

## Introduction

Every day in workshops, garages and factories, people use high-pressure grease guns without realising their potential for serious injury. The result is that each year a number of nasty hand injuries are reported to the Department of Labour.

This leaflet sets out the danger to grease gun operators and the few simple steps necessary to eliminate any risk. It is intended not only for operators but also for workshop supervisors, and employers, who should ensure that all workers are well aware of the potential for injury.

## The hazard

The most common type of grease gun in use today has a sharp needle point which is applied to the grease nipple on the vehicle or machinery being serviced. When the trigger is pressed, grease is delivered at a pressure of between 1.7 MPa and 40 MPa. With pneumatic grease guns, the pressure is such that if the needle should slip off the grease point and puncture the hand or finger, grease is injected and may be forced under the skin as far as the palm or even the wrist.

A grease gun injury. This injury resulted from one short injection of grease into the hand under pressure. If injuries like this don't receive immediate medical attention, the result is often loss of a hand or finger.



Lever- (or hand-) operated grease guns can pose a similar risk. The pressure at the nozzle is lower but still capable of pushing grease well under the skin, although the chance of injury is reduced by the need to use two hands to operate the gun.

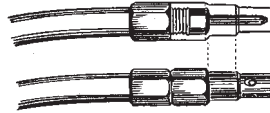
If you injure yourself this way you will at first feel only a momentary stab of pain, with little inconvenience at the time. Your finger swells a little but otherwise is seemingly

unaffected. However, over the following days the finger is likely to become swollen, stiff and, frequently, gangrenous, leading possibly to amputation.

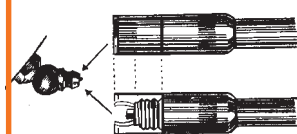
This is why grease gun injuries should receive immediate medical treatment, and why doctors regard them as serious.

## Causes

Although high-pressure grease guns have been in use for many years, there continue to be regular serious hand injuries among users. In all such cases, operators have been using the gun without any protective cover (such as a safety sleeve or shroud) over the needle point. The needle has only to slip off the grease point to inflict an injury if the operator's fingers are close.



Illustrated is a screw-on shield which can completely cover the dangerous point of the needle-type fitting.



Illustrated is a hydraulic or push-on type of fitting which clips into position and centres over the grease nipple. The grease delivery point is well protected.

During grease injection it is not necessary to place a hand in the danger zone, but it is a natural action when you may be having difficulty in locating the grease nipple or steadying the gun.

Most accidents occur while greasing flexible brake cables, where the operator usually places one hand behind the nipple to steady it, or else holds the cable near the nipple connection and then inserts the needle point. If the needle slips (and over many applications it is only a question of when it will) then it will almost certainly enter the hand or finger. For this reason, only a shrouded needle point or push-on fitting should be used.

All grease guns are provided with safety devices but their effectiveness may be limited by the positioning of grease nipples on certain cars and trucks, and protective covers may not be fitted as the operator rushes to get the job done quickly.

## Prevention

The Department of Labour requires that protective covers are kept on all grease guns. If this simple rule was followed in every garage and workshop, then serious injuries would be eliminated.

Most grease nipples fitted to vehicles and machinery today are of the hydraulic type, for which the hydraulic or push-on fitting is designed and is safe. However, you are likely to occasionally encounter other types of nipples (e.g. pin type, industrial type) for which the push-on fitting cannot be used. Special attachments are available for these cases and you should take the time to fit them to the grease gun. Also, make sure that anyone using the grease gun knows that such attachments are on hand.

Another point to remember concerning hydraulic fittings is that if the nipple has been damaged in any way — for example by a blow from a spanner — it is no longer effective and needs replacing.

Keep a stock of a good range of replacement grease nipples and replace them at the time of greasing, making sure that the replacement part is correct and allows access with the properly covered fitting.

Where you come across badly positioned nipples, it is practical to replace them with angled or even swivel fittings that allow better access for the future. Usually the time involved is minimal, while not only is safety improved but the point is better lubricated.

Operators can argue that grease nipples are sometimes inaccessible and located where it is impossible to get at them without first removing the safety sleeve from the gun fitting. However, grease nipples are unlikely to be placed in a position where they cannot be reached at all. What is probably meant when “inaccessibility” is mentioned is where the operator follows common practice and uses his or her hand to “feel” the gun on to the grease point.

This action may be necessary because:

- the lighting is poor; or
- the grease nipple is hidden under a layer of dirt and grime; or
- the wrong type of fitting is being used for the particular nipple.

Each of these causes can be fixed without the need to use an uncovered needle tip. Also, a safety sleeve helps to locate the point and it should not be necessary to “feel” the point in.

Should the unlikely situation ever arise where an unprotected needle point must be used, make sure that your hands (and body) are well clear of the needle once the trigger is pressed, and return the protective cover straight away.

Remember that many accidents occur while greasing nipples on flexible brake cables. These should be kept accessible and able to be lubricated with a sleeve-type fitting. If the gun slips, there is then no possibility of the needle puncturing the finger or hand.

In recent years, a number of improvements in the motor industry have helped reduce the risks from grease guns:

- more conveniently located service points on vehicles;
- increased use of hydraulic grease nipples; and
- more convenient designs of protective covers for guns.

These developments reduce the temptation to remove protective covers during the working day, but after any occasion when they are removed, always remember to return them.

In garages and workshops, as elsewhere, there is often pressure to neglect safety points in the rush to service as many vehicles as possible. But, unlike other cuts and grazes, the effects of grease injected under the skin can be long-term. You will be able to service more cars and trucks in the future with all your fingers.

### Some typical accidents

The following are typical accidents that have occurred when grease gun needle points have been used unprotected:

- A worker was greasing a nipple on the front suspension of a car raised on a hoist. Owing to the condition of the nipple, and the lack of lighting underneath the car, he was having difficulty in finding the injection point so he attempted to guide the needle of the grease gun with his finger. When pressure was applied, the grease gun slipped off the nipple and the needle lacerated his finger.

- A garage employee was greasing a ball joint prior to fitting it to a car. He was holding the grease gun in one hand, and the joint in the other, when the gun slipped and grease was injected into his finger.
- A lubricatorium attendant was attempting to insert grease into a nipple on a flexible brake cable. When pressure was applied with the gun on the nipple, the nipple rolled as the cable twisted and grease was forced into his finger.
- While greasing a brake cable a worker was injured when the cable twisted in his hand, breaking the point of the needle which slipped, cutting his hand and injecting grease.
- While trying to steady a flexible brake cable with his hand very near the nipple, an employee injected grease into his finger when the grease gun slipped off the nipple.

### Points to remember for safe grease gun operation

- Grease gun injuries are serious and any such injuries must receive immediate medical attention.
- Various safety devices are available for attachment to guns, depending on the type of nipple encountered.
- Hydraulic-type nipples are the most common today, therefore a push-on injector should be used to give maximum safety.
- The majority of accidents occur while greasing flexible brake cables but it is possible to do the job just as well when safety devices are attached to the gun. An unprotected needle point should not be used in this operation.
- Make sure safety sleeves and grease nipples are free of dirt before using guns.
- Grease guns can be used safely if the safety fittings are used and correct work methods are adopted.
- Be sure there is good lighting underneath the vehicle.
- If safety fittings are not used, there is always a danger of serious injury. Don't be the next to suffer from “grease gun finger”.

## GREASE GUN SAFETY

