

WORKSHEET · FREE RESOURCE LIBRARY · DIRT WORK BID SCHOOL

Machine Ownership and Operating Cost Worksheet

The full structure for working out what one machine costs you per hour: what it costs standing still, what it costs running, what it costs to move, and the divisor that most people get badly wrong.

Who it is for. Anybody charging a machine rate he cannot derive. If somebody asked you tonight how you got to your hourly number and the honest answer is that it sounded about right, this is the sheet.

One machine, one sheet

Do this per machine, not for the fleet. A mini excavator and a dozer do not cost the same to own, do not burn the same fuel and do not work the same number of hours, and averaging them produces a rate that is wrong for both.

There are three blocks of cost and one divisor. Ownership is what the machine costs you whether or not it turns a track. Operating is what it costs when it runs. Mobilisation is what it costs to get it there. The divisor is how many hours you actually bill, and it is the number that does the most damage.

Machine

UNIT NUMBER

MAKE AND MODEL

YEAR

SERIAL NUMBER

DATE ACQUIRED

CURRENT METER READING

PURPOSE: WHAT WORK THIS MACHINE ACTUALLY DOES

Block 1: Ownership cost per year

What it costs you standing in the yard.

ITEM	HOW YOU WORK IT OUT	ANNUAL AMOUNT

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Lines to fill: delivered purchase price less the value of tires or tracks, expected resale or salvage value, years you intend to keep it, capital recovery or the finance payment, interest, insurance, personal property tax, licence and registration, storage or yard cost, and any warranty or extended coverage you pay for.

Two different depreciations, and they are not interchangeable

Your accountant depreciates the machine for tax under the rules in IRS Publication 946. That schedule exists to work out taxable income and it has section 179, bonus depreciation and recovery periods in it.

The number you need for a bid is different. It is cost recovery: how much of the purchase price has to come back to you per hour so that you can replace the machine when it is done. Those two figures can be far apart, especially in a year you expensed a machine in full.

Use the tax schedule for the tax return. Use replacement thinking for the rate. Ask your accountant which is which before you use either, because this sheet is not tax advice.

Block 2: Operating cost per hour

What it costs while it is running.

ITEM	BASIS	COST PER HOUR

Lines to fill: fuel at your gallons per hour times your delivered price per gallon, DEF, engine oil and filters, hydraulic oil and filters, grease, undercarriage or tires prorated over their expected life in hours, ground engaging tools, cutting edges, repair parts, and outside repair labour. Your own mechanic's time belongs in overhead or here, but only in one of them.

Block 3: Mobilisation, per move

The move is a job cost, not an overhead. Price it per move and count the moves.

ITEM	BASIS	COST PER MOVE

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Lines to fill: truck and trailer cost per hour times round trip hours, driver time, fuel, permits for oversize or overweight loads, escort if required, loading and unloading time, and the time the machine is on a trailer instead of earning.

The divisor: billable hours per year

This is the line that decides everything else. Take the number off the meter for the last twelve months, not off a feeling.

METER HOURS LAST TWELVE MONTHS

HOURS ACTUALLY BILLED TO A CUSTOMER

HOURS ON YOUR OWN YARD WORK, MAINTENANCE AND MOVES

HOURS IDLING ON A JOB AND NOT BILLED

BILLABLE HOURS YOU WILL USE AS THE DIVISOR

HOW YOU KNOW THAT NUMBER IS RIGHT

Why the divisor is where the money goes

Spread a year of ownership cost over 2,000 hours and you get one rate. Spread the same cost over 900 hours, which is a great deal closer to what a single machine in a small outfit actually bills, and the rate is more than double.

Nothing about the machine changed. The only thing that changed is the honesty of the divisor. If you have never counted your billed hours off the meter, do that before you do anything else on this sheet, because every number above it is multiplied by the answer.

The rate

Work it in this order and write the arithmetic down, so that in six months you can see what you assumed.

OWNERSHIP COST PER YEAR

DIVIDED BY BILLABLE HOURS

OWNERSHIP COST PER HOUR

PLUS OPERATING COST PER HOUR

MACHINE COST PER HOUR, BEFORE ANYBODY IS PAID

PLUS OPERATOR BURDENED RATE PER HOUR

COST PER HOUR WITH AN OPERATOR IN IT

PLUS OVERHEAD RECOVERY PER HOUR

PLUS MARGIN

RATE YOU CHARGE

Sanity checks before you use the number

- ☐ Every cost in blocks 1 and 2 appears exactly once, and none of them appears in both
- ☐ The divisor is the number of hours you billed, not the number of hours the machine ran
- ☐ Fuel is at your delivered price, including any fuel surcharge you actually pay
- ☐ Undercarriage or tires are prorated over hours, not treated as a repair when they happen
- ☐ Insurance is the premium on this machine, not the whole policy
- ☐ The finance payment appears once, either as capital recovery or as a payment, never as both
- ☐ You have written the date next to the rate, because it expires

What is not on this sheet, and why

There are no rates, no fuel burn figures and no example machine here. A cost per hour that came off somebody else's iron is a guess with a decimal point on it.

The module that walks this through on real machines, with real payments and a real fuel bill, is module three of Dirt Work Bid School and it is still being filmed. What you can do today is fill this in for one machine, tonight, with your own statements in front of you.

Where this comes from

Every code, standard and statute this sheet leans on. Check them.

IRS Publication 946, How to depreciate property

<https://www.irs.gov/publications/p946>

Tax depreciation. Related to, but not the same as, the cost recovery you build into an hourly rate.

Ladders into module 03, What Your Machine Actually Costs You.

Checkered Flag Excavation, Inc. De Soto and Festus, Missouri. Founded 2000. Free to print, copy and hand to anybody.

Not legal, tax or engineering advice.

<https://dirtworkbusiness.com/library/machine-cost-worksheet>