21C, 21S, 25S, 30S & 38B Gasoline Line Trimmers and Brush Cutters

John Deere Horicon Works
TM1494 (27MAR91)
LITHO IN U.S.A.
ENGLISH

Introduction

FOREWORD

This manual is written for an experienced technician. Essential tools required in performing certain service work are identified in this manual and are recommended for use.

Live with safety: Read the safety messages in the introduction of this manual and the cautions presented throughout the text of the manual.

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

Technical manuals are divided in two parts: repair and diagnostics. Repair sections tell how to repair the components. Diagnostic sections help you identify the majority of routine failures quickly.

Information is organized in groups for the various components requiring service instruction. At the beginning of each group are summary listings of all applicable essential tools, service equipment and tools, other materials needed to do the job, service parts kits, specifications, wear tolerances, and torque values.

Binders, binder labels, and tab sets can be ordered by John Deere dealers direct from the John Deere Distribution Service Center.

This manual is part of a total product support program.

FOS MANUALS—REFERENCE

TECHNICAL MANUALS—MACHINE SERVICE

COMPONENT MANUALS—COMPONENT SERVICE

Fundamentals of Service (FOS) Manuals cover basic theory of operation, fundamentals of troubleshooting, general maintenance, and basic type of failures and their causes. FOS Manuals are for training new personnel and for reference by experienced technicians.

Technical Manuals are concise guides for specific machines. Technical manuals are on-the-job guides containing only the vital information needed for diagnosis, analysis, testing, and repair.

Component Technical Manuals are concise service guides for specific components. Component technical manuals are written as stand-alone manuals covering multiple machine applications.

MX,TM1494,IFC -19-27MAR91

Dealer Presentation Sheet

JOHN DEERE DEALER

This is a new technical manual, TM-1494. This manual covers the five new, 1991 model, line trimmers and brush cutters.

This manual includes the following features:

1. All repair specification can be found in Section 10, Group 15.

2. Section 10, Group 30 contains a features and attachments information to help you become familiar with the product.

3. All test and adjustments specification are located in Section 210, Group 05.

4. The diagnostic sections are in a new easy-to-use format.

MX,TM1494,DPS -19-27MAR91

HANDLE FLUIDS SAFELY—AVOID FIRES

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.

TS227 -UN-23AUG88

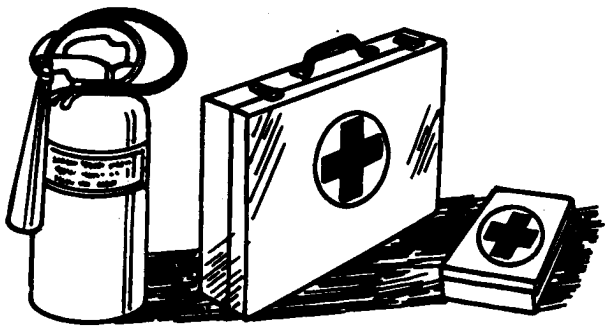
DX,FLAME -19-04JUN90

PREPARE FOR EMERGENCIES

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.



TS291 -UN-23AUG88

DX,FIRE2 -19-04JUN90

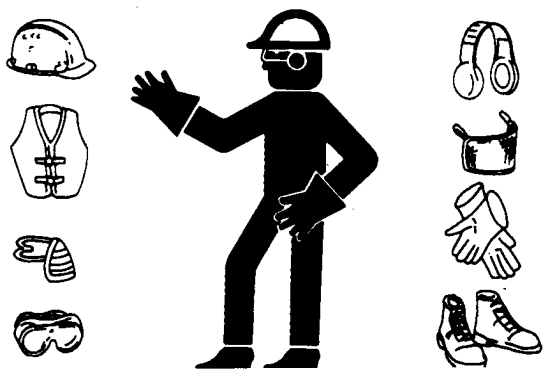
WEAR PROTECTIVE CLOTHING

Wear close fitting clothing and safety equipment appropriate to the job.

Prolonged exposure to loud noise can cause impairment or loss of hearing.

Wear a suitable hearing protective device such as earmuffs or earplugs to protect against objectionable or uncomfortable loud noises.

Operating equipment safely requires the full attention of the operator. Do not wear radio or music headphones while operating machine.



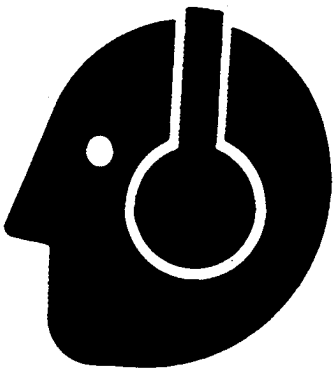
TS206 -UN-23AUG88

DX,WEAR -19-10SEP90

PROTECT AGAINST NOISE

Prolonged exposure to loud noise can cause impairment or loss of hearing.

Wear a suitable hearing protective device such as earmuffs or earplugs to protect against objectionable or uncomfortable loud noises.



-UN-23AUG88

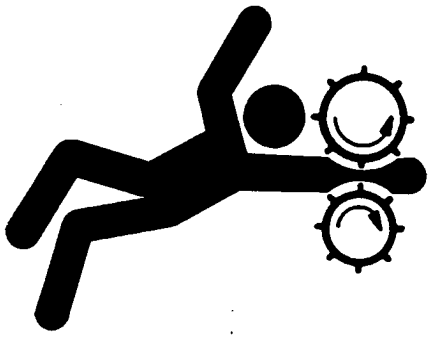
TS207

DX,NOISE -19-04JUN90

SERVICE MACHINES SAFELY

Tie long hair behind your head. Do not wear a necktie, scarf, loose clothing, or necklace when you work near machine tools or moving parts. If these items were to get caught, severe injury could result.

