



TUNG SHIN

扭力保持器

TORQUE HOLDERS

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扭力保持器簡介

統信公司所推出的「扭力保持器」提供素來剎車來令片所無法提供之超長使用年限。重視耐磨耗之設計，採用扭力刻度、輕量化，追求更容易之維護；本公司之「扭力保持器」是不同的剎車器。可活用於各種自動機械或產業機械之剎車機構中。

INTRODUCTION

TUNG SHIN Torque Holders utilize special friction composition to provide much longer service life.

It is a new era of mechanical brake with unique features of compact design, light weight, easy torque indication and maintenance. It is remarkably recommended for brake of automatic machines and industrial machine brake systems.



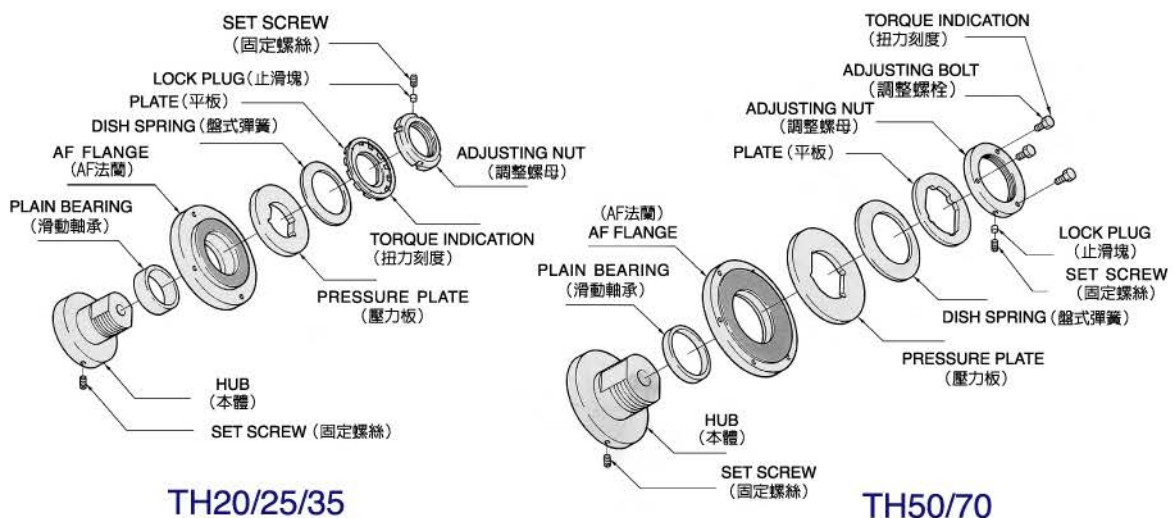
特點

- (01) 壽命長：磨擦片採用最優良之化學纖維，壽命比一般剎車來令片長許多。
- (02) 打滑扭力固定：扭力變動微小，扭力傳達順暢。
- (03) 正確扭力保持：高頻度一再打滑後，仍可以傳達固定扭力。
- (04) 滑動軸承：採用極特殊材質之滑動軸承，耐磨耗性最佳。
- (05) 重量輕：採用鋁製AF法蘭。
- (06) 小巧：比其他剎車機構小巧，節省空間。
- (07) 扭力範圍寬廣：各種尺寸之扭力範圍寬廣可供選擇。
- (08) 扭力設定簡單：一目了然之扭力刻度讓扭力設定非常容易可行。
- (09) 操作容易：構造簡單，可容易操作。
- (10) 免維護：不需要潤滑或冷卻。
- (11) 非石棉：完全不使用石棉。

FEATURES

- (01) Longer service life:
Special friction composition is used to provide much longer service life than anyother type of brake lining.
- (02) Stability of slipping torque:
Torque fluctuation is very limited.Stable torque can be transferred.
- (03) Accuracy of constant torque:
Even during peak status,stable torque is transferred consistently.
- (04) Plain bearing:
Special material is used to ensure longlasting wear.
- (05) Light weight:
AF flange is made of aluminum.
- (06) Compact:
Unique design has resulted in significant space saving than other braking devices.
- (07) Wide torque range:
Each size has very wide torque range.
- (08) Easy torque setting:
Due to torque indication,torque setting is easy.
- (09) Easy operation:
Due to simple construction,operation is easy.
- (10) Maintenance free:
Lubrication oil and cooling are unnecessary.
- (11) Non-Asbestos:
Friction material does not contain asbestos.

