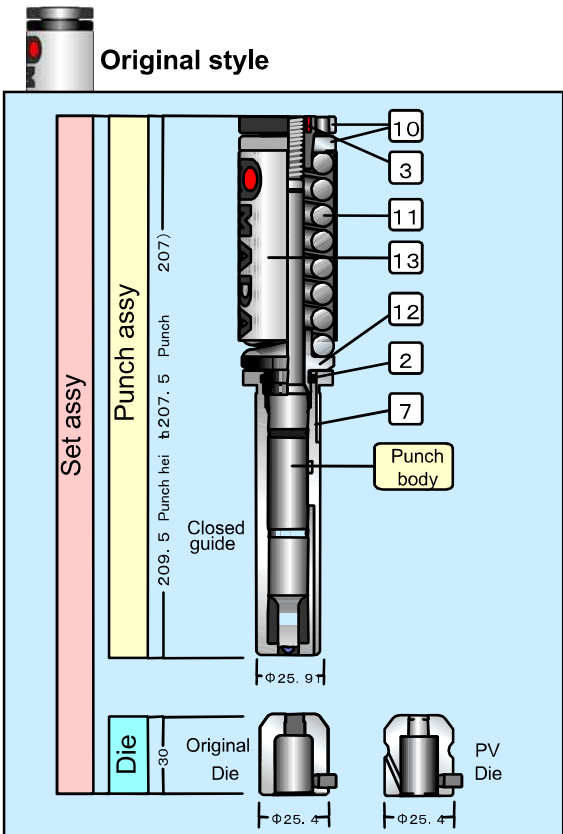
A 1/2" Size Shape (Inscribed 12.7mm)



※Closed guide is recommended for EM machine.
 ※Punch bigger than $\Phi 6.0\text{mm}$ diameter has a center hole.



※Punch bigger than $\Phi 6.0\text{mm}$ diameter has a slug ejector.



※Punch bigger than $\Phi 6.0\text{mm}$ diameter has a slug ejector.



■ Tooling selection and code

(Code No.)

Description	Punch		Die		NEX Air-blow		NEX Original style		Original style	
	Punch material	Die grade	Die material	Closed guide		Closed guide		Closed guide		
Punch assy	APH			12HY20		12XY20		12X020		
	HSS + TiCN			12GY20		126Y20		126020		
	HSS			12FY20		122Y20		122020		
	HWS					121Y20		121020		
Punch body	APH			42H020		42X020		42X020		
	HSS + TiCN			42G020		426020		426020		
	HSS			42F020		422020		422020		
	HWS					421020		421020		
Die		Original	HSS	271020		271020		271020		
			HWS	221020		221020		221020		
		PV	HSS	271V20		271V20		271V20		
			PKK die (Φ2.0mm or more)	HSS	271420		271420		271420	
	HWS	221420			221420		221420			

■ Component parts list

Fig.No.	Description	Code No.	
1	NEX spring assy	980000	
2	O-ring	Closed guide	910060
3	Urethane tube (10pcs.)	-	
4	Closed guide (AB)	52F020	
5			
6			
5 + 6			
7	Closed guide (Original style)	521010	
8			
9			
8 + 9			
10	Double punch head	901400	
11	Stripping spring	901300	
12	Retainer collar	901200	
13	Spring cover (5pcs.)	926220	
14	QS pliers	911910	

■ Option Additional work plus narrow type need additional charge.

	Item	Set Assy	Punch Assy	Punch body	Stripper & Guide	Die
Additional	4 corner radii					
	Additional key angle					
	Shear angle (2°)					
	Narrow (less than 2mm)					

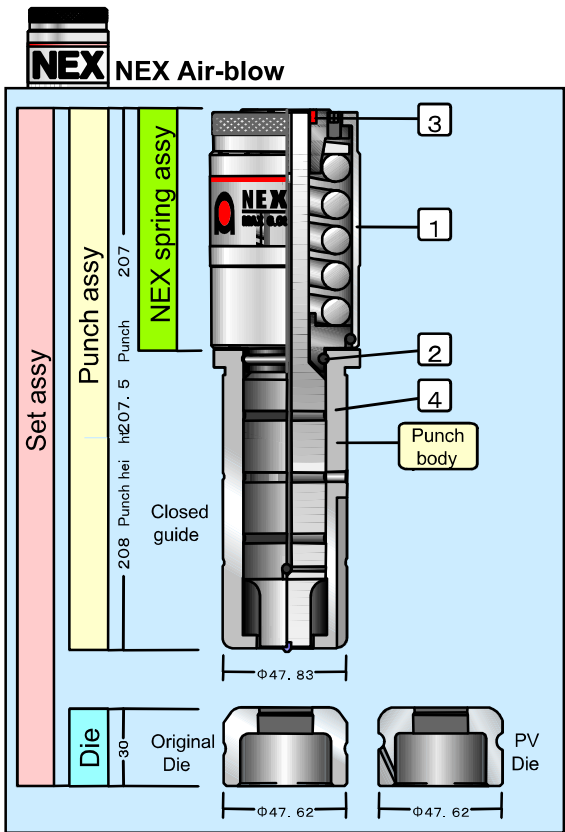
※Shear angle reduces the punch tonnage and noise.

B 1 1/4"

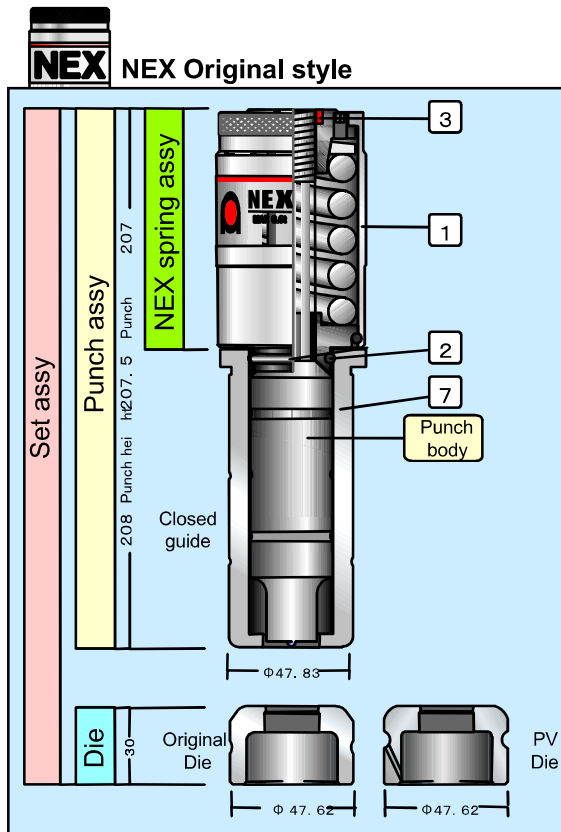
Size

Round

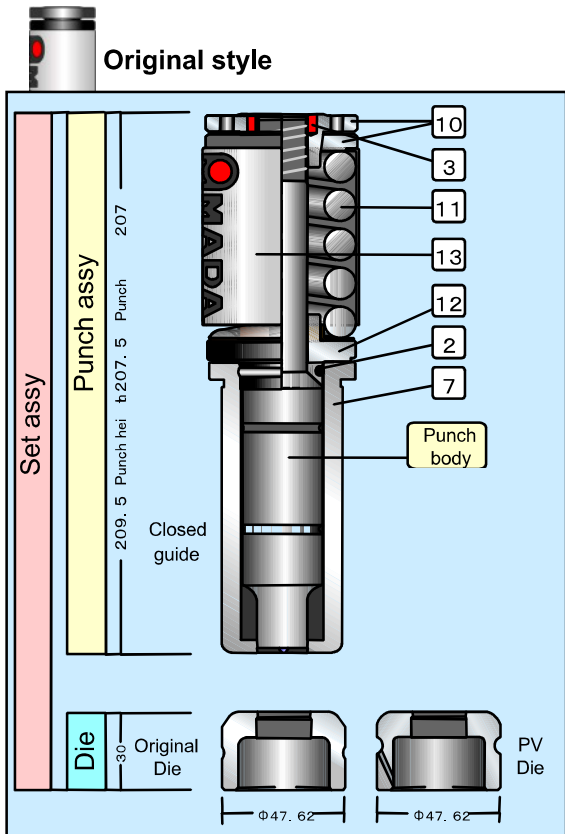
Air-blow: $\Phi 12.71 \sim \Phi 30.0\text{mm}$
Original style: $\Phi 12.71 \sim \Phi 31.7\text{mm}$



※Closed guide is recommended for EM machine.
※Punch body has a slug ejector.



