

NOTE: Insert this INDEX immediately behind the INDEX for 1981
in the "BULLETIN" section of your Service Manual

INDEX

TIMELY OPE TIPS FOR THE MONTH - 1982

<u>ISSUE NO.</u>	<u>DATE</u>	<u>TIP NO.</u>	<u>SUBJECT</u>
95	1/28	1	K1 and K2 Cab Door Handle Slots
		2	Kohler Connecting Rod Installation
		3	Battery Ignition 10-14 HP Kohler Models
		4	Kohler Engine Sheared Flywheel Keys
		5	Warning Not to Use Engine Oil Additives
96	2/26	1	New - REDUCED - Mower Blade Prices
		2	Model 448 - 648 Heat Exchanger Back Pressure
		3	Excessive Engine Vibration - All Kohler Equipped Models
		4	Excessive Engine Oil Carry Over - Models 446,448,648
97	3/29	1	Attachment Drive Clutch Pulley Spacer Change
		2	Tractor Attachment Lift Cylinder Substitution
		3	Revised Loader Travel Valve Control Bracket
		4	Improved Choke and Throttle Cables
98	4/30	1	New Exhaust Clamps for 200-400 Series Tractors
		2	New Travel Control Valve Center Spring,P/N C26382
		3	New Distribution - OPE Parts Catalogs
		4	Ordering Procedure-Service Manuals for Individual Tractors
99	5/26	1	New Distribution OPE - C.A.R.E.S. Machine Location and Job Code Manual
		2	Tractor Vibration And/Or Knocking - All Models
		3	Mod 80 - Addition of Carburetor Adjustment Hole
		4	Parts Catalog Correction - 648 Catalog # 8 - 1420
100	6/25	1	Application - Holding Valve/Flow Control Valve
101	7/29	1	Two Speed Transaxle Neutral Adjustment
		2	446, 448 648 Wiring Check
		3	Kohler Engine - Carbon Removal
		4	Mower Spindle Spacer Inspection
		5	Hydraulic Lift Position When Mowing - Reminder

<u>ISSUE NO.</u>	<u>DATE</u>	<u>TIP NO.</u>	<u>SUBJECT</u>
102	8/30	1	RER 80 Muffler Bolt Added
		2	CAUTION - When Removing a Kohler Engine Oil Base
		3	New Parts Catalog and Revisions
103	9/30	1	RER 80 Muffler Bolts
		2	Fuel Tank Gauge for 200-400-600 Series Tractors
		3	Model 210 Tractor - Retainer Wire for Shifter Boot
		4	Model J31 and J32 Wood Splitter Attachment Application
104	10/28	1	Model 80 Fuel Line Routing
		2	Model L80, L84 Snow Caster Pulley and Belt
		3	Sealant for Gear Covers on J74 Tiller and L29 PTO
		4	Application of Anti-Seize Compound at Specified Service Points
		5	Customer Mailing - Warranty Reminder
		6	Mower Display
105	11/19	1	Two Speed Transaxle Gear Engagement Adjustment - Models 220, 222, 224
106	12/27	1	Onan Engine Carburetor Float Swell

119 South First Street
Winneconne, Wisconsin 54986-9576
Phone 414 582-4455

January 28, 1982

TIMELY TIPS FOR THE MONTH

ISSUE # 95

- TIP # 1 - K1 and K2 Cab Door Handle Slots
- TIP # 2 - Kohler Connecting Rod Installation
- TIP # 3 - Battery Ignition 10-14 HP Kohler Models
- TIP # 4 - Kohler Engine Sheared Flywheel Keys
- TIP # 5 - Warning Not to Use Engine Oil Additives

TIP # 1 - K1 and K2 Cab Door Handle Slots:

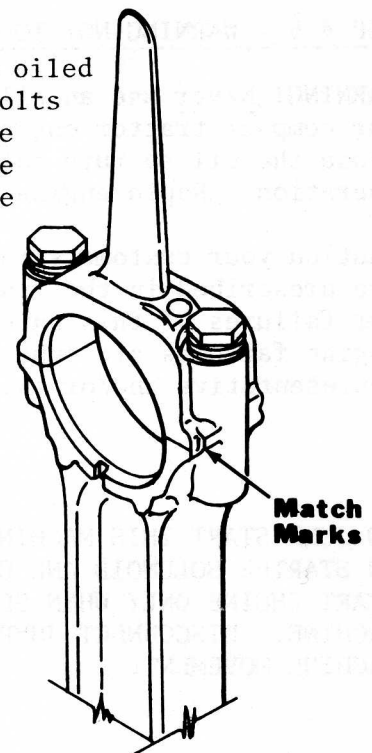
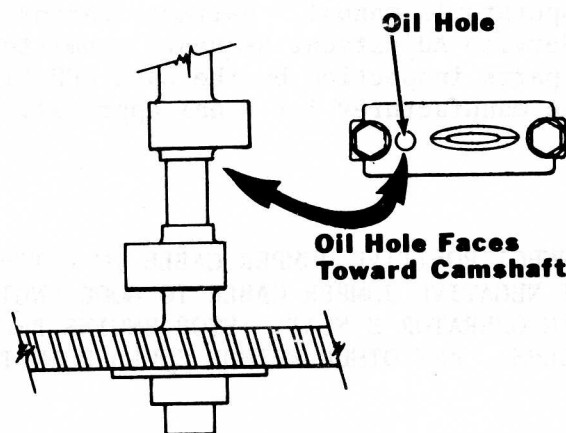
Reports have been received advising the handle slots in the doors of some K1 and K2 cabs are too narrow to accommodate the spacers. The cab manufacturer has indicated that one run of our cabs was probably made using the smaller slot punch since many of their OEM customers do not specify the spacers.

Dealers who have K1 or K2 cabs with this condition should disregard the spacers and snugly anchor the rear handle bolt with a 1/4" center locknut rather than the lockwasher and regular nut.

Do not enlarge the slots to accommodate the spacers and submit SAR's for labor reimbursement which a few dealers have already done.

TIP # 2 - Kohler Connecting Rod Installation:

After installing rod on the clean journal, torque the oiled bolts to 25% over the recommended level, loosen the bolts and re-torque to correct level. Before installing the rod check that the match marks correspond and that the oil hole faces towards the camshaft. This will ensure correct lubrication of the connecting rod bearing.



Viewed From Below

TIP # 3 - Battery Ignition 10-14 HP Kohler Models:

Reports from the field of poor performance indicate that proper spark plug type and/or gap is not always used when servicing. We advise before troubleshooting any engine that the spark plug gap and type be checked. In the subject engines, this should be Champion H10/RH10, or equivalent, gapped at .035" - .9mm. Operation at reduced gap may cause engine to cut out periodically giving symptoms similar to a sticking valve. It can also cause a "spark knock" symptom and added forces at the flywheel key. See next article, Tip #4.

TIP # 4 - Kohler Engine-Sheared Flywheel Keys:

Some field reports have indicated the shearing of flywheel keys - a condition which could result from several causes.

Since shearing has been reported specifically on engines with flywheel drives and battery ignition systems, check conditions such as overload, ignition timing and spark plug gap, when such an engine is brought in for repair.

Spark plug gap on battery ignition engines must be set at .035". If improperly gapped, a maverick spark can occur, which can cause improper ignition of unburned gases and can create a force causing the flywheel key to shear.

When repairing this type failure, replace the flywheel, crankshaft, key, flywheel washer and nut. Refer to your engine service manual for proper removal and installation instructions.

TIP # 5 - WARNING NOT TO USE ENGINE OIL ADDITIVES:

WARNING! Never use an oil additive such as STP or similar treatments in our compact tractor engines. During engine operation this type of additive can cause the oil to turn into a molasses type substance and prevent proper engine operation. Rapid engine wear and/or main and rod bearing seizure will result.

Caution your customers to use only the summer and winter grade oils which are prescribed in the tractor operator's manual. Warranty cannot be considered for failures of this nature. Service Adjustment Requests submitted for engine failures are subject to parts inspection by the Case OPE Field Service Representative and/or the engine manufacturer for final approval.

TO JUMP START THIS MACHINE, CONNECT POSITIVE JUMPER CABLE TO BATTERY TERMINAL ON STARTER SOLENOID AND CONNECT NEGATIVE JUMPER CABLE TO GOOD ENGINE GROUND. START ENGINE ONLY WHEN SEATED IN OPERATOR'S SEAT. STOP ENGINE BEFORE LEAVING MACHINE. DISCONNECT JUMPER CABLES. ANY OTHER METHOD COULD RESULT IN UNCONTROLLED MACHINE MOVEMENT.



119 South First Street
Winneconne, Wisconsin 54986-9576
Phone 414 582-4455

February 26, 1982

TIMELY TIPS FOR THE MONTH

ISSUE # 96

- TIP # 1 - New - REDUCED - Mower Blade Prices
- TIP # 2 - Model 448 - 648 Heat Exchanger Back Pressure
- TIP # 3 - Excessive Engine Vibration - All Kohler Equipped Models
- TIP # 4 - Excessive Engine Oil Carry Over - Models 446, 448, 648

TIP # 1 - New - REDUCED - Mower Blade Prices:

We are pleased to announce that the new Dealer's Consolidated Parts Price List No. 82-1 (U.S) effective February 1, 1982 reflects substantial reductions in dealer cost of nearly all current and non-current mower blades. The Service Parts Supply Division has successfully negotiated highly competitive supplier costs without compromise to ORIGINAL EQUIPMENT QUALITY.

The following list compares the new dealer net prices with the previous net prices.

<u>PART NUMBER</u>	<u>PREVIOUS NET</u>	<u>NEW NET</u>
A70388	\$ 7.56	\$ 5.75
A70317	7.67	5.80
C11654	8.25	5.80
C11655	7.91	5.75
C14886	8.61	6.00
C23408	16.57	10.57
C24441	7.88	5.75
C24442	7.82	5.90
C24443	8.78	5.90
C24686	10.57	10.57
C24797	7.92	6.00
C25637	9.36	6.10

The new net prices are also subject to:

- a. Cash Discount (2%)
- b. Stock Order Discount (5%)
- c. 1982 OPE Spring Stock Order Program Discount (10%) and extended terms as defined in the program policy.
- d. Prepaid freight on Stock Orders - no dollar minimum is required.

To maximize sales and profits dealers are encouraged to begin checking their inventory and usage records on the above and many other fast moving parts which can be ordered under the 1982 Spring Order Program which you will be receiving in the mail the week of March 8th.



TIP # 2 - Model 448 - 648 Heat Exchanger Back Pressure:

The heat exchanger (P/N C25376) used on Model 448 tractors and 648 loaders provides more cooling capacity than heat exchangers used on other models. This heat exchanger also has slightly more back pressure.

Several reports of the return line blowing off the oil cooler inlet have been received. This has occurred when the tractor was started in severely cold weather and with the summer grade oil in the hydraulic system.

Be sure to remind customers to change the oil in the hydraulic system to SAE 5W-20 when severely cold winter temperatures are expected. This information is found in both the tractor operator's manual and on the decal next to the fill cap for the hydraulic oil reservoir.

Contact your OPE service representative if the problem persists after checking for properly tightened hose clamps and proper oil.

NOTE: Dealers not called on by OPE service representatives should contact their service representative or the Winneconne Service Office.

The back pressure has been reduced effective with the Model and Product Identification Number listed below. SAE 5W-20 oil is still required, however, during winter operation.

448 P.I.N. 14028047

648 P.I.N. 14030146

TIP # 3 - Excessive Engine Vibration - All Kohler Equipped Models:

The bolts (P/N 113-219) which secure the engine mounting plate to the tractor frame must be tight. Loose bolts will cause excessive engine vibration.

If excessive engine vibration is noted, tighten the bolts to a torque of 35 to 42 lb. ft (48 - 57 Nm). Also check the bolts P/N 164-50 that fasten the engine mounting plates to the engine oil base. These should be tightened to a torque of 45 to 54 lb ft (61 to 73 Nm).

TIP # 4 - Excessive Engine Oil Carry Over - Models 446, 448, 648:

See Timely Tips, Issue #60, Tip #3.

Check for malfunctioning breather reed valve.

Several units have been reported that have burrs on the C20245 breather baffle. The burrs prevent the reed valve from seating which causes the crankcase to pressurize and force excessive oil out the breather into the air cleaner.

Remove the burrs with a file and insure that the reed valve seats when reassembling the breather.

119 South First Street
Winneconne, Wisconsin 54986-9576
Phone 414 582-4455

March 29, 1982

TIMELY TIPS FOR THE MONTH

ISSUE # 97

- TIP # 1 - Attachment Drive Clutch Pulley Spacer Change
- TIP # 2 - Tractor Attachment Lift Cylinder Substitution
- TIP # 3 - Revised Loader Travel Valve Control Bracket
- TIP # 4 - Improved Choke and Throttle Cables

TIP # 1 - Attachment Drive Clutch Pulley Spacer Change:

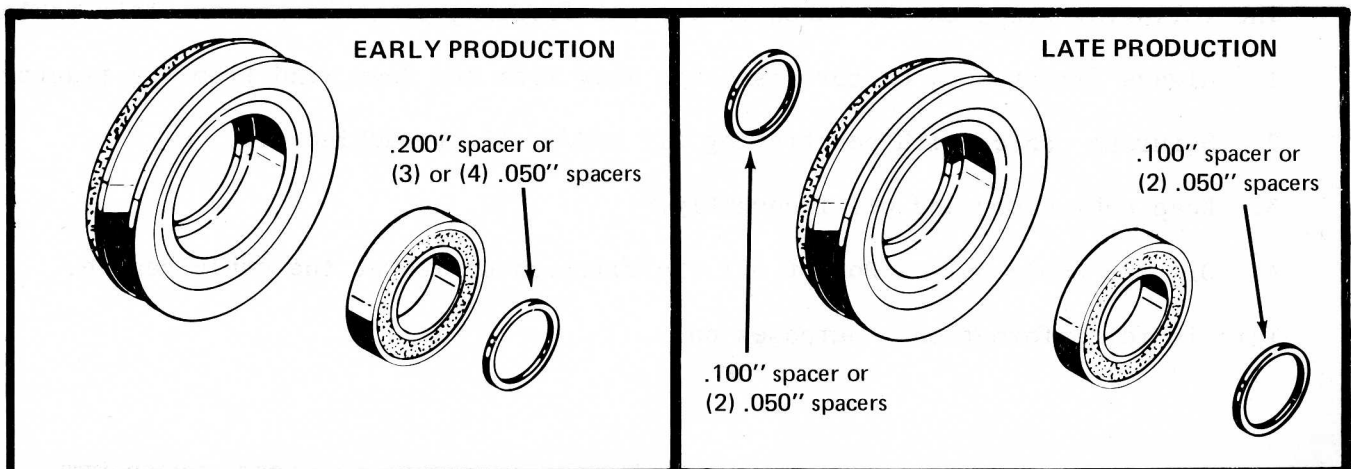
The position of the bearing in the attachment drive clutch pulley has been changed. The bearing is now centered under the pulley V-Groove.

