

## Cam Units Short Definitions

**Cam Units:** In dies, by turning vertical motion of press to horizontal motion within the die, drilling - cutting - form processes are provided in dies. These cam units are standard compact design components, and grouped as die mounted / angular or aerial cam types. As well as standard cam models are suitable to many general usages, also special models are produced as per request. Also, upper casing holes can be finished (with reamer / H7). Also, plate lock systems or gas spring options may be selected.

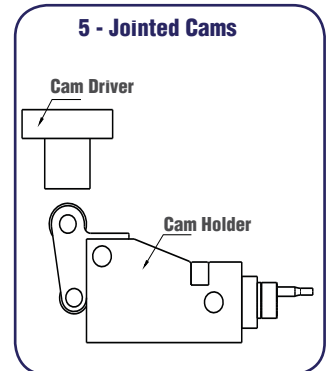
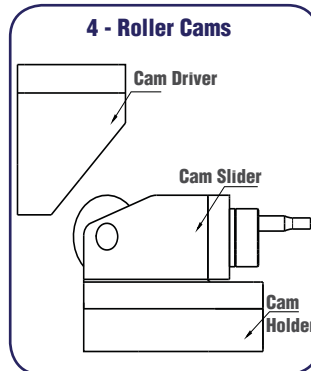
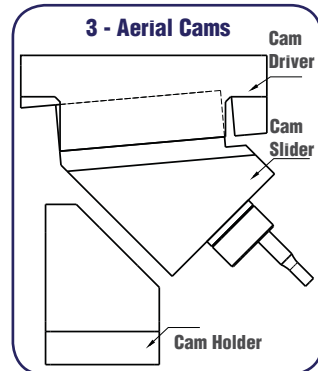
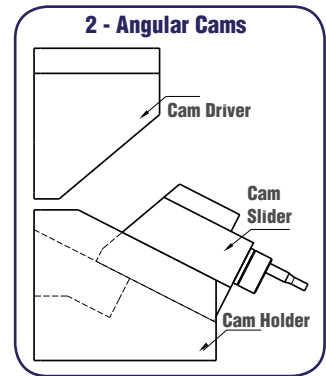
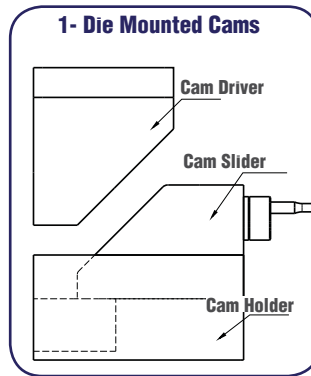
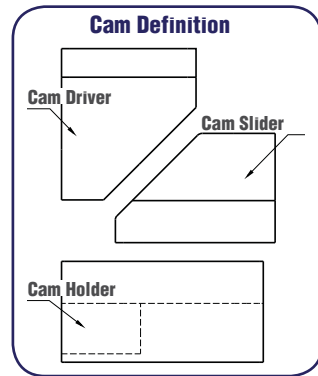
**Cam Units:** They can be connected to different angles - they can be worked at wide force and stroke ranges. **Giving 10% stroke tolerance is recommended.**

**Safety and Working Conditions:** Lateral loads should be avoided. Cam unit should not be exposed to dirt and burrs (friction surfaces may get damaged).

- \* To maintain repeated operation of cam unit, it should be secured to the die robustly.
- \* Steel or die gas spring used at cam units are ensured to bring cam to same starting point at every turn at returns.
- \* In case of any adhesion, side guide arms are with safety system to provide bringing cam to starting point.
- \* When cam units are mounted with replaceable self-lubricating wear plates, they should be lubricated with thin oil regularly.
- \* In case of replacement of worn plates, you should be sure that all and centering elements are in their right position.
- \* If necessary, technical setting should be remade and fixed.
- \* For technical service, you can contact with our company.

### Cam Units Group and Types:

Cam Unit Code	Nominal Size
<b>DK</b> Die Mounted Cam Units	52
	65
	100
	150 ~ 300
	400 ~ 600
<b>DAK</b> Angular Cam Units	65
	100
	150
<b>AKSD</b>	52
<b>AKSCD</b>	52
<b>AKHTF</b>	65
<b>AKUC</b> Aerial Cam Units	50
	65
	80
	150
<b>AKSUK</b>	65
	100
	200
<b>AKBK</b>	65 ~ 200
<b>AKUG</b> Aerial Cam Units	50
	65
	80 ~ 200
	300
<b>AKUSL</b>	500 ~ 1000
<b>AKUNR</b>	70
	80
	165 ~ 400
<b>AKCD</b>	52
	90
<b>AKKP</b>	50
	80
	200 ~ 300
<b>AKKSL</b>	500 ~ 1000
<b>AKUSV</b>	60 ~ 110
	165 ~ 400
<b>RK</b>	01 ~ 03
<b>MK</b>	01 ~ 02



**Cam products selection:** You can select cam products from our catalogue according to the feature of sheet metal used in your dies in production and load calculations or you can use our technical support service for this matter.