Remove rings and other jewelry to prevent electrical shorts and entanglement in moving parts.



-UN-23AUG88

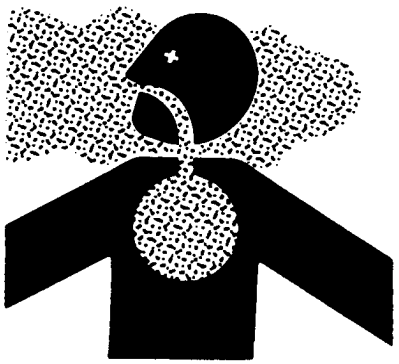
TS228

DX,LOOSE -19-04JUN90

WORK IN VENTILATED AREA

Engine exhaust fumes can cause sickness or death. If it is necessary to run an engine in an enclosed area, remove the exhaust fumes from the area with an exhaust pipe extension.

If you do not have an exhaust pipe extension, open the doors and get outside air into the area.



-UN-23AUG88

TS220

DX,AIR -19-04JUN90

ILLUMINATE WORK AREA SAFELY

Illuminate your work area adequately but safely. Use a portable safety light for working inside or under the machine. Make sure the bulb is enclosed by a wire cage. The hot filament of an accidentally broken bulb can ignite spilled fuel or oil.

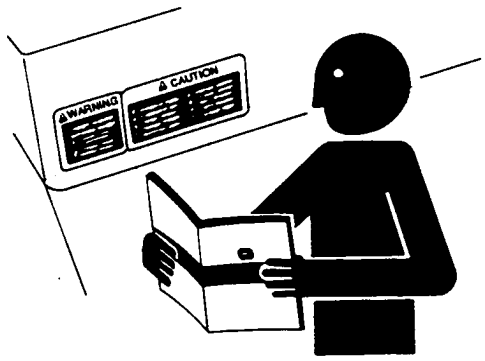
-UN-23AUG88

TS223

DX,LIGHT -19-04JUN90

REPLACE SAFETY SIGNS

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



TS201 -UN-23AUG88

DX,SIGNS1 -19-04JUN90

USE PROPER TOOLS

Use tools appropriate to the work. Makeshift tools and procedures can create safety hazards.

Use power tools only to loosen threaded parts and fasteners.

For loosening and tightening hardware, use the correct size tools. DO NOT use U.S. measurement tools on metric fasteners. Avoid bodily injury caused by slipping wrenches.

Use only service parts meeting John Deere specifications.

TS779 -UN-08NOV89

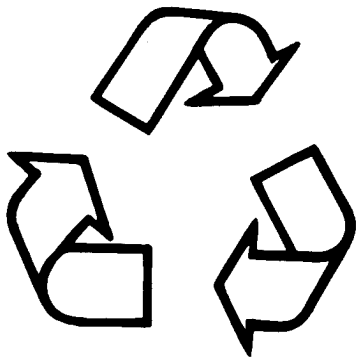
DX,REPAIR -19-04JUN90

DISPOSE OF WASTE PROPERLY

Improperly disposing of waste can threaten the environment and ecology. Potentially harmful waste used with John Deere equipment include such items as oil, fuel, coolant, brake fluid, filters, and batteries.

Use leakproof containers when draining fluids. Do not use food or beverage containers that may mislead someone into drinking from them.

Inquire on the proper way to recycle or dispose of waste from your local environmental or recycling center, or from your John Deere dealer. Do not pour waste onto the ground, down a drain, or into any water source.



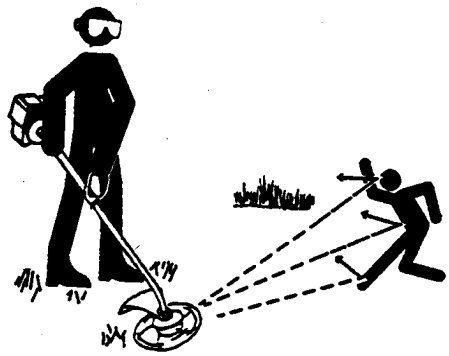
TS1133 -UN-26NOV90

DX,DRAIN -19-15MAR91

INSPECT CUTTING AREA

Remove all debris (string, wire, or cords) which might clog cutting head.

Remove objects (bottles, cans, or sticks) that might be thrown by clipper, trimmer/edger or cutter.



M61442 -UN-01SEP88

MX,1005GA,1 -19-27MAR91

OPERATE TRIMMERS SAFELY

Keep people and pets out of the area where you are using the machine.

Unauthorized modifications to the machine may impair the function and/or safety and affect machine life.

Do not run engine in an enclosed area. Exhaust fumes contain carbon monoxide, an odorless and deadly poison.

Keep machine hand grips clean and dry.

When operating machine, hold firmly with both hands. Keep proper footing and balance.

Move machine away from your body. Do not draw blades or cutting head toward you. Do not reach to make a cut.

When operating trimmer with optional blade installed, always use shoulder harness and grip handlebars securely.

Use metal shield when using blades on trimmer/cutter.

Take precautions to avoid “kickback”.

If cutting blade or blades are cracked, replace immediately.

Do not attempt to fill fuel tank, make adjustments, or clean while engine is running.

MX,1005GA,2 -19-27MAR91

LIVE WITH SAFETY

Before returning machine to customer, make sure machine is functioning properly, especially the safety systems. Install all guards and shields.