※Punch body has a slug ejector.



※Punch body has a slug ejector.



■ Tooling selection and code

(Code No.)

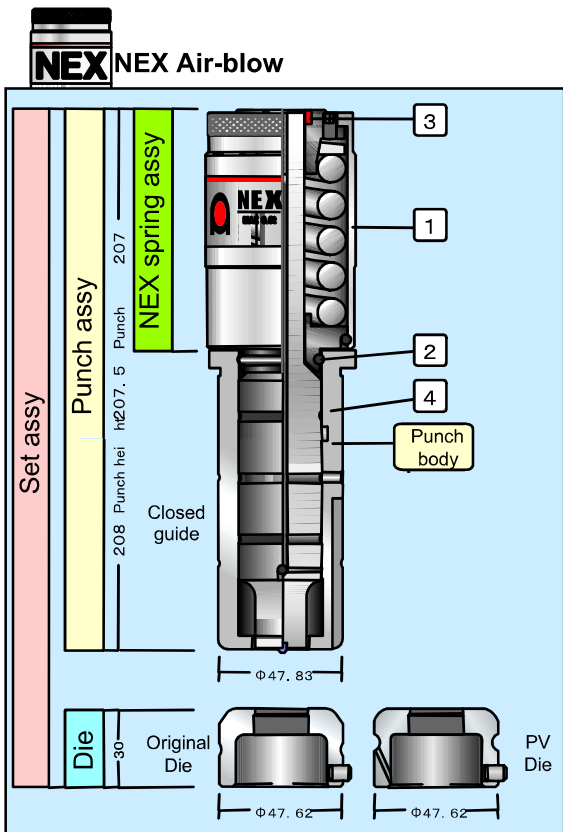
Description	Punch		Die		NEX Air-blow		NEX Original style		Original style	
	Punch material	Die grade	Die material	Closed guide		Closed guide		Closed guide		
Punch assy	APH			11HY40		11XY40		11X040		
	HSS + TiCN			11GY40		116Y40		116040		
	HSS			11FY40		112Y40		112040		
	HWS					111Y40		111040		
Punch body	APH			41H040		41X040		41X040		
	HSS + TiCN			41G040		416040		416040		
	HSS			41F040		412040		412040		
	HWS					411040		411040		
Die		Original	HSS	261040		261040		261040		
			HWS	211040		211040		211040		
		PV	HSS	261V40		261V40				
		PKK die (Φ2.0mm or more)	HSS	261440		261440		261440		
HWS	211440			211440		211440				

■ Component tooling list

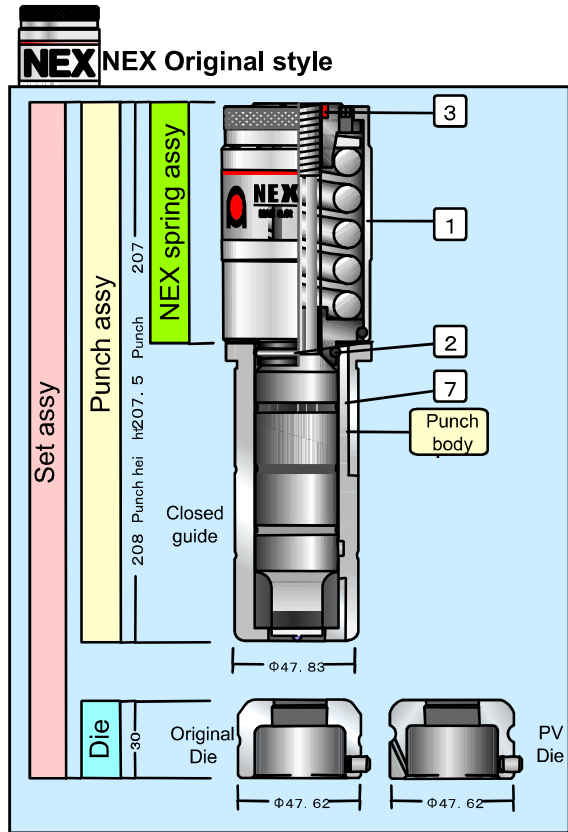
Fig No.	Description	Code No.
1	NEX spring assy	981000
2	O-ring	910080
3	Urethane tube (10pcs.)	-
4	Closed guide (AB)	51F040
5		
6		
5 + 6		
7	Closed guide (Original style)	511040
8		
9		
8 + 9		
10	Double punch head	901430
11	Stripping spring	901310
12	Retainer collar	901210
13	Spring cover (5pcs.)	926240
14	QS pliers	911910

B**1 1/4"****Size****Shape**

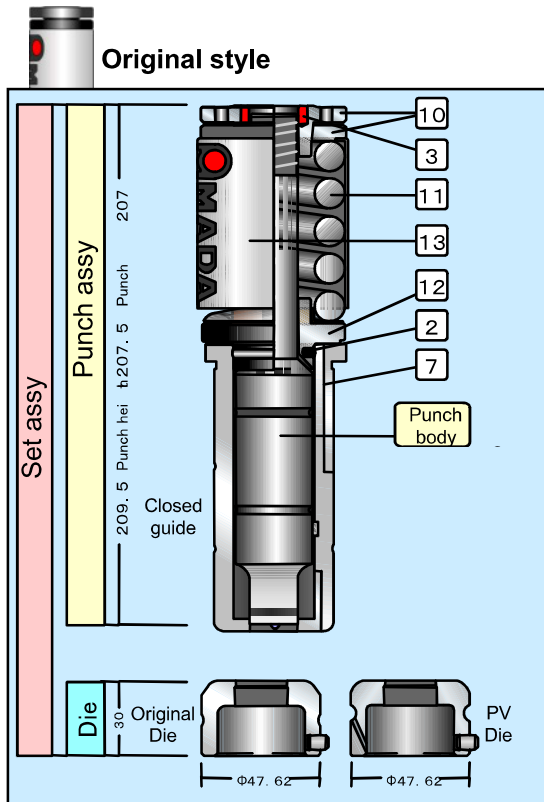
Air-blow: Inscribed $\Phi 30.0\text{mm}$ (Rectangle less 10mm 30mm)
 Original style: $\Phi 31.7\text{mm}$



※Closed guide is recommended for EM machine.
 ※Punch bigger than $\Phi 6.0\text{mm}$ diameter has a slug ejector.



※Punch bigger than $\Phi 6.0\text{mm}$ diameter has a slug ejector.



※Punch bigger than $\Phi 6.0\text{mm}$ diameter has a slug ejector.



■ Tooling selection and code

(Code No.)

Description	Punch	Die		NEX Air-blow		NEX Original style		Original style	
	Punch material	Die grade	Die material	Closed guide		Closed guide		Closed guide	
Punch assy	APH			12HY40		12XY40		12X040	
	HSS + TiCN			12GY40		126Y40		126040	
	HSS			12FY40		122X40		122040	
	HWS					121Y40		121040	
Punch body	APH			42H040		42X040		42X040	
	HSS + TiCN			42G040		426040		426040	
	HSS			42F040		422040		422040	
	HWS					421040		421040	
Die		Original	HSS	271040		271040		271040	
			HWS	221040		221040		221040	
		PV	HSS	271V40		271V40			
			PKK die ($\phi 2.0\text{mm}$ or more)	HSS	271440		271440		271440
		HWS	221440		221440		221440		

■ Component parts list

Fig No.	Description	Code No.
1	NEX spring assy	981000
2	O-ring	910080
3	Urethane tube (10pcs.)	
4	Closed guide (AB)	52F040
5		
6		
5 + 6		
7	Closed guide (Original style)	521040
8		
9		
8 + 9		
10	Double punch head	901430
11	Stripping spring	901310
12	Retainer collar	901210
13	Spring collar (5pcs.)	926240
14	QS pliers	911910

■ Option

Additional work plus narrow type need additional charge.

	Item	Set assy	Punch assy	Punch body	Stripper & Guide	Die
Additional	4 corner radii					
	Additional key angle					
	Shear angle (2°)					
Narrow (less than 2mm)						

※Shear angle reduces the punch tonnage and noise.

C 2" D 3 1/2" E 4 1/2" Large station Alpha guide series

Realize the time reduction for tooling maintenance!
 The tooling cost of large-size punches is sharply reduced.
 The punch tip can be more easily changed and adjusted.
 Air-blow effect is substantially improved.

