

Wet-type Multi-plate Magnetic Clutch and Brake

濕式多板電磁離合器 · 剎車器

■ 任岱開發新型濕式多板機械離合器、剎車器由本公司技術開發而成，領先其他公司首先採用外側傳送的方式，使用安裝到機器上的動作變得很簡單。

另外，我們還使用了特殊表面處理的摩擦板，可以使扭力啟動時間及扭力消滅時間更為敏捷迅速，並且減少拖曳扭力（空轉扭力），使性能得以提升，達到合理的機械設計目標。

Chain Tail has developed a new type of wet multi-plate clutch and brake assembly based on proprietary technology.

This is the first unit to utilize power transmission from the outer side, a design which greatly simplifies installation and operation.

We have also used a specially-finished friction plate which makes start-up and reduction times for torque more precise.

This simple but effective design also reduces the level of drag torque (no-load torque) and improves operating efficiency.

MWJ

離合器 Clutch



MWI

剎車器 Brake



■ 特色 Special Features

1 應答敏捷...由於使用了特殊表面處理的摩擦板，扭力啟動時間及扭力消滅時間特別敏捷。另外，由於合併使用了特殊的釋放彈簧，所以拖曳扭力（空轉扭力）極少。

Precise response. The specially-treated friction plate is particularly responsive in terms of start-up and reduction times for torque. In addition, its use in combination with a special release spring decreases drag (no-load) torque.

2 不需要做調整...由於是磁場線圈靜止型，可以免去碳刷等的維護工作，而且所有的零件全部安裝於主體（離合器輪殼），可以很簡單地安裝到機械中，不需要做調整。

No adjustment needed. The magnetic coil is static and does not need dust brushes or similar protective devices. All components are located in the main body (the clutch housing) for fast and easy installation with no need for further adjustment.

3 外型小、扭力大...與其他公司相比，不論外型或長度方面，都是最小規格，然而所產生的扭力卻是最大的。又加上精簡的安裝空間，可說是合理的機械設計。

Compact and loaded with torque. This design is smaller in every way than competitors' offerings, yet it delivers more torque than any other model. This, together with its ease of installation, makes it the ideal design for use with machinery.

4 增加所容許的連結工作...適當潤滑方法及油量可以使所容許的連結工作增加，經得起嚴酷的使用。

Greater capacity for connecting work. The unit can be used for strenuous applications, including lubrication and oil connections.

5 壽命長...即使是高頻率、高旋轉時的連結，極具效果的油膜可以使邊界呈潤滑狀態，因此摩擦板的磨相當少，只要在正常的使用條件下就可以達到將近永久的使用年限（半永久）。

Extremely durable. Even with high frequency and high speed applications, the highly effective hydraulic membrane can use borderline lubrication conditions. This may reduce friction considerably, and maximum durability can be guaranteed only in a normal operating environment (semi-permanent).

■ 用途及扭力範圍 Applications and Torque Ranges

工作機械、（車床、鏜床、銑床、多能自動加工機床）、建設機械、鍛壓機械、搬運機械、木工機械、船舶、特殊車輛（PTO）、其他一般產業機械。

Machine tools (lathes, drills, millers, multi-purpose auto-finishing machines), construction machinery, forging machinery, transportation machinery, wood-working machinery, boats, special-purpose vehicles (PTOs) and other production equipment

