

工厂及工业经营

(枪弹推动打钉工具) 规例简介

A Guide to the Factories and Industrial Undertakings (Cartridge-Operated Fixing Tools) Regulations



《工厂及工业经营(枪弹推动打钉工具)规例简介(2006年版)》更正对照表

(2024年4月19日)

项目	节	现行版本	修订
1	18 18.1	<p>违例及罚款</p> <p>地盘承建商或工业经营东主如违反规例第 4、5、6、7、8、9、10、11、12、13、14 或 16 条，一经定罪，可被处罚款五万元；</p>	<p>违例及罚款</p> <p>凡建筑地盘承建商或工业经营的东主违反—</p> <p>(a) 规例第 4、5、6、7、9、10、11、12、14 或 16 条，即属犯罪，一经定罪，可处第 6 级罚款(现为 100,000 元)；</p> <p>(b) 规例第 8 条，即属犯罪，一经定罪，可处第 4 级罚款(现为 25,000 元)；或</p> <p>(c) 规例第 13 条，即属犯罪，一经定罪，可处罚款 400,000 元。</p>
2	18.2	<p>操作员如违反规例第 6、7、9(2)或(3)、11、13、14(2)或 15 条，一经定罪，可被处罚款一万元。</p>	<p>任何操作员违反—</p> <p>(a) 规例第 6、7、9(2)或(3)、11、14(2)或 15 条，即属犯罪，一经定罪，可处第 5 级罚款(现为 50,000 元)；或</p> <p>(b) 规例第 13 条，即属犯罪，一经定罪，可处罚款 150,000 元。</p>
3	18.3	<p>任何人士如违反规例第 17 条，一经定罪，可被处罚款五万元。</p>	<p>任何人违反规例第 17 条的任何条文，即属犯罪，一经定罪，可处第 5 级罚款(现为 50,000 元)。</p>

**Corrigendum to A Guide to the Factories and Industrial Undertakings
(Cartridge-Operated Fixing Tools) Regulations (Year 2006 edition)
(19 April 2024)**

Item	Section	Current Version	Amendment
1	18 18.1	<p>Offences and Penalties</p> <p>The contractor of a construction site or the proprietor of any other industrial undertaking who contravenes any of the provisions of regulation 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14 or 16 commits an offence and is liable to a fine of \$50,000.</p>	<p>Offences and Penalties</p> <p>A contractor of a construction site or a proprietor of any other industrial undertaking who contravenes —</p> <p>(a) regulation 4, 5, 6, 7, 9, 10, 11, 12, 14 or 16 commits an offence and is liable on conviction to a fine at level 6 (currently \$100,000);</p> <p>(b) regulation 8 commits an offence and is liable on conviction to a fine at level 4 (currently \$25,000); or</p> <p>(c) regulation 13 commits an offence and is liable on conviction to a fine of \$400,000.</p>
2	18.2	<p>An operator who contravenes any of the provisions of regulation 6, 7, 9(2) or (3), 11, 13, 14(2) or 15 commits an offence and is liable to a fine of \$10,000.</p>	<p>An operator who contravenes —</p> <p>(a) regulation 6, 7, 9(2) or (3), 11, 14(2) or 15 commits an offence and is liable on conviction to a fine at level 5 (currently 50,000); or</p> <p>(b) regulation 13 commits an offence and is liable on conviction to a fine of \$150,000;</p>
3	18.3	<p>Any person who contravenes any of the provisions of regulation 17 commits an offence and is liable to a fine of \$50,000.</p>	<p>Any person who contravenes any of the provisions of regulation 17 commits an offence and is liable to a fine at level 5 (currently \$50,000).</p>

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欢迎复印本简介，但作广告、批核或商业用途者除外。如需复印，请注明录自劳工处刊物《工厂及工业经营（枪弹推动打钉工具）规例简介》。

This guidebook is issued free of charge and can be obtained from offices of the Occupational Safety and Health Branch, Labour Department. It can also be downloaded from website of the Labour Department at http://www.labour.gov.hk/eng/public/content2_8a.htm. For enquiries about addresses and telephone numbers of the offices, please visit the website of the Labour Department at <http://www.labour.gov.hk/eng/tele/osh.htm> or call 2559 2297.