TS231 -19-07OCT88

DX,LIVE -19-04JUN90

TRIMMER SPECIFICATIONS—21C/21S

	21C	21S
Engine:		
Type	Air-cooled, two-cycle, single cylinder	Air-cooled, two-cycle, single cylinder
Displacement cm^3(cu.in.)	21.2 (1.29)	21.2 (1.29)
Horsepower—kW (hp)	.66 (.88)	.66 (.88)
Ignition	Solid-state	Solid-state
Carburetor	Diaphragm type w/starting primer	Diaphragm type w/starting primer
Exhaust system	Spark arrestor type	Spark arrestor type-extra large
Cylinder material	Chrome	Chrome
Air cleaner	Felt	Felt
Lubrication	Fuel/oil mix	Fuel/oil mix
Fuel/oil ratio:		
John Deere 2-cycle oil	50:1	50:1
BIA cert. TC-W service	32:1	32:1
Fuel-type (gasoline)	Regular or unleaded	Regular or unleaded
Fuel capacity, L (fl oz)	0.4 (13.5)	0.4 (13.5)
Starter	Auto-rewind	Auto-rewind
Anti-vibration engine mount	Yes	Yes
Idle speed (rpm)	2500/3000	2500/3000
Clutch engagement speed (rpm)	3500	3500
Operation speed no load (rpm)	9000	9000
Drive:		
Clutch	Auto-centrifugal	Auto-centrifugal
Drive shaft	4-layer flexible steel cable	4-layer flexible steel cable
Shaft length mm (in.)	1422 (56)	1524 (60)
Rotation—viewed from top	Clockwise	Counterclockwise
Gear case reduction	—	1:1.4

MX,1010GA,1 -19-27MAR91

TRIMMER SPECIFICATIONS—21C/21S—CONTINUED

Cutter Head

Nylon line diameter mm (in.)	2 (.080)	2.4 (.095)
Number of exits	One	Dual
Line advance	Semi-auto	Semi-auto
Harness and metal shield	—	Optional
Cutting width mm (in.)	406 (16)	432 (17)

Optional cutting heads:

Heavy-duty nylon replacement cutting head	Yes	Yes
Manual line advance—two exit head	—	Yes
Professional tri-cut blade	Yes	Yes
Saw blades	No	Yes
Grass/brush blade	No	Yes
Plastic blade	No	Yes

Dimensions:

Length mm (in.)	1440 (56.7)	1665 (65.6)
Width mm (in.)	330 (13.0)	330 (13.0)
Height (lying flat on surface) mm (in.)	360 (14.2)	300 (11.8)
Weight kg (lb)	5.0 (11.0)	5.3 (11.7)

MX,1010GA,2 -19-27MAR91

TRIMMER SPECIFICATIONS—25S/30S/38B

	25S	30S	38B
Engine:			
Type	Air-cooled, two-cycle, single cylinder	Air-cooled, two-cycle, single cylinder	Air-cooled, two-cycle, single cylinder
Displacement cm^3 (cu.in.)	24.4 (1.48)	30.5 (1.80)	37.4 (2.20)
Horsepower—kW (hp)	.89 (1.19)	1.07 (1.44)	1.30 (1.74)
Ignition	Solid-state	Solid-state (TCI)*	Solid-state
Carburetor	Diaphragm type w/starting primer	Diaphragm type w/starting primer	Diaphragm type w/starting primer
Exhaust system	Spark arrestor type extra large	Spark arrestor type-extra large	Spark arrestor type-extra large
Cylinder material	Chrome	Chrome	Chrome
Air cleaner	Felt	Felt	Felt
Lubrication	Fuel/oil mix	Fuel/oil mix	Fuel/oil mix
Fuel/oil ratio:			
John Deere 2-cycle oil	50:1	50:1	50:1
BIA cert. TC-W service	32:1	32:1	32:1
Fuel-type (gasoline)	Regular or unleaded	Regular or unleaded	Regular or unleaded
Fuel capacity, L (fl oz)	.6 (20.3)	.7 (23.7)	.9 (32.1)
Starter	Auto-rewind	Auto-rewind	Auto-rewind
Anti-vibration engine mount	Yes	Yes	Yes
Idle speed (rpm)	3000	3000	3000
Clutch engagement speed (rpm)	3500	3500	3500
Operation speed no load (rpm)	9600	10,000	10,000
Drive:			
Clutch	Auto-centrifugal	Auto-centrifugal	Auto-centrifugal
Drive shaft	Solid bar shaft	Solid bar shaft	Solid bar shaft
Shaft length mm (in.)	1524 (60)	1588 (62.5)	1588 (62.5)
Rotation— viewed from top	Counterclockwise	Counterclockwise	Counterclockwise
Gear case reduction	1:1.4	1:1.33	1:1.33

**Transistor Control Ignition*

MX,1010GA,3 -19-27MAR91

TRIMMER SPECIFICATIONS—25S/30S/38B—CONTINUED

	25S	30S	38B
Cutter Head			
Nylon line diameter mm (in.)	2.4 (.095)	2.4 (.095)	2.7 (.105)
Number of exits	Dual	Dual	Dual
Line advance	Semi-auto	Semi-auto	Manual
Harness and metal shield	Harness-Std. Shield-Opt.	Std.	Std.
Cutting width mm (in.)	432 (17)	432 (17)	381 (15)
Optional cutting heads:			
Heavy-duty nylon replacement cutting head	Yes	Yes	No
Manual line advance—two exit head	Yes	Yes	Yes
Professional tri-cut blade	Yes	Yes	Yes
Saw blades	Yes	Yes	Yes
Grass/brush blade	Yes	Yes	Yes
Plastic blade	Yes	Yes	Yes
Dimensions:			
Length mm (in.)	1770 (66.9)	1716 (67.5)	1815 (71.5)
Width mm (in.)	330 (13.0)	600 (23.6)	600 (23.6)
Height (lying flat on surface) mm (in.)	300 (11.8)	350 (14.0)	400 (15.7)
Weight kg (lb)	6.2 (13.7)	7.3 (16.2)	9 (20.0)