— Tooling recommended for EM machines series —

(Alpha) guides (Alpha) blade guides

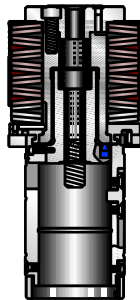
For long tooling D (3 1/2"), and E (4 1/2")

(Alpha) guides

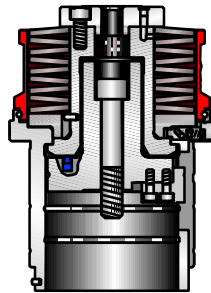
For long tooling C (2")



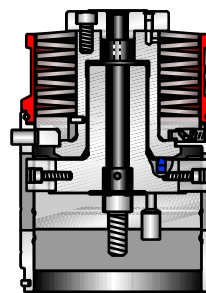
C(2") guide



D(3 1/2") guide



E(4 1/2") blade guide



Tooling cost reduction

guide and blade guide* have a dual structure, the punch driver can slide internally and make easy height adjustment without shim. Therefore maximum tool grinding value become 2.5 times longer to maximum 5mm (recommended value is 2mm) *2.
 (Thickness 3.3 to 6.0mm remains 2.0mm)

Combination use of blade guide and blade punch reduce the tooling cost for rectangle and obround shape punch body.

*1. blade guide accepts rectangle and obround shape only.

*2. Refer the table for regrinding value. (Punch for A size 5mm.)

Size	Guide type	Thickness	Max regrinding	After regrinding punch length
D(3 1/2")	Original style solid stripper	less than 3.2mm	5mm	79.0mm
		3.3~6.0mm	2mm	82.0mm
E(4 1/2")	Original style sheet saver stripper	less than 3.2mm	5mm	79.0mm
		3.3~6.0mm	2mm	83.0mm
E(4 1/2")	Original style solid stripper	less than 3.2mm	5mm	80.0mm
		3.3~6.0mm	2mm	83.0mm
E(4 1/2")	Original style sheet saver stripper	less than 3.2mm	5mm	80.0mm
		3.3~6.0mm	2mm	83.0mm

One touch punch height adjustment

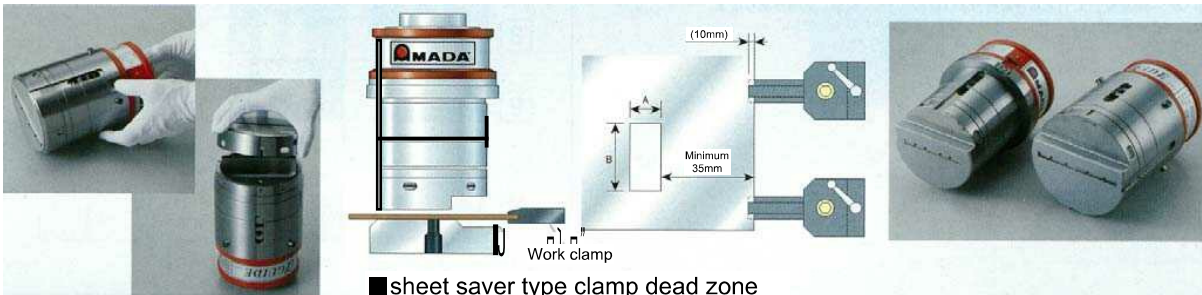
Easy adjustment by pushing the adjustment button and rotating the punch head. No additional hand tools are required.

Easy stripper plate replacement

Stripper plates can be easily removed without the need for hand tools.

guide can be altered to sheet saver by stripper change.

Note) Torques wrench is needed for the removal of Z style stripper from guide adapter.



■ sheet saver type clamp dead zone

guide combination

guide

Punch body and punch tip can be loaded.

Air-blow punch

M14 bolt

Punch body

Punch holder

Punch tip

Original style punch

M12 bolt + collar

Punch body

Punch holder

Punch tip

blade guide

Specified guide for blade punch.

blade punch

Punch type	blade punch			
Tool size	D(3½")		E(4½")	
A size	1.5~18mm			
B size (Max)	85mm		110mm	
Max diagonal	Air-blow Φ85.6mm	Original style Φ88.9mm	Air-blow Φ110.5mm	Original style Φ114.0mm

※Max dimension is A size size diagonal.
 ※ blade punch is deferent from the tip type punch for large size.
 blade punch is only loaded on blade guide.
 ※Jig is required for punch tip regrinding on TOGU .

guide adapter

Z style air-blow
stripper

Original style
stripper

Current stripper plate can be used.

sheet saver stripper
(Air-blow or Original style)

※This is for specified
guide only.

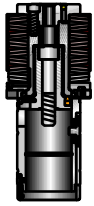
Material utilization ratio increases

solid stripper
(Air-blow or Original style)

Easy replacement of stripper.
Can be used for cluster punch.

Thick Turret C 2" Size Large station guides

NO.1
guide



NO.2
Air-blow guide



NO.3
Original style guide

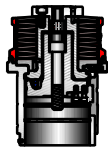
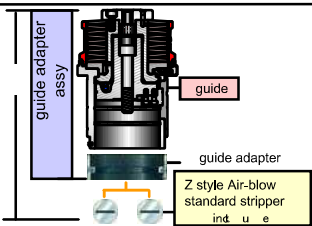
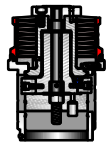
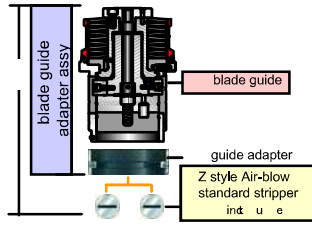




■ List of C(2") guide assy

Guide type	Description	No.	Code
Alpha guide	Alpha guide assy	1	90743E
Air-blow guide	Air-blow guide assy	2	900190
Original style guide	Original style guide assy	3	900120

Thick Turret D 3 1/2" Size Large station guides

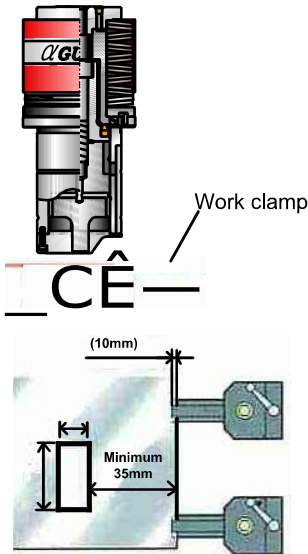
■ Large station guide list : guide · blade guide · Air-blow & Original style guide

guide	No. 1	No. 2
		
blade guide	No. 3	No. 4
		
Air-blow guide, Original style guide	No. 5	No. 6
	 Air-blow guide	 Original style guide

■ Large station guide list : D(3 1/2")

Guide type	Description	No.	Code
Alpha guide	Alpha guide assy without adapter	1	90713E
	Alpha guide assy with adapter	2	90719E
	Alpha guide adapter		907170
Alpha blade guide	Alpha blade guide assy without adapter	3	90715E
	Alpha blade guide assy with adapter	4	90721E
Air-blow guide	Air-blow guide assy	5	900190
Original style guide	Original style guide assy	6	900130

C 2" D 3 1/2" E 4 1/2" Size Sheet saver guide, stripper & die



Large Station Size Sheet Saver Guide, Stripper plate & Die

Tool size	Description	Code
C(2")	Alpha sheet saver guide assy	90744E
	Original style sheet saver stripper plate	-
	Air-blow sheet saver stripper plate	-
	Sheet saver die	-
D(3 1/2")	Alpha blade guide assy	90713E
	Original style sheet saver stripper plate	520180
	Air-blow sheet saver stripper plate	52F180
	Sheet saver die	220080
E(4 1/2")	Alpha blade guide assy	90714E
	Original style sheet saver stripper plate	520190
	Air-blow sheet saver stripper plate	52F190
	Sheet saver die	220090

