BMT 刀盤精度調整 BMT tool disc precision adjustment

調整前請先移除刀盤上之刀座以策安全，刀塔油壓 50kg 並有 S8 夾緊訊號

在一號刀原點記號調整刀盤精度，調整完後需確認齒輪頭精度。

Please remove all tool holders for safety reason before adjusting the tool disc.

Confirm the hydraulic pressure is 50kg, and S8 clamping signal is normal.

Adjust the tool disc when turret is at T1 origin station aligning with the mark line.

Confirm the gearhead precision after adjustment.

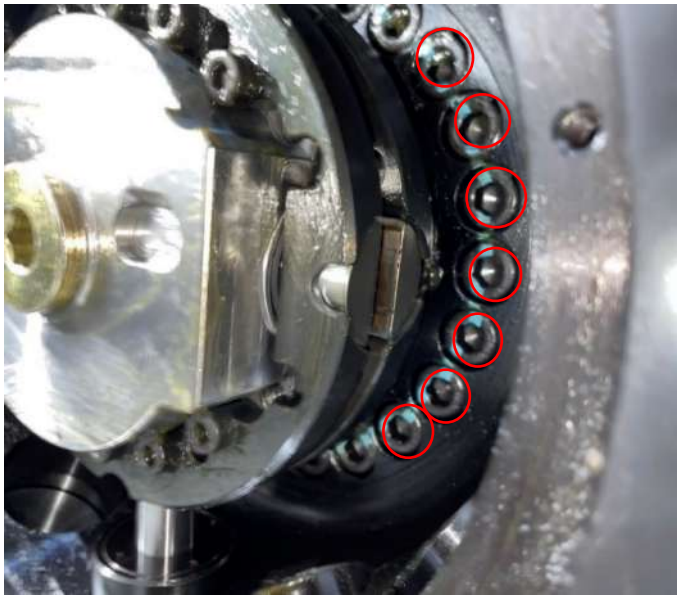
步驟 1. 放鬆刀盤螺絲調整刀盤精度。因刀塔和齒輪頭型式不同，外型會有些許差異，調整情況依下方而定(a,b,c)。

Step1. Loosen tool disc screws to adjust tool disc precision. Due to different types of turrets might have different gearheads, hence, the appearances will be different.

Please follow either a, b, or c basing on the actual situations :

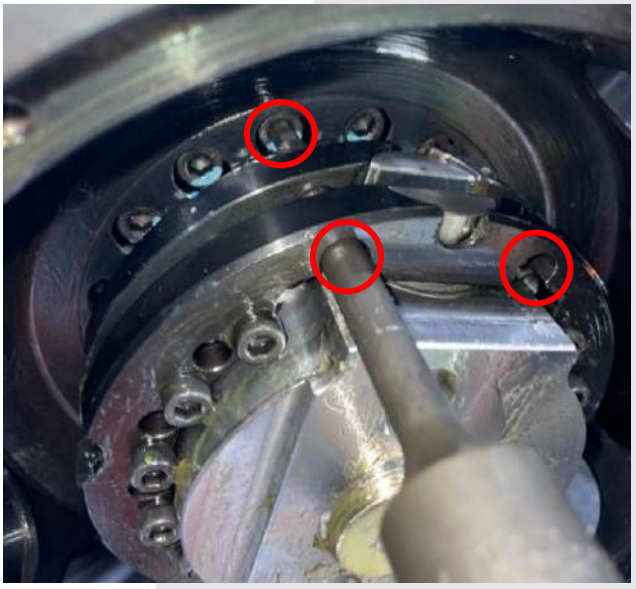
a. 如能直接看到刀盤螺絲沒被齒輪頭擋住，即可直接放鬆螺絲調整刀盤精度。

a. If you can see directly the screws that are not blocked by the gearhead, then you may loosen the screws to do tool disc precision adjustment.



b. 如齒輪頭隔環上有通孔，參照下述步驟 c-2, 鬆開齒輪頭固定螺絲後,可邊轉動齒輪頭,找到對應的刀盤螺絲, 再利用套筒放鬆。

b. If there is a through hole on the gearhead ring, refer to below step c-2 to loosen gearhead fixing screws in order to rotate the gearhead to find other screws. Afterwards you may loosen these screws with a sleeve.



