

**SMITHCO**

Wayne, Pennsylvania 19087

**OPERATOR'S  
MANUAL**

**SWEEP STAR**

**Gas and Diesel Sweep Star 60**

Models 76-000-C and 77-100-C

**High Lift Sweep Star 48**

Models 48-000-C

**July, 2004**

SMITHCO PRODUCT SUPPORT

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Thank you for purchasing a **SMITHCO** product.

Read this manual and all other manuals pertaining to the Sweep Star carefully as they have safety, operating, assembly and maintenance instructions. Failure to do so could result in personal injury or equipment damage. Keep manuals in a safe place after operator and maintenance personnel have read them. Right and left sides are from the operator's seat, facing forward.

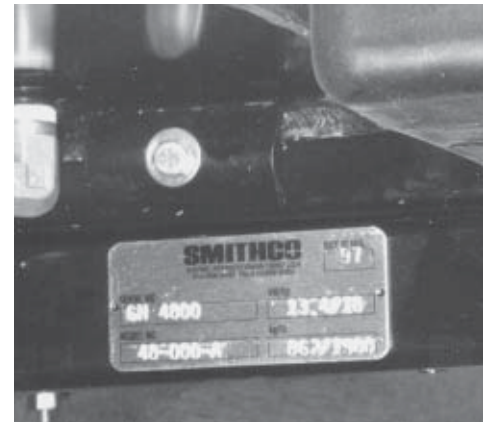
All **SMITHCO** machines have a Serial Number and Model Number. Both numbers are needed when ordering parts. The serial number plate on the Sweep Star 60 is located on the left front main frame, in front of the engine. The serial number plate on the Sweep Star 48 is located on the right main frame, in front of the oil and gas tanks. Refer to engine manual for placement of engine serial number.

For easy access record your Serial and Model numbers here.

<b>SMITHCO</b>		DATE OF MFG.
WAYNE, PENNSYLVANIA 19087 USA 610-688-4009 Fax 610-688-6069		<input type="text"/>
SERIAL NO.	kW/hp	
<input type="text"/>	<input type="text"/>	
MODEL NO.	kg/lb	
<input type="text"/>	<input type="text"/>	



Sweep Star 60

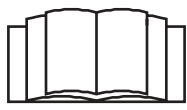


Sweep Star 48

Information needed when ordering replacement parts:

1. Model Number of machine
2. Serial Number of machine
3. Name and Part Number of part
4. Quantity of parts

# SYMBOLS



Read Operator's Manual



Electrical Power



No Electrical Power



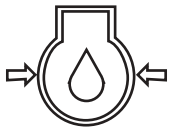
Engine - Stop



Engine - Start



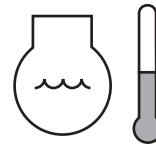
Engine - Run



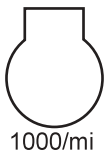
Engine Oil



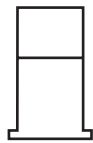
Temperature Light



Water Temperature



RPM



Gasoline



Diesel



Glow Plug - On



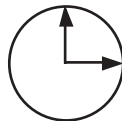
Glow Plug - Off



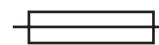
Glow Plug



Hour Meter



Hour Meter



Fuse



Hand Throttle



Choke - Closed



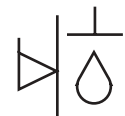
Choke - Open




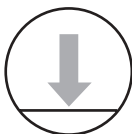


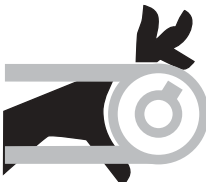



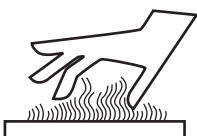
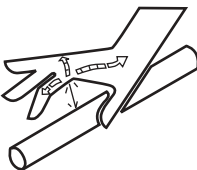
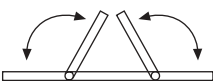
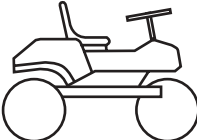