構造 (STRUCTURE)



用途 / 適用機械

扭力保持器之用途及適用機械如下：

一. **積聚用**：利用扭力保持器之安定的打滑特性；
可裝置於從動側以供定位及防止鬆動

適用機械：(1) 平板車輸送機
(2) 鍊條輸送機
(3) 滾輪輸送機
(4) 皮帶輸送機

二. **剎車用**：

(一) 防止鬆動：利用扭力保持器之一再打滑之
連結性，可保持從動側扭力之安定。

適用機械：(1) 旋轉盤
(2) 分割器圓盤
(3) 印刷機械－給紙機
油墨滾輪
(4) 反轉裝置－移轉機
電子裝置
(5) 昇降裝置－圓盤昇降機
平板昇降機
排列昇降機
(6) 沖床裝置－滾輪供料機
平衡器
(7) 線材加工機－送料滾輪
平衡器
(8) 紡織機械
(9) 無人台車

(二) 連續打滑：連續驅動機械裝置之剎車。

適用機械：(1) 工作機械－研磨機
(2) 自動包裝機－包裝膜卷出
黏帶卷取
(3) 線材加工機－金屬線卷出
(4) 薄膜機械－張力器
(5) 噴霧機－水管卷取
(6) 事務機－色帶卷取
(7) 絞車－防止線材鬆弛

三. **拖曳用**：依扭力保持器之打滑特性可賦於機械
裝置安定之負荷。

適用機械：(1) 運動用機器－體能訓練機
塑身機械
(2) 專用機－打螺栓機
打螺母機
打活門機
(3) 食品機械－鎖蓋機
(4) 各種負荷試驗裝置

PURPOSES / APPLICATIONS

(A) ACCUMULATING PURPOSE:

For stopping at correct position

MACHINE TYPE: (1) Pallet Cart Conveyor
(2) Chain Conveyor
(3) Roller Conveyor
(4) Belt Conveyor

(B) BRAKING PURPOSE:

(I) SLIP INDEXING/Even though there is repetitive
slip and connect, torque remains stable.

MACHINE TYPE: (1) Turning Table
(2) Indexing Table
(3) Printing Machine:
Paper Feeder
Ink Roll
(4) Direction Changer:
Transfer Machine
Electronic Device
(5) Lift Machine: Tall Lifter
Pallet Lifter
Tray Lifter
(6) Press: Roll Feeder
Leveller
(7) Wire Maker: Feeder Roll
Leveller
(8) Textile Machine
(9) Automatic Cart

(II) CONTINUOUS SLIPPING/

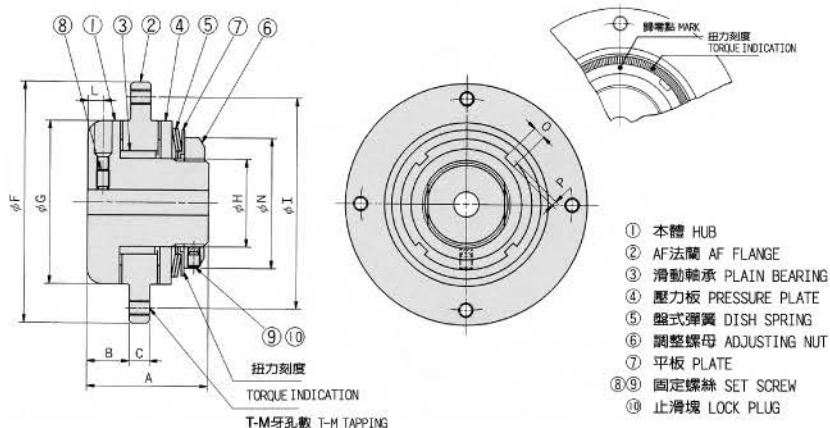
Braking unit for many type of machine

MACHINE TYPE: (1) Machine Tools: Grinder
(2) Packing Machine: Film Feeder
Tape Feeder
(3) Wire Maker: Wire Winder
(4) Film Machine: Tensioner
(5) Water Spray: Hose Winder
(6) Office Machine: Ribbon Winder
(7) Winch: Prevent Wire Slackening