To accommodate this change, the .200" spacer (or 3 or 4 .050" spacers) between the pulley and rear cam has been eliminated.

A .100" spacer, P/N C26346, (or 2 .050" spacers, P/N C15557) is now used on each side of the pulley bearing.

This change is effective with the following model and product identification numbers:

210 -	P.I.N. 14017905
220 -	P.I.N. 14018990
222 -	P.I.N. 14020602
224 -	P.I.N. 14022473
444 -	P.I.N. 14023967
446 -	P.I.N. 14025431
448 -	P.I.N. 14028081
648 -	P.I.N. 14030149



TIP # 2 - Tractor Attachment Lift Cylinder Substitution:

The correct service replacement part for tractor attachment lift cylinders is P/N C19475.

Recent parts catalogs indicate to order the C19475 and a bracket. The bracket will not work in this application. Order only the C19475.

The C19475 replacement has a slightly larger outside diameter than the original cylinder. If necessary, file a small amount of material away from the outside of the piston end mounting holes to permit the cylinder to fit between the mounting brackets.

TIP # 3 - Revised Loader Travel Valve Control Bracket:

The bracket which holds the C22986 control arm (affectionately nicknamed banana plate) captive has been revised to reduce free movement of the control arm. Reduction of free movement will help insure full spool travel within the stroke of the travel pedal.

Model 648 loader, P.I.N. 14014396 and after, have the new C26365 control valve bracket installed. The C26365 bracket is available from your regular parts source.

This is for informational purposes only.

TIP # 4 - Improved Choke and Throttle Cables:

Choke and throttle cables that resist freezing are available from your regular parts source. These cables have increased clearance between the inner wire and conduit.

Choke cable - 210, 220, 222, 224, 444	- P/N C25605
Choke cable - 446, 448, 648	- P/N C25604
Throttle cable - All models	- P/N C25603

The following steps can be taken to prevent freezing of choke and throttle cables:

1. Always direct snow caster discharge away from and down wind from the tractor.
2. Saturate cables with penetrating oil and/or light machine oil.
3. Keep cables dry and oil frequently.
4. Oil the cable only. Do not oil the friction device at the cable handle.

This is for informational purposes only.

EXTRA CAUTION MUST BE EXERCISED WHEN OPERATING ON GRADES OR SLOPES UNDER WET OR SLIPPERY SURFACE CONDITIONS.



119 South First Street
Winneconne, Wisconsin 54986-9576
Phone 414 582-4455

April 30, 1982

TIMELY TIPS FOR THE MONTH

ISSUE # 98

- TIP # 1 - New Exhaust Clamps for 200-400 Series Tractors
- TIP # 2 - New Travel Control Valve Centering Spring, P/N C26382
- TIP # 3 - New Distribution - OPE Parts Catalogs
- TIP # 4 - Ordering Procedure - Service Manuals for Individual Tractors

TIP # 1 - New Exhaust Clamps for 200-400 Series Tractors:

Exhaust clamps which fit the muffler flanges more precisely are now available from your regular parts source.

Part Number H315176 for Kohler equipped Models (210,220,222,224,444)

Part Number L47766 for Onan equipped Models (446, 448)

Make sure there is a tight seal between the muffler and exhaust pipe when replacing the muffler, exhaust pipe or clamps. Even a small leak could discolor the hood and decals. Muffler cement, available in most hardware stores, can be applied to the exhaust pipe joint. Cement made by Yale Engineering Co., Victor Automotive Prod., Inc. or Woodhill Chemical Sales Corp. is recommended. Apply a bead of muffler cement to the outside diameter of the exhaust pipe in the area for the clamp. Insert the exhaust pipe into the muffler inlet. Install the clamp.

Muffler sealant is being applied at the factory beginning with the models and product identification numbers listed below:

210	14017926	444	14024007
220	14019037	446	14025525
222	14020658	448	14028184
224	14022498		

TIP # 2 - New Travel Control Valve Centering Spring, P/N C26382:

Refer to Issue #90, Tip #1

A new travel control valve centering spring is now available from your regular parts source. The part number is C26382. The new spring has less tension and eliminates the possibility of the travel control lever returning to neutral by itself.



(OVER)

TIP # 2 - New Travel Control Valve Centering Spring, P/N C26382: CONTINUED

If you have a tractor with the travel control lever returning to neutral by itself, replace the travel control spool centering spring with the new C26382. Disregard the instructions in Issue #90, Tip #1.

TIP # 3 - New Distribution - OPE Parts Catalogs:

The following new catalogs/revisions are available:

1. Catalog C1279 for Model 446 Prior to P.I.N. 9728158 - Price \$2.50
 2. Catalog 8-1640 for Model J-74 Tiller - Price \$1.00
 3. Rev #1 for Catalog C1300 for Mod 80 Rider - No Charge
- A. Dealers called on by OPE Division Field Service Representatives will be supplied with this material by their Field Service Representatives.
- B. Dealers not called on by OPE Division Field Service Representatives can obtain this material by submitting a properly completed form 1740 to:

J I CASE COMPANY
119 South First Street
Winneconne, Wisconsin 54986
Attention: Service Department

TIP # 4 - Ordering Procedure - Service Manuals for Individual Tractors:

Please review Page 10 of the Ag Equipment Publications and Video Tape Catalog, Form # Rac 8-22672.

SERVICE MANUALS FOR INDIVIDUAL TRACTORS

NOTE: Order Service Manual Sections for individual tractors by specifying Model and Product Identification Numbers.

Many orders are being received without specifying Model and P.I.N. We cannot ship the correct service manual sections without this information.

The prices have been raised as follows to include a 3-ring binder for these service manual sections:

Hydraulic Drive Tractors \$20.00
Mechanical Drive Tractors \$10.00

The price for the OPE Master Service Manual, #9-51600 remains at \$30.00

All of the above service manuals must be ordered on a properly completed form 1740 from:

J I CASE COMPANY
119 South First Street
Winneconne, Wisconsin 54986
Attention: Service Department



119 South First Street
Winneconne, Wisconsin 54986-9576
Phone 414 582-4455

May 26, 1982

TIMELY TIPS FOR THE MONTH

ISSUE # 99

- TIP # 1 - New Distribution OPE - C.A.R.E.S. Machine Location and Job Code Manual
- TIP # 2 - Tractor Vibration And/Or Knocking - All Models
- TIP # 3 - Mod 80 - Addition of Carburetor Adjustment Hole
- TIP # 4 - Parts Catalog Correction - 648 Catalog # 8-1420

TIP # 1 - New Distribution OPE - C.A.R.E.S. Machine Location and Job Code Manual:

A new and revised C.A.R.E.S. Machine Location, Job Code Manual for compact tractors and equipment, Form No. 9-58421, is now available.

- A. Dealers called on by an OPE Division Field Service Representative will be supplied with this material by their Field Service Representative.
- B. Dealers not called on by OPE Division Field Service Representatives can obtain this material by submitting a properly completed Form 1740 to:

J I CASE COMPANY
119 South First St.
Winneconne, Wisconsin 54986
Attention: Service Department

NOTE: Please be sure that your complete name, address and dealer code is included.

A charge of \$3.00 will be made to cover the cost of printing and postage.

All SAR's submitted after July 1, 1982 must be coded from the new Machine Location - Job Code Manual.

TIP # 2 - Tractor Vibration And/Or Knocking - All Models:

Engine vibration can be transmitted to the tractor frame if the attachment drive clutch guide, Part Number C19767, contacts the engine oil base. A knocking sound and chassis vibration can result from this contact.

If interference exists between the guide and oil base, bend the loop forward enough to obtain clearance.



(OVER)

TIP # 2 - Tractor Vibration And/Or Knocking - All Models (CONTINUED):

Engine mounting bolts should also be checked on Kohler equipped models:

- A. Tighten the bolts which fasten the engine mounting plates to the tractor frame to a torque of 35 - 42 lb. ft. (48 - 57 Nm).
- B. Tighten the bolts that fasten the engine mounting plates to the engine oil base to a torque of 45 - 54 lb. ft. (61 - 73 Nm).

Submitted by: Galvin Tractor Co., Inc.
Abbotsford, WI.

TIP # 3 - Mod 80 - Addition of Carburetor Adjustment Hole:

A hole in the engine mounting plate, under the carburetor main fuel screw, is now provided to permit easier carburetor adjustment.

The first Mod 80 to have this hole is P.I.N. 14014909.

This adjustment hole can be added to Mod 80's prior to P.I.N. 14014909 if desired. Use the following procedure:

1. Remove the battery and drain the fuel to permit the Mod 80 to be stood on its end.
2. When viewed from underneath, the hole must be made in the upper right corner of the engine mounting plate.
3. Measure down 1-5/16" (33 mm)
Measure from the right hand edge 1-7/8" (48 mm)
4. Drill a 7/8" (22 mm) hole. Be careful that the drill bit does not break through and damage the carburetor.

This is for informational purposes only.

Submitted by: Blue Valley Tractor
Stilwell, KS.

and Hoffman's Power Eq.
Coldwater, MI.

TIP # 4 - Parts Catalog Correction - 648 Catalog # 8-1420:

Model 648 Loader Parts Catalog #8-1420

Page 55, Reference 10 - SHOULD BE C26179 Bearing

Please mark your book accordingly.



119 South First Street
Winneconne, Wisconsin 54986-9576
Phone 414 582-4455

June 25, 1982

TIMELY TIPS FOR THE MONTH

ISSUE #100

TIP #1 -Application - Holding Valve/Flow Control Valve

TIP #1 -Application - Holding Valve/Flow Control Valve:

Two optional, field installed, valves - THE HOLDING VALVE and THE FLOW CONTROL VALVE, that enhance the performance of hydraulic drive tractors, are available. These valves remain optional equipment since they are used on only a small percentage of all tractors.

It is extremely important that you, as a dealer, determine the needs of your customer and sell and install one or both of these options if required.

The following charts will clarify the differences between the HOLDING VALVE and FLOW CONTROL VALVE.

	<u>HOLDING VALVE</u>	<u>FLOW CONTROL VALVE</u>
<u>INSTALLATION:</u>	<ol style="list-style-type: none">Between the travel control valve and hydraulic motor.The holding valve can be installed and used in combination with the flow control valve.	<ol style="list-style-type: none">Between the pump and travel control valve. The excess flow tube connects to the return line.The flow control valve can be installed and used in combination with the holding valve.
<u>WHAT IT IS:</u>	<ol style="list-style-type: none">A spring centered spool in a valve body.Required tubes and fittings	<ol style="list-style-type: none">A manually controlled variable orifice and a spring loaded spool in a valve body.Required tubes, fittings and brackets.
<u>WHAT IT DOES:</u>	<ol style="list-style-type: none">Provides dynamic braking hydraulically.Completely automatic braking over the full range of travel speeds and engine throttle settings.Replaces the "RETARD" function of the Travel Control Valve.	<ol style="list-style-type: none">It maintains a *constant travel speed by metering the amount of supply oil to the travel control valve. *(as long as the pushing effect of the tiller is not great enough to cause cavitation of the tractor drive motor.It is controlled manually.It must be in the "full flow" position for the "RETARD" to work. (The flow control valve will not hold the tractor back).



HOLDING VALVEHOW TO OPERATE IT:

1. The operator places the travel control lever and the engine throttle in the desired positions. The valve is automatic.
2. When not in the full speed position, the travel control lever must be manipulated to control ground speed when the pressure requirements at the tractor drive motor change. This is true with or without the holding valve.

HOW IT WORKS:

1. The valve senses the pressure in the inlet line to the hydraulic motor. If this pressure drops (indicating that cavitation can occur), the spool shifts automatically to restrict the outlet line from the hydraulic motor. This action provides the hydraulic hold back feature.

WHEN TO RECOMMEND IT:

1. Operation on hilly terrain.
2. Operation with roto-tiller especially on hard ground where tiller pushing effect is greater.

MODELS AVAILABLE:
(For Current Product)

1. L-7 for 220, 222, 224
2. M-9 for 444, 446, 448
3. Standard equipment for 648

FLOW CONTROL VALVE

1. The operator places the:
 - a. flow control in the "Stop" position.
 - b. Travel control in the "Full Forward" (or Reverse) position.
 - c. flow control to the desired speed.

In this mode, direction is controlled by the travel control lever and speed is controlled by the flow control valve.

2. The operator places the:
 - a. flow control in the full speed position.
 - b. Travel control to the desired speed and direction.

In this mode, speed and direction are controlled by the travel control lever.

NOTE: The hydraulic lift will not operate when the flow control valve is in the "Stop" position.

1. The oil flow from the pump is divided between the "controlled flow" (to the travel control valve) and "return" ports.
2. When the pressure requirement at the tractor drive motor rises, the spool shifts to restrict the "return" port. This maintains a constant flow (speed) to the "controlled flow" port.
3. When the pressure requirement at the tractor drive motor falls, the spool shifts to open the "return" port. This maintains a constant flow (speed) to the "controlled flow" port.

1. Operation with roto-tiller.
2. Other special applications where precise creeper ground speed is desired.

1. M-19 for 220, 222, 224, 444, 446, 448
2. Not applicable to 648.



119 South First Street
Winneconne, Wisconsin 54986-9576
Phone 414 582-4455

July 29, 1982

TIMELY TIPS FOR THE MONTH

ISSUE # 101

- TIP # 1 - Two Speed Transaxle Neutral Adjustment
- TIP # 2 - 446, 448, 648 Wiring Check
- TIP # 3 - Kohler Engine - Carbon Removal
- TIP # 4 - Mower Spindle Spacer Inspection
- TIP # 5 - Hydraulic Lift Position When Mowing - Reminder

TIP # 1 - Two Speed Transaxle Neutral Adjustment:

All 200 series tractors must be checked for a true neutral position in the two speed transaxle during predelivery inspection.