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工厂及工业经营（枪弹推动打钉工具）规例简介

A Guide to the Factories and Industrial Undertakings (Cartridge-Operated Fixing Tools) Regulations

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1. 引言

- 1.1 枪弹推动打钉工具在香港通常用于建筑及土木工程业，和其他行业如室内装饰，机器安装及电气装置工程等。该等工具主要因生产力高，效能良好及能作多方面用途而日趋普遍。
- 1.2 该等工具虽拥有多项优点，但亦有若干项为使用人士必须留意的限制。该等工具在使用时如并无采取适当安全措施，则可能对操作员、其他工人及在现场附近的人士造成不必要的危险，此点实须注意。在过去，因使用枪弹推动打钉工具而发生的意外，曾引致操作员及旁人受重伤甚至死亡。钉除可能反弹飞射而造成危险外，倘物料太薄或脆弱，则更可能穿过物料而在另一面射出。由于钉是由有爆炸性装料之枪弹推动，因此操作员应曾接受适当训练及充份明了因使用该等工具所能引起的危险。
- 1.3 工厂及工业经营（枪弹推动打钉工具）规例列出承建商、东主及工具的操作员应负的法定责任，以确保该等工具在使用时有充份安全措施。
- 1.4 各项规定中有两项最为重要，即只有获得劳工处处长认可的工具有才能使用，及只有持有劳工处处长认可的合资格证明书的人士才得使用该等工具。

1. Introduction

- 1.1 In Hong Kong, cartridge-operated fixing tools are commonly used in the building and civil engineering industry, and in other areas such as interior decoration, machinery installation, electrical installation work, etc. The increasing popularity in the use of these tools is largely due to the high productivity and efficiency as well as versatility which these tools can offer in a wide range of applications.
- 1.2 In spite of the numerous advantages that these tools can offer, there are certain limitations which users must recognize. It is important to note that the use of these tools may sometimes cause unnecessary danger not only to the operator but also to other workers and passers-by if proper safety precautions are not taken. In the past, accidents involving cartridge-operated fixing tools had resulted in serious and sometimes fatal injuries both to operators as well as bystanders. Besides the risk of a ricochet, there is also the danger that the pin may penetrate the material and emerge in free flight on the other side if the material is too thin or if its resistance is too low. Because the pin is driven by a cartridge which contains an explosive charge, operators should be properly trained and should possess adequate knowledge of the dangers connected with the use of these tools.
- 1.3 To ensure that adequate safety precautions are taken in the use of these tools, the Factories and Industrial Undertakings (Cartridge-Operated Fixing Tools) Regulations lay down the legal obligations on contractors, proprietors and operators of the tools.
- 1.4 The two main requirements are that only tools approved by the Commissioner for Labour may be used and that a tool may only be used by a person holding a certificate of competency in a form approved by the Commissioner for Labour.

1.5 本简介旨在以简易文字解释法律，及在有需要时，以注释形式开列于每一条规例之后。本简介亦应与工厂及工业经营条例（第6A及6B条）有关的刊物同时阅读。该条例规定东主及受雇人士须在维持工业经营内工作健康及安全方面负起一般责任。

1.6 本处编制本简介时，已力求审慎详尽，惟对于所解释的各项法律条文，仍以工厂及工业经营（枪弹推动打钉工具）规例为唯一法律依据。

2. 定义

规例第二条

「认可工具」指劳工处处长根据规例第19条认可的任何工具，包括该工具的任何部份。

「枪弹」指设计供工具用的能产生推进气体的枪弹。

「枪弹推动打钉工具」指设计及用于将钉打入结构性物料的器具，而打钉的推动力是来自枪弹的。

「合资格证明书」指：

- (a) 由一名提供工具操作训练课程的人所发给的证明书，而该训练课程是劳工处处长所批准者；或
- (b) 获劳工处处长批准为相等于(a)段之证明书相若者。

「建筑地盘」指进行建筑工程的地方，以及紧接在附近用作储存物料或工业装置的地方，而此种物料及工业装置是供或拟供建筑工程用者。

「直接推动工具」指推动力由枪弹直接传达至钉上的工具。

1.5 This guide lists out the provisions of the law and where necessary gives an explanatory note immediately following each regulation. This guide should be read in conjunction with the publications relating to the Factories and Industrial Undertakings Ordinance (sections 6A & 6B) which imposes general duties on proprietors and persons employed with regard to the health and safety at work in industrial undertakings.

