氣動工具安全使用說明

空氣供給及連接的危險

- 在壓力下的空氣會導致嚴重危險。
- 當不使用氣動工具時，更換配件或進行維修時，請關掉空氣源並將氣動工具和空氣源的接頭拔掉。
- 在連接空氣源到氣動工具前， 請確定氣動工具開關在"OFF"(關)的位置。
- 不要將風管出風口直接對著自己或任何人。
- 管子的纏繞會導致嚴重的危險，請隨時檢查並將風管放鬆，放置在適當的位置。
- 在氣動工具上不要直接將快速接頭安裝於工具上，請參閱安裝的說明。
- 當使用普通的旋轉式接頭時，固定插銷一定要插上。
- 空氣壓力最大不要超過 90 psi (6.2 bar) 或在氣動工具銘牌上所標示的壓力。

拋射物的危險

- 當接近操作區，維修氣動工具或更換氣動工具的配件時，請隨時戴上可抵抗衝擊的眼罩及面具(臉部保護裝備)。
- 請確定所有在這區域內的人都已戴上眼罩及面具(臉部保護裝備)。
- 即使是小的拋射物，亦會傷害眼睛並可能導致失明。
- 砂輪或其他配件的破裂會導致非常嚴重的傷害。
- 請每日測量氣動砂輪機的轉速，確定所測量出來的轉速不會比其使用配件(砂輪片/切割片)所允許的轉速還高。
- 不要使用標示速度比氣動工具(氣動砂輪機)速度還低的砂輪配件。

糾纏的危險

- 請和旋轉中的轉軸及配件保持距離。
- 請不要戴首飾及穿寬鬆的衣服。
- 在操作中，若頭髮和氣動工具及配件沒有保持距離，可能頭皮會被剝掉。
- 在操作中，若圍頸物(圍巾、領帶等)和氣動工具及配件沒有保持距離，可能脖子會被勒住。

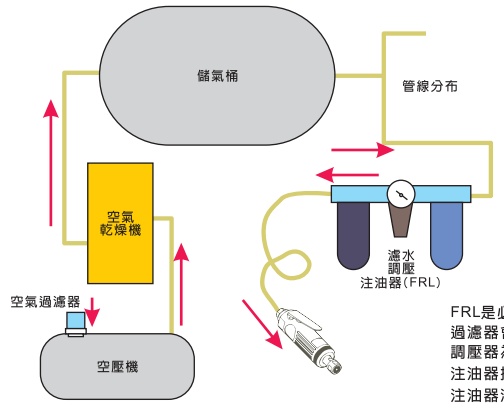
操作的危險

- 請勿直接接觸轉動中的轉軸及配件，避免手或身體的其它部份被切割到。 請戴上手套來保護手。
- 不要將在把手扳機上安全裝置(Safety Lock)的功能取消掉。
- 氣動工具及其配件禁止使用者自行修改。
- 若使用者使用和原始零件不同的零件，則製造商的責任將自行消滅。
- 對於氣動工具的重量及操作中所產生的力量，操作者或維修者必需有能夠穩定握住氣動工具的力量。

工作環境的危險

- 滑倒/絆倒/跌倒是導致嚴重傷害或死亡的主要原因。請注意不要將過長的風管留在走道或工作區域。
- 高音量(噪音)能導致聽覺傷害，請使用者依各地區的規定戴上合乎標準的耳罩。
- 關於振動對人體所造成的危險，請使用者遵守各地區的勞工安全規定來使用。
- 操作中請保持身體在平衡的位置及安全的立足點。
- 重覆的工作動作，不便的位置及曝露在振動環境中，會對手臂造成傷害。
- 若手臂麻木，刺痛感或白皮膚發生，停止使用工具並且請教醫生。
- 請避免在工作中吸入灰塵或拋射物(工作時所產生)而對你的健康造成傷害。
- 本氣動工具不是被設計來在爆炸環境中使用，且不對電力絕緣，無法於水中使用。

壓縮空氣系統配置



FRL是必要的，以確保供應氣動工具乾淨、潤滑及正確壓力的壓縮空氣。
過濾器會去除空氣濕氣，防止水氣進入氣動馬達造成生鏽。
調壓器為控制空氣壓力的工具。
注油器提供一個幾乎恆定油/氣比的空氣，用以潤滑氣動馬達。
注油器滴油率：每分鐘一滴 / 每20 SCFM (566 LPM)