Start the engine and use the following procedure to check:

1. Shift from high range to neutral. Check for possible engagement by moving the travel control lever into forward. Return the travel control lever to its neutral position.
2. Shift from low range to neutral. Check for possible engagement by moving the travel control lever into forward. Return the travel control lever to its neutral position.

If tractor movement occurs, indicating an improper neutral adjustment, the mounting holes (seat support to frame) in the front seat support must be elongated. Use the following procedure:

1. Remove the fenders, rear seat support, and seat.
2. Remove the front seat support.
3. Elongate the mounting holes approximately 1/8" to the right. This will allow the seat support to be shifted to the left. (Right and left are determined as seated in the tractor seat facing forward).
4. Install the front seat support and shift it as far to the left as the elongated holes will allow.
5. Tighten the bolts.
6. Recheck for a true neutral position. (Elongate the holes more if required).
7. Install the rear seat support, seat and fenders. Push the fenders inward as far as the fender mounting holes will allow to obtain as much clearance for tire chains as possible.



(OVER)

TIP # 1 - Two Speed Transaxle Neutral Adjustment: (CONTINUED)

Normal warranty will apply.

All 200 series tractors after the listed product identification numbers have been checked at the factory for a true neutral position.

220	P.I.N.	14019392
222	P.I.N.	14021080
224	P.I.N.	14022799

TIP # 2 - 446, 448, 648 Wiring Check:

Inspect the routing of the "ignition switch to coil+" wire during predelivery. This wire must be routed between the high tension towers on the coil and away from the exhaust pipe baffle.

If the wire contacts the exhaust pipe baffle, the insulation can wear through and short causing the fuse to blow.

TIP # 3 - Kohler Engine - Carbon Removal:

Carbon must be removed from the piston and cylinder head in accordance with the schedule below. Failure to remove carbon may result in premature piston and cylinder failure.

1. Every 100 operating hours when regular leaded gasoline is used.

OR

2. Every 200 operating hours when unleaded gasoline is used.

TIP # 4 - Mower Spindle Spacer Inspection:

The part number C10810 mower spindle spacer must be inspected and its length measured when mower spindle repair work is done. Bearing failure can cause material to be worn from the spacer.

This spacer must have a minimum length of 1.823 inches (46.31 mm) to properly lock the bearing inner races. Spacers shorter than 1.823" must be replaced or premature bearing failure will result.

Submitted by: New Hudson Power & Implement
New Hudson, Michigan

TIP # 5 - Hydraulic Lift Position When Mowing - Reminder:

In order to have proper floating action of the lawn mower attachment, the hydraulic lift must be lowered until the lift arms are midway in the lift link slots.

Do not use the "float" position on the hydraulic lift control.

This information is found on page 8 of the mower operator's manual.

119 South First Street
Winneconne, Wisconsin 54986-9576
Phone 414 582-4455

August 30, 1982

TIMELY TIPS FOR THE MONTH

ISSUE # 102

- TIP # 1 - RER 80 Muffler Bolt Added
TIP # 2 - CAUTION - When Removing a Kohler Engine Oil Base
TIP # 3 - New Parts Catalog and Revisions

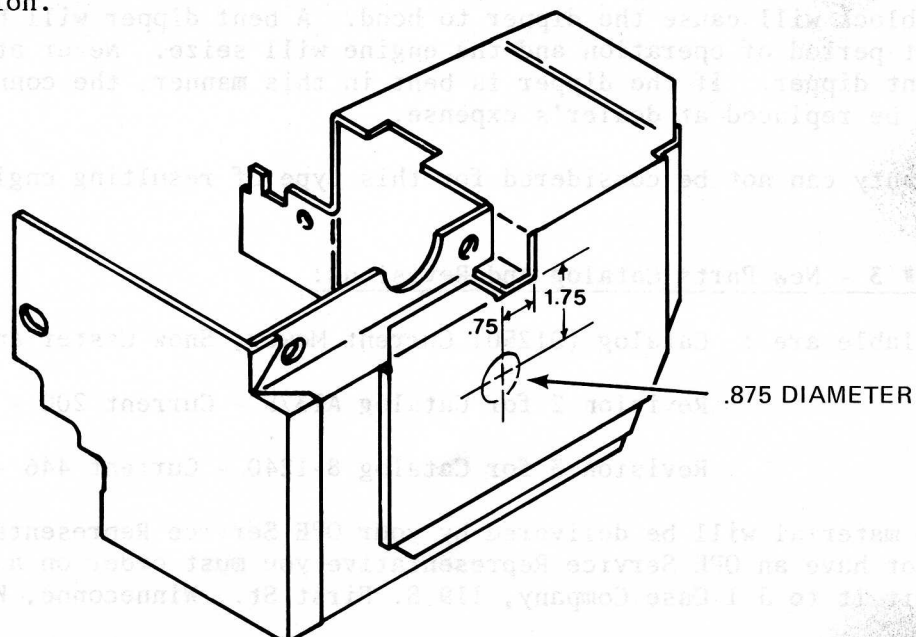
TIP # 1 - RER 80 Muffler Bolt Added:

As a result of some reports from the field of the two muffler shoulder bolts stripping out or breaking after extended hours of use, a third bolt has been added to secure the muffler anchor tab to the cylinder head. This change was made on the Model 80 RER effective with P.I.N. 14015151.

Although the problem potential is not deemed sufficient to warrant a mandatory field modification, we are requesting the third bolt be added to the muffler on all Model 80's in dealer inventory between above P.I.N. and P.I.N. 9776118 when the new muffler went into production. This should be done at the time the mowers are being predelivered. Also, when retail units are in for service between these two P.I.N.'s we are requesting that the third bolt be added at that time.

To install the 1/4-20 x 1/2" NC bolt and 1/4" lockwasher it is necessary to cut a 7/8" diameter hole in the exhaust air duct as follows:

1. Remove the engine enclosure and battery.
2. Center punch a pilot mark in the air duct according to the following illustration.



TIP # 1 - RER 80 Muffler Bolt Added: (CONTINUED)

3. Using a 3/8" drill with a 7/8" diameter hole saw cut a 7/8" hole in the air duct as illustrated.
4. Using a 1/4" drive socket and extension install a 1/4-20 x 1/2" long bolt, P/N 113-1, and 1/4" lockwasher, P/N 192-19, to anchor the muffler tab to the cylinder head. Position the lockwasher split so it seats against the tab rather than the slotted hole. Torque the bolt to between 50 and 60 inch pounds (5.6 - 6.7 Nm).

NOTE: Check to make certain the locking tabs are bent firmly against the two shoulder bolt heads.

5. IMPORTANT - Install a 7/8" button plug, Case P/N 205-36 in the sawed hole to prevent excessive heat leakage and subsequent engine overheating and vaporlocking.

NOTE: The 7/8" button plug is also available at most local hardware stores.

6. Install the battery and engine enclosure.

Warranty Information:

A separate SAR is required for each unit reworked. The SAR is to be processed and mailed in the regular manner.

Use Account Number 7491, Prime Part No. BR 391313 and Job Code 28631AM. Labor allowance is .6 hours per unit. List the parts installed: 1 each, P/N 113-1 bolt, 192-19 lockwasher, and 205-36 button plug.

TIP # 2 - CAUTION - - When Removing a Kohler Engine Oil Base:

Never allow the oil dipper on the connecting rod to come in contact with the workbench when working on an engine with the oil base removed. The weight of the block will cause the dipper to bend. A bent dipper will break after a short period of operation and the engine will seize. Never attempt to straighten a bent dipper. If the dipper is bent in this manner, the connecting rod assembly must be replaced at dealer's expense.

Warranty can not be considered for this type of resulting engine failure.

TIP # 3 - New Parts Catalog and Revisions:

Available are : Catalog (D1250) Current Mower, Snow Caster and Blade

Revision 2 for Catalog A1375 - Current 200 - 400 Series

Revision 3 for Catalog 8-1240 - Current 446 - 448

This material will be delivered by your OPE Service Representative. If you do not have an OPE Service Representative you must order on a 1740 form and submit it to J I Case Company, 119 S. First St., Winneconne, WI. 54986.



119 South First Street
Winneconne, Wisconsin 54986-9576
Phone 414 582-4455

September 30, 1982

TIMELY TIPS FOR THE MONTH

ISSUE #103

- TIP # 1 - RER 80 Muffler Bolts
- TIP # 2 - Fuel Tank Gauge for 200-400-600 Series Tractors
- TIP # 3 - Model 210 Tractor - Retainer Wire for Shifter Boot
- TIP # 4 - Model J31 and J32 Wood Splitter Attachment Application

TIP #1 - RER 80 Muffler Bolts:

If the RER 80 Muffler Bolts have loosened, and damaged the threads in the engine block, the threads must be repaired before attempting to retighten the bolts. Use a helicoil or a similar thread repair device to repair the block. Follow the directions with the thread replacement kit. The thread size is 1/4" x 20 UNC.

Do not replace the engine block as this is unnecessary and will not be allowed under warranty.

The engine must be removed to repair damaged threads in the block. Use the following removal procedure. This procedure allows the engine mounting plate and chain housing to remain in the chassis.

Remove the following components:

- a. Rear wheel and tire assemblies
- b. Gas tank (remove fuel line at carburetor)
- c. Starter wire at starter motor
- d. Throttle and ignition ground wire at engine
- e. Battery ground wire at engine
- f. Chain guard
- g. Rear axle
- h. Both belts and engine pulley
- i. 4 engine mounting bolts
- j. Engine will then lift off mounting plate

Reverse the procedure for reassembly.

TIP # 2 - Fuel Tank Gauge for 200-400-600 Series Tractors:

Mechanical "in the cap" fuel gauges for Model 200-400-600 series tractors are now available directly from:

Kelch Corp
6411 West Mequon Road
Mequon, Wisconsin 53092
Phone: 414-242-2970
Attention: Joan Ruff



(OVER)

TIP # 2 - Fuel Tank Gauge for 200-400-600 Series Tractors: (CONTINUED)

For 200 and 400 series tractors order: 31000 AV5-3/4

For 600 series tractors order: 31000 AV7-3/4

DEALER PRICES:

Quantity	1 to 10	\$2.07 each plus UPS
Quantity	11 to 100	\$1.38 each plus UPS

TIP # 3 - Model 210 Tractor - Retainer Wire for Shift Boot:

The shift lever boot used on Model 210 tractors since June, 1981 can slip down through the floor plate.

Tractors beginning with P.I.N. 14018046 have a retaining wire inserted in the boot to prevent this.

This retaining wire is a deviation part and will not be available from SPS.

Dealers with affected units can obtain the required number of retaining wires at no charge from their OPE Field Service Representative or by writing the J I Case Company, 119 S. First St., Winneconne, WI 54986, Attention: Service Department.

Insert the retaining wire using the following procedure:

1. Pull the boot up through the floor plate.
2. Slip the retaining wire on to the gear shift lever, under the boot and up into the first convolution of the boot.
3. Push the bottom edge of the boot back under the floor plate.

TIP # 4 - Model J31 and J32 Wood Splitter Attachment Application:

The newly released Model J31 and J32 Wood Splitters will mount on the following tractors:

220	Prior to P.I.N. 9702946 P.I.N. 9734870 and After
222	Prior to P.I.N. 9706651 P.I.N. 9736998 and After
224	Prior to P.I.N. 9708665 P.I.N. 9738335 and After
444	Prior to P.I.N. 9711027 P.I.N. 9739739 and After
446	Prior to P.I.N. 9728158 P.I.N. 9742953 and After
448	All
644	All
646	All
648	All

This excludes 1976 and 1977 year model tractors with the metal hydraulic reservoir under the battery. This reservoir does not have adequate oil volume or expansion space to accommodate the wood splitters.



119 South First Street
Winneconne, Wisconsin 54986-9576
Phone 414 582-4455

October 28, 1982

TIMELY TIPS FOR THE MONTH

ISSUE # 104

- TIP # 1 - Model 80 Fuel Line Routing
- TIP # 2 - Model L80, L84 Snow Caster Pulley and Belt
- TIP # 3 - Sealant for Gear Covers on J74 Tiller and L29 PTO
- TIP # 4 - Application of Anti-Seize Compound at Specified Service Points
- TIP # 5 - Customer Mailing - Warranty Reminder
- TIP # 6 - Mower Display

TIP # 1 - Model 80 Fuel Line Routing:

Field reports indicate that some Model 80 riding lawn mowers are "running out of Fuel" before the tank is empty. This can be caused by the fuel line being routed high over the throttle cable and/or battery ground wire.

Gravity flow, from the tank, will not push fuel (higher than its own level) over this "hump" in the fuel line.

During predelivery or if a complaint arises, remove the fuel line from the carburetor inlet fitting and route it under the throttle cable and/or battery ground wire. Angle the carburetor inlet elbow up slightly so the fuel line is not pressed tightly against the muffler baffle.

Model 80's P.I.N. 14015150 and after have the fuel line rerouted at the factory.

TIP # 2 - Model L80, L84 Snow Caster Pulley and Belt:

Refer to Timely Tip Issure #83, Tip #1.

The spring tensioned idler pulley may interfere with the mounting bracket (idler frame) when attempting to install the belt on late production L80 and L84 snow casters. This interference, resulting from using an idler pulley with a larger O.D. will make the belt seem too short.

Grind a small amount of material from the edge of the reinforcing plate to eliminate interference.

If the new pulley, Part Number C26090, is sold over the counter, be sure to advise the customer of this potential interference.

Snow casters at the serial numbers listed below have been corrected at the factory.

L80	Serial Number X10235 and after
L84	Serial Number Z10640 and after



(OVER)

TIP # 3 - Sealant for Gear Covers on J74 Tiller and L29 PTO:

The gear covers on the J74 Tiller and L29 PTO use silicone rubber sealant in lieu of conventional gaskets. This sealant is available in 3 oz. (88 ml) tubes from your normal parts source. Use part number 345-84.

A 12 oz. (350 ml) gun applicator tube is available under part number 345-25.