1.6 While every care has been exercised to include important details in this guide, the Factories and Industrial Undertakings (Cartridge-Operated Fixing Tools) Regulations remain the sole legal authority.

2. Interpretation

Reg.2

'approved tool' means a tool, including any part thereof, approved by the Commissioner for Labour under regulation 19;

'cartridge' means a propellant gas producing cartridge designed for use in a tool;

'cartridge-operated fixing tool' means an instrument designed and used for driving pins into structural material, the driving force being derived from a cartridge;

'certificate of competency' means —

- (a) a certificate issued by a person who provides courses of training, approved by the Commissioner for Labour, in the operation of a tool; or
- (b) such other certificate approved by the Commissioner for Labour as being equivalent to a certificate referred to in paragraph (a);

'construction site' means a place where construction work is undertaken and also any area in the immediate vicinity of any such place which is used for the storage of materials or plant used or intended to be used for the purpose of construction work;

'direct-acting tool' means a tool in which the driving force is transmitted to the pin directly from a cartridge;

「听觉保护器」包括护耳罩、耳塞及耳阀。

「间接推动工具」指推动力通过有限度轴向运行的居间活塞（位于弹药及钉中间）始传达至钉上的工具。

「制造商」如与工具有关者，指工具的制造商。

「操作员」指使用或受雇使用工具的人。

「钉」包括钉子、螺杆、线环、空心钉、扣钉以及其他类似物体，而以工具打入结构性物料内者。

「防护设备」指安全眼罩、安全头盔及听觉保护器。

「工具」指枪弹推动打钉工具。

3. 适用范围

规例第三条

3.1 于工业经营内使用任何枪弹推动打钉工具则受此等规例管制。

'ear protector' includes ear-muffs, ear plugs and ear valves;

'indirect-acting tool' means a tool in which the driving force is transmitted to the pin by means of an intervening piston with limited axial movement;

'manufacturer' in relation to a tool, means the manufacturer of the tool;

'operator' means a person using or employed in using a tool;

'pin' includes a nail, stud, eyelet, eyepin, fastener or other similar object which is driven into structural material by means of a tool;

'protective equipment' means safety goggles, safety helmets and ear protectors;

'tool' means a cartridge-operated fixing tool.

3. Application

Reg.3

3.1 These regulations apply in relation to the use of any cartridge-operated fixing tool in an industrial undertaking.

第二部 — 承建商、东主及操作员应负的责任

4. 只准使用认可的工具

规例第四条

4.1 在工业经营内只准使用认可的工具。

5. 工具的操作状况

规例第五条

5.1 工具应在下列情况下始能操作 -

(i) 发射管末端装有碎片防护罩，而该罩并与管轴成一直角。如属直接推动工具，碎片防护罩的外边缘至发射管轴心的距离最少应为五十毫米。

射向坚硬平面的钉可能向操作员回射，或是向另一角度喷射。例：倘钉撞向一块在混凝土内特别坚硬的石头，则本身会连续反弹而转向一百八十度；同时可能造成施工面破碎或剥落。为阻止钉及碎片和碎块射出，工具上应装有坚固的碎片防护罩以防反射。该罩应由发射管的轴线起伸展至五十毫米的距离，以便能遮盖钉反弹时的预见路线及可能有碎片剥落的地带。防护罩可设计为工具的一部分，或是经特别设计，使它在移离工具时，会使控制发射的弹簧，不能被压缩。

(ii) 碎片防护罩及发射管须完全压啮施工面，并与施工面紧密接触。

碎片防护罩的边缘必须完全与施工面接触才能发挥其保护作用。

Part II - Duties of Contractors, Proprietors and Operators

4. Only approved tools to be used

Reg.4

4.1 Only an approved tool shall be used in an industrial undertaking.

5. Operational condition of tools

Reg.5

5.1 Every tool must be maintained in such condition that it can be operated only —

(i) when a splinter guard is fitted at the end of the barrel and is at right angles to the axis of the barrel. For direct-acting tool, the distance from the outer edge of the splinter guard to the axis of the barrel shall be maintained to be of not less than 50mm.

