

# Euro regulations place emphasis on more sophisticated engines

**E**ngines in the new world of European legislation have to be increasingly sophisticated to assist manufacturers of all types of machinery to meet the EC declaration of conformity, introduced on January 1 this year.

The manufacturer of the machine must build the product to meet the regulations. It is in the interests of the engine supplier to produce models which meet the criteria, so that the engine can be fitted without additional safety features.

The council directive is mandatory. Products must be designed as far as possible to realise the objectives.

As will all EC legislation, the requirements are comprehensive and include filling and draining of fluids, storage, guarding on moving parts, guarding against contact with excessively hot or cold parts, noise, vibration and emission. This is by no means a comprehensive list of requirements, but it gives some idea of what's involved.

Machinery manufactured after January 1 1995 must be marked with a CE symbol to denote conformity. There will be a period when goods manufactured before the com-



mencement date may be sold, but by the end of this year all products should bear the CE mark if they are to be supplied within the Community.

Many of the regulations have benefits for the operator of professional golf course machinery. Reducing emissions usually means using less fuel. Less vibration helps the operator to work without fatigue and less

noise gives a more peaceful environment.

Modern engine technology can improve older machinery. If a replacement overhead valve "v" twin is substituted for a side valve horizontally opposed twin in, for example, a Cushman Turf Truck when the original engine is beyond economical repair, substantial improvements are made in noise, vibration, emissions, fuel and servicing costs.

This is achieved by the use of modern high impact plastics for engine blower housings and hydraulic tappets to attenuate noise. The "v" twin configuration is almost vibration free. Full flow filtered oil systems increase service intervals to 100 hours with ensuing savings. A 40% reduction in fuel consumption is commonplace.

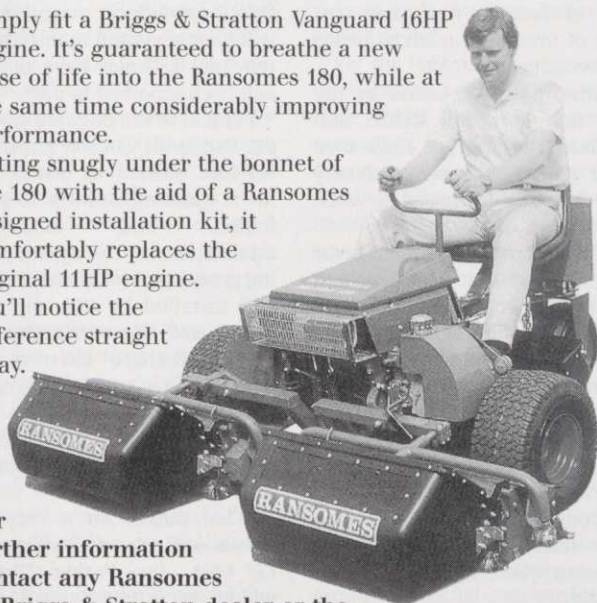
The overall result is that an outlay of around £1,100 plus labour can rejuvenate equipment that would cost in excess of £11,000 to replace. The bonus, of course, is that the reduction of operating costs would cover the capital outlay within three years while upgrading the machine to near-CE standards.

● The author, Bob Watson, is a director of JH Hancox Limited.

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