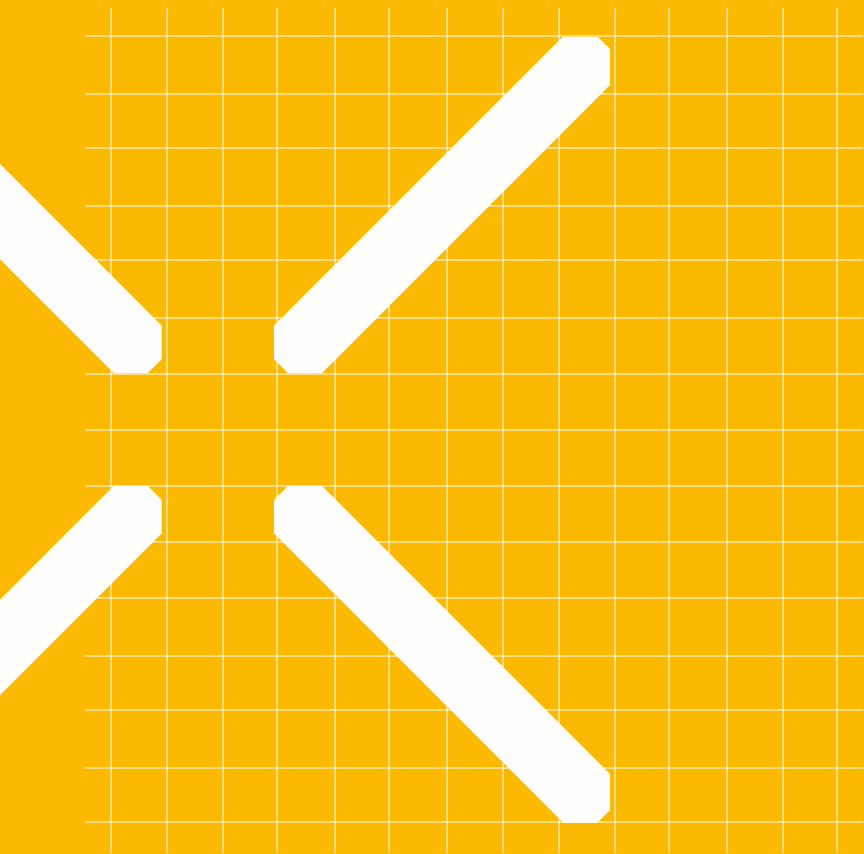




如何選擇工業型電動缸

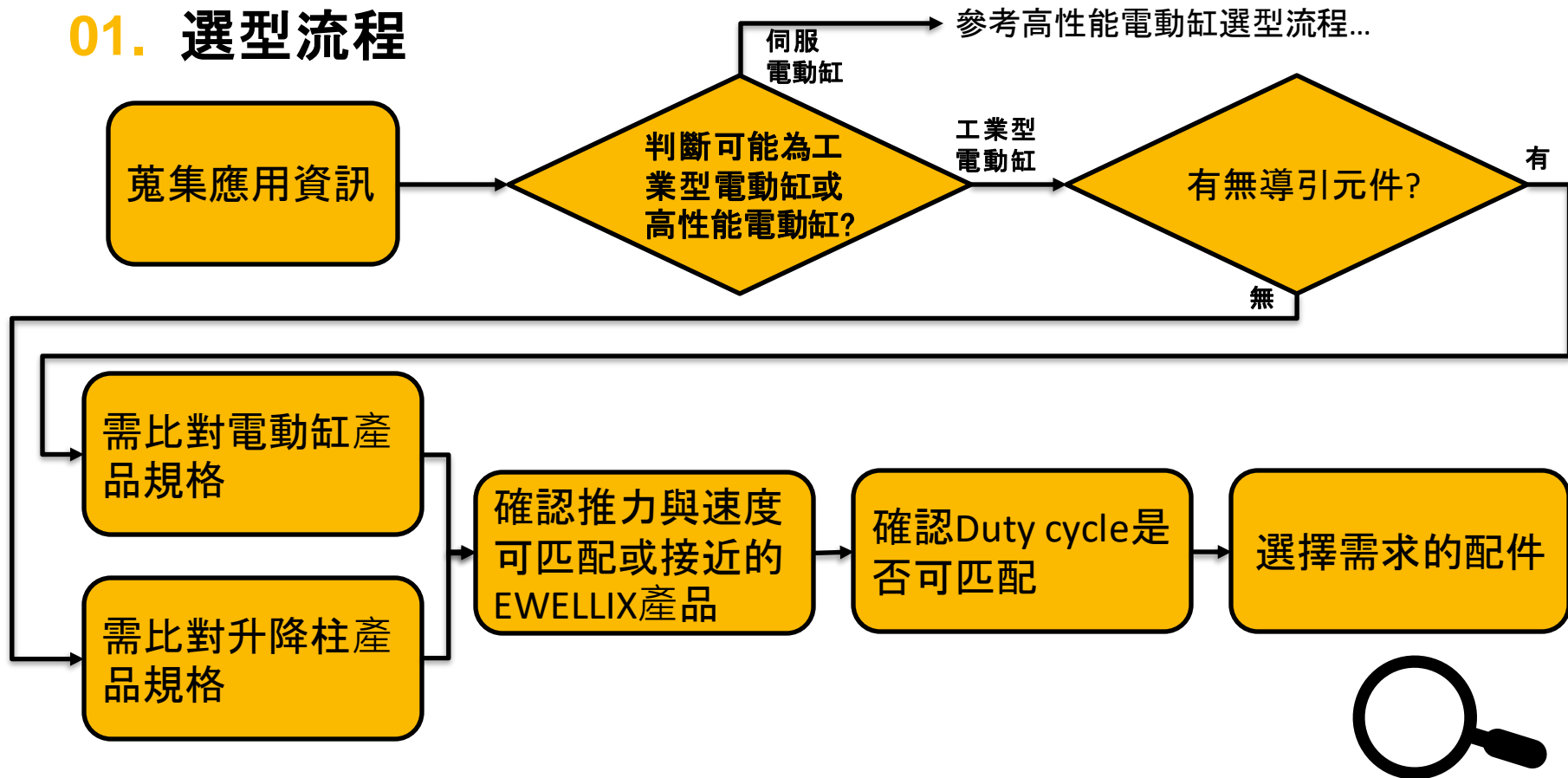
Vincent Shiu
Presentation to Ewellix
2022/03/29



1

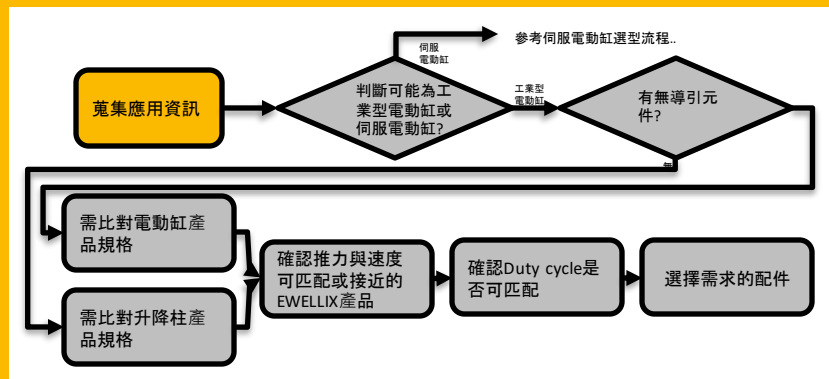
工業型電動缸選型

01. 選型流程



2

蒐集應用資訊



01. 需要那些資訊?