TIP # 4 - Application of Anti-Seize Compound at Specified Service Points:

Prior to September 1982, oil, grease or other anti-rust compounds were used in manufacturing at certain pivot and service points to reduce maintenance and aid in future servicing. Since the first of September they have been replaced by a much superior product called "Mantek Break-Away Aerosol".

Specific locations now being treated with this anti-seize compound are all spindle or shaft mounted pulleys, tiller shafts, and the Model 80 engine pulley and mower clutching pivot bracket.

This is another step which has been take to aid in the serviceability of our products.

This product is manufactured by MANTEK, P. O. Box 222263, Dallas, Texas 75222. To inquire toll free: In Texas call 1-800-442-7950; outside Texas call 1-800-527-7850.

TIP # 5 - Customer Mailing - Warranty Reminder:

Some customers let the 12 month warranty period expire before they get around to bringing their tractor in for a bonafide warranty repair. This can cause a hardship on all parties concerned.

At least one dealer uses a direct mail letter to his customers to remind them of the pending warranty expiration. Other advertisement fliers can be inserted with this letter. A sample letter follows:

Dear Sir:

We wish to remind you that your warranty on your Case Model _____ compact tractor ends on _____. If you have any failures that you feel qualify for warranty to be taken care of please contact us to have this work performed. Any failure not taken care of before the end of this period cannot be covered under warranty.

We wish to thank you for your cooperation in this matter and look forward to many more years of business with you.

Sincerely yours, Submitted by: Kelly Eq.
Macomb, IL

TIP # 6 - Mower Display:

A mower displayed upside down on the showroom floor makes an eye catching exhibit and is informational.

This dealer puts a piece of duct tape on the cutting edges of each blade to prevent accidental cuts or scrapes.

Submitted by: Blue Valley Tractor, Stilwell, KS



119 South First Street
Winneconne, Wisconsin 54986-9576
Phone 414 582-4455

November 19, 1982

TIMELY TIPS FOR THE MONTH

ISSUE # 105

TIP #1 - Two Speed Transaxle Gear Engagement Adjustment - Models 220,
222, 224

The following is advance information. A Service Bulletin will be mailed shortly.

ACTION TO BE TAKEN: EACH DEALER MUST ELONGATE THE MOUNTING HOLES IN THE FRONT SEAT SUPPORT ON AFFECTED UNITS.

ONLY PARTIAL HIGH RANGE GEAR ENGAGEMENT IS POSSIBLE ON AFFECTED UNITS. THIS CAUSES PREMATURE WEAR AND FAILURE OF THE GEAR TEETH.

MOVING THE FRONT SEAT SUPPORT SLIGHTLY TO THE LEFT WILL ALLOW THE SHIFT LEVER TO HOLD FULL ENGAGEMENT.

MACHINES INVOLVED: MODEL 220 PIN 14019184 to PIN 14019405
222 PIN 14020869 to PIN 14021092
224 PIN 14022622 to PIN 14022818

Reimbursement

The cost of labor can be recovered by submitting a Service Adjustment Request.

1. Use Account 7491 if sold at Retail. Use Account 7479 if in Dealer Stock.
2. Use Prime Part: C14644 Gear
3. Use Service Code: 205 Misalignment
4. Use Machine Location: 90111
5. Use Job Code: 90111 HM 0.5 Hours

INSTRUCTIONS:

1. Remove the fenders and rear seat support.
2. Carefully push the fuel tank aside and remove the front seat support with the seat attached.
3. Clamp the front seat support in a vice.

(OVER)



Instructions, Continued:

4. Elongate the front seat support mounting holes 5/16" (8 MM) to the RIGHT.

This will allow the seat support to be shifted to the left. (right and left are determined as seated in the tractor seat facing forward.)

5. Install the front seat support (with seat) and shift it as far to the left as the elongated holes will allow.

6. Tighten the bolts.

7. Check for full high range gear engagement.

Push the lever "down" into high range as far as it will go and release it.

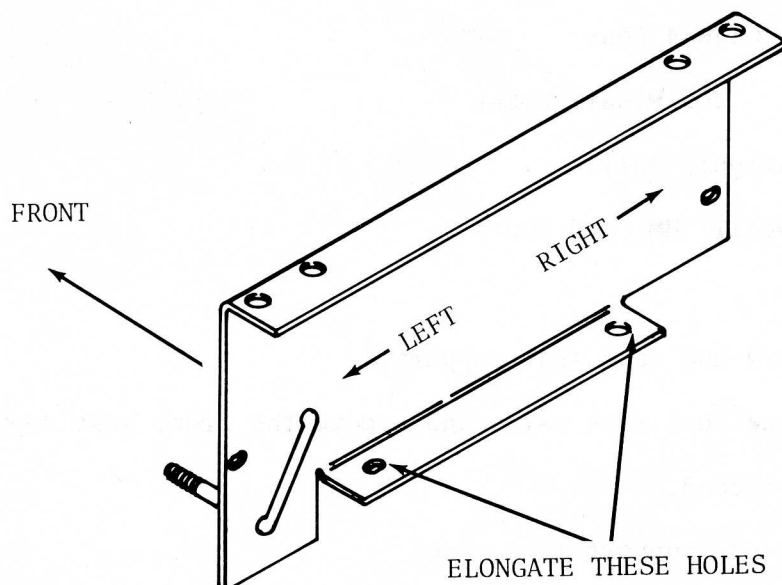
The distance between the top edge of the lever and the bottom edge of the pin must not be more than .12 inch (3.2 mm).

If the distance exceeds .12 inch (3.2 mm), remove the seat support and increase the slot size.

8. Install the rear seat support and shift it as far to the left as the slotted holes allow.

9. Install the fenders. Push the fenders inward as far as the fender mounting bolts will allow to obtain as much clearance for the tire chains as possible.

Tighten the fender mounting bolts.





119 South First Street
Winneconne, Wisconsin 54986-9576
Phone 414 582-4455

December 27, 1982

TIMELY TIPS FOR THE MONTH

ISSUE # 106

TIP # 1 - Onan Engine Carburetor Float Swell

We have received reports of floats swelling and sticking in the carburetor body on Model 446, 448 and 648 tractors. The engine could run rich if the float sticks in the "open" position and the engine could run lean or run out of fuel if the float sticks in the "closed" position.

The float failure is caused by ethanol or methanol blended into the gasoline. There are 3 ways ethanol or methanol can be introduced into the fuel system:

1. Gasohol: Advise customer NOT to use; it contains 10% ethanol.
2. Gas-Line De-icer: Gas-line de-icer is almost pure methanol. Advise customer NOT to use de-icers.
3. Direct from the pump: It appears that most states have little or no regulation concerning the blending of ethanol or methanol into gasoline. In most states, gasoline stations are NOT required to post ethanol or methanol blends on the gasoline pumps. The incidence of fortified gasolines is increasing.

If float swelling occurs, the fuel is the prime suspect. The float must be replaced and the entire fuel system purged. Advise customer to change fuel suppliers if he claims he did not use de-icers.

Swelling and deterioration of the fuel line and fuel system gaskets will also occur if fuel blended with ethanol or methanol is used.

Use the following procedure to test fuels for ethanol or methanol content:

1. Obtain a transparent container graduated in millilitres.
2. Pour 100 millilitres of the suspect gasoline into the container.
3. Add 10 millilitres of water to the gasoline.
4. Allow to separate for 10 minutes.

(OVER)



RESULTS:

- A. If 20 millilitres separate, the alcohol is 10%.
- B. If 15 millilitres separate, the alcohol level is 5%. This is the maximum allowable.

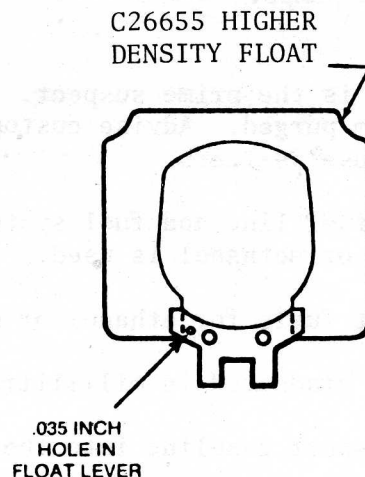
Since the use of ethanol or methanol blended fuels is not approved for use in Onan engines, warranty will not be allowed for fuel system failures resulting from their use.

Dealers should advise their customers NOT to use gasohol or to change fuel suppliers if they encounter fuel contaminated with ethanol or methanol.

As an ongoing effort and to help protect customers who may unknowingly purchase unidentified ethanol or methanol contaminated fuels, a higher density float, P/N C26655, went into production in early November, effective with the following tractor Model and P.I.N.'s.

<u>MODEL</u>	<u>PRODUCT IDENTIFICATION NUMBER</u>
446	14026863
448	14029065
648	14030240

The higher density float, P/N C26655, has also been available in Service Parts Supply since mid September. The new P/N C26655 float can be identified by an extra .035" hole in the float lever as illustrated.



Although the higher density float will better resist swelling in ethanol or methanol contaminated fuels, their use is not recommended. Any float damage resulting from their use will not be covered under warranty.

NOTE: Insert this INDEX immediately behind the INDEX for 1982
in the "BULLETIN" section of your Service Manual

INDEX

TIMELY OPE TIPS FOR THE MONTH - 1983

<u>ISSUE NO.</u>	<u>DATE</u>	<u>TIP NO.</u>	<u>SUBJECT</u>
107	1/28	1	Rectifier Regulator (P/N C25485) Failure
		2	Carburetor Gasket Kits for Onan Engines
		3	Correct Engine Block Cleaning Procedure Reminder
			Attachment - Onan Tech Newsletter 7
108	2/24	1	Installation Change for P/N C25485 Rectifier Regulator
			Attachment - Onan Tech Newsletter 8
109	3/28	1	CAUTION: Use of Hydraulic Quick Couplers with Wood Splitters
		2	Parts Catalog Correction
		3	Starter-Generator Vee Belt
		4	Onan Tech Newsletter 9
		5	Model 210 Tractor Clutching Belt
		6	New Distribution - OPE Parts Catalogs
			Attachment - Onan Tech Newsletter 9
110	4/28	1	Tractor Frame - Pump Suction Hose Interference - 446 and 448 tractors
		2	Test Procedure for Ethanol or Methanol Content in Gasoline - 446 & 448 tractors
111	5/25	1	Tractor Display Stand
		2	Announcement of Two-Piece Air Screen
112	6/27	1	J31 and J34 Woodsplitter Installation Precaution
		2	Part Number C21945 Rectifier Regulator - Lower Cost Replacement
		3	200-400 Series Fuel Tank Replacement
		4	O-Ring Seal for Dipstick on Kohler Engines
		5	Anti-Seize Compound Available from SPS Part Number B17507

<u>ISSUE NO.</u>	<u>DATE</u>	<u>TIP NO.</u>	<u>SUBJECT</u>
113	8/3	1	Model 80 XC 1984 Production Change
		2	Attachment Drive Clutch Arm Changes
		3	P/N C18907 Attachment Drive Clutch Hub
		4	400 Series Hydrive Tractors 1984 Production Change
		5	New Distribution OPE Parts Catalogs
114	8/30	1	Servicing the Mower Aluminum Spindle Housing
		2	Paint Part Numbers
115	9/28	1	Travel Control Kit, P/N C27271
		2	Air Cleaner Wing Nut
		3	Tubing Clamp Added to J17, L17 Hydraulic PTO Kits
		4	Set-Up Tip for Late Production Tractors
116	10/27	1	Snow Caster Lift Arm Clearance for 1984 200 Series Tractors
		2	1984 Hy Drive Travel Control Lever Operation
		3	J34/K34 Wood Splitter Lower Mounting Frame Assembly
117	11/28	1	Cab
		2	Fuel Tank Filter Model 210 Through 448
		3	200 Series Tire Chain Interference
		4	Onan Carburetor Brass Float Kit, P/N C27506, Now Available
		5	Transmission Lubricant for 1984 Model 100 Series Tractors
			Timely Newspaper Articles In Reference to Tip #4
118	12/28	1	Snow Caster Possible Interference Between Auger Flighting and Sprocket
		2	Check Replacement Ring End Gaps in Cylinder Bore
		3	Engine Block Cleaning Procedure After Honing or Resizing
		4	Manifold & Drive Link Change on P/N C14655 & P/N C16697 Hydraulic Drive Motors
		5	Correction to Timely Tip Issue #117 - Tip #2
		6	Parts Catalog Corrections



119 South First Street
Winneconne, Wisconsin 54986-9576
Phone 414 582-4455

January 28, 1983

TIMELY TIPS FOR THE MONTH

ISSUE #107

- TIP # 1 - Rectifier Regulator (P/N C25485) Failure
- TIP # 2 - Carburetor Gasket Kits for Onan Engines
- TIP # 3 - Correct Engine Block Cleaning Procedure Reminder

TIP #1 - Rectifier Regulator (P/N C25485) Failure:

Rectifier regulators must be checked for good positive and ground connections before replacement if a "no charge" symptom exists.

Use the following procedure:

1. Stop the engine.
2. Remove the tower rear access cover.
3. Select the 12 volt scale on your D.C. voltmeter.
4. Attach the black voltmeter lead to the battery negative terminal.
5. Place the probe of the red voltmeter lead into the rectifier regulator plug where the RED lead is connected.
6. Turn the key switch to the "RUN" position (don't start the engine).
7. Battery voltage should be registered on the voltmeter. (If voltmeter reads "0", trace wiring from battery positive terminal to the rectifier regulator plug).
8. Connect a jumper cable from the rectifier regulator body to the battery negative terminal.
9. Start and run the engine at full throttle for 3 minutes.
10. If the voltage increases from battery voltage to a range of 13.6 to 14.7 volts, the rectifier regulator is good. Install the rectifier regulator as shown and add a ground wire.
11. If the voltage does not increase above battery voltage, the alternator must be checked.
12. Disconnect your voltmeter from battery and select the 40 volt AC scale. This test must be done with an AC voltmeter.