MX,1010GA,4 -19-27MAR91

REPAIR SPECIFICATIONS—21C/21S

ITEM	SPECIFICATION
ENGINE	
Cylinder Bore	Replace if plating is worn and aluminum can be seen
Piston	
Outer diameter	32.18 mm (1.2630 in.)
Pin Bore	8.028 mm (0.3161 in.)
Pin Diameter	7.98 mm (0.3142 in.)
Ring Groove	1.6 mm (0.063 in.)
Piston Pin Clearance	0.048 mm (0.0018 in.)
Piston Ring—	
Ring Side Clearance	0.1 mm (0.004 in.)
Ring Width	1.45 mm (0.057 in.)
Ring End Gap	0.1—0.5 mm (0.004—0.020 in.)
Crankshaft Runout (max.)	0.05 mm (0.002 in.)
Connecting Rod Side Clearance	0.4 mm (0.016 in.)
Recoil Rope Diameter/Length	3.0 x 890 mm (0.12 x 35.0 in.)
FUEL SYSTEM	
Fuel Tank Capacity	0.4 L (13.5 fl oz)
Carburetor Type	Diaphragm
Metering Needle Setting (initial)	1-1/8 turns
Idle Adjusting Screw (initial)	3—4 turns open
Inlet Valve Lever Height	0.0—0.3 mm (0.0—0.012 in.)
ELECTRICAL	
Spark Plug Gap	0.6—0.7 mm (0.024—0.028 in.)
Spark Plug	BPM7A, CJ-7Y BPMR7A, RCJ7Y

MX,1015GA,1 -19-27MAR91

REPAIR SPECIFICATIONS—21C/21S CONTINUED

TORQUES

Description	Size	
Crankcase	M5	3.4—4.5 N·m (30—40 lb-in.)
Cylinder	M5	7—9.6 N·m (65—75 lb-in.)
Carburetor Insulator	M5	3—4.5 N·m (30—40 lb-in.)
Carburetor	M5	3—4.5 N·m (30—40 lb-in.)
Flywheel Cover	M4	2—2.5 N·m (17—22 lb-in.)
Engine Cover	M5*	2.8—3.4 N·m (25—30 lb-in.)
Flywheel	M8	18—20 N·m (160—175 lb-in.)
Ignition Coil	M4	2—2.5 N·m (17—22 lb-in.)
Spark Plug	M14	14.7—17 N·m (130—150 lb-in.)
Pawl Carrier	M8	8—10 N·m (70—90 lb-in.)
Pawl Carrier Nut	M8	16—20 N·m (140—175 lb-in.)
Muffler	M5	5.6—6.2 N·m (50—55 lb-in.)
Clutch Assembly Nut		17.6—19.6 N·m (156—174 lb-in.)
Drive Shaft Pinch Bolts		2.6—3.2 N·m (23—28 lb-in.)

STANDARD FASTENER TORQUE

Description	Size	
Regular Screws, Bolts, or Nuts	M3	0.5—0.9 N·m (5—8 lb-in.)
	M4	1.2—1.8 N·m (11—16 lb-in.)
	M5	2.6—3.2 N·m (23—28 lb-in.)
	M6	4.5—6.2 N·m (40—55 lb-in.)
	M8	10.7—14.7 N·m (95—130 lb-in.)
	M10	39.5—44 N·m (350—390 lb-in.)

**Tapping screw*

MX,1015GA,2 -19-27MAR91

REPAIR SPECIFICATIONS—25S/30S

ITEM	SPECIFICATION
ENGINE	
Cylinder Bore	Replace if plating is worn and aluminum can be seen
Piston	
Outer diameter (max.)	
Pin Bore (max.)—	
25S	8.03 mm (0.3161 in.)
30S	10.03 mm (.03949 in.)
Piston Ring	
Side Clearance	0.1 mm (0.004 in.)
End Gap	0.1—0.5 mm (0.004—0.020 in.)
Crankshaft	
Runout (maximum/1 revolution)	0.05 mm (0.002 in.)
Connecting Rod Side Clearance—	
25S	0.45 mm (0.018 in.)
30S	0.4 mm (0.016 in.)
Rope Size	3.5 x 850 mm (0.14 x 33.5 in.)
FUEL SYSTEM	
Inlet Valve Lever Height	1.5 mm (0.06 in.)
ELECTRICAL	
Ignition Module	3.4—4 N·m (30—35 lb-in.)
Air Gap—30S	0.3—0.4 mm (0.012—0.016 in.)
Spark Plug Torque	14.7—16.9 N·m (130—150 lb-in.)
POWER TRAIN	
Clutch Drum I.D.—	
25S	55.5 mm (2.19 in.) max.
30S	63.5 mm (2.50 in.) max.
Clutch Shoes—25S	4.9—5.9 N·m (45—55 lb-in.)
CUTTING HEAD	
Line Diameter	2.4 mm (0.095 in.)
Exposed Cutting Length	152 mm (6.0 in.)
Blade Nut	27.7—31.6 N·m (245—280 lb-in.)