■ 標準形動摩擦扭力

離合器 0.3kgm ~ 20kgm

剎車器 0.3kgm ~ 20kgm

本公司亦製作特殊規格的樣品及型錄以外的尺寸。

■ Standard Friction Torques

Clutch = 0.3kgm ~ 20kgm

Brake = 0.3kgm ~ 20kgm

Other models and specifications are available on request

MWJ . MWI Structure and Operation

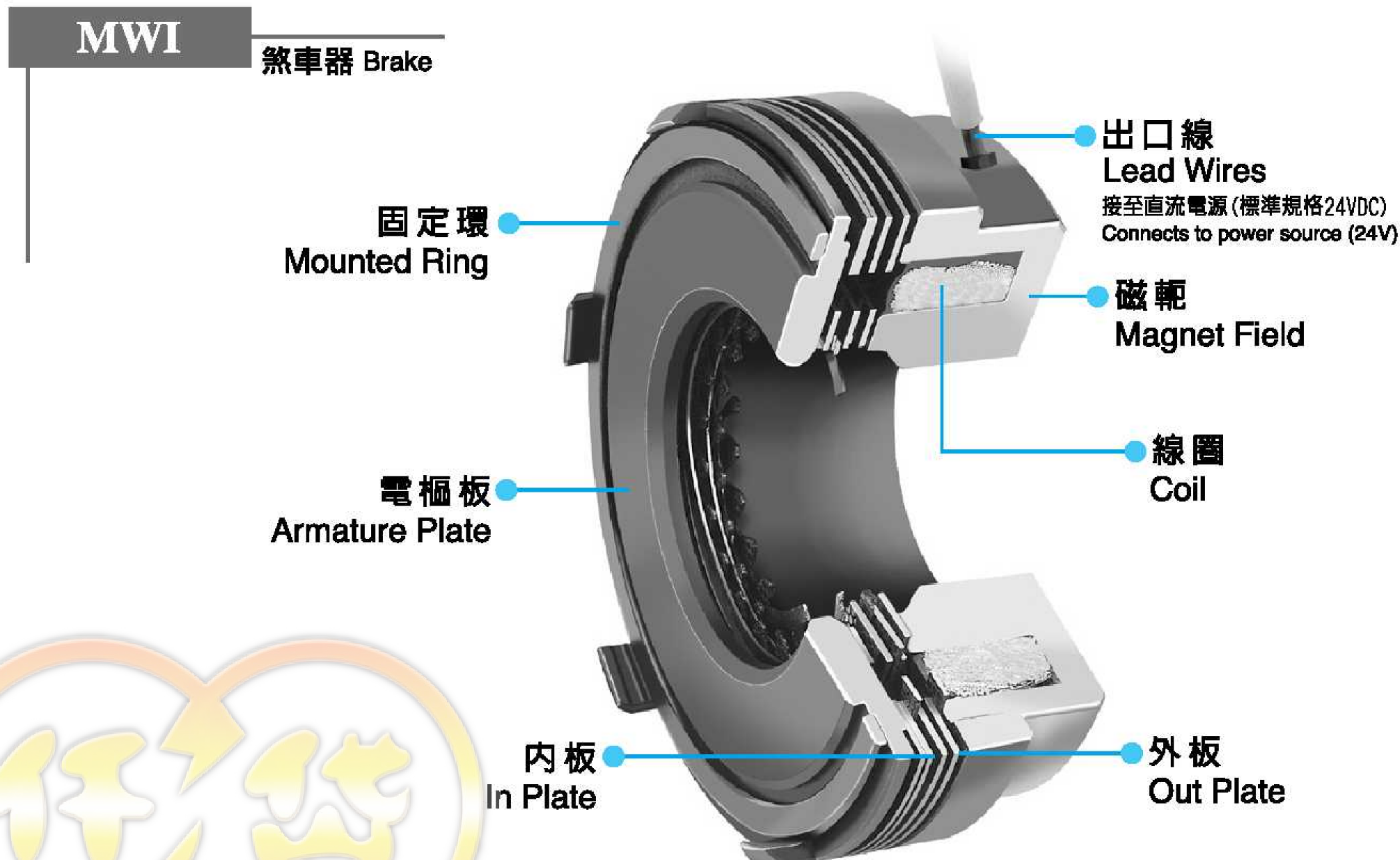
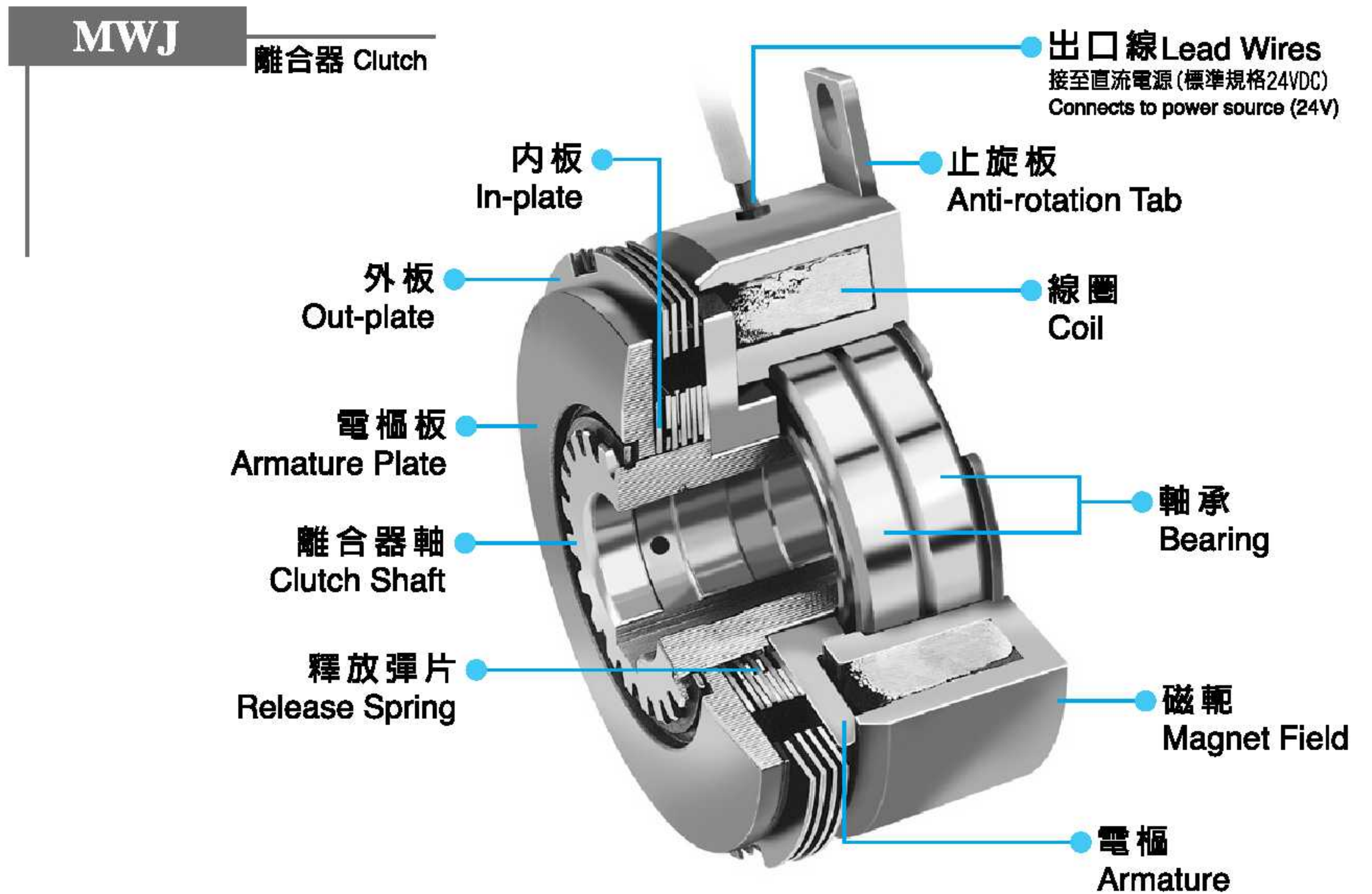
結構及動作

當盤管通電時，轉子、內板、外板、電樞之間會產生磁束，內板和外板強力結合，該摩擦力使離合器產生連結。電源切斷時，摩擦板彈簧作用及釋放彈簧使外板分離，離合器的連結就被解除了。剎車器的動作也和離合器相同原理。

When the coil is energized, the rotor, inner and outer plates and armature are all magnetized. The inner and outer plates are strongly connected, and the friction generated causes the clutch to engage.

When the current is cut off the friction plate spring pushes the outer plate away and the clutch is disengaged.

The brake component operates on the same basic principles as the clutch.