應用場合

是否有配有
導引元件

運作條件 -
負載/速度/
行程

Duty cycle
(佔空比)

壽命需求

操作電壓

IP等級

極限開關

位置回授

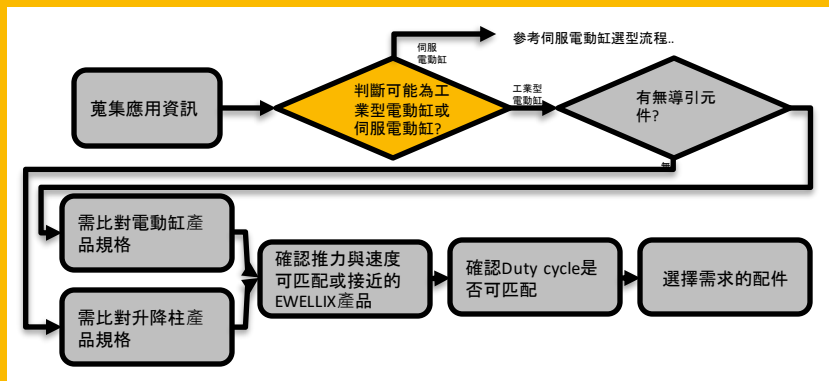
馬達位置

空間限制

其他需求

3

工業型電動缸 vs 高性能電動缸



01. 工業型電動缸 VS 伺服電動缸

工業型電動缸

Duty cycle $\leq 40\%$
[常用範圍10-25%]

≤ 193 mm/s
[常用範圍8-57 mm/s]

0.12 to 50 KN
[常用範圍0.12-10 KN]

高性能電動缸

Duty cycle 100%

≤ 1500 mm/s

0.3 to 500 KN



工作頻率低&速度慢

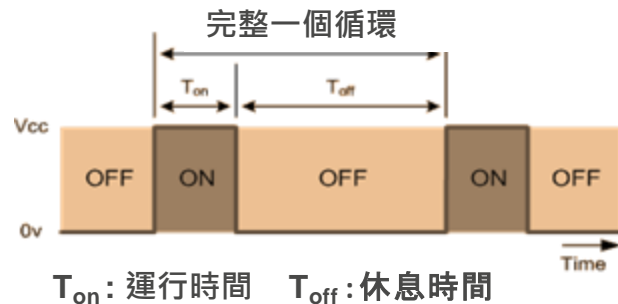
工作頻率高&速度高



01. 佔空比Duty cycle計算

- Duty cycle 計算公式如下:

$$\text{Duty cycle}\% = \frac{\text{運行時間}}{\text{運行時間} + \text{休息時間}}$$



- 知道Duty cycle和運行時間即可得知最少需要休息的時間

$$\text{休息時間} > \frac{\text{運行時間} \times (1 - \text{Duty cycle}\%)}{\text{Duty cycle}\%}$$



01. 休息時間計算範例

1. 由型錄查詢電動缸的Duty cycle

Technical data

Designation	Unit	CAHB-10... 5
Push load	N	1 000
Pull load	N	1 000
Speed (full load to no load)	mm/s	6 to 8
Duty cycle	%	25

推力1000N的CAHB-10電動缸伸出縮回一次大概要10秒,伸出縮回三次以後就會休息,到底需要休息多久才夠呢?

2. 計算運行時間

$$10 \text{ 秒} \times 3 \text{ 次} = 30 \text{ 秒}$$

3. 計算休息時間

$$\text{休息時間} > \frac{\text{運行時間} \times (1 - \text{Duty cycle}\%)}{\text{Duty cycle}\%} = \frac{30 \times (1 - 0.25)}{0.25} = 90 \text{ 秒}$$



01. 大方向- 工業型電動缸 or 伺服電動缸

推力只需要10kg,速度很慢約10mm/s就夠了,需要連續運作,基本上沒有休息

除非客戶能降低工作頻率,否則你只能選擇**高性能電動缸**

推力需要800kg,速度需要250mm/s,大概動個1分鐘會休息9分鐘

除非客戶能降低運作速度,否則你只能選擇**高性能電動缸**

推力需要200kg,速度需要20mm/s,一天動個10次不到

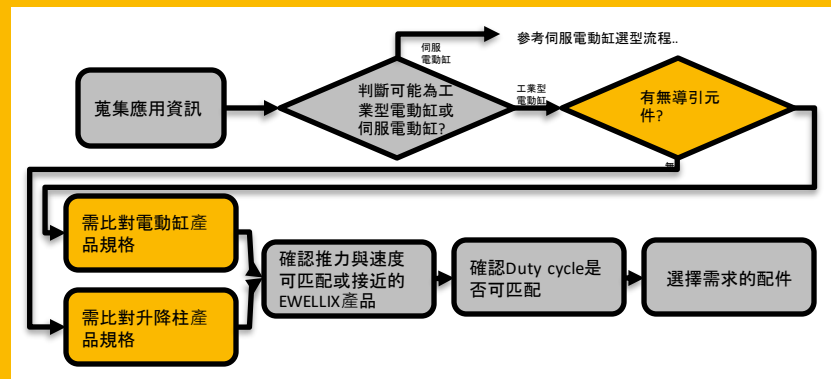
你可以選擇**工業型電動缸**

推力需要6000kg,速度只要30mm/s,佔空比約15%

除非客戶能降低推力需求,或是考慮多支同步作動,否則你只能選擇**高性能電動缸**



4 導引元件



01. 導引元件

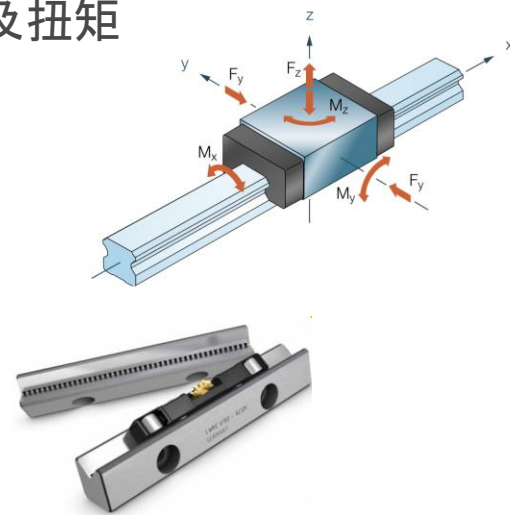
- 引導元件運行的軌道,可承受來自不同方向的徑向負載及扭矩



直線軸承



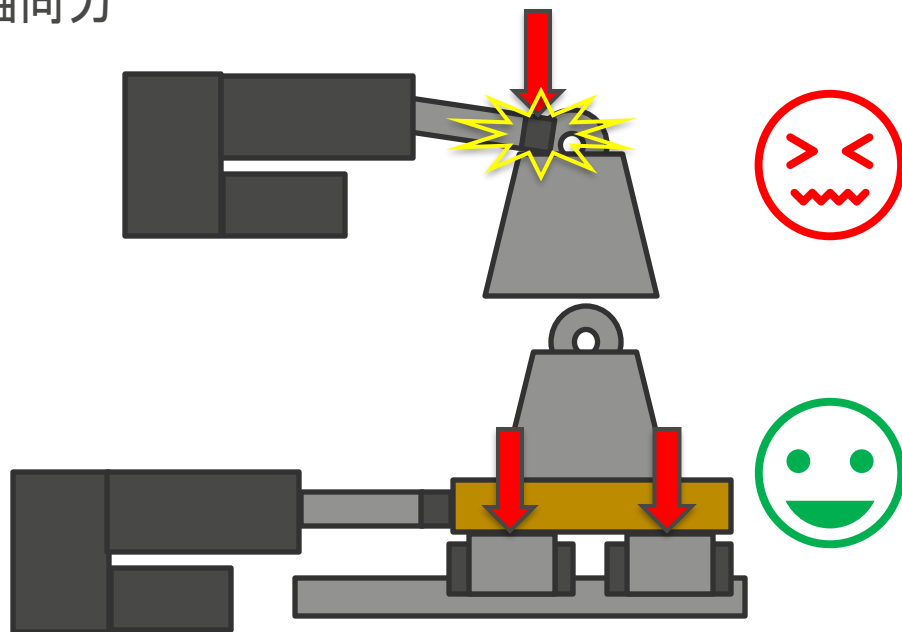
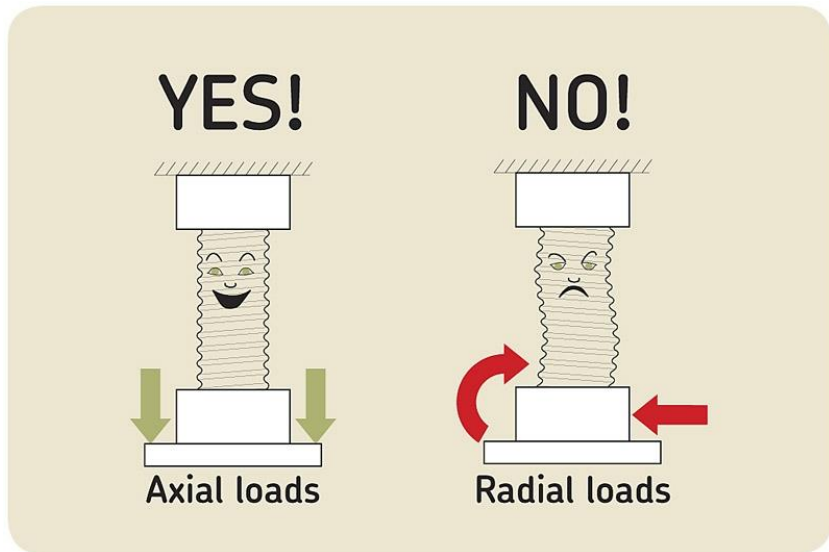
線性滑軌



