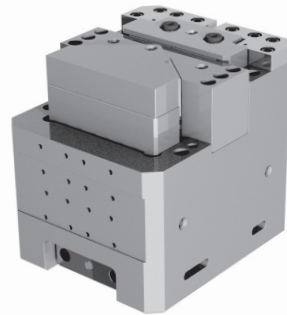


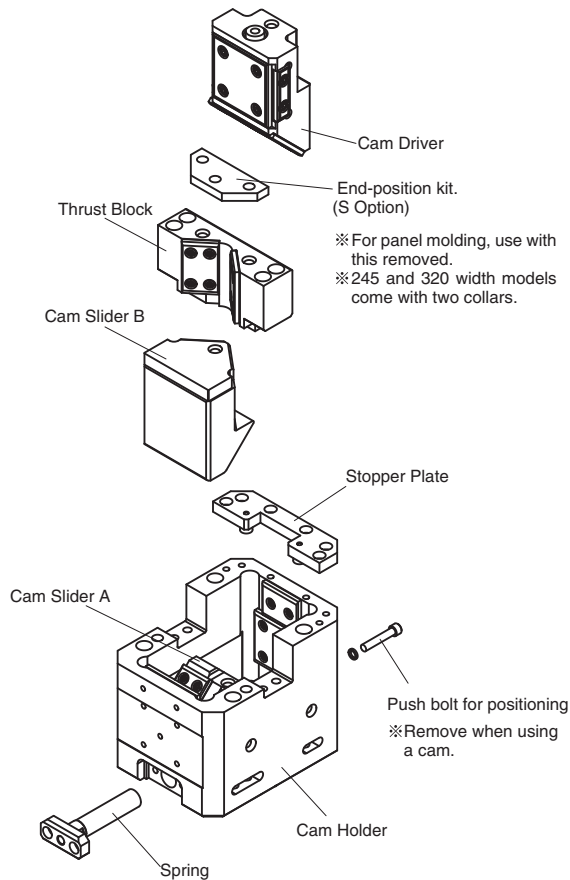
Counter Cam Unit General Description of CTCS / CTVS

THRUST BLOCK TYPE

The counter cam unit CTCS and CTVS series are the optimum cam units for bending panels upward. There are 8 variations available; regular / robust type and 4 different widths.



Structure and features of counter cam unit

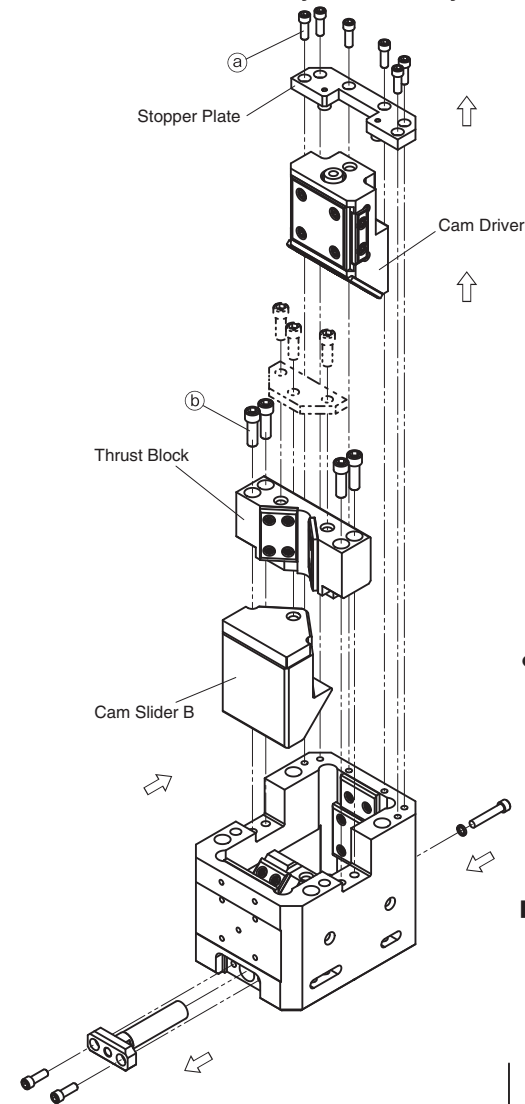


- Robust structure integrated into the casting is applied.
- The highly rigid type is reinforcing the backup wall of cam slider B. It is not necessary to machine the die for backup.
- V-shaped cam slider B is highly resistant to the reaction force on the side. (145/245/320 mm wide only)
- Urethane stopper for shock absorption are provided on the stopper plate to prevent direct force on the screws.
- The thrust block is installed as the stopper of cam slider B. This stopper block could prevent the cam slider B from lifting up over the specified stroke.
- A thread hole is drilled so that a pushing bolt for the end-position kit could be installed.