(C) DRAGGING PURPOSE: Torque Holder can apply stable Load to machine

MACHINE TYPE: (1) Exercise Machine
Training Machine
Fitness Machine
(2) Special-Use Machine
Bolt Tightener
Nut Tightener
Valve Tightener
(3) Food Processor: Cap Tightener
(4) Load Testing Equipment

尺寸表—TH20/25/35 DIMENSIONS-TH20/25/35



單位：mm (UNIT:mm)

型 號 MODEL	設定扭力範圍 SETTING TORQUE RANGE(kgf.m)	普通內徑 PILOT BORE	最大孔徑 MAX BORE	尺 寸 (DIMENSIONS)													重量 WT. (kg)	
				A	B	C	F (h7)	G	H	I (PCD)	T-M 牙孔數 TAPPING	L	N	O	P	本體外徑牙距 ADJUSTING NUT DIA×PITCH		固定螺絲 SET SCREW
TH20-1L	0.06~0.12	7	14	40	12.5	7	84	49.5	24	70	4-M6	5	38	5	2.5	M24*1.0	M5 (M5)	0.55
TH20-1	0.18~0.6																	
TH20-2	0.4~1.2																	
TH25-1L	0.18~0.42	10	22	53	16.5	8	96	64.5	35	84	4-M6	6	50	8	3.5	M35*1.5	M5 (M5)	1.0
TH25-1	0.4~1.7																	
TH25-2	0.8~3.3																	
TH35-1L	0.6~1.2	17	25	62	23	8	120	89	42	108	4-M6	7	63	8	3.5	M42*1.5	M6 (M5)	2.0
TH35-1	1.2~4.5																	
TH35-2	2.1~9.1																	

※ 運轉速度 (RPM) : 請參照08頁 ※ For running speed (RPM): please refer to p.08

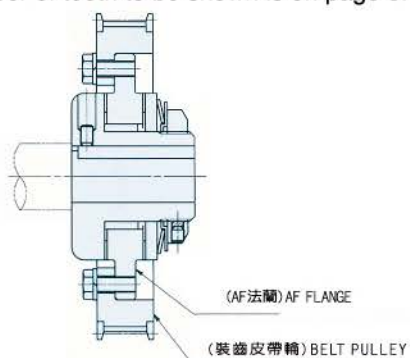
註：(1) 本系列為標準品。(2) 止付螺絲及止滑塊為標準配備。(3) 固定螺絲孔徑欄之()值為⑨之尺寸

(1) All pilot bore type. (2) Set screw and lock plug are supplied with Torque Holder.

(3) The size of set screw in () shows part NO. ⑨

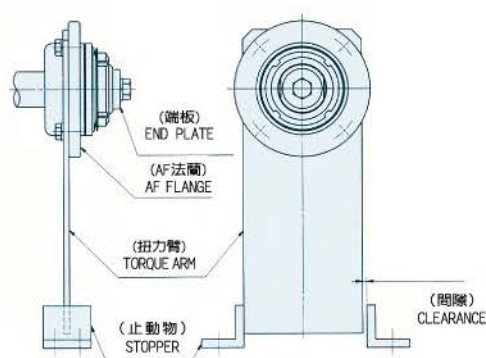
1. 以AF法蘭外徑為引導，將附齒皮帶輪或齒輪，確實以螺栓裝妥。(如下裝配圖) 齒輪之最小齒數如P.5。

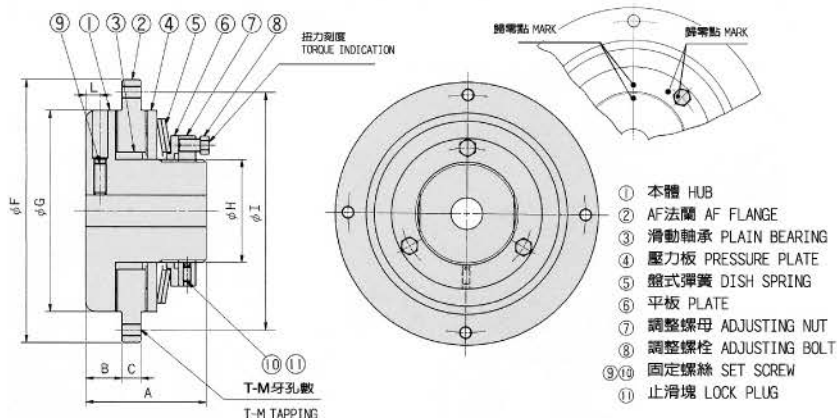
When installing the belt pulley, sprockets etc, the outside diameter part (Dimension F) of the AF flange should be connected with bolts to the inside as shown below. The sprocket minimum number of teeth to be shown is on page 5.