影響壓縮空氣的因素

- 風管太長或或風管內徑不足會影響壓縮空氣流動。
- 如果您使用的是氣動工具的軟管超過7.6公尺長，最好是加大風管管徑到下一個較大的尺寸，即增加風管的內徑，如1/4” 增加到3/8” ，這將確保能提供足夠壓力和流量的空氣給氣動工具使用。
- 於氣動工具工作端前需使用濾水器、調壓器及注油器。
- 同時使用壓縮空氣的氣動工具及相關配件設備總數。
- 防止任何造成風管空氣流動堵塞的情況，隨時保持順暢的空氣流通。
- 去除或減少壓縮空氣的水氣凝結情況。
- 需注意定時洩水，降低管線內的空氣濕度。
- 定期檢查所有的空氣管道、接頭、洩水閥、洩壓閥及風管等是否有空氣洩漏情況

壓縮空氣系統的預防性維護

- 壓縮空氣系統中存在的水會提高空氣濕度而嚴重腐蝕氣動工具，應該每天定時洩水(包括空壓機、乾燥機、儲氣桶、空氣管線及濾水器)，以避免過多的水氣存在管線中。污穢潮濕的空氣會迅速縮短氣動工具的壽命。
- 供應90 psi (6.2 bar)的乾燥空氣給氣動工具。過高的壓力，會大大的降低氣動工具壽命。
- 不要直接安裝快速接頭到氣動工具本體上。
- 防止污染物進入氣動工具馬達。
- 在每天使用氣動工具前，從工具進氣口，倒入約20毫升合適的馬達潤滑油，運行幾秒鐘的工具，使得潤滑油充份的潤滑氣缸。這將確保氣動工具保持在最佳性能並延長其耐用性。
- 安裝注油器於連接氣動工具風管前，用以潤滑氣動工具；注油器需添加輕質油(SEA#10)，調整為每分鐘2~3滴。
- 如果無法安裝注油器於管線上，則於氣動工具使用前和使用後，直接將潤滑油加入氣動工具進氣口。需要潤滑的零件包括氣缸、齒輪、軸承及會移動的零件。
  如果每天使用氣動工具，請每3個月拆卸並檢查氣動馬達等相關裝配，更換損壞或磨損零件並於齒輪處加上黃油。
- 使用原廠家提供的工具，零部件和配件。
- 不要改變或修改所使用氣動工具的原設計或功能。

HER-CHEN GROUP CO.
www.hcg-tools.com.tw

hcg-tools.com.tw

2015.07
Edition 2

AIR TOOLS SAFETY INSTRUCTMENT

Air supply and Connection Hazards

- Air under pressure can cause severe injury.
- Disconnect air tool from air supplier before assembling or replacing.
- Be sure that switch is at "OFF" position before air tools connect with air supply system.
- Always SHUT OFF air supply, drain hose of air pressure and disconnect air tools from air supply when not in use, before changing accessories or when making repairs.
- Never direct air at yourself or anyone else.
- Whipping hoses can cause serious injury, Always check for damaged or loose hoses and fittings.
- Do not use quick disconnect couplings at tools. See instruction for correct set-up.
- Whenever universal twist couplings are used, lock pins must be installed.
- Do not exceed maximum air pressure of 90 psi/6.2 bar or as stated on air tool's nameplate.

Projectile Hazards

- Always wear impact resistant eye and face protection when involved with or near the operation, repair or maintenance of the air tools or changing accessories on the air tool.
- Be sure all others in the area are wearing impact-resistant eye and face protection.
- Even small projectiles can injure eyes and cause blindness.
- A grinding wheel or other accessory that bursts can cause very serious injury.
- Daily measure the air grinder speed with a tachometer to make sure it is not greater than the RPM marked on the grinding accessory.
- Never use a grinding accessory marked with a speed lower than the grinder speed.

Entanglement Hazards

- Keep away from rotating spindle and accessory.
- Do not wear jewelry or loose clothing.
- Scalping can occur if hair is not kept away from air tools and accessories.
- Choking can occur if neckwear is not kept away from air tools and accessories.