MX,1015GA,3 -19-27MAR91

REPAIR SPECIFICATIONS—25S/30S—CONTINUED

10 15 4

TORQUES

Crankcase Screws	3.41—4.00 N·m (30—35 lb-in.)
Cylinder Mounting Screw—25S	8—9 N·m (70—80 lb-in.)
Flywheel Nut	10.7—13 N·m (95—115 lb-in.)
Clutch Shoes—25S/30S	5—6 N·m (45—55 lb-in.)
Ignition Module Screw—	
25S	3.4—4.0 N·m (30—35 lb-in.)
30S	4—4.5 N·m (35—40 lb-in.)
Pawl Carrier	7.91—10.17 N·m (70—90 lb-in.)
Pawl Carrier Nut	15.82—17.5 N·m (140—155 lb-in.)
Carburetor Mounting Screws	3.4—4.0 N·m (30—35 lb-in.)
Carburetor Insulator	4.5 N·m (40 lb-in.)
Muffler Mounting Nuts	5.09—6.22 N·m (45—55 lb-in.)
Spark Plug	14.69—16.95 N·m (130—150 lb-in.)

MX,1015GA,4 -19-27MAR91

REPAIR SPECIFICATIONS—38B

ITEM	SPECIFICATION
ENGINE	
Cylinder Bore	Replace if plating is worn and aluminum can be seen
Piston	
O.D. Out-of-Round*	0.05 mm (0.002 in.)
Pin Diameter Max. Wear	0.013 (0.0005 in.)
Pin Bore Out-of-Round	0.025 mm (0.001 in.)
Piston Pin Clearance	0.03 mm (0.001 in.)
Piston Ring—	
Ring Side Clearance (max.)	0.10 mm (0.004 in.)
Ring End Gap	0.1—0.5 mm (0.004—0.020 in.)
Ring Width (min.)	1.45 mm (0.057 in.)
Connecting Rod Side Clearance	0.4 mm (0.016 in.)
Crankshaft Runout (max.)	0.05 mm (0.002 in.)
Recoil Rope Diameter/Length	3.0 x 850 mm (0.12 x 33.5 in.)
Clutch Drum Bore (max.)	79.5 mm (3.130 in.)
TORQUES	
Crankcase Screws	8—9 N·m (70—80 lb-in.)
Cylinder Mounting Screws	8—9 N·m (70—80 lb-in.)
Spark Plug	14.7—17 N·m (130—150 lb-in.)
Clutch Shoes	8—10 N·m (70—90 lb-in.)
Ignition Module	3.4—3.9 N·m (30—35 lb-in.)
Pawl Carrier	8—10 N·m (70—90 lb-in.)
Pawl Carrier Nut	15.8—17.5 N·m (140—155 lb-in.)
Carburetor Mounting Screws	4—5 N·m (35—45 lb-in.)
Muffler Screws	8—9 N·m (70—80 lb-in.)
Muffler Cover Screws	1.4—2 N·m (12—17 lb-in.)
Carburetor Insulator	4—5 N·m (35—45 lb-in.)
Flywheel Nut	27.7—31.6 N·m (245—280 lb-in.)

**Measured between ring grooves*

MX,1015GA,5 -19-27MAR91

TUNE-UP AND ADJUSTMENT GUIDE

10
15
6

IMPORTANT: Perform the following service operations prior to any machine disassembly to avoid unnecessary repairs.

Operation	Reference
Clean and Regap Spark Plug	
Adjust Magneto Air Gap—21C, 21S & 30S	Section 240
Clean Muffler and Exhaust Port	Section 20
Clean Carbon from Combustion Chamber	Section 20
Clean and Inspect Air Cleaner	Section 30
Check Throttle Linkage and Cable	Section 30
Clean Fuel Filter	Section 30
Adjust Carburetor	Section 230
Check Cutting Head	Section 60
Check Lubricant in Housing or Gear case	

MX,1015GA,6 -19-27MAR91

HANDLE FUEL SAFELY

CAUTION: Avoid fires:
—Use approved containers.
—Let engine cool before you add fuel.
—Do not mix fuel in trimmer/brush cutter fuel tank.
—Mix fuel outdoors.
—Fill fuel tank outdoors.
—Avoid spilling fuel. Do not fill tank to top: fuel will expand.
—Wipe trimmer/brush cutter clean after you fuel it.
—Do not smoke.
—Move trimmer/brush cutter away from fueling area before you start engine.
—Drain fuel before you transport trimmer/brush cutter.
—Do not store trimmer/brush cutter with fuel in tank in a building where fumes may reach an open flame or spark.

Help prevent the possibility of fire and explosion caused by static electric discharge while you fill plastic tank:

•Use a non-metal fuel container.
•If you use a funnel, use a plastic funnel.
•Avoid funnel with metal screen or filter.

Use only clean oil and fuel:

—To prevent engine damage.
—So engine can operate efficiently.

Use clean, approved containers and funnels.

Store oil and fuel in area protected from dust, moisture, and other contamination.

MX,1020GA,1 -19-27MAR91

TWO-CYCLE ENGINE FUEL

M71107 -UN-10SEP90

IMPORTANT: Use correct gasoline:
—Leaded or unleaded.
—Not gasohol or alcohol blends.
—Not fuel stored long time.

John Deere 2-Cycle Engine Oil, 50:1 mix is recommended. (Not available in Canada.) This oil contains stabilizer to prevent varnish in fuel system.

Also approved:
—2-Cycle oils containing ashless-type additives AND
—Certified by BIA for Service TC-W.

MX,1020GA,2 -19-27MAR91

MIXING FUEL

IMPORTANT: Unleaded fuel is recommended. Regular leaded gasoline with an anti-knock index of 87 or higher may be used. Unleaded fuel burns cleaner and leaves less unburned deposits in combustion chamber.