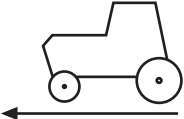



Park Brake



Park Brake Release



Hydraulic Oil Level

	Up/Down Arrow		Down/Lower		Up/Raise
	No Smoking		Moving Parts		Manual Operation
	Pinch Point		Step		Hot Surface
	Hydraulic Fluid Penetration		Lift Arm		Tractor
	Engage		Disengage		PTO
	Ground Speed		Fast		Slow
<b>H</b>	High	<b>L</b>	Low	<b>F</b>	Forward
<b>R</b>	Reverse	<b>N</b>	Neutral		Warning Danger Caution

## SAFE PRACTICES

1. It is your responsibility to read this manual and all publications associated with this machine (engine, accessories and attachments).
2. Never allow anyone to operate or service the machine or its attachments without proper training and instructions. Never allow minors to operate any equipment.
3. Learn the proper use of the machine, the location and purpose of all the controls and gauges before you operate the equipment. Working with unfamiliar equipment can lead to accidents.
4. Wear all the necessary protective clothing and personal safety devices to protect your head, eyes, ears, hands and feet. Operate the machine only in daylight or in good artificial light.
5. Inspect the area where the equipment will be used. Beware of overhead obstructions and underground obstacles. Stay alert for hidden hazards.
6. Never operate equipment that is not in perfect working order or without decals, guards, shields, or other protective devices in place.
7. Never disconnect or bypass any switch.
8. Carbon monoxide in the exhaust fumes can be fatal when inhaled, never operate a machine without proper ventilation.
9. Fuel is highly flammable, handle with care.
10. Keep engine clean. Allow the engine to cool before storing and always remove the ignition key.
11. After engine has started, machine must not move. If movement is evident, the neutral mechanism is not adjusted correctly. Shut engine off and readjust so the machine does not move when in neutral position.
13. Never use your hands to search for oil leaks. Hydraulic fluid under pressure can penetrate the skin and cause serious injury.
14. This machine demands your attention. To prevent loss of control or tipping of the vehicle:
  - A. Use extra caution in backing up the vehicle. Ensure area is clear.
  - B. Do not operate on a slope greater than 10°. Pay careful attention to the inclinometer on you machine.
  - C. Do not stop or start suddenly on sloped surfaces.
  - D. Reduce speed on slopes and in all turns. Use caution when changing directions on all surfaces.
  - E. Do not change directions of travel on any slope.
  - F. Do not operate debris hopper lift or tailgate while on slopes.
  - G. Stay alert for holes in the terrain and other hidden hazards.
15. Before leaving operator's position for any reason:
  - A. Disengage all drives.
  - B. Lower all attachments to the ground.
  - C. Set park brake.
  - D. Shut engine off and remove the ignition key.
16. Keep hands, feet and clothing away from moving parts. Wait for all movement to stop before you clean, adjust or service the machine.
17. Keep the area of operation clear of all bystanders.
18. Never carry passengers.
19. Stop engine before making repairs/adjustments or checking/adding oil to the crankcase.
20. Use parts and materials supplied by SMITHCO only. Do not modify any function or part.
21. Do not remove the radiator cap when the engine is hot. When cooled, loosen cap slightly to the stop to relieve any pressure before removing the cap completely.

***These machines are intended for operation by well trained persons performing professional maintenance on golf courses, sports turf, and any other area maintained turf and related trails, paths and lots. No guaranty as to the suitability for any task is expressed or implied.***



# SPECIFICATIONS FOR SWEEP STAR 60 GAS & DIESEL

## WEIGHTS AND DIMENSIONS

Length	129" (328 cm)
Width	74.5" (179 cm)
Height with Hopper Down	66" (168 cm)
Height with Hopper Up	127" (323 cm)
Wheel Base	68.5" (174 cm)
Weight	2200 lb (998 kg)

SOUND LEVEL	GAS ENGINE	DIESEL ENGINE
At ear level	92 dB	98 dB
At 3 ft (0.914 m)	86 dB	96 dB
At 30 ft (9.14 m)	64 dB	74 dB