Thick Turret E 4 1/2" Size Large station guides

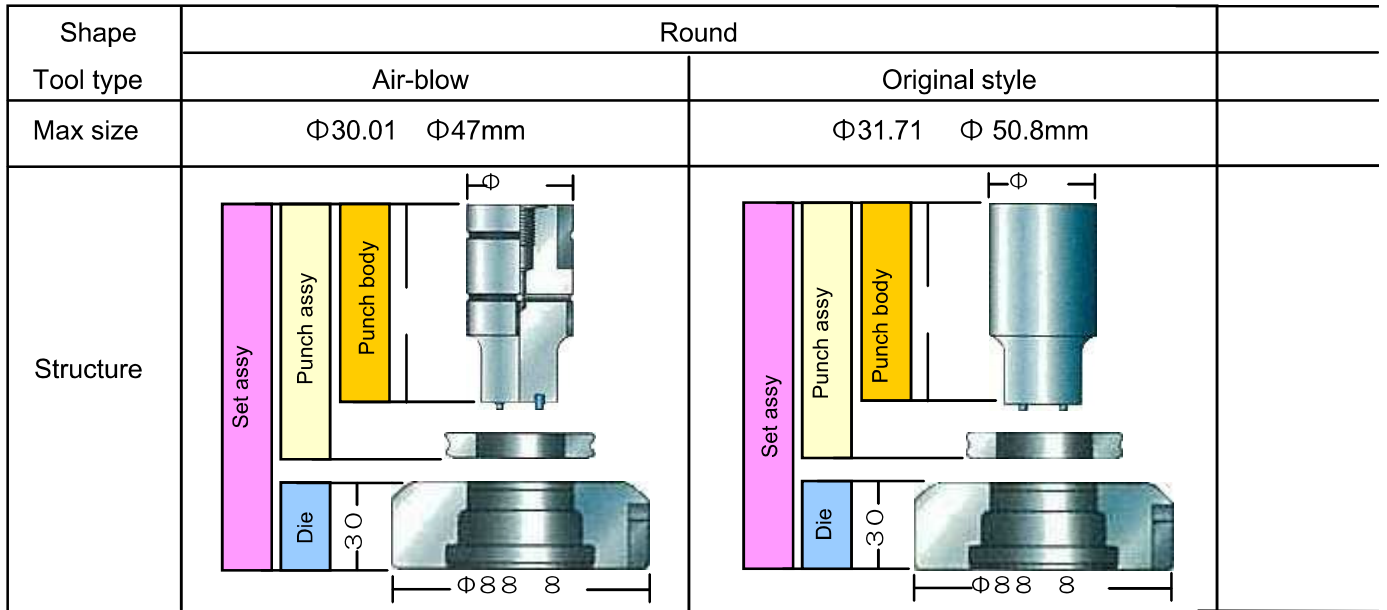
Large station guide list : guide · blade guide · Air-blow & Original style guide

guide	No. 1	No. 2
blade guide	No. 3	No. 4
Air-blow guide, Original style guide	No. 5	No. 6
	Air-blow guide	Original style guide

Large station guide list : E(4 1/2")

Guide type	Description	No.	Code
Alpha guide	Alpha guide assy without adapter	1	90714E
	Alpha guide assy with adapter	2	90720E
	Alpha guide adapter		907180
Alpha blade guide	Alpha blade guide assy without adapter	3	90716E
	Alpha blade guide assy with adapter	4	90722E
Air-blow guide	Air-blow guide assy	5	900200
Original style guide	Original style guide assy	6	900140

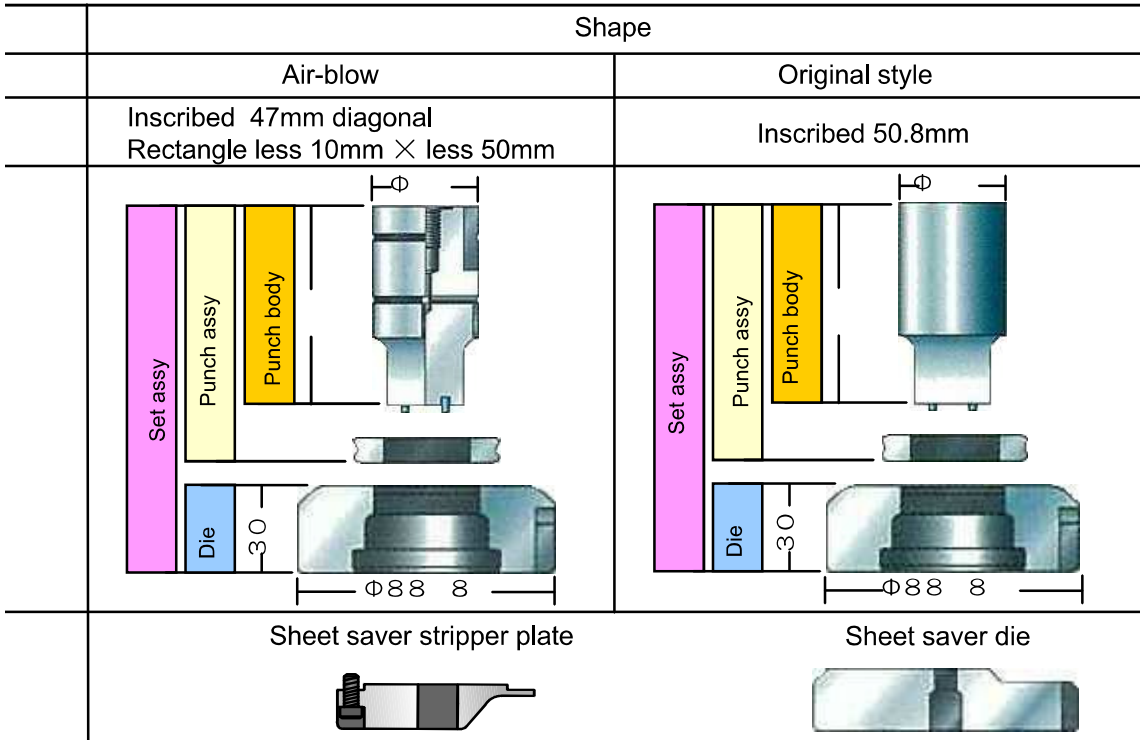
Thick Turret C 2" Size Punch-Die



■ Tooling selection and code

(Code No.)

Description	Punch	Die		Round		Shape	
	Punch material	Die grade	Die material	Air-blow	Original	Air-blow	Original
Punch body	APH			41H060	41X060	42H060	42X060
	HSS + TiCN			41G060	416060	42G060	426060
	HSS			41F060	412060	42F060	422060
	HWS				411060		421060
Stripper plate	Z style air-blow stripper plate			51FZ60	511060	52FZ60	521060
	Sheet saver					-	-
Die		Original	HSS	215060	215060	225060	225060
			HWS	211060	211060	221060	221060
		PKK die Round Φ2.0mm or more Shape 2.0mm width or more	HSS	215460	215460	225460	225460
			HWS	211460	211460	221460	221460
		Sheet saver die	HSS			-	-



■ Option Additional work plus narrow type need additional charge.

Item		Set assy	Punch assy	Punch body	Die
Additional	4 corner radii				
	Additional key angle				
	Shear angle (2°)				
Narrow (less than 3mm)					

※1. Punch regrinding value is expanded to max 5mm by using guide.

※2. Slug ejector can be installed for the punch body bigger than Φ6.0mm or A size 6.0mm as standard.

※3. Shear angle works for tonnage reduction and nose reduction.

Thick Turret D 3 1/2" Size Large station Punch • Die

■ Solid type punch

Type	Round		Shape	
Tool type	Air-blow		Original style	
Max size	Φ47.01	Φ85.6mm	Φ50.81	88.9mm
			Inscribed 85.6mm	Inscribed 88.9mm
Structure				
guide stripper type	Air-blow round solid stripper 		guide adapter (Z style stripper separate be available) 	
			sheet saver stripper air-blow shape solid stripper guide adapter Sheet saver die 	

■ Tooling selection and code

(Code No.)

Description	Punch		Die		Round		Shape	
	Punch material	Die grade	Die material	Air-blow	Original	Air-blow	Original	
Punch body	HSS + TiCN			41G080	416080	42G080	426080	
	HSS			41F080	412080	42F080	422080	
	HWS				411080		421080	
Stripper plate	Z style air-blow stripper plate			51FZ80	511080	52FZ80	521080	
	guide adapter (Z style air-blow stripper plate is not included)			907170	907170	907170	907170	
	guide solid stripper			51F480	511480	52F480	521480	
	guide sheet saver stripper					52F280	520280	
Die		Original	HSS	215080	215080	225080	225080	
			HWS	211080	211080	221080	221080	
		PKK die Round Φ2.0mm or more Shape 2.0mm width or more	HSS	215480	215480	225480	225480	
			HWS	211480	211480	221480	221480	
		Sheet saver die	HSS			220080	220080	

■ Option Additional work plus narrow type need additional charge.

Item	Set assy	Punch assy	Punch body	Die
Additional 4 corner radii				
Additional key angle				
Shear angle (2°)				
Narrow (less than 3mm)				

※Shear angle reduces the punch tonnage and noise.

■ Tip type punch & blade punch

Type	Rectangle Shape only		
Tool type	Air-blow	Original style	Air-blow · Original (for blade guide)
Max size	Rectangle less 10mm X less 85mm		Rectangle less 10 X less 85
Structure			
guide stripper type	<p>Sheet saver stripper Sheet saver die</p>	<p>Air-blow shape solid stripper</p>	<p>blade punch Z style stripper plate guide adapter</p>

■ Tooling selection and code

(Code No.)