The main purpose in die production is to minimize die production process in terms of time and cost and to simplify the die. This simplification can only be ensured by using standard products as far as possible. In some cases, cam units may be customized according to the operation conditions they will be used. In such cases, if you contact us about product selection or design, we can offer solutions for you.

#### Cast casing cam type (DK02): Standard (delivery from stock).

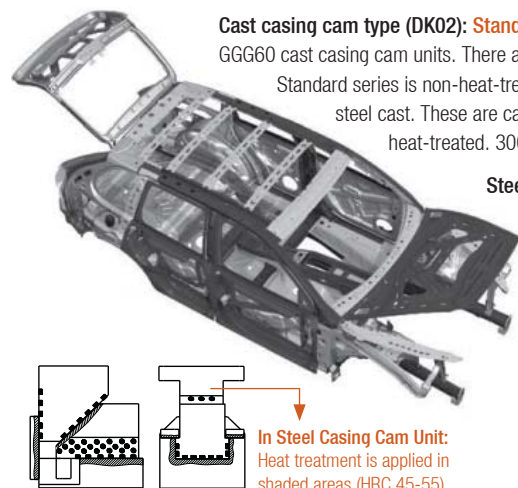
GGG60 cast casing cam units. There are 2 models: Heat-treated and non-heat-treated cams.

Standard series is non-heat-treated. **Heat-treated cams:** Are produced from hardenable steel cast. These are cams of which friction surfaces (cam holder - slider) are heat-treated. 300 - 500 grade is suitable for sheet metals press.

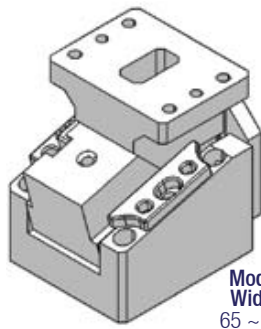
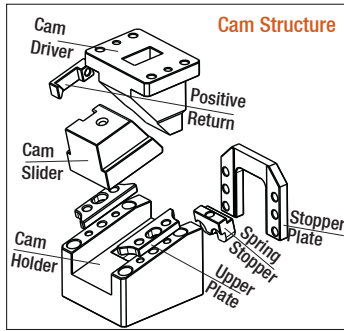
#### Steel casing cam type (DK01) : Order as per request.

Cams with mono block steel casing, of which friction surfaces (lower casing and driver) are applied heat treatment. It has a feature to be used in die 400 - 650 grade and over. They work efficiently in performance 1.5 - 2 times better than load values specified in catalogue in proportion to the normal cast type cams and they give better results in high quantity productions (150.00 - 200.00 pieces / year).

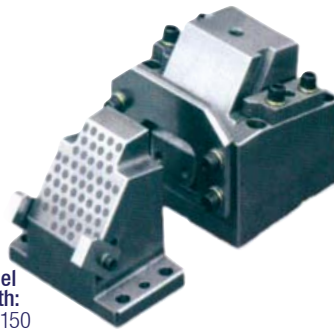
If periodic maintenance, cleaning and lubrication is done, cams can press 1.000.000 pieces and over.