交叉滾子

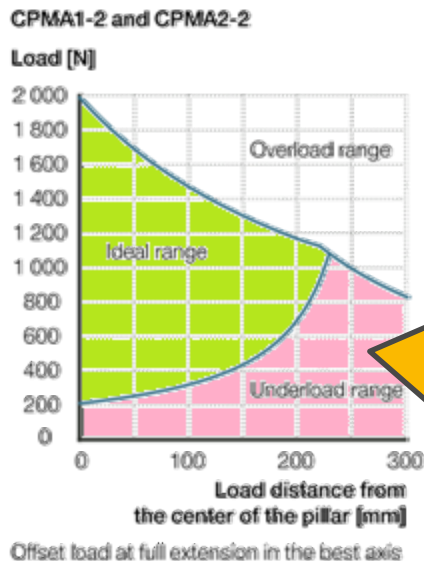
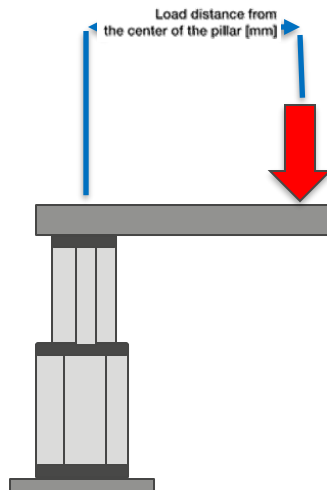
為何需要導引元件

- 電動缸內部的主要元件為螺桿
- 螺桿僅能承受軸向力,如果螺桿承受徑向力則會嚴重影響行走性能及壽命
- 搭配導引元件可保證螺桿只承受軸向力



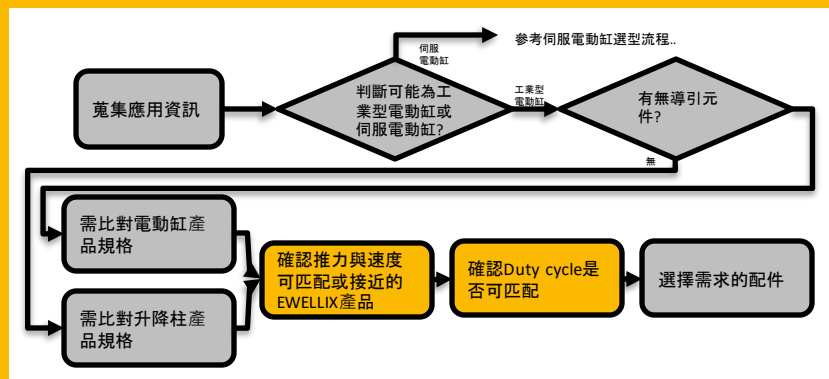
01. 電動缸+導引=升降柱

- 升降柱為包含有導引元件的電動缸
- 其負荷大小必須使用於理想的負載區域(Ideal range),以避免超負荷或黏滑現象



5

性能比對

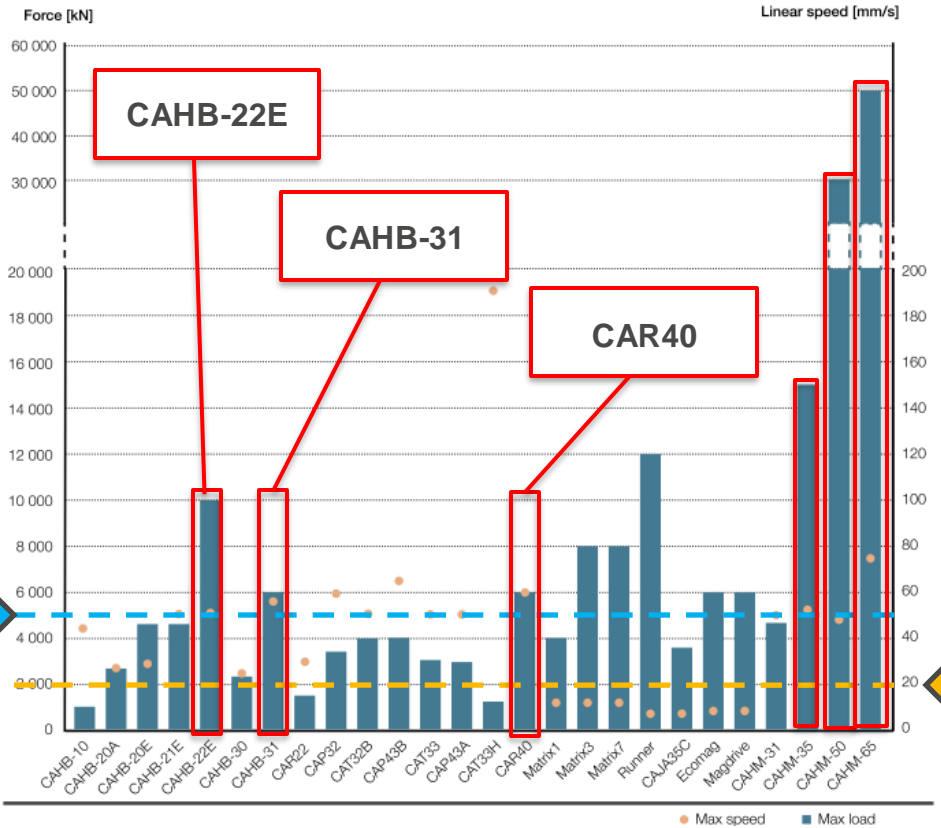


型錄資料比對(1/2)

- 總表數值以該系列之最高推力及速度數據為列表數值
- 均可滿足時可優先選擇CAHB系列之產品
- CAHM系列之產品有最高的推力值但目前此系列需要10PCS MOQ才接單生產



範例：
推力500kg,
速度20mm/s



型錄第17頁

型錄資料比對(2/2)

範例:
推力500kg,
速度20mm/s

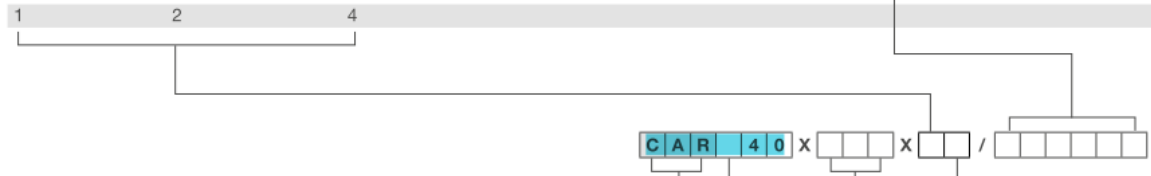
- 查詢該系列是否有吻合或接近需求的型號

Technical data - AC version

	Unit	CAR 40 - AC version	CAR 40 - DC version
Rated push load	N	2 000 to 6 000	2 000 to 6 000
Rated pull load	N	2 000 to 6 000	2 000 to 6 000
Speed (at full load)	mm/s	9 to 40 ¹⁾	10 to 60
Stroke	mm	100 to 700	100 to 700
Retracted length	mm	S+263	S+263

Ordering key

Dynamic load [N] / Speed [mm/s]			Motor options	
6 000/xx	4 000/xx	2 000/xx	No motor	0
6 000/10	4 000/20	2 000/40	120 V AC/60 Hz, 1-phase, IP54	E110D
6 000/10	4 000/20	2 000/40	120 V AC/60 Hz, 1-phase, brake, IP20	E110DB
6 000/9	4 000/17	2 000/34	230 V AC/50 Hz, 1-phase, IP54	E220D
6 000/9	4 000/17	2 000/34	230 V AC/50 Hz, 1-phase, brake, IP20	E220DB
6 000/xx	4 000/xx	2 000/xx	No motor	0
6 000/15-10	4 000/30-20	2 000/60-40	24 V DC, flat motor, IP44	D24D
6 000/15-10	4 000/30-20	2 000/60-40	24 V DC, flat motor, extended shaft, IP44	D24DS
6 000/15-10	4 000/30-20	2 000/60-40	24 V DC, flat motor, brake, IP20	D24DB



網路工具(1/3)

網址: <https://www.ewellix.com/actuatortool/en/linear-actuators>

1

Product selection

Performance calculator

Cost saving calculator

Product search

This tool will allow you to easily select the right actuator to fulfil your application needs. Please choose the desired product family and then, by entering few simple parameters, you will be guided in the selection. The results will be automatically updated after each input entry.