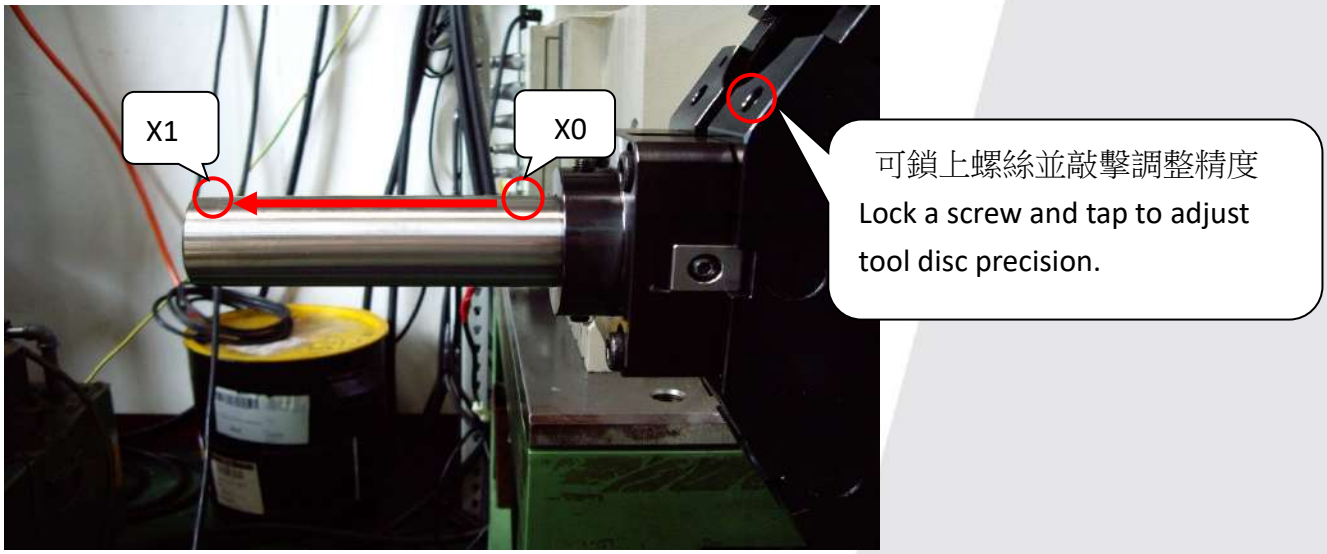
步驟 2. 刀盤精度調整

Step2. Tool disc precision adjustment

刀盤調整方式，在工作刀位上放入測試棒後，去尋找測試棒的最高點後歸零。

在刀盤上鎖螺絲並敲擊調整精度，再移動 x 軸去量刀盤的水平標準在 0.01mm 內，最後刀盤螺絲請依規格上足扭力。

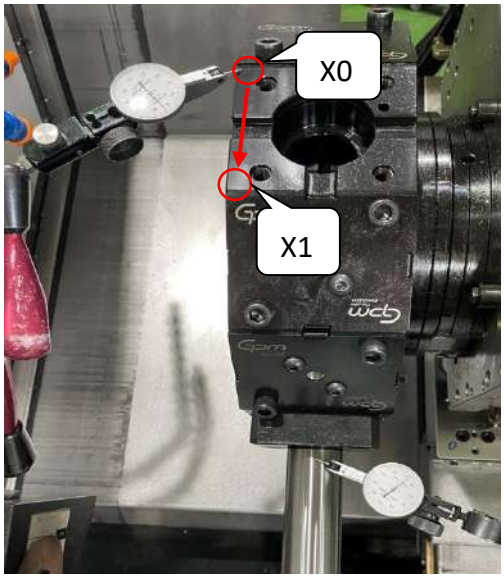
Place a testing mandrel on the working station, and to measure the highest point of the test mandrel, and then set to zero. Fasten a screw on the tool disc and tap it with a plastic hammer to adjust tool disc precision. Measure X axis (see below pic) to ensure precision is within 0.01mm. Fasten all tool disc screws by torque basing on required standard.