A pin fired into a hard surface may turn back towards the operator or deflect at an angle. For example, if it strikes a particular hard piece of aggregate in concrete, it may be turned through an angle of 180 degrees by successive internal ricochets. This may be accompanied by splintering or spalling of the working surface. To contain the flying pin and prevent splinters and fragments from shooting out, a robust splinter guard should be provided to guard against penetration by a ricochet. It should extend over a distance of 50mm from the axis of the barrel to cover the foreseeable path of a turn-back pin and a possible spalling area. The guard can be made as an integral part of the tool or be so designed that, removal of the guard from the tool will render the spring which activates the firing mechanism unable to be compressed.

(ii) when the splinter guard and barrel are fully pressed home and is in firm contact with the surface of the material to be pierced;

A splinter-guard can fulfil its protective function only when its rim is in contact with the working surface over its entire perimeter.

(iii)发射管与碎片防护罩受超过五公斤的压力向施工面压下。

应在工具上装置连锁设备，使它如非受超过五公斤的压力压于施工面时，便无法发射。此举可避免工具因意外碰撞及跌落而走火。

(iv)如是直接推动工具，其发射管的轴线与施工面的垂直线间的角度小过七度。

倘工具不是与施工面成直角时，则钉可能反弹而不会打入施工面。为避免该等事件发生，持工具时需使钉与施工面成直角而直击之。设计上，可使直接推动工具的撞针不能撞击到弹药，除非工具与施工面垂直线间的角度小过七度。

5.2 工具应在下列情况下不能操作 -

(i) 当将弹药放入工具时；

(ii) 当工具由不超逾300厘米的高度跌落于坚硬平面时。

工具可因疏忽地扣开机板或意外碰撞如跌下等，而引致发射。为避免因工具跌下而引致意外走火，其内部弹簧的设计，必须有足够的强度以确保当工具由某一规定高度跌下时，工具内活动部分的动力不足以牵动发射机件或引发枪弹。法例规定的高度为300厘米（即三米）。

(iii)当工具未被正确地接嵌时，或因上弹药时而拆开或移动的部份未能稳固地装合时。

(iii)when a pressure exceeding 5kg is applied to the barrel and splinter guard against the surface to be pierced;

An interlock should be provided in the tool which makes it impossible to fire unless it is pressed fully home against the working surface with a force of exceeding 5kg. They will prevent the possibility of a misfire by accidental bumping and dropping of the tool.

(iv)in the case of direct-acting tool, when the axis of the barrel is at an angle of less than 7 degrees from a line perpendicular to the work surface.

If the tool is not held at right angles to the working surface, the pin may ricochet instead of penetrating the surface. To prevent such occurrence, the tool must be held so that the pin is at right angles to the surface and strikes it squarely. It is practicable to so design the muzzle of a direct-acting tool that unless the tool is within 7-degrees tolerance of perpendicularity to the working surface, the barrel cannot retract sufficiently far into the body for the firing pin to reach the cartridge.

5.2 Every tool must be maintained in such condition that it cannot be operated —

(i) when the tool is being loaded;

(ii) when the tool is dropped from a height of not more than 300 cm onto a hard surface; and

The tool may be fired either by inadvertent pressing of the trigger or by an accidental blow, such as when the tool is dropped. Prevention of accidental firing when the tool is dropped is provided by designing the internal spring with sufficient strength to ensure that if the tool is dropped from a specified height, the inertia of the moving parts in the tool will not be sufficient to cock the firing mechanism or fire the cartridge. The specified height in this case is 300 cm (i.e. 3 metres).

(iii)when the tool has been assembled incorrectly or the separate parts required to be dismantled or manipulated for loading have not been firmly locked together.

5.3 工具均须保养良好及无内在毛病。

工具中所有活动部份及发射机件应遵照制造商的指示适当保养。所有发射机件及发射部份须加以清理，以避免侵蚀。发射管必须保持平滑和没有锈斑。所有活动部份应加以清洁及涂上少许润滑油。

