STX30, STX38, and STX46 Lawn Tractors



TECHNICAL MANUAL

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John Deere
Worldwide Commercial and
Consumer Equipment Division

TM1561 (15Mar97)
Replaces TM1561 (01Sep95) and
TM1418 (26Oct92)

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CONTENTS

Page

SPECIFICATIONS & INFORMATION

GENERAL VEHICLE SPECIFICATIONS 3
METRIC FASTENER TORQUE VALUES. 6
METRIC FASTENER TORQUE VALUE - GRADE 7. 7
INCH FASTENER TORQUE VALUES 8
O-RING SEAL SERVICE RECOMMENDATIONS 9
FACE SEAL FITTINGS WITH INCH STUD ENDS TORQUE 9
FACE SEAL FITTINGS WITH METRIC STUD ENDS TORQUE 10
O-RING FACE SEAL FITTINGS 11
O-RING BOSS FITTINGS 11
GASOLINE SPECIFICATIONS. 12
4–CYCLE ENGINES - NORTH AMERICA 12
GASOLINE STORAGE 12
4–CYCLE ENGINES - EUROPE 13
GASOLINE STORAGE 13
4–CYCLE GASOLINE ENGINE OIL 14
4–CYCLE GASOLINE ENGINE OIL - NORTH AMERICA 14
4–CYCLE GASOLINE ENGINE OIL - EUROPE 15
BREAK–IN 4-CYCLE GASOLINE ENGINE OIL - NORTH AMERICA 16
BREAK–IN 4-CYCLE GASOLINE ENGINE OIL - EUROPE 17
HYDROSTATIC TRANSMISSION OIL 18
HYDROSTATIC TRANSMISSION OIL - NORTH AMERICA 18
HYDROSTATIC TRANSMISSION OIL - EUROPE 19
ALTERNATIVE LUBRICANTS 20
SYNTHETIC LUBRICANTS. 20
LUBRICANT STORAGE 20
MIXING OF LUBRICANTS 20
OIL FILTERS 20
GEAR TRANSMISSION GREASE 21
ANTI-CORROSION GREASE SPECIFICATIONS 22
GREASE SPECIFICATIONS 23
GREASE - NORTH AMERICA 23
GREASE - EUROPE 23
SERIAL NUMBER LOCATIONS. 24
ENGINE SERIAL NUMBER SUFFUX 24
TRACTOR IDENTIFICATION NUMBER 24
ENGINE SERIAL NUMBER. 24
GEAR TRANSAXLE SERIAL NUMBER 24
HYDROSTATIC TRANSMISSION SERIAL NUMBER 24

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RECOGNIZE SAFETY INFORMATION



This is the safety-alert symbol. When you see this symbol on your machine or in this manual, be alert to the potential for personal injury.

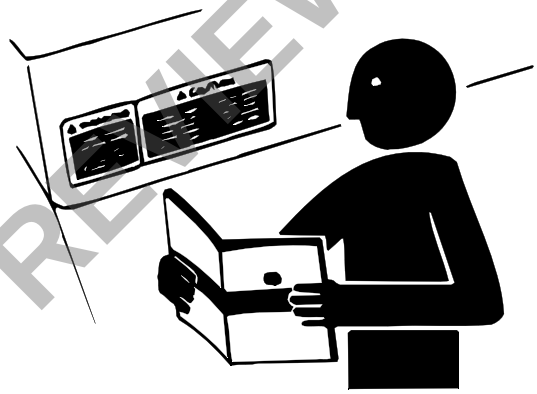
Follow recommended precautions and safe servicing practices.

Understand Signal Words

A signal word—DANGER, WARNING, or CAUTION—is used with the safety-alert symbol. DANGER identifies the most serious hazards.

DANGER or WARNING safety signs are located near specific hazards. General precautions are listed on CAUTION safety signs. CAUTION also calls attention to safety messages in this manual.

REPLACE SAFETY SIGNS

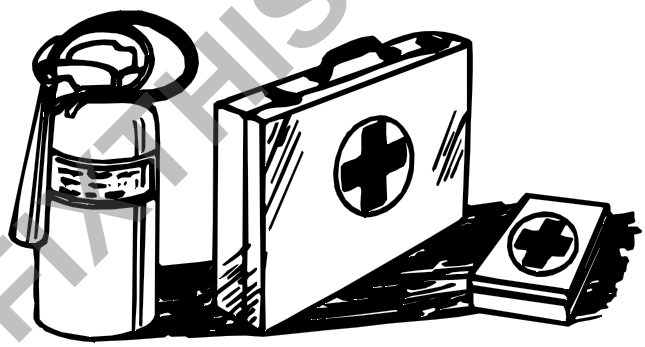


Replace missing or damaged safety signs. See the machine operator's manual for correct safety sign placement.

HANDLE FLUIDS SAFELY-AVOID FIRES

Be Prepared For Emergencies





When you work around fuel, do not smoke or work near heaters or other fire hazards.

Store flammable fluids away from fire hazards. Do not incinerate or puncture pressurized containers.

Make sure machine is clean of trash, grease, and debris.

Do not store oily rags; they can ignite and burn spontaneously.

Be prepared if a fire starts.

Keep a first aid kit and fire extinguisher handy.

Keep emergency numbers for doctors, ambulance service, hospital, and fire department near your telephone.

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GENERAL VEHICLE SPECIFICATIONS

Engine:

Make . . . . . Kohler
Style . . . . . .Command LT
STX30 . . . . . .CV12.5—1216s
STX38 (Serial No. —270000) . . . . . .CV12.5—1215
STX38 (Serial No. 210001—270000) . . . . . .CV12.5—1270
STX38 (Serial No. 270001—595000 & Motorsport) . . . . . CV13S—21509
STX46 (Serial No. 210001—270000) . . . . . CV14S—1463
STX46 (Serial No. 270001—595000) . . . . . CV15S—41521
Type . . . . . Gasoline, Air Cooled, Single Cylinder, 4-Cycle, Overhead Valves
Crankcase Oil Capacity (with filter) . . . . . 1.8 L (1.9 U.S. qt)
Oil Type: (Warm Climate) 10W30
(Cold Climate). 5W30

Electrical:

Charging System. . . . . Flywheel/Electronic Magneto
Magneto Air Gap . . . . . 0.2—0.3 mm (0.008—0.012 in.)
Charging Capacity. . . . . 15 amp (regulated)
Spark Plug. . . . . .Champion RC12YC
Spark Plug Air Gap . . . . . .1.0 mm (0.040 in.)
Battery Type . . . . . .BCI Group, U1
Battery Reserve Capacity . . . . . 23 min. at 25 amp
Battery Cold Cranking Amp. . . . . .25 amp at 27° C (0° F) for 20 minutes
Battery Specific Gravity. . . . . .Above 1.225 Points
Starter Type . . . . . .Bendix Inertia Drive
PTO Clutch Type. . . . . Electric (Manufactured by Warner)
Fuel Shut-Off Solenoid (Optional) . . . . . Replaceable (Below Carburetor Float Bowl)
Headlight Kit (Optional) . . . . . Two Bulbs—Each 12 Volt/23W/1.9 Amp Draw

Fuel/Air System:

Carburetor Make . . . . . .Walbro
Carburetor Type . . . . . Side Draft
Throttle/Choke. . . . . .Unitized Control Linkage
Carburetor Fuel Shut-Off Solenoid (Optional). . . . . .Electric
Fuel Delivery . . . . . Gravity Flow
Fuel Filter . . . . . .Replaceable Paper (in-line type)
Fuel Type . . . . . Unleaded (87 octane minimum)
Fuel Tank Capacity . . . . . 4.7 L (1.25 gal)
Air Filter. . . . . Paper Element with Foam Pre-cleaner
Muffler Type . . . . . Anti-Backfire

Power Train:

Gear Transaxle—
Make . . . . . Dana
Model . . . . . .Spicer Heavy-Duty 4360 Transaxle
Type . . . . . .Five-Speed/Linear Shift
Domestic Ground Speeds (at FAST idle—3350 rpm) and Gear Ratios:
1st Gear . (STX30 & STX38 SN —210000 2.2km/hr) 2.4 km/hr (1.5 mph)—61.67:1
2nd Gear. . . . . 3.2 km/hr (2.0 mph)—46.67:1
3rd Gear . (STX30 & STX38 SN —210000 4.5km/hr) 5.0 km/hr (3.1 mph)—30.00:1
4th Gear . (STX30 & STX38 SN —210000 5.7km/hr) 6.4 km/hr (4.0 mph)—23.48:1
5th Gear . (STX30 & STX38 SN —210000 8.5km/hr) 8.0 km/hr (5.0 mph)—15.71:1
Reverse . .(STX30 & STX38 SN —210000 3.3km/hr) 3.7 km/hr (2.3 mph)—40.00:1
Export Ground Speeds (at FAST idle—3000 rpm) and Gear Ratios:
1st Gear . . . . . 1.97 km/hr (1.22 mph)—61.67:1
2nd Gear. . . . . 2.61 km/hr (1.67 mph)—46.67:1
3rd Gear . . . . . 4.07 km/hr (2.53 mph)—30.00:1
4th Gear . . . . . 5.18 km/hr (3.22 mph)—23.48:1
5th Gear . . . . . 7.76 km/hr (4.82 mph)—15.71:1
Reverse . . . . . 3.04 km/hr (1.89 mph)—40.00:1
Brake Type . . . . . .Single, External Brake Disc With Dual Friction Pucks

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TESTS AND ADJUSTMENTS

THROTTLE CABLE ADJUSTMENT

Reason:

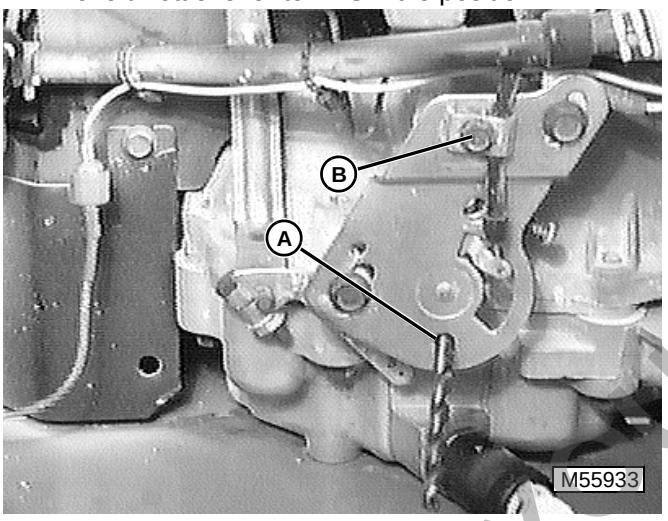
To make sure the throttle cable moves the throttle and choke control lever through its full range of movement.

Equipment:

- 6.4 mm (0.25 in.) Drill Bit

Procedure:

1. Move throttle lever to FAST idle position.



2. Align hole in throttle control lever with hole (A) in throttle control plate. Put a **6.4 mm (0.25-in.)** drill bit through holes to keep the throttle control lever from moving. Be sure drill bit is perpendicular to the throttle control plate.
3. Loosen cap screw (B) and pull throttle cable housing tight. Tighten cap screw.
4. Remove drill bit.
5. Move throttle lever to the full choke position. Make sure throttle lever is held up against throttle plate. Choke should be fully closed.
6. Move throttle lever through full range to be sure linkage is not binding.

CHOKE ADJUSTMENT

Reason:

To make sure the choke plate is fully closed when the throttle lever is in the full choke position. Correct adjustment also makes sure choke is completely open in the fast idle position.

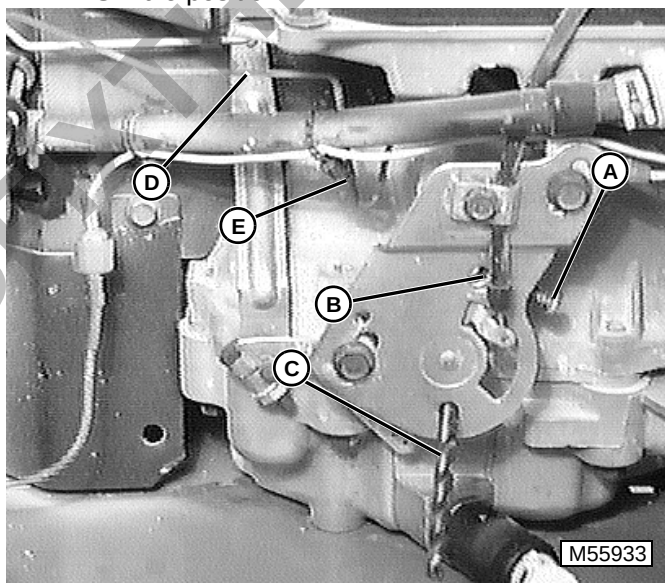
Equipment:

- 6.4 mm (0.25 in.) Drill Bit

Procedure:

NOTE: Adjust throttle cable before adjusting choke.

1. Move throttle lever to CHOKE position then back to FAST idle position.



2. Align hole in throttle control lever with hole in throttle control plate. Put a **6.4 mm (0.25 in.)** drill bit (C) through holes to keep the throttle control lever from moving. Be sure drill bit is perpendicular to the throttle control plate.
3. Turn screw (A) counterclockwise until screw does not contact the choke control lever (B).
4. Turn screw clockwise until screw just touches the choke control lever.
5. Remove drill bit.
6. Move throttle lever to full choke position.
7. Try to move choke rod (D) forward (choke rod should not move). If the choke rod moves forward, the choke plate is not fully closed. Carefully bend the choke rod at Vee bend (E) until the choke plate is fully closed.
8. Move throttle lever to be sure choke linkage is not binding.

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READING ELECTRICAL SCHEMATICS

The schematic is made up of individual circuits laid out in a sequence of related functions. It is formatted with all power wires (A) across the top and all ground wires (B) across the bottom. Current flow is generally from top to bottom through each circuit and component. All components are shown in the OFF position. The diagram does not list connector (C) information unless needed to avoid confusion. If the connector is shown, the number next to it is the terminal pin location (D) in the connector.

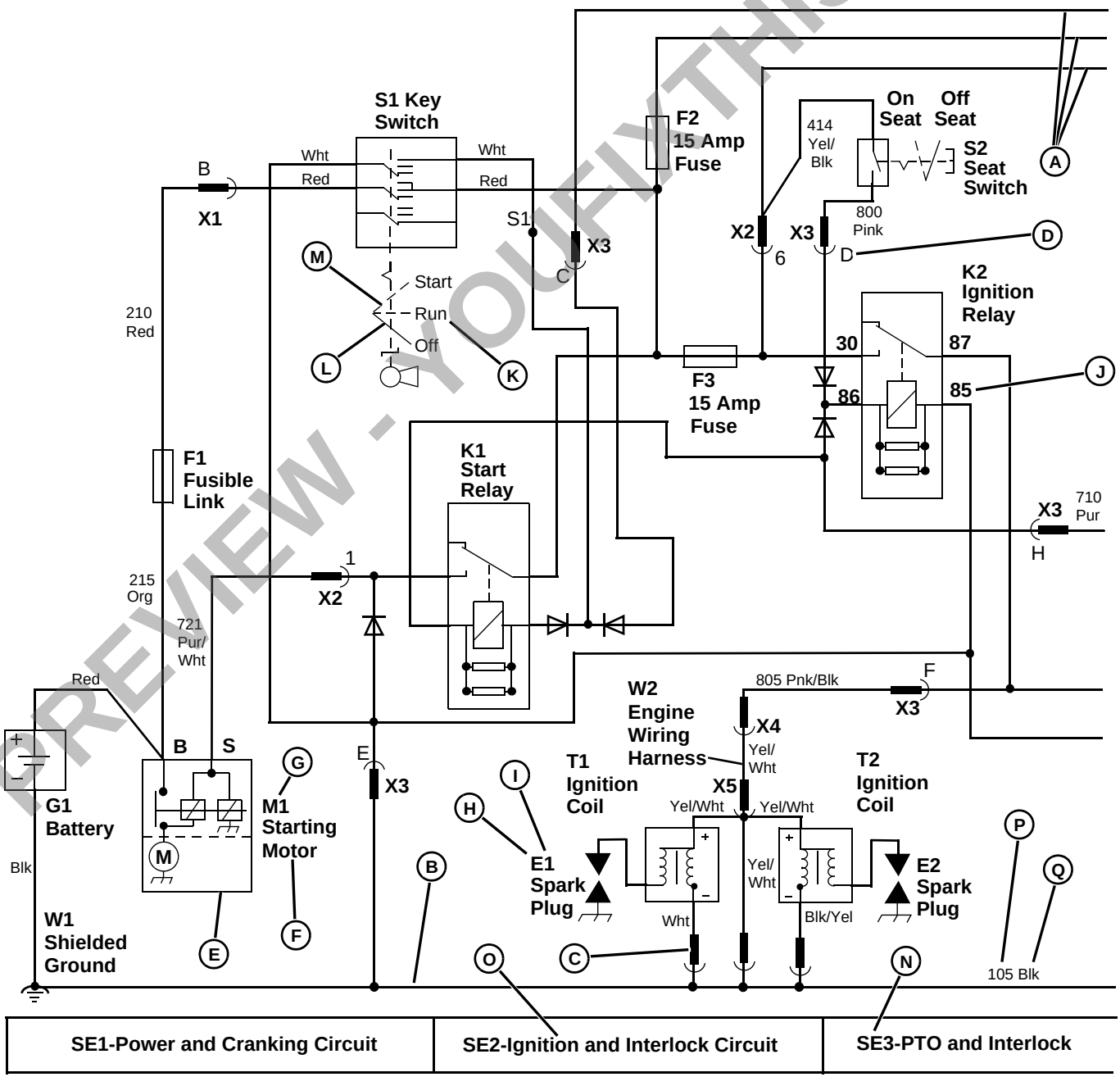
Each component is shown by a symbol (E), its name (F), and an identification code (G). The identification code contains a device identifying letter (H) and number (I).