若無測試棒，可利用刀盤上方與刀塔本體平行的平面調整。

If no testing mandrel is available, it is also okay to adjust the tool disc precision by using the parallelism of the tool disc top and turret housing

for precision adjustment.



螺絲 screw	M8	M10	M12
扭力 torque	39Nm	77Nm	135Nm
數量 quantity	15	21	19

c. 如無任何位置可穿過齒輪頭拆卸刀盤螺絲，必須移除動力馬達、聯軸器及齒輪頭並照以下步驟。

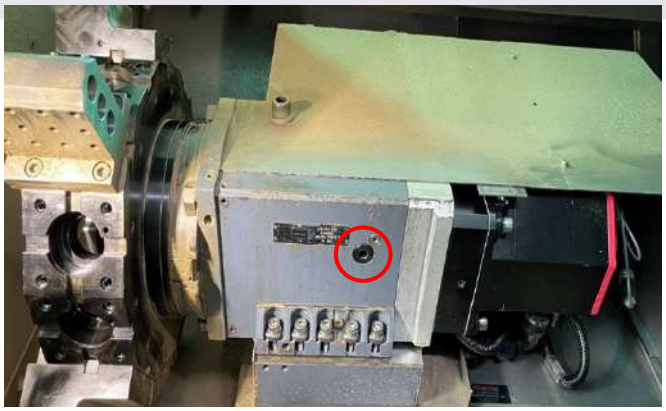
c. If there is no place to remove the tool disc screws through the gearhead, then please follow steps to remove the tool drive motor, coupling and gearhead.

c-1. 將齒輪頭動力馬達卸除，接著將刀塔端聯軸器卸除

c-1. Remove tool drive motor, and then remove coupling at turret side.

c-2.拆卸本體側邊塞頭及放鬆齒輪頭固定座螺絲

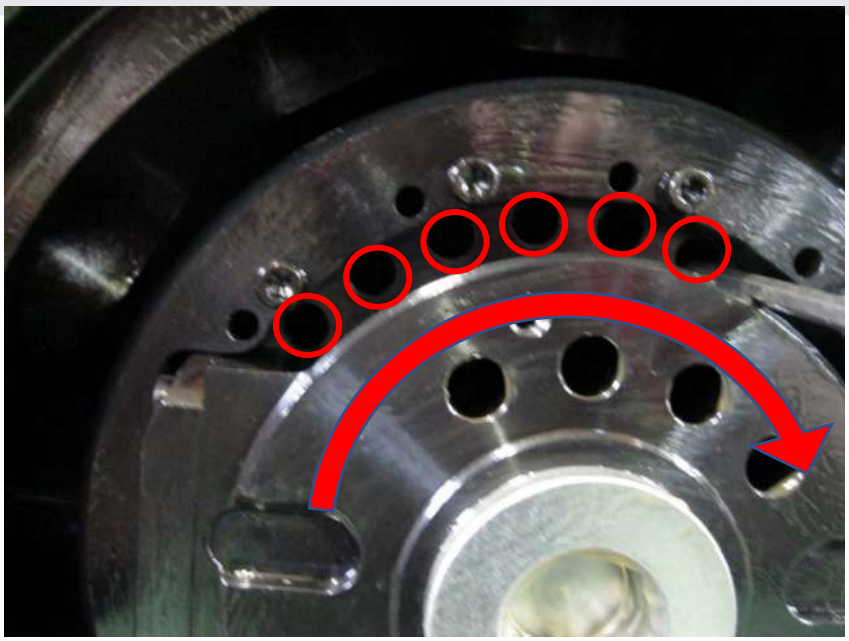
c-2. Remove plug head on turret side and loosen the screws of gearhead fixing seat.