ENGINE	GAS	DIESEL
Make	Kohler	Kubota
Model#	Command CH25S	D 722B-1
Type / Spec#	PA-68525	
Horsepower	25 Hp (18 kW)	18.8 Hp (14 kW)
Fuel	Unleaded 87 Octane Gasoline Minimum	No. 2 Diesel
Cooling System	Air Cooled	Liquid Cooled
Lubrication System	Full Pressure	Full Pressure
Alternator	15 Amp	15 Amp

TIRES & WHEELS
Front: One 18 x 9.50 x 8 Multi-rib (20 psi (1.4 bar)) Front tire and wheel fluid filled to 50 lb. total. 28 pints of windshield washer fluid or equivalent.
Rear: Two 24 x 13.00 x 12 Super Soft (18 psi (1.3 bar))
Castor: 12 x 6.00 x 6 (20 psi (1.4 bar))

SPEED	
Forward Speed	0 to 12 m.p.h. (0-19 kph)
Reverse Speed	0 to 4 m.p.h. (0-6 kph)

BATTERY	
Automotive type	45- 12 volt
BCI Group	Size 45
Cold Cranking Amps	480 minimum
Ground Terminal Polarity	Negative (-)
Maximum Length	9" (23 cm)
Maximum Width	5.38" (14 cm)
Maximum Height	9" (23 cm)

FLUID CAPACITY	
Crankcase Oil	See Engine Manual
Fuel	5 gallon (19 liters)
Hydraulic Fluid	5 gallon (19 liters)
Cooling	Kubota approximately 1 gallon (3.8 liters)
Grade of Hydraulic Fluid	SAE 10W-40 API Service SJ or higher Motor Oil

# SPECIFICATIONS FOR SWEEP STAR 48 HIGH LIFT

<b>WEIGHTS AND DIMENSIONS</b>	<b>HIGH LIFT</b>
Length	121" (307 cm)
Width	60" (153 cm)
Height with Hopper Down	63" (160 cm)
Height with Hopper Up	126" (320 cm)
Wheel Base	70" (179 cm)
Weight	1900 lb (862 kg)
<b>SOUND LEVEL</b>	
At ear level	90 dB
At 3 ft (0.914 m)	91 dB
At 30 ft (9.14 m)	76 dB
<b>ENGINE</b>	
Make	Kohler
Model#	CH25
Type / Spec#	CH730-0100
Horsepower	25 Hp (18.6 kW)
Fuel	Unleaded 87 Octane Gasoline Minimum
Cooling System	Air Cooled
Lubrication System	Full Pressure
Alternator	15 Amp
<b>WHEELS &amp; TIRE</b>	Front: One 18 x 9.50 x 8 Multi-rib (20 psi (1.4 bar)) Rear: Two 23 x 10.50 x 12 NHS (20 psi (1.4 bar)) Castor: 9 x 3.50 - 4 (20 psi (1.4 bar))
<b>SPEED</b>	
Forward Speed	0 to 10 m.p.h. (0-16 kph)
Reverse Speed	0 to 4 m.p.h. (0-6 kph)
<b>BATTERY</b>	Automotive IBS type 45-12 volt
BCI Group	Size 45
Cold Cranking Amps	480 minimum
Ground Terminal Polarity	Negative (-)
Maximum Length	9" (23 cm)
Maximum Width	5.38" (14 cm)
Maximum Height	9" (23 cm)
<b>FLUID CAPACITY</b>	
Crankcase Oil	See Engine Manual
Fuel	5 gallon (19 liters)
Hydraulic Fluid	5 gallon (19 liters)
Grade of Hydraulic Fluid	SAE 10W-40 API Service SJ or higher Motor Oil





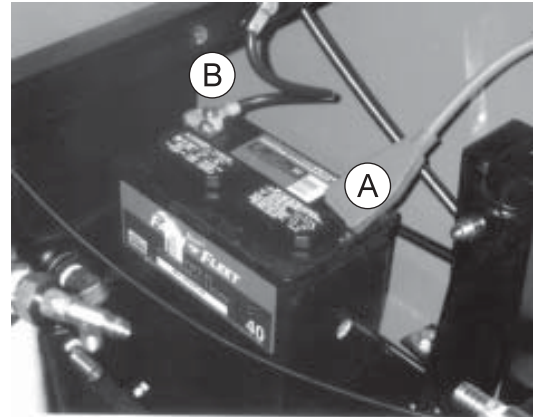
The Sweep Star arrives from **SMITHCO** setup and ready for service.

