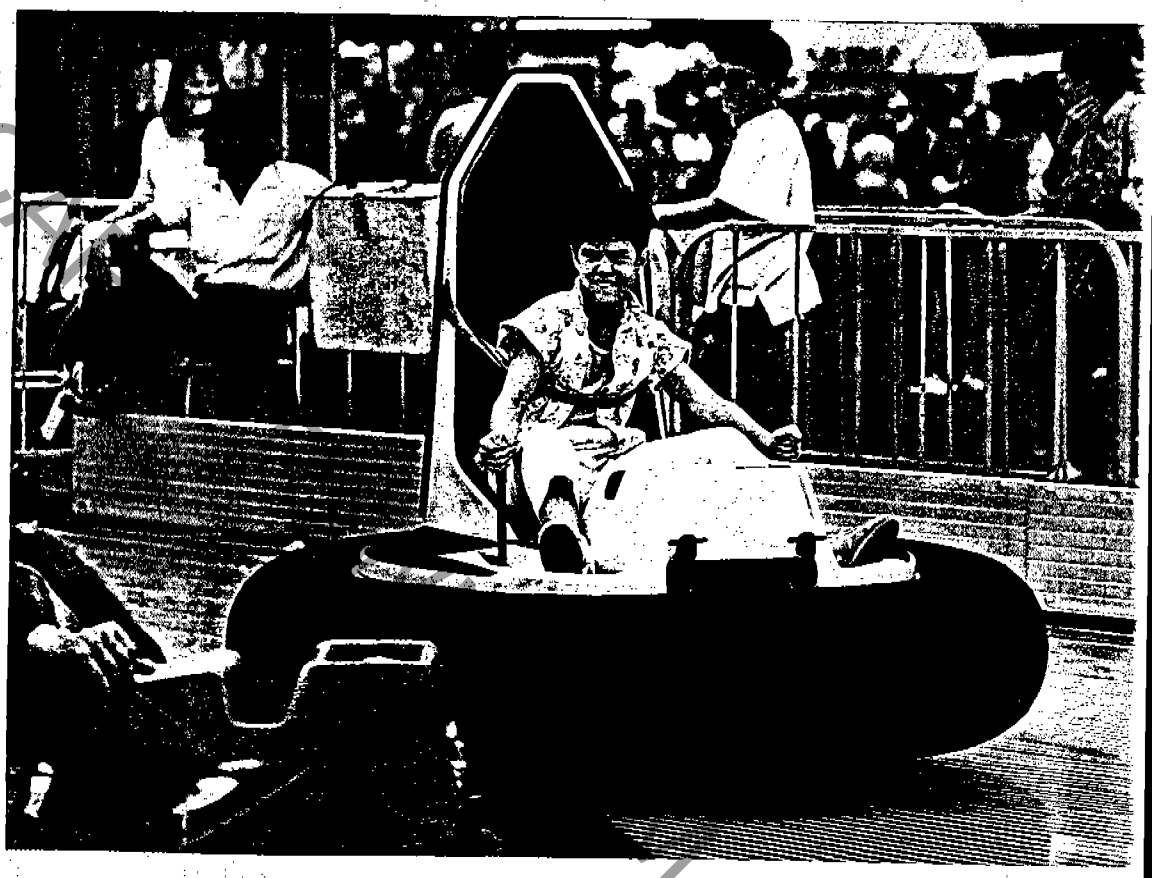
MFG: RIDE DEVELOPMENT
NAME: BUMPER CARS
TYPE: NON-KIDDIE

KRAZY KARS

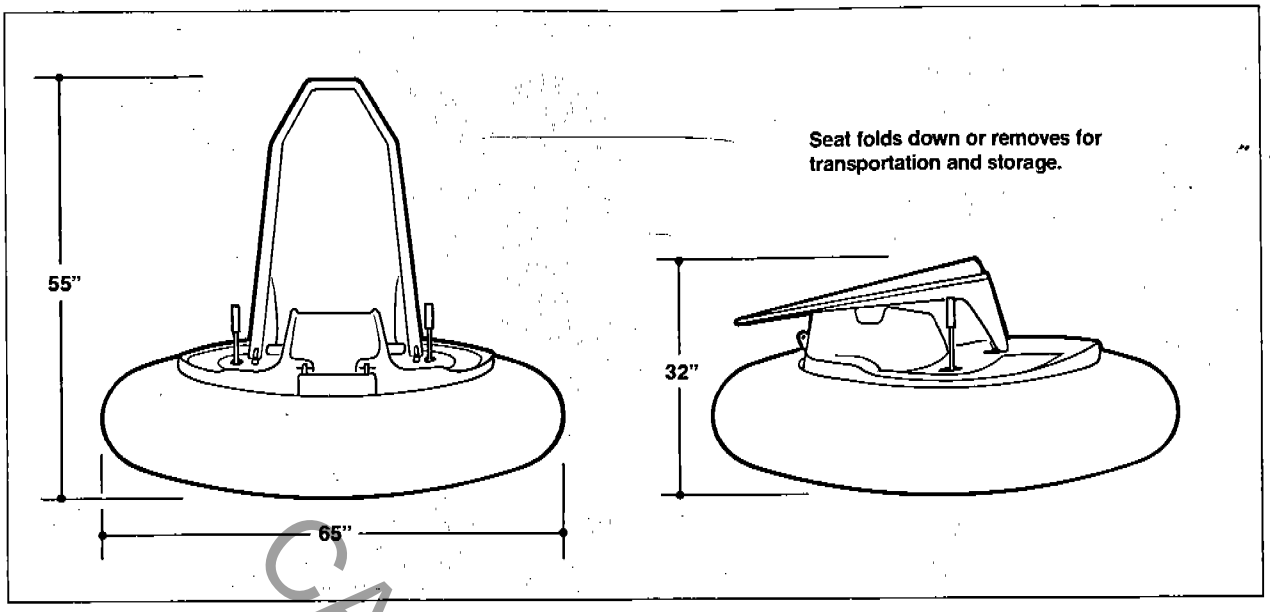
GAS POWERED



- An excitingly different bumper car
- Appealing to all ages
- Featuring proven Honda power in a tried and tested design
- Simple to operate and simple to maintain
- Single employee control
- May be operated on a variety of surfaces
- Keeps your fun zone crowd coming back for more

RIDE DEVELOPMENT COMPANY INC.
Post Office Box 12155 • Salem, OR 97309-1048 • (503) 371-9490

GAS POWERED KRAZY KAR



Features: 30 riders per hour per car (based on a two minute ride cycle); reliable 4 cycle Honda gasoline engine with; 1 1/2 gallon fuel tank; welded steel frame; removable fiberglass body, and a contoured folding and removable padded seat with restraint belt. Standard colors are orange and yellow with black trim. Recommended operating area: 100 square feet per car.

Operation

One passenger per car. The cars forward, reverse and turning motions are controlled by two levers connected to hydrostatic transmissions which power two independent drive wheels. The engine is brought up to operating rpm through a seat activated throttle and speed is controlled through the operating levers.

Construction

Body: Fiberglass with high gloss gelcoat finish

Seat: Fiberglass with restraint and padded inserts.

Frame: Fabricated steel

Engine: Honda GX 140, 5 HP

Drive: Oil bath centrifical clutch with 2:1 reduction

Transmission: Reversible hydrostatic

Wheels: Cast aluminum with pneumatic tires and sealed bearings

Casters: High impact steel casters with pvc coated wheels

Bumper: Coated nylon rip-stop cover encasing an extra heavy air bladder

Finish: Metal surfaces are sandblasted to remove rust and mill scale. Finished with one coat of quality primer and two coats of high grade paint.

RDC

RIDE DEVELOPMENT COMPANY

P.O. Box 12155
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********** PRE-OPERATION PROCEDURES **********
GAS POWERED KRAZY KARS.

HONDA ENGINE.....The engine has been factory run and adjusted to obtain optimum performance at sea level. The engine is ready for operation as it arrives from the factory, with the exception of the fuel. To better understand your new engine, (maintenance, idle adjustments, etc.), it is imperative that you familiarize yourself with the HONDA MANUAL included with your unit.

BUMPER TUBE.....If your unit is shipped with the tubes deflated, it will be necessary to over-inflate to 8# PSI(.562 kg) in order for the tube and cover to form to their proper configuration. After the initial inflation, the tubes must be deflated to the proper pressure of 1-1/2 psi.(.1056 kg) at 65 deg. F.(20 deg. C). A coat of silicone applied to the center strip of the cover every 8 hrs. of operation will greatly prolong the life of the tube covers.

OPERATING SURFACE.....The KRAZY KARS are designed to be operated on a smooth surface. Polished concrete, steel, aluminum or composite sufaces are recommended. BLACK-TOP OR ASPHALT surfaces are NOT desirable, due to excessive wear on the drive wheels, belts, tube covers etc. If it is absolutely necessary to operate on black-top, the surfaces should be filled and waxed. DO NOT use wood, plywood or any flammable composition as a platform base material.

PERIMETER BUMPERS.....If your unit is to be operated on surfaces other than JVI'S PORTA-FLOOR system, it will be necessary to construct a bumper system using the following dimensions and specifications. The bumper face contact surfaces should be no less than 12 (30.8 cm) inches in width. The surfaces should be smooth and free from cracks, protrusions, sharp edges or other irregularities. If a wood construction is used the face must be covered with sheet steel, aluminum, or a composite such as "Formica", "Micarta", "U.H.M.W" or similar material. The height from the operating surface to the center of the bumper surface should be 9" (22.86 cm). The construction of the bumper base material, and support post spacing should withstand a minimum impact loading of 600 lbs (272 kg). at 6 m.p.h. (9.65 kph).

NOTE: THE CARS MAY BE MOVED ABOUT ON THE FLOOR EASILY BY PLACING THE NEUTRAL SHIFT LEVER (LOCATED INSIDE THE OPENING AT THE FRONT OF THE CAR.) IN THE NEUTRAL POSITION, TOWARD THE CAR FRAME RIM. THE LEVER MUST BE MOVED TOWARD THE REAR TO ENGAGE THE TRANSMISSIONS FOR OPERATION.

********** CONTENTS **********

KRAZY KARS, GAS AND ELECTRIC MODEL MK II
OPERATION AND SAFETY PROCEDURES

The KRAZY KAR was designed to be a family oriented amusement ride. It will accommodate safely any member of the family who can reach the control levers while seated, with the passenger restraint belt in place. The gas model is designed for outdoor applications. The electric model for indoor applications.

The speed and directional operation of the gas model KRAZY KAR and the electric model KRAZY KAR are identical with the exception of the power source.

The gas model is powered by a Honda GX140 5hp engine which is started manually. The high rpm is pre-set at the factory at 3100. The low rpm is pre-set at 1400. After the engine has been started and warmed up the unit is ready to operate. Note that the car will not move when the engine is in the idle (low rpm) mode. To set the car in motion the engine must be brought up to operating (high rpm) mode. This is accomplished by a seat activated throttle control. The seat board must be depressed by the rider or weight of sufficient amount to activate the throttle setting to high rpm (operating mode). To start or stop the ride cycle an audible command should be given by the attending operator. If the unit is equipped with REMOTE CONTROLLED IDLE-BACK SYSTEM the throttle settings for starting and stopping the ride cycle are controlled through a transmitted signal activated by the attending operator.

The electric model is powered by a 3-1/4 hp 24V DC motor which is energized by current supplied by the floor through car mounted contacts. To start or stop the ride cycle the floor is energized or de-energized through a switch controlled by the attending operator.

NOTE: THE CARS MAY BE MOVED ABOUT ON THE FLOOR EASILY BY PLACING THE NEUTRAL SHIFT LEVER (LOCATED INSIDE THE OPENING AT THE FRONT OF THE CAR) IN THE NEUTRAL POSITION, (TOWARD THE CAR FRAME RIM). THE LEVER MUST BE MOVED TOWARD THE REAR TO ENGAGE THE TRANSMISSIONS FOR OPERATION.