6. 钉

规例第六条

6.1 在操作某一種類及牌子的工具時，祇准配用符合製造商所指定適用於該工具的釘。

6.2 釘的大小，包括罩套或套環，必須符合工具發射管的口徑。

因釘是用于打入坚硬表面，如软钢和混凝土等，故与木匠用的普通铁钉有不同的品质和特性。每位制造商都有专为配合自己出品工具发射性能用的各种型式的钉。由于每种钉的特点乃是从广泛研究下的冶金技术形成，故每一制造商的出品皆有其独特之处。工具使用者绝不当尝试将某一牌子或类型的钉用于其它不同牌子及类型的工具上。使用不适合的钉，可能引致震裂及碎片横飞。所以，应依照制造商的指示来选择正确的钉。

5.3 Every tool must be maintained properly and free from patent defects.

All moving parts and firing mechanism of the tool should be properly maintained in accordance with the manufacturer's instruction. All parts which may come into contact with the propellant gas should have the fouling cleaned off to avoid corrosion. The barrel should be smooth and free from pitting. All moving parts should be cleaned and lightly oiled.

6. Pins

Reg.6

6.1 In the operation of a particular type and make of tool, only pins which correspond to the manufacturer's specifications for that tool shall be used.

6.2 The size of pins, including their caps or rings shall be in conformity with the bore of the barrel of the tool.

As pins are intended to penetrate hard surfaces such as mild steel and concrete, they have physical properties different from ordinary carpenter's nails. Each manufacturer produces a wide range of pins, which are intended for use with the tools produced by that firm and are matched to the ballistic characteristics of the tools. The metallurgical control giving the pins their specific properties often involves extensive research and is therefore unique to each maker. Users should never try to interchange pins between different makes and models of tool. Use of a wrong pin may result in its shattering, and producing flying fragments. The manufacturer's guide should be followed when selecting the correct pins.

7. 枪弹

规例第七条

7.1 在操作某一种类型及牌子的工具时，只准配用符合制造商所指定适用于该工具的枪弹。

用在枪弹推动打钉工具的枪弹属于边缘遭撞击才能发射且无弹头的枪弹，其火药料及性能特别与所配用的工具的发射性能配合。各不同牌子或类型的工具所配用的枪弹，外型虽然相似，但绝不能调换使用。工具使用者应依从说明书或枪弹包装招贴上所标明的制造商规格。过往常有因将设计为间接推动工具的枪弹用于直接推动工具而引致发生意外。间接推动工具的枪弹，其火药料比直接推动工具用的枪弹火药料为强烈，结果产生较猛烈的爆炸因而导致钉穿透施工面而殃及旁人。

8. 工具的标记

规例第八条

8.1 每件工具须在工具本身或紧系于工具的金属片上以中文或英文清楚及永久地标记下列各项目：

- (i) 制造商的姓名、名称或商标；
- (ii) 该工具的类型或型号；及
- (iii) 工具编号。

7. Cartridges

Reg.7

7.1 In the operation of a particular type and make of tool, only cartridges which correspond to the manufacturer's specifications for that tool shall be used.

The cartridge used in cartridge-operated fixing tool is a rim-fire blank cartridge having a charge and characteristics which are specifically related to the ballistic properties of the tool to be used. Although cartridges for different makes or models of tool may appear the same, they are not inter-changeable. One should adhere to the specification given by the manufacturer in the manual or on the label of the package containing the cartridges. Accidents have been known to occur by using cartridges designed for indirect-acting tools in direct-acting tools. The charge in the 'indirect' cartridge is greater than that of the one appropriate to a direct-acting tool and as a result, the more powerful explosion can cause the pin to penetrate the working surface and injure a passer-by.

8. Tool markings

Reg.8

8.1 Every tool shall be clearly and permanently marked, in English or in Chinese, either on the tool or on a plate fixed to it, with —

- (i) the manufacturer's name or trade mark;
- (ii) the type or model of the tool; and
- (iii) its serial number.

9. 工具及其配件的贮存方法

规例第九条

9.1 每件工具、其枪弹、钉、及配件均应贮存于可以上锁的坚固工具箱或其他类似的容器内。

工具、其枪弹、钉、及配件在不用时应存放在工具箱内，并将箱上锁。如要使用时，应将整个工具箱携至使用的地方，此举可防止未经授权或未经训练的人士扰动该工具。

9.2 装上枪弹的工具不得贮存于第9.1段所规定的工具箱或其他容器内。

基于明显理由，工具倘已装上枪弹，绝不该无人看管或贮存在工具箱内，工具只应在发射前才装上枪弹。

9.3 工具在不用时，应贮存于第9.1段所规定的工具箱或其他容器内。更应将该箱或容器上锁及存放在安全地方。

9. Storage of tool and ancillary equipment **Reg.9**

9.1 Every tool, its cartridges, pins and ancillary equipment shall be stored in a tool box or other similar containers, which is of strong construction and fitting with suitable means for locking.