2



網路工具(2/3)

Ewellix offers the most comprehensive range of linear actuators that can be applied in almost every kind of application. With several options on load, speed, voltage, protection, Ewellix actuators provide design flexibility and proven reliability.

1

Select features

Rated load ⓘ

All



Max speed at rated load ⓘ

All



Stroke ⓘ

All



Duty Cycle ⓘ

All



Supply voltage ⓘ

All



3

Select variant of product CAHB-10

Ordering key	Rated load	Retracted length	Power consumption	Current consumption	Ambient temp.	Degree of protection
<input type="radio"/> CAHB-10-A1A	120	S+110	--	4.0	-40 to +85	66s/69K
<input type="radio"/> CAHB-10-A2A	240	S+110	--	3.5	-40 to +85	66s/69K
<input type="radio"/> CAHB-10-A3A	500	S+110	--	3.2	-40 to +85	66s/69K
<input type="radio"/> CAHB-10-A4A	750	S+110	--	3.0	-40 to +85	66s/69K

4

Compare

2







CAHB-10	CAHB-20	CAHB-20E, CAHB-20S	CAHB-21E, CAHB-21S
<input type="checkbox"/> Select product (12)	<input type="checkbox"/> Select product (4)	<input type="checkbox"/> Select product (9)	<input type="checkbox"/> Select product (9)
📁 📄 3D	📁 📄 3D	📁 📄 3D	📁 📄 3D



網路工具(3/3)

Product Comparison

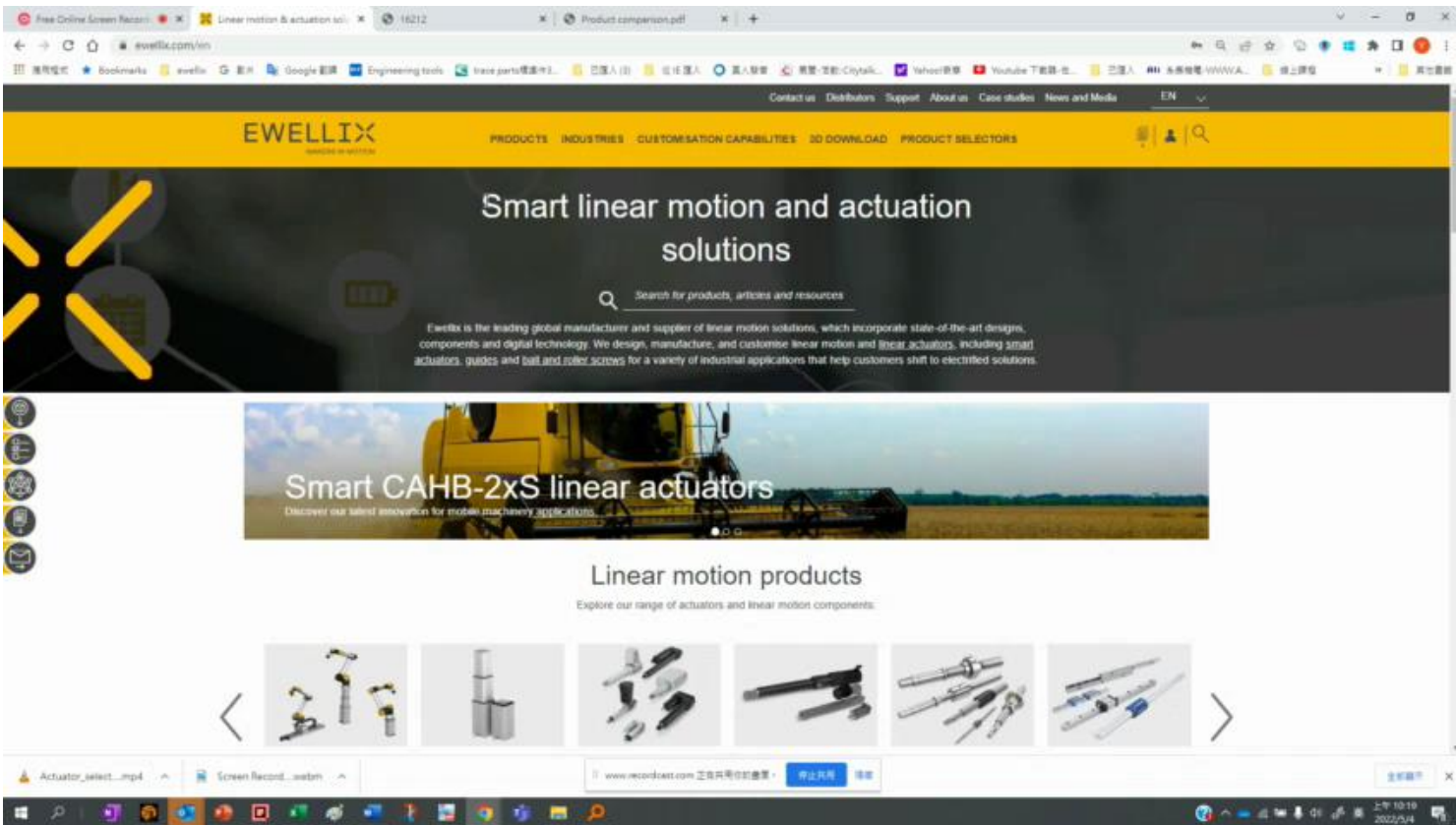
	CAHB-10	CAHB-20	CAHB-21E, CAHB-21S
			
Ordering key	CAHB-10-A1A	CAHB-20-A2A	CAHB-21-B1E
Rated load	120	2500	1500
Pull load	120	2500	1500
Max speed at rated load	45	13	50
Stroke	300	610	700
Retracted length	S+110	S+160/211	S+182/261
Supply voltage	12	12	24

Power consumption	--	--	--
Current consumption	4.0	14	7
Duty cycle	25	25	20
Ambient temp.	-40 to +85	-40 to +85	-40 to +85
Degree of protection	66S/69K	66	66M/69K
Standard compliancy	2	2	2
Weight	1.5	5.5	4.8
Dimensional drawing			
Technical datasheet			
3D model configurator	3D	3D	3D

1

Save as pdf

網路工具-範例



補充說明



需搭配控制器,點入可知相容的控制器型號

actuators and lifting columns. The control units can have either AC or DC input and battery powered operation. There are Control unit able to manage single or up to 6 actuators and several external operating devices.

★★



CAHB-30A

Select product (2)



★★★



MATRIX3

Select product (2)



★★★



MATRIX7

Select product (2)



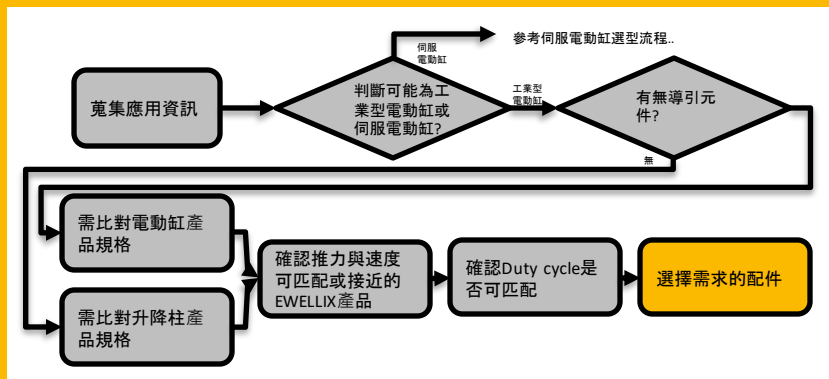
可直接搭配手控器,點入可知相容的手控器型號

Compatible switches related for product Linear actuators MATRIX7

				
Code	EHA1	PFP	PHC	
Power	Electrical	Pneumatic	Pneumatic	EI
N. of channel	2	1	4	
Degree of protection	IP 67	IP 21	IP 66	
Colour	Grey	Grey	Grey	

6

配件選擇



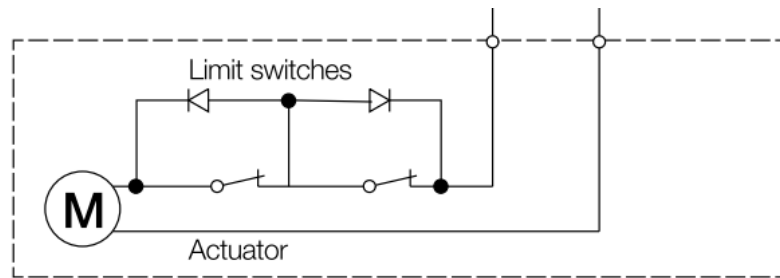
極限開關Limit switch

目的

用以保護電動缸走到極限為止時不直接碰撞機械結構

功能

當電動缸移動到特定方向的極限時,電子式極限開關的觸發後將會使電路斷開,使電動缸將停止作動。此時電動缸只能往反向移動。



溫控保護開關 Thermal switch



目的

用以保護馬達不因過熱而導致受損

功能

溫控保護開關被內建於控制器或馬達內部,用以監測溫度是否超過上限。當電動缸因為duty cycle過高導致超過上限溫度時,溫控保護開關將會斷開電路直至電動缸或控制器冷卻後為止。