**In Steel Casing Cam Unit:** Heat treatment is applied in shaded areas (HRC 45-55).



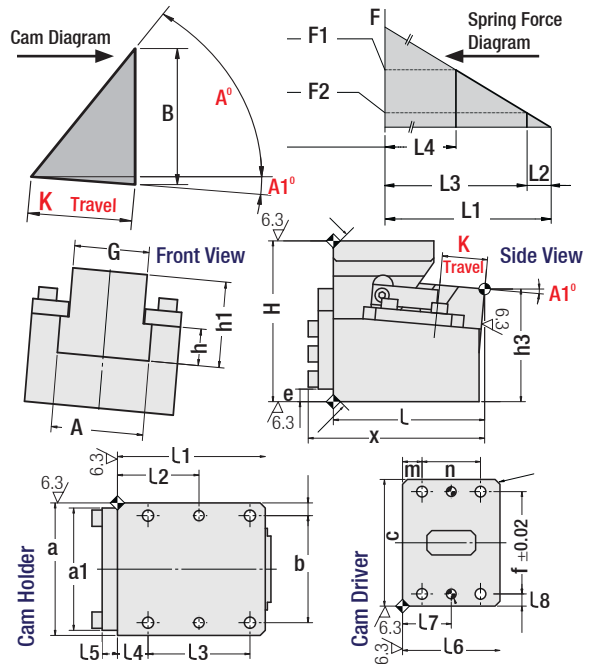
Model Width: 65 ~ 150



"Order" DAK02	Working & Spring Force							Cam Diagram			
	F N/mm	F1 kg.	F2 kg.	L1 mm	L2 mm	L3 mm	L4 mm	A°	A1°	B mm	K Trav.
65 05 45	6.3	75.5	18	125	14	111	66	55°	5°	67.9	45
65 05 70	5.6	99	19.4	175	17	158	88	55°	5°	105.7	70
65 10 45	6.3	75.5	18	125	14	111	66	50°	10°	60.6	45
65 10 70	5.6	99	19.4	175	17	158	88	50°	10°	94.3	70
65 15 45	6.3	75.5	18	125	14	111	66	45°	15°	55.1	45
65 15 70	5.6	99	19.4	175	17	158	88	45°	15°	85.7	70
65 20 45	6.3	75.5	18	125	14	111	66	40°	20°	50.8	45
65 20 70	5.6	99	19.4	175	17	158	88	40°	20°	79.1	70
100 05 45	9.4	113	27	125	14	111	66	55°	5°	67.9	45
100 05 70	6.8	117	20	175	14.5	161	91	55°	5°	105.7	70
100 10 45	9.4	113	27	125	14	111	66	50°	10°	60.6	45
100 10 70	6.8	117	20	175	14.5	161	91	50°	10°	94.3	70
100 15 45	9.4	113	27	125	14	111	66	45°	15°	55.1	45
100 15 70	6.8	117	20	175	14.5	161	91	45°	15°	85.7	70
100 20 45	9.4	113	27	125	14	111	66	40°	20°	50.8	45
100 20 70	6.8	117	20	175	14.5	161	91	40°	20°	79.1	70
150 05 45	15.3	184	44	125	14	111	66	55°	5°	67.9	45
150 05 70	11	188	32	175	14	161	91	55°	5°	105.7	70
150 10 45	15.3	184	44	125	14	111	66	50°	10°	60.6	45
150 10 70	11	188	32	175	14	161	91	50°	10°	94.3	70
150 15 45	15.3	184	44	125	14	111	66	45°	15°	55.1	45
150 15 70	11	188	32	175	14	161	91	45°	15°	85.7	70
150 20 45	15.3	184	44	125	14	111	66	40°	20°	50.8	45
150 20 70	11	188	32	175	14	161	91	40°	20°	79.1	70

Die Mounted - Angular Cam Unit

Code: DAK02



"Order" DAK02	Working Force		Cam W. Kg.	Cam Front View (mm)				Cam Side View (mm)					Cam Driver (mm)				Cam Holder (mm)											
	Standard	Allowable		G	A	h	h1	K	L	x	H	h3	e	c	f	m	n	L6	L7	L8	a	a1	b	L1	L2	L3	L4	L5
65 05 45	2	4	19	65	80	30	70	45	151	176	160	112	12.5	130	105	20	60	100	50	12.5	130	120	105	145	80	100	30	15
65 05 70			22.2					70	195	220	170	123	25											180	65	125	40	
65 10 45	2	4	20	65	80	30	70	45	155	180	160	109	25	130	105	20	60	100	50	12.5	130	120	105	145	79	100	30	15
65 10 70			20.5					70	199	224	170	111												180	65	125	40	
65 15 45	2	4	22	65	80	30	70	45	158	183	170	105	25	130	105	20	60	100	50	12.5	130	120	105	145	80	100	30	15
65 15 70								70	202	227	170	104	40											180	65	125	40	
65 20 45	2	4	22	65	80	30	70	45	160	185	170	101	30	130	105	20	60	100	50	12.5	130	120	105	145	80	100	30	15
65 20 70			21					70	203	228	170	96	40											180	65	125	40	
100 05 45	4	8	33	100	120	40	90	45	172	197	200	145	27.5	165	140	20	80	100	50	12.5	175	150	140	160	90	105	40	15
100 05 70			38					70	207	234	200	147	30											190	70	130	45	
100 10 45	4	8	33	100	120	40	90	45	178	205	200	135	30	165	140	20	80	100	50	12.5	175	150	140	160	90	105	40	15
100 10 70			38					70	213	240	200	134												190	70	130	45	
100 15 45	4	8	33	100	120	40	90	45	183	210	200	129	32.5	165	140	20	70	110	55	12.5	175	150	140	160	90	105	40	15
100 15 70			38					70	217	244	200	130	35											190	70	130	45	
100 20 45	4	8	32	100	120	40	90	45	186	213	200	118	35	165	140	20	70	110	55	12.5	175	150	140	160	90	105	40	15
100 20 70			39					70	219	246	200	121	45											190	70	130	45	
150 05 45	6.6	10	62	150	180	40	100	45	193	229	220	159	30	230	200	20	70	110	55	15	260	220	210	190	105	125	45	20
150 05 70			73					70	218	254	220	167	40											200	120	135		
150 10 45	6.6	10	63	150	180	40	100	45	200	236	220	152	40	230	200	20	70	110	55	15	260	220	210	190	105	125	45	20
150 10 70			73					70	224	260	220	153												200	120	135		
150 15 45	6.6	10	65	150	180	40	100	45	205	240	220	144	40	230	200	20	80	120	60	15	260	220	210	190	105	125	45	20
150 15 70			77					70	229	265	230	153	55											200	120	135		
150 20 45	6.6	10	66	150	180	40	100	45	208	224	220	136	40	230	200	20	80	120	60	15	260	220	210	190	105	125	45	20
150 20 70			75					70	232	268	230	137	55											200	120	135		