It is important that a tool, its cartridges, pins, and ancillary equipment should always be kept and locked in a box whenever it is not in use and the whole box should be taken to a place of use when needed. This prevents meddling by unauthorized or untrained persons.

9.2 A loaded tool shall not be stored in the tool box or other container provided under paragraph 9.1.

For obvious reasons, a tool, when loaded, should never be left unattended or stored in a tool box. It should only be loaded immediately prior to firing.

9.3 A tool when not required for use shall be kept in the tool box, or other container, provided under paragraph 9.1, which shall be locked and stored in a secure place.

10. 工具箱内须存放如何保养及操作该工具的指示 **规例第十条**

10.1 每一工具箱或其他类似的容器均应存放一份由制造商订定并适用于该工具的中英文指示书，而该指示书须详载下列资料 -

(i) 该工具装枪弹时，发射时及拆开时应遵从的程序；

指示书的内容应包括工具的使用，如装枪弹及发射的程序，及可以由操作员拆除的机件及其方法。

(ii) 处置延误发射时应遵守的程序；

处置延误发射的程序须严格遵守。更重要的是在拆除失灵枪弹时，不应在枪弹边缘施加压力。用螺丝批或刀将工具内的枪弹挖出是极端危险之举，因可能触发枪弹内的火药料而导致严重损伤。失灵的枪弹不应再度使用，应交回予以毁灭。

(iii) 按期清洁、抹油、检验的指示、及拆开与重装该工具可拆除部份的正确方法；

制造商的指示应包括如何按期清洁、抹油和检验该工具所有活动部份及发射机件的有关资料。指示中应有拆除程序，使操作员能正确地拆除足够的部份以便清洁工具。操作员不得尝试进行超越指示所载的工作，因为某些工具的原装安全设备十分复杂，故需有特别工具与科技知识才能胜任。彻底拆除工作应交由制造商或其服务代理进行。

10. Tool box to contain instructions on care **Reg.10** and operation of tool

10.1 Every tool box or other similar container shall contain a copy of the manufacturer's instruction manual of the tool in English and Chinese giving the following information —

(i) the procedure for loading, firing and dismantling the tool;

The instructions should cover the tool usage connected with loading and firing and the method of such stripping as may be done by the operator.

(ii) the procedure for dealing with delayed ignition;

The procedure for dealing with delayed ignition should be strictly followed. It is particularly important that when removing a misfired cartridge, no pressure should be applied to the rim of the cartridge. Using a screw driver or knife to prise a cartridge out of a tool is extremely dangerous, for this may trigger off the charge in the cartridge and cause serious injury. A mis-fire cartridge should not be used again. It should be returned for destruction.

(iii) instructions on regular cleaning, oiling and inspection and the correct method of dismantling and reassembling the removable parts of the tool; and

The manufacturer's instruction should always include appropriate information on regular cleaning, oiling and inspection of all moving parts and firing mechanism of the tool. They should lay down the procedure for sufficient dismantling to enable the operator to clean the tool properly. It is important that users should not attempt to do more than is detailed in the instructions because the built-in safety devices of some tools are complex and it requires special tools and technical knowledge to do the job properly. It is always advisable to leave full stripping down to the manufacturer or its service agent.

(iv) 选择适合该工具的钉及枪弹的指示、和辨别枪弹力度强弱的指南。

用于某一打钉工作的钉，其长度乃决定于工作物料的厚薄，钉须突出部份的长短及打入施工面的深度。但有些操作员颇倾向用较长的钉，而钉过长的部份则赖威力较强的枪弹，使其能插入较深。结果造成物料破裂损毁，并冒碎片四射及打钉工作不妥之险。为某工作选择枪弹时、应依从制造商的指南。倘需试行打钉工作以找出正确的插入程度及枪弹强度时，应由力度最弱的枪弹开始，然后逐步增加枪弹力度，直至找出正确的插入程度为止。使用过强的枪弹会造成钉过度深入、反弹及施工面碎裂。枪弹包装须示明枪弹的强度而每粒枪弹须以其代表颜色表示其强度。须紧记各制造商所采用的颜色并不划一。

(iv) instructions on the selection of pins and cartridges for the tool and a guide for distinguishing the strength of the charge in the cartridges.

