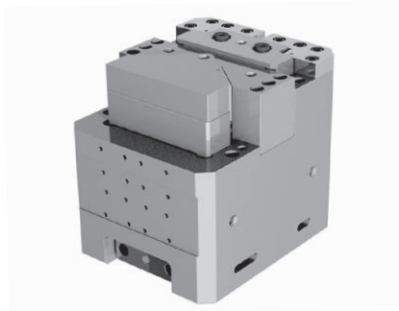


Counter Cam Unit CTCS·H/CTVS·H [Overview]

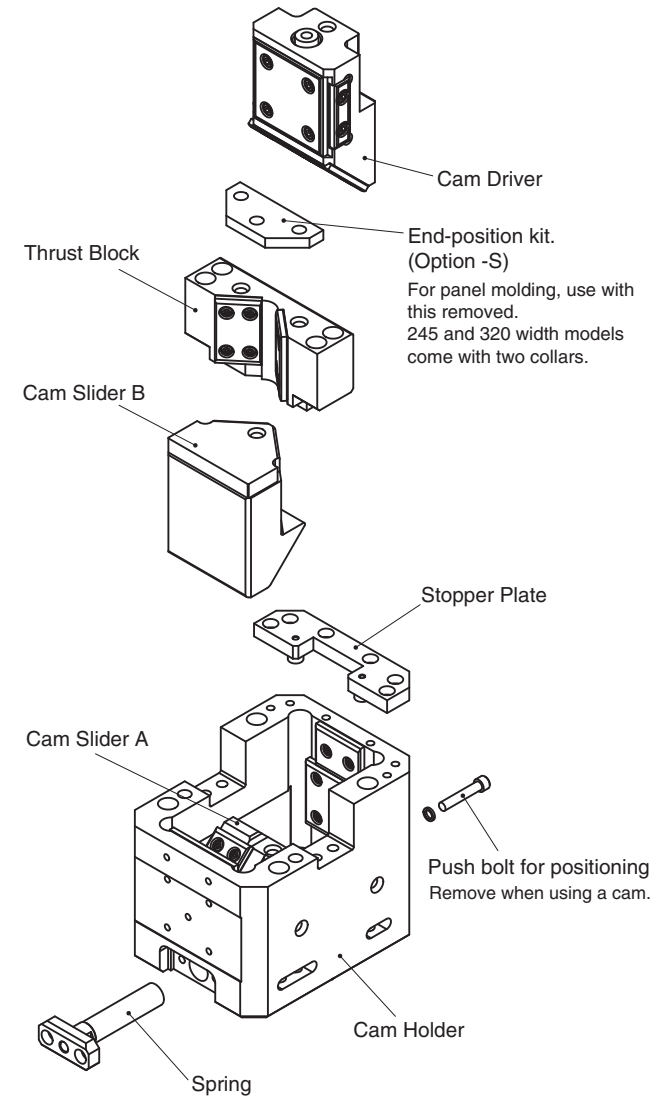
Product Information

- Mount face widths 120, 145, 245, and 320 mm.
- High rigidity structure.
- V-shaped guide.
- Built-in abnormal ascent stop mechanism.
- Built-in urethane for shock absorption in cam driver stopper.