2. 可將AF法蘭以螺栓固定於扭力臂上

When installing the torque arm, connect it to the AF flange with bolts as shown below.





單位 : mm (UNIT:mm)

型 號 MODEL	設定扭力範圍 SETTING TORQUE RANGE(kgf.m)	普通內徑 PILOT BORE	最大孔徑 MAX BORE	尺 寸 (DIMENSIONS)												重量 WT. (kg)
				A	B	C	F (h7)	G	H	I (PCD)	T-M 牙孔數 TAPPING	L	本體外 徑牙距 ADJUSTING NUT DIA×PITCH	本體固 定螺栓 ADJUSTING BOLT DIA×PITCH	固定 螺絲 SET SCREW	
TH50-1L	1.2~3.0	20	42	76	25	12	166	127	65	150	4-M8	9	M65*1.5	M8 *1	M8 (M5)	4.8
TH50-1	2.9~12.8															
TH50-2	5.4~25.7															
TH70-1L	3.0~7.2	30	64	98	28.5	12	216	178	95	200	6-M8	10	M95*1.5	M10*1.25	M10 (M5)	12.2
TH70-1	7.1~34.8															
TH70-2	13.7~66.3															

※ 運轉速度 (RPM) : 請參照08頁 ※ For running speed (RPM): please refer to p.08

註 : (1) 本系列為標準品。(2) 止付螺絲及止滑塊為標準配備。(3) 固定螺絲孔徑欄之 () 值為⑩之尺寸

(1) All pilot bore type. (2) Set screw and lock plug are supplied with Torque Holder.

(3) The size of set screw in () shows part NO. ⑩

SPROCKET MINIMUM NUMBER OF TEETH (OPTION)

齒輪之最少齒數 (另購品)

註 : 1. 本公司推介使用無給油鍊條。

2. △記為A型非標準齒輪, 使用標準庫存齒輪時, 請用 () 內之齒數。

型號 MODEL	使用齒輪數 SPROCKET						
	RS35	RS40	RS50	RS60	RS80	RS100	RS120
TH20	32	25					
TH25	35	28	23	20	16		
TH35		△33 (34)	28	24	19	16	14
TH50		45	△37 (38)	△31 (32)	24	20	18
TH70			△47 (48)	△39 (40)	△31 (32)	25	22

1. The roller chain which does not require lubricating oil is recommended.

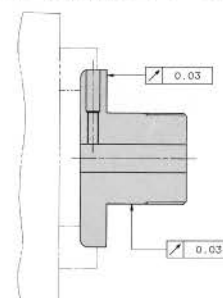
2. "△" denotes non-standard A-type sprocket. Please use the sprocket in ()

BORE MACHINING

軸心加工

※ 本體加工時請依下列圖示

※ 不當加工會產生磨擦面之不平而無法產生安定之打滑扭力, 請注意



※ When bore machining, please follow instruction as shown above.

※ If the centering is not right, unusual slipping may occur. So, care should be taken. Otherwise stable slipping torque can not be achieved



選定 SELECTION

1. 參考用途、打滑扭力、軸徑及運轉速度等，來選擇符合「設定扭力範圍」內之適當型號。

In consideration of application, slipping torque, bore size, and rpm, etc., then select model for which slipping torque falls within the setting torque range.