1. Set park brake.
2. Check the tire pressure. **Sweep Star 60:** The front tire and castor wheels are 20 psi (1.4 bar) and the rear tires are 18 psi (1.3 bar). **Sweep Star 48:** All tires and castor wheels are 20 psi (1.4 bar). All are maximum pressures.
3. Check the installation of the battery, which is located below the seat. This is a negative grounding system.



**WARNING**

**Connecting battery cables to the wrong post could result in personal injury and/or damage to the electrical system. Make sure battery and cables do not interfere or rub on any moving part. Connect the red positive(+) cable (A) to the battery first. When disconnecting remove the black negative(-) cable (B) first.**



4. Check the engine oil and add as necessary. The dip stick is located under the seat directly behind the control panel. Oil fill is located on top of valve cover, use SAE 10W-40 API Service SJ or higher motor oil. **DO NOT OVERFILL.**
5. Fill fuel tank, located on right side, with Unleaded 87 Octane gasoline (minimum) for gas machines and No. 2 Diesel for diesel machines.

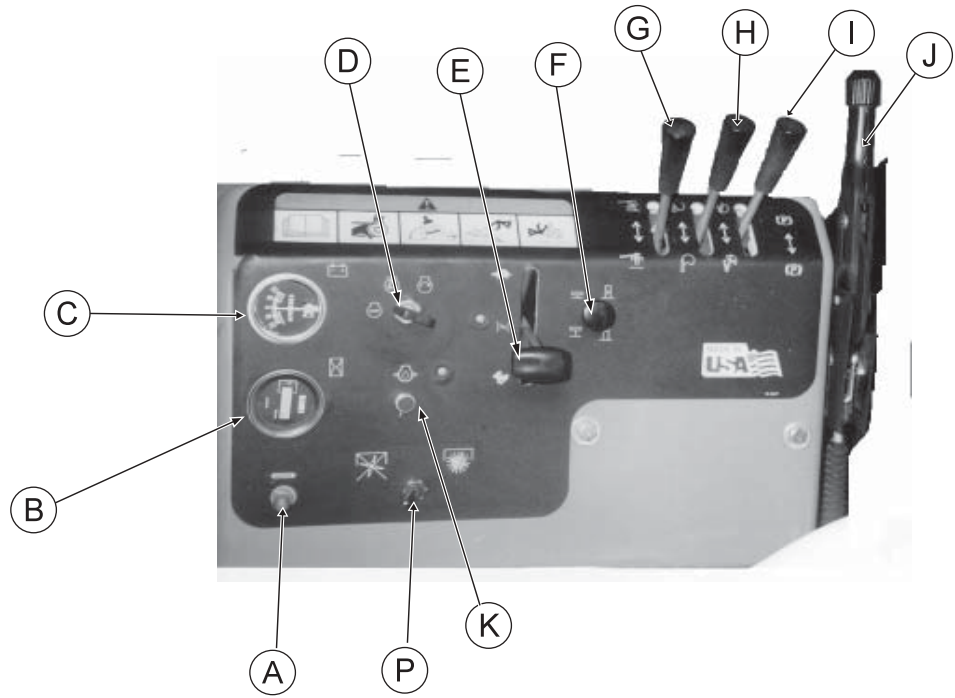


**DANGER**

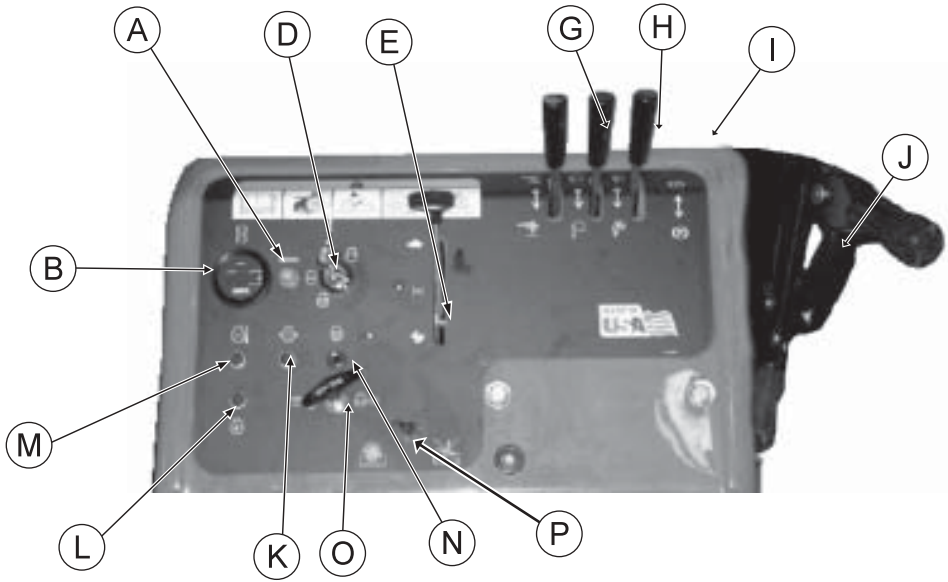
**Fuel is flammable. Caution must be used when storing or handling it. Do not fill fuel tank while engine is running or in an enclosed area. Fumes are explosive and dangerous to inhale. DO NOT SMOKE while filling the fuel tank. DO NOT OVERFILL.**

6. Check hydraulic fluid level in tank. Remove cap and add SAE 10W-40 API Service SJ or higher motor oil if necessary. Fluid level should be about 2"-2½" (5 - 6.4 cm) from the top of the tank when cold.
7. Machine should be greased before starting. See Maintenance part of manual.
8. Read operating instructions before starting.

