

# The Cutting Crew

Roland Taylor looks at the myriad of non-grass cutting machinery which is on the market at the moment and gives some useful advice on what to look for before buying.

Keeping a course looking immaculate at the turn of the century (not the last one!) must have been a greenkeepers nightmare. There would have been very little mechanisation in the machinery sheds to make life easier. As most of the work was done by hand it required a great deal of skill to achieve the results members in those days expected. Labour was relatively cheap, but one suspects, that most clubs kept their grounds maintenance staff to a minimum and on a tight budget. Thank goodness for man's inventiveness in coming up with mechanised solutions.

A walk round BTME or SALTEX reveals that for virtually every task there is now a powered unit available to carry it out. This is great, but as often happens, companies see an opportunity and suddenly the choice becomes overwhelming. It then becomes a question of sorting out the wheat from the chaff and to do this you are in a better position, if you are aware of exactly what goes on under those bright shining covers. Hopefully, by the end of this feature, you will have some ideas regarding hand-held power equipment now on offer.

## TRIMMERS/BRUSHCUTTERS AND CLEARING SAWS

These are not the same machines although some models will take different cutting heads.

### TRIMMERS

George Ballas was bored, he had nothing to do and there was no sport on the telly, so, he went into his garage in Houston, Texas, and cobbled together an electric lawn edger, a popcorn tin and some fishing line. "What's that for?" cried his neighbours. "Cutting grass", he replied. They fell about laughing, but not for long. The trimmer had arrived. George called his invention a Weed Eater and went on to sell millions throughout the world.

This type of machine is designed, mainly for cutting grass, although they will deal with light vegetative growth as well. Trimmers are generally, electrically powered and sold mainly to domestic customers. Some companies offer petrol engine units, but like their electric counterparts, they are mainly bought by the man in the street.

### BRUSHCUTTERS/CLEARING SAWS

The brushcutter and its larger cousin, the clearing saw, evolved from the chainsaw and were first used for forestry work. As their name implies the brushcutter was developed for clearing undergrowth and tall vegetation. The clearing saws harvested saplings and small trees. Interchangeable cutting heads were introduced at a later stage to provide more versatility.



### ENGINES

In the past, the two-stroke engine has proved the best. This is about to change in the next few years, because of regulations regarding exhaust emission. The engine as we now know it, will no longer be available. Its replacement is likely to be a mini four-stroke power unit. However, man's ingenuity is coming to the fore and some variations on this principle are beginning to surface (more information on the latest developments will be covered over the next few months).

Any system that relies on a constant speed, to achieve satisfactory results, requires the availability of extra power when it is needed, so engine output is critical. Certainly, you have got to be looking at least a 25cc rating for a professional application, higher if possible. Below this level the machine will be under powered, especially in long, wet grass or thick stemmed undergrowth. This situation is dangerous and can seriously damage the brushcutter.

### CLUTCHES

On some cheaper models the drive is direct from the engine to shaft. If this type of unit is used in heavy conditions then either the drive shaft or engine is likely to be damaged.

Virtually, all brushcutters have some form of clutch that is there to act as a safety feature. It ensures that when an engine is ticking over and not under throttle, the drive shaft is disengaged. This reduces the possibility of an operator coming into contact with a moving cutterhead and also means the engine does not have to be switch off when walking between sites.

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A throttle can come 'off adjustment' so the engine does not slow down sufficiently to stop the blade assembly spinning. From a Health and Safety point of view, if this happens the machine needs to be correctly adjusted, as soon as possible.

## SHAFTS

Apart from engine sizes and cutting heads, one of the most important components of a trimmer, brushcutter or clearing saw, is hidden from sight, this is the flexible drive shaft.

These can be made from flexible steel and consist of either a soft steel rod or a wire core encased in a coiled wire sheath. This type of drive is okay for light work, but it can unwind, or in some cases break, if placed under a heavy load.

For heavy-duty work the answer is a solid straight shaft made from high carbon steel. These will absorb the twisting forces that are created, in certain conditions and because there are no joints where stress levels can build-up the chance of a breakage occurring are less likely. The shaft is supported at intervals throughout its length by rubber mounted, brass bushes, which also help to absorb vibration. Another advantage is this type of shaft is that they are longer, so produce a wider cutting area.



## VIBRATION

A brushcutter is often used for fairly long periods. Excessive vibration will cause damage to the operators hands and arms, Health & Safety issue guide lines on this subject. With a larger brushcutter there is an increased possibility of twist and kick from high impact loads. This will also become very evident if the blade becomes blunt. Quality machines have built-in shock absorbers to minimise this problem. As these are likely to vary between models, it is a feature that requires particular attention when buying a unit. Another thing to be on the look out for, is how the fuel tank is mounted. If it is screwed directly on to the engine block, due to vibration, the bolts can damage a plastic tank. The best method is where the tank is situated underneath the engine away from the exhaust and held in place by anti vibration, elastic straps.

