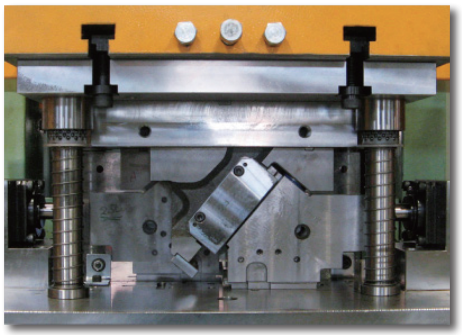
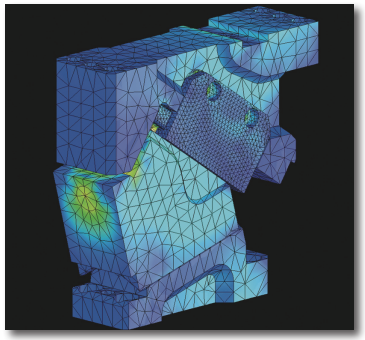
Features of VALCAM®

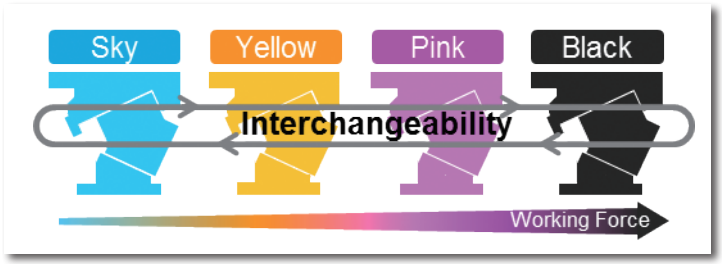
- The mounting surface widths of 46, 58, 72, 100, and 140 mm are available.
- The white grade, which emphasizes compactness, and three compatible grades are available. The working force can be increased in the same form. (Two types of grades are available for mounting surface widths of 100 and 140.)
- Thanks to the design that used CAE analysis and in-house testing to reduce stress concentration, these models are lighter weight and more rigid and can handle high-speed production.
- For mounting surface widths of 46, 58, and 72 mm, there are two stroke types, long and short. (One stroke type is available for mounting surface widths of 100 and 140 mm.)
- Two types of pressure source, coil spring and gas spring are available. The gas spring types secure a spring force more than 10% of the working force and can even handle high tensile strength steel sheets.
- Depending on the grade, use with triming and flanging is possible.
- V-shaped guide structure.



