

HEALTH AND SAFETY EXECUTIVE - SAFETY ALERT

Department Name:	<i>Field Operations Directorate</i>
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Target Audience:	<i>Arboriculture; Agriculture and Construction Industries & Trade Associations</i>
Key Issues:	Non-standard metal brush cutting accessories fitted to petrol driven brush cutters can fail catastrophically in-service. There is a risk of death or serious injury to operators and others in vicinity from ejected metal components. These accessories are manufactured from more than one component and rotate at high speeds Anyone using them should discontinue use of any non-standard metal cutting accessory immediately and consult the brush cutter manufacturer for guidance.

Use of Chain Flail/Non Standard Accessories on Brush Cutters

INTRODUCTION:

Portable, hand-held, combustion engine driven brush cutters are commonly used for cutting weeds, brush and similar vegetation, and are frequently utilised in ground-clearance operations connected with construction work, using a variety of standard cutting attachments.



Photograph of Brush Cutter with Typical Manufacturers' Cutting Attachments

The Health and Safety Executive (HSE) has become aware of a dangerous practice involving the fitting of non-standard accessories, not approved by the manufacturers, to brush cutting machines. In particular, HSE are aware of the UK supply of chain flail attachments comprising of a cutting head incorporating lengths of metal chain. This alert is relevant to any such metal brush cutter accessory manufactured or assembled from more than one component.

BACKGROUND:

The safety alert arises from a fatal incident. Initial investigations indicate that a link from a chain flail attached to a brush cutter, struck a nearby worker in the head.

In contrast with dedicated chain flail machinery, brush cutters typically lack the robust guarding arrangements required to control the risk from articles (including fragments of chain) being ejected with high energy. The guarding supplied with brush-cutters is predominantly aimed at protecting the operator from inadvertent contact with the cutting accessory.

The fatal incident involved the use of a twin-chain attachment, similar designs have been encountered having 4 chains, and one which utilises chainsaw type chains as the cutting implement. The presence of a CE mark should not be regarded as a reliable indication that such attachments are safe to use.



Chain Flail attachment with two chains



Flail Attachment Fitted to the Brush Cutter

Issues

- The high output shaft speed of a brush cutter creates the potential for significant energy to be transferred to the cutter head. The chains affixed to non-standard cutter heads are subject to high stresses and impacts during normal use, and the risk from breakage and ejection of chain components at high speed is significant.
- The use of non-standard cutting attachments not approved by the manufacturer may, because of their geometry and mass, induce excessive stresses which could result in premature failure and possible break-up of the brush cutter, thereby increasing the risk of injury from any ejected component.
- Manufacturers' original cutting equipment such as nylon cords, metal cutting blades and saw blades are designed to be used in combination with specifically designed safeguarding systems. The chain flail attachments are not supplied with any compatible safeguard/deflector.
- The harmonised standard for specifying the safety requirements for such machinery, EN ISO 11806, excludes from its scope brush cutters equipped with metallic blades having more than one part (such as chain links.)

ACTION REQUIRED:

Users

- Any brush cutters fitted with chain flail or similar non-standard attachments should be taken out of service immediately and the attachments removed and replaced with the manufacturer's approved accessory.
- Manufacturers' advice should be followed as to the appropriate combinations of cutting tools and guards. Such advice is typically available within the instruction books accompanying the machine.

Suppliers

- UK suppliers should immediately cease the supply of such chain flail attachments, whether or not intended for "professional use."

RELEVANT LEGAL REFERENCES

- Health and Safety at Work etc Act (1974)
- Management of Health and Safety at Work Regulations (1999)
- Provision and Use of Work Equipment Regulations (1998)
- Supply of Machinery (Safety) Regulations (2008)

Note: The EU Commission is of the view that chain flail attachments are *interchangeable equipment* within scope of the Machinery Directive as listed in Art 2(b)