■ Features

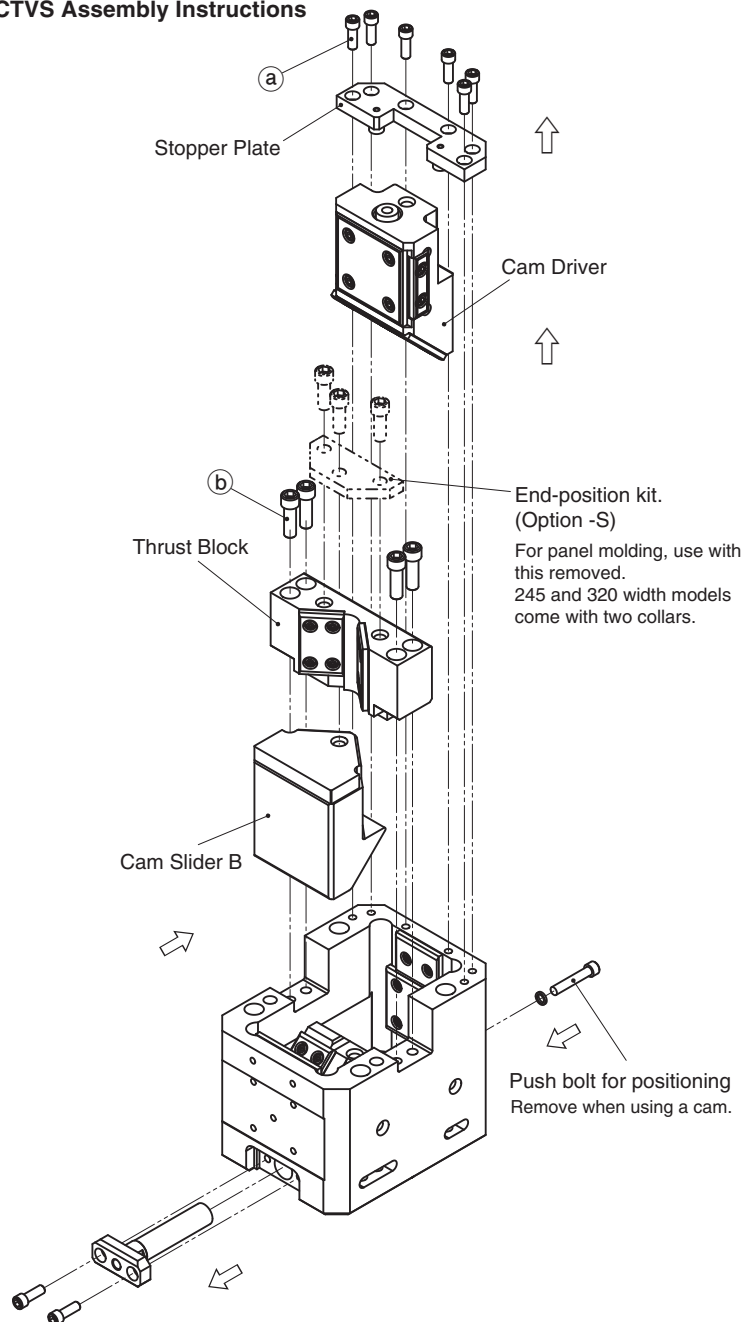
- Robust structure integrated into the casting is applied.
- The highly rigid type is reinforcing the backup wall of Cam Slider B. It is not necessary to machine the die for backup.
- V-shaped Cam Slider B is highly resistant to the reaction force on the side. (145 / 245 / 320 mm wide only)
- Urethane 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.



Counter Cam Unit CTCS·H/CTVS·H [Overview]

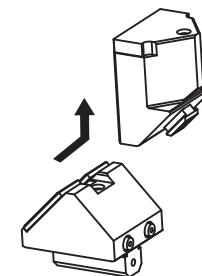
Product Information

■CTCS CTVS Assembly Instructions



●Disassembly

- 1) Remove Hexagon Socket Head Bolts (a), to pull out Stopper Plate.
- 2) Pull and remove Cam Driver upward.
- 3) Remove Hexagon Socket Head Bolts (b), 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

Assembly is the reverse procedure of disassembly.

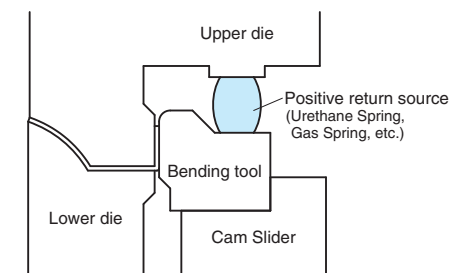
- Ensure that all parts are clean, particularly the sliding components to which a small amount of lubricant is applied and is then placed in position.
- Take care that the respective tolerances are observed when assembling Cam Slider and Cam Holder, which also should be identified by the same serial number.
- Make sure that all bolts are tighten to the recommended torque after assembly and disassembly.

⚠ Gas Spring

Please contact your local sales representative if you prefer to use a gas spring not specified in our catalog. For use and maintenance of gas spring, please contact the manufacturer directly.

■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.)