螺絲 screw	M6	M10
扭力 torque	16Nm	77Nm

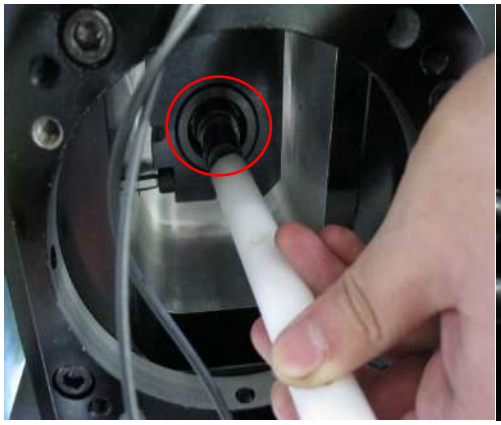
c-3. 依齒輪頭型式有分 M4/M5/M6 的固定螺絲將其拆卸, 若螺絲不足 16/10 根，請旋轉齒輪頭去找螺絲.

c-3. Depending on gearhead types, there are M4/M5/M6 fixing screws. Find all the screws and remove them. If there are less than 16/10 screws, please rotate the gearhead to find the other screws.



c-4.將固定螺絲根螺絲拆卸完後即可將齒輪頭敲出，用一根塑膠棒頂住心軸後方用槌子敲出，因齒輪頭有點重量，故前方需有人接住，以免造成撞傷或難以敲擊.

c-4.After removing all screws, the gearhead may be knocked out. Use a plastic rod to hold the back of the shaft and tap it with a plastic hammer. The shaft is a little heavy, hence, it is important to have someone in the front to catch it and to avoid any injury.



敲出齒輪頭前，一定要確認齒輪頭後端固定座螺絲需放鬆,及前方固定刀盤上的螺絲已全部移除.

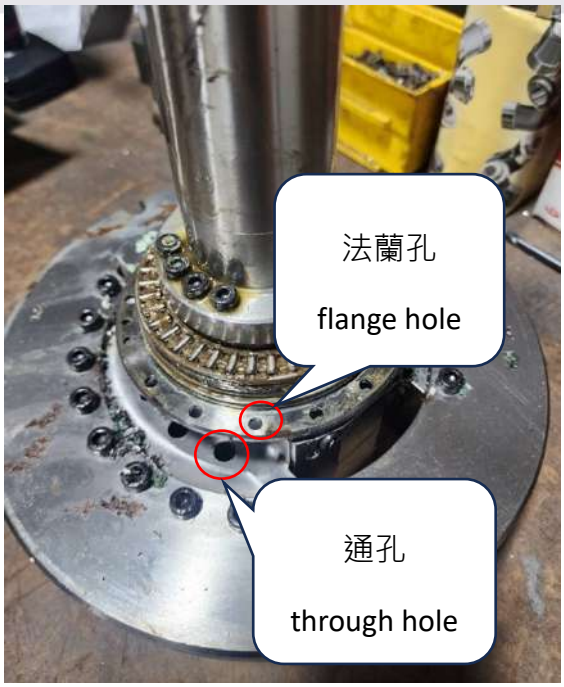
Before knocking out the gearhead, it is important to make sure the fixing screws on gearhead rear side are loosened, and all the screws on the tool disc front are all removed.

c-5.齒輪頭拆除後，即可將刀盤螺絲放鬆至步驟 2.調整刀盤精度

c-5. After gearhead is removed, you can loosen the too disc screws and follow step 2. to do tool disc precision adjustment.