The direction and speed of the car are controlled by the manipulation of the steering levers. The levers are spring loaded to return to neutral position when released. To move the car straight forward both levers must be pushed forward simultaneously. The car speed is increased by advancing the levers further forward. To reverse the travel, both levers are pulled to the rear. The speed is increased by pulling the levers further rearward. To change the direction of travel, right or left, manipulate one lever further in either direction than the other, depending on the direction in which one wishes to go. Again, the further the lever is moved, the faster the response is in that direction of travel. To "brake" the movement of the car, release both levers. They will return to the neutral position, (center) and the car will stop.

The following is a list of ride operator responsibilities and precautions to be taken before activating the ride.

1...Visually check all cars, floor, and bumper surfaces for any safety irregularities. Hood latch straps secure, fuel tank caps tight, smooth bumper surfaces, floor free of metal objects, etc.

2...Check condition of seat restraint belt. If cut, worn, or otherwise unsafe, replace immediately. Also, note the condition of the restraint belt fastener. If loose, tighten or replace.

3...Before starting the ride cycle make certain the restraint belt is positioned properly, UNDER THE ARMS AND AROUND THE CHEST of ALL riders.

4...Check air bladder air pressure. The KRAZY KAR is designed to be operated with bladder air pressure at 1-1/2 psi (.1056 kg) at 65 deg. F. (20 deg C) for optimum performance. It is imperative that the pressure not exceed 3 psi. (.2112 kg.).

5...A fire extinguisher must be within reach of the attending operator at all times when operating gas model cars.

6...Do not operate the gas model KRAZY KAR on flammable or porous surfaces.

7...The attending operator should be in position at all times to react to any emergency that might arise.

8...Although the electric model floor is safe from harmful electric shock by touching or walking on the floor, do not allow persons to carry metal objects onto the ride. If metal objects are dropped onto the floor, it is possible for contact to occur between the floor grids. If contact is made, arcing will occur and the object will become extremely hot, and if touched, could result in serious burn.

9...Do not attempt to re-fuel unoccupied idle gas cars on the floor while remaining cars are operating. Move cars to an area away from the operating units or shut down the operation when re-fueling. Make certain all excess fuel is removed from the cars before returning to service. Keep a fire extinguisher within reach while re-fueling.

10..Check non-skid patches for wear or ineffective surfaces. Replace if these conditions exist. 11..Check legibility of safety decals. If marred and/or illegible, replace.

12..Do not enter the operating area while cars are in motion.

13..Entrance and exit gates must be easily accessible in case of emergency.

14..Perimeter fencing or barrier must be installed no less than 24" away from the operating floor edge.

15..The attending operator can deny entry to the ride to any person, if in the opinion of the operator the entry may cause above normal exposure to risk of discomfort or injury to the person who enters, or if in the opinion of the operator the entry may jeopardize the safety of other patrons or employees.

GAS AND ELECRIC MODELS

These recommendations are based on a 8 hour actual operating period

DAILY: Inspect tires for proper inflation (35 to 40 psi) and for wear, and any irregularities.

DAILY: Purge machinery compartment with compressed air. DAILY: Apply silicone to the bladder cover to reduce friction and prolong cover life.

DAILY: Check car for any mechanical irregularities.

WEEKLY: Inspect all fasteners, drive belts, fluid levels, etc. Tighten all loose bolts, nuts, set screws, etc. Be especially careful to maintain an equalized tensioning of fasteners in taper lock bushings when tightening. Maintain caster/floor clearance to 3/8". Adjust front caster for this.

NOTE:.....For Honda engine maintenance, refer to the Honda Manual. Recommended RPM for the Krazy Kar is 1400 (idle rpm) and 3100 (operating rpm.)

LUBRICATION INSTRUCTIONS

LUBRICATION POINT	LUBRICATION TYPE	FREQUENCY
A...Caster Bearings (2)	Bearing Lube	Bi-Weekly
B...Control Lever Bearing (2)	Bearing Lube	Daily
C...Neutral Plunger (4)	Oil***	Daily
D...Control Link Rod Ends (2)	Oil***	Daily
E...Primary Drive Idler (1)	Bearing Lube*	3 Months
F...Drive Wheel (2) ****	Wheel Bearing Grease	Yearly
G...Seat Throttle Linkage	Oil***	Bi-Weekly
H...Transmission (2)	SAE 30 motor oil, (SE-SF RATED)**	Daily

BEARING LUBE....Multi-purpose water resistant grease with accepted extreme pressure additive.

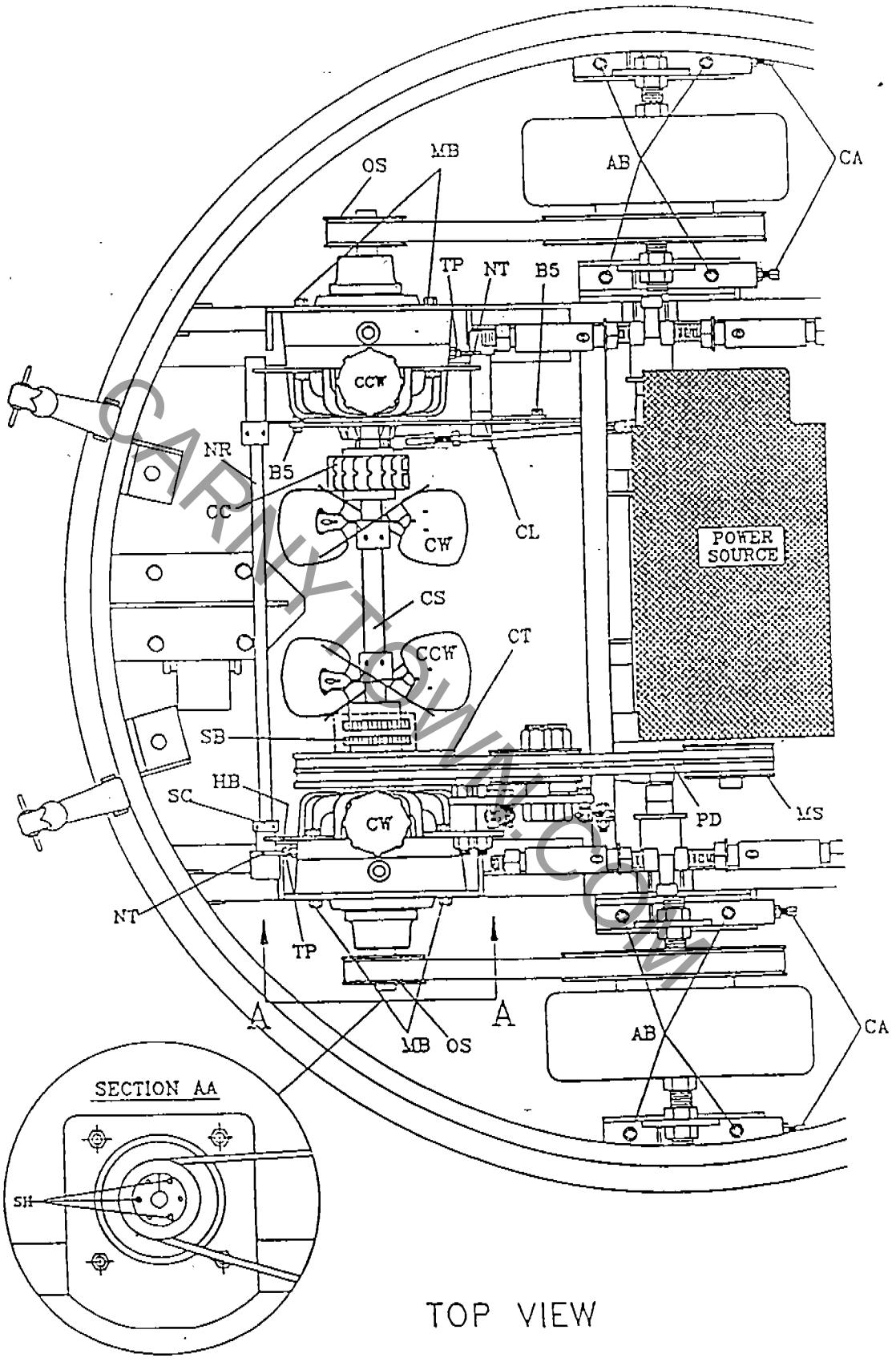
DAILY.....= 8 Hours operation.

***.....SAE motor oil, 20 or 30 weight.

*....Do Not over-lubricate, as seals will be blown.

**...It is imperative that the transmission fluid be maintained at proper level (check when cold) and contamin free. It is recommended that the fluid be changed every 100 hours of operation. (Capacity, .15 gal., 19.2 fl oz.). Note "SERVICE AND LUBRICATION" section.

**** Repack wheel bearings as follows: Remove final drive belt by loosening axle mount adjusting bolts and removing mount bolts, (4). Lift out wheel assy. Remove axle jam nuts and lift off wheel assy. Re-pack bearings and replace on axle. Make sure seals are in place. While rotating wheel set inside jam nut tight against bearing assy, then back off 1/4 turn. Set outer jam nut while holding inner nut. Make sure outer nut is tight against inner nut. Rotate wheel to make sure it turns freely. For re-assembly reverse removal procedure. Make certain drive belts are tensioned properly and in alignment with transmission output sprocket.



TOP VIEW

FIG. 1

REPLACEMENT OF HYDROSTATIC TRANSMISSION
GAS AND ELECTRIC MODELS

The "CW" (clockwise) transmission is located on the RH side, (sitting in the car). The "CCW" (counter-clockwise) transmission is on the LH side.

1....Loosen the Allen set screws securing the fans to the countershaft "CS", (fig.1) and slide the fans to the center of the shaft. Note that two of the screws are "half dog point". These are installed in the keyway of the countershaft "CS" (fig.1).

2....When removing the "CW" transmission use the special shortened Allen wrench (supplied), push one of the removeable pins in the coupling chain "CC" (fig.1) of the transmission toward the center of the car and remove. (save pin). Use a small punch to remove a pin from the coupling chain on the "CCW" transmission. Remove the chains and countershaft. Note: Prior to removing countershaft, note orientation of "CW" and "CCW" fans on countershaft. Make certain countershaft assembly is replaced as initially installed. DO NOT REVERSE THIS ASSEMBLY.

3....Loosen the nuts on pivot bolts "C" and "G" (fig.2), page 10 on the primary drive idler assembly. Loosen the nut "E" on the tension adjusting rod enough to relieve the spring tension on the idler assembly. Slide the belts off the lower idler and remove the belts from the transmission drive sheave.

4....Remove the final drive belt to the transmission sprocket "OS"(fig.1) by loosening the axle bracket bolts "AB"(fig.1) and backing off the adjusting bolt "CA"(fig.1) to relieve the tension on the belt. Make certain that the belt has enough slack to be removed from the transmission output sprocket without rolling it over the flange.

5....Remove the steering lever control rod "CR"(fig.2), page 12, from the underside of transmission. Do not remove the shifting lever "SL" from the transmission. REMOVAL WILL VOID WARRANTY.

6....Loosen the set collar "SC"(fig.1) on the neutral rod "NR" (above the "CW" transmission) with 1/8" allen wrench and slide the collar toward the center (approx. 3"). When changing the "CW" transmission remove the four mounting bolts (3/8" x 3") "MB"(fig.1) securing the transmission to the housing. Remove the primary drive idler assembly "CD"(fig.1). Slide neutral rod housing bracket "HB"(fig.1) toward the center and lift out the transmission.
When changing the "CCW" transmission, remove one of the 5/16" bolts "BS"(fig.1) on the neutral connecting link. Remove the four 3/8" x 3" mounting bolts "MB"(fig.1) and slide the neutral rod housing bracket toward center (approx. 3"). Lift out transmission.

7....Remove input sprocket bushing "SB1"(fig.2) by loosening both Allen screws "8"(fig.2) with 1/8" Allen wrench approximately 4 turns. Remove one of the Allen screws and insert into the third hole "H1"(fig.2). Tighten this screw until sprocket is free of the bushing. Remove sprocket, bushing and woodruff key. Replace the screw in the original hole. Insert woodruff key in the new transmission input shaft keyway. Slide sprocket and bushing onto shaft until flush with end of shaft. Note: Make certain woodruff key stays in place. Tighten Allen set screws evenly in a rotating sequential manner until all screws are tight. Approximately 10 in./lbs. Remove the output sprocket "OS"(fig.1) and bushing by removing the 3 socket head cap screws "SH" with 5/32" Allen wrench. Insert the 3 cap screws in the other 3 holes and tighten in a rotating sequential manner until the bushing is pushed from the sprocket. Remove sprocket, bushing and woodruff key.