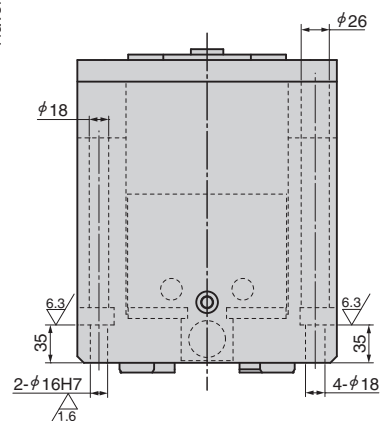
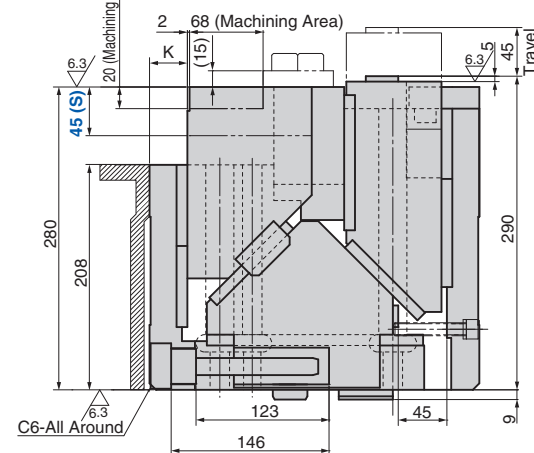
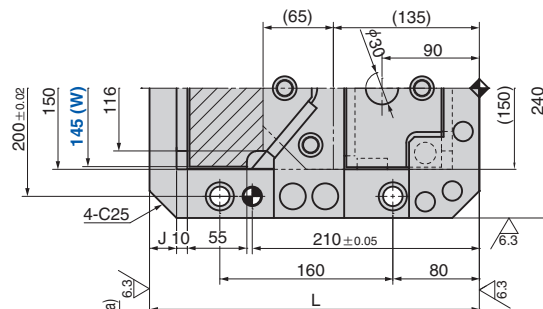
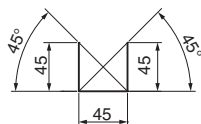
CTVS • CTVH

Counter Cam Unit

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



● Cam Diagram



Working Force kN (tonf) 1,000,000 strokes	Spring Force N (kgf)		Total Weight kg	Catalog No.	W	Travel S	Spring Type PS
	Initial Load	Final Load					
73.5 (7.5)	—	2072 (211.3)	124.0	CTVS CTVH	145	45	ISO NISO
	330 (33.7)	1815 (185.1)					GK NGK

ISO: Coil Spring GK: Gas Spring (KALLER)
NGK: Without Gas Spring NISO: Without Coil Spring Parts for spring assembly are included.



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



Option Code	Specification
NF	Nitrogen gas not charged.
S	Lock plate attached.

