

KS

KOREAN INDUSTRIAL STANDARD

Cam Operated Control Switches

KS C 4519 : 1992

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Cam Operated Control Switches

1. Scope

This Korean Industrial Standard specifies cam operated control switches⁽¹⁾ intended for use in circuits of not more than 600V a.c. (at a frequency of 50Hz or 60Hz) or of not more than 250V d.c. (hereafter referred to as the "switches").

Note ⁽¹⁾ The cam operated control switches mentioned here are the cam operated switches having contact elements that are intended to be installed in industrial switchgear or control gear, to perform control transmission of signals, interlocking, etc. of the said equipment.

2. Definitions

For the purpose of this Standard, in addition to the definitions specified in 2. (definitions) of **KS C 4516**, the following definitions apply:

(1) notch

A standard position at which a set of contact pieces take a certain working state.

(2) locking electromagnet

An electromagnet which is a part of mechanism for locking a handle, and which has a movable iron core that locks the handle actuated by excitation or erasion of the exciting coil.

3. Standard Service Conditions

The standard service conditions shall comply with 3. of **KS C 4516**.

4. Classification

4.1 Classification of Switches by Mounting Method And Size

The switches are classified by the mounting method and size as given in Table 1.

Normative References	IEC 947-1	Low-voltage Switchgear and Controlgear. Part 1 : General Rules
	IEC 947-5-1	Low-voltage Switchgear and Controlgear Part5 : Control Circuit Devices and Switching Elements. Section One-Electromechanical Control Circuit Devices
	KS C 4516	General Rules for Control Switches

Table 1. Classification of Switches by Mounting Method and Size

Type designation	Mounting method of switch	Size of switch	Shape and size
Type A 22	Mounted by one tightening ring.	Diameter of mounting part is 22mm	As shown in A 22 of Fig 3.
Type A 25		Diameter of mounting part is 25mm	As shown in A 25 of Fig 3.
Type A 30		Diameter of mounting part is 30mm	As shown in A 30 of Fig 3.
Type B 60	Mounted by 2 screws.	One side of notch mark plate(square) is 60mm	As shown in B 60 of Fig 3.
Type C 60	Mounted by 4 screws.		As shown in C 60 of Fig 3.

4.2 Classification by Shape and Color of Handle

The shapes of handle shall be as given in Fig 1, and the colors of handle shall be three kinds i.e. black, red and brown