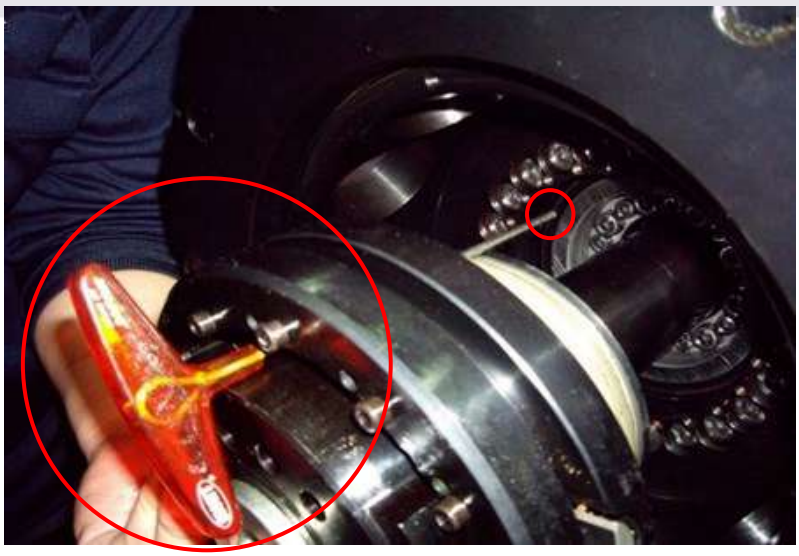
c-6. 齒輪頭安裝前，注意齒輪頭通孔與法蘭孔必須對齊，如偏移可移動法蘭使其對齊.

c-6. Before installing the gearhead, pay attention to the alignment of the through hole of the gearhead and the flange hole. If there is any deviation, you may move the flange to make the alignment.



c-7.回裝齒輪頭時，請用一支 T 型板手穿入齒輪頭固定螺絲孔去跟刀盤的齒輪頭固定螺絲孔做定位，需注意耦合齒是否跟加工刀位同心。(T 型板手功用在於對固定螺絲定位用，若有偏掉時又硬敲會造成 T 型板手斷裂，請注意)

c-7.When reinstall the gearhead, use a T-shaped wrench to penetrate the fixing screw hole on gearhead and tool disc. Be aware that the coupling pinion must be concentric with the working position. (Please note the function of the T-shaped wrench is to position the fixing screw. If knock it too hard, the T-shaped wrench will break.)

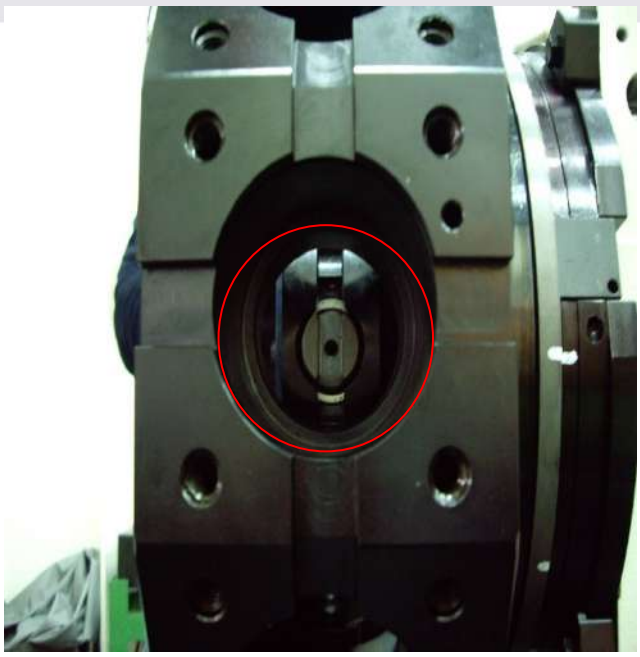


用 T 型板手去做齒輪頭固定螺絲的定位動作

Use a T-shaped wrench to position the gearhead fixing screw.

c-8 齒輪頭裝回後，先確認耦合齒與工作刀位大約同心

c-8. After the gearhead is reinstalled, confirm the coupling pinion and working position are concentric.



鎖回齒輪頭固定螺絲，注意請在一號刀上鎖回，避免日後維修需再換刀找固定螺絲.

Fasten all gearhead fixing screw back on T1 station.

螺絲 screw	M4	M5	M6
扭力 torque	X	6Nm	10Nm
數量 quantity	16	16	10