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

Spring Specification

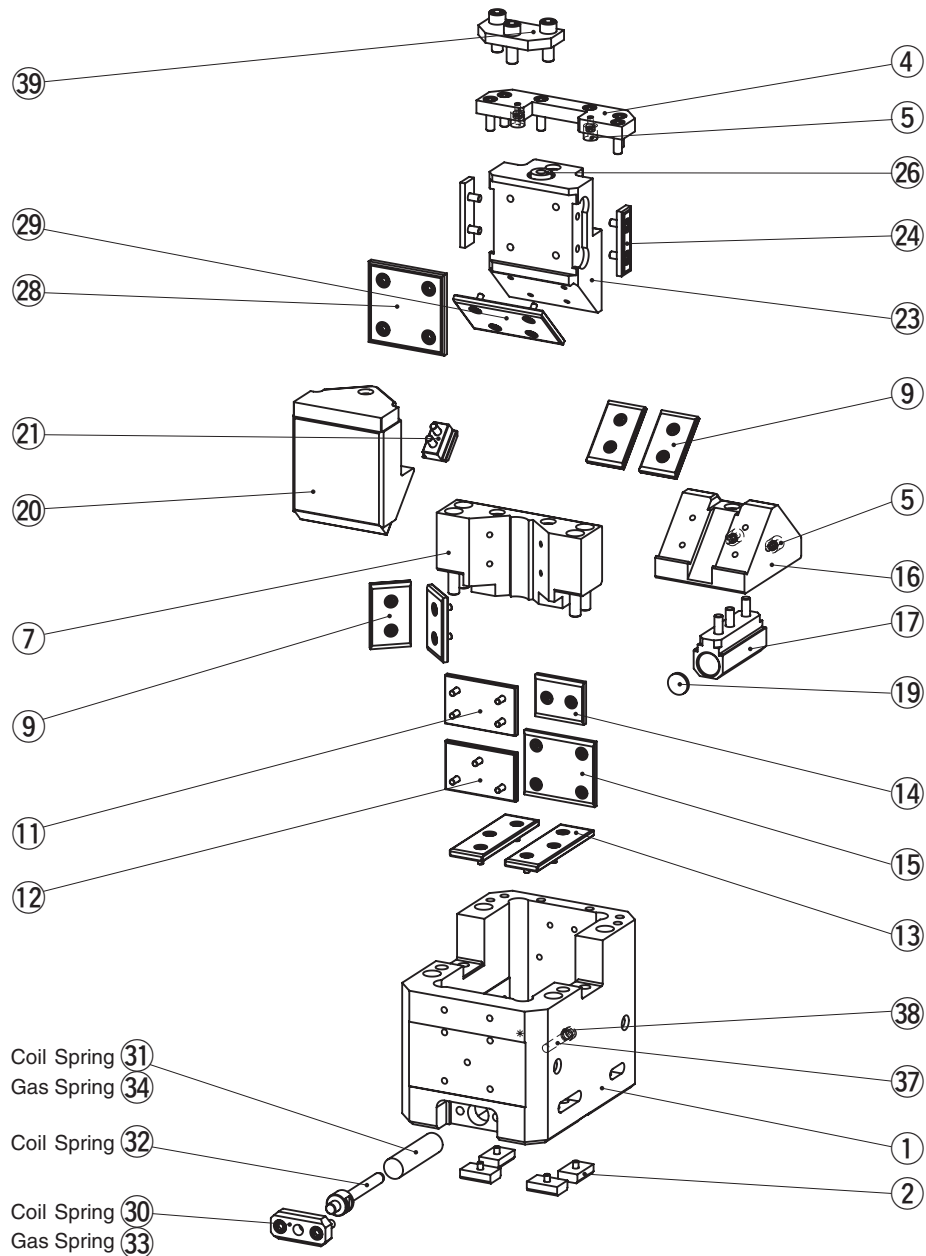
No.	PS	Spring Model	Qty	Remark
34	GK	X350-80	1	Gas Spring (KALLER)
31	ISO	TJM32-178	1	Coil Spring 33 N/mm (3.37 kgf/mm) Life expectancy of Coil Spring is approximately 1,000,000 strokes.

Gas filling pressure: 7.0 MPa

CTVS·CTVH [Table of Components]

Counter Cam Unit

CTVS145/CTVH145



No.	Description	Qty		Material and Remark
		Coil Spring	Gas Spring	
1	Cam Holder	1		Cast Iron
2	Key	4		Steel
4	Stopper Plate	1		Steel
5	Stopper A	4		—
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		Cast Iron
17	Spring Guide Block	1		Steel
19	Spring Stopper	1		Steel
20	Cam Slider B	1		Cast Iron
21	Cam Positive Return	1		Steel
23	Cam Driver	1		Cast Iron
24	Wear Plate	2		Copper Powder Sintered
26	Stopper B	1		—
28	Wear Plate	1		Copper Powder Sintered
29	Wear Plate F	1		Bronze with Graphite
30	Spring Stopper A	1	—	Steel
31	Coil Spring	1	—	TJM32-178
32	Spring Guide Pin	1	—	Steel
33	Spring Stopper B	—	1	Steel
34	Gas Spring	—	1	X350-80-7.0MPa
37	Locate Cap Bolt	1		M12x68
38	Spacer	1		Steel
39	Locking Plate (Option -S)	1		Steel

Bolts, nuts, dowels, and washers for assembly are not indicated.

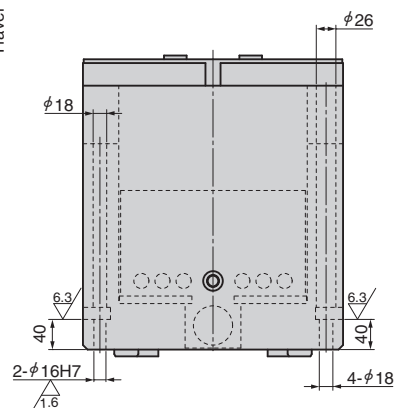
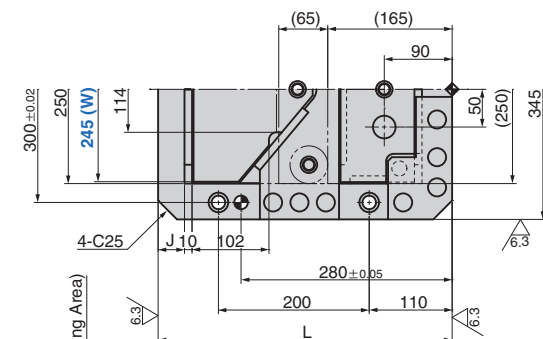
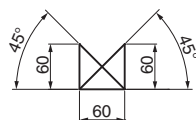
CTVS • CTVH