使用目的 Application	使用條件 Conditions	決定尺寸 Size
積聚用 Accumulating	各種輸送機之扭力保持器該決定條件 Determine the following for the Torque Holder of each conveyor. 1. 打滑扭力 Slip torque 2. 打滑轉速 Slip rpm 3. 打滑時間（輸送機停止時間） Slip time(conveyor stop time) 4. 連結時間（輸送機運轉時間） Connection time(conveyor drive time) 5. 每天運作時數 Operating time per day	※打滑扭力及打滑轉速在T-N曲線圖之曲線以下之容許範圍內來選定正確之尺寸 Determine a size for which the slip torque and slip rpm is within the permissible range(below the curve)on the T-N curve graph. ※打滑時間比連結時間長時，且每天運作超過8小時，則以T-N曲線圖■框內之運用為準。 When the slip time is longer than the connection time, and the time used per day exceeds eight hours, we recommend that it be operated within ■ area of the T-N curve graph.
剎車用 Braking	各種機械裝置之扭力保持器該決定條件 Determine the following for the Torque Holder of each machine. 1. 剎車扭力 Brake torque 2. 打滑轉速 Slip rpm 3. 打滑時間（剎車運作時間） Slip time(brake operating time) 4. 連結時間（剎車不運作時間） Connection time(time when brake not operated) 5. 每天運作時間 Operating time per day 連續打滑時3、4項不用 Note: Items 3 and 4 are unnecessary when there is continuous slipping.	※剎車扭力及轉速在T-N曲線圖之曲線以下之容許範圍內來選定正確之尺寸 Determine a size for which the brake torque and rpm is within the permissible range(below the curve)on the T-N curve graph. ※打滑時間比連結時間長時，且每天運作超過8小時，則以T-N曲線圖■框內之運用為準。 When the slip time is longer than the connection time, and the operation time per day exceeds eight hours, we recommend that it be operated within ■ area of the T-N curve graph.
拖曳用 Dragging	各種機械裝置之扭力保持器該決定條件 Determine the following for the Torque Holder of each machine. 1. 打滑扭力 Slip torque 2. 打滑轉速 Slip rpm 3. 打滑時間 Slip time 4. 連結時間 Connection time 5. 每天運作時數 Operating time per day	※打滑扭力及打滑轉速在T-N曲線圖之曲線以下之容許範圍內來選定正確之尺寸 Determine a size for which the slip torque and slip rpm is within the permissible range(below the curve)on the T-N curve graph. ※打滑時間比連結時間長時，且每天運作超過8小時，則以T-N曲線圖■框內之運用為準。 When the slip time is longer than the connection time, and the operating time per day exceeds eight hours, we recommend that it be operated within ■ area of the T-N curve graph.

2. 選定之扭力保持器之軸徑要滿足裝配之軸徑要求。

The bore of the chosen Torque Holder must satisfy the shaft diameter to be installed.

3. 打滑扭力之設定：

扭力保持器每型號以設定扭力最大值之50%為準（參見P.4及P.5）。扭力之曲線資料於出貨時附上。此50%扭力為“零點”（即設定打滑扭力之基準點）。詳細情況參見P.9（裝置/操作2）

Setting the slip torque:

Each Torque Holder is set at a value that is 50% of the maximum set torque range (see P.4 and P.5). The torque curve will be included with the unit when it is delivered. This 50% torque is called the "zero point" and it is the basis for setting the slip torque. For details, see the section of "Handling 2" on P.9.

選定時應注意 Caution For Selection

1. 磨擦面若有水或油漬時扭力會減低，無法取得安定之打滑扭力。

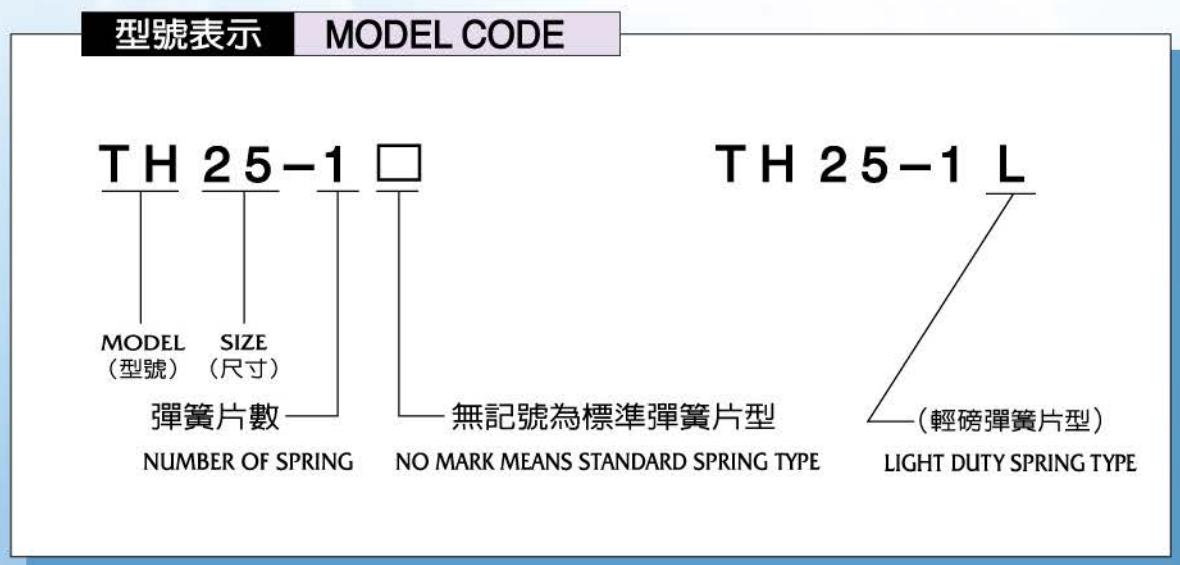
Do not allow water or oil to get onto the friction surface. This will cause the torque to drop and unstable slip torque will result.