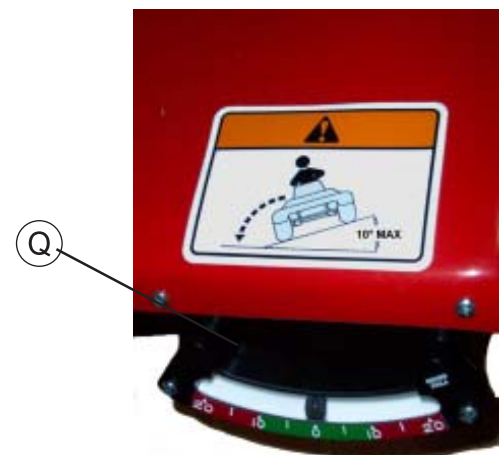
# CONTROLS & INSTRUMENTS SWEEP STAR 60 GAS SWEEPER & 48 HIGH LIFT



# CONTROLS & INSTRUMENTS SWEEP STAR 60 DIESEL SWEEPER



- A. Circuit Breaker - The circuit breaker is a re-settleable fuse. To reset push down on it.
- B. Hour Meter - The hour meter indicates hours of machine operation. It operates only when the ignition switch is on.
- C. Ammeter - The ammeter indicates the rate of charging or discharging of battery.
- D. Ignition Switch - The ignition switch has three positions: Off - Run - Start.
- E. Hand Throttle - The hand throttle is used to regulate engine speed.
- F. Choke - The choke is used in starting the engine. Pull choke out to close choke plate when starting a cold engine. Push in when engine starts. A warm engine may not require "choking" to start.
- G. Reel Lift Lever - The reel lift lever is used raise and lower the reel. Pull back to raise the reel. Push forward to lower the reel.
- H. Hopper Lift Lever - The hopper lift lever is used to raise and lower the hopper. Pull back to raise the hopper. Push forward to lower the hopper.
- I. Tailgate Lever - The tailgate lever is used to open and close the tailgate. Pull back to open the tailgate. Push forward to close the tailgate. Tailgate tends to creep open while sweeping. Frequently close the tailgate to ensure no creeping.
- J. Park Brake - The park brake is only a parking brake. Pull back to release, push forward to apply.
- K. Oil Light - The oil light should come on when the ignition is on without the engine running and go out when the engine is running. The oil light will light when the oil pressure is low. If oil light should come on, shut engine off immediately and find the cause.
- L. Charge Light - The charge light should come on when the ignition is on, without the engine running. When the engine is running the light should go out. The charge light will light when the charging system is not charging. If the charge light should come on, shut engine off and find cause.
- M. Temperature Light - Temperature light will come on and a buzzer will sound when the engine starts to overheat.
- N. Glow Plug Indicator Light - When key is turned counter clockwise to "Preheat" the light will light. When it goes out the engine is ready to start.