Counter Cam Unit

CTVS245-60 (Regular Type)
CTVH245-60 (Highly Rigid Type)



● Cam Diagram



Working Force kN (tonf) 1,000,000 strokes	Spring Force N (kgf)		Total Weight kg	Catalog No.	W	Travel S	Spring Type PS
	Initial Load	Final Load					
117.6 (12.0)	—	4691 (478.3)	295.0	CTVS CTVH	245	60	ISO NISO
	582 (59.3)	4074 (415.4)					GK NGK

ISO: Coil Spring GK: Gas Spring (KALLER)
NGK: Without Gas Spring NISO: Without Coil Spring Parts for spring assembly are included.



Catalog No.	W	—	S	—	PS	—	Option
CTVS	245	—	60	—	ISO	—	
CTVH	245	—	60	—	GK	—	NF



Option Code	Specification
NF	Nitrogen gas not charged.
S	Lock plate attached.

Catalog No.	J	K	L
CTVS	35	45	390
CTVH	55	65	410

Spring Specification

No.	PS	Spring Model	Qty	Remark
34	GK	K750-100	1	Gas Spring (KALLER)
33	ISO	TJM50-229	1	Coil Spring 58.2 N/mm (5.93 kgf/mm) Life expectancy of Coil Spring is approximately 1,000,000 strokes.