The identifying letter is always the same for a specific component, but the identifying numbers are numbered consecutively from upper left to lower right. The terminal designation (J) is placed directly outside the symbol next to the connecting wire path. Switch positions (K) are also placed directly outside the symbol. The solid line (L) shows the position the switch is currently in and dash lines (M) represent other switch positions.

Each circuit is identified at the bottom of the drawing by a section number (N) and section name (O).

The circuit number (P) and wire color (Q) of the wires are shown directly next to the wire path.

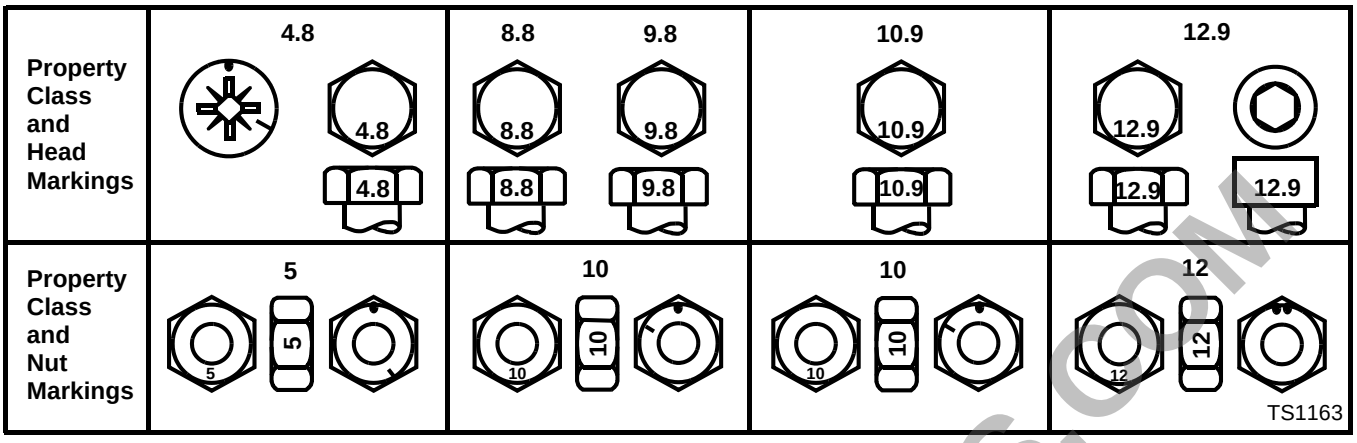
The same component name and identification code are used consistently on all diagrams in this section. Components can be easily cross-referenced.



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METRIC FASTENER TORQUE VALUES



	Class 4.8				Class 8.8 or 9.8				Class 10.9				Class 12.9			
	Lubricated[a]		Dry[a]		Lubricated[a]		Dry[a]		Lubricated[a]		Dry[a]		Lubricated[a]		Dry[a]	
SIZE	N•m	lb-ft	N•m	lb-ft	N•m	lb-ft	N•m	lb-ft	N•m	lb-ft	N•m	lb-ft	N•m	lb-ft	N•m	lb-ft
M6	4.8	3.5	6	4.5	9	6.5	11	8.5	13	9.5	17	12	15	11.5	19	14.5
M8	12	8.5	15	11	22	16	28	20	32	24	40	30	37	28	47	35
M10	23	17	29	21	43	32	55	40	63	47	80	60	75	55	95	70
M12	40	29	50	37	75	55	95	70	110	80	140	105	130	95	165	120
M14	63	47	80	60	120	88	150	110	175	130	225	165	205	150	260	109
M16	100	73	125	92	190	140	240	175	275	200	350	225	320	240	400	300
M18	135	100	175	125	260	195	330	250	375	275	475	350	440	325	560	410
M20	190	140	240	180	375	275	475	350	530	400	675	500	625	460	800	580
M22	260	190	330	250	510	375	650	475	725	540	925	675	850	625	1075	800
M24	330	250	425	310	650	475	825	600	925	675	1150	850	1075	800	1350	1000
M27	490	360	625	450	950	700	1200	875	1350	1000	1700	1250	1600	1150	2000	1500
M30	675	490	850	625	1300	950	1650	1200	1850	1350	2300	1700	2150	1600	2700	2000
M33	900	675	1150	850	1750	1300	2200	1650	2500	1850	3150	2350	2900	2150	3700	2750
M36	1150	850	1450	1075	2250	1650	2850	2100	3200	2350	4050	3000	3750	2750	4750	3500

DO NOT use these hand torque values if a different torque value or tightening procedure is given for a specific application. Torque values listed are for general use only and include a ±10% variance factor. Check tightness of fasteners periodically. DO NOT use air powered wrenches.

Shear bolts are designed to fail under predetermined loads. Always replace shear bolts with identical grade.

Fasteners should be replaced with the same class. Make sure fastener threads are clean and that you properly start thread engagement. This will prevent them from failing when tightening.

When bolt and nut combination fasteners are used, torque values should be applied to the **NUT** instead of the bolt head.

Tighten toothed or serrated-type lock nuts to the full torque value.

a *"Lubricated" means coated with a lubricant such as engine oil, or fasteners with phosphate and oil coatings. "Dry" means plain or zinc plated (yellow dichromate - Specification JDS117) without any lubrication.*

Reference: JDS—G200.