Durability test



CAE analysis



Interchangeability

Grade	Cam width [mm]	Working force [kN (tonf)] 1,000,000 strokes Standard	1,000,000 strokes Center	300,000 strokes Center	Stroke	Angle (5-degree increments)	Catalog No.	Spring Type	Application	Page
White	46	14.7 (1.5)	22.1 (2.2)	29.4 (3.0)	Short	0°～80°	VACWS46	Coil	Pierce	P.595～613
					Long	0°～50°	VACWL46			P.615～627
	58	18.6 (1.9)	27.9 (2.8)	37.2 (3.8)	Short	0°～80°	VACWS58			P.663～681
					Long	0°～50°	VACWL58			P.683～695
Sky	46	14.7 (1.5)	22.1 (2.2)	29.4 (3.0)	Short	0°～80°	VACSS46	Gas / Coil	Pierce	P.629～647
					Long	0°～50°	VACSL46			P.649～661
	58	18.6 (1.9)	27.9 (2.8)	37.2 (3.8)	Short	0°～80°	VACSS58			P.697～715
					Long	0°～50°	VACSL58			P.717～729
	72	24.5 (2.5)	36.8 (3.7)	49.0 (5.0)	Short	0°～80°	VACSS72			P.731～749
					Long	0°～50°	VACSL72			P.751～763
Yellow	46	20.6 (2.1)	30.9 (3.1)	41.2 (4.2)	Short	0°～80°	VACYS46	Gas / Coil	Pierce / Trim / Flange	P.629～647
					Long	0°～50°	VACYL46			P.649～661
	58	28.4 (2.9)	42.6 (4.3)	56.8 (5.8)	Short	0°～80°	VACYS58			P.697～715
					Long	0°～50°	VACYL58			P.717～729
	72	40.2 (4.1)	60.3 (6.1)	80.4 (8.2)	Short	0°～80°	VACYS72			P.731～749
					Long	0°～50°	VACYL72			P.751～763
	100	57.8 (5.9)	86.7 (8.8)	103.9 (10.6)	Long	0°～70°	VACYL100			P.765～781
	140	90.2 (9.2)	112.8 (11.5)	135.3 (13.8)	Long	0°～70°	VACYL140			P.783～799
Pink	46	24.5 (2.5)	36.8 (3.7)	49.0 (5.0)	Short	0°～80°	VACPS46	Gas / Coil	Pierce / Trim / Flange	P.629～647
					Long	0°～50°	VACPL46			P.649～661
	58	34.3 (3.5)	51.5 (5.2)	68.6 (7.0)	Short	0°～80°	VACPS58			P.697～715
					Long	0°～50°	VACPL58			P.717～729
	72	45.1 (4.6)	67.7 (6.9)	90.2 (9.2)	Short	0°～80°	VACPS72			P.731～749
					Long	0°～50°	VACPL72			P.751～763
	100	77.4 (7.9)	116.1 (11.8)	139.2 (14.2)	Long	0°～70°	VACPL100			P.765～781
	140	127.4 (13.0)	159.3 (16.3)	191.1 (19.5)	Long	0°～70°	VACPL140			P.783～799
Black	46	36.8 (3.7)	49.0 (5.0)	—	Short	0°～80°	VACBS46	Gas	Pierce / Trim / Flange	P.629～647
					Long	0°～50°	VACBL46			P.649～661
	58	51.5 (5.2)	68.6 (7.0)	—	Short	0°～80°	VACBS58			P.697～715
					Long	0°～50°	VACBL58			P.717～729
	72	67.7 (6.9)	90.2 (9.2)	—	Short	0°～80°	VACBS72			P.731～749
					Long	0°～50°	VACBL72			P.751～763

Gas Spring Coil Spring :Make sure to check your conditions of use

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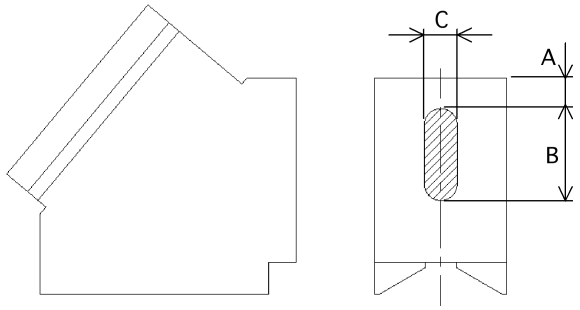
Increased Working Force for 1 Million strokes Durability and 300,000-strokes Durability

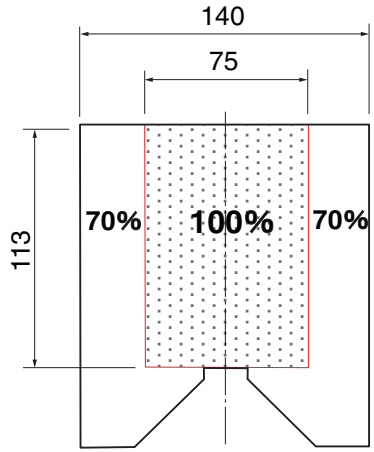
Having the gravity center of tools on mounting surface kept within the center area shown below allows use at higher working force than the standard working force.
Please refer to the working force at conditional on page 590.



Cam Width	Durability Stroke	Dimensions		
		A	B	C
46	1milion	9	36	14
	300,000			
58	1milion	14	36	14
	300,000			
72	1milion	18	48	16
	300,000			
100	1milion	34	50	30
	300,000			
140	1milion	37	52	32
	300,000			

Range of Use in Standard Working Force of 140 mm width.