可變電阻 Potentiometer

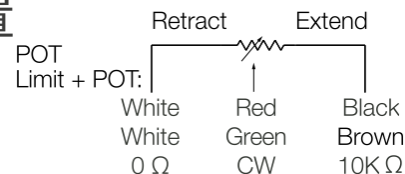
目的

根據電動缸的絕對位置,提供對應之類比信號回授

功能

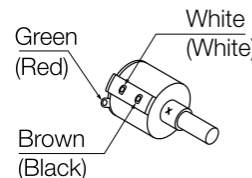
當電動缸移動時,相對應的機構會轉動內部的可變電阻,使可變電阻的電阻值變化,故可變電阻的電阻值可直接對應電動缸的位置

PS. 常會搭配電阻分壓電路使用



Potentiometer resolution

Stroke [mm]	102	153	204	305	457	610
Ohm/mm	59,0	59,0	29,5	29,5	9,84	9,84



絕對式類比位置輸出Absolute analog position output

目的

根據電動缸的絕對位置,提供對應之類比信號回授

功能

當電動缸移動時,電動缸將根據電動缸的目前行程位置輸出相對應之0 ~ 5 VDC的電壓

Absolute analogue
position output [V/mm]

0,0167 if S=050-222

0,0083 if S=223-444

0,0028 if S=445-700

Input voltage:

10~55 V DC

Current consumption:

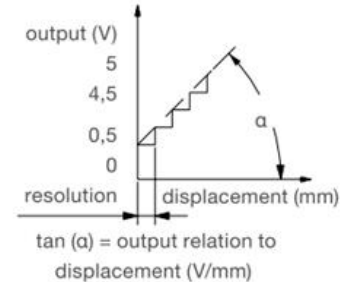
15 mA max.

Output analog signal (voltage):

0~5 V DC

Max current output:

5 mA



編碼器Encoder

目的

提供根據電動缸的移動狀,提供相對式之數位信號回授

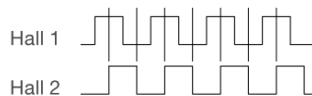
功能

當電動缸移動時,兩組相位差90度之霍爾感應元件將根據電動缸的移動狀態輸出相對應之數位信號

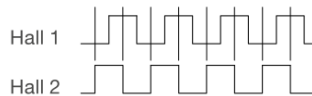
Hall sensor
[pulses/mm]

1,56

Signal CCW extension



Signal CW retraction



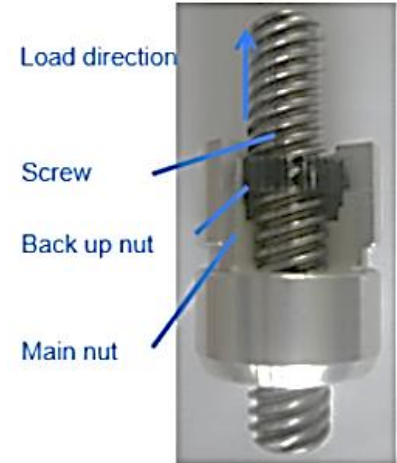
備用螺帽 Back up nut

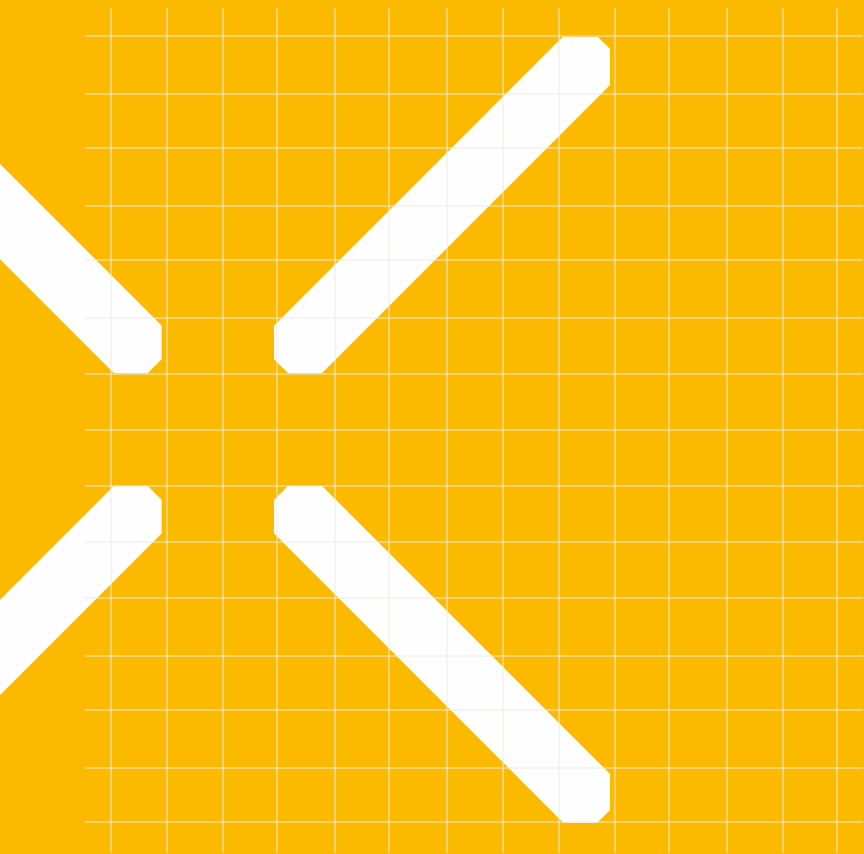
目的

當主要螺帽失效時,備用螺帽可以支撐電動缸,防止推管脫出

功能

備用螺帽與螺桿上的主螺帽一起運行。在主螺帽失效的情況下,備用螺帽承擔負載。此時電動缸無法在只有備用螺帽的情況下運作。





7

選用範例

選型範例-1

範例 1

我正在建造頂部帶有可折疊桅杆的拖車，以便為遠程工作場所搭建臨時 4G 網絡基地。

為此，我需要一個電動缸來將可折疊桅杆升到空中。執行器需要有 500mm 的行程，需要推動 5000N。移動到新位置前需要折疊桅杆，天氣不好時也需要折疊，每天最多 1 次。

應用條件

- 負載: 最小 5000 N
- 行程: 500 mm
- 速度: 沒有限制(一天只操作一次)
- 佔空比:<10 %
- IP等級: 至少IP65
- 電壓: 沒有明確的資訊，但應該類似從電池可獲得的12V 或24 DC



Select features

Rated load ⓘ
6 000 N (40) ▼

Stroke ⓘ
401 - 500 mm (36) ▼
All
1 - 200 mm (40)
201 - 300 mm (38)
301 - 400 mm (36)
401 - 500 mm (36)
501 - 600 mm (36)
601 - 700 mm (32)
701 - 800 mm (24)
801 - 1 000 mm (20)
> 1 000 mm (14)

Degree of protection ⓘ
65 (5) ▼
All
20 (35)
44 (35)
54 (34)
54S (18)
55 (5)
64 (5)
65 (5)
66 (4)
66M/69K (1)

Supply voltage ⓘ
24 V DC (3) ▼
All
12 V DC (2)
24 V DC (3)
48 V DC (1)
120 V AC (1)
230 V AC (2)



選型範例-1

範例 1

我正在建造頂部帶有可折疊桅杆的拖車，以便為遠程工作場所搭建臨時 4G 網絡基地。

為此，我需要一個電動缸來將可折疊桅杆升到空中。執行器需要有 500mm 的行程，需要推動 5000N。移動到新位置前需要折疊桅杆，天氣不好時也需要折疊，每天最多 1 次。






















應用條件

- 負載: 最小 5000 N
- 行程: 500 mm
- 速度: 沒有限制(一天只操作一次)
- 佔空比:<10 %
- IP等級: 至少IP65
- 電壓: 沒有明確的資訊, 但應該類似從電池可獲得的12V 或24 DC



