



High energy absorption cylinder, double acting/single rod type

# HCM Series

- Bore size: 20, 25, 32, 40, 50, 63 mm

JIS symbol



## Specifications

Descriptions	HCM						
	20 dia.	25 dia.	32 dia.	40 dia.	50 dia.	63 dia.	
Bore size mm	20 dia.	25 dia.	32 dia.	40 dia.	50 dia.	63 dia.	
Actuation	Double acting						
Working fluid	Compressed air						
Max. working pressure MPa	1.0						
Min. working pressure MPa	0.15						
Withstanding pressure MPa	1.6						
Ambient temperature °C	-10 to 60 (to be unfrozen)						
Port size	Rc $\frac{1}{8}$	Rc $\frac{1}{8}$	Rc $\frac{1}{4}$	Rc $\frac{1}{4}$	Rc $\frac{3}{8}$	Rc $\frac{3}{8}$	
Stroke length tolerance mm	$^{+2.0}_0$			$^{+2.0}_0$			
Working piston speed mm/s	50 to 2000 (use this within the range of allowable energy absorption.)						
Cushion	Air cushion						
Lubrication	Not required (when lubrication, use turbine oil Class 1 ISOVG32.)						
Allowable energy absorption J (Note 1)	Air cushion	3	5	9	14	23	30
Effective cushion length mm	56.5	56.5	56.5	55.5	58.5	58.5	

Note 1: When kinetic energy exceeds this value, consider installing an external shock absorber.  
Please refer to Page 1428 to 1431 about energy calculation/size selection.

## Stroke length

Stroke length (Note 1)						
Bore size mm	20 dia.	25 dia.	32 dia.	40 dia.	50 dia.	63 dia.
Stroke range mm	200 to 700			200 to 1000		

Note 1: Consult with CKD about stroke length other than above.

## Cylinder mass

(Unit: kg)

Bore size (mm)		20 dia.	25 dia.	32 dia.	40 dia.	50 dia.	63 dia.
Product mass when 0 mm stroke	Basic type 00	0.33	0.47	0.62	0.98	1.58	2.27
	Axial foot type LB	0.44	0.6	0.78	1.2	2.06	2.99
	Flange type FA/FB	0.36	0.51	0.68	1.06	1.92	2.77
Switch mass (per switch)		0.018					
Additional mass per stroke length without switch 100mm		0.012	0.016	0.017	0.027	0.040	0.044
Additional mass per stroke length with switch rail 100mm		0.014	0.018	0.019	0.029	0.042	0.046

[Calculation e.g.]

Product mass of HCM-LB-40B-500-T2H-D

When stroke length 0mm, product mass is 1.2kg.

Additional mass at stroke length 500mm is  $0.029 \times \frac{500}{100} = 0.145\text{kg}$ .

Mass of two switch is  $0.018 \times 2 = 0.036\text{kg}$

Product mass is  $1.2 + 0.145 + 0.036 = 1.381\text{kg}$

SCP \* 2  
CMK2  
CMA2  
SCM  
SCA2  
SCS  
CKV2  
CAV2/  
COV \* 2  
CAT  
MDC2  
MVC  
SMD2  
MSD/  
MSDG  
SSD  
SSD  
(large)  
FC \*  
ULKP/  
ULK  
JSK2/  
JSM2  
JSC3  
(medium)  
JSC3  
(large)  
JSB3  
UCAC  
STS/  
STL  
LCS  
LCY  
STR2  
UCA2  
STK  
USSD  
USC  
MFC  
GLC  
SHC  
CAC3  
HCM  
HCA  
MRL2  
SRL2  
SRG  
SRM  
SRT  
SRB2

High-speed type  
High energy absorption cylinder

### Switch specifications

- One color/bi-color indicator

Descriptions	Proximity 2 wire		Proximity 3 wire		Reed 2 wire			
	T2H/T2V/T2JH/T2JV	T2YH/T2YV	T3H/T3V	T3YH/T3YV	T0H/T0V		T5H/T5V	
Applications	Programmable controller		Programmable controller, relay		Programmable controller, relay		Programmable controller, relay IC circuit (without indicator light), serial connection	
Power voltage	-		DC10 to 28V		-			
Load voltage	DC10 to 30V		DC30V or less		DC12/24V	AC110V	DC5/12/24V	AC110V
Load current	5 to 20mA (Note 1)		100mA or less	50mA or less	5 to 50mA	7 to 20mA	50mA or less	20mA or less
Light	LED (ON lighting)	Red/green LED (ON lighting)	LED (ON lighting)	Red/green LED (ON lighting)	LED (ON lighting)		-	

Note 1: Max. load current : 20mA above is the value at 25 °C. When ambient temperature around a switch is higher than 25 °C, the value is lower than 20mA. (5 to 10mA at 60 °C).