Remove socket head cap screws "SH" from holes and replace in original holes. Install woodruff key in output shaft of replacement transmission. Install sprocket and bushing and place as close to transmission housing as possible without making contact with the housing. Tighten set screws evenly in a rotating sequential manner in 1/4 turn increments until tight (approx. 10 in./lbs.).

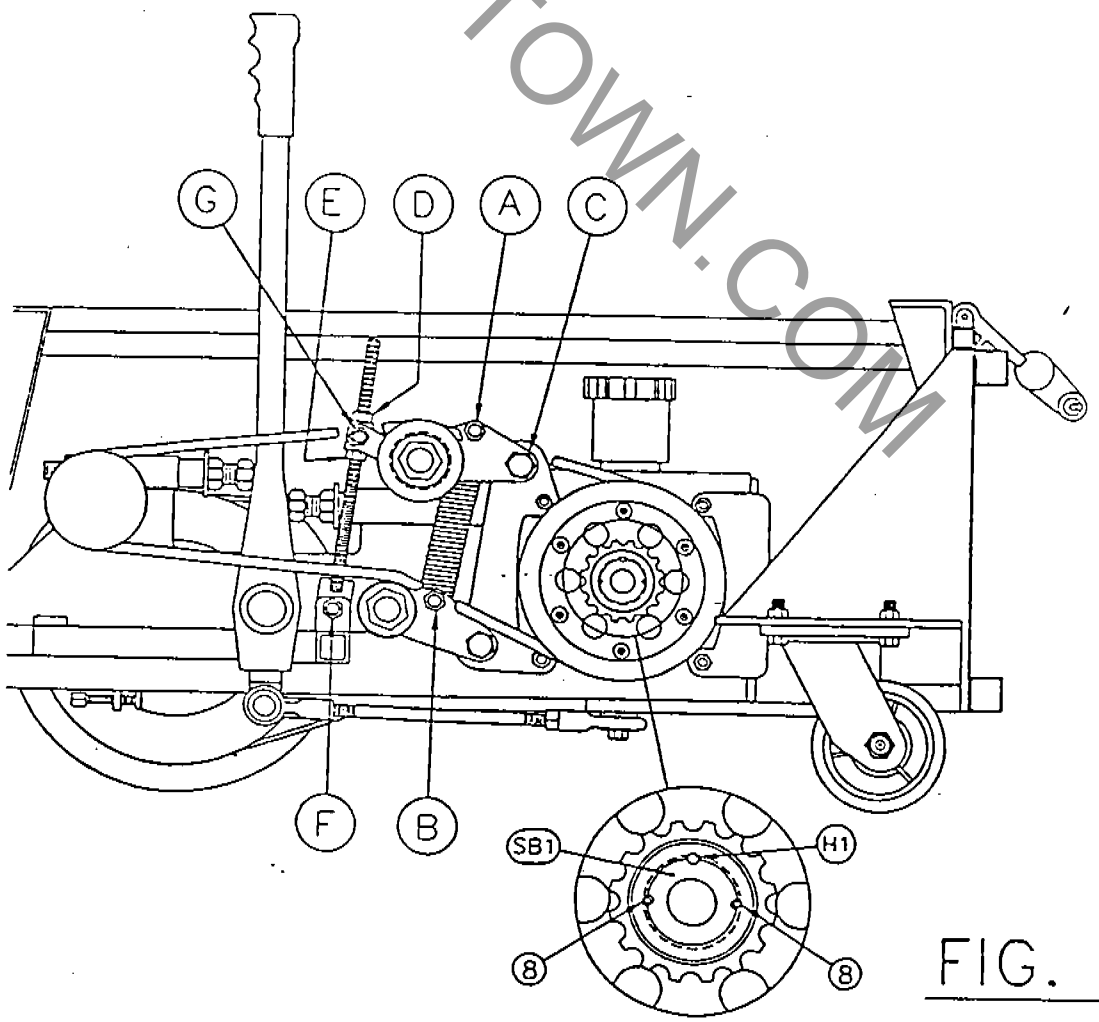


FIG. 2

8....When replacing "CW" transmission, insert transmission in housing bracket, insert bolts, place primary drive idler assembly at the front side of the transmission. Install nuts finger tight. Install neutral rod housing bracket "HB" and neutral rod "NR". Tighten the four mounting bolts securely. Install primary drive belt "PD" and check for alignment with straight edge. Adjust motor sheave "MS" if necessary to align belt with transmission and idler sheaves. Tension the primary drive belts by adjusting the idler as per "ADJUSTING THE PRIMARY DRIVE TENSION IDLER". Align the neutral rod tab "NT" (fig.1) with the transmission plunger "TP" and move the set collar "SC" into position and tighten.

8A...When replacing "CCW" transmission, place transmission in housing bracket, insert bolts, set neutral rod housing brackets in place and secure tightly. Install neutral connecting link "CL" and tighten bolt, then loosen slightly until it turns freely.

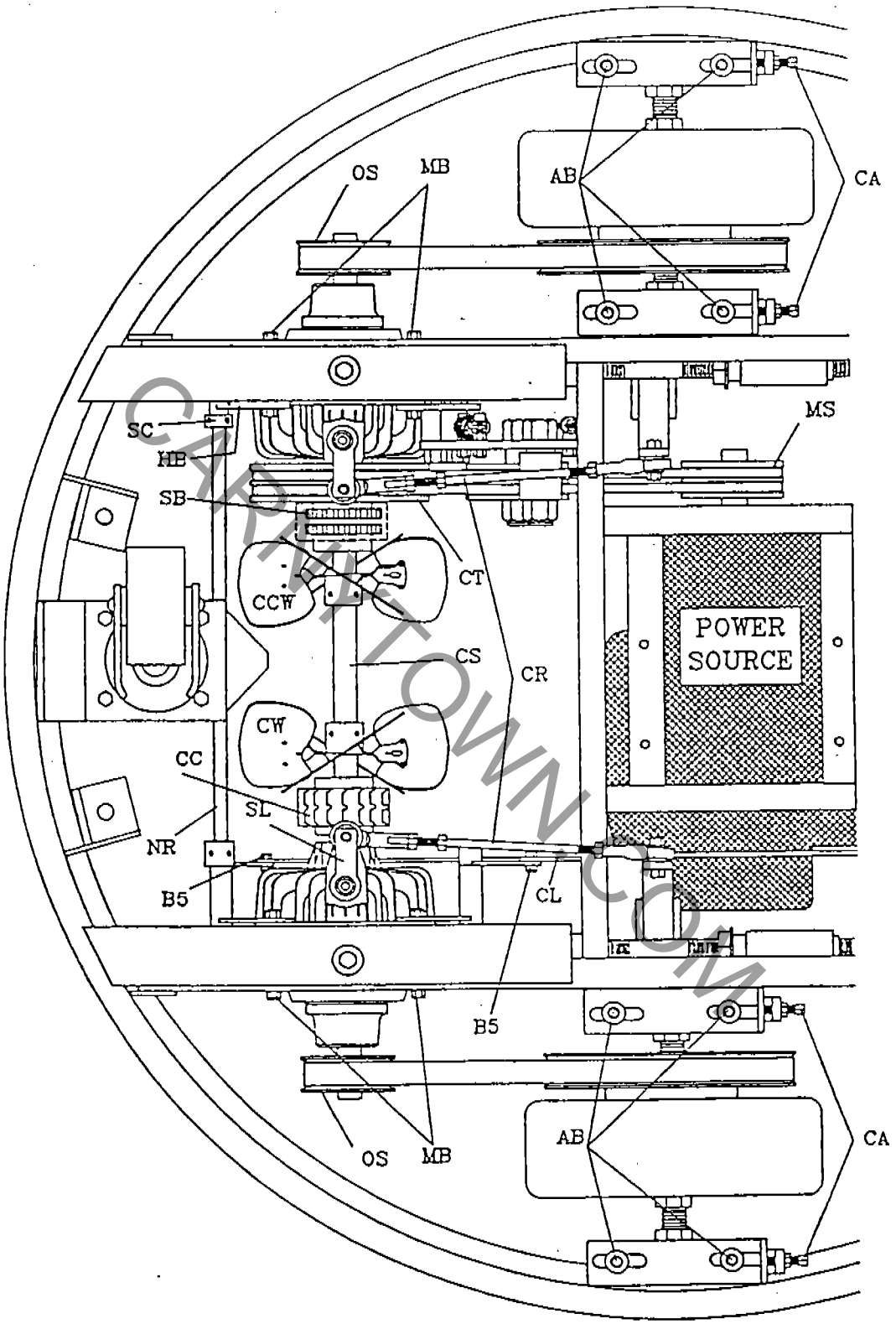
9....Attach steering lever control rod "CR" to transmission shifting lever "SL" and secure.

10...Place countershaft assembly in place between transmissions. Note: Make certain countershaft assembly is replaced in the same orientation as originally installed. Install coupling chains and insert pins. Do not drive in with hammer. This could result in damage to the chain. If coupling chains do not properly mate, it will be necessary to loosen sprocket on countershaft and move into position so that the sprockets are centered in the coupling chain. Remember to retighten the bushing screws securely.

11...Slide fans toward coupling chains until they touch, then back off until they just clear the chains. Install half dog point Allen set screws in keyway side of hub. Tighten, then install remaining set screws and tighten.
Note: Rotate countershaft to make certain the fan blades do not contact any part of the car.

12...Install primary drive belt. See "ADJUSTING THE PRIMARY DRIVE TENSION IDLER" for correct belt adjustment. Install final drive belt. Check for proper alignment with straight edge. Adjust belt tension with set screw "CA" to 1/2" deflection with 5 lbs pressure on underside of belt.

13...Check transmission oil reservoir for proper level. Run car for approximately 1 hour. Recheck oil level. If level is low, fill to proper level with 30 wgt. SAE motor oil, rated SE -SF ONLY. Note: For neutral lever adjustment, refer to "ADJUSTING STEERING LEVERS AND HYDROSTATIC TRANSMISSIONS".



BOTTOM VIEW

FIG. 3

NOTES

INSTALLATION OF IDLE-BACK CONTROL SYSTEM
ON KRAZY KARS

The system consists of five main components:

A....Receiver/charger/driver assembly with wiring harness, mounting hardware and three position switch.
B....Solenoid actuator and mount assembly with mounting bolts and hardware for installation.
C....Battery and battery case with mounting hardware.
D....Transmitter, Hand Held. (Optional console).
E....Charging system (flywheel and pickup coils)

Follow the procedure as set forth in "DIRECTIONS FOR FLYWHEEL AND PICKUP COIL INSTALLATION", then proceed as follows.

1..Using the drill template (L), supplied. (fig. 1A). Mark hole centers and drill 3 (three) 11/32" holes as shown (fig.1A) in the rear caster support gusset (item 1). Mount the receiver housing (RH) as shown. (fig.1B). Do not remove base nuts. Secure with three 1/4-28 hex nuts and lock washers provided.
2..Insert the offset end of the governor control rod (A) in the engine governor lever (item 2) as shown (fig.4B). Note: It may be necessary to drill this hole, (3/32"). See item 2 fig.4B. Holding the solenoid actuator assembly in place, insert the straight end of the governor control rod (A) in the tab of the actuator control lever (B). Mount the Solenoid Actuator Assembly as shown (fig.2B) using the two 6mm bolts supplied. Tighten securely. Slip the compression spring (C) onto the governor control rod (A) as shown in (fig.4B). Position the actuator control lever (B) rearward to the locked position. Place the set collar (D) on the governor control rod (A). With supplied allen wrench inserted in set screw in the set collar, slide collar forward, and compress spring (C) approximately 1/3 of it's length (fig.4B). Make certain the engine governor lever (item 2) is at it's rearmost position. Temporarily tighten the allen set screw in the set collar.
3..Remove the two hex nuts and lock washers from the right hand side of the rear casterwheel mount plate (item 3) fig.1B. Install the lower half of the battery base (BB) as shown (fig.1B) and secure with the two hex bolts, (3/8" x 1-1/2" provided). Do not tighten nuts at this time. Install 3/8" x 1" cap screw and lock nut in the outboard hole of the battery base (BB) fig.1B. Tighten. Tighten the two previously installed 3/8" hex nuts.
4..Install fully charged battery in the battery base (BB) with (+) positive terminal to the outside, (fig.1B). Make certain rubber pad (RP) is placed under the battery. Install the toggle switch (TS) as shown (fig 1B). Connect cabling as per wiring diagram (IB1-123). Note: 2 holes (5/32") must be drilled in the top of the transmission housing bracket (HB) fig.3B for securing cable with 1/8" tie wraps, supplied. Make certain the fuse is NOT installed in the fuse holder in the back of the receiver case prior to connecting to the battery. Note: When mating spade connectors, make sure the male spade is inserted properly. It must be inserted into the female end <u>inside</u> the metal socket, <u>NOT</u> <u>between</u> metal socket and plastic cover. Place rubber insulating pad (RP) on top of the battery and install cover (BC), (fig 1B). Insert 1/4" bolts and tighten. Make certain rubber insulating pad (RP) remains in

place. Tighten securely.