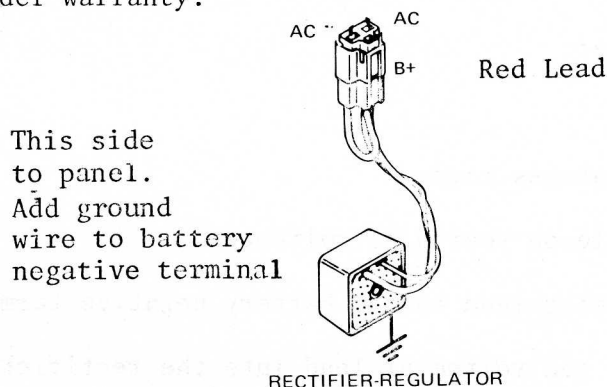
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TIP # 1 - Rectifier Regulator (P/N C25485) Failure: (CONTINUED)

13. Start and run the engine at full throttle.
14. Place one voltmeter probe into the rectifier regulator plug where the yellow wire from the rectifier regulator is connected. Place the other voltmeter probe into the rectifier regulator plug where the "looped" yellow wire is connected.
15. If a minimum of 28 volts AC registers on the AC voltmeter, the rectifier regulator is faulty and must be replaced.
16. If AC output is "0", check connections back to stator. Remove flywheel, check for "dead" magnet ring or open stator windings.

This test procedure is in Electrical System, Section 9-51171, in your OPE Service Manual.

Rectifier regulators that are found to be within specification can not be accepted under warranty.

TIP # 2 - Carburetor Gasket Kits for Onan Engines:

The Part Number C24665 gasket kit does not include the needle and seat assembly as indicated in parts catalog 8-1240 and 8-1420, page 7.

The needle and seat assembly must be ordered separately using P/N C20449.

Please mark your parts catalogs accordingly.

TIP # 3 - Correct Engine Block Cleaning Procedure Reminder:

After boring or honing, clean the engine block thoroughly with soap and water and clean rags. A clean white rag should not be soiled by the cylinder wall after cleaning is complete. Dry the block and lightly coat the cylinder wall with SAE 10 oil.

Clean the engine blocks with soap and water ONLY. DO NOT use solvent. Solvent will not remove grit from the cylinder walls.

Improper cleaning will result in rapid bore, piston rings, and bearing wear.

This information is included in the Kohler, Onan and Briggs & Stratton Engine sections in your OPE Service Manual.



119 South First Street
Winneconne, Wisconsin 54986-9576
Phone 414 582-4455

March 28, 1983

TIMELY TIPS FOR THE MONTH

ISSUE #109

- TIP # 1 - CAUTION: Use of Hydraulic Quick Couplers with Wood Splitters
- TIP # 2 - Parts Catalog Correction
- TIP # 3 - Starter-Generator Vee Belt
- TIP # 4 - Onan Tech Newsletter 9
- TIP # 5 - Model 210 Tractor Clutching Belt
- TIP # 6 - New Distribution - OPE Parts Catalogs

TIP # 2 - Parts Catalog Correction:

Please mark the following correction in your parts catalog D1250 for J and K 40, 44, and 46 mowers:

Page 7
Item 28
Should Be: C25543

TIP # 1 - CAUTION: Use of Hydraulic Quick Couplers with Wood Splitters:

CAUTION: STOP ENGINE BEFORE DISCONNECTING HYDRAULIC QUICK COUPLERS

DAMAGE TO EQUIPMENT AND PERSONAL INJURY CAN RESULT IF COUPLERS
ARE DISCONNECTED WITH THE ENGINE RUNNING.

This Tip applies to J31 and J34 Wood Splitters and any other hydraulic hookup with optional hydraulic quick couplers connected to the pump supply line or the return line.

There is no relief valve protection for the pump upstream from the travel control valve.

The oil flow is blocked when the quick coupler is disconnected. If the engine is running, this blockage will cause a pressure shock that will damage the pump or cause the hose to burst.

Follow the removal procedure in your Operator's Manual.



(OVER)

TIP # 3 - Starter-Generator Vee Belt:

The correct (original size and length) belt for Case compact tractor starter-generator application is now available from your regular parts source. The part number is C14345. Disregard other part numbers previously recommended.

TIP # 4 - Onan Tech Newsletter 9:

Attached is the last of a series of 3 Onan Newsletters (Numbers 7, 8 and 9) concerning the Onan engines used in Model 446, 448 and 648 tractors.

Study these newsletters as they are a valuable source of information for both the sales and service people at your dealership.

TIP # 5 - Model 210 Tractor Clutching Belt:

A new clutching belt for the Model 210 tractor that provides smoother starts is now available from your regular parts source. The part number is C26437.

Model 210 tractors, P.I.N. 14017958 and after have the new belt installed.

TIP # 6 - New Distribution - OPE Parts Catalogs:

The following new catalogs/revision are available:

1. Catalog 8-2050 for Model J31, J32 and J34 Wood Splitters - Price \$1.00
 2. Catalog 8-1870 for Model E60, F60 and E62 Dump Cart - Price \$1.00
 3. Rev. #2 for Catalog 8-1300 for J45, J48, K48 Rotary Mowers - Price - No Charge
- A. Dealers called on by OPE Division Field Service Representatives will be supplied with this material by their Field Service Representatives.
- B. Dealers not called on by OPE Division Field Service Representatives can obtain this material by submitting a properly completed form 1740 to:

J I CASE COMPANY
119 South First Street
Winneconne, Wisconsin 54986
Attention: Service Department



119 South First Street
Winneconne, Wisconsin 54986-9576
Phone 414 582-4455

February 24, 1983

TIMELY TIPS FOR THE MONTH

ISSUE #108

TIP # 1 - Installation Change for P/N C25485 Rectifier Regulator

TIP #1 - Installation Change for P/N C25485 Rectifier Regulator

The rectifier regulator can fail prematurely if it has a poor electrical ground or poor heat transfer connection. Beginning with the PIN's below:

- a) the 'star' washer between the rectifier regulator and rear access panel is moved.
- b) a ground wire is added from the rectifier regulator to the battery negative terminal.

<u>MODEL</u>	<u>PIN AND AFTER</u>
210	14018179
220	14019656
222	14021362
224	14023042
444	14024499
446	14026749
448	14029026

All dealers are asked to make this change during (a) Pre-Delivery Inspection, (b) if replacing a rectifier regulator or (c) routine service.

NOTE: Be sure to test the rectifier regulator in accordance with your OPE Service Manual and Timely Tip Issue #107 whether or not the tractor is under warranty.

Use the following procedure:

1. Make a grounding wire.
 - a) 18 gauge
 - b) 29 inches (740 mm) long
 - c) 1/4 inch (7 mm) ring terminal on each end
2. Remove the rear access panel.
3. Remove the nut holding the rectifier regulator

NOTE: DO NOT UNPLUG THE RECTIFIER REGULATOR.

4. Remove the "STAR" washer from between the rectifier regulator and rear access panel.

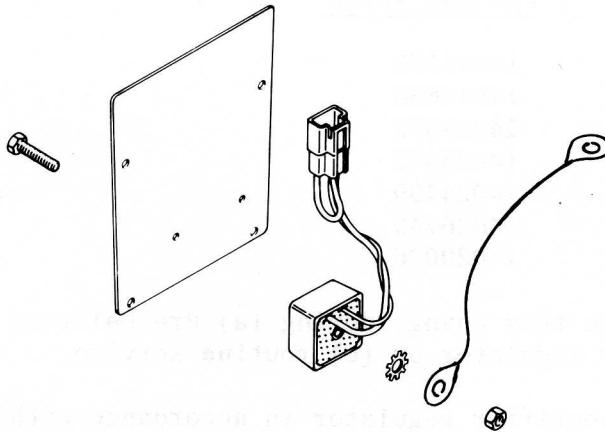
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TIP #1 - Installation Change for P/N C25485 Rectifier Regulator (CONTINUED)

5. Assemble in the following sequence:

- a) Put the bolt through the access panel from the outside in.
 - b) Place the rectifier regulator on the bolt with its metal side tight against the inside of the access panel.
 - c) Place the star washer on the bolt.
 - d) Place one end of the ground wire on the bolt.
 - e) Install and tighten the nut.
6. Position the new ground wire around the front left corner of the hydraulic reservoir and connect to the battery negative terminal.
7. Reinstall the rear access cover.



Reimbursement:

The cost of parts and labor can be recovered on units in dealer inventory or within the one year warranty period by submitting a Service Adjustment Request.

1. Use account 7491 if sold at retail.
Use account 7479 if in dealer inventory.
2. Use Prime Part C25485
3. Use Service Code 275. Enter under comments: "T.T. Issue #108"
4. Use Machine Location: 43030
5. Use Job Code 43030A 0.3 hours

Include an outside invoice to cover the cost of the wire and terminals.



119 South First Street
Winneconne, Wisconsin 54986-9576
Phone 414 582-4455

April 28, 1983

TIMELY TIPS FOR THE MONTH

ISSUE #110

- TIP #1 - Tractor Frame - Pump Suction Hose Interference - 446 and 448 tractors
TIP #2 - Test Procedure for Ethanol or Methanol Content in Gasoline - 446 & 448 tractors

TIP # 1 - Tractor Frame - Pump Suction Hose Interference

Interference between the support tab for the attachment drive clutch lever and the pump suction hose is possible within the following PIN range:

446 PIN 14026340 thru 14041329
448 PIN 14028714 thru 14043987

All dealers are asked to inspect this area for clearance. If interference exists, the support tab must be shortened.

This inspection should be made:

- a) when the tractor is predelivered
- b) when the ground wire for the rectifier regulator is installed
(See Timely Tip Issue No. 108)
- c) when the tractor is in for routine service

USE THE FOLLOWING PROCEDURE:

- A) Remove the control tower access cover
- B) Use a .020" (0.5 mm) feeler gauge or equivalent (such as a Parts Return Tag) to check for clearance between the support tab and pump suction hose.
- C) If .020" (0.5 mm) clearance exists, no action is required.
- D) If less than .020" clearance exists, perform the following corrective action:
 - 1) Loosen the four (4) engine mounting bolts and move the engine ahead as far as the tolerance in the bolt holes will allow. Tighten the bolts.
 - 2) Check for clearance. If .020" (0.5 mm) or more clearance exists, no further action is necessary.
 - 3) If less than .020" (0.5 mm) clearance exists, remove the hydraulic reservoir and cut the end from the support tab for the attachment clutch lever. Follow existing procedures for saving and reusing the oil in the hydraulic system.



(OVER)

- 4) Reassemble all parts. Check carefully for leaks and refill the hydraulic system to the proper level.

Reimbursement:

The cost of labor can be recovered on units in warranty by submitting a properly completed Service Adjustment Request:

- 1) Use Account 7491 if sold at retail. Use Account 7479 if in dealer inventory.
- 2) Use Prime Part C26489
- 3) Use Service Code 170. Enter under Comments: "T.T. Issue 110".
- 4) Use Machine Location 90111
- 5) (a) When moving engine ahead only:
Use Job Code: 28203E 0.5 hours
(b) When removing reservoir and cutting tab:
Use Job Code: 62711CM 2.3 hours

TIP # 2 Test Procedure for Ethanol or Methanol Content in Gasoline

Refer to Timely Tip Issue Number 106 "Onan Engine Carburetor Float Swell".

The test procedure is clarified as follows:

- 1) Obtain a transparent container graduated in milliliters. (Available in most drug stores).
- 2) Measure 10 milliliters of water and put in a separate container.
- 3) Put 100 milliliters of the suspect gasoline into the graduated container.
- 4) Add the 10 milliliters of water to the gasoline and shake vigorously.
- 5) Allow to separate for 10 minutes.

Results:

- 1) If 20 milliliters separate, the alcohol is 10%.
- 2) If 15 milliliters separate, the alcohol is 5%.

119 South First Street
Winneconne, Wisconsin 54986-9576
Phone 414 582-4455

May 25, 1983

TIMELY TIPS FOR THE MONTH

ISSUE #111

TIP #1 - Tractor Display Stand

TIP #2 - Announcement of Two-Piece Air Screen

Tip # 1 - Tractor Display Stand

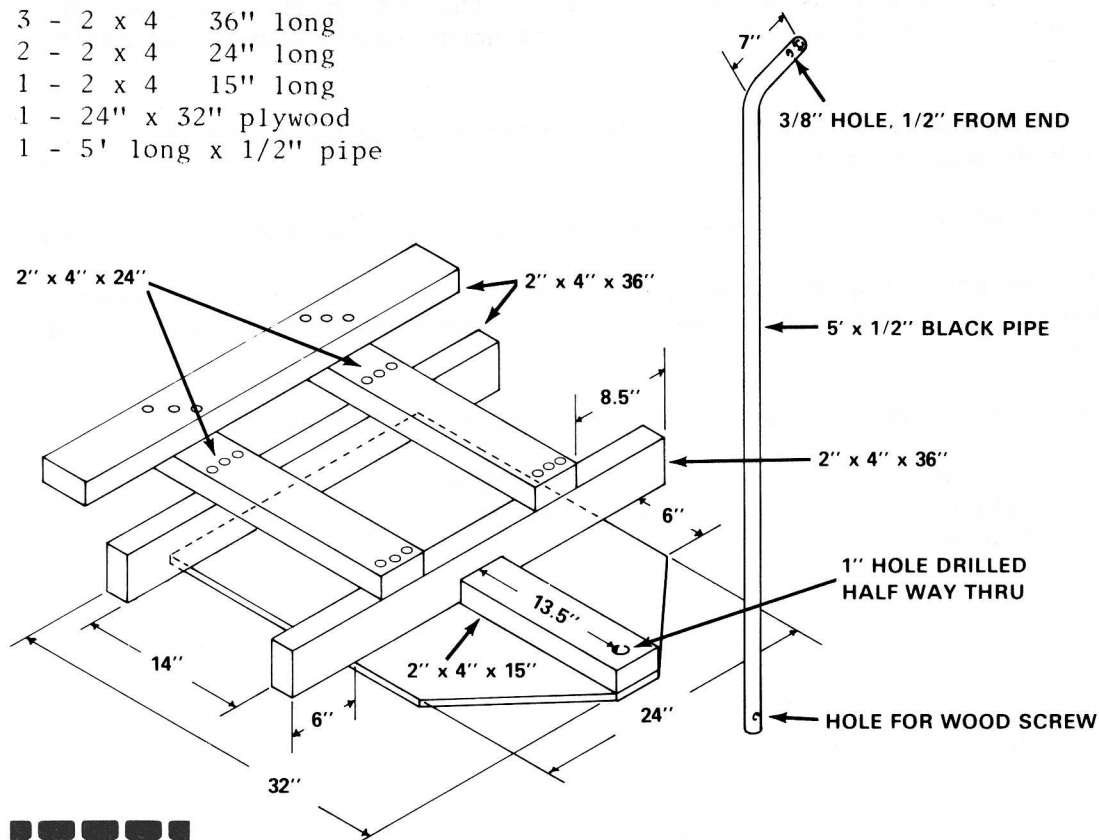
Below is a detailed diagram of a tractor display stand that does not require welding to construct.