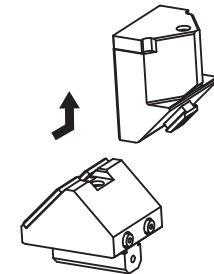
⚠ How to handle the Gas Spring

- If you are planning to use any other gas springs than the ones Sankyo recommends, please let us know first.
- For the handling of the gas spring you have/use, including the maintenance of it on a standalone basis, please contact the gas spring manufacturer from where you purchased.

Structure and Assembly/Disassembly of CTCS / CTVS



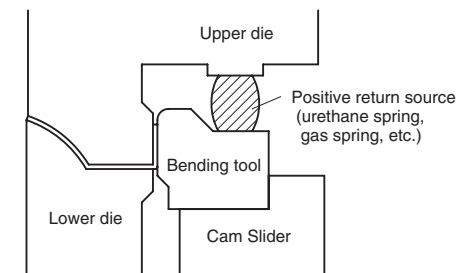
- Disassembly method of CTCS and CTVS
 - 1) Loosen hexagon socket head bolt (Ⓐ) and remove stopper plate.
 - 2) Pull and remove cam driver upward.
 - 3) Remove hexagon socket head bolt (Ⓑ) and remove thrust block.
 - 4) Slide cam slider B with positive return obliquely upward and remove it. (See the figure below.)
 (In the same way, slide cam slider B diagonally from above to assemble.)



- Assembly method of CTCS / CTVS
 - 1) Assemble components in the reverse order of disassembly.
 - Make sure that there is no foreign matter on the sliding area and assemble components.
 - When cam is disassembled and then reassembled, please do not forget to assemble all bolts provided.

For Operation

In order to make the counter cam unit correctly track the up-down motion of the press, use a return assist pressure source (urethane spring, gas spring, etc.) (See the figure below.)



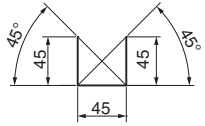
Counter Cam Unit

SPECIAL CAM UNIT

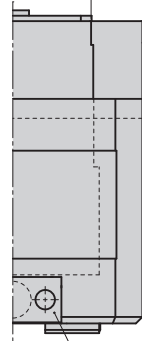


CTVS145-45 (Regular Type)
CTVH145-45 (Highly Rigid Type)

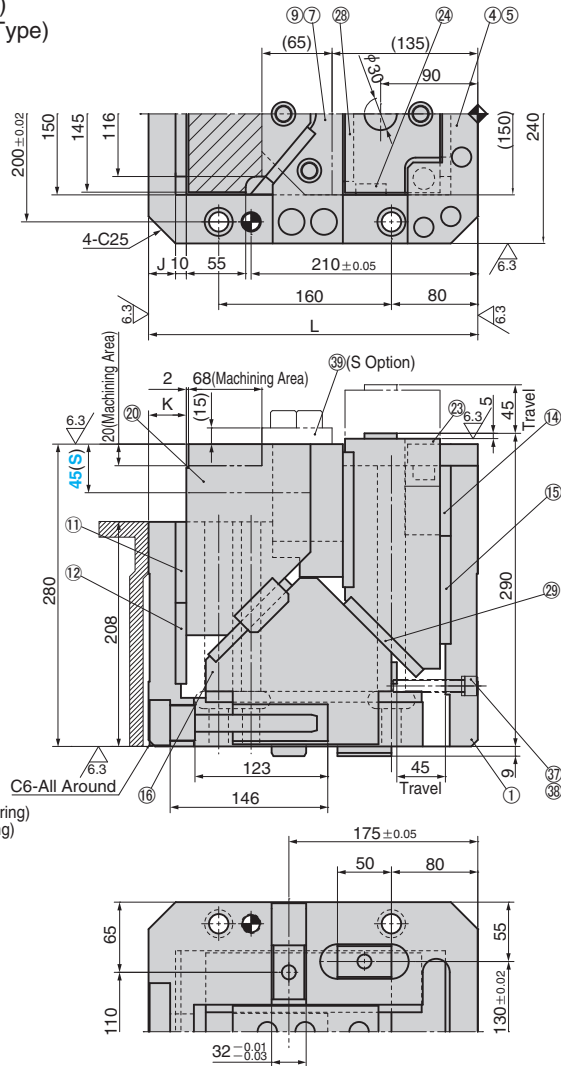
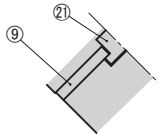
Cam diagram



145(W)



⑩⑪⑫⑬ (For Coil Spring)
⑭⑮⑯⑰ (For Gas Spring)



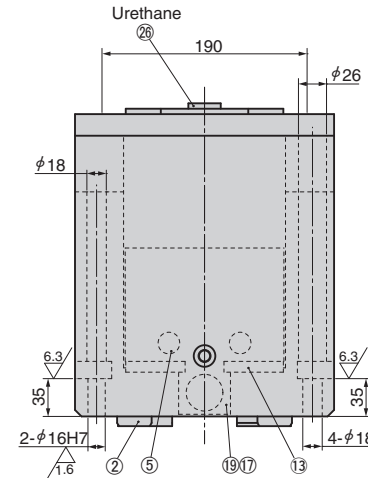
Spring Specification

Spring PS	Spring Force N(kgf)	
	Initial Load	Final Load
ISO	330 (33.7)	1815 (185.1)
GK	—	2072 (211.3)



Option

Option Code	Specification
S	End-position kit is included
NF	Nitrogen gas not charged.