Description	Punch	Die		Tip type (Round)		blade punch (Shape)	
	Punch material	Die grade	Die material	Air-blow	Original	Air-blow	Original
Punch body assy	APH			72H280	72X280		
	HSS			72F280	722280		
	HWS				721280		
Punch holder				72F380	721380		
Punch tip blade punch	APH			42X280	42X280	42X480	42X480
	HSS			422280	422280	422480	422480
	HWS				421280		
Stripper plate	Z style air-blow stripper plate			52F280	521080	52F280	521080
	guide adapter (Z style air-blow stripper plate is not included)			907170	907170	907170	907170
	guide solid stripper			52F480	521480	52F480	521480
	guide sheet saver stripper			52F280	520280	52F280	520280
Die	Original		HSS	225080	225080	225080	225080
			HWS	221080	221080	221080	221080
	PKK die Shape 2.0mm width or more		HSS	225480	225480	225480	225480
			HWS	221480	221480	221480	221480
	Sheet saver die		HSS	220080	220080	220080	220080

Thick Turret E 4 1/2" Size Large station Punch • Die

■ Solid type punch

Type	Round		Shape	
Tool type	Air-blow		Original style	Original style
Max size	Φ85.61 Φ110.5mm		Φ88.91 114.0mm	Inscribed 110.5 Inscribed 114.0mm
Structure				
guide stripper type	Air-blow round solid stripper		guide adapter	sheet saver stripper air-blow shape solid stripper guide adapter Sheet saver die

■ Tooling selection and code

(Code No.)

Description	Punch		Die		Round		Shape	
	Punch material	Die grade	Die material	Air-blow	Original	Air-blow	Original	
Punch body	HSS + TiCN			41G090	416090	42G090	426090	
	HSS			41F090	412090	42F090	422090	
	HWS				411090		421090	
Stripper plate	Z style air-blow stripper plate			51FZ90	511090	52FZ90	521090	
	guide adapter (Z style air-blow stripper plate is not included)			907180	907180	907180	907180	
	guide solid stripper			51F490	511490	52F490	521490	
	guide sheet saver stripper					52F290	520290	
Die		Original	HSS	215090	215090	225090	225090	
			HWS	211090	211090	221090	221090	
		PKK die Round Φ2.0mm or more Shape 2.0mm width or more	HSS	215490	215490	225490	225490	
			HWS	211490	211490	221490	221490	
		Sheet saver die	HSS			220090	220090	

■ Option Additional work plus narrow type need additional charge.

Item	Set assy	Punch assy	Punch body	Die
Additional 4 corner radii				
Additional key angle				
Narrow (less than 3mm)				

※Shear angle reduces the punch tonnage and noise.

■ Tip type punch & blade punch

Type	Rectangle Shape only		
Tool type	Air-blow	Original	Air-blow · Original (for blade guide)
Max size	Rectangle less 10mm X less 110mm		Rectangle less 10 X less 110
Structure			
guide stripper type	<p>sheet saver stripper Sheet saver die</p>	<p>air-blow shape solid stripper</p>	<p>guide adapter</p>

■ Tooling selection and code

(Code No.)

Description	Punch	Die		Tip type (Shape)		blade punch (Shape)	
	Punch material	Die grade	Die material	Air-blow	Original	Air-blow	Original
Punch body assy	APH			72H290	72X290		
	HSS			72F290	722290		
	HWS				721290		
Punch holder				72F390	721390		
Punch tip blade punch	APH			42X290	42X290	42X490	42X490
	HSS			422290	422290	422490	422490
	HWS				421290		
Stripper plate	Z style air-blow stripper plate			52FZ90	521090	52FZ90	521090
	guide adapter (Z style air-blow stripper plate is not included)			907180	907180	907180	907180
	guide solid stripper			52F490	521490	52F490	521490
	guide sheet saver stripper			52F290	520290	52F290	520290
Die		Original	HSS	225090	225090	225090	225090
			HWS	221090	221090	221090	221090
		PKK die Shape 2.0mm width or more	HSS	225490	225490	225490	225490
			HWS	221490	221490	221490	221490
	Sheet saver die	HSS	220090	220090	220090	220090	

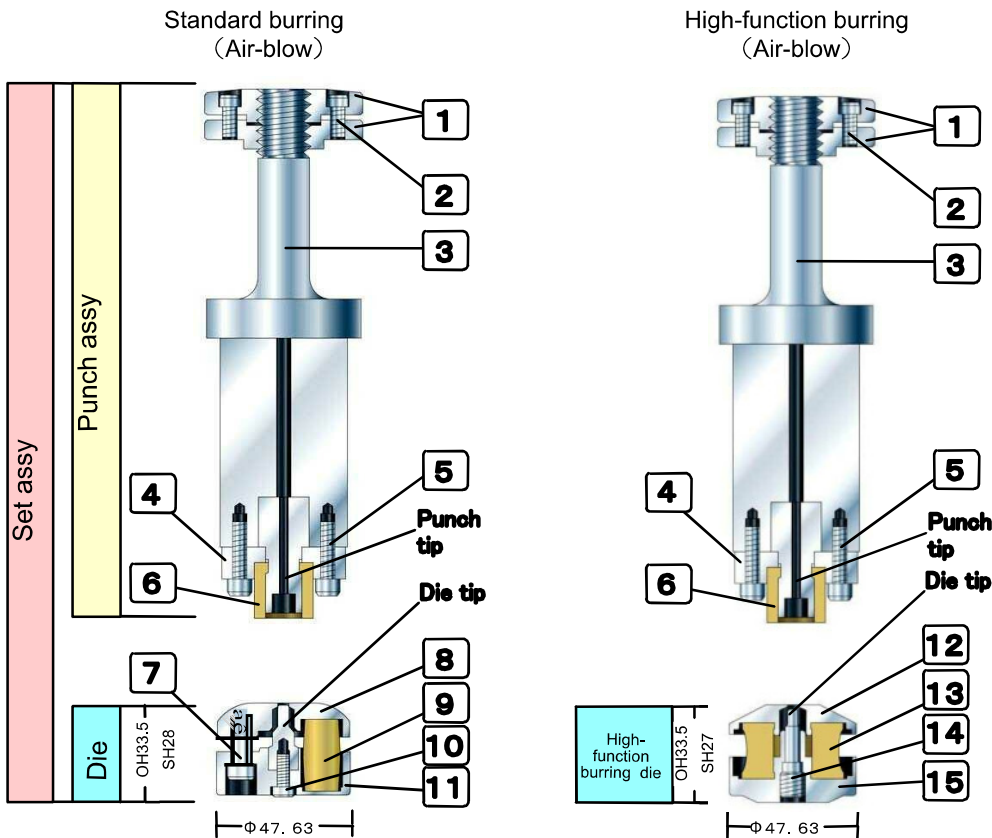
- ※1. guide adapter is specified for Z style stripper plate.
- ※2. air-blow shape round solid stripper is for guide stripper.
- ※3. air-blow sheet saver stripper is for sheet saver die stripper.

B 1 1/4" Size

Size

Upform burring

Two operation type
M2.6~M6: for forming taps & cutting taps



Pre-pierced hole diameters for Tap burring tooling (Reference)

Unit:mm

Tap type	Material		M2.5	M2.6	M3	M4	M5	M6	M8	
Forming tap	Mild steel Aluminum	Burring tip diameter	Φ2.28	Φ2.37	Φ2.75	Φ3.65	Φ4.6	Φ5.50	Φ6.70	
		t	(Multi tap: 2.30)	(Multi tap: 2.40)				(Multi tap: 5.55)	(Multi tap: 7.40)	
		Pre-pierced hole diameter	0.8	Φ1.3	Φ1.3	Φ1.3	Φ2.0			
			1.0	Φ1.3	Φ1.3	Φ1.3	Φ2.0	Φ2.4		
			1.2			Φ1.6	Φ2.0	Φ2.4	Φ3.2	
	1.5					Φ2.4	Φ3.0			
	Stainless steel 304 430	Burring tip diameter			Φ2.75	Φ3.65	Φ4.6			
		t								
		Pre-pierced hole diameter	0.8			(Φ1.5)	Φ2.5			
			1.0			(Φ1.8)	Φ2.5	Φ3.0		
1.2						Φ2.5	Φ3.0			
Cutting tap	Mild steel Aluminum	Burring tip diameter	Φ2.10	Φ2.21	Φ2.57	Φ3.40	Φ4.30	Φ5.10	Φ6.70	
		t		(Multi tap: 2.20)					(Multi tap: 6.90)	
		Pre-pierced hole diameter	0.8		Φ1.3	Φ1.3	Φ2.0			
			1.0		Φ1.3	Φ1.3	Φ2.0	Φ2.3		
			1.2		Φ1.3	Φ1.6	Φ2.0	Φ2.3	Φ3.0	
			1.5		Φ1.6	Φ1.6	Φ2.3	Φ2.8	Φ3.0	
			1.6		Φ1.6	Φ1.6	Φ2.3	Φ2.8	Φ3.0	
	2.0					Φ2.3	Φ2.8	Φ3.8		
	2:3(excluding AL)				Φ2.5	Φ3.0	Φ3.8			
	Stainless steel 304 430	0.6		Φ1.3	Φ1.3					
		0.8		(Φ1.3)	(Φ1.3)	Φ2.0				
		1.0		(Φ1.3)	(Φ1.6)	Φ2.0	Φ2.3	Φ3.0		
		1.2			(Φ1.8)	(Φ2.0)	(Φ2.3)	Φ3.0		