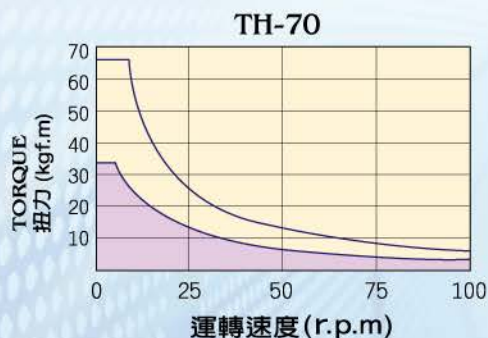
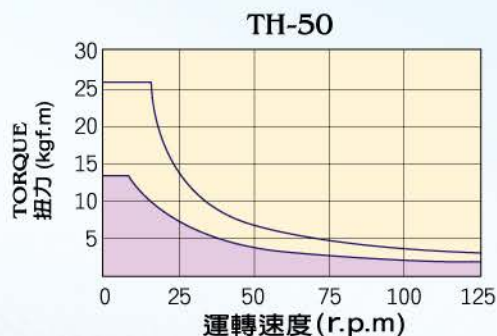
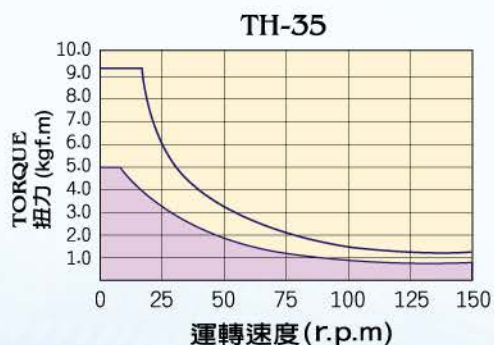
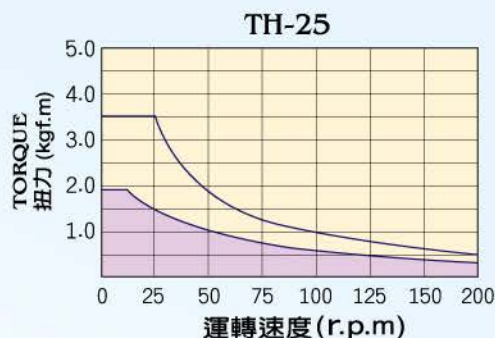
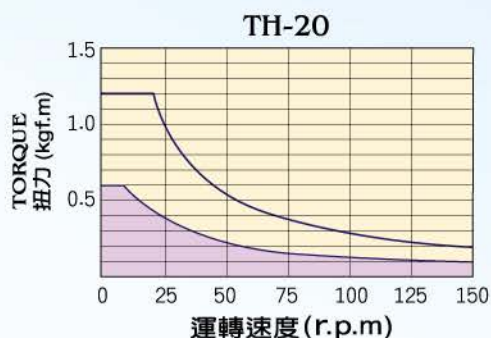
2. T-N曲線圖適用於周溫40°C以下，超過此溫度之使用時，請連絡本公司。

The T-N curve graph is intended for use within 40°C ambient temperature. Please contact us, when the ambient temperature is higher than this.

3. 使用軸徑之打滑扭力小於扭力保持器之扭力設定範圍時，請連絡本公司。

Please contact us when the slip torque for the shaft diameter to be used is smaller than the setting torque range of the Torque Holder.