The length of pin required for a particular fixing job depends on the thickness of material to be worked, the outstand required, and the depth of penetration into a working surface. There is however a tendency for some operators to use a longer pin and to take up the excess length of pin by using a stronger cartridge to reach a deeper penetration. This may result in spalling and shattering of material, with danger from flying particles and the risk of an ineffective fixing. When selecting the cartridge for a particular job, maker's guidance should be followed. If trial fixings are necessary to determine the correct pin penetration and cartridge strength, use the weakest cartridge first, increasing the cartridge strength one step at a time until the correct penetration is obtained. The use of an unnecessarily powerful cartridge may result in overpenetration, ricochet and shattering of working surface. The cartridge package should show the strength of the cartridge, and each cartridge should be marked with a distinctive colour to indicate its strength. It should be borne in mind that those colours are not standardised among different manufacturers.

11. 操作员须持有合资格证明书

规例第十一条

11.1 只有持有合资格证明书的人士才可以使用工具。

使用枪弹推动打钉工具的任何人士实际上是使用著一枝枪械，故应曾经接受如何安全使用此种工具的训练。工具制造商提供训练课程予使用其产品的人士，并在受训完毕后发给合资格证明书予合格的受训者，该证明书并列明其接受训练使用的工具是属于何种牌子及类型。

11.2 合资格证明书的格式须经劳工处处长批准。

此举为确保使用者有足够的训练。

12. 照明设备及安全工作场地

规例第十二条

12.1 使用工具的地方必须：

(i) 有适当及足够光线以保障操作员的安全；及

(ii) 尽可能保持安全以便操作员能有稳固立足点。

操作员只可在稳定及坚固的位置时才可使用工具。与棚架或工作平台比较，梯子并不适宜在这类工作中使用，因为扳动工具所需的气力及因抵消反撞时所产生的本能反应，都可能引致在梯子上工作的工人失去平衡。

13. 安全环境

规例第十三条

13.1 不得在含有易燃蒸气、易燃气体或爆炸性尘埃的空气中使用工具。

引发枪弹时会使其火药料爆炸，所产生的火花及热能足以使易燃气体燃烧或引致含爆炸性气体或尘埃的空气爆炸。

11. Operators to hold certificates of competency

Reg.11

11.1 A tool shall only be used by a person holding a certificate of competency.

Any person using a cartridge-operated fixing tool is in effect using a firearm and should therefore have been trained in its safe use. Manufacturers of tools provide training to users of their products and provide each trainee with a certificate of competency specifying the make and model of the tool on which he has been successfully trained.

11.2 A certificate of competency shall be in a form approved by the Commissioner for Labour.

This is to ensure that training is adequate.

12. Lighting and safe place of work

Reg.12

12.1 The place in which a tool is used shall —

(i) be suitably lit to secure the operator's safety; and

(ii) so far as is reasonably practicable, be made and kept safe so that the operator shall have a firm foothold.

The operator should use the tool only from a firm and stable position. Comparing with a scaffold or a working platform, the use of a ladder is unsuitable for the job because the strength required to cock the tool, and the instinctive reaction to the recoil, may cause a workman on a ladder to over-balance.

13. Safe atmosphere

Reg.13

13.1 No tool shall be used in an atmosphere containing flammable vapours, flammable gases or explosive dusts.

The firing of the cartridge sets off an explosion in the charge and the flash and energy released would be more than sufficient to ignite flammable vapours or to detonate an explosive atmosphere.

