

DAILY CHECKS AND PREVENTIVE MAINTENANCE FOR MOTORGRADER



Read Maintenance Interval Schedule before operating grader

Maintenance Support

Welding on Machines and Engines with Electronic Controls

SMCS Code: 1000, 7000

Proper welding procedures are necessary in order to avoid damage to the electronic controls and to the bearings. The following steps should be followed in order to weld on a machine or an engine with electronic controls.

1. Turn off the engine. Place the engine start switch in the OFF position.
2. If equipped, turn the battery disconnect switch to the OFF position. If there is no battery disconnect switch, remove the negative battery cable at the battery.

NOTICE

Do NOT use electrical components (ECM or ECM sensors) or electronic component grounding points for grounding the welder.

3. Clamp the ground cable from the welder to the component that will be welded. Place the clamp as close as possible to the weld. Make sure that the electrical path from the ground cable to the component does not go through any bearing. Use this procedure in order to reduce the possibility of damage to the following components:
 - Bearings of the drive train
 - Hydraulic components
 - Electrical components
 - Other components of the machine
4. Protect any wiring harnesses from the debris which is created from welding. Protect any wiring harnesses from the splatter which is created from welding.
5. Use standard welding procedures in order to weld the materials together.

Maintenance Interval Schedule

SMCS Code: 1000, 7000

Note: All safety information, warnings, and instructions must be read and understood before you perform any operation or any maintenance procedure.

Before each consecutive interval is performed, all of the maintenance requirements from the previous interval must also be performed.

When Required

Battery - Recycle	77
Belt - Replace	78
Blade Lift Cylinder Socket - Check/Adjust/Replace	79
Centershift Cylinder Socket - Check/Adjust/Replace	82
Circle Clearances - Check/Adjust	83
Circle Drive Oil Level - Check	86
Circuit Breakers - Reset	87
Cutting Edges and End Bits - Inspect/Replace	95
Drawbar Ball and Socket - End Play - Check/Adjust	95
Engine Air Filter Primary Element - Clean/Replace	97
Engine Air Filter Secondary Element - Replace	99
Engine Air Filter Service Indicator Screen - Check/Replace	101
Engine Crankcase Breather - Replace	102
Engine Overheating	105
Engine Power Loss	106
Ether Starting Aid Cylinder - Replace	107
Evaporator Coil and Heater Coil - Clean	107
Fuel System - Fill	109
Fuses - Replace	113
Moldboard Wear Strip - Inspect/Adjust/Replace	119
Oil Filter - Inspect	119
Radiator - Clean	121
Roper Tip - Inspect/Replace	122
Scarifier Teeth - Inspect/Replace	123
Steering Accumulator - Check	125
Window Washer Reservoir - Fill	132
Window Wiper - Inspect/Replace	132
Windows - Clean	133

Every 10 Service Hours or Daily

Air Tank Moisture and Sediment - Drain	76
Backup Alarm - Test	77
Brakes, Indicators and Gauges - Test	80
Circle Drive Pinion Teeth - Lubricate	86
Circle Top - Lubricate	87
Cooling System Level - Check	92
Engine Air Filter Service Indicator - Inspect	99
Engine Air Pre-cleaner - Clean	101
Engine Oil Level - Check	102

Fuel System Water Separator - Drain	111
Seat Belt - Inspect	124
Transmission and Differential Oil Level - Check	129

Initial 100 Service Hours

Transmission and Differential Oil Filter and Screens - Replace/Clean	128
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Every 100 Service Hours or 2 Weeks

Articulation Bearings - Lubricate	76
Axle Oscillation Bearings - Lubricate	76
Belt - Inspect	77
Blade Lift Cylinder Socket - Lubricate	79
Cab Air Filter - Clean/Replace	81
Centershift Cylinder Socket - Lubricate	82
Centershift Lock Bar - Clean/Lubricate	82
Drawbar Ball and Socket - Lubricate	82
Fuel Tank Water and Sediment - Drain	95
Hydraulic System Oil Level - Check	113
Kipper Bearings - Lubricate	118
Kipper Cylinder Bearings - Lubricate	122
Scarifier Lift Link Socket - Lubricate	122
Tandem Drive Oil Level - Check	123
Tire Inflation - Check	126
Wheel Bearing Oil Level (Front) - Check	126
Wheel Lean Bar Bearings - Lubricate	131
Wheel Lean Bearings - Lubricate	131
Wheel Lean Cylinder Bearings - Lubricate	132