Use of gasohol is acceptable as long as the ethyl alcohol blend does not exceed 11 percent. Unleaded gasohol is preferred over leaded gasohol.

DO NOT use fuel that has been stored for a long time. Do not use oils not BIA certified.

Fuel mix (50:1)—Use John Deere 2-cycle engine oil. (Not available in Canada.) 3.8 L (1 gal) gas and 74 ml (2.5 oz) oil.

FUEL MIX CHART (50:1 Mixture)

U.S.		IMPERIAL		S. I. (Metric)	
Gas	Oil To Be Added	Gas	Oil To Be Added	Petrol	Oil To Be Added
1 gal	2.5 oz	1 gal	3.2 oz	4 L	80 ml
2 gal	5.0 oz	2 gal	6.4 oz	8 L	160 ml
2.5 gal	6.4 oz	2.5 gal	8.0 oz	10 L	200 ml
3 gal	7.5 oz	3 gal	9.6 oz	12 L	240 ml
4 gal	10.0 oz	4 gal	12.8 oz	16 L	320 ml
5 gal	12.5 oz	5 gal	16.0 oz	20 L	400 ml
6 gal	15.0 oz	6 gal	19.2 oz	24 L	480 ml

Fuel mix (32:1)—Use oil meeting BIA certification for TC-W service.

Mix 3.8 L (1 gal) gas and 120 ml (4 oz) oil OR 4.5 L (1 Imperial gal) gas and 150 ml (5 oz) oil.

FUEL MIX CHART (32:1 Mixture)

U.S.		IMPERIAL		S. I. (Metric)	
Gas	Oil To Be Added	Gas	Oil To Be Added	Petrol	Oil To Be Added
1 gal	4 oz	1 gal	5 oz	4 L	125 ml
2 gal	8 oz	2 gal	10 oz	8 L	250 ml
2.5 gal	10 oz	2.5 gal	12.5 oz	10 L	313 ml
3 gal	12 oz	3 gal	15 oz	12 L	375 ml
4 gal	16 oz	4 gal	20 oz	16 L	500 ml
5 gal	20 oz	5 gal	25 oz	20 L	625 ml
6 gal	24 oz	6 gal	30 oz	24 L	750 ml

1. Fill container with half of gasoline.
2. Add all the oil. Fasten lid.
3. Shake mixture.
4. Pour in remaining gasoline.
5. Shake mixture.

MX,1020GA,3 -19-27MAR91

GEAR HOUSING LUBRICANT

IMPORTANT: When servicing gear housing, use only John Deere PT507 Multi-Purpose Grease.
After every 50 hours, pack gear housing with approximately 20g (0.7 oz) of grease.

MX,1020GA,4 -19-27MAR91

FEATURES AND ATTACHMENTS

Five new, 1991 models of gasoline line trimmers replace the current models. This group will look at some of the new features of this new line.

