

GETTING THE BEST FROM WHAT WE'VE GOT

When to Rebuild or Replace

Some factors to be considered when overhauling power units

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INTRODUCTION

The Diesel Engine is the major source of power for the forest industry up until the stage where the raw material enters the large processing plants. The running and maintenance of these units represents a significant portion of the industry's operating costs. Any savings in this area of operations can therefore be of real interest to operators.

When a Diesel Engine comes up for major overhaul there should be some consideration given to replacing the engine completely. In most cases this consideration need only be brief, as it will be obvious to the operator on receipt of his quotation for overhaul that fitting of a new unit is not a viable option. However, it would be advisable to be aware of the cost of replacing the power unit completely.

Points for consideration:

1. New power unit price.
2. Age and condition of existing power unit.
3. Is the existing power unit up to the work being requested of it.
4. Will the power unit be up to the demands of the future programme.
5. Has technology overtaken the power unit.

1. NEW POWER UNIT PRICE

Comparisons between the cost of repair for a power unit and new price could bring surprises to the operator who dares to check the figures. This will especially be so when the overhaul is going to involve the replacement of major components in the engine structure. A new engine, with its added value of factory warranty, can become a very serious consideration. Most franchise dealers will also offer some trade-in value on the old engine.

Price of engines vary widely within the industry depending on vocation i.e. an automotive engine will be much more expensive than the rates of the equivalent industrial unit due to duty and taxes. It is, therefore, more difficult to justify the fitting of a replacement engine in this instance.

2. AGE AND CONDITION OF UNIT

After one major overhaul it may be possible to obtain near new engine life, but at second overhaul we must accept that engine life after overhaul will diminish significantly. When this fact is taken into the equation it may be that the new unit will look more attractive. Any engine being overhauled for the second time should be minutely examined for flaws in the major components.

3. IS THE POWER UNIT LARGE ENOUGH

This question may arise before an engine is due for overhaul, but at overhaul opportunity can be taken to invest the price of overhaul in upgrading the equipment. There are many cases where due to changing circumstances in operations the machinery being used becomes underpowered. Upgrading the unit by an increase in power (provided this can be accomplished without overloading other machine components) can be a viable alternative to replacing the complete machine.

4. WILL THE POWER UNIT BE LARGE ENOUGH

As a further extension of (3) the future work programme can be inspected and a decision made to upgrade equipment in preparation for a proposed new work programme.

5. THE TECHNOLOGICAL ADVANCE

Since the first oil shock nearly ten years ago Diesel Engine manufacturers have been hard at work improving the efficiency of their product. Prior to this time most research had been centered around the durability aspects of engine performance (not to say that this does not still receive a tremendous amount of attention).

We have all seen the improvements made recently in fuel consumption. Direct injection and turbocharging have become universally accepted for engines operating at high power outputs for extended periods.

Further and more far reaching developments are only one or two years away. We are referring, of course, to the use of electronics in controlling engine systems. Fuel savings of up to 20% on present levels may be possible with electronically controlled engine governing and fuel injection.

It could become a very good economic proposition with this type of fuel saving to scrap older units before what we have traditionally regarded as the end of its service life. Economic for both the operator and the country.

SUMMARY

Whenever we are confronted with decisions on the replacement or repair of machinery we must examine all possibilities, and also inspect very closely, the vocation both present and future for the equipment. Failure to do so could deny an operator of some very important cost savings and the consequent improved profitability. Extra profit must be the final objective.