- Amada's standard burring tools for pre pierced holes meet Amada's specifications.
- The ΦA value (burring inner diameter) in the tables above are Amada's standard dimensions. Tools for other dimensions are ordered as special.
- The pre-pierced hole diameter is the reference diameter of the hole to be pre-pierced in the first of the two burring operations. The forming height=H varies with this pre-pierced hole diameter.
- This table is applicable to Multi tap on the turret punch press (cutting and forming tap).

■ Tooling selection and code

(Code No.)

Tooling code		Specification		Air-blow		Original style		
		Type	Standard	High-function		Standard	High-function	
		Material	Mild steel		Stainless steel	Mild steel	Stainless steel	
		Set assy	-	-	-	301000	305000	305100
		Punch assy	-	-	-	101000	101000	105100
Punch tip	902020	902020	905020	902020	902020	905020		
Die assy	201000	205000	205100	201000	205000	205100		
Die tip	902220	405000	405100	902220	405000	405100		

Item	Component	No.	Description	Standard		High-function		
	Punch assy	1	Double punch head	-	-	-	901010	901010
		2	Cap screw (4-M5 X 14)	997710	997710	997710	997710	997710
		3	Punch body	-	-	-	902000	902000
		4	Punch plate	902030	902030	902030	902030	902030
		5	Cap screw (4-M6 X 20)	998900	998900	998900	998900	998900
		6	Urethane spring (Φ20 X 22L)	902040	902040	902040	902040	902040
	Die assy	7	Stripper bolt (3pcs.)	902070			902070	
		8	Ejector plate	902060			902060	
		9	Urethane spring (3pcs.)	998500			998500	
		10	Cap screw (M5 X 12)	901970			901970	
		11	Die block	902210			902210	
	High-function burring die	12	Ejector plate		995090	905090		905090
		13	Urethane spring		905080	905080		905080
		14	Set screw (M10 X 10)		905110	905110		905110
15		Die block		905100	905100		905100	

■ Specification

Type	Standard burring	High-function burring	
		Mild steel and Aluminum	Stainless steel
Specification	Standard · Air-blow		
Material	Mild steel and Aluminum	Mild steel and Aluminum	Stainless steel
Max thickness	2.3t	2.3t	1.2t
Tap size	M2.6~M6		

- ※Specified tool is applied to PDC series.
- ※Ensure pre pierce hole is sharp before use.
- ※Use each tool only for its intended material type and thickness.
- ※High-function burring die has increased stripping force compared with conventional burring tools.
- ※Chrome plating reduces marking on the backside of the material when traversing. (Option)
- ※Punch tip is common for Standard and Air-blow.

■ Burring minimum pitch

Unit:mm

Up or Down form	Minimum pitch	Calculation
Upform Burring		$P = 10 + 1.2 \frac{\Phi A + t}{2}$

■ Burring pre-pierced hole diameter and tip diameter calculation

(Material : Mild steel, Aluminum)

Operation	Upform two-operation Burring tool	Calculation
First operation		Pre-pierced hole diameter = (0.56~0.59) ΦA
Second operation		ΦC = ΦA + 1.3 t

Upform burring tool : two-process type only.

B 1 1/4"

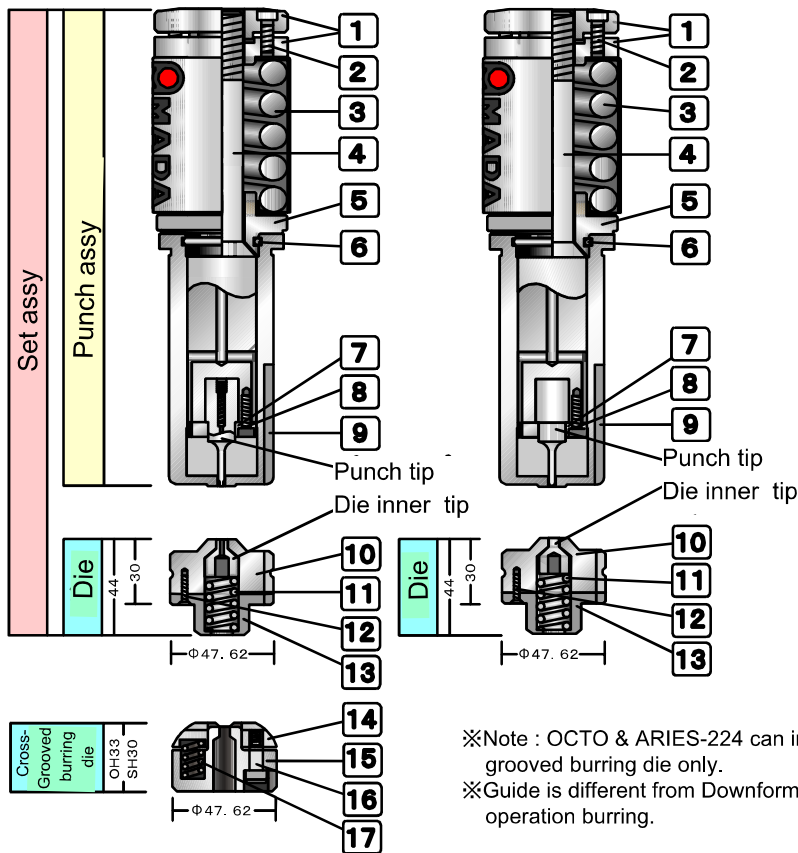
Size

Downform burring

(M2.6 ~ M6 : for forming taps & cutting taps)

One-operation burring
(Air-blow)

Two-operation burring
(Air-blow)



※Note : OCTO & ARIES-224 can install cross-grooved burring die only.
 ※Guide is different from Downform one-operation burring.

Pre-pierced hole diameters for Tap burring tool (Reference)

Unit:mm

Tap type	Material		M2.5	M2.6	M3	M4	M5	M6	M8		
Forming tap	Mild steel Aluminum	Burring tip diameter ΦA	Φ2.28 (Multi tap:Φ2.30)	Φ2.37 (Multi tap:Φ2.40)	Φ2.75	Φ3.65	Φ4.6	Φ5.50 (Multi tap:5.55)	Multi tap: Φ7.40		
		Material thickness	Pre-pierced hole diameter	0.8	Φ1.3	Φ1.3	Φ1.3	Φ2.0			
				1.0	Φ1.3	Φ1.3	Φ1.3	Φ2.0		Φ2.4	
				1.2			Φ1.6	Φ2.0		Φ2.4	
				1.5				Φ2.4		Φ3.0	Φ3.2
				1.6				Φ2.4		Φ3.0	
	Stainless steel 304 Stainless steel 430	Pre-pierced hole diameter	Burring tip diameter ΦA			Φ2.75	Φ3.65	Φ4.60			
			Material thickness	Pre-pierced hole diameter	0.8			Φ2.5			
					1.0			Φ1.5	Φ2.5	Φ3.0	
					1.2			Φ1.8	Φ2.5	Φ3.0	
Cutting tap	Mild steel Aluminum	Burring tip diameter ΦA	Φ2.10	Φ2.21 (Multi tap:Φ2.20)	Φ2.57	Φ3.40	Φ4.30	Φ5.10	Φ6.70 (Multi tap:Φ6.90)		
		Material thickness	Pre-pierced hole diameter	0.8		Φ1.3	Φ1.3	Φ2.0			
				1.0		Φ1.3	Φ1.3	Φ2.0	Φ2.3		
				1.2		Φ1.3	Φ1.6	Φ2.0	Φ2.3	Φ3.0	
				1.5			Φ1.6	Φ2.3	Φ2.8	Φ3.0	
				1.6	Φ1.6	Φ1.6	Φ2.3	Φ2.8	Φ3.0		
	Stainless steel 304 Stainless steel 430	Pre-pierced hole diameter	2.0			Φ2.3	Φ2.8	Φ3.8			
			2.3(Excluding AL)			Φ2.3	Φ2.8	Φ3.8			
			0.6		Φ1.3	Φ1.3					
			0.8		Φ1.3	Φ1.3	Φ2.0				
			1.0		Φ1.3	Φ1.6	Φ2.0	Φ2.3	Φ3.0		
			1.2			Φ1.8	Φ2.0	Φ2.3	Φ3.0		

- Amada's standard burring tools for pre pierced holes meet Amada's specifications.
- The ΦA value (burring inner diameter) in the tables above are Amada's standard dimensions. Tools for other dimensions are ordered as special.
- The pre-pierced hole diameter is the reference diameter of the hole to be pre-pierced in the first of the two burring operations. The forming height=H changes with this pre-pierced hole diameter.
- This table is applicable to Multi tap on the turret punch press (cutting and forming tap).