Operating Guidelines

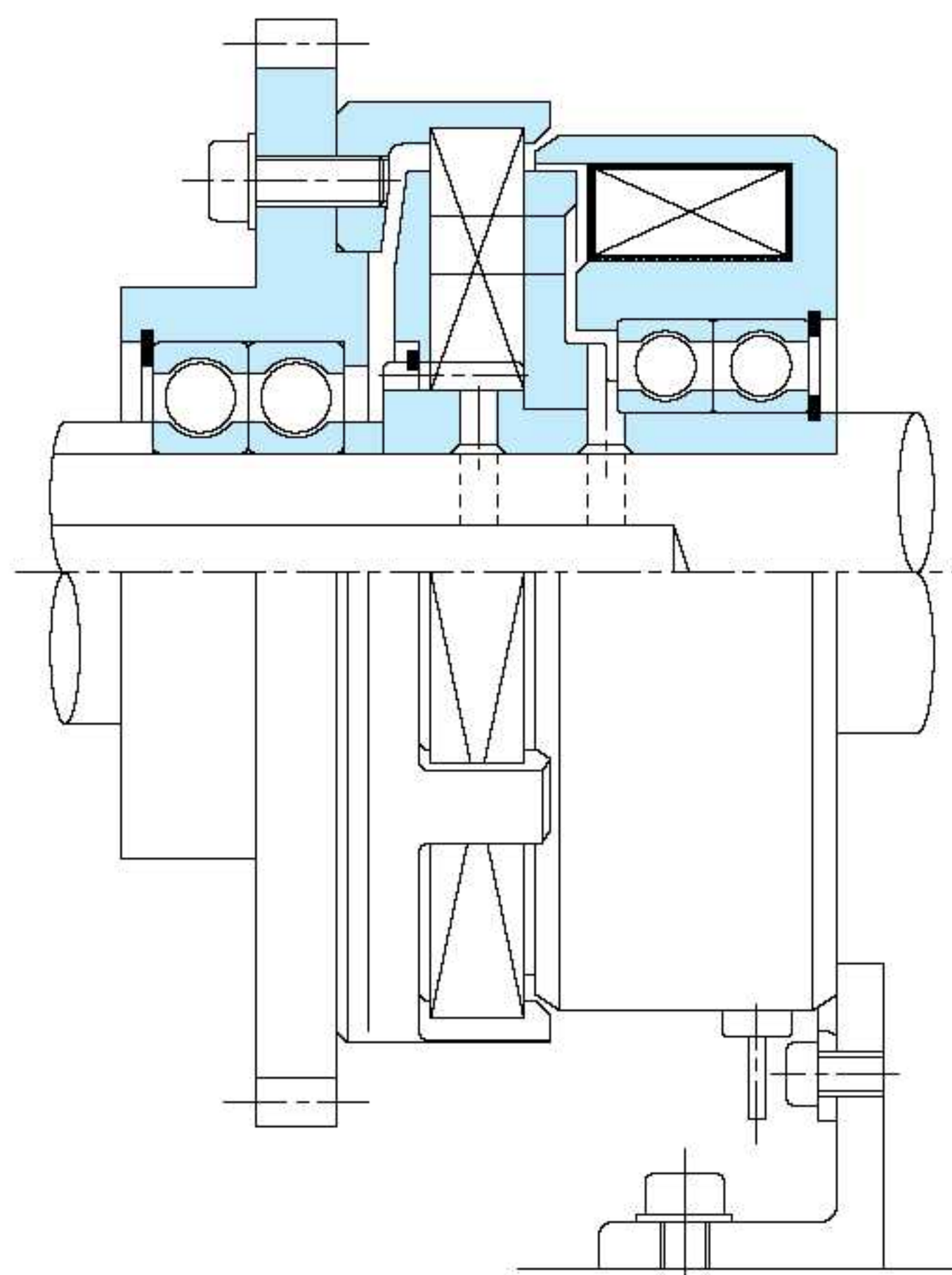
使用注意事項

1 安裝前的注意事項 Checkpoints before installation

- 離合器、剎車器大多使用軟性材質，請防掉落或受到撞擊。不要勉強拉扯引線或將其彎成直角。
- Most clutches and brakes include some soft or fragile materials. Ensure against loss or damage to part. Do not force or crimp lead wires.

1 安裝時的注意事項 Checkpoints during installation

- 離合器、剎車器與安裝軸的嵌合狀況請使用JIS B H7 h6的規格。另外，必須固定於長軸方向，不可有鬆弛現象。
- Consult JIS B H7 specifications on installing the clutch and brake on the shaft. These must be securely attached to the long side of the shaft with no play.
- 取蕊時，要注意不要讓驅動側及從動側的蕊偏掉，特別是相對軸的直線度會有問題。偏蕊或直線度不佳會引起作動不良，使壽命大為減短，請特別注意。偏蕊的容許值因尺寸而異，但請保持在5/100以下。
- When removing a core, exercise caution to maintain alignment between the driving and driven cores. If the cores are mis aligned or at an angle the effective life of the unit will be severely affected. Alignment tolerance varies for different models but is generally less than 5/100.
- 磁場的止旋板不要緊緊於長軸方向，只單純做為防止旋轉之用即可。
- The magnetic top plate is used simply to prevent rotation and should not be firmly attached to the long end of the shaft.
- 耦合器與離合器主體的安裝位置請參考表2。再者，要注意耦合器的安裝螺栓長度，不要碰觸到離合器。
- Consult Figure 2 for positioning of the coupler and clutch body. In addition, bolts used to hold the coupler in place should not be too long, to avoid making contact with the clutch.
- 耦合器與離合器主體安裝耦合器時，除了使用螺栓鎖緊的方式之外，請合併使用頂出銷。
- Screws should be tightly fastened in installing the clutch and used with the locknut.
- 剎車器主體與軸的同心度請保持在0.04mm以下，安裝面與軸的直角度請保持在0.05mm以下。
- Centerline alignment of the brake and main body and the shaft should be within 0.04mm, and installation surface should be within 0.05mm of a right angle to the shaft.
- 請以分段軸或軸環等來決定剎車器的內側趕錐之位置。
- Position the internal brace in line with the segmental shaft or the bearing race.
- 安裝於齒輪箱或箱體內的情況下，盡量設計成罩蓋可以取下的結構，以利離合器及剎車器的檢查維修。
- When making an installation in a gear box or housing, design a cover where possible to facilitate inspection and maintenance of the clutch.