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TROUBLESHOOTING

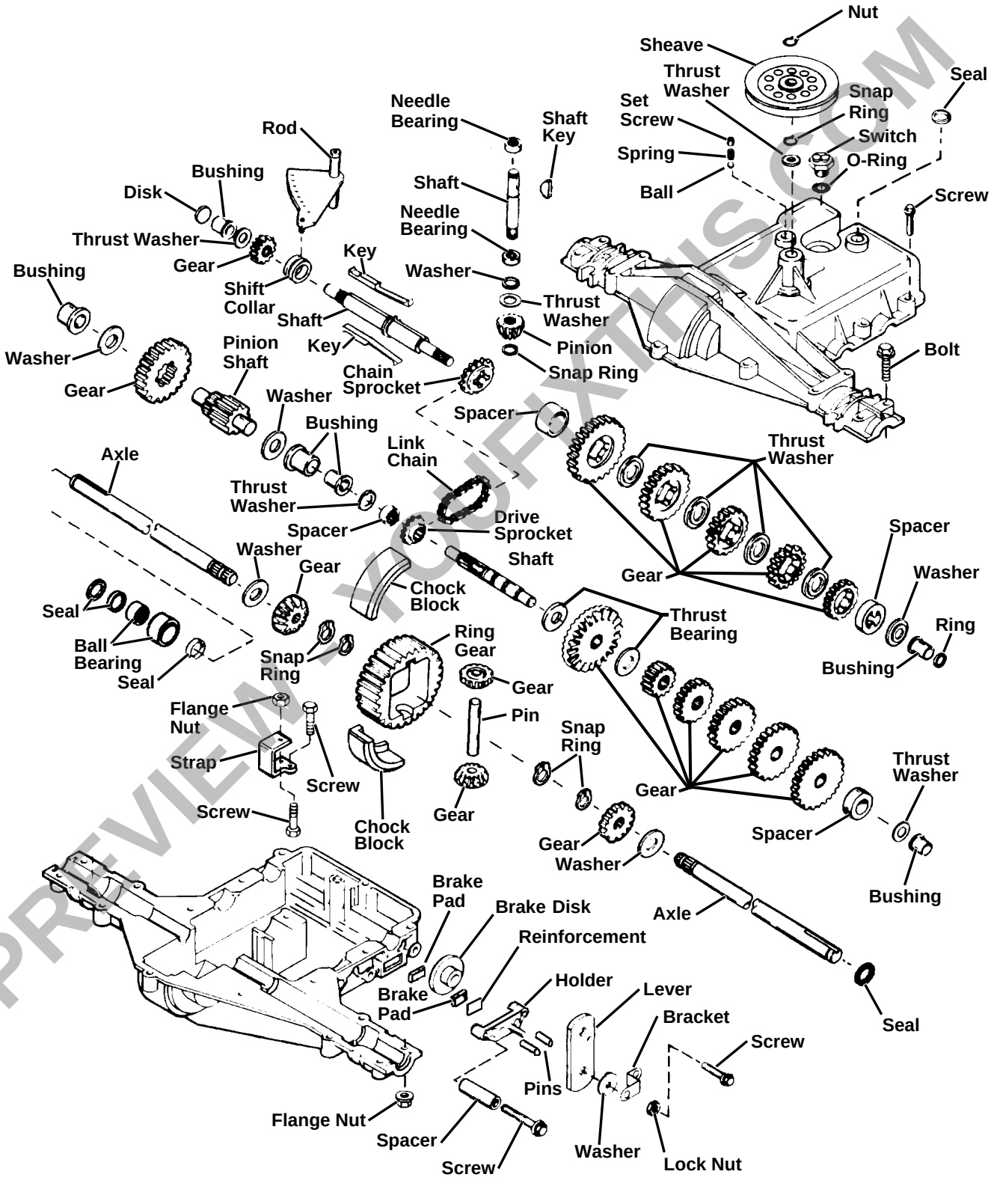
Problem or Symptom / Check or Solution	Engine cranks but will not start or starts hard	Engine will not stay running or runs rough	Engine stalls frequently	Engine backfires	Engine surges, uneven or uncontrolled rpm	Engine misses	Low power under load	Engine has no spark	Engine will not crank	Exhaust black, engine floods or burns rich	Exhaust smoke blue or high oil consumption	Engine has low oil pressure	Fuel in oil	Engine overheats	Excessive engine noise or vibration start or starts hard
Spark plug fouled or incorrect gap. Incorrect spark plug.	●	●	●		●	●	●	●		●					●
Defective ignition components.	●	●	●	●	●	●	●	●	●	●					●
Starter worn. Cranking rpm too slow, cables corroded, battery weak. Engine overloaded.	●	●	●				●		●			●		●	●
Fuel tank outlet restricted, shut-off valve not fully open, fuel filter or line restricted. Fuel stale, contains water, or wrong type.	●	●	●	●	●	●	●			●	●		●		●
Air filter element plugged or oil soaked.	●	●	●		●	●	●			●					●
Choke, throttle, or governor linkage worn or out of adjusted. Carburetor set too rich.	●	●	●	●	●	●	●		●	●					●
Carburetor worn, contaminated with debris or varnish. Passages plugged. Wrong jets or adjusted too lean.	●	●	●	●	●	●	●								●
Carburetor, intake manifold, or cylinder head gaskets leaking.	●	●	●	●	●	●	●								●
Low compression: worn piston, rings, cylinder, valves. Warped head.	●	●	●		●	●	●				●	●	●	●	●
Valve clearance incorrect. Burned or warped valves and seats. Defective springs.	●	●	●	●	●	●	●								●

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COMPONENT LOCATION

TRANSAXLE—PEERLESS MODEL 920-017
STX30 (SN —135158) (SN 160759—)
STX38 (SN —139614) (SN 185587—210000)



M15390

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REPAIR SPECIFICATIONS (Continued)

Camshaft:

End Play . . . . . 0.076—0.127 mm (0.003—0/005 in.)
Clearance . . . . . 0.025—0.063 mm (0.0010—0.0025 in.)
Bore ID:
New . . . . . 20.000—20.025 mm (0.7874—0.7884 in.)
Maximum . . . . . 20.038 mm (0.7889 in.)
Bearing OD:
New . . . . . 19.962—19.975 mm (0.7859—0.7864 in.)
Minimum . . . . . 19.959 mm (0.7858 in.)

Balance Shaft:

End Play . . . . . 0.0575—0.3625 mm (0.0023—0.0143 in.)
Clearance . . . . . 0.025—0.063 mm (0.0009—0.0025 in.)
Bore ID:
New . . . . . 20.000—20.025 mm (0.7874—0.7884 in.)
Maximum . . . . . 20.038 mm (0.7889 in.)
Balance Shaft Bearing OD:
New . . . . . 19.962—19.975 mm (0.7859—7864 in.)
Minimum . . . . . 19.959 mm (0.7858 in.)

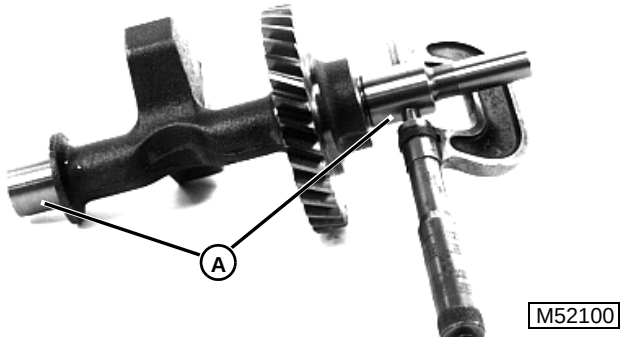
Cylinder Bore, Piston and Rings:

Cylinder Bore ID (12.5, 13, 14 hp):
New . . . . . 87.000—87.025 mm (3.4252—3.4262 in.)
Maximum . . . . . 87.063 mm (3.4277 in.)
Cylinder Bore ID (15 hp):
New . . . . . 90.000—90.025 mm (3.5433—3.5443 in.)
Maximum . . . . . 90.63 mm (3.5681 in.)
Maximum Out-of-Round . . . . . 0.12 mm (0.0047 in.)
Maximum Taper . . . . . 0.05 mm (0.0020 in.)
Piston-To-Pin Clearance . . . . . 0.006—0.017 mm (0.0002—0.0007 in.)
Piston Pin Bore ID:
New . . . . . 19.006—19.012 mm (0.7483—0.7485 in.)
Maximum . . . . . 19.025 mm (0.7490 in.)
Piston Pin OD:
New . . . . . 18.995—19.000 mm (0.7478—0.7480 in.)
Minimum . . . . . 18.994 mm (0.74779 in.)
Top Compression Ring-To-Groove Side Clearance
12.5, 13, 14 hp . . . . . 0.040—0.105 mm (0.0016—0.0041 in.)
15 hp . . . . . 0.060—0.105 mm (0.0023—0.0041 in.)
Middle Compression Ring-To- Groove Side Clearance
12.5, 13, 14 hp . . . . . 0.040—0.072 mm (0.0016—0.0028 in.)
15 hp . . . . . 0.040—0.085 mm (0.0015—0.0002 in.)
Oil Control Ring-To-Groove Side Clearance
12.5, 13, 14 hp . . . . . 0.551—0.675 mm (0.0217—0.0266 in.)
15 hp . . . . . 0.176—0.026 (0.0069—0.0010 in.)
Top and Center Compression Ring End Gap
New Bore:
12.5, 13, 14 hp . . . . . 0.3—0.5 mm (0.012—0.020 in.)
15 hp . . . . . 0.27—0.51 mm (0.010—0.020 in.)
Used Bore (Maximum)
All . . . . . 0.77 mm (0.030 in.)