If the center gravity of tools on mounting surface for 140mm width cam is out of the range shown on the under, its allowable working force will be decreased by 30%.

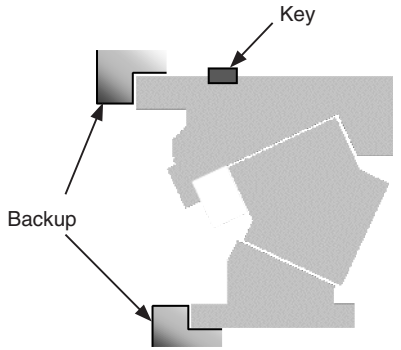


Backup Settings with Increased Working Force

When using within the following working force range, set a backup or key block for the cam holder or cam driver.

Cam Width	Operating working force [kN (tonf)]
46	29.4 (3.0) or more
58	49.0 (5.0) or more
72	68.6 (7.0) or more
100	79.4 (8.1) or more
140	127.4 (13.0) or more

Angle	Location for backup
0～20˚	Cam Holder
25˚	Cam Holder, Cam Driver
30～80˚	Cam Driver



Guideline of coil spring durability

Guideline of durability for coil spring is 300,000 cycles complying with the guideline from the coil spring manufacturer.

Installation of thrust pad

When the unit is used for trimming and flanging, it is recommended that the thrust pad be additionally installed for an extreme lateral load due to release of the trimming (flanging) line.

Use with Restriking

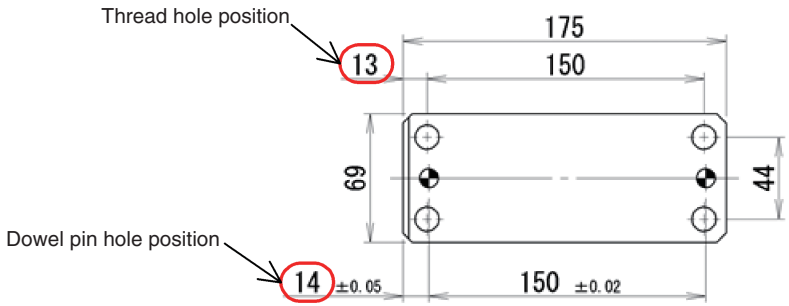
Do not use with restriking. It would lead to cam damage.

Installation range of piercing punch

Install the piercing punch so that it may not come out of the cam slider mounting surface.
If the pierce punch is used out of the cam slider mounting surface, the working force is degraded.

Dowel pin hole positions for cam holder and cam driver

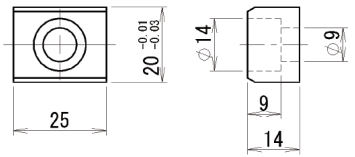
To prevent incorrect assembly of the cam, the dowel pin positions are intentionally offset in the front/back direction.
Make sure that the dowel pin hole positions are set up according to the catalog indication.



(Reference) VACSS72 - Cam Driver

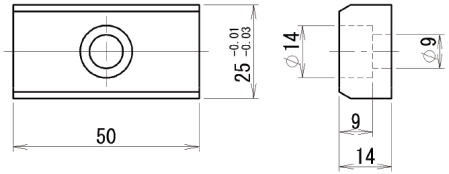
Key specifications (option code K)

●Cam width 46



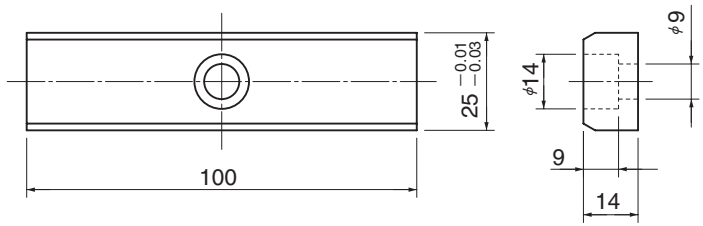
(1 pc. bolt M8×15 attached)