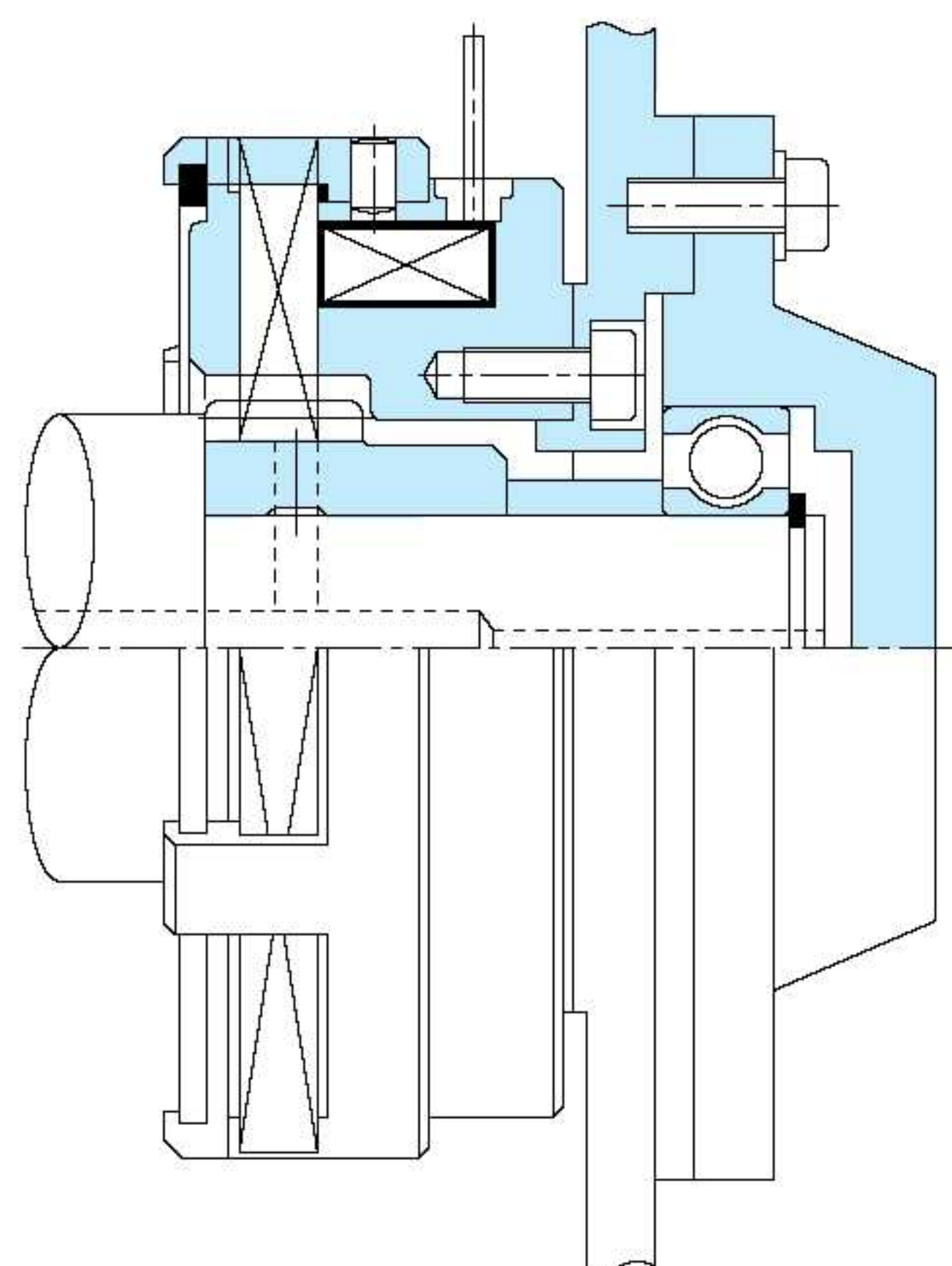
濕式多板離合器裝置圖

Assembly diagram for wet multi-plate clutch

MWJ型離合器的基本安裝範例

Basic assembly plan for MWJ clutch

型號 Model	1S2	2S5	005	010	020
尺寸(mm)	5.5	5.5	6	6.5	9.5



濕式多板煞車器裝置圖

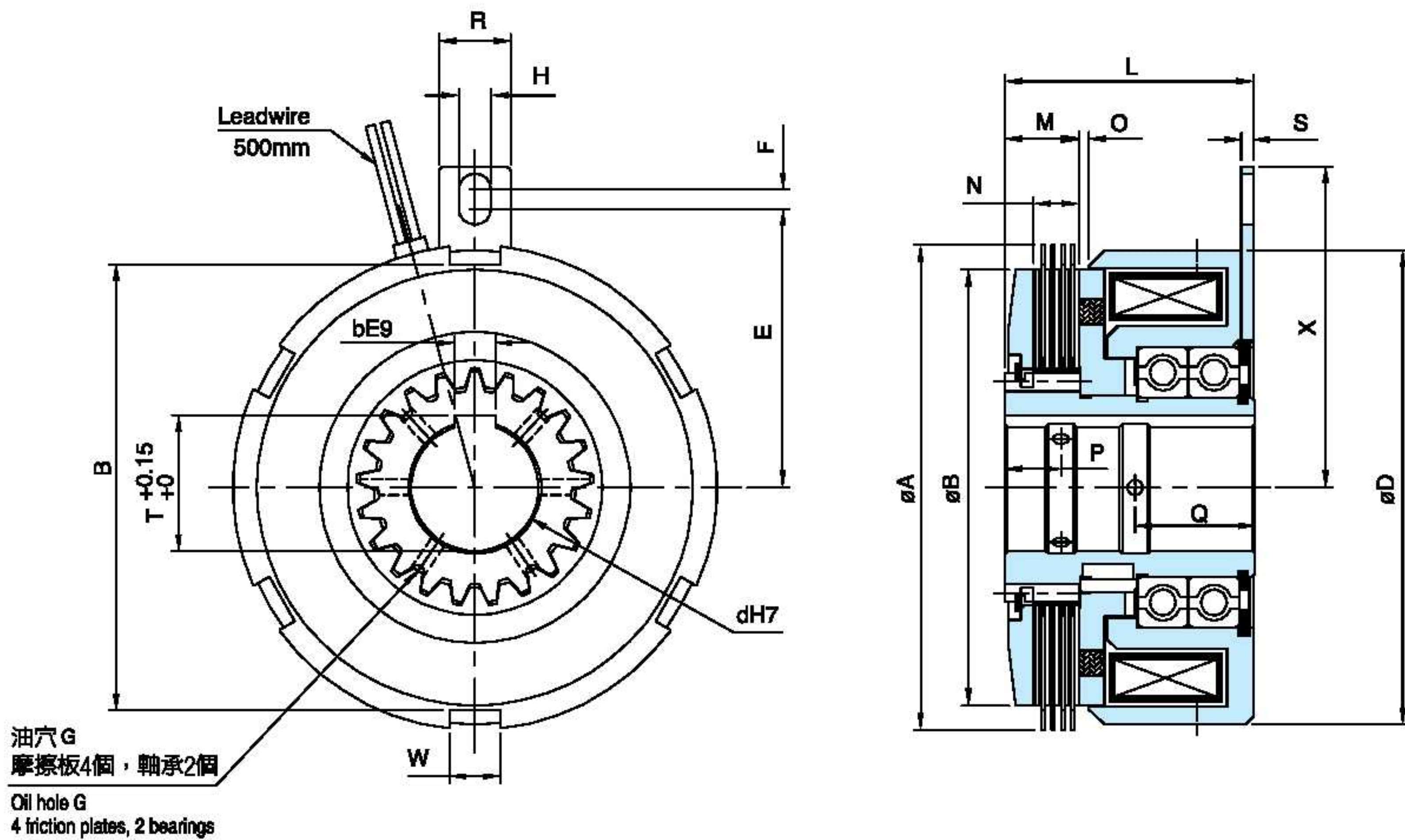
Assembly diagram for wet multi-plate brake