- With preventive maintenance output

Descriptions	Proximity 3 wire		Proximity 4 wire		Proximity 3 wire		Proximity 4 wire	
	T2YFH/V		T3YFH/V		T2YMH/V		T3YMH/V	
Applications	Programmable controller		Programmable controller, relay		Programmable controller		Programmable controller, relay	
Light	Installation position adjustment Preventive maintenance output		Red/green LED (ON lighting)				Yellow LED (ON lighting)	
Output	Current voltage	-	DC10 to 28V		-	DC10 to 28V		
	Load voltage	DC10 to 30V	DC30V or less		DC10 to 30V	DC30V or less		
	Load current	DC5 to 20mA	DC50mA or less		DC5 to 20mA	DC50mA or less		
Preventive maintenance output	Load voltage	DC30V or less						
	Load current	DC20mA or less	DC50mA or less	DC5 to 20mA or less	DC50mA or less			

- Strong magnetic field

Descriptions	Proximity switch	
	T2YD	
Applications	Programmable controller	
Light	Red/green LED (ON lighting)	
Load voltage	DC24V±10%	
Load current	5 to 20mA	
Internal voltage drop	6V or less	
Leakage current	1.0mA or less	

## How to order

Without switch

HCM — LB — 40 — B — 500 — I

With switch

HCM — LB — 40 — B — 500 — T2H\* — D — Q — I

**A** Mounting style

**B** Bore size

**C** Cushion

**D** Stroke length

**E** Switch model No.

**F** Switch quantity

**G** Option

**H** Accessory

Symbol	Descriptions
<b>A Mounting style</b>	
00	Basic type
LB	Axial foot type
FA	Rod side flange type
FB	Head side flange type

<b>B Bore size (mm)</b>	
20	20 dia.
25	25 dia.
32	32 dia.
40	40 dia.
50	50 dia.
63	63 dia.

<b>C Cushion</b>	
B	Both sides cushion
R	Rod side cushion
H	Head side cushion
N	No cushion

<b>D Stroke length (mm)</b>		20	25	32	40	50	63
Bore size (mm)							
200	200	●	●	●	●	●	●
250	250	●	●	●	●	●	●
300	300	●	●	●	●	●	●
350	350	●	●	●	●	●	●
400	400	●	●	●	●	●	●
450	450	●	●	●	●	●	●
500	500	●	●	●	●	●	●
550	550	●	●	●	●	●	●
600	600	●	●	●	●	●	●
650	650	●	●	●	●	●	●
700	700	●	●	●	●	●	●
750	750	-	-	-	●	●	●
800	800	-	-	-	●	●	●
850	850	-	-	-	●	●	●
900	900	-	-	-	●	●	●
950	950	-	-	-	●	●	●
1000	1000	-	-	-	●	●	●

<b>E Switch model No.</b>				
Lead wire	Lead wire	Read/Contact	Indicator	Lead wire
Straight type	Radial type			
T0H *	T0V *	1 color indicator		2 wire
T5H *	T5V *			
T2H *	T2V *			
T3H *	T3V *	1 color indicator		3 wire
T2YH *	T2YV *			
T3YH *	T3YV *			
T2YFH *	T2YFV *	Proximity	With preventive maintenance output	3 wire
T3YFH *	T3YFV *			
T2YMH *	T2YMV *			
T3YMH *	T3YMV *			
T2YD *	-	Strong magnetic field proof switch		2 wire
T2YDT *	-			
T2JH *	T2JV *			
T2JH *	T2JV *	Off delay type		2 wire

<b>* Lead wire length</b>	
Blank	1m (standard)
3	3m (option)
5	5m (option)

<b>F Switch quantity</b>	
R	One on rod side
H	One on head side
D	Two
T	Three
4	4
5	5

<b>G Option</b>	
Q	Switch rail attached at shipment
M	Piston rod material (stainless steel)

<b>H Accessory</b>	
I	Rod eye
Y	Rod clevis

<Example of model number>

**HCM-LB-40B-500-T2H-D-QI**

Model: High energy absorption cylinder, double acting

- A** Mounting style : Axial foot type
- B** Bore size : 40 mm
- C** Cushion : Both sides cushion
- D** Stroke length : 500 mm
- E** Switch model No.: Proximity T2H switch, lead wire 1m
- F** Switch quantity : Two
- G** Option : Switch rail attached at shipment
- H** Accessory : Rod eye