14. 防护设备

规例第十四条

- 14.1 工作场地应有保养良好的适当防护设备供应，给每位操作员使用。
- 14.2 工具操作员在使用工具时均须配戴所供给的防护设备。
在任何情况下，操作员均需戴上安全帽、高效能防击护眼罩及听觉保护器。

15. 发现毛病时应采取的行动

规例第十五条

- 15.1 操作员一旦发现工具，或任何钉，或枪弹有毛病或缺点时，应：
- (i) 停止使用该工具；及
 - (ii) 立即将毛病或缺点向承建商或东主报告。
此举可使东主或承建商立即停止使用那件有缺点的工具、钉或枪弹，并将它送交供应商修理。

16. 未满十八岁的人士不得使用工具

规例第十六条

- 16.1 未满十八岁的人士不应获准使用工具。
年青人多有不够仔细的倾向。

17. 滥用工具等事宜

规例第十七条

- 17.1 任何人士均不得滥用或未有合理理由而干扰：
- (i) 任何工具、钉或枪弹；或
 - (ii) 规例第14(1)条所规定的任何防护设备。

14. Protective equipment

Reg.14

- 14.1 Suitable protective equipment shall be provided and maintained in good condition for the use of every operator.
- 14.2 Every operator shall wear the protective equipment provided when using a tool.
It is necessary that in all situations safety helmets, eye protectors of a high impact type and ear protectors should be worn.

15. Action when defect discovered

Reg.15

- 15.1 If an operator discovers a fault or defect in a tool, or in any pins or cartridges, he shall
- (i) stop operating the tool; and
 - (ii) report immediately the fault or defect to the contractor or proprietor.
In this way the proprietor or contractor can immediately take the defective tool, pins or cartridges out of service for repair by the supplier.

16. Person under 18 not to use tools

Reg.16

- 16.1 Person under 18 years of age shall not be permitted to use a tool.
Some young persons are prone to be careless.

17. Misuse of tools, etc.

Reg.17

- 17.1 No person shall misuse or, without reasonable excuse, interfere with-
- (i) any tool, pin or cartridge; or
 - (ii) any protective equipment provided under Regulation 14(1).

第三部 — 其他条款

18. 违例及罚款

规例第十八条

- 18.1 地盘承建商或工业经营东主如违反规例第4、5、6、7、8、9、10、11、12、13、14或16条，一经定罪，可被处罚款五万元；
- 18.2 操作员如违反规例第6、7、9(2)或(3)、11、13、14(2)或15条，一经定罪，可被处罚款一万元。
- 18.3 任何人士如违反规例第17条，一经定罪，可被处罚款五万元。

19. 修订规例附表的权利

规例第十九条

- 19.1 劳工处处长可经由宪报公布认可某一枪弹推动打钉工具。

Part III - Miscellaneous

18. Offences and penalties

Reg.18

- 18.1 The contractor of a construction site or the proprietor of any other industrial undertaking who contravenes any of the provisions of regulation 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14 or 16 commits an offence and is liable to a fine of \$50,000.
- 18.2 An operator who contravenes any of the provisions of regulation 6, 7, 9(2) or (3), 11, 13, 14(2) or 15 commits an offence and is liable to a fine of \$10,000.
- 18.3 Any person who contravenes any of the provisions of regulation 17 commits an offence and is liable to a fine of \$50,000.

19. Commissioner may approve tools

Reg.19

- 19.1 The Commissioner for Labour may approve a cartridge-operated fixing tool by notice in the Gazette.

资料查询

如你对本简介有任何疑问，或想查询其他职业安全及健康事宜，你可与劳工处职业安全及健康部联络：

电话： 2559 2297（办公时间外，将会自动录音）

传真： 2915 1410

电子邮件： enquiry@labour.gov.hk

你亦可透过互联网络，找到劳工处提供的各项服务，及主要劳工法例的资料。本处的网址是 <http://www.labour.gov.hk>。

你并可透过职安热线 2739 9000，找到职业安全健康局提供各项服务的资料。

投诉

如有任何有关不安全工作地点及工序的投诉，请致电劳工处职安健投诉热线 2542 2172。

Useful Information

If you wish to enquire about this guide or require advice on occupational safety and health, you can contact the Occupational Safety and Health Branch of the Labour Department through:

Telephone: 2559 2297 (auto-recording after office hours)

Fax: 2915 1410

E-mail: enquiry@labour.gov.hk

Information on the services offered by the Labour Department and on major labour legislation can also be found by visiting our Home Page on the Internet. Address of our Home Page is <http://www.labour.gov.hk>.

Information on the services offered by the Occupational Safety & Health Council can be obtained through hotline 2739 9000.

Complaints

If you have any complaints about unsafe workplaces and practices, please call the Labour Department's occupational safety and health complaint hotline at 2542 2172.