Specification

Catalog No.	J	K	L
CTVS	25	35	305
CTVH	40	50	320

Working Force kN(tonf)	Spring Force	Total Weight kg	Catalog No.	W	Travel S	Spring Type PS*
Standard Working Force kN(tonf) (1,000,000 strokes)	Refer to the table on the following page.	124.0	CTVS CTVH	145	45	ISO GK NISO NGK

※ ISO : Coil spring

GK : Gas spring (KALLER)

NISO/NGK : without spring Parts for spring assembly are included.

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Order

Catalog No.	W	S	PS
CTVS	145	45	ISO
CTVH	145	45	GK - NF

* Use gas spring filling pressure of 7MPa or less to avoid damage to components.

* For the spring specification, refer to the above and below.

• ISO...TJM32-178, Spring constant 33N (3.37kgf) /mm

Guideline of spring durability 1,000,000 strokes

• GK ...X350-80-7.0.MPa

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Counter Cam Unit CTCS,CTCH,CTVS

THRUST BLOCK TYPE



CTVH Table of Components

Table of Components

CTCS120, CTCH120 .ST=45

No.	Description	Qty		Material and Remark
		Coil Spring	Gas Spring	
①	Cam Driver	1		FC250 with Graphite
②	Cam Holder	1		FCD550
③	Cam Slider A	1		FC250 with Graphite
④	Cam Slider B	1		FC250 with Graphite
⑤	Cam Positive Return	1		Bronze
⑥	Spring Guide Block	1		Bronze with Graphite
⑦	Stopper Plate	1		S45C(1045)
⑧	Thrust Block	1		Bronze with Graphite
⑨	Urethane Stopper	4		Urethane
⑩	Spring Stopper	1		S45C(1045)
⑪	Wear Plate	1		S45C Copper Powder Sintered
⑫	Wear Plate	1		S45C Copper Powder Sintered
⑬	Wear Plate	1		Bronze with Graphite
⑭	Wear Plate	4		S45C Copper Powder Sintered
⑮	Wear Plate	2		S45C Copper Powder Sintered
⑯	Spacer	1		SK5
⑰	Locate Cap Bolt	1		M12×68
⑱	Spring Stopper A	1	-	S45C(1045)
⑲	Spring Stopper B	-	1	S45C(1045)
⑳	Spring Guide Pin	1	-	S45C(1045) HQI-HT
㉑	Coil Spring	1	-	TJM32-178
㉒	Gas Spring	-	1	X350-80-7.0MPa
㉓	Locking Plate(S Option)	1		S45C(1045)

※ When springs are GK, there are three

㉓ Spring stopper Bs per spring.

Bolts for assembly are not indicated.

CTVS145, CTVH145

.ST=45

No.	Description	Qty		Material and Remark
		Coil Spring	Gas Spring	
①	Cam Holder	1		FCD550
②	Key	4		SS400(1020)
④	Stopper Plate	1		S45C(1045)
⑤	Urethane Stopper A	4		Urethane
⑦	Thrust Block	1		Bronze with Graphite
⑨	Wear Plate E	4		Bronze with Graphite
⑪	Wear Plate A-1	1		Bronze with Graphite
⑫	Wear Plate A-2	1		Bronze with Graphite
⑬	Wear Plate B	2		Bronze with Graphite
⑭	Wear Plate C	1		Bronze with Graphite
⑮	Wear Plate D	1		Bronze with Graphite
⑯	Cam Slider A	1		FC250
⑰	Spring Guide Block	1		S45C(1045)
⑲	Spring Stopper	1		S45C(1045)
⑳	Cam Slider B	1		FC250
㉑	Cam Positive Return	1		S45C(1045)
㉒	Cam Driver	1		FC250
㉔	Wear Plate	2		S45C Copper Powder Sintered
㉖	Urethane Stopper B	1		Urethane
㉘	Wear Plate	1		S45C Copper Powder Sintered
㉙	Wear Plate F	1		Bronze with Graphite
㉚	Spring Stopper A	1	-	S45C(1045)
㉛	Coil Spring	1	-	TJM32-178
㉜	Spring Guide Pin	1	-	S45C(1045) HQI-HT
㉝	Spring Stopper B	-	1	S45C(1045)
㉞	Gas Spring	-	1	X350-80-7.0MPa
㉟	Locate Cap Bolt	1		M12×68
㊱	Spacer	1		S45C(1045)
㊲	Locking Plate(S Option)	1		S45C(1045)

※ When springs are GK, there are three

㉛ Spring stopper Bs per spring.