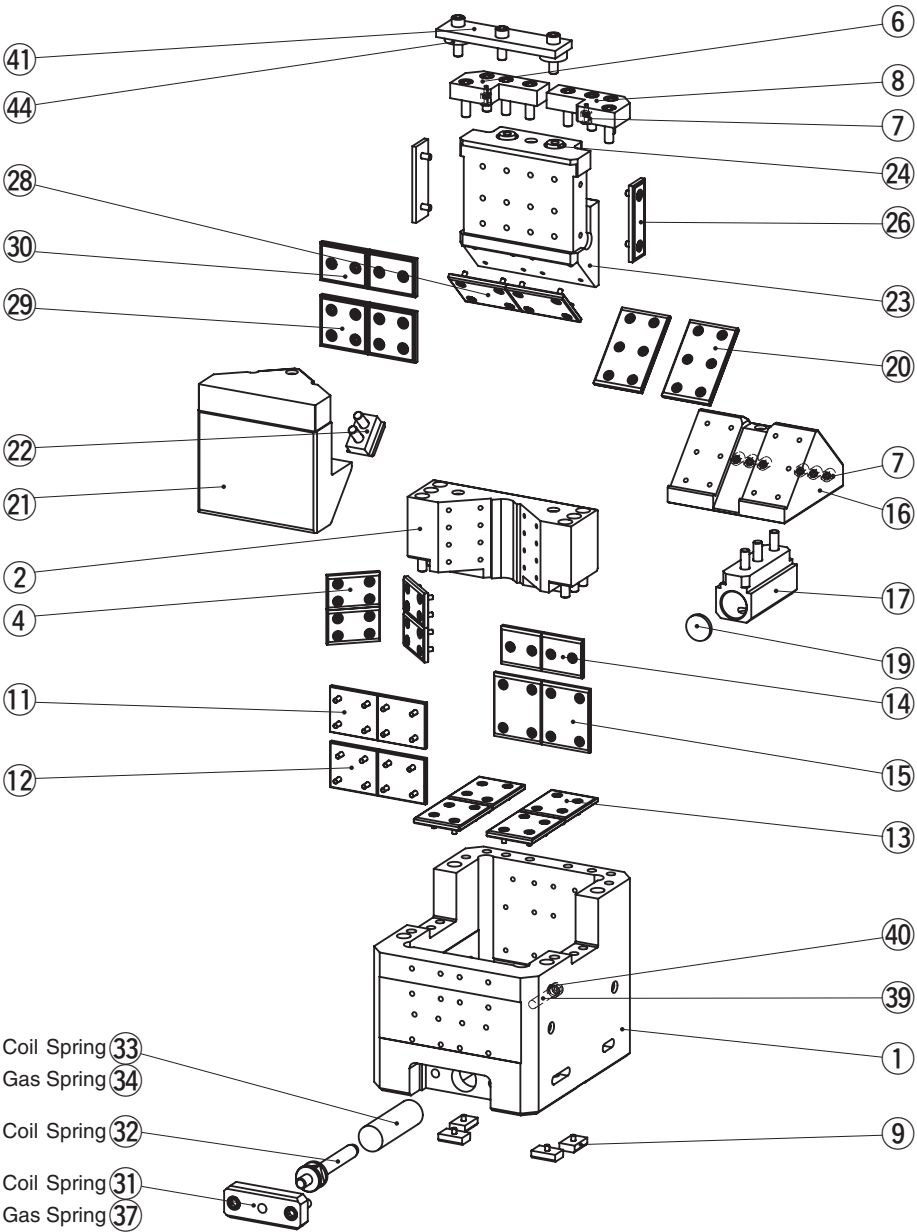
Gas filling pressure: 7.0 MPa

Refer to page 643 for Table of Components.

CTVS·CTVH [Table of Components]

Counter Cam Unit

CTVS245/CTVH245



No.	Description	Qty		Material and Remark
		Coil Spring	Gas Spring	
1	Cam Holder	1		Cast Iron
2	Thrust Block	1		Cast Iron
4	Wear Plate E	4		Bronze with Graphite
6	Stopper Plate R	1		Steel
7	Stopper A	8		—
8	Stopper Plate L	1		Steel
9	Key	4		Steel
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		Cast Iron
17	Spring Guide Block	1		Steel
19	Spring Stopper	1		Steel
20	Wear Plate G	2		Bronze with Graphite
21	Cam Slider B	1		Cast Iron
22	Cam Positive Return	1		Steel
23	Cam Driver	1		Cast Iron
24	Stopper B	2		—
26	Wear Plate	2		Copper Powder Sintered
28	Wear Plate F	2		Bronze with Graphite
29	Wear Plate	2		Copper Powder Sintered
30	Wear Plate	2		Copper Powder Sintered
31	Spring Stopper A	1	—	Steel
32	Spring Guide Pin	1	—	Steel
33	Coil Spring	1	—	TJM50-229
34	Gas Spring	—	1	X750-100-7.0MPa
37	Spring Stopper B	—	1	Steel
39	Locate Cap Bolt	1		M16x88
40	Spacer	1		Steel
41	Locking Plate (Option -S)	1		Steel
44	Locking Collar (Option -S)	2		Steel

Bolts, nuts, dowels, and washers for assembly are not indicated.