●Cam width 58, 72



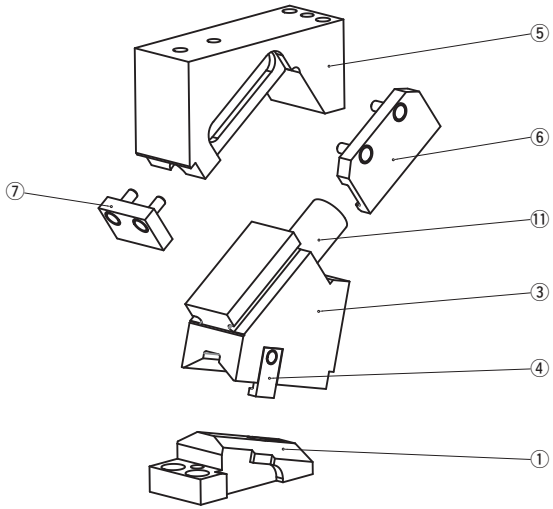
(1 pc. bolt M8×15 attached)

●Cam width 140



(1 pc. bolt M8×15 attached)

Exploded view : 46 and 58 White



Parts list : 46 and 58 White

No.	Description	Qty
①	Cam Driver	1
③	Cam Slider	1
④	Positive Return Follower	1
⑤	Cam Holder	1
⑥	Slide Keeper	2
⑦	Stopper Plate	1
⑪	Coil Spring	1

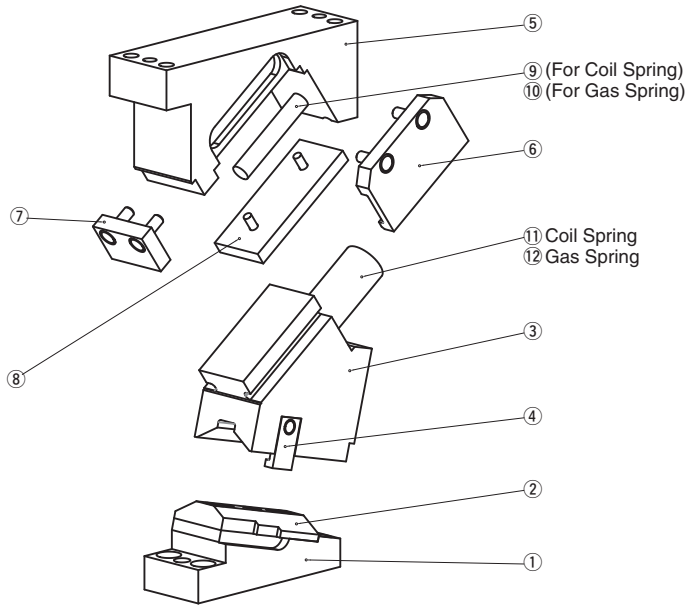
VALCAM Disassembly method

1) Loosen hexagonal socket head bolts and remove ⑦ Stopper Plate.
2) Pull out and remove ③ Cam Slider from ⑤ Cam Holder to the rear.

VALCAM Assembly method

1) Assemble parts in the reverse order of disassembly.
   - Make sure that there is no foreign matter on the sliding area and apply grease on sliding surface.
   - Since clearances of Cam Slider and Cam Holder are controlled, make sure that serial numbers engraved on Cam Slider and Cam Holder are indentical.
   - After assembly, make sure that all bolts are correctly tightened.