**T-N 曲線圖****T-N CURVE GRAPHS**

註：(1) T-N 曲線圖是以扭力保持器之容許溫度為基準。

(2) 若於連續或間歇用途時需要比較安定之打滑扭力，本公司推介上圖  框內之運用為宜。

Note: (1) T-N Curve graph is based on the permissible temperature of the Torque Holder.

(2) If a stable slipping torque for continuous or intermittent application is required, then operation within  area is recommended.

裝置 / 操作 1

1. 扭力保持器全部以標準孔徑出貨。本體之加工要全部分解後進行 (請參見 P.5)
2. 二個以上之扭力保持器分解加工時，零件請勿互換。一定要原來扭力保持器之零件才可組合以產生和原扭力保持器一致之打滑扭力。
3. 配掛齒型皮帶或鍊條時，不可太緊。超過必要之張力將無法取得安定之打滑扭力。

HANDLING 1

1. All Torque Holders are supplied with pilot bore. For bore machining, please refer to P.5
2. Be careful not to mix up when bore machining 2 or more Torque Holders. Be sure to use the original parts when assembling. Otherwise, slip torque will not be able to secure.
3. Do not use overtensioned belt or roller chain. Otherwise, stable slip torque can not be obtained.

裝置/操作 2

打滑扭力之設定

TH20/25/35

- (1) 所需之打滑扭力為零點以上時，依出貨所附扭力曲線圖將調整螺母調緊到所需之角度。
- (2) 所需之打滑扭力為零點以下時，依出貨所附扭力曲線圖將調整螺母調鬆到所需之角度以下後，再調緊回到所需之角度。

※例：負30度之打滑扭力之設定 (由零點開始)

1. 由零點開始將調整螺母調鬆至負60度
2. 再由負60度調緊回到負30度

TH50/70

- (1) 所需之打滑扭力為零點以上時，依出貨所附扭力曲線圖將 3 個調整螺栓調緊到所需之角度。
- (2) 所需之打滑扭力為零點以下時依出貨所附扭力曲線圖將3個調整螺栓調鬆到所需角度以下後，再調緊回到所需之角度。

※例：同TH20/25/35 (2) 之例。

注意：

首次設定扭力保持器或改變打滑扭力設定值時，為了求得安定的打滑扭力，於正式運轉前，最好空載試行運轉2-3分鐘。

試行運轉之要領如下：

- (1) 零點以下之打滑扭力使用時
 1. 以零點之扭力試行空載運轉2-3分鐘。
 2. 依上述要領，設定打滑扭力再正式運轉。
- (2) 零點以上之打滑扭力使用時
 1. 依上述要領設定打滑扭力
 2. 試行空載運轉2-3分鐘
 3. 將調整螺母或調整螺栓回復到零點。
 4. 再次設定打滑扭力後，才正式運轉。

HANDLING 2

SETTING THE SLIP TORQUE

TH20/25/35

- (1) When the required slip torque is over the zero point, tighten the adjusting nut to the angle required in accordance with attached torque curve.
- (2) When the required slip torque is below the zero point, loosen the adjusting nut beyond the point required and then tighten it to the desired angle in accordance with the attached torque curve

Example: Set to a slip torque -30° from the zero point.

- (1) loosen the adjusting nut to -60° from the zero point.
- (2) Tighten the adjusting nut from -60° to -30°

TH50/70

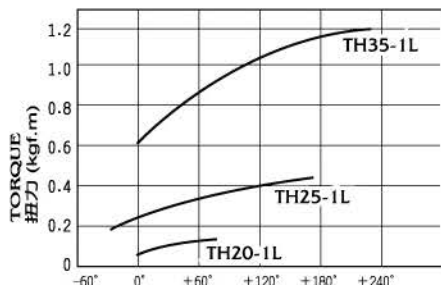
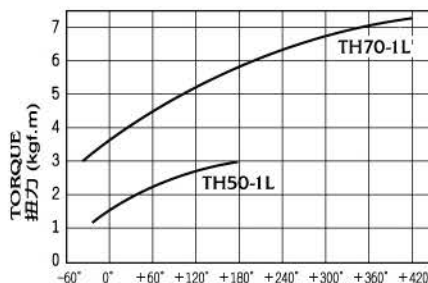
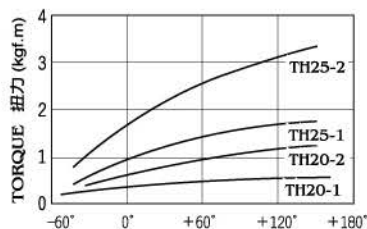
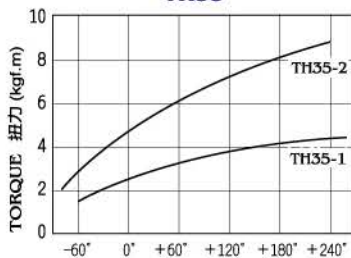
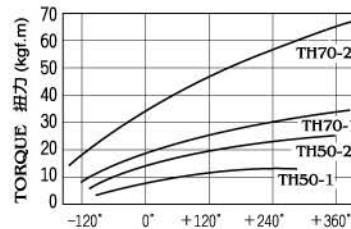
- (1) When the required slip torque is over the zero point, tighten the three adjusting bolts to the angle required in accordance with the attached torque curve.
- (2) When the required slip torque is below the zero point, loosen the three adjusting bolts beyond the point required and then tighten them to the desired angle in accordance with the attached torque curve.