5..Before operating the cars, a check must be made of the Idle Back's remote control system to insure that all units are adjusted properly. Follow the steps as outlined below.

A..Install fuse (4A 250v 313) in the fuse holder in the receiver case.

B..Move the toggle switch to the R.H. (radios on) position.

C..Holding the hand held transmitter at a minimum distance of approximately 10 to 12 ft away from the cars, move the momentary toggle switch (on the face of the transmitter) to "ON" and hold while pressing the transmit button (at the top of the transmitter) for approximately 2 seconds. The governor control lever of the actuator assembly should move to the forward position (fig.4B)

D..Release the momentary toggle switch. (it will return to the "OFF" mode). Press the transmitter button and hold for 1 to 2 seconds. The governor control lever of the actuator assembly should move to the rear position, compressing the spring (C), and moving the engine governor arm fully rearward. To be certain there is no slack in the engine governor arm, depress the seat throttle lever (T) all the way down and note that the engine governor arm does not move. If the engine governor arm moves, the set collar on the governor control rod will have to be readjusted forward until there is no movement the engine governor arm when the seat throttle lever (T) is depressed. See fig.3. This will further compress the spring, creating more tension on the engine governor arm. Note: Do not over-compress the spring. It is advised when readjusting the spring tension to move the set collar very slightly at each setting until the correct amount of tension is acquired. This is a critical adjustment.

E..Before proceeding, Refer to "RADIO PRELIMINARY CHECK AND PREPARATION" of the IDLE-BACK CONTROL SYSTEM for operation of the system.

TOOLS REQUIRED FOR IB1 INSTALLATION WITH FLYWHEEL AND PICKUP COILS INSTALLED.

1..9/16" COMBINATION END WRENCH. (1) BATTERY BASE
2..6" ADJUSTABLE END WRENCH. (1) SWITCH, BOLT HEADS, ETC.
3..7/16" COMBINATION END WRENCH. (1) RECEIVER HOUSING
4..DIAGONAL WIRE CUTTERS. (1) WIRE, ETC.
5..10 MM COMBINATION END WRENCH. (1) RECOIL STARTER HOUSING
6..SMALL BLADE SCREWDRIVER. (1) TOGGLE SWITCH, ETC.
7..SMALL PHILLIPS SCREWDRIVER. (1)
8..1/8" DRILL BIT. (1) TIE WRAP HOLES.
9..11/32" DRILL BIT. (1) (SHORT) RECEIVER HOUSING HOLES.
10..5/64" ALLEN WRENCH. (1) GOVERNOR ROD SET COLLAR.
11..ANGLE HEAD DRILL MOTOR.
12..PLIERS. (1)
13..9/64" ALLEN WRENCH. (1) SOLONOID MOUNT SCREWS.

ADDITIONAL TOOLS REQUIRED FOR INSTALLATION OF FLYWHEEL AND PICKUP COILS.

1..1/2" COMBINATION WRENCH.(2)
2..5.16" COMBINATION WRENCH.
3..3/8" OPEN END WRENCH.
4..3/4" COMBINATION WRENCH.(2)
5..19M SOCKET AND TOURQUE WRENCH.
6..6" PULLER.
7..1/4" NC TAP & TAP WRENCH.
8..0.016" FEELER GUAGE.
9..18" STRAIGHT EDGE.

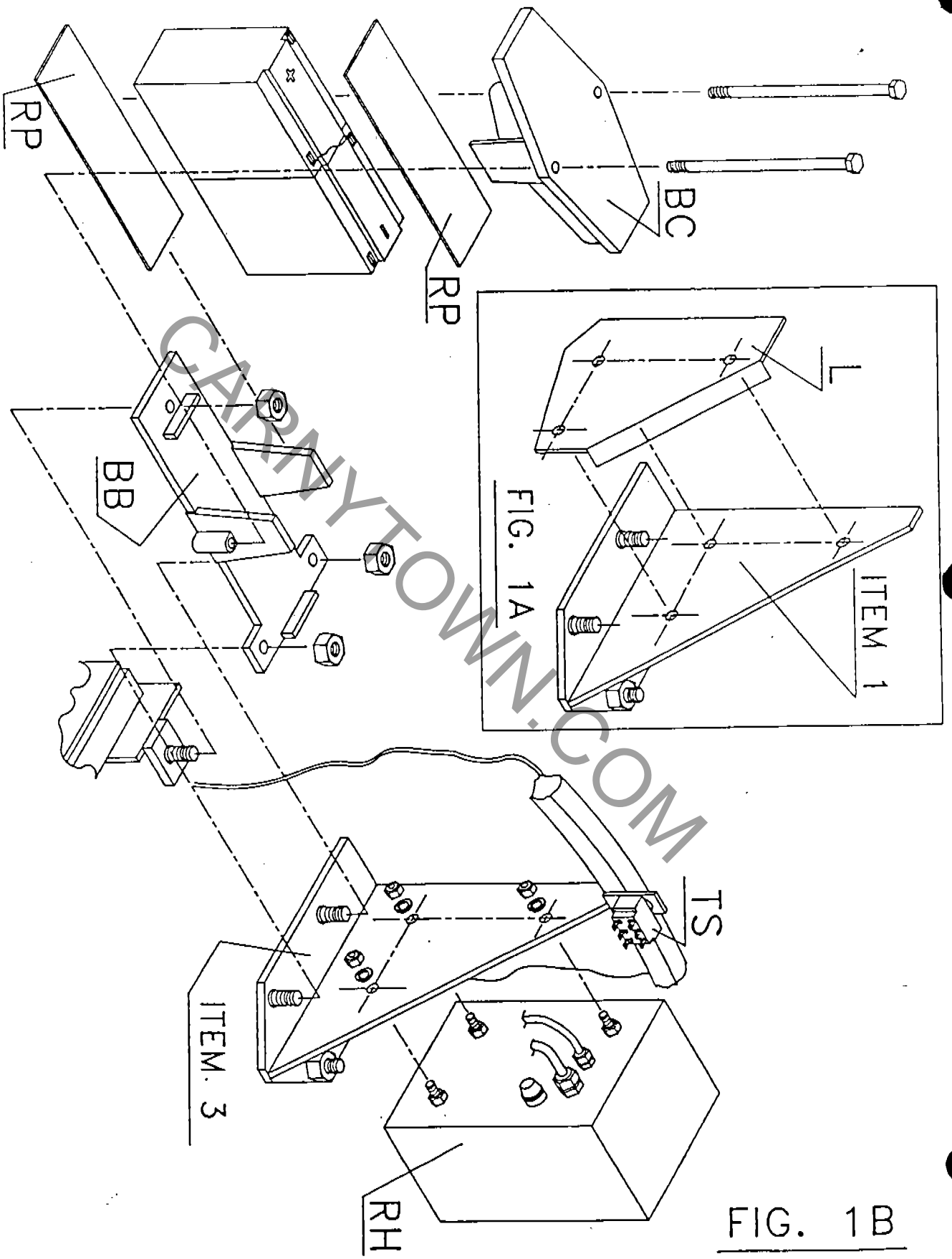


FIG. 1A

FIG. 1B

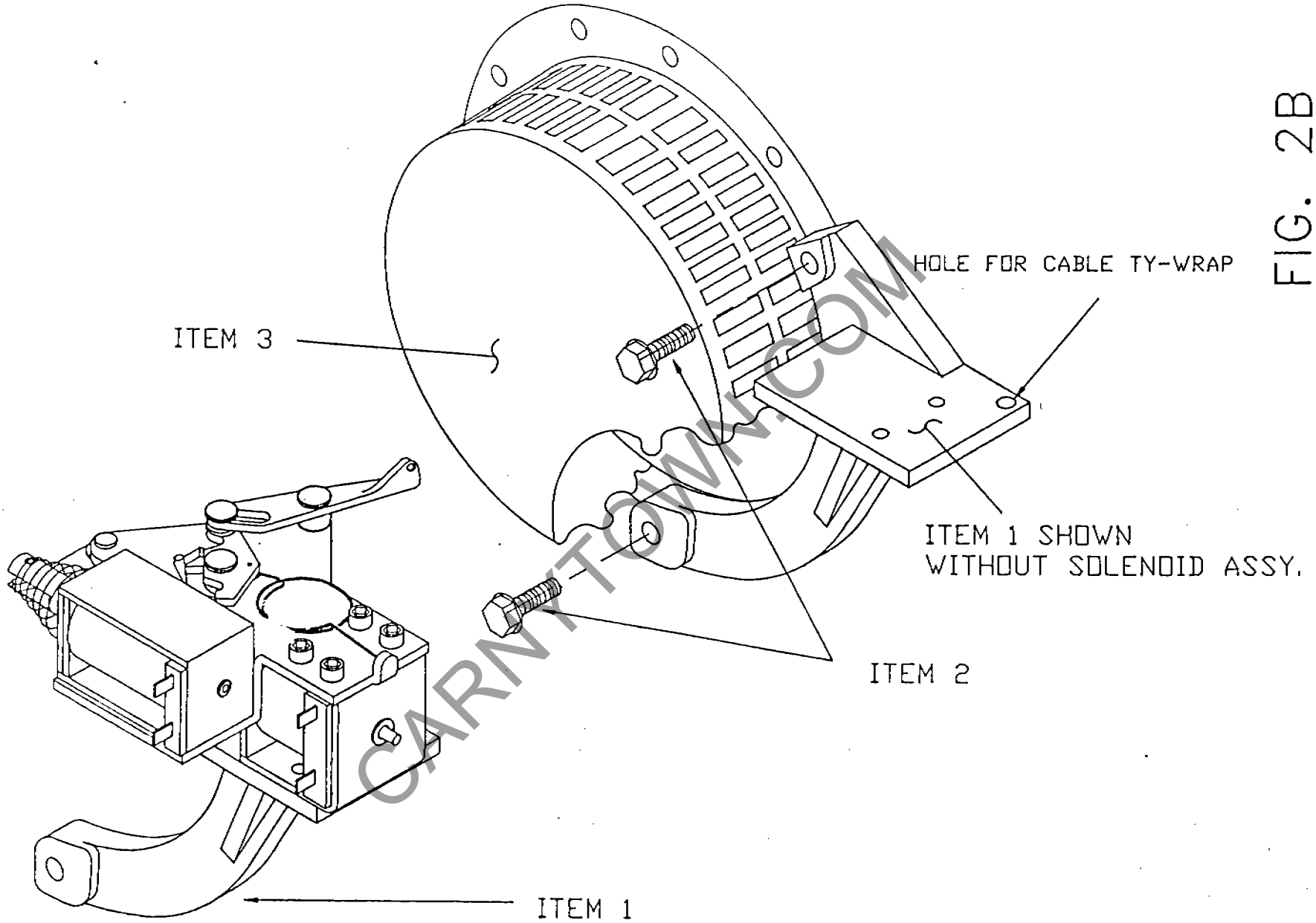


FIG. 2B

IDLE-BACK CONTROL SYSTEM

If your units are equipped with this optional system, all components are operational as they arrive from the factory with the exception of the battery. To prevent accidental discharge in shipping, the positive leads to batteries have been disconnected from the system at the factory. It will be necessary to reconnect the lead before operation.

