golf industry show

GCSAA Education Conference | Trade Show | GCSAA Golf Championships
San Diego Convention Center | February 6-11, 2016
Same Two Guys Productions
Preventive Maintenance Strategies For Turf Equipment

COSTS

EQUIPMENT REPLACEMENT
CATASTROPHIC BREAKDOWN
SERVICE CALLS
PM PROGRAM

A customized PM Program pays for itself

The Best Way to Deal with a Problem is to Prevent it
Periodic Maintenance
Periodic Maintenance
Periodic Maintenance
Preventive Maintenance Defined

• Preventive maintenance is maintenance that is regularly performed on a piece of equipment to lessen the likelihood of it failing. Preventative maintenance is performed while the equipment is still working, so that it does not break down unexpectedly.

• Preventative maintenance is planned so that any required resources are available.
Advantages

• Planning is the biggest advantage of preventive maintenance over less complex strategies.
• Unplanned, reactive maintenance has many overhead costs that can be avoided during the planning process.
• The cost of unplanned maintenance include lost production, higher costs for parts and shipping, as well as time lost responding to emergencies and diagnosing faults while equipment is not working.
• **Unplanned maintenance typically costs three to nine times more than planned maintenance.**
• When maintenance is planned, each of these costs can be reduced. Equipment can be shut down to coincide with production downtime.
Advantages

• Ensures trade-in resale values are maximized
• Your program will be recognized by vendors
• Lease Residual values.
Disadvantages

• Really?
• OK, Can increase workload
• Administrative time for scheduling and documentation
• Easily pencil whipped for time constraints and special projects
• Can become useless unless there is commitment to the program by the entire staff
Inspection Guides

PREVENTIVE MAINTENANCE

SECTION 11C. MAINTENANCE SCHEDULES

GENERAL
The following charts summarize maintenance to be performed daily, weekly, every two weeks, monthly, every three months, and annually. The maintenance charts give recommended hours of operation between various procedures. Tri-King machines equipped with the performance monitor have direct read outs of operating hours. Reference numbers are keyed to the illustration on page 11C-4. Footnotes on page 11C-3 give additional information.

MAINTENANCE SCHEDULE CHART

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Remarks and/or Type of Lubricant

- Check dipstick.
- Change filter the first 25 hours and thereafter every 250 hours.
- Inspect for loose connections, kinks, worn or cut hoses, etc.
- Check. Use diesel fuel oil #2 Cetane rating 45.
- Remove sediment.
- Change at 100 hours. Replace at 400 hours.
- Check 50 hours.
- Change after the first 35 hours, thereafter every 25 hours.
- Change after the first 35 hours, thereafter every 150 hours.
- Check, change coolant, 3 qt. volume annually.
- Use clean tap water.
- Clean area around screen.
- Clean.
- Clean every two weeks and/or replace every year.
- Preheating time recommended: above 0°C/32°F: 15 sec., below 0°C/32°F: 30 sec.
Inspection Guides

• **Every 200 Hours or Annually (whichever comes first)**
  • Change spark plug.
  • Change air cleaner element.
  • Check air cleaner dust unloading valve.
  • Change fuel filter.
  • Check spark arrestor.
  • Check drive belt condition.
  • Check driven clutch wear buttons.
  • Inspect and replace battery hold-down strap, if necessary.
  • Inspect battery; clean if necessary.
  • Check and tighten wheel bolts to correct torque.
  • Check and tighten hardware.
  • Check brake pad wear.
  • Inspect cargo box tailgate lanyards. Replace if kinked or frayed.
## Inspection Guides

### Maintenance

#### A – Service (every 50 hours)
- Check Battery Fluid Level
- Check Battery Cable Connections
- Service Air Filter Pre-Cleaner
- Lubricate All Grease Fittings
- Change Engine Oil

#### B – Service (every 100 hours)
- Replace Engine Oil Filter
- Replace Air Filter Element
- A – Service required

#### C – Service (every 200 hours)
- Torque Wheel Lug Nuts
- Check Reel Bearing Preload Adjustment
- A and B – Service required

#### D – Service (every 800 hours)
- Replace Hydraulic Oil
- Replace Hydraulic Oil Filter
- Check Engine RPM (idle and full throttle)
- Replace Fuel Filter
- Replace Spark Plugs
- Check Engine Valve Clearance
- A, B, and C – Service required

### Other – Annual Service and Specials
- Replace Moving Hoses
- Replace Safety Switches (2 years)
- Fuel Tank – Drain/Flush (2 years)
- Hydraulic Tank – Drain/Flush (2 years)

(See Operator’s and Service Manual for specifications and procedures.)
Inspection Guides

• Always add items of local interest
• Recent high failure items
• Seasonal adjustments
• Pay particular attention to high hour items
• Plan ahead Parts, consumables, supplies
Build Your Program

- Ideally One piece of equipment per week, two for large fleets
- 180 day cycle gets each piece in twice per year
- Always include the smallest equipment (weed eaters, chain saws)
- Allows one to adjust for heavier work loads, pre planned projects, down time, vacations
Dollars and Cents

• Actual Lease savings – On a 1 Million dollar fleet of equipment doing the proper PM can save your company $1000’s per month in lease payments.

• Shop around for high use items (filters, oil, grease, etc)

• Don’t be afraid to challenge parts pricing!
Dollars and Cents

A few examples of what savings can be realized when you have the time to shop around...
$75.00 v.s. $14.95
$419.00 v.s. $24.17
$75.00 vs $21.00
Improve the Program

• If you see items that wear often that are not in the program put them in.
• If a repair is needed find out why the part failed so maybe you can prevent others.
• If you see something going bad fix it then rather than wait.
What Programs are There?

• Index Cards
• Excel Spreadsheet
• Toro My Turf
• Trims
• Others
Thank You

Contact Us

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