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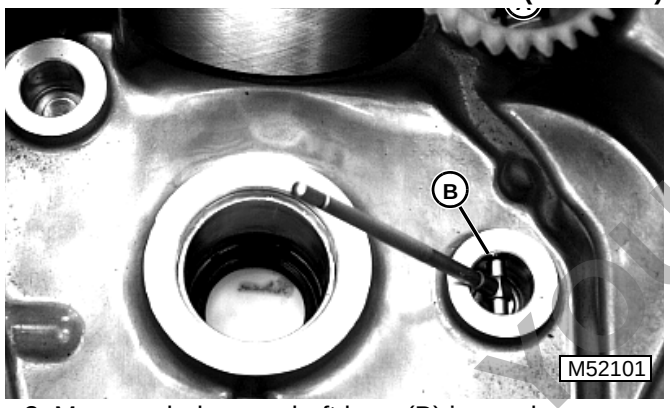
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BALANCER SHAFT INSPECTION



1. Inspect shaft for cracks and broken teeth. Replace shaft if cracked or damaged.
2. Measure journals (A). Replace if not within specification.

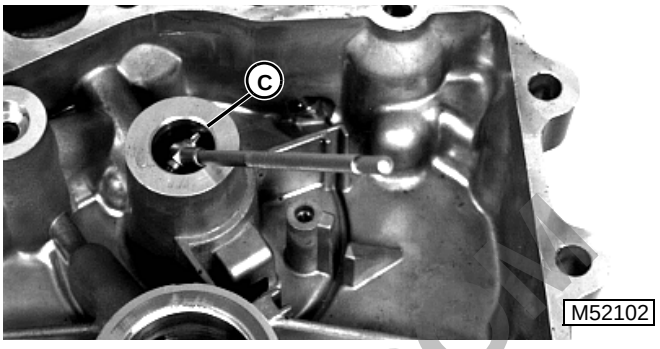
Balancer Shaft Journal O. D. Specification
New . . . . . 19.962—19.975 mm (0.7859—0.7864 in.)
Wear Limit. . . . . 19.959 mm (0.7858 in.)



3. Measure balancer shaft bore (B) in crankcase.
4. Subtract journal OD. from bore ID. to determine clearance with balancer shaft journal. Replace crankcase if measurements are not within specifications.

Balancer Shaft Crankcase Bore Specifications:

ID (New)
. . . . . 20.000—20.025 mm (0.7874—0.7884 in.)
Wear Limit. . . . . 19.959 mm (0.7858 in.)
Balancer Shaft to Crankcase Bore Clearance
. . . . . 0.025—0.063 mm (0.0009—0.0025 in.)

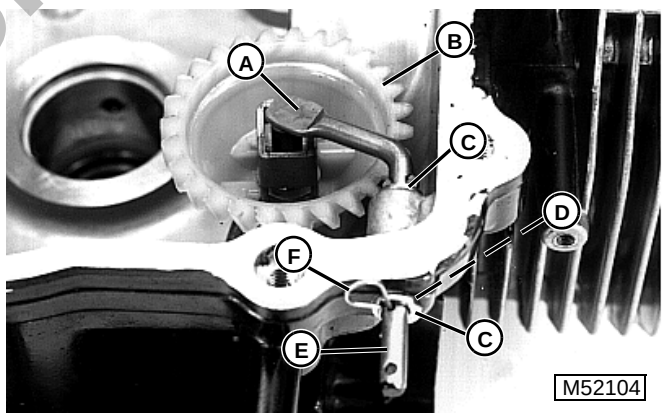


5. Measure balancer shaft bore (C) in oil pan.
6. Determine clearance with balancer shaft journal. Replace oil pan if measurements not within specifications.

Balancer Shaft Oil Pan Bore Specifications:

ID (New). . . 20.000—20.025 mm (0.7874—0.7884 in.)
Wear Limit. . . . . 19.959 mm (0.7858 in.)
Balancer Shaft to Crankcase Bore Clearance
. . . . . 0.025—0.063 mm (0.0009—0.0025 in.)

GOVERNOR REMOVAL & INSTALLATION



1. Remove governor lever (not shown) from end of control arm (E).
2. Remove spring clip (F), washers (C), and governor control arm (A) from inside of crankcase.
3. Remove and discard seal (D).

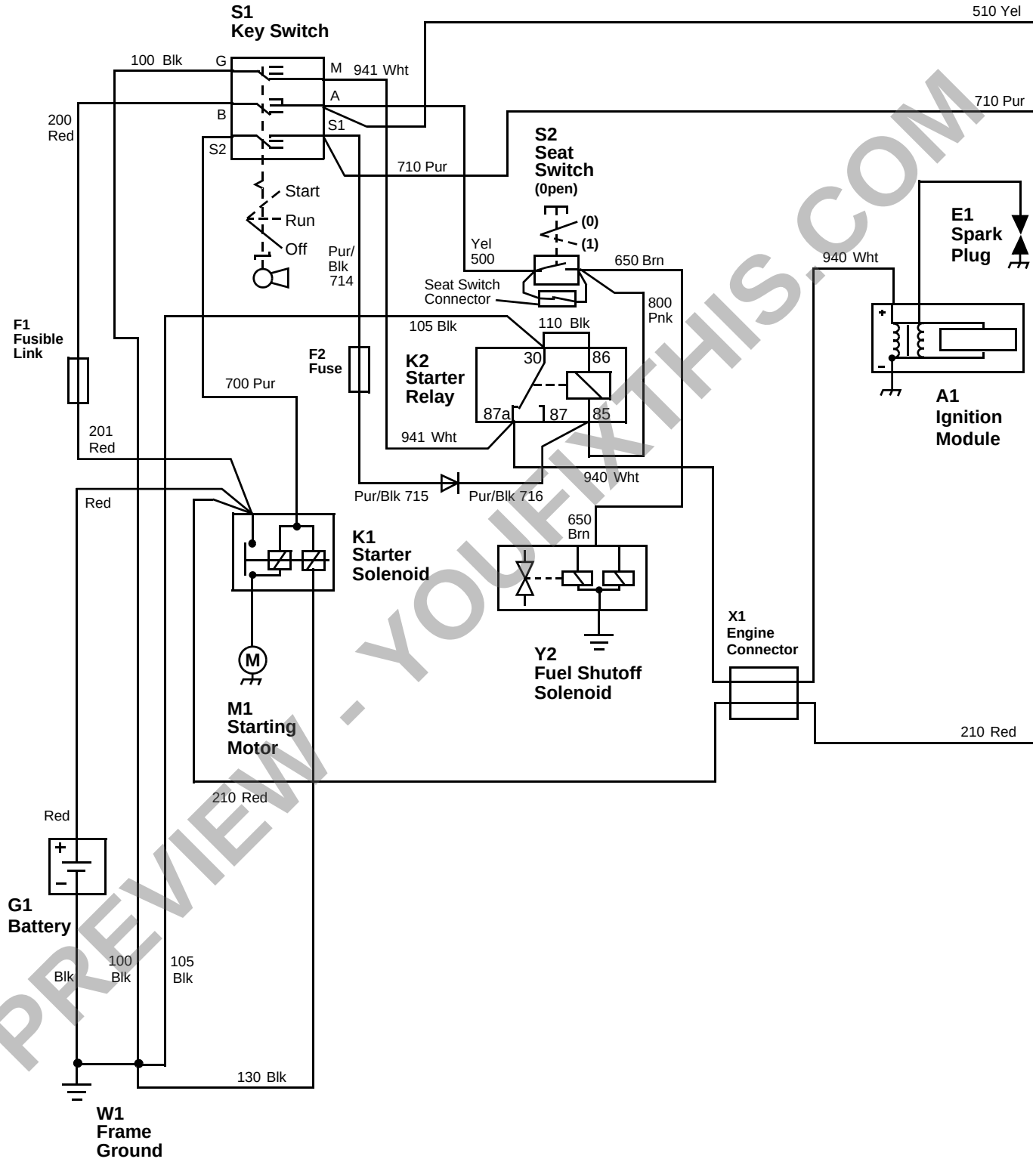
NOTE: Check governor shaft/gear assembly, if plastic gear, flyweight assembly, flyweight cap, and/or shaft are damaged, the complete assembly must be replaced.