## CARBURETTORS

Whatever the salesman says, a diaphragm carburettor, with a sliding throttle valve, is the best, for working at virtually any angle. These produce a constant power output over the whole rpm range, especially at the lower end where fuel/air mixture can sometimes be effected.

## HANDLES

When it comes to a choice of handles it has to be the dual type with foam grips. The blade head is travelling at over 8000 rpm, if it comes into contact with something solid the machine is going to take some holding. In addition, they give the operator more stability on rough ground and an easier swinging action when cutting.

## CUTTING HEADS

A brushcutter usually comes fitted with a nylon line unit. This will have a built in carrier, which has either manual line feed, or a semi-automatic system that is activated by tapping the head on the ground.

The correct diameter and weight of line should always be used, if it is too heavy, then overloading will occur. This drastically reduces the speed of the head and the line can then become entangled in vegetation and the chance of the clutch shoes burning out is greatly increased. The quality of cut will also be appalling.

When buying nylon line always go for quality, rather than price, it will give longer service.

In a new brushcutter's pack there are, generally, some metal blades. These can be used for other applications than grass cutting. A blade with eight cutters is ideal for taking down dead, dried weeds and rushes, whilst a shredder/brush type is for working on areas of tangled grass and undergrowth. The circulars saws are best suited were bushes, saplings and trees are predominant.



## BACKPACKS

Brushcutters are usually handheld units, but some manufacturers also offer backpack models. These are designed for working on steep slopes, ditches and embankments. The engine is carried on the back, like a rucksack and there is a flexible drive between the power unit and shaft. They are said to reduce operator fatigue and make it easier when working over difficult terrain.

## EDGING MACHINES

You often see the visual effect of a finely cut expanse of turf, marred by uncut edges not usually on golf courses, I hasten to add. Edging has traditionally been done with shears, but this method is a very time consuming operation. Using a machine is a far quicker and more cost effective, there are a number of these now available. They are basically a rotary blade, mounted vertically rather than horizontally. There is some form of guide, with a depth control, that runs along the edge and they are mostly pushed units on either wheels or rollers. An edger will trim bunker's surrounds and the sides of paths in a matter of minutes. On some models the angle of the blade can be altered to deal with any feathers of grass against walls and other obstacles. A few companies are now offer an edging attachment to fit on some of their specially designed trimmers and brushcutters.



## ROTARY BROOMS

These come as complete units or an attachment, as part of a system. They look like a brushcutter with a horizontal drum, that incorporates flexible fins, that are designed to work on turf, without causing surface damage. On golf courses they can be used for keeping tees, fairways and greens clear of debris. Raking and grading the sand, or simply brushing it back into bunkers, are other tasks they will perform. In addition, these power brooms or sweepers are used for removing aeration cores, sweeping up leaves and cleaning paths and car parks. In the winter they are ideal for clearing snow and mud of hard surfaces.

## POLE PRUNERS

When it comes to chainsaws unless you have a qualified operator on the staff, any work involving these is best left to a tree surgeon or arboriculturist.

However, over recent years pole pruners have been introduced. These consisting of a small chainsaw attached to a telescopic shaft, and depending on the make, will deal with branches as high as 5 metres from the ground. A major benefit of these, is the operator does not have to climb ladders, so it can be a one-man job. They are particular useful for dealing with storm damaged or dead branches that may be a hazard, especially, over walkway and paths. Some companies also offer a long-reach hedge cutting attachment for their pole pruners, these are the answer when it comes to shaping and trimming large bushes and ornamental shrubs.

## WHAT TO WEAR

Like all other machinery, in the interests of safety, there are set rules that apply then using any handheld units. The operators kit should include; safety helmet, the correct footwear, ear protectors, gloves and a full-face mask rather than goggles. If a chainsaw is being used then the Health & Safety Executives Protective Clothing Recommendations should be worn. At all times it is necessary to follow the guidelines on safe use of the equipment. This is usually found in the manuals or paperwork supplied with the machine.

## WHAT TO BE ON THE LOOK OUT FOR WHEN BUYING

Power-to-weight ratios are an important feature bearing in mind how long a unit is likely to be used. The figures in the literature are fine, but are only a guide. The best way to find out if a unit is not going to cause fatigue problems, is to test it, for at least an hour, in the conditions it will normally be encountering. If, after this period you are not flat on your back or aching from every joint, it could be the model for you. This type of trial will also throw up other things, like how hot the engine gets and the effects on its performance. One suggestion of a good way to carry out this evaluation is the actually hire a particular machine before buying.

There are literally hundreds of models to choose from, so look at specifications carefully, checkout price comparisons, warranty periods and the reputation of both the manufacturer and the company who will be supplying the machine. After sales service and availability of replacement parts are two other important areas to take into consideration.

With so many different models available its advisable to follow the above suggestions to ensure you are buy the right one that meets your specific needs and will give you long reliable service.