Remove the battery if it has been filled with electrolyte. Drain the gasoline. Engine, transmission and hydraulic oil can be left in the tractor.

The angled top of the pipe slides through the hollow front axle pivot pin and is secured by the P/N C22278 axle pivot retaining pin. The bottom of the pipe is inserted in the hole in the 2 x 4 block and secured with a wood screw.

This stand accommodates 200 series tractors with turf tires. Material List:

- 3 - 2 x 4 36" long
- 2 - 2 x 4 24" long
- 1 - 2 x 4 15" long
- 1 - 24" x 32" plywood
- 1 - 5' long x 1/2" pipe



(OVER)

TIP # 2 - Announcement of Two-Piece Air Screen

The new two-piece cooling air intake screen for KOHLER equipped tractors will permit the attachment drive clutch assembly to be installed without altering the factory preset adjustment.

Service part clutch assemblies (P/N C24774) built after April 1, 1983 will have the friction disc clearance properly adjusted at the factory.

The new two-piece air screen will fit on prior models that are equipped with the bendix style starter motor (1978 model year and after). The two-piece air screen is not included with the C24774 clutch assembly. Order the following parts if you desire to retrofit:

<u>QUANTITY</u>	<u>PART NUMBER</u>	<u>DESCRIPTION</u>
2	C26758	Screen
4	113-2	Bolt, 1/4 x 5/8
4	192-19	Lock Washer
4	195-518	Flat Washer

Assemble the new two-piece Air Screen and preadjusted clutch by using the following procedure:

- a) Remove the old clutch assembly and air screen.
- b) Mount the new clutch assembly to the engine flywheel with the original four cap screws and new 3/8" lock washers.
- c) Install the two-piece air screen so the bottom of the left half overlaps the bottom of the right half and the top of the left half goes under the top of the right half when facing the attachment drive clutch end of the engine.
- d) Check friction disc clearance with the attachment drive clutch lever in the fully disengaged position.

Refer to "Clutch Disc Clearance Adjustment Section" in your Service Manual.

The installation of a complete clutch assembly will not be permitted under warranty unless the cost of the defective part equals or exceeds the cost of the clutch assembly.

The two-piece Air Screen was first used with the following PIN's:

210 - 14033845	224 - 14037994
220 - 14034755	444 - 14039494
222 - 14036280	



119 South First Street
Winneconne, Wisconsin 54986-9576
Phone 414 582-4455

June 27, 1983

TIMELY TIPS FOR THE MONTH

ISSUE #112

- TIP #1 - J31 and J34 Woodsplitter Installation Precaution
- TIP #2 - Part Number C21945 Rectifier Regulator - Lower Cost Replacement
- TIP #3 - 200-400 Series Fuel Tank Replacement
- TIP #4 - O-Ring Seal for Dipstick on Kohler Engines
- TIP #5 - Anti-Seize Compound Available from SPS Part Number B17507

Tip #1 - J31 and J34 Woodsplitter Installation Precaution

The hydraulic connection between the tractor and woodsplitter MUST be made properly or expensive equipment damage WILL occur.

Make certain that the appropriate people in your dealership understand the full impact of improper hookup both financially and from a safety standpoint.

This information (which is explained in detail in the J31 and J34 Operator's Manuals) MUST be explained to the customer as required by corporate policy when completing the Owner Warranty Registration, Form 2916.

If the hose connection between the tractor and woodsplitter is reversed, there is no relief valve protection for the woodsplitter. When the cylinder reaches the end of the stroke, excessive pressure is created which can cause the pump, cylinder or hose to fail.

Warranty can not be considered for damage resulting from improper hookup.

A special decal depicting the proper hose connection is being made and will be available from your OPE Field Service Representative upon request in the near future.

(Dealers not called on by OPE FSR's can request the decals from this office.)

Tip #2 - Part Number C21945 Rectifier Regulator - Lower Cost Replacement

A part number C25485 current rectifier regulator and C25486 current wiring harness will replace the C21945 rectifier used on prior models 220 through 446 with the flywheel alternator system.

This substitution will result in a cost savings for your customer and will permit you to reduce your parts inventory cost.

To use the substitution, a mounting hole must be drilled and a ground wire added as with current production. Be sure to install the C25485 regulator with its metal side tight against the metal of the tractor. See Timely Tip Issue 108 Tip #1.

This announcement is for informational purposes only.



(OVER)

Tip #3 - 200-400 Series Fuel Tank Replacement

The current part number C26697 fuel tank can be used to replace the prior metal tank (P/N C16363) resulting in a substantial cost saving for the customer.

The following procedure must be followed if installing a current tank in an older tractor:

- a) Remove the tank mounting saddles from the frame. Grind the area smooth.
- b) Install two part number C14690 fuel tank cushions.
- c) Install the part number C23527 fuel tank liner.
- d) Install the fuel tank.
- e) Cut a slot in the rear seat support and install a part number C26699 fuel level decal if desired.

This announcement is for informational purposes only.

Tip #4 - O-Ring Seal for Dipstick on Kohler Engines

The o-ring seal at the dipstick must be good to prevent crankcase pressurization and oil leakage in this area. Recommend to your customers that they change this o-ring at each oil change or at the first sign of a loose fit or oil leakage.

Consult your parts catalog for the correct part number o-ring and stock them.

TIP # 5 - Anti-Seize Compound Available from SPS Part Number B17507

Anti-seize compound required when installing steering wheels, mower spindle pulleys, snowcaster pulleys and other critical areas is available from your SPS depot.

Part Number B17507 - 10 oz. Brush Top Can

If you do not have anti-seize compound in your shop, you are urged to order a can on your next bi-weekly stock order.



119 South First Street
Winneconne, Wisconsin 54986-9576
Phone 414 582-4455

August 3, 1983

TIMELY TIPS FOR THE MONTH

ISSUE #113

- TIP # 1 - Model 80 XC 1984 Production Change
- TIP # 2 - Attachment Drive Clutch Arm Changes
- TIP # 3 - P/N C18907 Attachment Drive Clutch Hub
- TIP # 4 - 400 Series Hydrive Tractors 1984 Production Change
- TIP # 5 - New Distribution OPE Parts Catalog

TIP # 1 - Model 80 XC 1984 Production Change:

The 1984 Model 80 XC (P.I.N. 14030675 and after) have a flywheel alternator charging system.

A separate plug-in battery charger is no longer included with the Model 80 since it is not necessary.

Please disregard the battery charger information found in the operator's manual.

TIP # 2 - Attachment Drive Clutch Arm Changes:

Beginning with the P.I.N.'s listed, the clutch engaging arm was standardized between the Kohler and Onan engines. The rod from the handle to the engaging arm was also changed.

The new arms and rods were first used:

<u>Model No.</u>	<u>P.I.N.</u>	<u>Date</u>	<u>Model No.</u>	<u>P.I.N.</u>	<u>Date</u>
210	14033845	3/15/83	444	14039484	3/11/83
220	14034755	3/14/83	446	14041044	3/14/83
222	14036270	2/28/83	448	14043789	3/14/83
224	14037993	3/9/83	648	14045699	3/15/83

The following service parts, to be used prior to the P.I.N.'s listed above, supercede the information found in your parts catalog.

C27031 newly released Onan service arm (replaces C23392)

C26702 newly released Kohler service arm (replaces C23391)

C27150 Kohler PTO clutch assembly (replaces C24774)

*C27152 Onan PTO clutch assembly (replaces C26350)

*C27152 Onan PTO clutch assembly includes the C27031 service arm. To service 446, 448, 646's after the P.I.N.'s listed above, order the C27152 Onan PTO clutch assembly and the C26166 current production clutch arm.



(OVER)

TIP #3 - P/N C18907 Attachment Drive Clutch Hub

The P/N C18907 attachment drive clutch hub (snap ring style) has been discontinued as a service part. C18907 now subs to the parts (listed below) needed to change the clutch to the EZ adjust style providing the customer with the benefits of the EZ adjust style attachment drive clutch.

<u>LINE</u>	<u>QUAN.</u>	<u>P/N</u>	<u>DLR.NET</u>
1	1	C23624	.49
2	1	C23625	.64
3	1	C23627	.92
4	1	C23630	2.45
5	1	C23677	41.51
6	1	C24743	1.15
7	2	C26346 (.39)	.78
8	1	O 2815N	1.46
9	1	129-125	<u>.13</u>
			49.53

Prices are subject to change without notice. Always check your current Parts Price List.

TIP #4 - 400 Series Hydrive Tractors 1984 Production Change

High-Back seats are now standard equipment on 400 Series Tractors. The tractors will not fit in the crates with the new high back seats installed. Therefore, the seats are packed in the crate unmounted and the mounting hardware is included with the tractor hardware.

Follow the seat installation instructions provided in the Operator's Manual during set-up and predelivery of the tractor.

TIP #5 - New Distribution OPE Parts Catalog

The following new Parts Catalog is available.

Catalog A1374 for 210 tractor PIN 9733525 and after.

- A. Dealers called on by OPE Division Field Service Representatives will be supplied with this material by their Field Service Representatives.
- B. Dealers not called on by OPE Division Field Service Representatives can obtain this material by submitting a properly completed form 1740 to:

J I CASE COMPANY
119 South First Street
Winneconne, Wisconsin 54986
Attention: Service Department



119 South First Street
Winneconne, Wisconsin 54986-9576
Phone 414 582-4455

August 30, 1983

TIMELY TIPS FOR THE MONTH

ISSUE # 114

- TIP # 1 - Servicing the Mower Aluminum Spindle Housing
TIP # 2 - Paint Part Numbers

TIP # 1 - Servicing the Mower Aluminum Spindle Housing:

Effective with the models and serial numbers listed below an aluminum spindle housing is being used:

<u>MODEL</u>	<u>SERIAL NUMBER</u>
K40	AA11798
K44	BB12278
K45	CC11119
K46	DD12835
L41	EE11122

Use the following procedure to assemble the aluminum spindle housing:

1. Install the upper bearing by pressing on the outer race until it seats against the shoulder in the housing.
2. Install the center spacer. Maintain center spacer alignment when installing the lower bearing.
3. Install the lower bearing by pressing on the inner race until it seats against the center spacer.
4. Slide the bearing shield and spacer washers(s) on the spindle. Insert the spindle through the bearings. Install upper washer (if equipped) and key.

IMPORTANT: APPLY ANTISEIZE COMPOUND TO THE SPINDLE BEFORE INSTALLING THE PULLEY.

5. Install the spindle housing. Tighten the four bolts that secure the spindle housing to the mower deck to a torque of 14 to 15 lb. ft. (19 to 20 Nm). Do not overtighten.
6. Install the pulley(s) and tighten the pulley retaining nut to a torque of 100 ft. lbs. (135 Nm).

Service parts listed in your current parts catalog are to be used when servicing this spindle housing and its components.



TIP # 2 - Paint Part Numbers:

The following paint is available from your regular parts source.

COLOR	WHERE USED	SPRAY PAINT (CARTON OF 12)	QUARTS (CARTON OF 4)	GALLONS
		PART NUMBER	PART NUMBER	PART NUMBER
Power Red Enamel - Gloss	For tractor hoods & Fenders	B17450	B17505	-----
Power Red Enamel - Semi-Gloss	For Cast surfaces - tractors	B17451	B17167	B17166
Power White Enamel - Gloss	For wheels and white attachments	B17452	B17409	B17410
Power Yellow Enamel - Medium Gloss	For all yellow loader tractors	B17453	B17420	B17421
Desert Sunset Enamel - Gloss	For hoods, fenders prior model tractors	B17454	B13004	B13005
Industrial Yellow Enamel - Gloss	For prior model yellow & red loader tractors	B17455	B13034	B13035
Case Red Enamel - Gloss	No OPE product	B17456	-----	-----
Case Green Enamel - Gloss	No OPE product	B17457	-----	-----
Yellow Oxide Primer - Semi-Gloss	No OPE product	B17458	-----	-----
Black Enamel - Semi-Gloss	Grilles, engine shields, 1984 frames, transmission.	B17459	B17169	-----
Black Heat Resistant - Semi-Gloss	Mufflers	B17461	-----	-----
Aluminum Heat Resistant Enamel	No OPE product	B17462	-----	-----

Case Service Parts Supply will ship paint by Truck Freight Only. To avoid excessive freight charges to you, be sure to order paint on your Bi-Weekly Stock Order which qualifies for prepaid freight.



119 South First Street
Winneconne, Wisconsin 54986-9576
Phone 414 582-4455

September 28, 1983

TIMELY TIPS FOR THE MONTH

ISSUE #115

- TIP # 1 - Travel Control Kit, P/N C27271
- TIP # 2 - Air Cleaner Wing Nut
- TIP # 3 - Tubing Clamp Added to J17, L17 Hydraulic PTO Kits
- TIP # 4 - Set-Up Tip for Late Production Tractors

TIP # 1 - Travel Control Kit, P/N C27271:

Beginning with 1984 model year production, a change was made to the travel control linkage to increase the ground speed selection range on all HYDRIV tractors. The travel valve was changed to eliminate the spring on the travel spool and to incorporate retard detents on a spool extension.

The retard notch locations were changed on the new travel neutral start switch to accommodate a revised travel lever tab hole location. The new travel neutral start switch also provides a more positive neutral position.

Some dealers, after operating 1984 HYDRIV tractors, have expressed an interest in adapting these changes, on their own, to prior model tractors which have the centering spring on the travel spool. Accordingly, a travel control kit, P/N C27271, has been made available through Service Parts Supply for this purpose.