4. Inspect governor shaft/gear assembly (B), replace as necessary (see Replace Governor Shaft/Gear Assembly, later in this group).
5. Install governor shaft/gear assembly.
6. Install new seal (D) using suitable driver.
7. Install control arm, washers, and clip.
8. Install lever (not shown).

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STX38 (SN 160001—210000)



SE1 - Power And Cranking Circuit	SE2- Ignition Circuit

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PTO AND HEADLIGHTS CIRCUITS OPERATION STX38 (SN 210001—) & STX46

Function:

To provide power to energize the PTO clutch and headlights (optional).

Operating Conditions:

PTO—

The key switch (S1) must be in the RUN position, the seat switch must be DEPRESSED (operator ON the seat), the brake switch must be turned OFF (brake pedal released), and the PTO switch (S2) must be ENGAGED.

Headlights—

The key switch (S1) must be in RUN position and the optional headlight switch (S5) must be pushed ON (ENGAGED).

Theory of Operation:

PTO—

The PTO circuit uses the ignition circuit to stop the engine if the operator gets off the seat with the PTO engaged.

Current flows from the battery (G1) positive terminal to the key switch (S1) via the starter solenoid (K1) connection point, fusible link (F1) 201 light orange wire, and 200 red wire. With the key switch (S1) in the RUN position, current flows to the PTO switch (S2) via the 400 yellow wire.

The seat switch must be ENGAGED (operator ON the seat) to prevent a path to ground for the ignition circuit through the turned OFF (released) brake switch, allowing the engine to RUN and power the PTO drive sheave.

When the PTO switch (S2) is moved to the ON position (ENGAGED), current flows through the PTO switch (S2) and 750 blue wire to energize the PTO clutch (Y1) windings. The energized PTO clutch magnet pulls the PTO clutch brake away from the sheave plate, allowing the sheave plate to turn with the engine crankshaft.

If the operator gets OFF the seat, the seat switch creates a path to ground for the ignition circuit and the engine kills. Once the engine has been killed, the PTO switch (S2) must be pushed into the OFF position before the cranking circuit can be engaged to restart the engine.

Headlights—

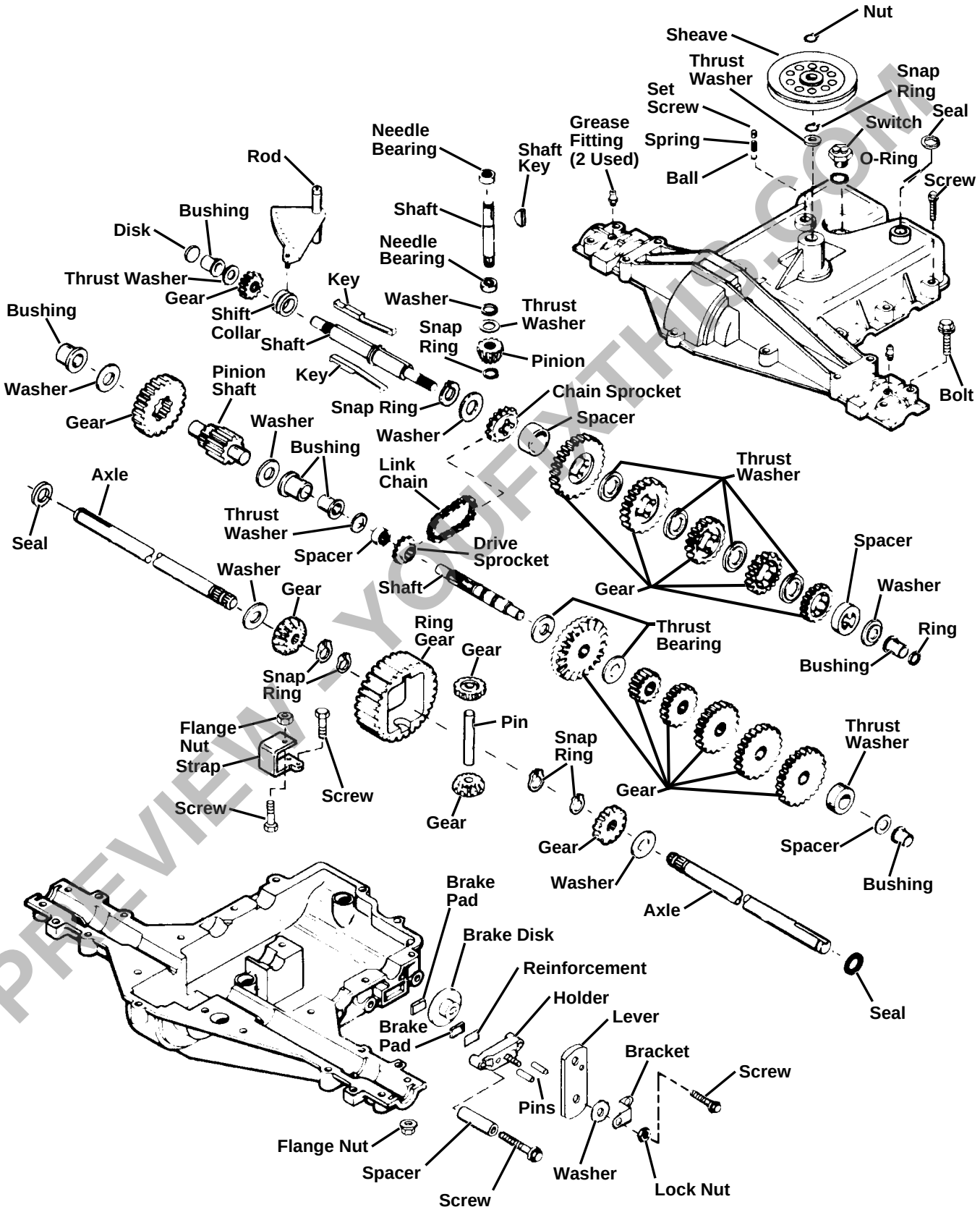
Current flows from the battery (G1) positive terminal to the key switch (S1) via the starter solenoid (K1) connection point, fusible link (F1) 201 light orange wire, and 200 red wire. With the key switch (S1) in the RUN position, current flows to the PTO switch (S2) via the 400 yellow wire. At this tie point, current flows through the 450 yellow/white to the headlights switch (S5). When the headlights switch (S5) is pushed ON (ENGAGED), current flows through the 451 yellow/white wire through the headlights kit harness yellow wire into the two red wire to the twin headlights, then to engine ground (W2) via the black wires of the headlights kit harness and the tractor harness 120 black wire.

The headlights are turned OFF by turning off the headlights switch (S5) or the key switch (S1).

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TRANSAXLE—PEERLESS MODEL 930-004 & 930-004A
STX30 (SN —135158) (SN 160759—)
STX38 (SN —139614) (SN 185587—210000)



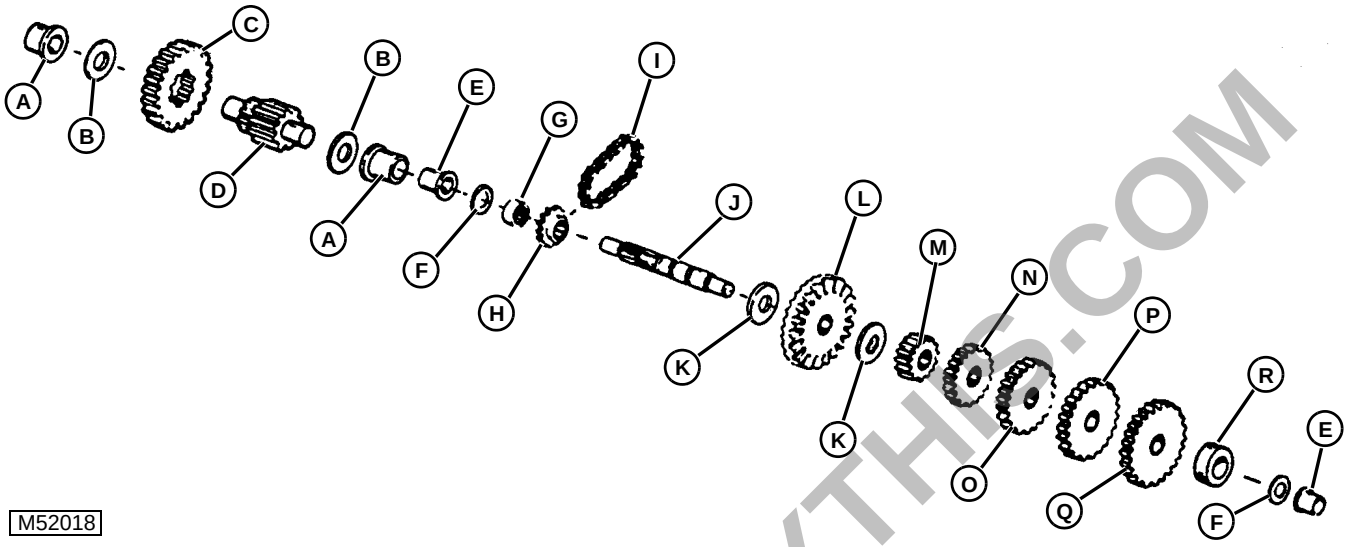
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Counter Shaft—Disassemble