Bolts for assembly are not indicated.

CTVS245, CTVH245

.ST=60

No.	Description	Qty		Material and Remark
		Coil Spring	Gas Spring	
①	Cam Holder	1		FCD550
②	Thrust Block	1		FCD550
④	Wear Plate E	4		Bronze with Graphite
⑥	Stopper Plate R	1		S45C(1045)
⑦	Urethane Stopper A	8		Urethane
⑧	Stopper Plate L	1		S45C(1045)
⑨	Key	4		SS400(1020)
⑪	Wear Plate A-1	2		Bronze with Graphite
⑫	Wear Plate A-2	2		Bronze with Graphite
⑬	Wear Plate B	4		Bronze with Graphite
⑭	Wear Plate C	2		Bronze with Graphite
⑮	Wear Plate D	2		Bronze with Graphite
⑯	Cam Slider A	1		FC250
⑰	Spring Guide Block	1		S45C(1045)
⑲	Spring Stopper	1		S45C(1045)
⑳	Wear Plate G	2		Bronze with Graphite
㉑	Cam Slider B	1		FC250
㉒	Cam Positive Return	1		S45C(1045)
㉓	Cam Driver	1		FC250
㉔	Urethane Stopper B	2		Urethane
㉖	Wear Plate	2		S45C Copper Powder Sintered
㉘	Wear Plate F	2		Bronze with Graphite
㉙	Wear Plate	2		S45C Copper Powder Sintered
㉚	Wear Plate	2		S45C Copper Powder Sintered
㉛	Spring Stopper A	1	-	S45C(1045)
㉜	Spring Guide Pin	1	-	S45C(1045) HQI-HT
㉝	Coil Spring	1	-	TJM50-229
㉞	Gas Spring	-	1	X750-100-7.0MPa
㉟	Spring Stopper B	-	1	S45C(1045)
㊱	Locate Cap Bolt	1		M16×88
㊲	Spacer	1		S45C(1045)
㊳	Locking Plate(S Option)	1		S45C(1045)
㊴	Locking Collar(S Option)	2		S45C(1045)

※ When springs are GK, there are three

㉜ Spring stopper Bs per spring.

Bolts for assembly are not indicated.

CTVS320, CTVH320

.ST=60

No.	Description	Qty		Material and Remark
		Coil Spring	Gas Spring	
①	Cam Holder	1		FCD550
②	Thrust Block	1		FCD550
④	Wear Plate E	4		Bronze with Graphite
⑥	Key	4		SS400(1020)
⑧	Wear Plate A-1	2		Bronze with Graphite
⑨	Wear Plate A-2	2		Bronze with Graphite
⑩	Wear Plate B	4		Bronze with Graphite
⑪	Wear Plate C	2		Bronze with Graphite
⑫	Wear Plate D	4		Bronze with Graphite
⑬	Stopper Plate R	1		S45C(1045)
⑭	Urethane Stopper A	8		Urethane
⑮	Stopper Plate L	1		S45C(1045)
⑯	Cam Slider A	1		FC250
⑰	Spring Guide Block	1		S45C(1045)
⑲	Spring Stopper	2		S45C(1045)
⑳	Wear Plate G	4		Bronze with Graphite
㉑	Cam Slider B	1		FC250
㉒	Cam Positive Return	1		S45C(1045)
㉓	Cam Driver	1		FC250
㉔	Wear Plate	2		S45C Copper Powder Sintered
㉖	Urethane Stopper B	2		Urethane
㉘	Wear Plate F	2		Bronze with Graphite
㉙	Wear Plate	2		S45C Copper Powder Sintered
㉚	Wear Plate	2		S45C Copper Powder Sintered
㉛	Spring Stopper A	1	-	S45C(1045)
㉜	Spring Guide Pin	2	-	S45C(1045) HQI-HT
㉝	Coil Spring	2	-	TJM50-229
㉞	Spring Stopper B	-	1	S45C(1045)
㉟	Gas Spring	-	2	X750-100-7.0MPa
㊱	Locate Cap Bolt	1		M16×88
㊲	Spacer	1		S45C(1045)
㊳	Locking Plate(S Option)	1		S45C(1045)
㊴	Locking Collar(S Option)	2		S45C(1045)

※ When springs are GK, there are three

㉜ Spring stopper Bs per spring.

Bolts for assembly are not indicated.