RADIO PRELIMINARY CHECK AND PREPARATION..... To energize the system, the following steps should be taken.

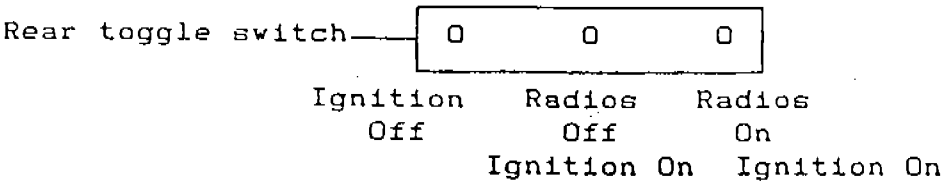
1.....The switch located at the rear of the car, centered under the rear of the seat back must be switched to "Radios On", all the way to the right. The actuator solenoids may or may not actuate. Engage and hold the momentary toggle switch on the front of the transmitter in the "ON" position. Depress the transmit button on top of the transmitter for approximately 2 seconds. This will actuate the solenoids, placing the actuator lever in the proper position for starting the engine. Note; (locate the transmitter a minimum of 10 to 12 ft. (3.048 to 3.657 m) away from the car being tested). If the system fails to operate, check the car battery. It is possible that the battery may have been discharged accidentally. Connect a fully charged spare battery to the system and repeat the procedure.

2.....Follow the starting instructions in the HONDA ENGINE MANUAL; Start the engine and then let run at full speed for approximately 15 to 20 minutes after warm up to assure full charge to the battery. Note; The seat board must be depressed to activate the throttle . Please NOTE; It is adviseable to initiate this step prior to initial operation, or if cars have been idle for a period of time.

3.....Locate the transmitter a minimum of 10 to 12 feet (3.048 to 3.657 m) away from the car. To accelerate the engine speed (approx. 3100 RPM) move the transmitter momentary toggle switch to the "ON" position and depress the transmit button at the top of the transmitter. Hold the transmitter button in for 1 to 2 seconds then release it. Release the momentary toggle switch. Although the receiver has been designed to filter out stray signals, it is possible that occasionally it will not receive the signal. if this happens, repeat the above sequence. To bring the engine rpm to the idle mode, depress the transmit button and hold for approximately 2 seconds, then release it. The engine speed will decrease to approximately 1400 RPM, (idle mode). Please note that to <u>increase</u> the engine speed, <u>both the MOMENTARY SWITCH and the TRANSMIT button</u> must be manipulated. To <u>decrease</u> the engine speed (bring to idle mode) <u>only the TRANSMIT button</u> is depressed.

4.....The system is designed for full operation of ALL cars. In the event all cars are not being used, switch the unused cars to "RADIOS OFF", (center position on the toggle switch at the rear of the seat) as the receiver cycling of the control without full speed car operation will drain the batteries and not recharge them in those cars. If the batteries have been continuously drained they may reach a point at which they will not accept a charge. IT IS

ABSOLUTELY NECESSARY TO FOLLOW THIS PROCEDURE AT ALL TIMES.



RADIO TROUBLE SHOOTING GUIDE

1.....Engine fails to accelerate or decelerate.

A.... TURN OFF THE ENGINE BEFORE PROCEEDING.

B.... Make certain the toggle switch at the rear of the car is switched to (RADIOS ON) position.

C.... Check all wire connections to make sure they are secure.

D.... Check the fuse, if fuse has blown, replace with "LITTLEFUSE 4A 250V 313". ONLY. (spares provided). Another fuse type will not provide the protection necessary. DO NOT SUBSTITUTE.

E.... Check the car battery to make sure it has not been accidentally discharged. To make this check follow the procedure as referenced in #1 of "RADIO PRELIMINARY CHECK AND PREPARATION."

NOTE!, IT IS ADVISABLE TO MAINTAIN A FULLY CHARGED BATTERY AT ALL TIMES.

After steps "A" trough "E" have been performed, Start the engine and let warm up at "idle" for a few minutes. If the system still fails to operate when a signal is transmitted, (at a minimum distance of 10 to 12 ft.) (3.048 to 3.657 m), install fresh batteries in the transmitter unit. If the problem still exists, contact the factory.

NOTE; THERE ARE NO INTERNAL REPAIRS OR ADJUSTMENTS THAT ARE FIELD REPAIRABLE IN ANY OF THE SYSTEM'S COMPONENTS.
IF MALFUNCTION OCCURS, CONTACT THE FACTORY.
PLEASE NOTE THE SERIAL NO. AND CODE NO. OF THE UNIT.

INSTRUCTIONS FOR FLYWHEEL AND PICK-UP
COIL INSTALLATION

1... FUEL LINE REMOVAL.. Close fuel petcock located on the bottom of fuel tank. Loosen hose clamp on fuel filter line and remove line from filter.

2... EXHAUST TUBE REMOVAL.. Loosen "U" clamp securing flex tube to muffler exhaust pipe. Slip flex tube from pipe.

3... PRIMARY DRIVE BELT REMOVAL.. (FIG 2). Loosen pivot bolt "CN" on primary drive idler bracket "CD". Loosen lock nut "CJ" on idler adjusting screw "C3". Unscrew adjusting screw sufficient to allow idler sprocket to be lowered to it's extreme bottom position. Remove primary drive belt from engine output sprocket. Do not back-bend or roll belt over sprocket flange. (Damage to belt will result).

4... Disconnect kill wire from the rear of the engine.

5... ENGINE REMOVAL... Remove the four engine mounting bolts and slide the engine as far to the right (looking from the rear) as it will go.

6... RECOIL HOUSING REMOVAL... Remove the three mounting bolts securing the recoil starter housing to the engine and slip the housing assembly from the engine. Leave housing assembly in the car and lift engine out.

7... COOLING FAN COVER REMOVAL... Remove the four bolts securing the cooling fan cover to the engine block. Note that the throttle rod guide "H" (FIG 2A) is secured to the cover and the engine block by the forward top bolt. It is not necessary to remove the throttle rod from the throttle rod guide. Remove cooling fan cover.

8... FLYWHEEL REMOVAL... Remove the 14 mm nut from the crank shaft. Remove the cooling fanand rope start pulley. Using a commercially available six inch puller, remove the flywheel. Do NOT position the puller jaws on the magnet section of the flywheel. Do NOT strike flywheel or crankshaft with a hammer.

9... PICK UP COIL INSTALLATION..(FIG 2A).. Tap four pre-located pickup mounting holes "A" with 1/4" NC tap. Mount coils "D" in place, with lead wire "C" to the rear of the engine (next to kill wire). Secure in place with four 1/4" X 1" NC bolts "B" coated with "Locktite 242", supplied. Note path of coil lead wire "C", (Between side cover and engine block).

10.. MAG. FLYWHEEL INSTALLATION.. Make certain woodruff key

is in place in keyway on crankshaft. Align flywheel keyway with woodruff key on crankshaft and slide onto shaft until seated. Install cooling fan by aligning the four lugs on the rear side of the fan with the holes in the flywheel. Attach starter pulley by aligning the lug on back side of pulley with small hole at the center of the flywheel. Install 14 mm nut and tighten to 700/800 kg-cm (50/57 ft lbs). Rotate flywheel by hand to make certain motor turns freely.

11.. IGNITION COIL ADJUSTMENT...(FIG 2C).. Loosen ignition coil mounting bolts "E". Insert a long thickness guage or piece of paper of prober thickness (0.4 ± 0.2 mm) (0.016 ± 0.008 in.) between the ignition coil "F" and the flywheel. Push coil firmly toward the flywheel and tighten mounting bolts. Note, Avoid the magnet part of the flywheel when making this adjustment.

12.. FAN COVER INSTALLATION... Place fan cover over starter pulley. Align the four holes and insert the mounting bolts. Make sure the throttle rod and guide assembly "H" is installed. Position throttle rod guide "H", (FIG 2A) to allow clearance between throttle rod and engine governor arm, see item "G", (FIG.2A). Tighten mounting bolts securely.

13.. ENGINE INSTALLATION... Place engine in the car with enough clearance to install the recoil housing assembly. At this time the IB1 actuator assembly is placed in position over the proper mounting holes in the recoil housing and the cooling fan cover (see item "1", (FIG. 2B). Note. Read section (2) of "INSTALLATION OF JVI'S IDLEBACK CONTROL SYSTEM" for proper mounting of the actuator assembly. Position engine in place using the two long bolts at the front of the engine and the two short bolts at the rear of the engine. Tighten one bolt slightly. Using a straight edge, check alignment of the engine output sprocket with the transmission input sprocket. After making sure they are in alignment, tighten all bolts. Recheck for alignment. THIS IS ALIGNMENT IS CRITICAL.

14.. PRIMARY DRIVE BELT AND ADJUSTMENT.. (FIG. 2).. Place primary drive belt over engine output sprocket. Care should be taken not to roll belt over sprocket flange. Note section "ADJUSTING THE PRIMARY DRIVE TENSION IDLER"

15.. Re-install exhaust flex tube and fuel line. Make certain clamps are tight. Open fuel pet cock. Check for leaks in the fuel line connections.

16.. Start engine and check the "high" rpm with wire tachometer, supplied. Adjust throttle setting, if necessary, to obtain 3100 rpm.

17.. RECHECK ALL FASTENERS AND ADJUSTMENTS.

18.. See "INSTALLATION OF JVI'S IDLE-BACK CONTROL SYSTEM" for installation of remaining IDLE-BACK control system components.