Example: Same as TH20/25/35 (2) example

Caution:

When initially setting the Torque Holder or when changing the setting during operation, we recommend to run the machine for two to three minutes without load before normal operation. This will allow you to obtain a more stable slip torque. Procedure will be as under:

- (1) When the slip torque is below the zero point
 1. Run the machine at zero point torque for two to three minutes without load.
 2. Set the slip torque as explained above and then enter normal operation.
- (2) When the slip torque is above the zero point
 1. Set the slip torque as explained above.
 2. Run the machine for two to three minutes without load.
 3. Return the adjusting nut or bolts to the zero point.
 4. Set the slip torque again and then begin normal operation.

**扭力曲線〔輕量彈簧型〕 TORQUE CURVE (LIGHT DUTY SPRING TYPE)****TH20-1L/TH25-1L/TH35-1L**調整螺母之調整角度
ADJUSTING NUT ANGLE**TH50-1L/TH70-1L**調整螺栓之調整角度
ADJUSTING BOLT ANGLE**扭力曲線〔標準彈簧型〕 TORQUE CURVE (STANDARD SPRING TYPE)****TH20 / TH25**調整螺母之調整角度
ADJUSTING NUT ANGLE**TH35**調整螺母之調整角度
ADJUSTING NUT ANGLE**TH50 / TH70**調整螺栓之調整角度
ADJUSTING BOLT ANGLE**零點再設定之方法 RESETTING THE ZERO POINT**

心軸加工再組立後之零點之設定要點

After bore machining and re-assembling, set the "Zero point" as mentioned below.

(TH20 / 25 / 35)

- (1) 依正確順序組合。(注意不要倒轉180°)
Assemble every part in good order.
(Do not allow it to be positioned 180° in the opposite direction.)
- (2) 用手或板手將調整螺母上之歸零點調緊到扭力刻度0之位置為止。
Hand-tighten the adjusting nut and then use a hook spanner to further tighten it until its mark reaches the 0 position on the torque indication.

(TH50 / 70)

- (1) 將調整螺母調緊使其歸零點對上本體上之歸零點。
Tighten the adjusting nut and align its mark with the mark on the hub.
- (2) 用手或板手將調整螺栓調緊到歸零點與其緊鄰之調整螺母上之歸零點重合為止。
Hand-tighten the bolts and then use a wrench to further tighten them until its marks align with the marks on adjusting nuts.

註：(REMARKS)

- (1) 扭力曲線之刻度0°(即零點)為最大扭力值之50%為準。
The "Zero point" (i.e. 0°) on the torque curve indicates 50% of the maximum torque.
- (2) 以上各扭力曲線為範例。實際使用時要以實物所附之扭力曲線為準。
Above torque curve is a typical example. For actual use, please refer to the torque curve that comes with your Torque Holder.



TUNG SHIN

® 扭力保持器

產品系列 PRODUCT LINES



■ TH系列—扭力保持器 TH SERIES—TORQUE HOLDERS



■ TL系列—摩擦式扭力限制器
TL SERIES—FRICTION DISC TORQUE LIMITERS



■ TL (AF/AC) 系列—精密型扭力限制器
TL (AF/AC) SERIES—ONE (SINGLE) POSITION ENGAGEMENT
BALL DETENT TORQUE LIMITERS