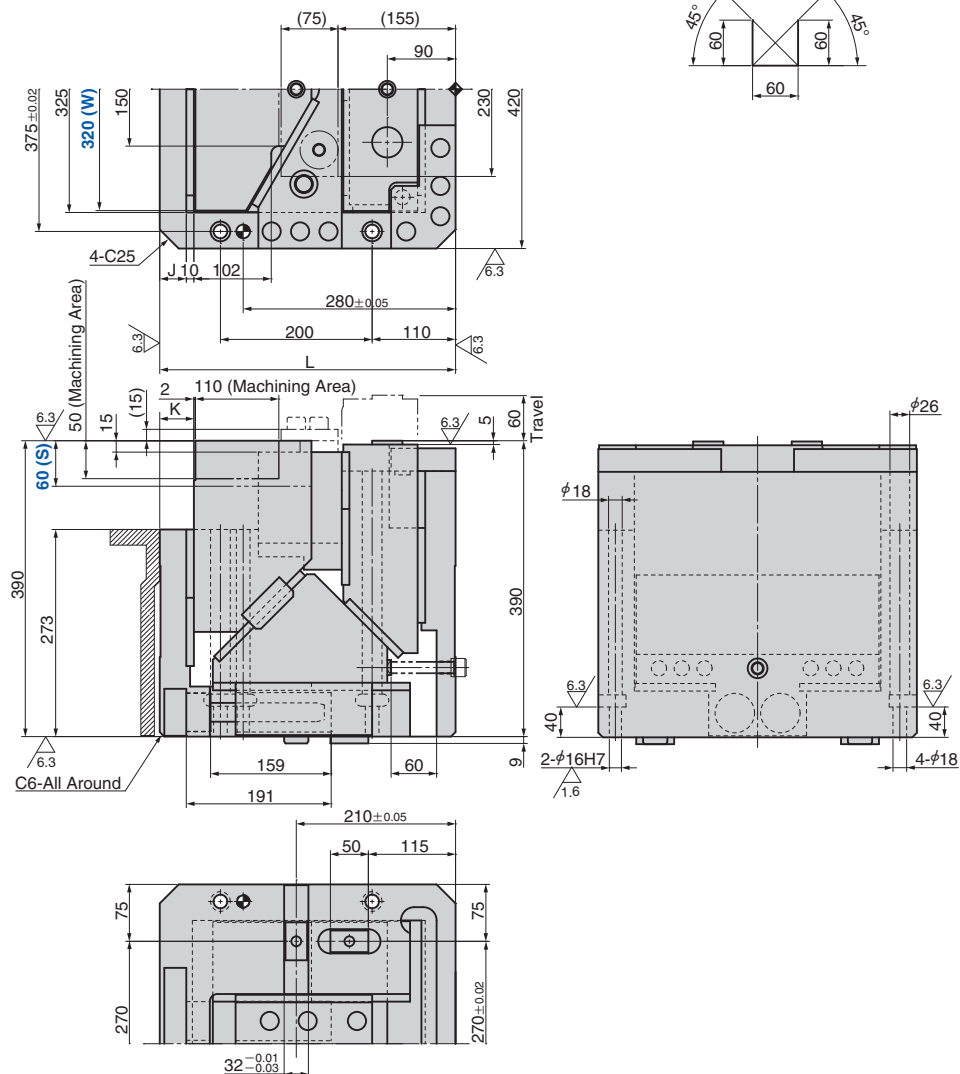
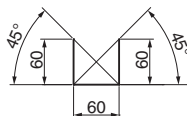
CTVS • CTVH

Counter Cam Unit

CTVS320-60 (Regular Type)
CTVH320-60 (Highly Rigid Type)



● Cam Diagram



Working Force kN (tonf) 1,000,000 strokes	Spring Force N (kgf)		Total Weight kg	Catalog No.	W	Travel S	Spring Type PS
	Initial Load	Final Load					
156.8 (16.0)	—	9382 (956.7)	362.0	CTVS CTVH	320	60	ISO NISO
	1164 (118.7)	8148 (830.9)					GK NGK

ISO: Coil Spring GK: Gas Spring (KALLER)
NGK: Without Gas Spring NISO: Without Coil Spring Parts for spring assembly are included.



Catalog No.	W	—	S	—	PS	—	Option
CTVS	320	—	60	—	ISO	—	
CTVH	320	—	60	—	GK	—	NF



Option Code	Specification
NF	Nitrogen gas not charged.
S	Lock plate attached.

Catalog No.	J	K	L
CTVS	35	45	390
CTVH	55	65	410

Spring Specification

No.	PS	Spring Model	Qty	Remark
37	GK	K750-100	2	Gas Spring (KALLER)
33	ISO	TJM50-229	2	Coil Spring 58.2 N/mm (5.93 kgf/mm) Life expectancy of Coil Spring is approximately 1,000,000 strokes.