GASOLINE LINE TRIMMERS AND BRUSHCUTTERS

21C 25S 38B

21S 30S

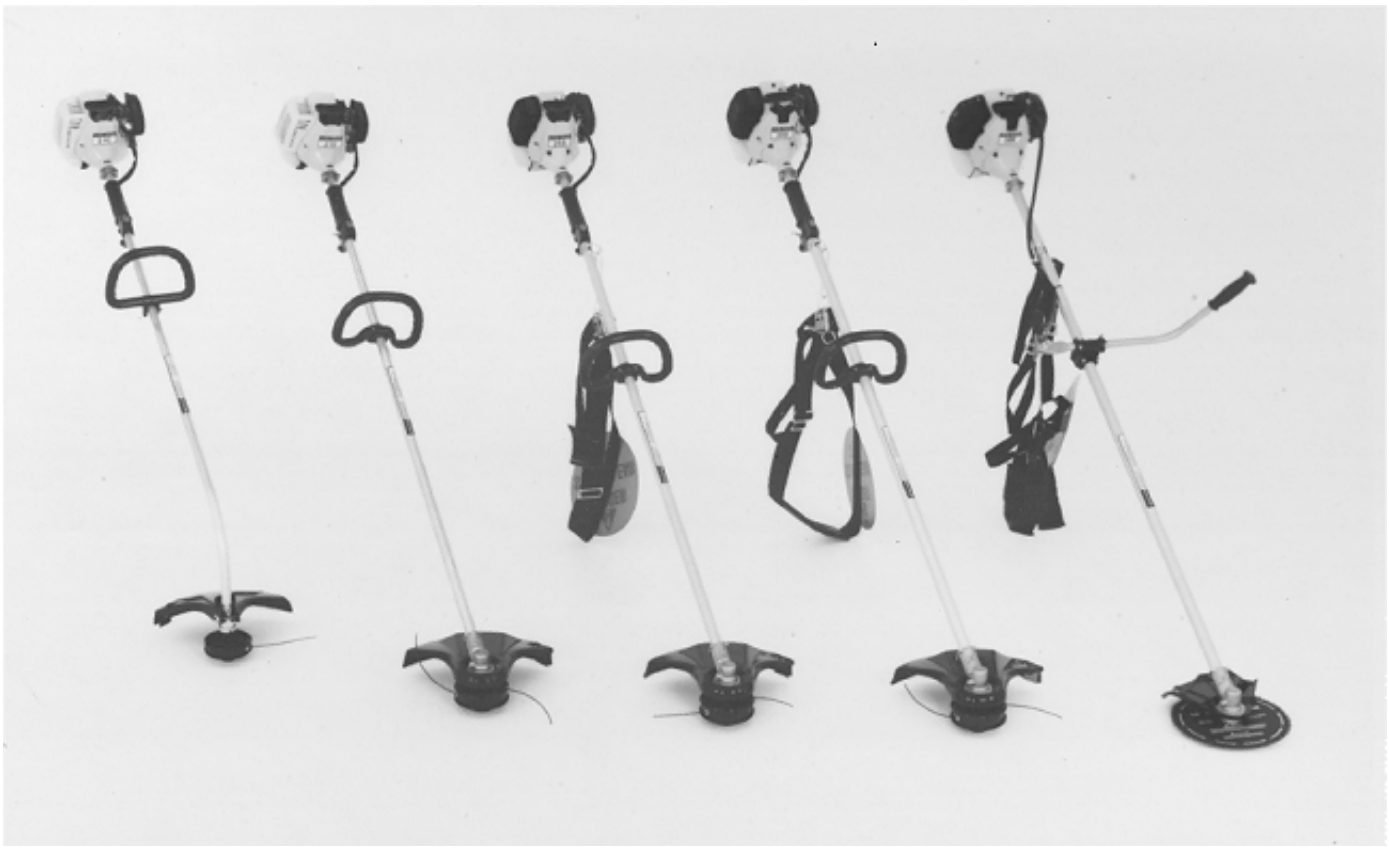
M42016

-19-07JAN91

M42016

Slide No. M42016

MX,1030GA,1 -19-27MAR91



-UN-09JAN91

M42116

Slide No. M42116

All models use a kioritz, air-cooled, two-cycle, single cylinder engine.

MODEL	DISPLACEMENT	POWER
21C and 21S	21.2 cc	0.66 kW (0.88 Hp)
25S	24.4 cc	0.86 kW (1.19 Hp)
30S	30.5 cc	1.05 kW (1.44 Hp)
38B	37.4 cc	1.28 kW (1.74 Hp)

MX,1030GA,2 -19-27MAR91

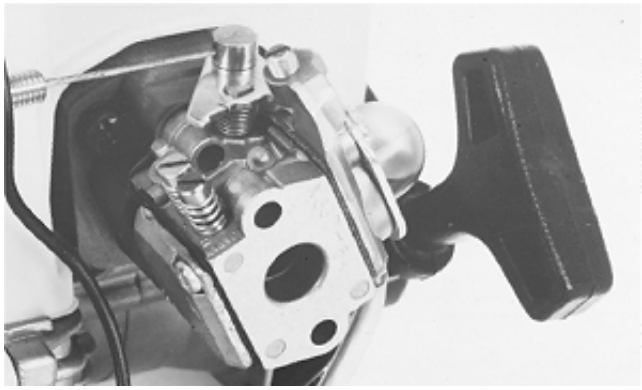
The most noticeable improvements are:

•Significantly reduced noise level due to the design of the the air intake and the larger muffler.

•Metal, fully adjustable carburetor to maintain optimum running efficiency.

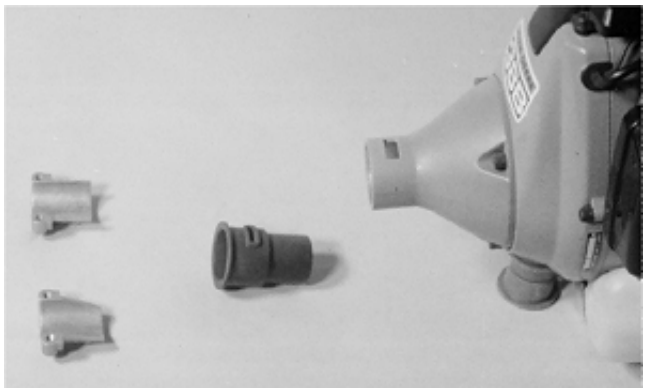
•Primer pump for easier starting.

•Larger recoil handle.



Slide No. M42023-Adjustable carb

•Anti-vibration engine mounts for increased operator productivity.



Slide No. M42117-Anti-vibration Mount

•Two-finger throttle control lever.

Slide No. M42024

MX,1030GA,3 -19-27MAR91

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21C CURVED-SHAFT TRIMMER

MODEL	DISPLACEMENT	POWER
21C	21.2 cc	0.66 Kw (0.88 Hp)

The 21C is designed for the homeowner market. Used for trimming and edging of grass and soft-stemmed weeds.

•21C replaces the 210G.

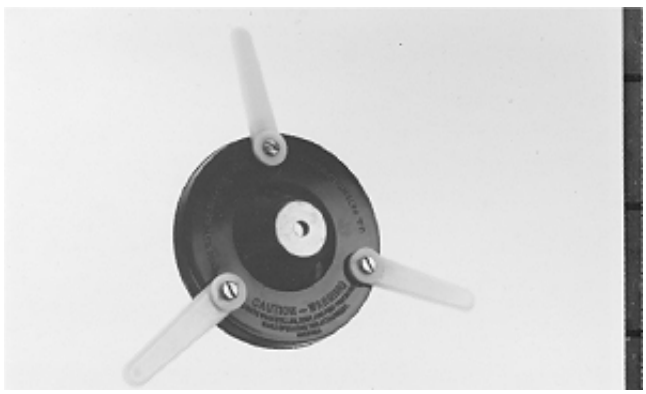
Slide No. M42018

Standard features of the 21C:

•1422mm (56 in.) long curved shaft.
•4-layer flexible steel cable. (Three layers on previous models.)
•Multi-position handle grip.
•2.30 mm (0.080 in.) nylon line.
•Single exit, tap-to-advance, semi-automatic line feed.
•Safety goggles.

Slide No. 42019-Curved-shaft

Optional equipment:
•Pro tri-cut blade.