MWI型剎車器的基本安裝範例

Basic assembly plan for MWI brake

MWJ Series

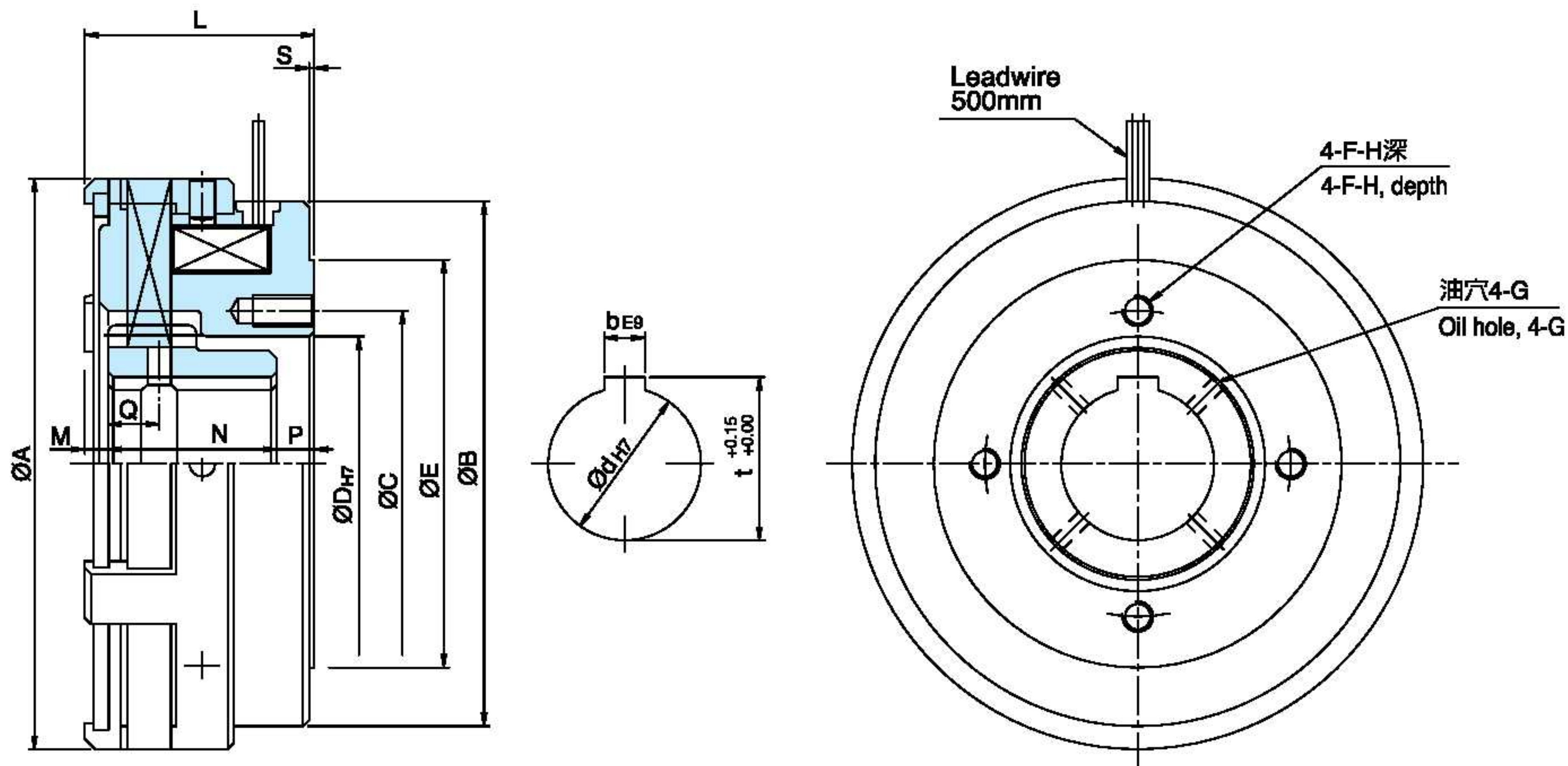
標準濕式多板離合器 Wet Multi-plate Clutch



型號 MODEL	MWJ1S2AA	MWJ2S5AA	MWJ005AA	MWJ010AA	MWJ020AA	
靜摩擦轉距 Static Friction Torque [kgm](Nm)	2.5 (25)	5.0 (50)	10(100)	20 (200)	40 (400)	
動摩擦轉距 Dynamic Friction Torque [kgm](Nm)	1.2 (12)	2.5 (25)	5.0(50)	10 (100)	20 (200)	
功率 Power [24V](W) at 20°C	12	17	22	36	45	
徑 方 向 Radius	A	80	95	112	132	
	B	73.4	87.5	103	122	
	C	71	85.5	101	120	
	D	78	93	110	130	
	E	47	56.5	62.5	77	
	F	2.7	3.7		4.5	5.5
	G	2	3			
	H	6.3		6.5		
	X	53	63	69	85.5	99.5
	軸 方 向 Shaft	L	45	49	57	63
M		13	14.5	17.7	21.1	26.6
N		8.3	8.8	12.2	14	
O		2.5	2	1.2	1.4	2.5
P		10	11	12.5	14	20.5
Q		21.5	23.5	27.5	23.7	31
R		12	14		16	
S		2	2.3		3	
W		9	10			
d		20	25	30	40	50
b		6	8			
t		21.7	26.7	32.5	42.5	52.5
重量 Weight (kg)		1.4	2.0	3.0	4.8	7.7
保護素子 Protective band	GD80KD10			GD80KD14		