■ Tooling selection and code

(Code No.)

Tooling code	Specification		Air-blow		Original style		
	Type		1-ope.burring	2-operation burring	1-ope.burring	2-operation burring	
	Material		Mild steel		Stainless steel	Mild steel	Stainless steel
	Set assy	-	-	-	301100	-	-
	Punch assy	-	-	-	101100	-	-
	Punch tip	902120	-	-	902120	-	-
Die assy	201200	-	-	201200	-	-	
Die inner tip	903010	-	-	903010	-	-	

Item	Component	No.	Description						
	Punch assy	1	Double punch head	-	-	-	901010	901010	901010
		2	Cap screw (4-M5 X 12)	997710	997710	997710	997710	997710	997710
		3	Stripping spring	901410	901410	901410	901410	901410	901410
		4	Punch body	-	-	-	902010	902010	902010
		5	Retainer collar	901210	901210	901210	901210	901210	901210
		6	O-ring (Closed guide, Open guide)	910080	910080	910080	910080	910080	910080
		7	Punch plate	-	-	-	901960	901960	901960
		8	Cap screw (3-M4 X 12)	901940	901940	901940	901940	901940	901940
		9	Burring guide	-	-	-	501100	-	-
	Die assy	10	Die block	901920	-	-	901920	-	-
		11	Spring (Φ2 X Φ15 X 31L)	902910	902910	-	902910	902910	-
		12	Flush screw (3-M3 X 10)	901990	901990	901990	901990	901990	901990
13		Die plate	901980	901980	901980	901980	901980	901980	

■ Specifications

Type	One-operation burring	Two-operation burring	
	Mild steel·Aluminum		Stainless steel
Specification	Standard·Air-blow		
Material	Mild steel·Aluminum	Mild steel·Aluminum	Stainless steel
Max thickness	2.3t	2.3t	1.2t
Tap size	M2.6~M6		

- ※Specified tool is applied to PDC series.
- ※Two-operation type performs higher precision burring.
- ※ Use each tool only for its intended material type and thickness.
- ※The ejector pin of the punch tip is attached to M3 and larger burring tools.
- ※Ensure pre pierce hole is sharp before use
- ※Chrome plating reduces marking on the backside of the material when traversing. (Option)
- ※Punch tip is common for Standard and Air-blow.

■ Burring size

Up or Down form	Minimum pitch	Burring size
Downform burring		$P = 11.75 + 1.2 \frac{\Phi A + t}{2}$

■ Burring pre-pierced hole diameter and tip diameter calculation (Material : Mild steel, Aluminum)

	Downform one-operation burring tool	Downform two-operation burring tool	
		Calculation	Calculation
First operation		$\Phi C = \Phi A + 1.3t$	Pre-pierced hole diameter $= (0.56 \sim 0.59) \Phi A$
Second operation			$\Phi C = \Phi A + 1.3t$

※Standard downform burring tool is one-operation type. But if two-process type for downform burring is used, burring finish shape becomes much better.

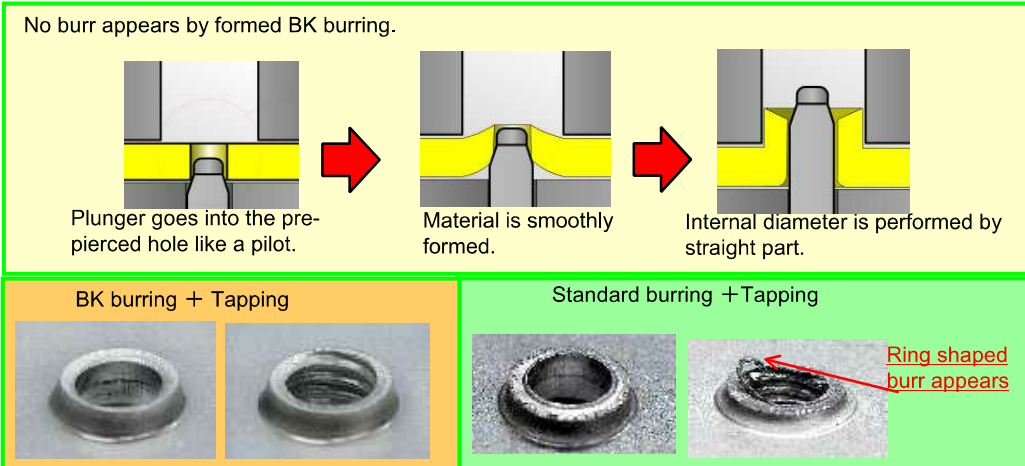
■ Component parts list for Cross-grooved burring die

No.	Description	Code No.
	Cross-grooved burring set assy	301400
	Cross-grooved burring set assy	101400
	Punch tip	902120
	Cross-grooved burring die assy	201300
9	Cross-grooved burring guide	501400
14	Ejector plate	902920
15	Die body	902940
16	Stripper bolt (3pcs.)	902930
17	Spring	902950

- ※Note : OCTO & ARIES-224 can install cross-grooved burring die only.
- ※Guide is different from Downform one-operation burring.

B 1 1/4" Size BK burring tool

Burring tool without tapped swarf (Ring shaped burr)



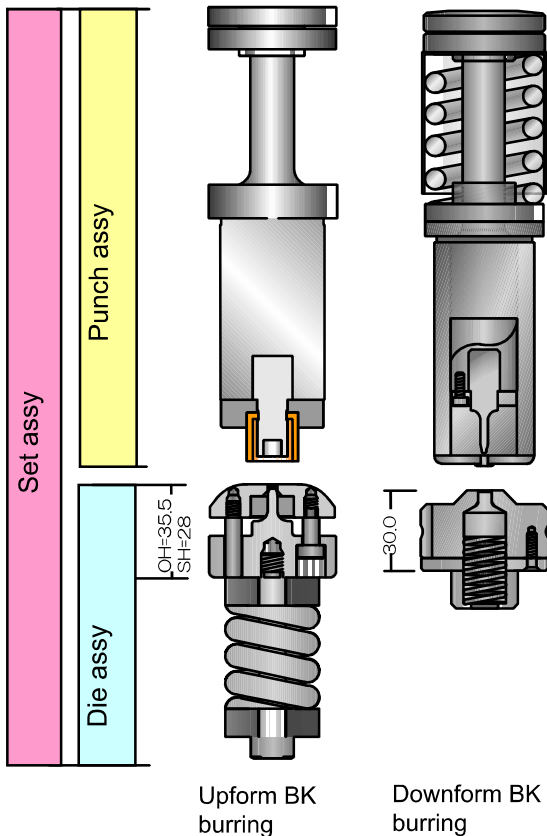
■ Specification

	Upform BK burring	Downform BK burring
Operation	Two-operation	
Material	Mild steel and Aluminum (Stainless steel need consultant)	
Thickness	t	t

■ BK burring pre-pierced hole inner diameter (Mild steel · Aluminum) Unit:mm

Tap type	Tap size	M2.6	M3	M4	M5	M6
Forming tap	Br inner diameter	Φ2.37	Φ2.75	Φ3.65	Φ4.60	Φ5.50
	Pre-pierced hole diameter	Φ1.3	Φ1.6	Φ2.0	Φ2.5	Φ3.0
Cutting type	Br inner diameter	Φ2.21	Φ2.57	Φ3.40	Φ4.30	Φ5.10
	Pre-pierced hole diameter	Φ1.3	Φ1.6	Φ2.0	Φ2.5	Φ3.0

- ※1. Upform die height of BK burring has 2mm higher than Standard burring die because of larger shoulder radius, so pay attention for backside marking or deformation of the material.
- ※2. BK burring has only two-operation type. Pre-pierced hole diameter is specified by AMADA.
- ※3. Burring height cannot be altered because of fixed pre-pierced hole diameter.
- ※4. Upper table shows pre-pierced hole diameter for two-operation BK burring. (fixed size for all material thickness.)
- ※5. M6 tapping tool is for Φ5.55.