- O. Stop Knob - The stop knob is used to start the engine. The knob **must** be pulled out to start and run the engine. Push in to stop engine.
- P. Electric Clutch - Controls the reel electrically. Move the switch to the left and the reel will disengage. If moved to the right reel will engage. NOTE: Electric clutch must be disengaged before starting.
- Q. Inclinator - Indicates machine tilt on side hill. **DO NOT EXCEED 10°.**



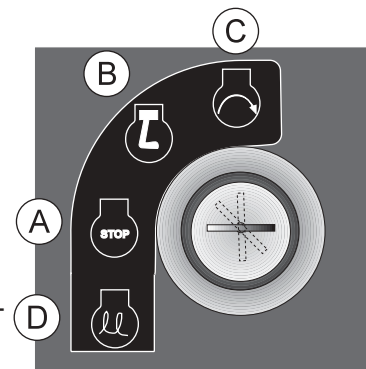
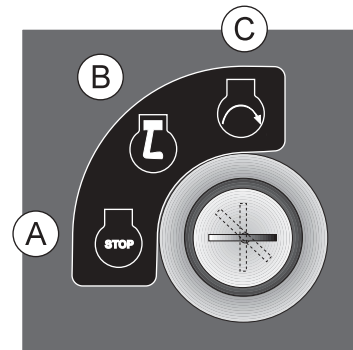
Beater reel **MUST BE DISENGAGED** before starting engine.

ACCELERATOR/REVERSE PEDAL

On the right floorboard is a "rocker" pedal. Push down on the front (G) with your foot and the machine will accelerate. Push down on the rear of the pedal (H) with the heel of your foot and the machine will go in reverse. The machine is in neutral when foot is off the pedal.

DAILY CHECKLIST

1. Check park brake adjustment. Adjust as required.
2. Check engine oil level. Add as needed. **DO NOT OVERFILL.**
3. Tire pressure should be 20 psi (1.4 bar) on all Sweep Star 48 tires and castor wheels. Tire pressure should be 20 psi (1.4 bar) on Sweep Star 60 front tire and castor wheel, 18 psi (1.3 bar) on rear tires.
4. Inspect electrical system for loose connections or frayed wiring, including battery cables. Replace any faulty equipment or tighten if loose.
5. Check hardware for loose or missing nuts, bolts, screws, etc., and tighten or replace as needed.
6. Inspect hydraulic lines for damage or leaks. Never use hands to inspect leaks.
7. Check hydraulic oil level in right side tank. The level should be 2" to 2½" (5-6.4 cm) from top of tank when fluid is cold. If level is low, add SAE 10W-40 API Service SJ or higher motor oil.
8. Inspect steering, throttle and shift linkages for good hookups and clear travel.
9. Check controls for smooth, proper working operation. Lubricate as needed.
10. Check and clean all debris from engine compartment.



# BATTERY

## NOTE:

### BATTERY

Batteries normally produce explosive gases which can cause personal injury. Do not allow flames, sparks or any ignited object to come near the battery. When charging or working near battery, always shield your eyes and always provide proper ventilation.