MWI Series

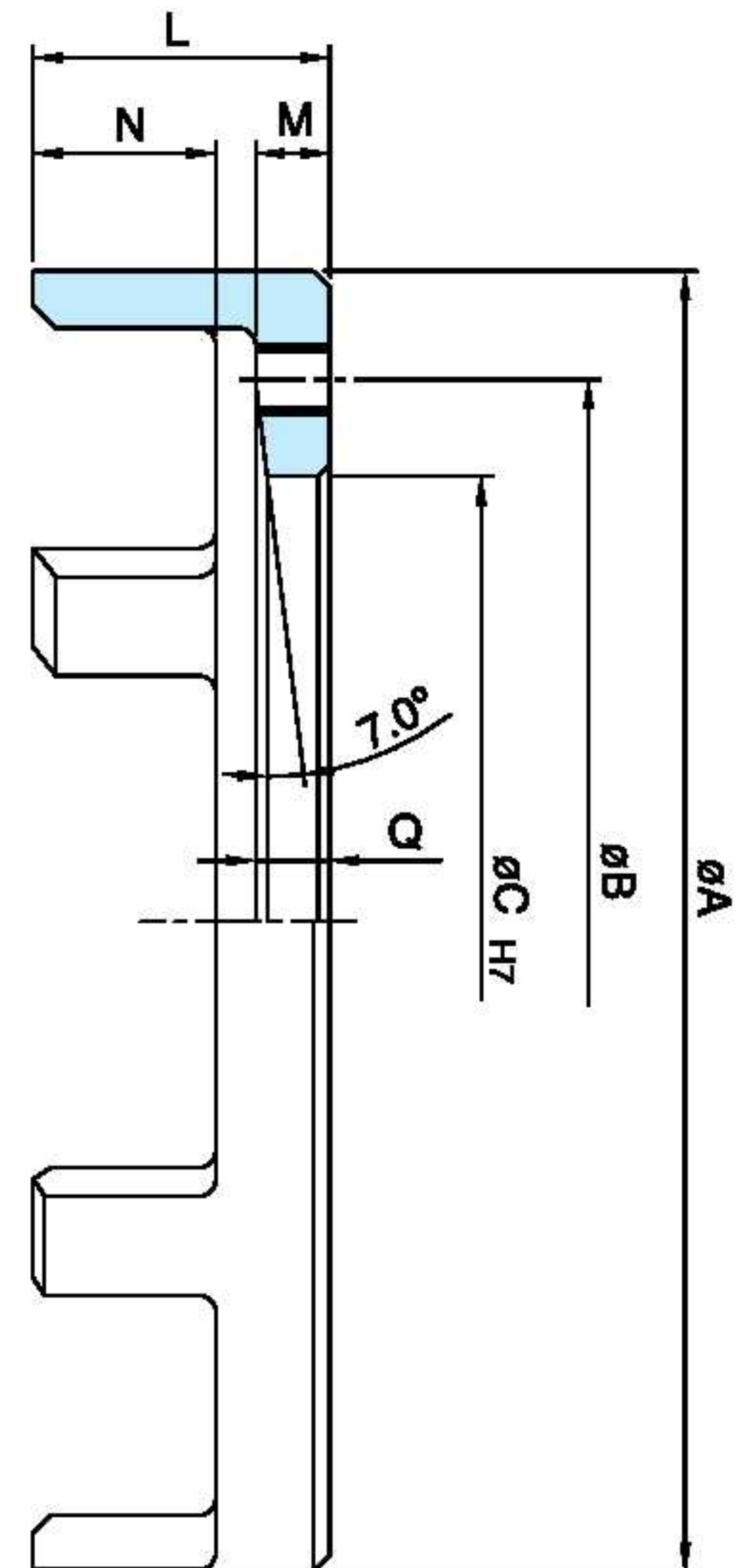
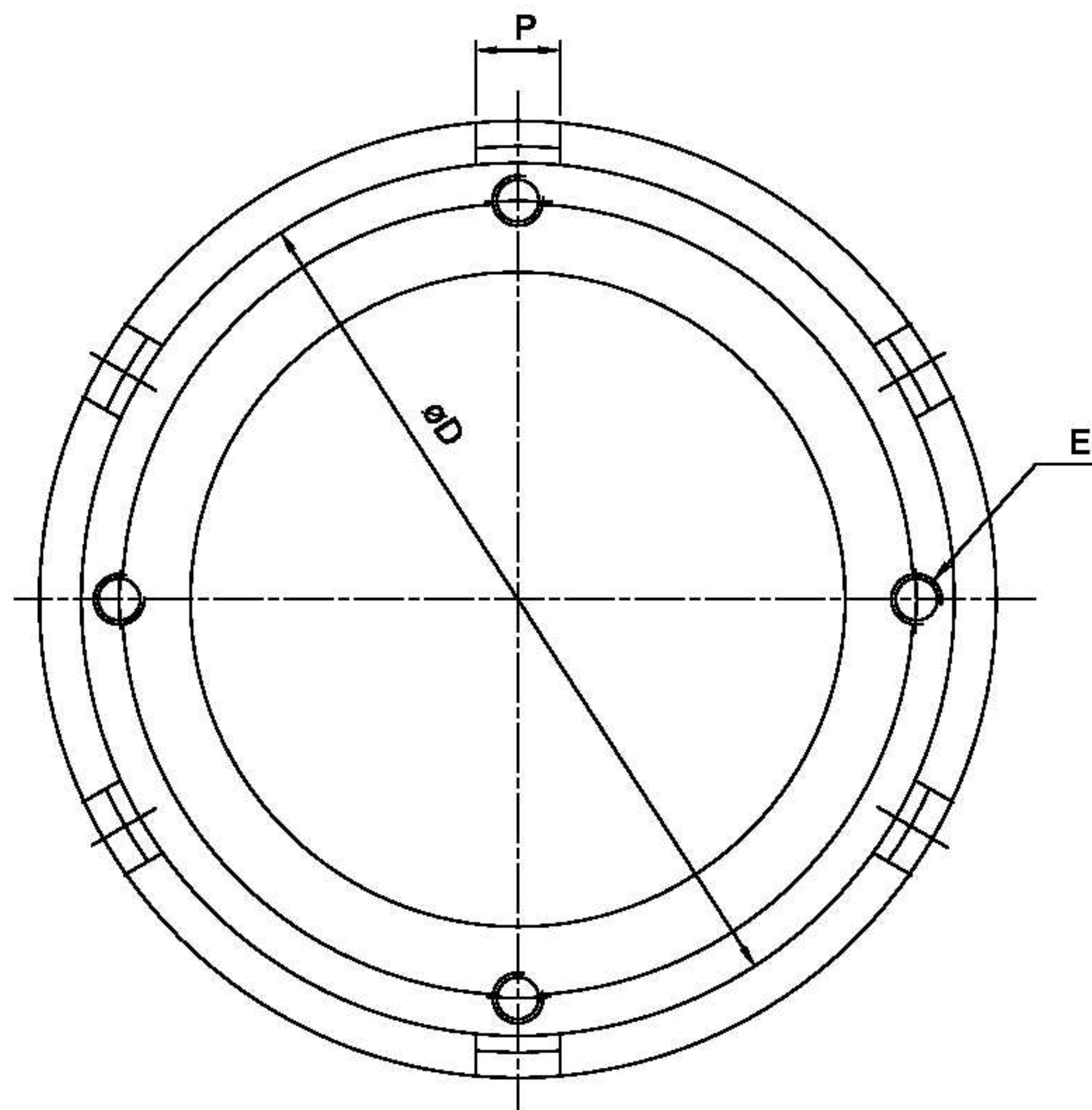
標準濕式多板煞車器 Wet Multi-plate Brake



型號 MODEL	MWI1S2AA	MWI2S5AA	MWI005AA	MWI010AA	MWI020AA	
靜摩擦轉距 Static Friction Torque [kgm](Nm)	2.5 (25)	5.0 (50)	10 (100)	20 (200)	40 (400)	
動摩擦轉距 Dynamic Friction Torque [kgm](Nm)	1.2 (12)	2.5 (25)	5.0 (50)	10 (100)	20 (200)	
功率 Power [24V](W) at 20°C	8	12	18	24	28	
徑方向 Radius	A	80	95	112	132	157
	B	73	87	103	122	148
	C	42	50	60	70	95
	D	32	40	50	56	74
	E	-	-	80	95	116
	F	M5*0.8P	M6*1P		M8*1.25P	M10*1.5P
	G	2	3			
	H	8		12		20
軸方向 Shaft	L	30	37	45	52	61
	M	3.5	4	3	4	7.8
	N	23	27	33	35	48
	P	3.5	6	9	13	5.2
	Q	7	8.5	10	13	6
	S	-	-		1	3
	d	20	25	30	40	52
	b	6	8		12	15
	t	21.7	26.7	32	42.5	57
重量 Weight (kg)	0.7	1.3	2.0	3.3	4.5	
保護索子 Protective band	GD80KD10			GD80KD14		