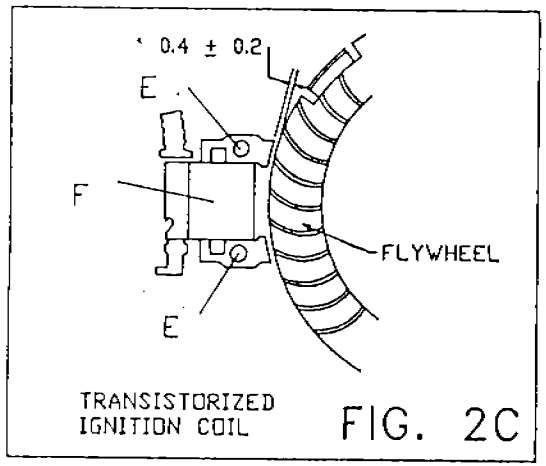


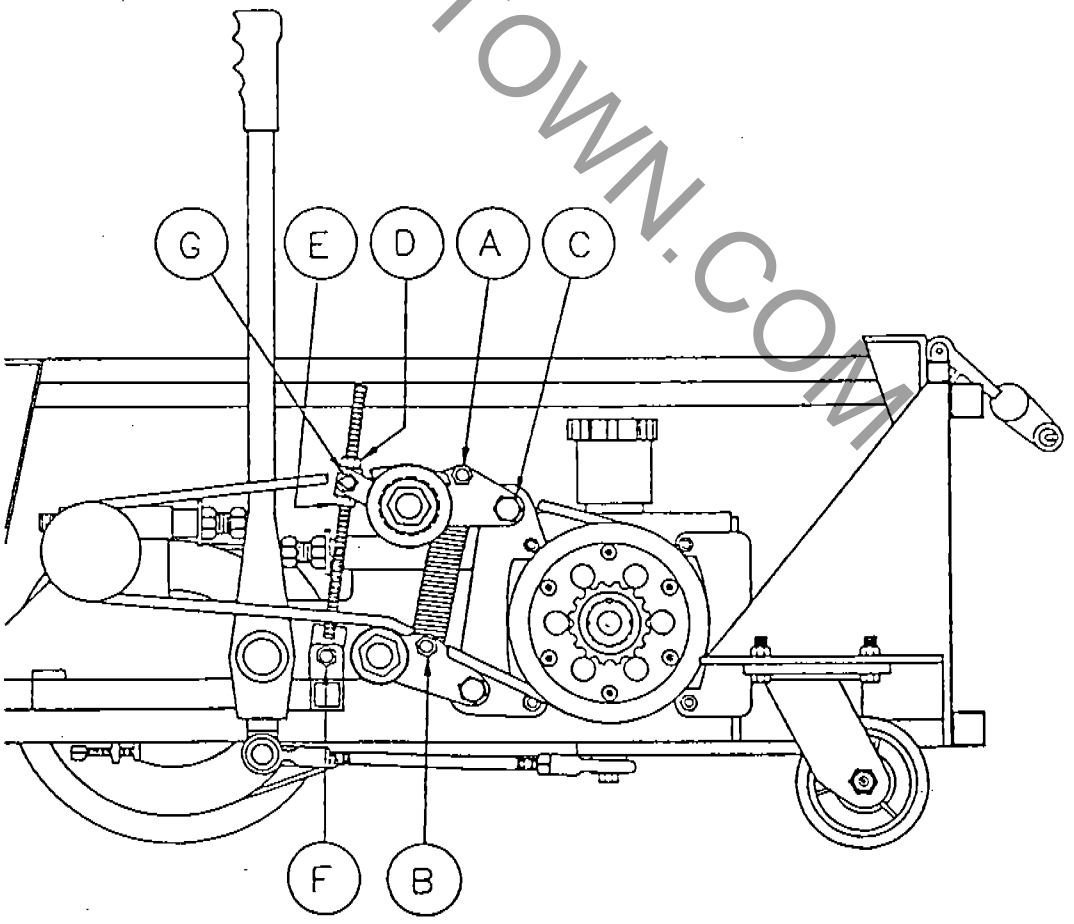
FIG. 2C

FIG. 2A

NOTES

ADJUSTING THE PRIMARY DRIVE TENSION IDLER

The idler spring tension has been set at the factory to 5-1/4", centerline to centerline of the spring anchor bolts. Note ref. "A" and "B". After the first day of operation, or, as the belts become stretched and seated, it will be necessary to readjust the spring tension to the original setting of 5-1/4". This adjustment is critical and must be checked periodically to maintain proper belt tension on the primary drive. To adjust the spring tension, loosen pivot bolts "C" and "G". Loosen the top adjusting nut "D" several turns. Turn the lower adjusting nut "E" clockwise or counter clockwise until the distance between the centers of the spring anchor bolts is 5-1/4". Apply downward pressure several times on the lower spring idler to equalize belt tension. Recheck the distance between "A" and "B". Reset the top adjusting nut "D". Make certain both upper and lower adjusting nuts are tight. Tighten pivot bolts "C" and "G". Note adjusting rod lower anchor bolt "F". This nut should be torqued just tight enough to allow the bolt to rotate with wrench applied.



ADJUSTING THE STEERING LEVERS AND HYDROSTATIC TRANSMISSIONS

CENTERING THE STEERING LEVERS. (FIG 4)

Position the steering lever (A) in a vertical position and inclined approximately 2 deg. away from the hydrostatic transmission (C) by adjusting nuts (18.4-A) until all contact points (G) are at zero. Steering lever at this time should have zero movement.

ADJUSTING NEUTRAL ON HYDROSTATIC TRANSMISSION. (FIG 4)

To position the bell crank (B) on transmission (C) at neutral mode, first, place a block of wood under the frame behind the drive wheel so each is free of floor. Loosen right hand threaded nut (40.2) and left hand threaded nut (40.1) on the transmission control rod (D). After making sure all loose objects are clear of the car's internal moving parts, Move toggle switch to "ON" (energize floor on electric model). Start the engine (gas model).

CAUTION: CARE MUST BE MAINTAINED AT THIS TIME AS THE DRIVE UNIT HAS BEEN ACTIVATED AND MOVING DRIVE BELTS, ETC. ARE EXPOSED. BEWARE OF LOOSE CLOTHING, LONG HAIR, TOOLS, ETC.

Rotate control rod (F) right or left to center bell crank (B) in neutral position. Move toggle switch (gas model) to (OFF), (de-energize floor on electric model) being careful not to move rod (F), tighten nuts (40.1 and (40.2). Move toggle switch to (ON). Restart engine (gas model). Push steering lever to forward and reverse positions and release. The spring loaded plunger assembly will allow the lever to return to the neutral position. If adjusted properly, the drive wheel will stop. If the drive wheel continues to rotate, repeat the above procedure.

CAR SPEED ADJUSTMENT. (FIG 4)

Back off nuts (18.4-b) towards hex head of plunger bolt (D) until washer (18.5) does not make contact with point (E) on plunger housing. CAUTION: THE STEERING LEVER (A) TRAVEL SHOULD NOT BE STOPPED BY THE HYDROSTATIC TRANSMISSION BELL CRANK (B). DAMAGE WILL OCCUR TO THE TRANSMISSION IF ALLOWED TO OPERATE IN THIS MANNER. Adjust nuts (18.4-B) away from plunger bolt (D) hex head until washers (18.5) make a solid contact with point (E) of plunger housing and adjust 1/6th turn or one nut flat further. SEAT THROTTLE LEVER ADJUSTMENT. (gas model only, engine running).

Check engine RPM with wire tachometer (read tach. instructions) in operating mode, seat throttle lever depressed. Engine RPM should be 3100. Note position of the adjusting bolt in the lower leg of the seat throttle lever. Bolt should be firm against stop with lock nut secured. If RPM is above or below 3100 on wire tachometer, readjust bolt to maintain 3100 RPM.

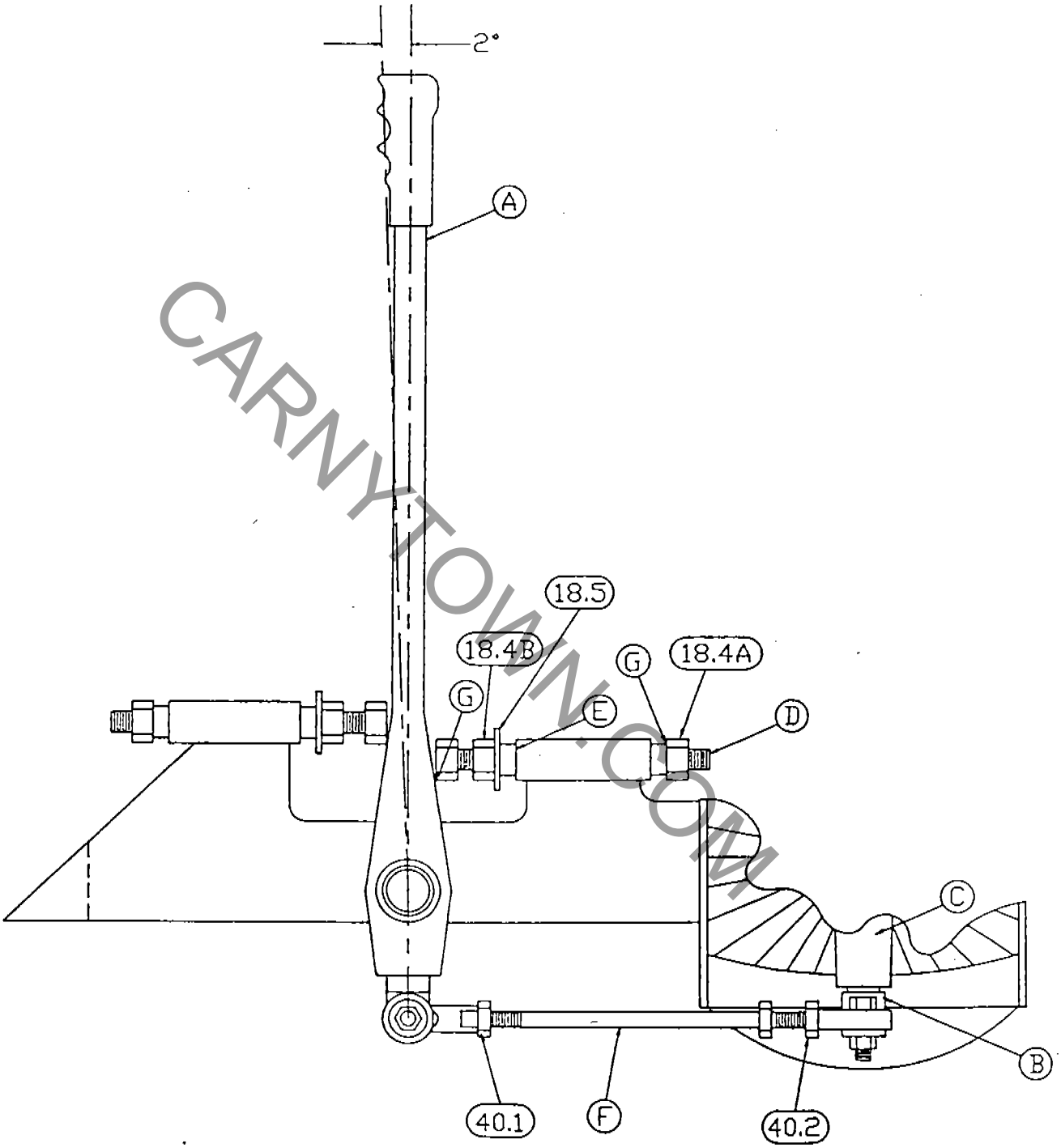


FIG. 4

REMOVAL AND INSTALLATION OF AIR BLADDER
FIG. 5

1..... With bladder deflated, remove upper cable clamp "A"and pull the cover bead cables out of the frame. Do not remove cable from the cover.

2..... Remove valve stem lock nut "C" and washer "B", push valve stem free of stem hole. Work air bladder up through cover. Take care not to puncture bladder.

3..... Inflate new air bladder to 1 p.s.i. and silicone entire surface.

4..... Silicone inside of bladder cover and area on car frame where bladder makes contact.

5..... Position bladder on floor with valve stem pointing up or parallel to the floor.

6..... Laying bladder on car frame, insert valve stem through stem hole in car frame and secure with washer and nut.

7..... Carefully work bladder down over car frame while bringing cover over outside of bladder. Note. Make certain valve stem remains centered in hole.

8..... Continue working bladder down on car frame leaving a clearance of 1" under top ring. Insert cover bead cables through stem hole. Secure cover by tightening and clamping cable. Use special cable tool, (supplied).

9..... Inflate bladder to 6 psi. Inspect cover for symmetry, then reduce air pressure to 1-1/2 psi at 65 deg. f.
NOTE: MAXIMUM PSI. (3# GAS), (2.5# ELECTRIC).

INSTALLING AIR BLADDER & COVER

1....Insert lower 1/8" cable through 1/2" round hole & pull loose ends together until snugly fit against the car frame wall and lying tightly against the perimeter.

2....Pull lower cable taut for absolute bearing around the car frame (using special cable tool, supplied) and install cable clamp without relaxing pressure on the cable.

3....For installation of air bladder refer to "REMOVAL AND INSTALLATION OF AIR BLADDER.

4....Insert upper cable as in Step 1.

5....Install upper cable clamp as in Step 1.

6....Inflate bladder to 6 PSI. Inspect cover for symmetry, then reduce air pressure to 1-1/2 PSI at 65 deg. F.

NOTE: DO NOT OPERATE CARS WITH BLADDERS INFLATED ABOVE 2.5 PSI MAXIMUM. (ELECTRIC). 3 PSI (GAS).