Product comparison

Linear actuators

		CAHB-22E, CAHB-22S 	MATRIX3 	RUNNER 
Ordering key		CAHB-22-B3E	MAX3 1-A	RU20
Rated load	N	6800 	8000 	8000 
Pull load	N	6800	6000	8000
Max speed at rated load	mm/s	17 	5 	7 
Stroke	mm	610	700	700
Retracted length	mm	S+194/270	S+215/280	S+215/315
Supply voltage	V	24	24	24
Power consumption	W	--	120	--
Current consumption	A	9.5	5	7
Duty cycle	%	20 	10 	10 
Ambient temp.	°C	-40 to +85 	0 to +40 	+10 to +40 
Degree of protection	IP	66M/69K 	66 	66 
Standard compliancy		Mobile machinery 	Medical 	Medical 
Weight	kg	4.8	4.5	4.7
Dimensional drawing		Download	Download	Download
Technical datasheet		Link to datasheet	Link to datasheet	Link to datasheet
3D model configurator		Link to Ewellix.com	Link to Ewellix.com	Link to Ewellix.com

Use catalogue to define ordering key

選型範例-2

範例 2

客戶需要一個電動缸用於船舶應用上的窗戶開啟,且客戶強調需要注重成本效益

應用條件

- 負載: 1300 N
- 行程: 50 mm
- 速度: 5 mm/s
- 佔空比:<10 %
- IP等級: 至少IP66
- 電壓: 12V DC



Select features	
Rated load [ⓘ]	1 200 N (2) ▼
Max speed at rated load [ⓘ]	1 - 5 mm/s (6) ▼
Stroke [ⓘ]	1 - 200 mm (2) ▼
Duty Cycle [ⓘ]	10% (2) ▼
Supply voltage [ⓘ]	12 V DC (2) ▼
Application [ⓘ]	All ▼
Standard compliancy [ⓘ]	All ▼
Self-locking [ⓘ]	All ▼
Motor technology [ⓘ]	All ▼
Motor configuration [ⓘ]	All ▼
Degree of protection [ⓘ]	66 (2) ▼

	CAHB-10	MATRIX3
Ordering key	CAHB-10-A6A	MAX3 2-A
Rated load	N 1500 ✓	⚠ 8000
Pull load	N 1500	6000
Max speed at rated load	mm/s ✓ 5	✓ 5
Stroke	mm ✓ 300	✓ 700
Retracted length	mm S+110	S+215/280
Supply voltage	V ✓ 12	✓ 12
Power consumption	W --	120
Current consumption	A 4.4	5
Duty cycle	% ✓ 20	✓ 10
Ambient temp.	°C ✓ -40 to +85	⚠ 0 to +40
Degree of protection	IP ✓ 66s/69K	✓ 66
Standard compliancy	2	1
Weight	kg 1.5	4.5
Dimensional drawing		
Technical datasheet	CAHB-10-A6A-050xxx	
3D model configurator	3D	3D

選型範例-3

範例 3

客戶需要於病床上使用兩支電動缸,一個用來操作背部的傾斜,另一支用於剪刀臂結構舉升。此外客戶想要使用一個手控器來控制這兩支電動缸

電動缸-剪刀臂

- 負載: 4000 N
- 行程: 500 mm
- 速度: 最多1分鐘須走完完全行程
- 佔空比:<10 %
- IP等級: IP65

電動缸-背部

- 負載: 2000 N
- 行程: 350 mm
- 速度: 最多30秒須走完完全行程
- 佔空比:<10 %
- IP等級: IP65



電動缸-剪刀臂

$$\text{速度需求} = \frac{\text{行程}}{\text{時間}} = \frac{500\text{mm}}{60\text{sec}} 8,33\text{mm/s}$$

Select features

Rated load ①

4 000 N (3)

Max speed at rated load ②

6 - 10 mm/s (4)

Stroke ③

301 - 400 mm (3)

Duty Cycle ④

10% (3)

Application ⑤

Medical (3)

Degree of protection ⑥

65 (3)

		MATRIX3	MATRIX7	RUNNER
				
Ordering key		MAX3 2-B	MAX7 1-B	RU23
Rated load	N	4000	4000	8000
Pull load	N	4000	4000	8000
Max speed at rated load	mm/s	6	8	8
Stroke	mm	700	700	700
Retracted length	mm	S+215/280	S+215/280	S+215/315
Supply voltage	V	12	120	24
Power consumption	W	120	150	--
Current consumption	A	5	1.8	10
Duty cycle	%	10	10	10
Ambient temp.	°C	0 to +40	0 to +40	+10 to +40
Degree of protection	IP	66	66	66
Standard compliancy		1	1	1
Weight	kg	4.2	5.4	4.7

選型範例-3

範例 3

客戶需要於病床上使用兩支電動缸,一個用來操作背部的傾斜,另一支用於剪刀臂結構舉升。此外客戶想要使用一個手控器來控制這兩支電動缸

電動缸-剪刀臂

- 負載: 4000 N
- 行程: 500 mm
- 速度: 最多1分鐘須走完完全行程
- 佔空比:<10 %
- IP等級: IP65

電動缸-背部

- 負載: 2000 N
- 行程: 350 mm
- 速度: 最多30秒須走完完全行程
- 佔空比:<10 %
- IP等級: IP65



電動缸-背部

$$\text{速度需求} = \frac{\text{行程}}{\text{時間}} = \frac{350\text{mm}}{30\text{sec}} = 11,6\text{mm/s}$$

	MATRIX3	MATRIX3	RUNNER	RUNNER	RUNNER
Ordering key	MAX3 1-C	MAX3 2-C	RU33	RU34	RU35
Rated load	N	3000	8000	10000	12000
Pull load	N	3000	8000	8000	8000
Max speed at rated load	mm/s	13	17	14	11
Stroke	mm	700	700	700	700
Retracted length	mm	S+215/280	S+215/315	S+215/315	S+215/315
Supply voltage	V	24	36	36	36
Power consumption	W	120	--	--	--
Current consumption	A	5	10	10	10
Duty cycle	%	10	10	10	10
Ambient temp.	°C	0 to +40	+10 to +40	+10 to +40	+10 to +40
Degree of protection	IP	66	66	66	66

選型範例-3

範例 3

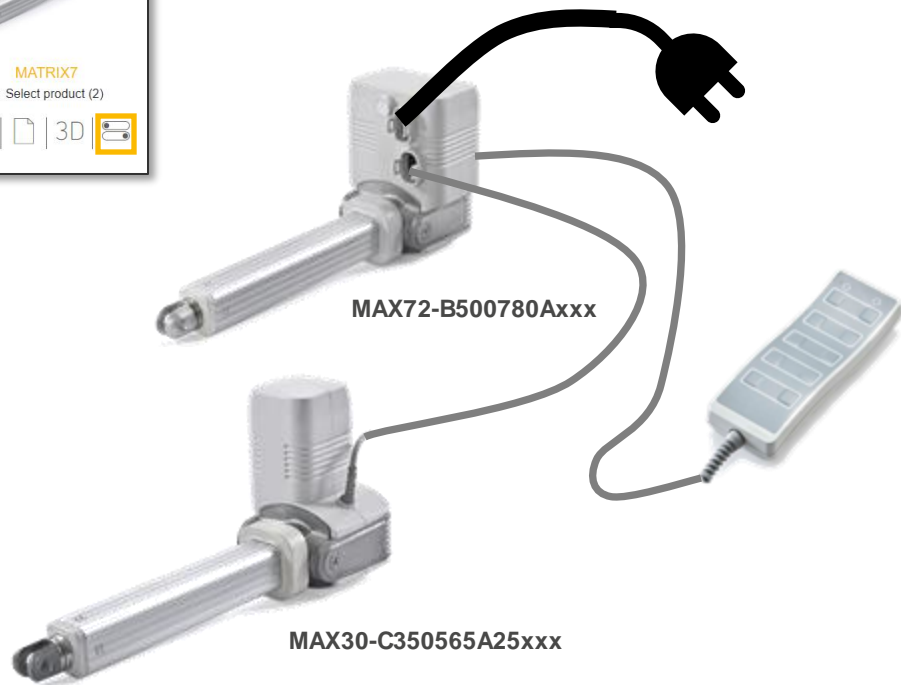
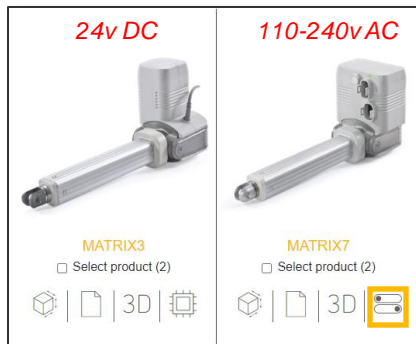
客戶需要於病床上使用兩支電動缸，一個用來操作背部的傾斜，另一支用於剪刀臂結構舉升。此外客戶想要使用一個手控器來控制這兩支電動缸