MWJ Series

連接板 Connecting Plate



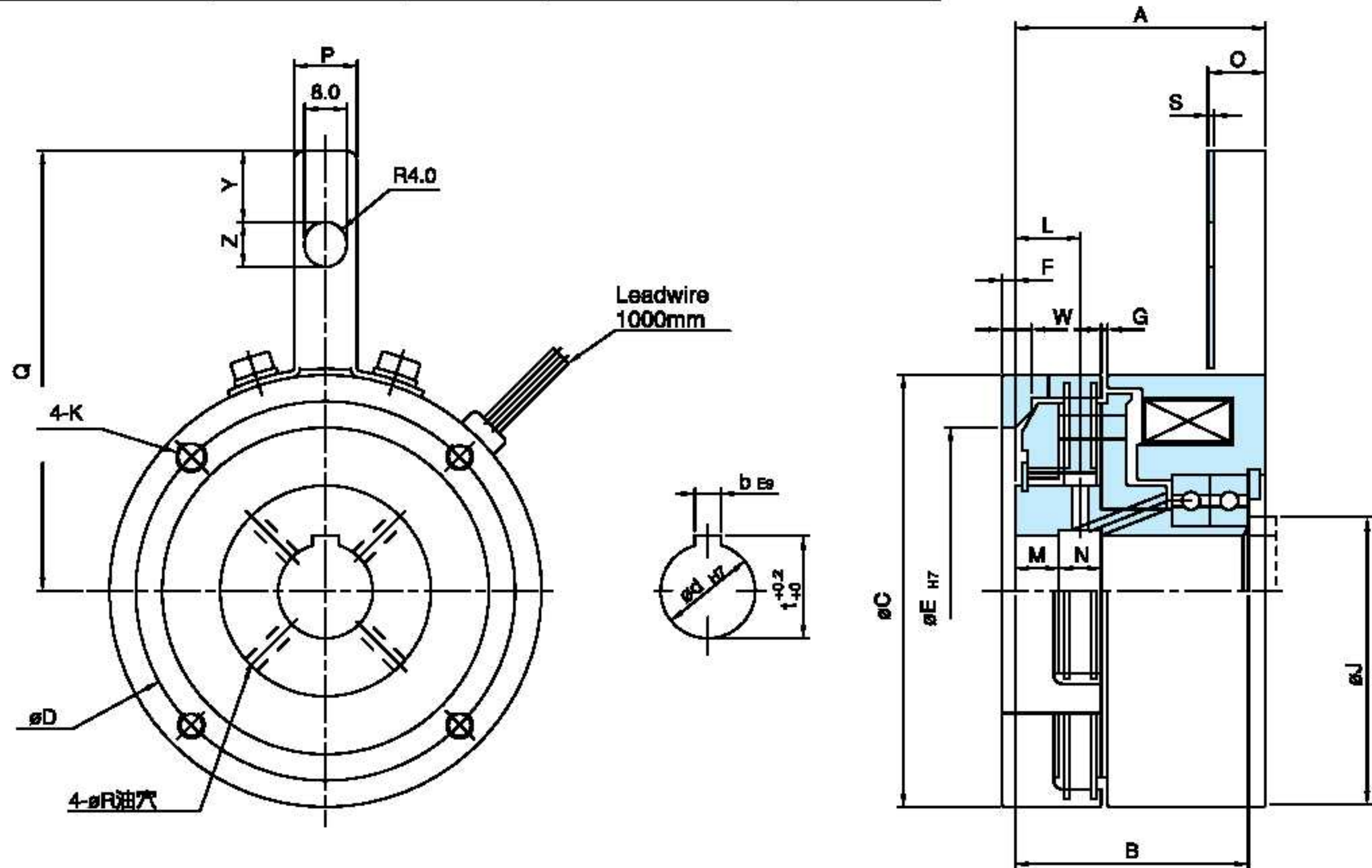
型號 MODEL	MWJ1S2AA07	MWJ2S5AA07	MWJ005AA07	MWJ010AA07	MWJ020AA07	
外型尺寸 Exterior dimensions	A	82	97	114	135	160
	B	68	80	95	115	135
	C	56	65	78	95	115
	D	74	88.5	104	123	146.5
	E	4-M5*0.8P	4-M6*1.0P		6-M6*1.0P	6-M8*1.25P
	L	21.5	23	26	32	38
	M	5.5	6	5.5	7	10
	N	13.8	17	16	25	22
	P	7.5	9.5	9.7	11.5	
	Q	5.5	6	5.5	7	9
重量 Weight (kg)	0.15	0.22	0.35	0.51	1.1	

MWJ Series

濕式多板離合器 Wet Multi-plate Clutch

產品規格表 SPECIFICATIONS:

型號 Model	動摩擦轉距 Dynamic Friction Torque kgm(Nm)	靜摩擦轉距 Static Friction Torque kgm(Nm)	電壓 (DC-V) Voltage	功率 Power	最高轉速 (rpm) Maximum number of turns	重量 (kg) Weight
MWJ0S6AA	0.6(6.0)	1.2(12)	24V	15W	4400	1.0



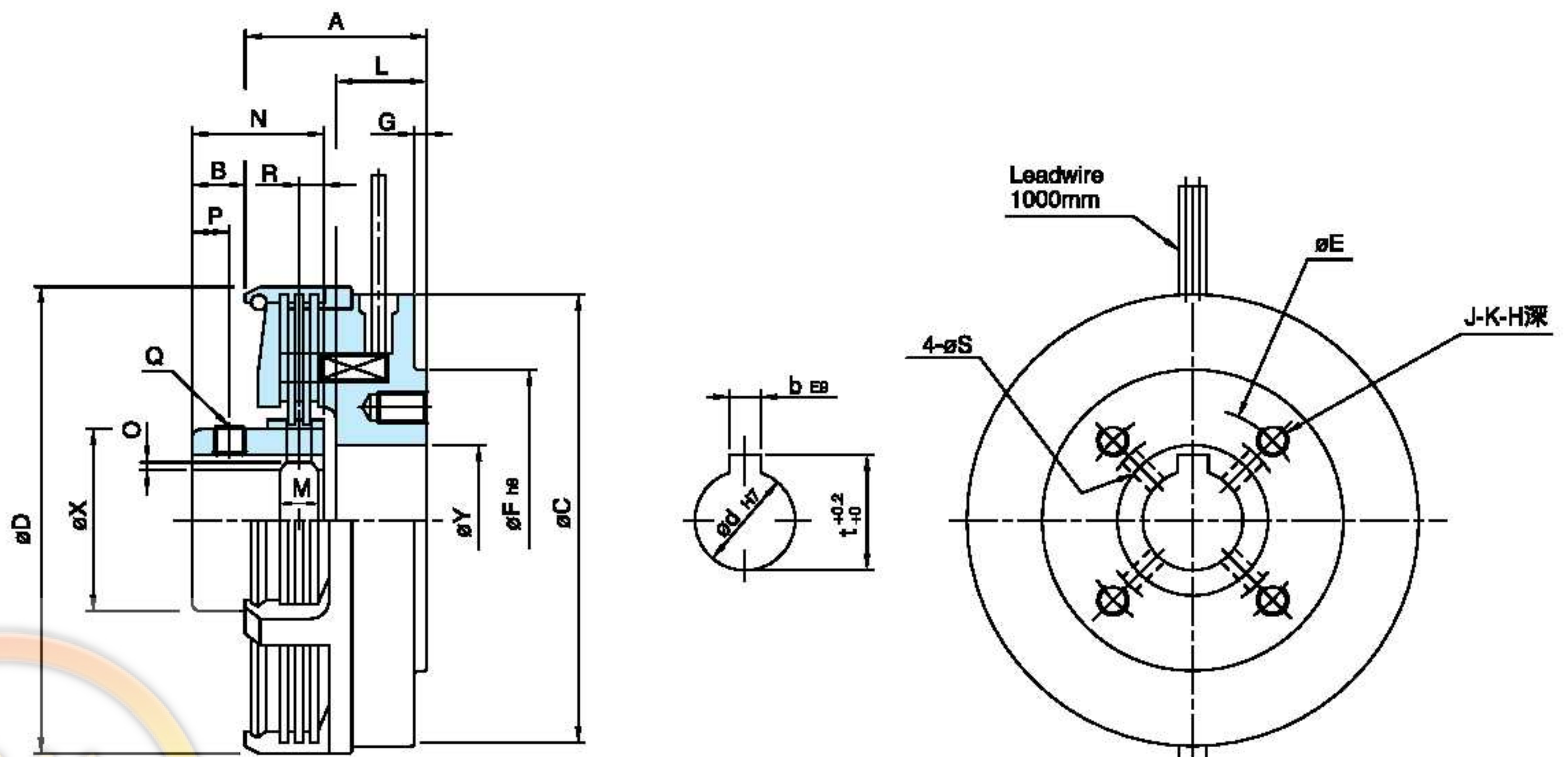
型 式	A	B	C	D	E	F	G	J	K	L	M	N	O	P	Q	R	S	W	Y	Z	d	b	t
MWJ0S6AA	41	37.4	73	63	54	2.5	1.0	24	M4	8.5	3	11	11	12	79	3	1.2	4.5	13.5	8.5	16	5	18