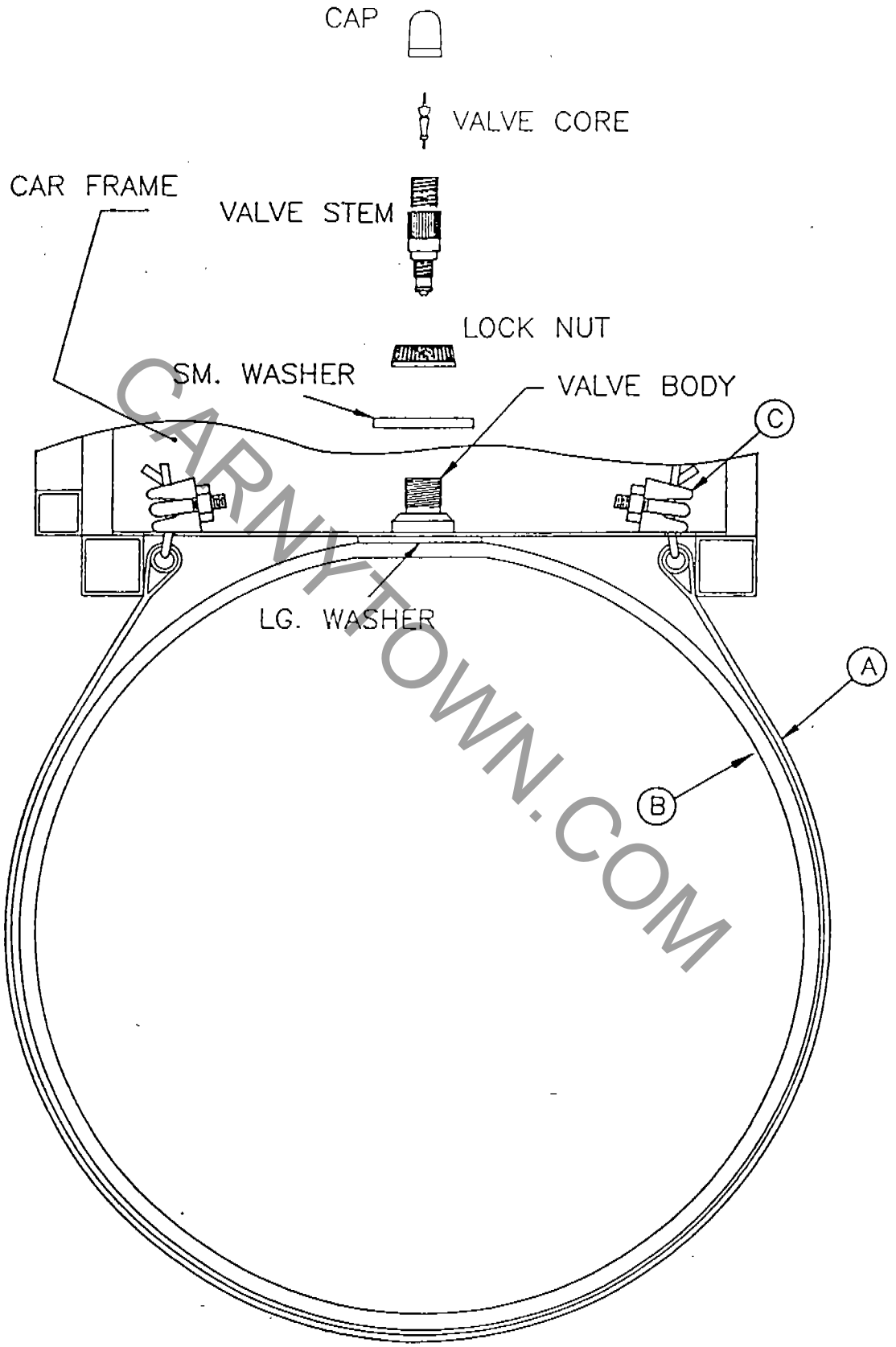


FIG. 5

LUBRICATION INSTRUCTIONS

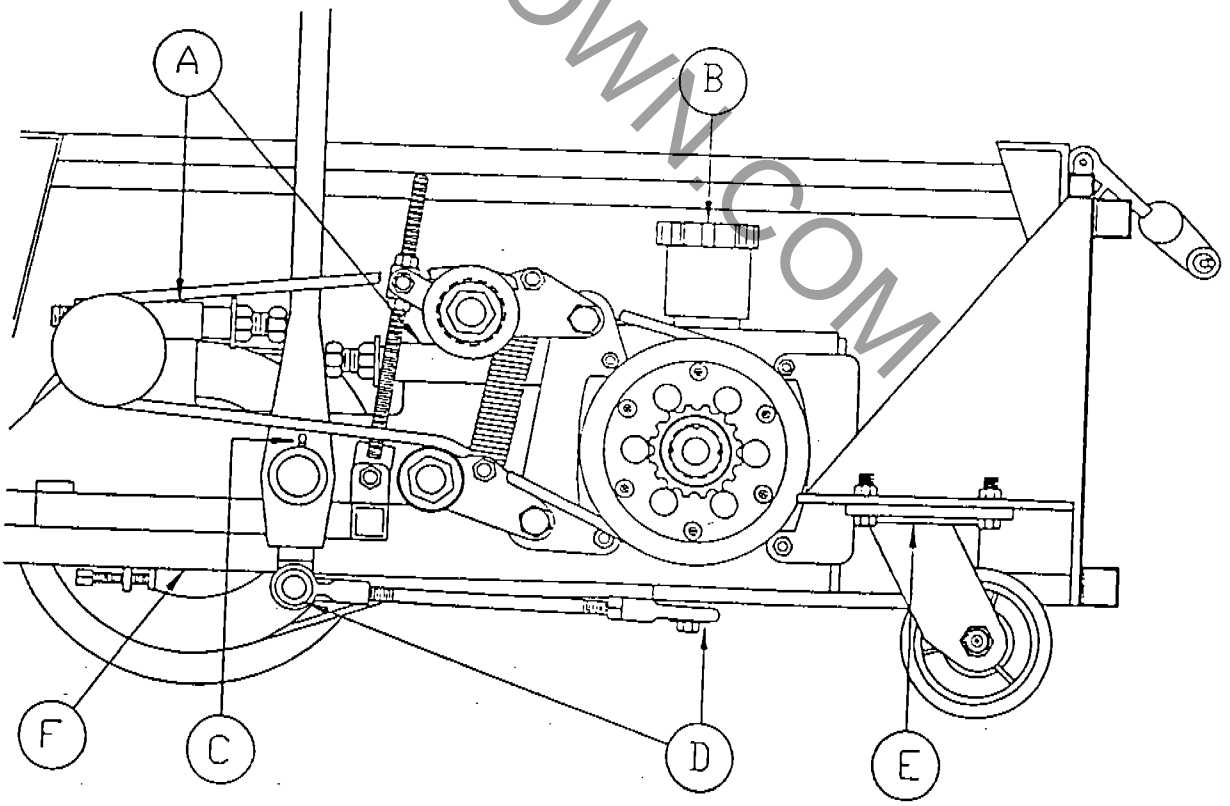
LUBE POINT	TYPE	FREQUENCY
A..CONTROL LEVER PLUNGERS (4)	SAE 30	DAILY
B..TRANSMISSIONS * (2)	SAE 30, SE-SF RATED	DAILY
C..CONTROL LEVER BUSHINGS (2)	BEARING LUBE	DAILY
D..CONTROL LINK ROD ENDS (4)	SAE 30	DAILY
E..CASTER BEARINGS (2)	BEARING LUBE	BI-WEEKLY
F..WHEEL BEARING ** (4)	WHEEL BEARING GREASE	YEARLY

* It is imperative that the transmission fluid be maintained at proper level (check when cold) and contaminant free. It is recommeded that the fluid be changed every 100 hours of operation. (Capacity, .15 gal., 19.2 fl. oz.)

** See "PREVENTIVE MAINTENANCE" for this service.

DAILY = 8 hrs. actual operating time.

NOTE: Do not over-lubricate. Wipe off excess lubricants to prevent floor contamination.



SERVICE AND LUBRICATION

The KRAZY KAR, like any piece of quality equipment, was designed and equipped with the finest materials available to withstand the environment and conditions in various areas of operation. The necessity of routine maintenance is of utmost importance to assure trouble free operation and reliability of your units. It is strongly recommended that you familiarize yourself with all documentation and maintenance procedures included with your unit.

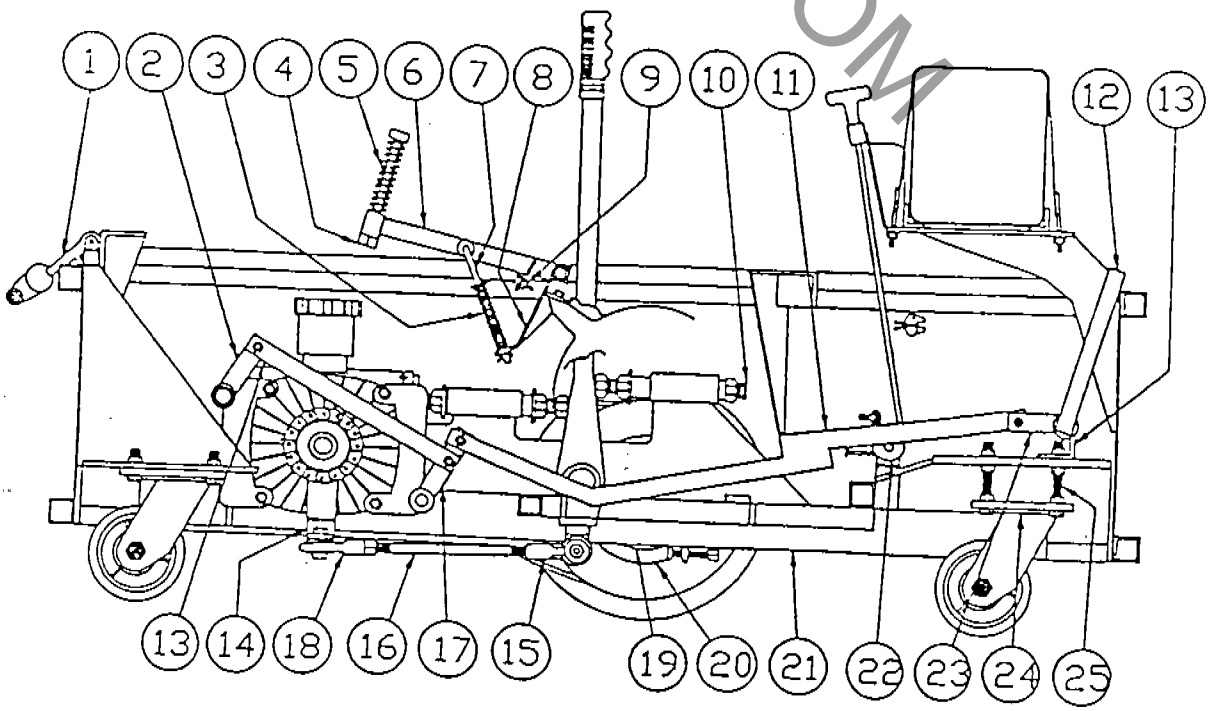
Among referenced maintenance areas, the following are critical for trouble-free and safe operation.