The kit consists of the valve spool conversion assembly, travel neutral start switch and an instruction sheet illustrating the revised hole location in the travel lever tab for the valve spool link. Current dealer net cost for the kit is \$22.13 and approximately two hours labor is involved.

This announcement is for informational purposes only.

TIP # 2 - Air Cleaner Wing Nut:

The wing nut securing the air cleaner cover on Kohler and Onan engines has a special gasket material attached. If the gasket is lost or "hardware" wing nut used as a replacement, unfiltered air will enter the engine and cause premature wear.

The correct part number for this wing nut is C26703 and is available from your regular parts source.

Please mark this change in your parts catalogs.

(OVER)



TIP # 3 - Tubing Clamp Added to J17, L17 Hydraulic PTO Kits:

Beginning with J17, L17 Hydraulic PTO Kits built on 8/30/83 a P/N L71188 clamp is included to hold the tubes to the left side tractor frame rail. The clamp was added to prevent possible interference between the PTO tubes and the Hi-Low range shift lever.

Clamps can be obtained from your regular parts source to add to prior kits if desired.

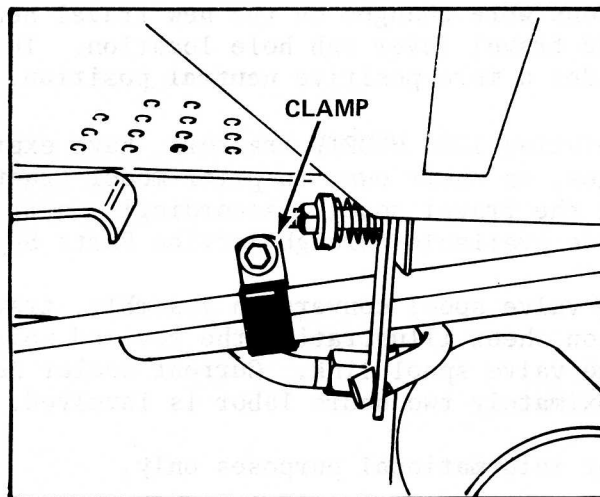
Use the following procedure to install the clamp.

Use the clamp to secure the hydraulic tubes to the tractor left side frame rail. Locate the clamp about 4 inches (100 mm) forward of the two speed transaxle shift lever and with the bolt hole up.

The tube from the pump hose must be on top. The tube to the travel control valve inlet must be on the bottom.

Centerpunch and drill a 5/16" hole in the frame rail using the hole in the clamp as your guide.

Bolt the clamp, with tubes, in position.



Tubing Clamp on Frame Rail

TIP # 4 - Set-Up Tip for Late Production Tractors:

Make sure that the steering sector gear is in proper engagement with the pinion gear before installing the steering wheel or drag link.

The new, narrower, pinion gear will allow the sector gear to pass over it before the steering wheel is installed.

119 South First Street
Winneconne, Wisconsin 54986-9576
Phone 414 582-4455

October 27, 1983

TIMELY TIPS FOR THE MONTH

ISSUE #116

- TIP # 1 - Snow Caster Lift Arm Clearance for 1984 200 Series Tractors
- TIP # 2 - 1984 Hy Driv Travel Control Lever Operation
- TIP # 3 - J34/K34 Wood Splitter Lower Mounting Frame Assembly

TIP # 1 - Snow Caster Lift Arm Clearance for 1984 200 Series Tractors:

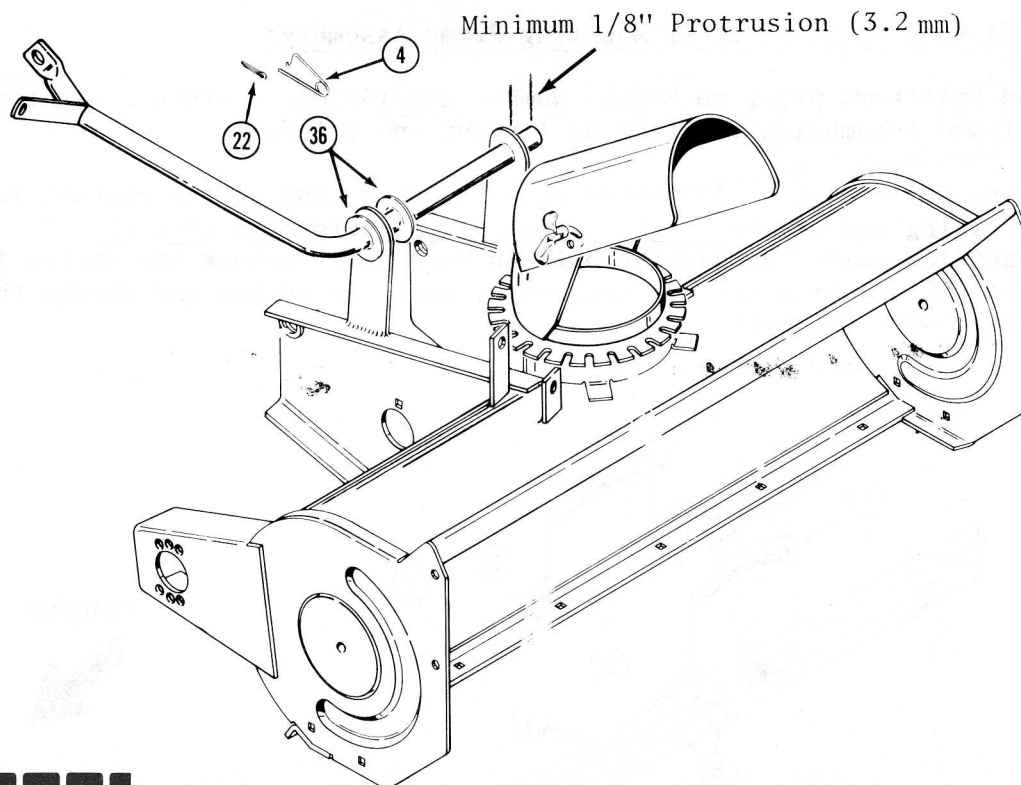
The lift arm on 38" and 48" snow casters prior to the serial numbers listed below may interfere with the hood on 1984 Model 200 series tractors.

To overcome this interference, shift the lift arm to the right until a minimum of 1/8" protrusion through the left support exists. Position the washers (36) as pictured and drill new holes for the cotter pin and safety pin (items 22 and 4 respectively).

The following snow casters have the revised lift arm:

P80 - VV10000 and after

P84 - ZZ10201 and after



(OVER)

TIP # 2 - 1984 Hy Driv Travel Control Lever Operation:

Changes in the "neutral" and "retard" notches in the travel control lever neutral start switch make it more important than ever to explain to your customers that the lever must be depressed in order to shift from the neutral position.

The American National Standards Institute Regulation B71.1 requires that a distinct actuation at right angles to the general control motion be required when changing from forward to reverse travel. The new travel control lever neutral start switch enhances our compliance with this regulation.

During your demonstration, explain the proper operation of depressing the travel control lever when shifting from "neutral" and explain the clicking sound (with the engine stopped) of the neutral and retard detents within the travel control valve.

To aid you in conveying this information to your customers, a "Depress to Shift" decal for the tractor instrument panel and an Operator's Manual Supplement Sheet - Form Number 8-55120 which accentuates the recommended operating procedure are available.

Decals and Supplement Sheets for units prior to the P.I.N.'s listed below can be obtained at no charge from your OPE Service Rep. or by writing the OPE Service Dept.

"Depress to Shift" decal was added in production affective with the following P.I.N.'s.

220 - 14035131
444 - 14039849
448 - 14044487

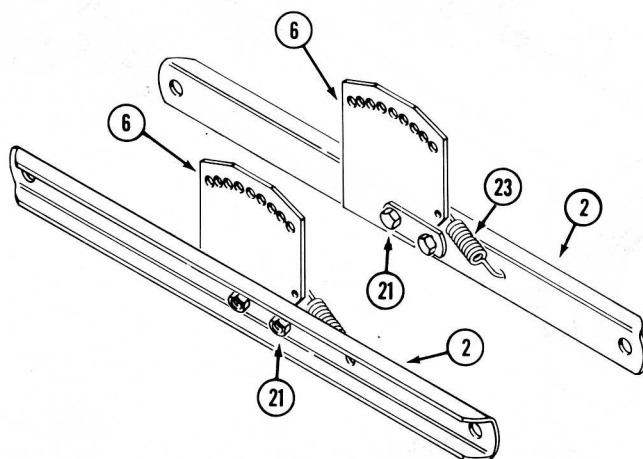
222 - 14036755
226 - 14048777

224 - 14038431
446 - 14041965

TIP # 3 - J34/K34 Wood Splitter Lower Mounting Frame Assembly:

J34 and K34 Wood Splitters prior to Serial Number JK12182 may contain 2 right hand lower mounting frame assemblies (instead of 1 right and 1 left).

The lower mounting rails must be installed with the open side of the channel facing outward and the spring end of the height adjust plate facing the tractor. To correct a misassembled rail: Remove the bolt in hole (21), unhook the spring (23), reposition the height adjust plate (6) correctly, hook the spring and secure the height adjust plate with the bolt.



TRACTOR





119 South First Street
Winneconne, Wisconsin 54986-9576
Phone 414 582-4455

November 28, 1983

TIMELY TIPS FOR THE MONTH

ISSUE # 117

- TIP # 1 - Cab
- TIP # 2 - Fuel Tank Filter Model 210 Through 448
- TIP # 3 - 200 Series Tire Chain Interference
- TIP # 4 - Onan Carburetor Brass Float Kit, P/N C27506, Now Available
- TIP # 5 - Transmission Lubricant for 1984 Model 100 Series Tractors

TIP # 1 - Cab:

New production K-1 and K-2 cabs will fit all fender and seat support variations since the 1980 style.

New production cabs can be identified by the carton having only J I CASE Identification.

They will fit prior to 1980 tractors if fender spacer adapters previously supplied with the K-1, K-2 cabs are used. A sketch that will enable you to fabricate these spacers is available from the Winneconne Service Office.

Prior production K-1 cabs (with "HINSON MANUFACTURING" on the box) will fit 200 series tractors built since 6/8/83 if a new lower back panel is used. This new lower back panel, P/N C25508, is available from the OPE DISTRIBUTION DEPARTMENT. The tractors requiring a new lower back panel to permit mounting a "HINSON" K-1 cab are:

220 P.I.N. 14034915 and after
222 P.I.N. 14036535 and after
224 P.I.N. 14038212 and after
226 ALL

Prior production K-2 cabs (with "HINSON MANUFACTURING" on the box) will fit 400 series tractors built between 6/8/83 and 8/1/83 if a new lower back panel is used. This new lower back panel, P/N C25509, is available from the OPE DISTRIBUTION DEPARTMENT. The tractors requiring a new lower back panel to permit mounting a "HINSON" K-2 cab are:

*444 from P.I.N. 14039666 to P.I.N. 14039739
*446 from P.I.N. 14041531 to P.I.N. 14041699
*448 from P.I.N. 14044109 to P.I.N. 14044239

*These are the same tractors that will experience a tight fit of the L-3 seat kit.

(OVER)



059949
TIP # 2 - Fuel Tank Filter Model 210 Through 448:

Some tractors have a fuel tank with the outlet elbow and filter heat welded, rather than threaded, in position. If the filter becomes plugged beyond cleaning, it should be removed from the inside of the tank and a P/N D59949 "IN-LINE" filter added to the fuel line. Use a long tong to pull out the filter and retrieve it from the tank. It is not necessary to replace the tank. SAR's submitted for a complete tank due to a plugged filter will be disallowed.

For tanks with a threaded outlet elbow, the outlet elbow with filter, should be removed and cleaned or replaced as required.

Several reports have been received indicating filters are plugged with rust and dirt. Be sure to caution your customers to use clean gas cans and a funnel with a filter. Review the appropriate pages in the operator's manual with your customers.

This announcement is for informational purposes only.

TIP # 3 - 200 Series Tire Chain Interference:

Clearance for tire chains between the fender and inside wall of the tire on 200 series tractors can be increased using the following procedure:

1. Follow the two speed transaxle gear engagement adjustment as described in Timely Tips Issue #105, Tip #1.
2. Loosen the fender mounting bolts and push the fenders inward as far as possible. Tighten the bolts.

TIP # 4 - Onan Carburetor Brass Float Kit, P/N C27506, Now Available:

OPE Field Service Representatives have been provided with a supply of the new Onan Brass Float Kits, P/N C27506. All OPE Division dealers will have their parts inventory of the old float, P/N C26655 or P/N C20442, exchanged for P/N C27506 on a one-for-one basis by your OPE Field Service Representative. U.S. Case dealers not serviced by the OPE Division should contact our Winneconne Service Office if they have any parts inventory of P/N C26655 or P/N C20442 floats to exchange. Alcohol blended gasolines have not been a problem in Canada and float exchange is not required by Canadian dealers. See attached timely newspaper articles in reference to illegal blending of alcohol. The P/N C27506 float kit is also now available through Case Service Parts Supply. As of now, any orders placed under the old float part numbers will be automatically substituted to the new number.

TIP # 5 - Transmission Lubricant for 1984 Model 100 Series Tractors:

The transmission in the 1984 Model 108XC, 110XC, and 116XC tractors are partially filled with 30 oz. (887 ml) of EP Lithium grease.

The transmissions are filled when assembled and do not have to be checked during predelivery inspection. The grease does not have to be changed unless the transmission is disassembled for service.



November 28, 1983

TIMELY TIPS FOR THE MONTH

ISSUE #117

Timely Newspaper Articles In Reference To Tip #4

LANSING STATE JOURNAL
Thurs., Oct. 20, 1983

Stations warned of methanol use

Service station operators in 16 Michigan cities were threatened with state lawsuits and fines today for allegedly selling methanol-spiked gasoline without notifying their customers, Attorney General Frank Kelley said.

"The sale of methanol-laced gasoline can cause significant problems for the motorist," Kelley said. "One dealer advised us that a car's fuel pump can be affected to the point that the vehicle is inoperable."

He said 22 dealers were notified that they would be sued under the "deceit" section of Michigan's Consumer Protection Act if they do not immediately cease selling gas mixed with methanol, which is commonly known as wood alcohol and is made from wood, coal or natural gas.