1. Remove shifter fork from brake shaft assembly.
2. Remove brake shaft and counter shaft assemblies.

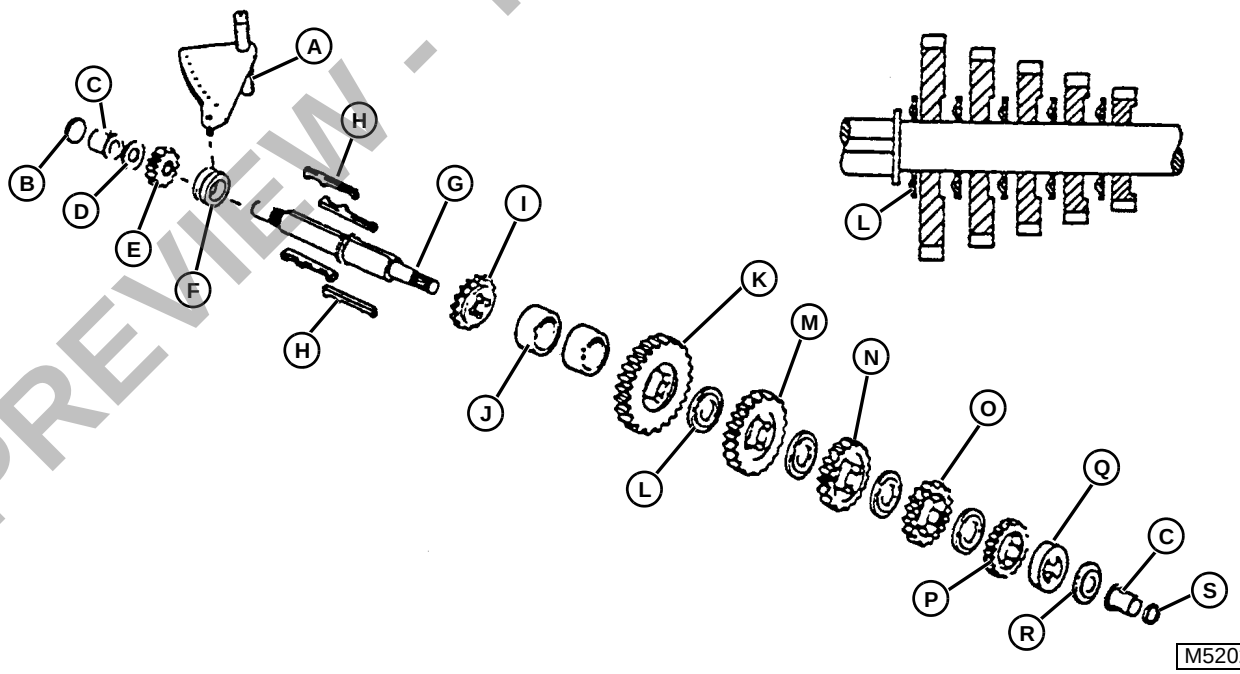
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M52018

3. Remove bushing (A), washer (B), and output gear (C) from pinion (D).
4. Remove pinion (D), washer (B), and bushing (A).
5. Remove bushing (E), washer (F), and spacer (G) from shaft (J).
6. Pull ends of counter and brake shafts together and remove chain (I).
7. Remove 9 tooth gear (H).
8. Remove bushing (E), washer (F), and spacer (R).
9. Remove 28 tooth gear (Q), 23 tooth gear (P), 20 tooth gear (O), 16 tooth gear (N), and 12 tooth gear (M).
10. Remove washers (K) and 42 tooth gear (L).

Brake Shaft—Disassemble



M52021

1. Remove disc (B), bushing (C), washer (D), and 15 tooth gear (E) from shaft (G).
2. Remove collar (F) and keys (H) from shaft (G).
3. Remove seal (S), bushing (C), washer (R), and spacer (Q).
4. Alternately remove 22 tooth gear (P), 27 tooth gear (O), 30 tooth gear (N), 34 tooth gear (M), and 37 tooth gear (K), and washers (L).
5. Remove spacers (J) and 18 tooth sprocket (I).

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THEORY OF OPERATION

In this group the STX hydrostatic power train is separated into the following systems:

- Belt Traction Drive System
- Transaxle and Shift Linkage System
- Brake/Neutral Return System
- Transport (Free-Wheeling) System

BELT TRACTION DRIVE SYSTEM OPERATION

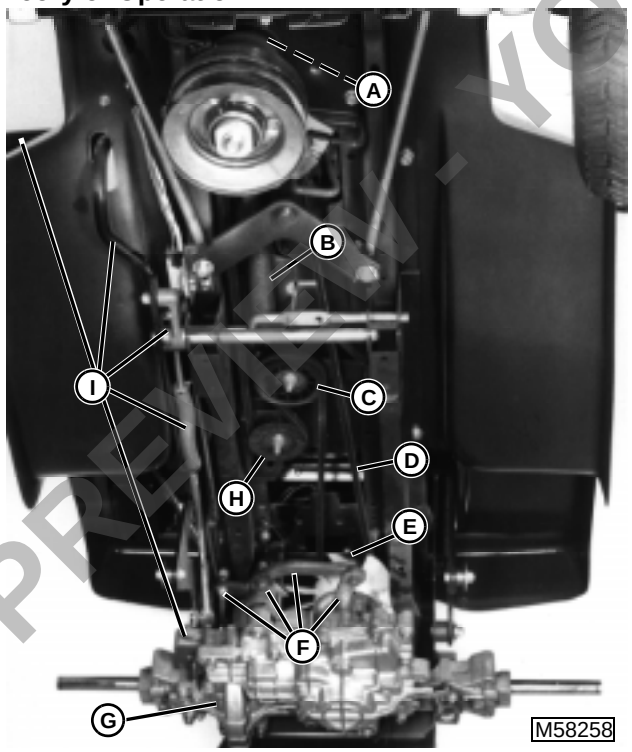
Function:

The function of this system is to transfer power from the engine to the hydrostatic transaxle.

Major Components:

- Foot pedal and brake linkage
- Engine drive sheave
- Traction drive belt
- Tensioning idler assembly
- Tensioning spring
- Adjusting idler assembly
- Transaxle drive sheave

Theory of Operation:



As soon as the engine is cranking, the engine drive sheave (A) pulls the drive belt (D). The drive belt, having been tensioned by the tension spring (B) and idlers (C and H), transmits power to the transaxle drive sheave (E). With the brake pedal linkage (I) released and hydro control linkage (F) engaged, the hydrostatic pump and differential matrix (G) drives the unit.