電動缸-剪刀臂

- 負載: 4000 N
- 行程: 500 mm
- 速度: 最多1分鐘須走完全行程
- 佔空比:<10 %
- IP等級: IP65

電動缸-背部

- 負載: 2000 N
- 行程: 350 mm
- 速度: 最多30秒須走完全行程
- 佔空比:<10 %
- IP等級: IP65



選型範例-3

Actuator 1:
MAX72-B500780Axxx

Ordering key

Type

Voltage

0 100-240 V AC/50-60 Hz, integrated pneumatic control
 2 100-240 V AC/50-60 Hz, integrated low voltage control with additional 24 V output
 4 100-240 V AC/50-60 Hz, integrated low voltage control

Load

A 8 000 N
 B 4 000 N
 C 3 000 N

Stroke (S)

050 265 50 mm
 100 315 100 mm
 150 365 150 mm
 200 415 200 mm
 250 465 250 mm
 300 515 300 mm
 350 565 350 mm
 400 680 400 mm
 450 730 450 mm
 500 780 500 mm
 550 830 550 mm
 600 880 600 mm
 650 930 650 mm
 700 980 700 mm
 - - - - - Other stroke lengths: 50 < S < 700 mm

Cable / Connecting plug

0 No cable

Orientation of rear attachment

0 No fork head (customized option)
 1 Standard (as drawing)
 2 Turned 90°

Option 1

0 No option, only valid for actuator "A" (push and pull)
 E Quick-release +EKZm, push, fork head bore parallel to button (for actuator design "C" is L= +115 mm)¹⁾
 F Quick-release +EKZm, push, fork head bore 90° to button (for actuator design "C" is L= +115 mm)¹⁾
 K Electrical anti-pinching protection, motor direction pull
 L Electrical anti-pinching protection, motor direction push
 M Push load, for actuator version "B" and "C"
 N Pull load, for actuator version "B" and "C"

Option 2

0 No option

Option 3

- No option
 V Emergency lowering, fork head bore parallel to clamping lever (for actuator design "A", L+30 mm)
 W Emergency lowering, fork head bore 90° to clamping lever (for actuator design "A", L+30 mm)

Customized

Actuator 2:
MAX30-C350565A25xxx

Ordering key

Type

Voltage

1 24 V DC
 2 24 V DC with integrated current cut-off
 12 V DC

Load

A 8 000 N
 B 4 000 N
 C 3 000 N

Stroke (S)

050 265 50 mm
 100 315 100 mm
 150 365 150 mm
 200 415 200 mm
 250 465 250 mm
 300 515 300 mm
 350 565 350 mm
 400 680 400 mm
 450 730 450 mm
 500 780 500 mm
 550 830 550 mm
 600 880 600 mm
 650 930 650 mm
 700 980 700 mm
 - - - - - Other stroke lengths: 50 < S < 700 mm

Cable / Connecting plug

0 B Coiled, 0.75 m (not stretched) / DIN8 plug
 C 5 Straight, 2.5 m / DIN8 plug
 0 A Coiled, 0.75 m (not stretched) / Jack plug
 2 5 Straight, 2.5 m / Jack plug
 - - Special cable length on request

Orientation of rear attachment

0 No fork head (customized option)
 1 Standard (as drawing)
 2 Turned 90°

Option 1

0 No option, only valid for actuator "A" (push and pull)
 E Quick-release +EKZm, push, fork head bore parallel to button (for actuator design "C" is L= +115 mm)¹⁾
 F Quick-release +EKZm, push, fork head bore 90° to button (for actuator design "C" is L= +115 mm)¹⁾
 K Electrical anti-pinching protection, motor direction pull
 L Electrical anti-pinching protection, motor direction push
 M Push load, for actuator version "B" and "C"
 N Pull load, for actuator version "B" and "C"

Option 2

0 No option
 F 2-Hall encoder, DIN8 plug
 M Lifetime monitoring
 P Lifetime monitoring, 2-Hall encoder, DIN8 plug

Option 3

0 No option
 V Emergency lowering, fork head bore parallel to clamping lever (for actuator design "A", L+30 mm)
 W Emergency lowering, fork head bore 90° to clamping lever (for actuator design "A", L+30 mm)

Customized

選型範例-4

範例 4

客戶需要一個電動缸每30分鐘開關一次閥門

電動缸

- 負載: 400 N
- 行程: 350 mm
- 速度: 100mm/s
- 佔空比:<10 %
- IP等級: IP20
- 電壓:24V

Select features

Rated load ⓘ
240 N (7) ▼

Max speed at rated load ⓘ
51 - 100 mm/s (7) ▼

Stroke ⓘ
301 - 400 mm (7) ▼

Duty Cycle ⓘ
10% (7) ▼

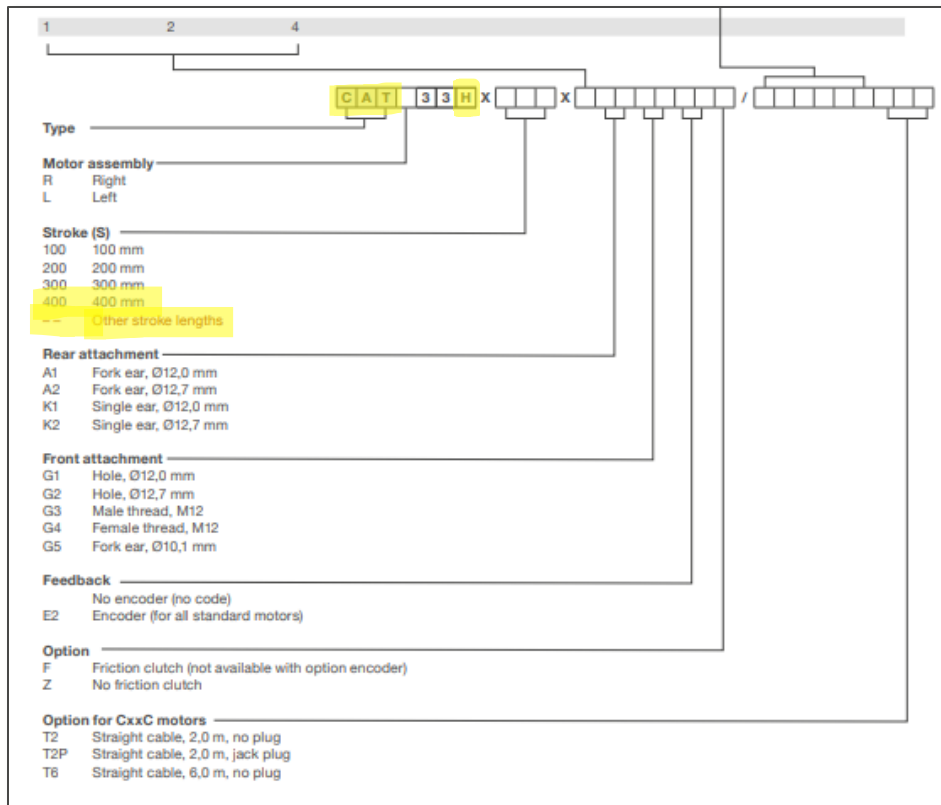
Supply voltage ⓘ
24 V DC (7) ▼

Product Comparison x

	CASM_32_BS	CAT-33H DC	CAT-33H DC
			
Ordering key	CASM-32-BS-BG45	CAT-33H-4/C24	CAT-33H-4/D24
Rated load	N 393 ⚠	500 ✓	500 ✓
Pull load	N 393	500	500
Max speed at rated load	mm/s 150 ✓	140 ✓	140 ✓
Stroke	mm 400 ✓	400 ✓	400 ✓
Retracted length	mm S+148	S+150/158/189	S+150/158/189
Supply voltage	V 24 ✓	24 ✓	24 ✓
Power consumption	W 91	--	--
Current consumption	A 4.9	9	9
Duty cycle	% 100 ⚠	20 ✓	20 ✓
Ambient temp.	°C 0 to +50	-20 to +50	-20 to +50
Degree of protection	IP 54S	66	44
Standard compliancy	0	0	0
Weight	kg 2.05	2 to 2,7	2 to 2,7
Dimensional drawing			
Technical datasheet			
3D model configurator	3D	3D	3D