The notices were sent to businesses in Brooklyn, Detroit, Farwell, Jackson, Lansing, Livonia, Madison Heights, Midland, Napoleon, Pontiac, Redford, Roseville, St. Johns, Southfield, Southgate and Troy.

LANSING STATE JOURNAL
Sat., Oct. 22, 1983



Staff photo by NORRIS INGELLS

NO DOUBT — More signs proclaiming "pure" gasoline are showing up at Lansing stations after some were charged this week with selling tainted gas.

Mechanics have solution if Betsy ODs on methanol

By DICK FRAZIER
Staff Writer

So you're suspicious your old chariot has OD'd on some kind of gasohol — what can you do about it?

The first thing, mechanics agree, is to get rid of the suspicious fuel as soon as possible. If you can't readily get it out of your car's tank, at least dilute it with some fuel of which you're sure. Putting in a can of "dry gas" will help mix up any methanol that has settled to the bottom of your gas tank and flush it through the carburetion system.

AFTER THAT, the mechanics who fix carburetors say, the best way to avoid a methanol hangover in your flivver is to be sure of what's going into its gas tank.

The instructions came on the heels of announcements late this week by Attorney General Frank Kelley that stations across Michigan are lacing gasoline with low-cost methanol in a "greedy" attempt to make money. Three Drake Refinery Stations in Lansing and St. Johns were among 62 cited by Kelley as having been warned by his department to clean up their acts.

Kelley characterized the methanol-lacing as something a service station would have "only one reason" for doing — "unmitigated greed."

ONE SLUG of methanol-spiked gasoline won't necessarily ruin a carburetor, one

mechanic said, but repeated imbibing can make the workings — especially if the carburetor has a lot of rubber parts — inoperative.

Mike Kirkey, a mechanic at Ken's Carburetor Service, said his shop started getting methanol-rotted cars in about mid-summer. Major overhauls as a result of the problem are occurring daily in recent weeks, he said, and sometimes are extremely costly.

Kirkey says he buys his gasoline at a major-brand station that advertises it adds no alcohol to its supplies. Others advertise only ethanol as an alcohol additive, and some admit to adding methanol but say they stay within industry-suggested limits. The additions can improve gas mileage and engine efficiency, according to industry experts.

METHANOL-LACED GASOLINE can be especially tough on small gasoline engines such as those on chainsaws, power mowers and snowblowers. In some case, local mechanics have seen small engines with rubber gas lines partly dissolved by the alcohol additive.

A Drake's spokesman said Friday his company had sold gasoline with methanol in it, but had always posted notice of the additive on the gas pump and had stayed within industry guidelines. But Kelley's report listed the Drake stations as having too much methanol in their tanks when they were checked by Michigan Department of Agriculture inspectors.



By JIM HOUGH

The Onlooker

Lester Crosslin, owner of Lester Service Company, Holt, asked us to warn users of small gasoline engines such as those in chain saws and lawn trimmers against using gasoline diluted with alcohol.

"In recent months, we have found that gasoline doctored up with alcohol burns too hot for those small engines which still use rubber and plastic gas lines. It causes those lines to melt or deform and the result is a big repair bill for the owner. Just be careful to follow the manufacturer's recommendations on the type and the mixture of fuel or you may be in trouble," Lester said.



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LANSING STATE JOURNAL
Friday, Oct. 21, 1983

Drake stations admit using some methanol

By DICK FRAZIER
Staff Writer

Nobody knows just how the gasoline got spiked with methanol before customers of three Lansing area service stations pumped it into their automobile tanks.

Three Drake's Stations — two in Lansing and one in St. Johns — were among 22 Michigan retail gasoline dealers being notified today that they face lawsuits and possibly heavy fines for selling methanol-laced fuel to customers.

Officials at the Drake's Refinery distribution center that services the stations said today they have received no complaints from customers and are making sure no methanol gets into their pumps from now on.

METHANOL, according to Attorney General Frank J. Kelley, can gum up an automobile fuel pump, damage carburetor parts and fuel tanks, cause all sorts of starting and stalling problems and even eat up a car's finish.

Michael P. Drake, president of the local distribution firm, said Drake stations have used some methanol in the past — according to industry guidelines — but have always notified customers of the additive with stickers on the gas pumps.

He said it was possible Drake's got a load from a supplier that already had some methanol in it. But now, the firm will not be adding any methanol, he said, "until we get this thing cleared up."

DRAKE SAID that some methanol added to fuel can increase per-

formance and keep carburetors and engines cleaner because it acts as a solvent. But too much of the wrong kind can cause trouble by loosening too much sludge, he said.

The Drake stations cited were at 3124 S. Logan St., 2105 E. Grand River Ave. and 1201 U.S. 27 in St. Johns.

Kelley said his crackdown came after a three-month investigation of numerous consumer complaints and the analysis of 385 tests run on samples taken in 62 communities throughout the state. Most of the dealers warned today were in the Detroit and Jackson areas.

"THERE IS just one reason for knowingly selling gasoline that contains methanol," Kelley said. "Unmitigated greed. Methanol costs about 50 to 55 cents per gallon, compared to about \$1.25 for gasoline and \$1.55 to \$1.75 for ethanol."

Diluting gasoline with methanol "means larger profit margins and an illegal competition advantage over law-abiding gas dealers and, for the consumer, it means not getting value for one's money — and potential problems."

Kelley told the dealers they have 10 days to file written assurances they will stop spiking the gas with methanol.

IF THAT doesn't solve the problem, Kelley said, he can file lawsuits, seek injunctions to bar stations from selling fuel and ask for civil penalties of up to \$25,000.

Methanol, commonly known as wood alcohol, is made from wood, coal or natural gas.

THE COLUMBUS DISPATCH/Thursday, Aug. 18, 1983

Chemist warns of methanol hazards

By Michael J. Berens
Dispatch Staff Reporter

Fuel analysis expert Darwin Nevue said methanol found in gasoline at area service stations will damage "inferior" plastics used in foreign-made automobiles faster than American-made plastics.

Nevue, 50, owner of Nalin Laboratories & Fuel Testing Laboratory of 2641 Cleveland Ave., said that methanol additives are not limited to just a few service stations. "There are a whole pile of them," he said.

Nevue, a chemist 25 years, said any amount of methanol in gasoline can damage engines. He is a member of the American Standards of Testing and Materials, a national group of scientists and chemists who suggest new procedures to the petroleum industry and government agencies.

Although the Ohio Environmental Protection Agency permits the regulated use of methanol as an octane booster, rust inhibitor and anti-freezing additive in gasoline, agency spokesman Scott Compton said he is "acutely aware" of methanol's harmful affects.

Nevue said he has analyzed many cases of methanol-related problems this year, and he is concerned about the use of fiberglass fuel tanks in school buses and some new car models.

On March 6, city engineers brought him six gasoline samples from Columbus school buses that were using fiberglass fuel tanks, he said.

Preliminary tests made him suspect methanol was causing the fiberglass to deteriorate and damaging the fuel systems.

Nevue said the engineers would not let him test all the samples for methanol because they were afraid of "what the answer might be."

Another growing problem is the use of water in gasoline, Nevue warned.

Three weeks ago, a sample taken from a major Ohio gasoline chain showed a 13 percent level of water. Federal regulations permit 0.01 percent.

He said three gallons of water was resting on the bottom of the fuel tank.

Nevue said one local service station manager told him he used methanol in his gasoline because "everyone else did, and I have to stay competitive."

Other area dealers don't trust their own distributors and have Nevue take samples directly from the truck before accepting a new fuel shipment.

Nevue said the local dealers are often "caught in the middle" and really don't know what's in the gasoline.

WED. JULY 13, 1983 TRIBUNE CHRONICLE

Car engine damage claims being paid for too rich gasoline-alcohol mixture

FINDLAY (AP) — Some gasoline dealers are paying for engine damage from gasoline mixed with methanol-alcohol, which automakers warn against using.

Until July 1, gasoline dealers received a 35-cent-a-gallon tax break for selling gasoline mixed with alcohol. Because no state or federal law requires marking pumps with ingredients, many consumers have been unaware they were using mixed gas.

In small amounts, mechanics say methanol and ethanol have little effect on an automobile, but at high concentrations of alcohol, it can corrode a carburetor and cause engine damage.

There is disagreement over how high the level of alcohol content is in some gasoline being sold, but many dealers seem convinced it far exceeds Environmental Protection Agency guidelines of 4.8 percent.

Some estimates place the concentration as high as 40 percent.

"That's absolutely incredible," said Roger Dreyer, executive director of the Ohio Petroleum Marketers Association. "It would eat the tank truck

up going to the station."

Some oil companies, legislators and the Ohio attorney general's office are pushing for laws requiring the marking of gasoline pumps.

Only one of five stations that sold mixed gasoline in the Findlay-Fostoria area continues to offer the product. The others dropped the sale after the tax break expired and customers began to complain.

"We were having too much trouble," said Dolores Miller, manager of a 7-Eleven convenience store that sold the mixed gas. "People were getting water in their tanks."

Doug Reed, a spokesman for the Southland Corp., parent of the 7-Eleven stores, said the company has had few complaints about problems from mixed gas nationwide. He did not say how many claims have been paid nor the amount of the claims.

Ford Motor Co., General Motors Corp. and Chrysler Corp. warn purchasers of new cars to stay clear of mixed gasoline because of the chance of engine damage.

Chrysler reportedly is considering placing a clause in the warranty of its

1984 models that would negate fuel system protection if gasoline combined with methanol is used.

State and federal Environmental Protection Agency officials have been touring Ohio, checking whether unleaded gas containing illegal levels of methanol have been sold.

Methanol and ethanol are used to boost the octane rating in unleaded gasolines and EPA officials are checking emissions levels to see that they are in line with those of leaded and unleaded non-mixed gas.

The EPA prohibits gasoline-methanol mixtures exceeding 4.8 percent methanol and 4.8 percent co-solvents, designed to stop engine corrosion. The only exception is a special fuel consisting of 10 percent methanol and 2 1/2 percent co-solvents.

INGERSOLL

Ingersoll Equipment Co., Inc.

119 South First Street
Winneconne, Wisconsin 54986-9576
Phone 414 582-4455

December 28, 1983

TIMELY TIPS FOR THE MONTH

ISSUE # 118

- TIP # 1 - Snow Caster Possible Interference Between Auger Flighting and Sprocket
- TIP # 2 - Check Replacement Ring End Gaps in Cylinder Bore
- TIP # 3 - Engine Block Cleaning Procedure After Honing or Resizing
- TIP # 4 - Manifold & Drive Link Change on P/N C14655 & P/N C16697 Hydraulic Drive Motor
- TIP # 5 - Correction to Timely Tip Issue #117 - Tip #2
- TIP # 6 - Parts Catalog Corrections

TIP #1 - Snow Caster Possible Interference Between Auger Flighting and Sprocket

We have become aware of a possible interference between the outer end of the auger flighting and the drive chain. The snow casters listed below must be checked and measured for a minimum of 9/16" (15 mm) clearance between the outer end of the flighting and the sprocket.

If required, grind off the end of the flighting to obtain the minimum 9/16" (15 mm) clearance. Inspect affected units in your inventory prior to installation, operation or delivery to customers since damage can result if contact is made.

Normal Warranty will apply.

The following Snow Casters are affected:

- A. Model N80 and N84 Snow Casters with a locating hole near the outer end of the auger flighting.
- B. Model P80 Snow Casters Prior to S/N VV10193.
- C. Model P84 Snow Casters Prior to S/N ZZ10545.

TIP #2 - Check Replacement Ring End Gaps in Cylinder Bore

The practice of checking new parts before installation is sometimes questioned. It is always good practice to check fits and clearances when assembling an engine, even with all new parts. Job pricing codes include the time for these checks. It is especially important to check the piston ring end gaps in a cylinder bore (whether standard, honed or resized) before assembling the rings to the piston.

Refer to OPE Service Manual Section 9-77713, Kohler Engine Models K241, K301 and K321, Page 22, Step 3.

- 3. "Before installing new rings on piston, place each ring in turn in its running area in cylinder bore and check end clearance".

(OVER)



Exclusive Manufacturer of Case Outdoor Power Equipment

Tip #2 - Check Replacement Ring End Gaps in Cylinder Bore - Continued

Refer to OPE Service Manual Section 9-51391 Onan Engines BF, B43M, B48M, CCKA, Page 24, Step 5:

- 5a. "Install the piston ring in the cylinder bore. Invert the piston and push the ring to the end of ring travel, about halfway into the bore. Check the gap with a feeler gauge".

This reminder is for informational purposes only.

TIP #3 - Engine Block Cleaning Procedure After Honing or Resizing

After resizing or honing is completed, be sure to take care of the final, and probably one of the most important details of the job-cleaning the bore thoroughly. Merely wiping out the bore with an oily shop rag won't do the trick. In fact, that may make matters worse by smearing the metal chips and abrasive particles - the ones you're trying to get rid of - into the honed surface.

To do a thorough job you'll need a good, stiff bristle brush, hot water, and some soap or detergent. Scrub the bore until the soap suds stay white (use a fresh batch of soap and water if you must). Then, with a cloth or paper towel, wipe the bore dry until the towel stays clean. When the bore is completely dry, protect it with a light coat of oil. On Kohler engines, also check the small oil drain-back hole from the valve chamber to the bore. Make sure it, too, is clean and free of debris.

TIP #4 - Manifold and Drive Link Change on P/N C14655 and P/N C16697 Hydraulic Drive Motors

The drive link and manifold have changed on the hydraulic drive motors listed above. A current style manifold will not fit a motor with a prior style drive link.

When replacing the manifold on a hydraulic motor prior to Motor Code (86-75) also replace the drive link. The hydraulic motor code is found on the metal plate on the housing assembly.

TIP #5 - Correction to Timely Tip Issue #117, Tip #2

The correct part number for the in-line fuel filter is D59949. Please mark this correction on Issue #117, Tip #2.

TIP #6 - Parts Catalog Corrections

Please mark the following correction in your parts catalog:

CATALOG NO. 8-1420 Model 648 Loader

Page 51, Item 15, Pump Coupling, should be C25950.

CATALOG NO. C1300 Model 80 Rear Engine Rider

Page 35 - Bottom Half of Page -

Item 2 should be P/N C22891 - Wheel, Friction Drive

Item 3 should be P/N NSS - Use C26129 and C26130 for Service