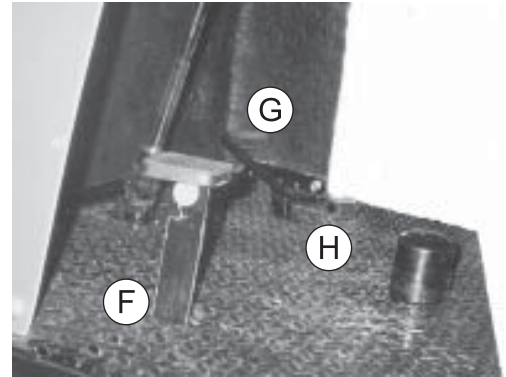
Battery cable should be disconnected before using "Fast Charge".

Charge battery at 15 amps for 10 minutes or 7 amps for 30 minutes. Do not exceed the recommended charging rate. If electrolyte starts boiling over, decrease charging.

Always remove grounded (-) battery clamp first and replace it last.

Avoid hazards by:

1. Filling batteries in well-ventilated areas.
2. Wear eye protection and rubber gloves.
3. Avoid breathing fumes when electrolyte is added.
4. Avoid spilling or dripping electrolyte.



**WARNING**

**Battery Electrolyte is an acidic solution and should be handled with care. If electrolyte is splashed on any part of your body, flush all contact areas immediately with liberal amounts of water. Get medical attention immediately.**

## JUMP STARTING

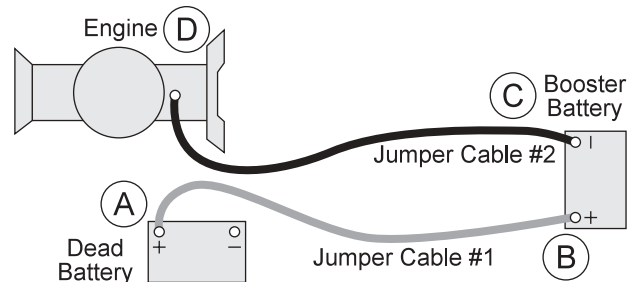


**WARNING**

**Use of booster battery and jumper cables. Particular care should be used when connecting a booster battery. Use proper polarity in order to prevent sparks.**

To jump start (negative grounded battery):

1. Shield eyes.
2. Connect ends of one cable to positive (+) terminals of each battery, first (A) then (B).
3. Connect one end of other cable to negative (-) terminal of "good" battery (C).
4. Connect other end of cable (D) to engine block on unit being started (NOT to negative (-) terminal of battery)



To prevent damage to other electrical components on unit being started, make certain that engine is at idle speed before disconnecting jumper cables.

## TOWING

When it is necessary to move the Sweep Star 48 without engine running, the bypass valve built into hydrostatic pump must be "open" by turning it counterclockwise. An "open" valve allows fluid to pass through the wheels freely. When normal, driven, operation is desired, valve should be closed by turning it clockwise. Failure to "close" the valve with engine running means no power to wheels. Tow slowly. 2 m.p.h. or less.

The bypass valve is a  $\frac{3}{8}$  diameter shaft with a  $\frac{11}{64}$  hole for inserting something for leverage so you can turn it. On the high lift it is on the top of the hydrostatic. On the ground level dump it is on the bottom of the hydrostatic.



# EC DECLARATION OF CONFORMITY

according to Directive 89/392/EEC

We

**SMITHCO INC.**

*(Name of supplier)*

**34 West Ave. Wayne, PA 19087 USA**

*(Full address of the manufacture - authorized representative established in the Community must also give the business name and address of the manufacture)*

declare under our sole responsibility, that the product

**Gas Sweep Star 60 / 76-000-B  
Diesel Sweep Star 60 / 77-100-B  
Sweep Star 48 High Lift / 48-000-C**

*(Make, Model)*

to which this declaration relates corresponds to the relevant basic safety and health requirements of the Directive 89/392/EEC,

*(if applicable)*

and to the requirements of the other Directives:

**EN292-1**

**EN292-2**

**EN294**

**EN349**

**92/59**

**89/392**

*(Title and/or number and date of issue of the other Directives)*

*(if applicable)*

For the relevant implementation of the safety and health requirements mentioned in the Directives, the following standard(s) and/or technical specification(s) has (have) been respected:

**ISO 37-1983**

**PREN 836**

**ISO 1219-1976**

**SAE HS-2800**

**SAE J1362**

*(Title and/or number and date of issue of standard(s) and/or technical specification(s))*

**Cameron, Wisconsin USA**

**March 19, 1995**

*(Place and date of issue)*

  
*(Name, function and signature of the authorized person)*

# EG-KONFORMITÄTSERKLÄRUNG

entsprechend der EG-Richtlinie 89/392/EWG

Wir

**SMITHCO INC.**

*(Name des Anbieters)*

**34 West Ave., Wayne, PA 19087 USA**

*(vollständige Anschrift der Firma - bei in der Gemeinschaft niedergelassenen Bevollmächtigten ebenfalls Angabe der Firma und Anschrift des Herstellers)*

erklären in alleiniger Verantwortung, daß das Produkt

**Gas Sweep Star 60 / 76-000-C  
Diesel Sweep Star 60 / 77-100-C  
Sweep Star 48 High Lift / 48-000-C**

*(Fabrikat, Typ)*

auf das sich diese Erklärung bezieht, den einschlägigen grundlegenden Sicherheits- und Gesundheitsanforderungen der EG-Richtlinie 89/392/EWG,

*(falls zutreffend)*

sowie den Anforderungen der anderen einschlägigen EG-Richtlinien

**EN292-1**

**EN292-2**

**EN294**

**EN349**

**92/59**

**89/392**

*(Titel und/oder Nummer sowie Ausgabedatum der anderen EG-Richtlinien)*

entspricht

*(falls zutreffend)*

Zur sachgerechten Umsetzung der in den EG-Richtlinien genannten Sicherheits- und Gesundheitsanforderungen wurde(n) folgende Norm(en) und/oder technische Spezifikation(en) herangezogen:

**ISO 37-1983**

**PREN 836**

**ISO 1219-1976**

**SAE HS-2800**

**SAE J1362**

*(Titel und/oder Nummer sowie Ausgabedatum der Norm(en) und/oder der technischen Spezifikation(en))*

**Cameron, Wisconsin USA**

**March 19,1995**

*Ort und Datum der Ausstellung)*



*(Name, Funktion und Unterschrift des Befugten)*



## LIMITED WARRANTY

SMITHCO warrants this product to be free from defects in material and workmanship under normal use for one year from the date of purchase by the original user. (60 days if product is used for rental purposes.) All warranty claims must be handled through a SMITHCO authorized dealer or by SMITHCO, INC. All transportation charges must be paid by the purchaser.

There is no further express warranty. All implied warranties, including those of merchantability and fitness for a particular purpose, are limited to one year, (60 days if product is used for rental purposes) from the date of purchase by the original user, and to the extent permitted by law any and all implied warranties are excluded and disclaimed after the expiration of such period.

All incidental and consequential damages, including pickup and delivery of the unit, communication, mileage charges and/or rental of a replacement unit during repair, are not covered under this warranty, nor is any loss of income and/or other loss resulting from the failure of the product to function due to a warranty defect.

The following items are not covered under the SMITHCO warranty, and are warranted by their respective manufacturer.

- (a) Engine and engine parts, including starters, generators, alternators and filters.
- (b) Transaxle, differentials, gear boxes and mechanical pumps.
- (c) Hydrostatic transmissions, hydraulic pumps and motors.
- (d) Batteries.
- (e) Wheels and tires.

A copy of the warranty for the above items is furnished if necessary with each SMITHCO product.

Some states do not allow limitations on how long an implied warranty lasts, or the exclusion or limitations of incidental or consequential damages, so the above limitations or exclusions may not apply to you. This warranty gives you specific legal rights and you may also have other rights, which may vary from state to state.

Federal law now requires disclosure of the warranty which applies to this product prior to the sale to a customer. Please leave this statement attached to the product and allow the buyer to remove it after purchase.

**SMITHCO**

Wayne, Pennsylvania 19087