Exploded view : 46, 58, and 72 Sky, Yellow, Pink, and Black



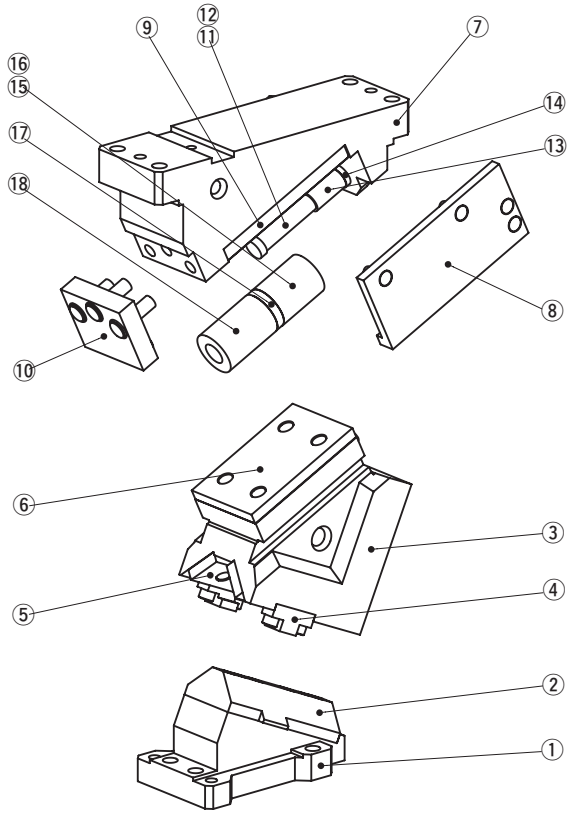
Parts list : 46, 58, and 72 Sky

No.	Description	Qty	
		Coil Spring	Gas Spring
①	Cam Driver	1	
③	Cam Slider	1	
④	Positive Return Follower	1	
⑤	Cam Holder	1	
⑥	Slide Keeper	2	
⑦	Stopper Plate	1	
⑨	Spring Guide Pin	1	—
⑩	Spring Plate	—	1
⑪	Coil Spring	1	—
⑫	Gas Spring	—	1

Parts list : 46, 58, and 72 Yellow, Pink, and Black

No.	Description	Qty	
		Coil Spring	Gas Spring
①	Cam Driver	1	
②	Cam Slide Guide	1	
③	Cam Slider	1	
④	Positive Return Follower	1	
⑤	Cam Holder	1	
⑥	Slide Keeper	2	
⑦	Stopper Plate	1	
⑧	Wear Plate	1	
⑨	Spring Guide Pin	1	—
⑩	Spring Plate	—	1
⑪	Coil Spring	1	—
⑫	Gas Spring	—	1

Exploded view : 100 and 140 Yellow and Pink



Parts list : 100 and 140 Yellow

No.	Description	Qty	
		Coil Spring	Gas Spring
①	Cam Driver	1	
②	Cam Slide Guide	1	
③	Cam Slider	1	
④	Positive Return Follower	2	
⑦	Cam Holder	1	
⑧	Slide Keeper	2	
⑨	Wear Plate	1	
⑩	Stopper Plate	1	
⑪	Spring Guide Pin	1	—
⑫	Pin	—	1
⑮	Coil Spring	1	—
⑯	Gas Spring	—	1

Parts list : 100 and 140 Pink

No.	Description	Qty	
		Coil Spring	Gas Spring
①	Cam Driver	1	
②	Cam Slide Guide	1	
③	Cam Slider	1	
④	Positive Return Follower	2	
⑤	Slide Plate A	2	
⑥	Slide Plate B	1	
⑦	Cam Holder	1	
⑧	Slide Keeper	2	
⑨	Wear Plate	1	
⑩	Stopper Plate	1	
⑪	Spring Guide Pin	1	—
⑫	Pin	—	1
⑬	Collar	1	—
⑭	Washer	1	—
⑮	Coil Spring	1	—
⑯	Gas Spring	—	1
⑰	Bush	1	—
⑱	Coil Spring	1	—

VALCAM Disassembly method

1) Loosen hexagonal socket head bolts and remove ⑩ Stopper Plate.
2) Pull out and remove ③ Cam Slider from ⑦ Cam Holder to the rear.

VALCAM Assembly method

1) Assemble parts in the reverse order of disassembly.
   - Make sure that there is no foreign matter on the sliding area and apply grease on sliding surface.
   - Since clearances of Cam Slider and Cam Holder are controlled, make sure that serial numbers engraved on Cam Slider and Cam Holder are indentical.
   - After assembly, make sure that all bolts are correctly tightened.