Slide No. M42020

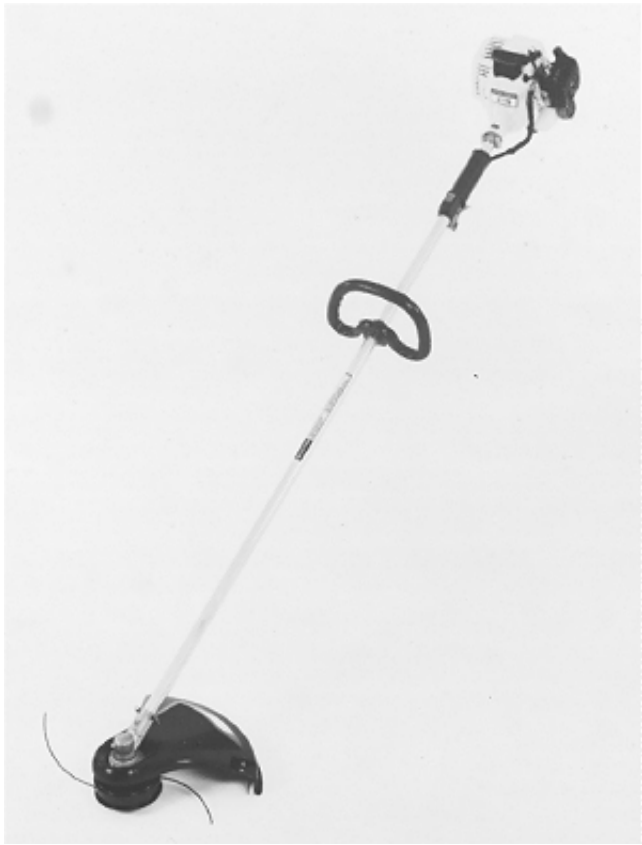
MX,1030GA,4 -19-27MAR91

21S TRIMMER/BRUSH CUTTER

MODEL	DISPLACEMENT	POWER
21S	22.2 cc	0.66 kW (0.88 Hp)

The 21S is suited for the homeowner who cares for 1.4 or more acres or light commercial applications such as landscapers and maintenance crews.

The 21S replaces the 240G.

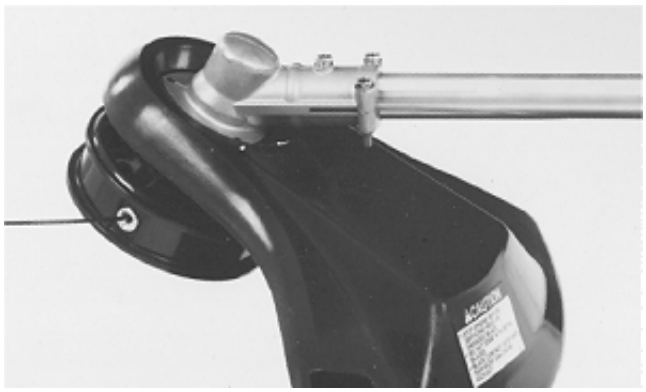


M42021 -UN-09JAN91

Slide No. M42021

Standard features of the 21S:
- Straight shaft with a larger gear box than previous model.
- 4-layer flexible steel cable.
- Multi-position handle grip.
- 2.41 mm (0.095 in.) nylon line.
- Dual exit, tap-to-advance, semi-automatic line feed.
- Safety goggles.

Optional equipment for 21S:
- Brush cutter blade kit.
- 50 mm (0.97 in.) harness.
- Pro tri-cut blade.
- 203 mm (8.0 in.) 80-tooth steel sawblade.
- 203 mm (8.0 in.) 8-tooth grass/weed blade.



M42067 -UN-09JAN91

Slide No. M42067

MX,1030GA,5 -19-27MAR91

25S TRIMMER/BRUSH CUTTER

MODEL	DISPLACEMENT	POWER
25S	24.4 cc	0.86 kW (1.19 hp)

The 25S is suited for the homeowner who cares for 1.4 or more acres or light commercial applications such as landscapers and maintenance crews.

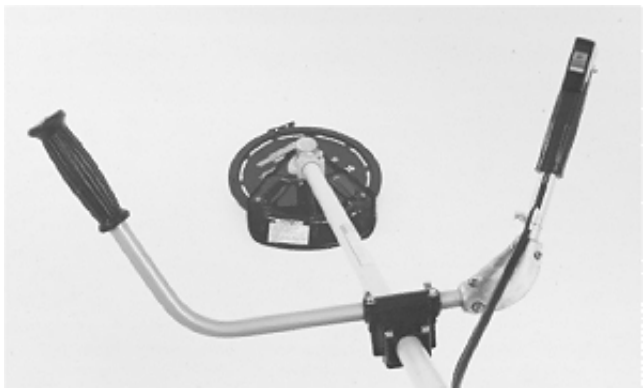
The 25S replaces the 300G.

M42022 -UN-09JAN91

Slide No. M42022

Standard features of the 25S:
- Splined 7mm (0.275 in.) solid bar shaft.
- 50 mm (1.97 in.) harness.
- 2.41 mm (0.095 in.) nylon line.
- Dual exit, tap-to-advance, semi-automatic line feed.
- Safety goggles.

Optional equipment:
- Pro tri-cut blade.
- Brush cutter blade kit.
- 203 mm (8.0 in.) 80-tooth steel saw blade.
- 203 mm (8.0 in.) 8-tooth grass/weed blade.



M42068 -UN-09JAN91

Slide No. M42068

MX,1030GA,6 -19-27MAR91