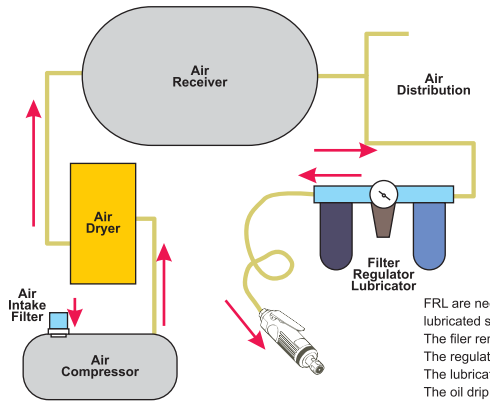
Operating Hazards

- Avoid direct contact with rotating spindle and accessory to prevent cutting of hands or other body parts.
- Wear gloves to help protect hands.
- Do not disable the safety lock off feature on the throttle lever of air tools.
- This air tool and its accessories must not be modified.
- The liability of manufactory lapses if the user uses spare parts that are not idential with the original.
- Operators and maintenance personnel must be physically able to handle the power of the tool and capable of performing the job task.

Workplace Hazards

- Slip/Trip/Fall is a major cause of serious injury or death. Be aware of excess hose left on the walking or work surface.
- High sound levels can cause permanent hearing loss. Use hearing protection as recommended by your employer.
- Regarding the dangers to vibration. User have to obey the Labor Safe operational instruction that depend on defferent country rule to setting.
- Maintain a balanced body position and secure footing.
- Repetitive work motions, awkward positions and exposure to vibration can be harmful to hands and arms, if numbness, tingling pain or whitening of the skin occurs, stop using tool and consult a physician.
- Avoid inhaling dust or handling debris from work process that can be harmful your health.
- Operators and maintenance personnel must be physically able to handle the bulk weight and power of this tool.
- This air tool is not intended for use in explosive atmospheres and is not insulated for contact with electric power sources.

Compressed Air System Network



FRL are needed to ensure that an air tool is receiving a clean, lubricated supply of air at the proper pressure.
The filer removes water, pipe deposits, rust and condensation from entering the air motor.
The regulator controls air pressure to the tool.
The lubricator provides a nearly constant oil/air ratio of air flows.
The oil drip rate: one drop per minute for each 20 SCFM (566 LPM)

Factors Relate to adequate air flow

- A hose of excessive length and / or insufficient diameter can restrict the air flow.
- If you are using an air tool on a hose over 7.6 M (25 ft). long, it is advisable to increase the bore of the hose to the next larger size available, ie. 1/4" increase to 3/8". This will ensure adequate pressure and volume of air to power the air tools.
- Usage of air inline filter / regulator.
- Total number of air connections / fitting being used.
- Prevent any blockage of air flow. Maintain adequate air flow.
- Remove or reduce condensation from the air supply.
- Note to drain water from the Drain Value regularly.
- Regular check for leaks in all piping, joints, drains, relief valves, flexible air hoses.

Air System preventative maintance

- Water in the compressor tank will cause serious corrosion to your air tools and should be drained daily to avoid excessive water in your air supply. Dirty wet air will rapidly shorten the life of your air tools.
- Supply tool with 90 psi (6.2 bar) of clean, dry air. Higher pressure drastically reduces life of air tools.
- Do not install a quick coupler directly into the throttle handle (body) of air tools.
- Prevent contaminates from entering the air motor of air tools.
- Every day before use, remove the air tool from air line and pour 20 cc suitable motor lubricating oil into Air Inlet. Run the air tools for few seconds to allow air to circulate the oil and well lubricate the cylinder. This will ensure top performance and maximum durability of air tools.
- Lubrication : Use an air line lubricator with SAE#10 oil, adjusted to 2 ~ 3 drops per minute. If an air line lubricator can not be used, add air motor oil to the air inlet before and after use. Gears, bearing, sleeves, and sliders need to be lubricated as well.
- Disassemble and inspect air motor and governor assembly every 3 months if the air tool is used every day. Replace damaged or worn parts.
- Use original factory supplied tools, spare parts and accessories.
- Do not alter or modify the unit from the Original design or function of Air Tools.

HER-CHEN GROUP CO.
www.hcg-tools.com.tw

hcg-tools.com.tw

2015.07
Edition 2