■ Tooling selection and code

Type	Description	Code No.
Upform	Set assy	-
	Punch assy	-
	Die assy	-
Downform	Set assy	-
	Punch assy	-
	Die assy	-

■ Request for Air-blow

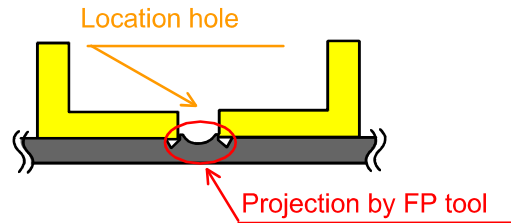
When Air-blow is needed, add on extra charge as below.

Type	Description	Code No.
Upform	Set assy	-
	Punch assy	-
	Die assy	-
Downform	Set assy	-
	Punch assy	-
	Die assy	-

B 1 1/4" Size FP (Flat Positioning) tool

Time saving for locating parts !

Conventional parts location method by half shear punch needed additional surface finish for concaved surface repair. This FP tool avoids surface finish process because no concaved mark appears.



Specifications

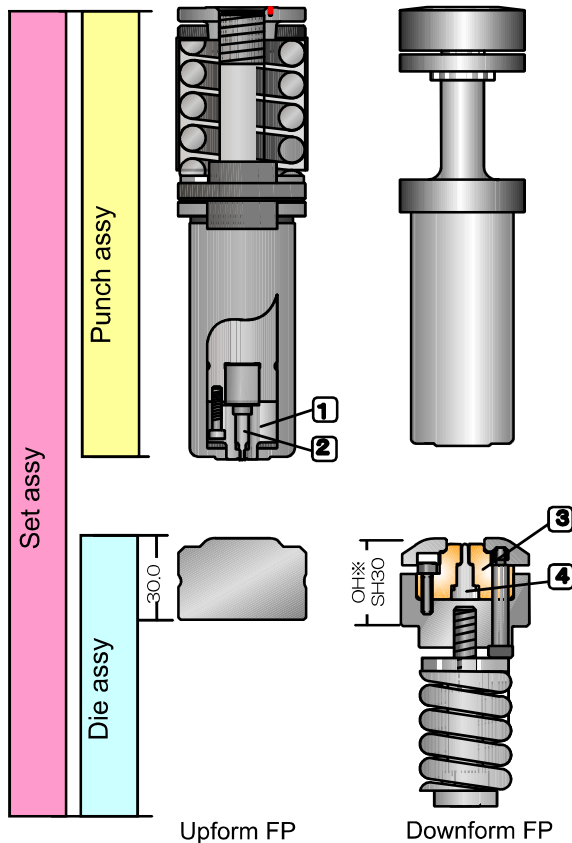
	Upform FP tool	Downform FP tool
Tool type	Long (PDC, P&F) • Short	
Tool size	B(1 1/4")	
Process	Upform (appears on the face)	Downform (appears on the backside)
Projection size ^(※1)	Φ1.9~Φ4.0 (Specified projection size)	
Projection height	0.2~0.4 (varies by machine, material thickness and material type)	
Thickness ^(※2)	0.8t (1.0t common), 1.0t (1.2t common), 1.6t (specified), 2.0t (2.3t common)	
Material	Mild steel (not applicable for more than 441kN / mm ² tensile strength)	
Minimum pitch	15mm	17mm

※1. Projection size is determined by specified size, if different size is required, die tip or punch tip must be replaced. (additional parts are needed to replace.)

※2. Common type has different projection height by material thickness.

※3. Smaller unevenness may remain on rear side of the material projected by FP tool (less than ±0.02mm).

※4. Not applicable for stainless steel and Aluminum protected by vinyl sheet.



Tooling selection and code

Type	Description	Code No.
Upform	Set assy	-
	Punch assy	-
	Die assy	-
	1 Punch tip	-
	2 Ejector tip	-
Downform	Down form set assy	-
	Punch assy	-
	Die assy	-
	Die tip	-
	Inner ejector	-
	3 Die tip	-
	4 Inner ejector	-

※NOTE: Overall die height

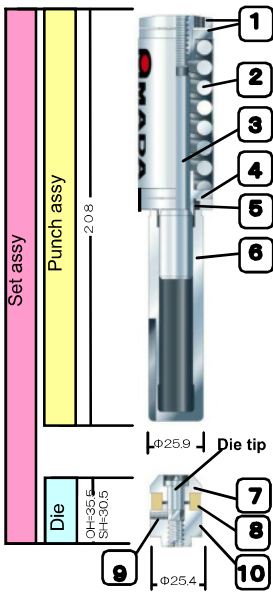
OH=31mm Thickness 0.8mm ~ 1.6mm

OH=32.2mm Thickness 2.0mm ~ 2.3mm

A 1/2" Size

Upform center punch

(Maximum material thickness 3.2mm)
Material thickness non-adjustment type
(fine adjustment possible)



Component tooling list

Description	Code No.
Set assy	381110
Punch assy	181110
Die assy	281010
Die tip	918210

Component parts list

No.	Description	Specification	Code No.
1	Double punch head		901400
2	Stripping spring		901300
3	Punch body		918310
4	Retainer collar		901200
5	O-ring (Closed guide)		910060
6	Punch guide		581010
7	Ejector plate		918320
8	Urethane spring		918720
9	Lock screw (2-M4X4)		918340
10	Die holder		918330

No dry-run ! (No material punch) : No material punch damages the guide and die tip.

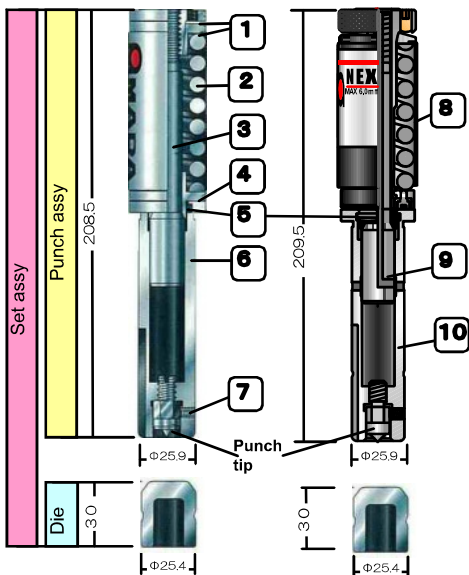
- ※1. The maximum material thickness is 3.2mm.
- ※2. The point angle is 90°.
- ※3. Be aware of the marking – The die tip contacts on the backside of material because of the material weight of large sheet such as 3.2mm thick 4'×8'.
To avoid this use the tool size B(1¼") (special tool).
- ※4. Wider use of this tool to cover different thickness requires the adjustment of die tip projection height.

A 1/2" Size

Downform center punch High speed marking tool

(Maximum material thickness 6.0 t)
Material thickness non-adjustment type
(fine adjustment possible)
For EM machine series

Downform center punch High speed marking tooling (Air-blow)



Tooling selection and code

(Code No.)

	Description	
	Upform center punch	High speed marking
Set assy	381100	-
Punch assy	181100	-
Punch tip	918110	918110
Die	281000	281000

No dry-run! (No material punch) : No material punch damages the guide and die tip.

- ※1. The maximum material thickness is 6.0mm.
- ※2. The point angle is 90°.
- ※3. Wider use of this tool to cover different thickness requires the adjustment of punch projection height.

Component parts list

No.	Description	Specification	Code No.
1	Double punch head		901400
2	Stripping spring		901300
3	Punch body		918410
4	Retainer collar		901200
5	O-ring	Closed guide (Downform center punch)	910060
		Open guide (High-speed marking)	910150
6	Punch guide (Downform center punch)		918420
7	Lock screw (M5X6)		999960
8	NEX spring assy		980000
9	Punch body (High speed marking)		501100
10	Punch guide (High speed marking)		901920



High speed marking tool

Improve the post-punching process drastically

Indication for part's name, lot number, bending line, and welding position on the component.

- ※1. Only applicable for downform type.
- ※2. Recommended for EM, EML and AC.

Specifications

Tool type	Air-blow
Tool size	A(1/2")
Process speed	Maximum 1800min ⁻¹ {hpm}