Initial 500 Service Hours (or at first oil change)

Battery or Battery Cable - Inspect/Replace	77
Electronic Unit Injector - Inspect/Adjust	96
Engine Valve Lash - Check	106

Every 500 Service Hours or 3 Months

Air Dryer - Check	75
Braking System - Test	80
Coolant Sample (Level 1) - Obtain	88
Engine Air Filter Service Indicator - Inspect/Replace	100
Engine Oil Sample - Obtain	102
Engine Oil and Filter - Change	103
Fuel System - Prime	109
Fuel System Secondary Filter - Replace	110
Fuel System Water Separator Element - Replace	111
Fuel Tank Cap and Strainer - Clean	112
Hydraulic System Oil Filter - Replace	116
Hydraulic System Oil Sample - Obtain	118
Parking Brake - Drain	120
Tandem Breather - Clean/Replace	125
Tandem Drive Oil Sample - Obtain	126
Transmission and Differential Oil Filter and Screens - Replace/Clean	128
Transmission and Differential Oil Sample - Obtain	130

Engine Oil



Check
engine oil
level daily

Check for
discoloration

Smell oil for
hints of
diesel

Hydraulic Oil



**Check
daily**

**Watch for
discoloration**

**Start shift
with level
at full.**

Transmission Oil



**Check oil level in
transmission**

**See owners
manual because
machine may have
to be running to
check level**

Batteries



**Check battery
fluid level
according to
service manual**

**Fill with
recommended
fluid only**

**Clean
corrosion from
connections
when needed**

**Refer to
manual before
jump starting**

Coolant level



**Make sure
proper level is
maintained**

**Check for
discoloration**

**Check strength
seasonally for cold
weather operation
(see operators
manual)**

Air Filter



Check daily for dirt

May need to check several times daily for snow

Clean by tapping with hand only

Replace when wet

Air Cleaner Restriction Gauge



**Check gauge
for proper
operation daily**



Inspect Tires Daily



**Check for
proper
pressure**

**Inspect for
wear**

**Check recaps
for tread
separation**

**Check for
objects
sticking in tire**

**Make sure lug
nuts are
properly
tightened**

Oil Level In Tandems



**Check oil level
with machine
setting
completely level**

**Check for
discoloration
and grit**

Moldboard



Check cutting edge for wear, cracks, and loose bolts.

Check edges often during snow removal to prevent moldboard damage, and cutting edge loss!!!!!!

Grease Daily



Check operators manual for grease intervals

Grease points with extreme exposure to grit at least daily, and more often if needed

Wipe grit from zerk before greasing

Mirrors



Clean mirrors

If mirrors are cracked or damaged in any way, report it to your supervisor to schedule replacement