Save as pdf

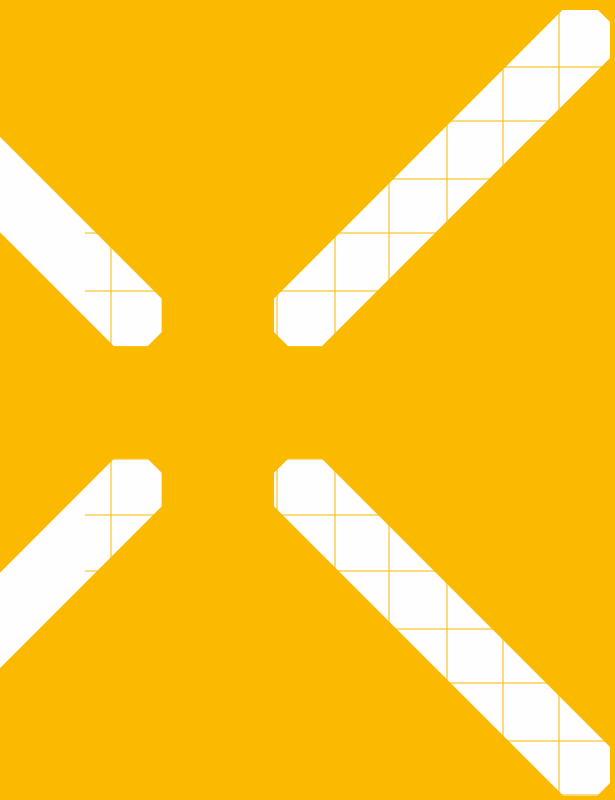
選型範例-4



Load [N] / Full Load Speed [mm/s]			Motor options	
1 200/xx	900/xx	600/xx	No motor	0000
1 200/20	900/37	500/90	120 V AC/60 Hz, 1-phase, IP54	E110C
1 200/20	900/37	500/90	120 V AC/60 Hz, 1-phase, brake, IP20	E110CB
1 200/20	900/37	500/90	230 V AC/50 Hz, 1-phase, IP54	E220C
1 200/20	900/37	500/90	230 V AC/50 Hz, 1-phase, brake, IP20	E220CB
1 200/20	900/37	500/90	400 V AC/50 Hz, 3-phase, IP55	E380C
1 200/xx	900/xx	600/xx	No motor	0000
1 200/50-38	600/100-80	400/174-150	12 V DC, IP66	C12C
1 200/47-25	600/95-65	400/170-100	12 V DC, flat motor, IP44	D12C
1 200/56-36	600/113-79	500/174-140	24 V DC, IP66	C24C
1 200/27-17	600/60-35	500/100-65	24 V DC, low speed motor, IP66	C24CW
1 200/48-37	600/95-65	500/193-140	24 V DC, flat motor, IP44	D24C
1 200/48-37	600/95-65	500/193-140	24 V DC, flat motor, brake, IP20	D24CB
1 200/48-37	600/95-65	500/193-140	24 V DC, flat motor, ext.shaft, IP44	D24CS
1 200/30-17	600/63-35	500/100-65	24 V DC, flat motor, low speed, IP44	D24CW



CATx33H-400-4xx



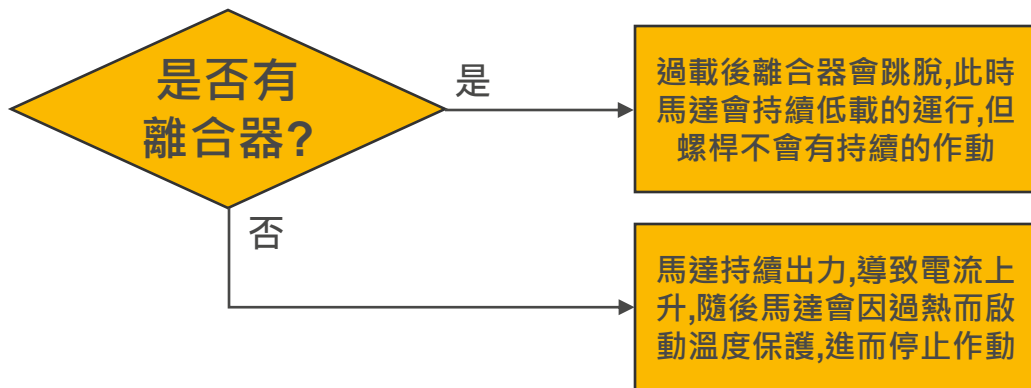
8

常見問題

常見的客戶問題

Q. 若電動缸在可動行程的移動過程中,因外物堵死不可移動會發生甚麼事情?

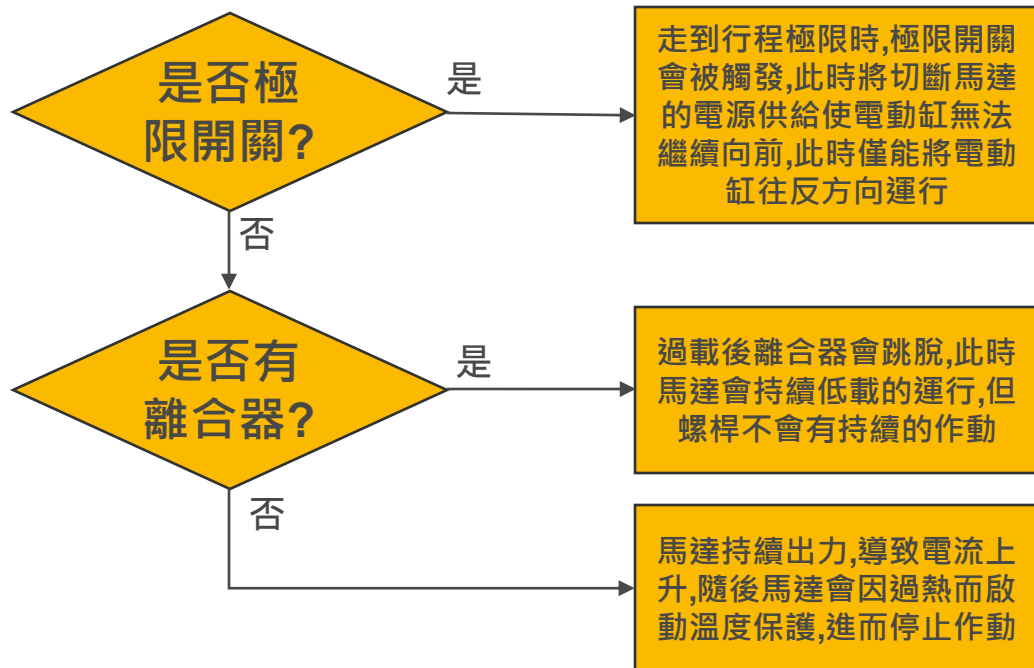
A: 根據不同電動缸的內建保護機制會有不同的結果,可以參照下列流程圖說明:



常見的客戶問題

Q. 若電動缸在走到行程極限繼續給電運行會發生甚麼事情？

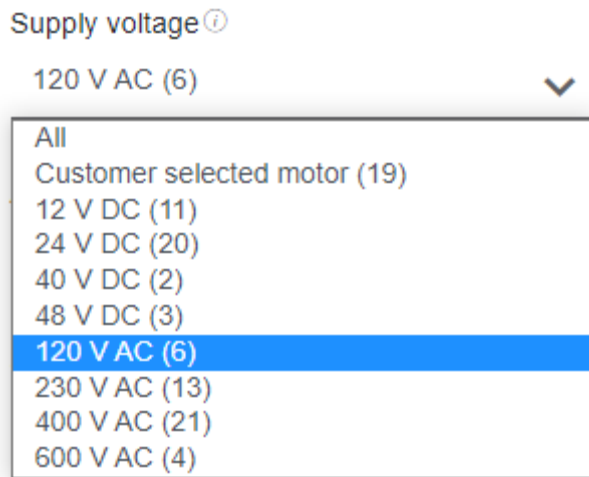
A: 根據不同電動缸的內建保護機制會有不同的結果,可以參照下列流程圖說明:



常見的客戶問題

Q. 是否有支援AC電源的工業型電動缸？





A: 有可支援120/230/400 VAC的型號,詳請可以使用線上選型工具,於Supply voltage之下拉式選單中選取需求的電壓規格,可展出合適的型號



常見的客戶問題

Q. 若為醫療相關應用有甚麼該注意的地方？

A: 若確認為醫療相關的應用,建議就必須選擇醫療適用的電動缸,因為此類電動缸有通過IEC 60601-1/UL/ RU 的認證,且醫療應用對聲音要求較高,此系列的電動缸聲音會比較小

Family	Load kN	Speed mm/s	Stroke mm	Voltage V	
MATRIX	8	13	700	12, 24	
RUNNER	12	8	700	24	
CAJA 35C	3,5	7,5	250	24	
Ecomag	6	9	300	24	

EWELLIX

MAKERS IN MOTION