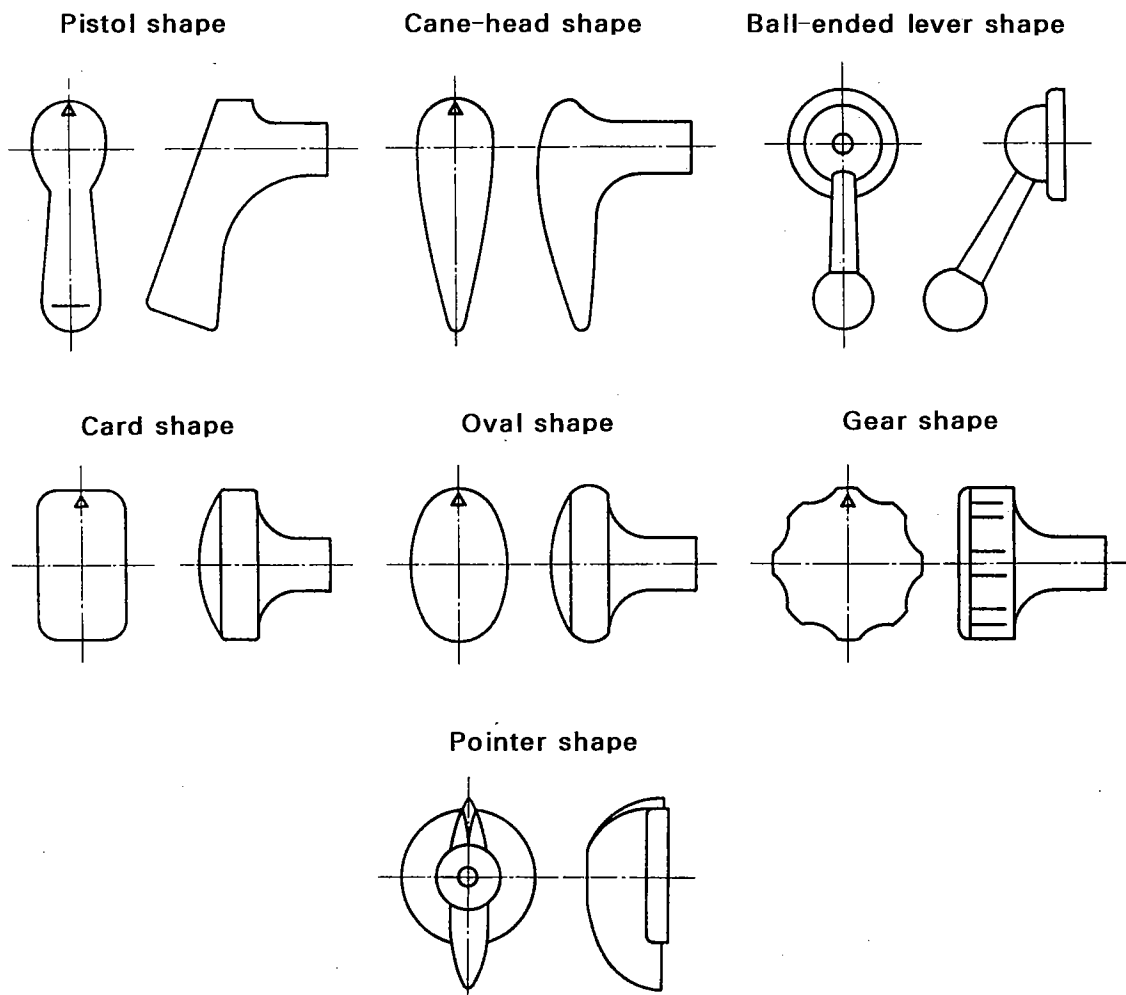


Fig 1. Shapes of Handle

4.3 Classification by Operating Method

Switches are classified by the operating method as given in Table 2.

Table 2. Classification by Operating Method

Necessity of push or pull of handle		Resetting system		Provision of lock	
Classification	Sym- bol	Classification	Sym- bol	Classification	Sym- bol
Push turn, manual return	J	Manual reset	M	Key-lock(mechanical)	K
Push turn, automatic return	P	Automatic reset	A	Magnetic lock(electrical)	E
Pull turn, manual return	Q	Manual and automatic reset	C	No lock	-
Pull turn, automatic return	R	Unidirectional rotation	N		
No push/pull	-				

5. Ratings

5.1 Rated Insulation Voltages

The rated insulation voltages shall comply with 5.1 of KS C 4516.

5.2 Rated Operational Voltages

The rated operational voltages shall comply with 5.2 of KS C 4516.

5.3 Rated Operational Voltages of Locking Electromagnet

The rated operational voltages of locking electromagnets shall be as given in Table 3.

Table 3. Rated Operational Voltages of Locking Electromagnet

Unit : V

A.C. or D.C.	Rated operational voltage of locking electromagnet				
A.C.	100	200			
D.C.	6	12	18	24	48

5.4 Rated Thermal Currents

The rated thermal currents shall comply with 5.3 of KS C 4516.

5.5 Rated Operational Currents

The rated operational currents shall comply with 5.4 of KS C 4516.

5.6 Classification by Making and Breaking Capacities

The classification by making and breaking capacities comply with 5.5 of KS C 4516.

5.7 Classification by Frequency of Operating Cycles

The Classification by frequency of operating cycles shall comply with 5.6 of KS C 4516.

5.8 Classification by Mechanical Durability and Electrical Durability

The classification by mechanical durability and electrical durability shall comply with 5.7 of KS C 4516.

6. Notches and On-off Conditions

6.1 Notch Angle

It denotes the angle between adjacent notches, and the values of which shall be as given in Table 4.

Table 4. Notch Angle

Unit : degree								
Notch angle								
10	15	22.5	30	36	45	60	90	

6.2 Expression of Notch Positions

Notch positions shall be expressed in the order of notch angle, number of notches and position of first notch as shown below.

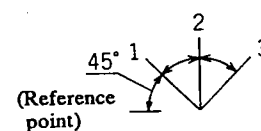
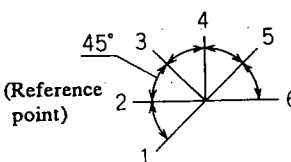
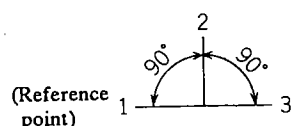
Notch angle	·	Number of notches	±	Position of 1st notch
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Example

(90 · 3)

(45 · 6-45)

(45 · 3+45)



The first notch position shall be denoted by the degrees of deflection relative to the reference point which is the 9 o'clock position on the dial (analog system), with a (+) sign for clockwise deflection, with a (-) sign for counterclockwise deflection.

When the first position coincides with the reference position the above expression is not necessary.