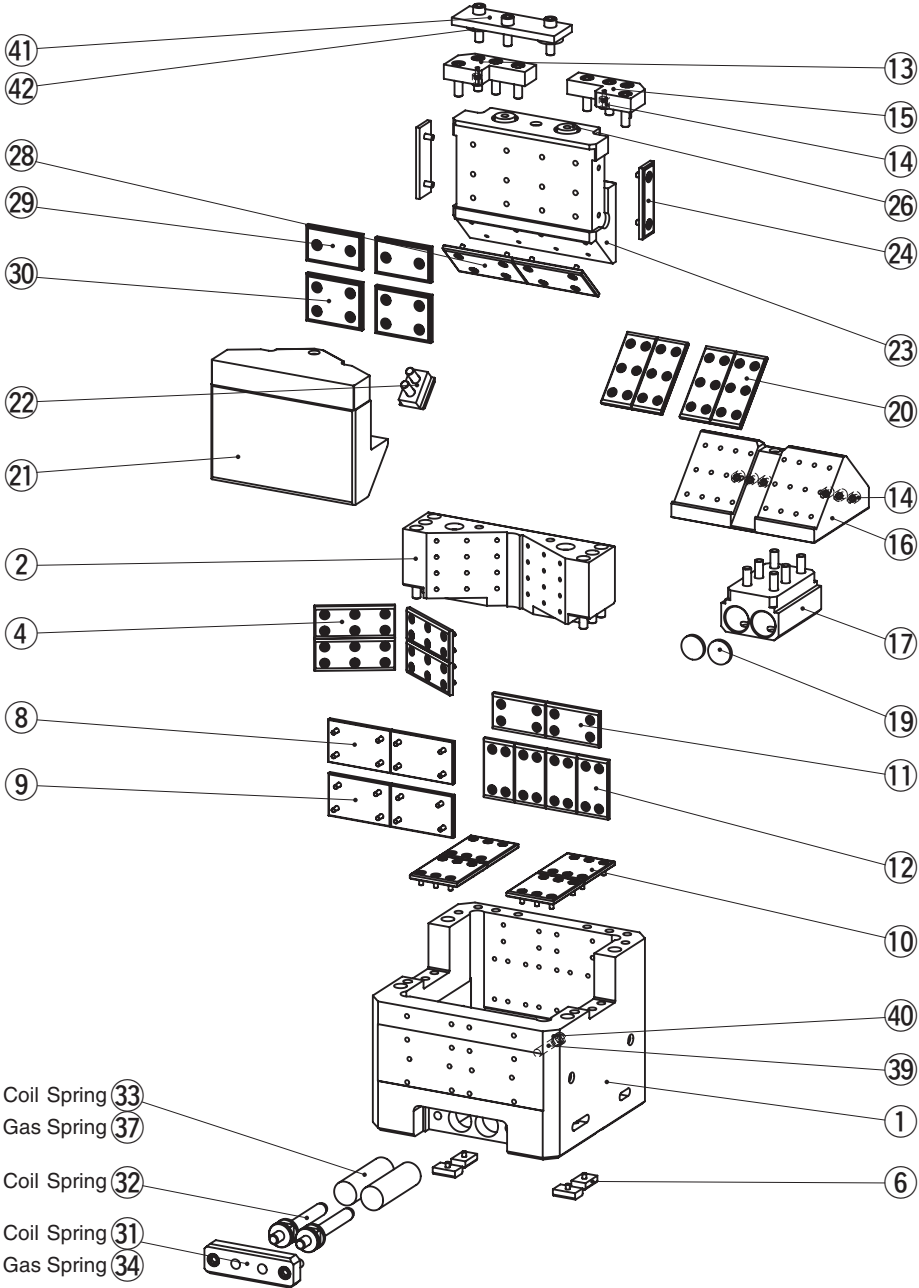
Gas filling pressure: 7.0 MPa

Refer to page 647 for Table of Components.

CTVS·CTVH [Table of Components]

Counter Cam Unit

CTVS320/CTVH320



No.	Description	Qty		Material and Remark
		Coil Spring	Gas Spring	
1	Cam Holder	1		Cast Iron
2	Thrust Block	1		Cast Iron
4	Wear Plate E	4		Bronze with Graphite
6	Key	4		Steel
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		Steel
14	Stopper A	8		—
15	Stopper Plate L	1		Steel
16	Cam Slider A	1		Cast Iron
17	Spring Guide Block	1		Steel
19	Spring Stopper	2		Steel
20	Wear Plate G	4		Bronze with Graphite
21	Cam Slider B	1		Cast Iron
22	Cam Positive Return	1		Steel
23	Cam Driver	1		Cast Iron
24	Wear Plate	2		Copper Powder Sintered
26	Stopper B	2		—
28	Wear Plate F	2		Bronze with Graphite
29	Wear Plate	2		Copper Powder Sintered
30	Wear Plate	2		Copper Powder Sintered
31	Spring Stopper A	1	—	Steel
32	Spring Guide Pin	2	—	Steel
33	Coil Spring	2	—	TJM50-229
34	Spring Stopper B	—	1	Steel
37	Gas Spring	—	2	X750-100-7.0MPa
39	Locate Cap Bolt	1		M16x88
40	Spacer	1		Steel
41	Locking Plate (Option -S)	1		Steel
42	Locking Collar (Option -S)	2		Steel

Bolts, nuts, dowels, and washers for assembly are not indicated.