MWI Series

濕式多板煞車器 Wet Multi-plate Brake

產品規格表 SPECIFICATIONS:

型號 Model	動摩擦轉距 Dynamic Friction Torque kgm(Nm)	靜摩擦轉距 Static Friction Torque kgm(Nm)	電壓 (DC-V) Voltage	功率 Power	最高轉速 (rpm) Maximum number of turns	重量 (kg) Weight
MWI0S6AA	0.6(6.0)	1.2(12)	24	7W	4000	0.6



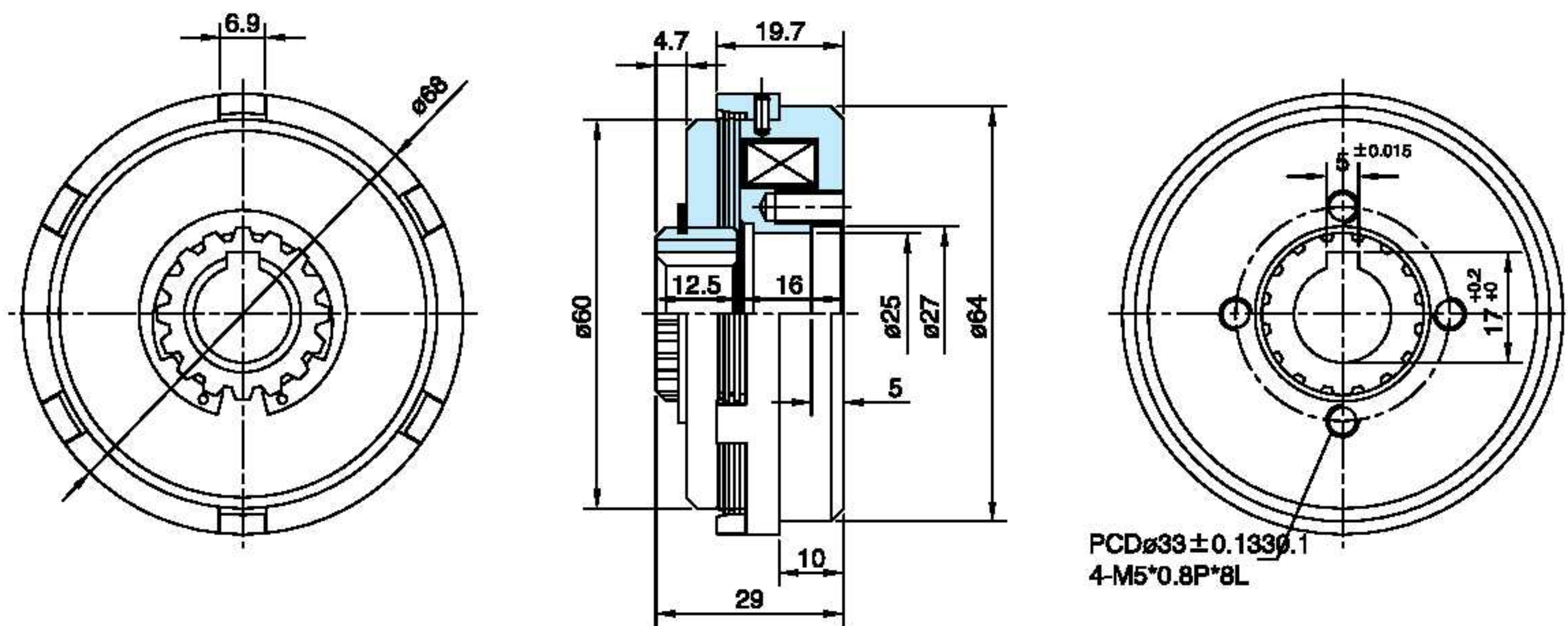
型 式	A	B	C	D	E	F	G	H	J	K	L	M	N	O	P	Q	R	S	X	Y	d	b	t
MWI0S6AA	29	8.5	72	72	36	48	2	8	4	M5	14.5	3	20	0.5	6	M5	3	3	29	24	16	5	18.5

MBO Series

濕式多板煞車器 Wet Multi-plate Brake

產品規格表 SPECIFICATIONS:

型號 Model	電壓 (DC-V) Voltage	功率 Power at 20°C	動摩擦轉距 Dynamic Friction Torque kgm(Nm)	靜摩擦轉距 Static Friction Torque kgm(Nm)	重量 (kg) Weight
MBO0S5AA	12V	7.2W	0.5(5.0)	1.0(10)	0.4



MCO Series

濕式多板離合器 Wet Multi-plate Clutch

產品規格表 SPECIFICATIONS:

型號 Model	電壓 (DC-V) Voltage	功率 Power at 20°C	動摩擦轉距 Dynamic Friction Torque kgm(Nm)	靜摩擦轉距 Static Friction Torque kgm(Nm)	重量 (kg) Weight
MCO0S5AA	12V	7.8W	0.5(5.0)	1.0(10)	0.4