TRANSAXLE AND SHIFT LINKAGE SYSTEM OPERATION

Function:

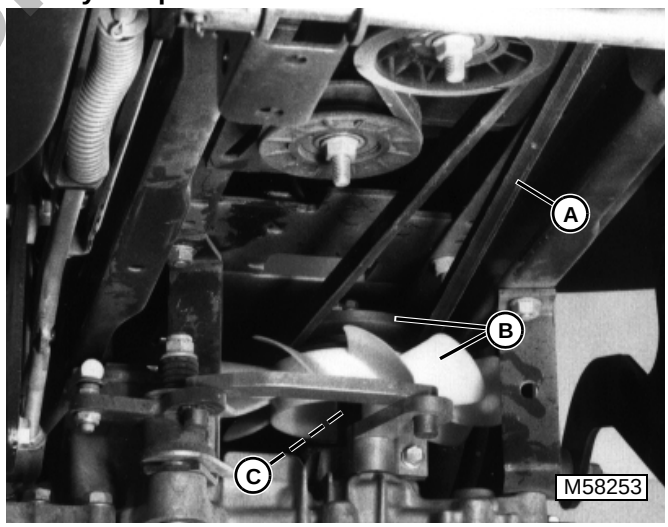
The transaxle transmits power from the engine, through the belt traction drive system, through the transaxle's hydraulic pump and motor center block matrix into the differential assembly and out the drive axles to the rear wheels. The transaxle provides infinite ground speed selections up to 5 mph in forward and up to 2.6 mph in reverse.

It also provides the means to interrupt the flow of power when shifted into neutral.

Major Components:

- Transaxle drive sheave and fan
- Pump (input) shaft and cylinder block assembly
- Shift linkage and pump swashplate assembly
- Center block assembly
- Motor cylinder block assembly and drive shaft
- Differential assembly and axle shafts
- Wheels and tires.

Theory of Operation:



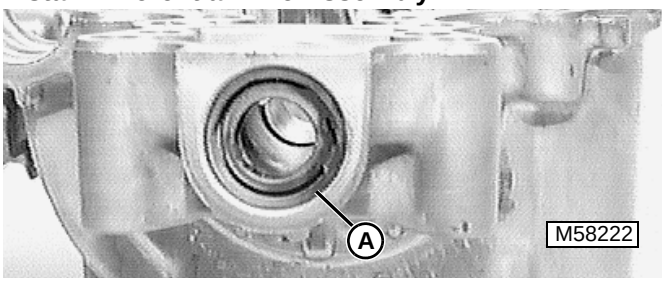
Neutral:

As soon as the engine is running, the traction drive belt (A) turns the transaxle input sheave and fan (B) rapidly in a clockwise direction. The sheave hub is splined and retained by a flat washer and flanged cap screw onto the splined pump (input) shaft (C).

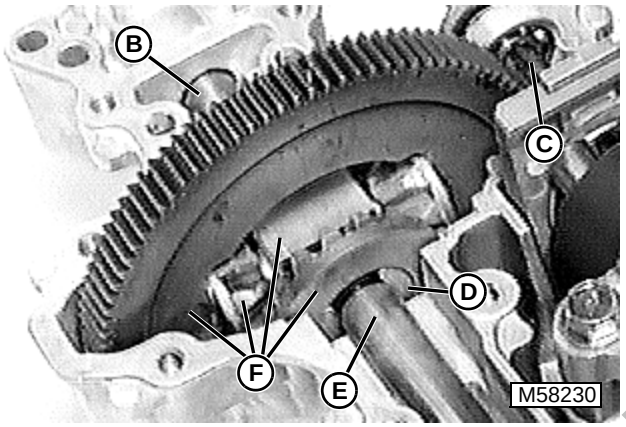
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Install Differential Axle Assembly—

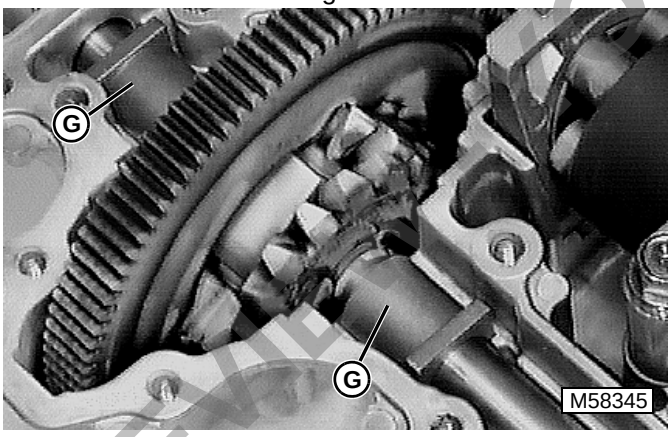


1. Apply grease to new axle seals (A) and install them into each end so they are flush with outside case lip and open side of seals to inside.



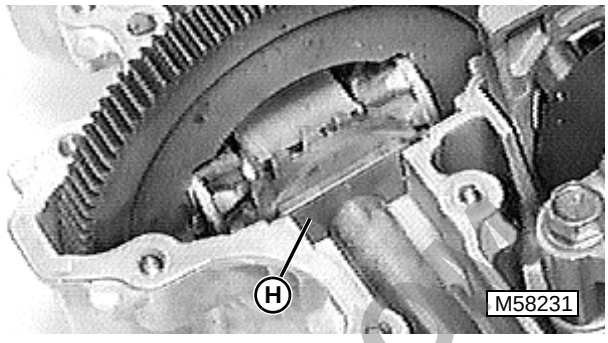
2. Wrap tape around short (B) and long (E) axle shaft splines and c-ring grooves to protect new seals.

K-50 Long Axle Side

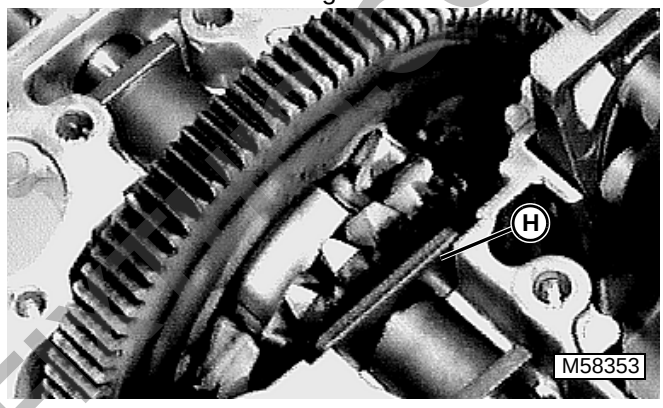


K-55 Long Axle Side

3. Install axle shafts through seals and bushings, then remove tape, and slide them up to differential cavity. On K-55 transaxles only, install additional inner bushings (G) and slide axle shafts flush with inside edge of bushings.
4. Assemble and hold differential cross-shaft, bevel gears, and ring gear assembly (F) together as you align it with motor drive shaft spur gears (C) and axle shafts (B and E).
5. Slide axle shafts into their bevel gears and retain them with c-ring (D).

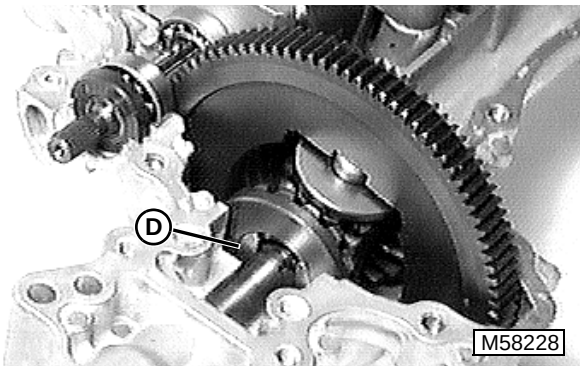


K-50 Long Axle Side

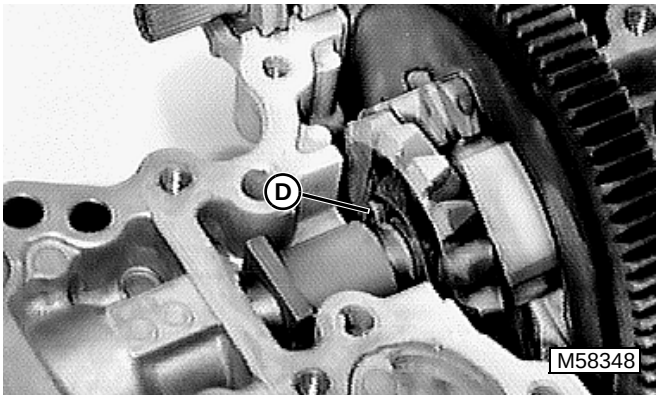


K-55 Long Axle Side

6. Install thrust washer (H).



K-50 Short Axle Side



K-55 Short Axle Side

7. Repeat c-ring (D) procedures for short axle side.

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