Make sure mirrors are adjusted

Glass

**Clean glass often
as needed**

**Report cracked or
broken glass to
your supervisor
for replacement.**



Wipers



Inspect all wipers on machine for damage or wear. Replace if necessary

Fill washer fluid reservoir if necessary

Walk around

**Check for
telltale signs of
leaks.**

**Check for
breaks, cracks,
debris, and
loose parts.**



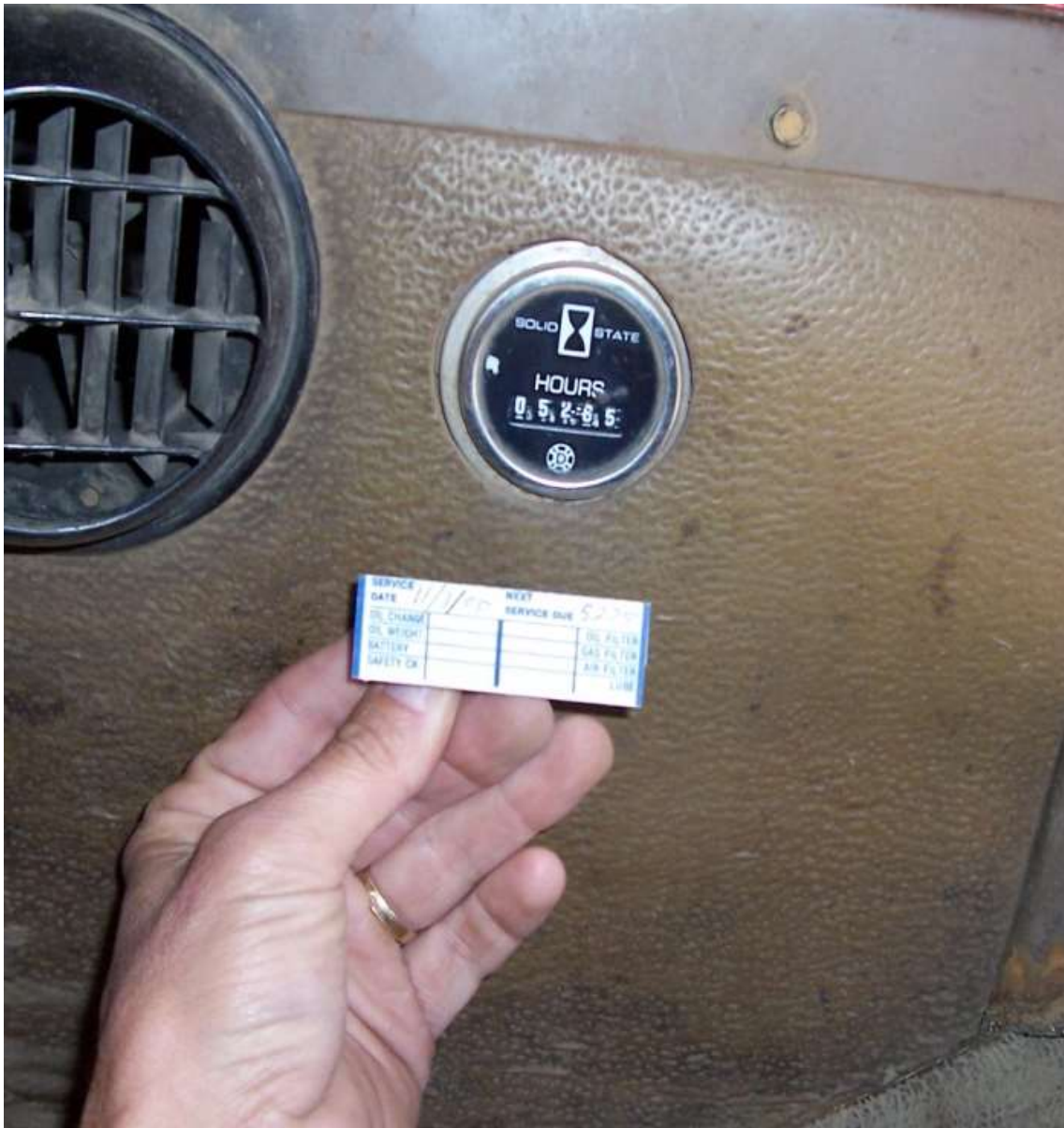
Entering and Exiting



Always keep **three** points of contact with grader when entering and exiting grader

Never use the steering wheel as a point of contact for entering and exiting

Service Due Date



The entire fleet should be the same

Safety Items



Make sure fire extinguisher is charged and serviced regularly



Make sure First Aid Kit is filled and up to date

2-way radio

**Make sure
radio is
working
properly
before leaving
yard.**



**Make sure you
are familiar with
radio so you can
use it easily while
operating
equipment**



Gauges at Startup



Make sure gauges are working properly before leaving yard.


Clean dust from gauges for easy reading during operation.

Checks at Startup

Check Horn

A large, black, downward-pointing arrow with a white outline, indicating the flow from the first step to the second.

**Check brakes by moving slightly then
applying them**

A large, black, downward-pointing arrow with a white outline, indicating the flow from the second step to the third.

**Check backup alarm by putting Grader in reverse
and listening**

Make sure **all** lights are working properly before leaving yard



Shutdown

Fuel machine at end of shift to prevent condensation



Park on level ground



Lower attachments



Allow 5 minutes for cool down



Walk around machine and check for problems



Machines not in the shop should be secured