SUGGESTED ROUTINE MAINTENANCE AREAS

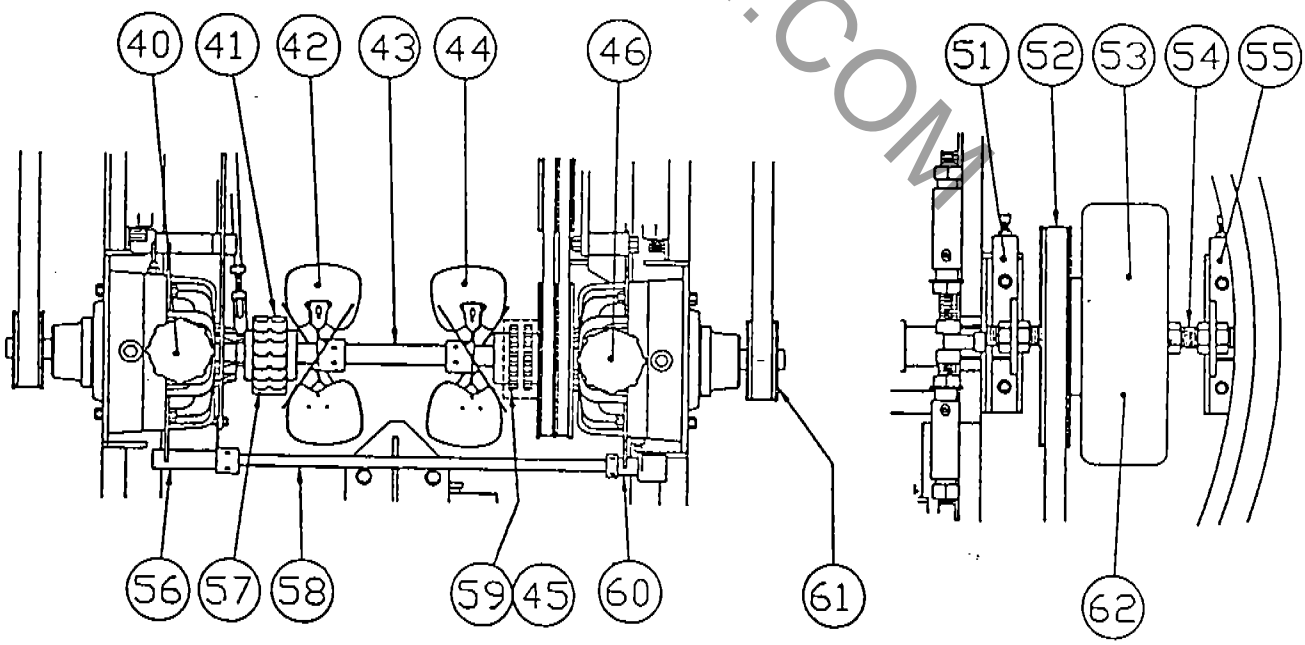
	GAS	ELEC.
1....Hydrostatic Transmission fluid.	D	D
2....Engine & Reduction unit fluids.	D	
3....Bearings & Linkage lubrication.	D	D
4....Bladder air pressure.	D	D
5....Bladder cover condition.	B-W	B-W
6....Tire pressure and condition.	B-W	B-W
7....Belt tension and condition.	D	D
8....Caster wheel floor clearance.	W	W
9....Operator / rider seat restraint.	D	D
10...Steering lever adjustments.	W	W
11...Floor contacts, wear.		W
12...Floor condition. (clean).	D	D
13...Fuel filter.	W	
14...Air filter.	W	
15...Steering controls.	B-W	B-W
16...Loose fasteners.	D	D
17...Hood latches and socket condition.	W	W
18...Transmission cooling fins. (clean)	W	W
19...Transmission cooling fans. (bent)	W	W
20...Bumper condition.(clean & silicone)	D	D
21...Neutral plunger. (lubricate).	D	D
22...Primary drive idler. (lubricate).	3	3
23...Control link rod ends. (lubricate).	D	D
24...Car interior. (clean)	D	D
25...Internal linkages and fasteners	D	D
26...External finishes (clean & wax)	B-W	B-W
27...Safety decal.(illegible or missing)	D	D
28...Caster adjustment (3/8" clearance to floor.	W	W

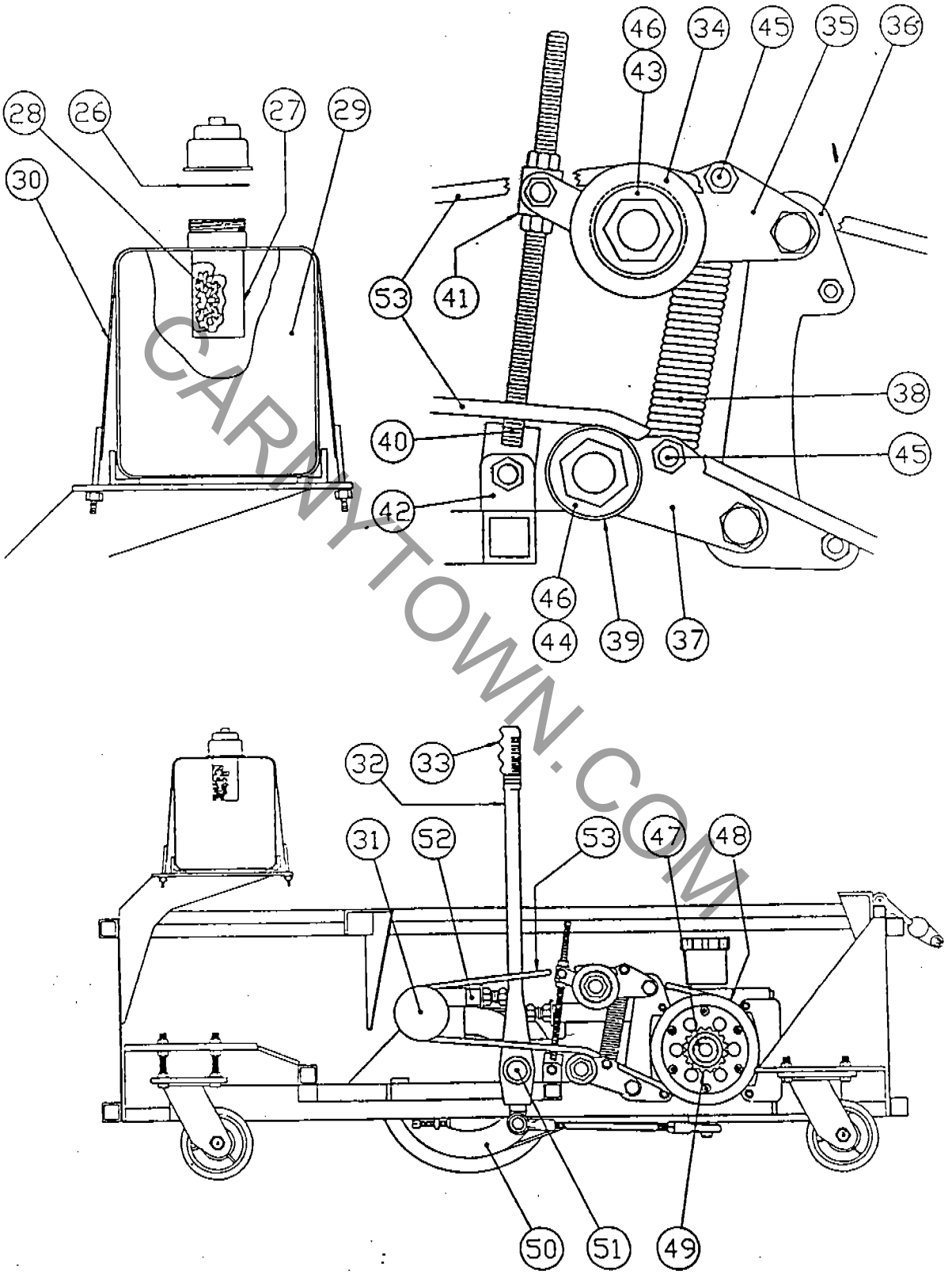
D = daily, W = weekly, B-W = bi-weekly, 3 = 3 months

REF. NO.	PART NO.	DESCRIPTION OF PARTS	QTY USED
1	KCGE2-23	HOOD LATCH STRAP W/SOCKET	4
2	KCGE1-06	NEUTRAL CONTROL LEVER, SHORT	1
3	KCG2-42	THROTTLE LEVER ROD SPRING	1
4		THROTTLE LEVER BOLT W/LOCK NUT	1
5	KCG2-41	SEAT THROTTLE SPRING	1 EA
6	KCG1-10	SEAT THROTTLE LEVER	1
7	KCG1-22	THORTTLE LEVER SPRING ROD	1
8	KCG1-04	THROTTLE LEVER BRACKET	1
9		THROTTLE LEVER ROD ADJUSTING BOLT W/NUT	1
10	KC2-41	NEUTRALIZING BOLT	1 EA
11	KCGE1-02	NEUTRAL CONTROL LINK, LONG	4
12	KCGE1-05	NEUTRAL CONTROL LEVER	1
13	KCGE1-14	NEUTRAL CONTROL LINK, SHORT	1
14	KCGE1-08	BELL CRANK, TRANSMISSION	1
15	O-788	ROD END, R.H.	2
16	KCGE1-34	SHIFTING LINK	2
17	KCGE1-07	NEUTRAL CONTROL LEVER, LONG	2
18	O-789	ROD END, L.H.	1
19	KCGE3-16	BRAKE DRUM, W/INSERT	2
20	KCGE3-15	DRIVE WHEEL	2
21	KCG1-0	BASE FRAME	2
22	KCG1-27	START ROPE IDLER SHEAVE	1
23	KCGE1-17	NEUTRAL CONTROL LEVER ROD	1
24	KC1-4	CASTER WHEEL ASSEMBLY	1
25	KCGE1-47	CASTER ADJUSTING BOLT	2
			4

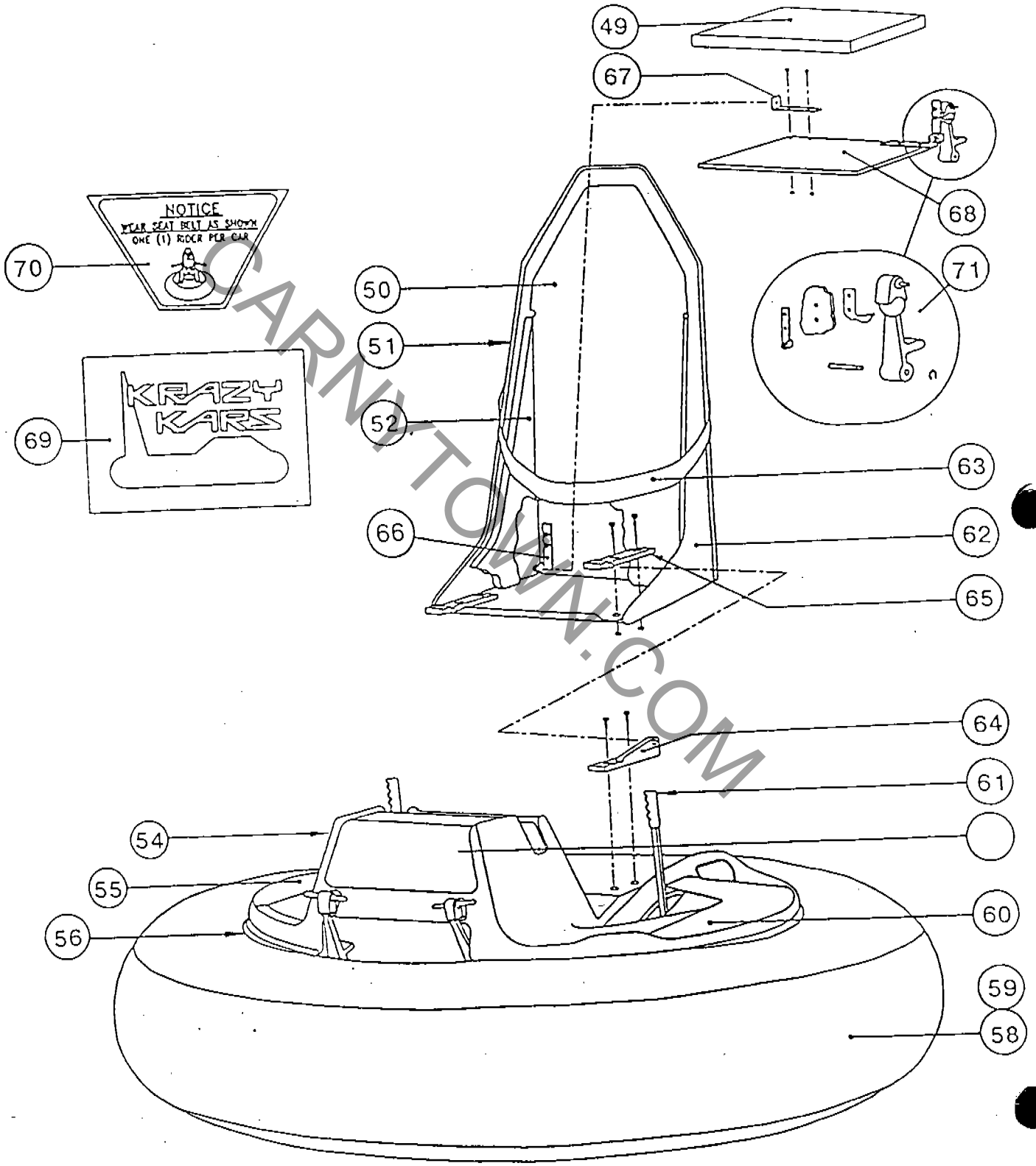


REF. NO.	PART NO.	DESCRIPTION OF PART	QTY USED
40	KC1-2	HYDROSTATIC TRANSMISSION, "CCW"	1
41	KCGE2-07	COUPLING CHAIN (NYLON, 16 LINKS)	2
42	KCGE2-031	TRANSMISSION COOLING FAN "CW"	1
43	KCGE1-29	TRANSMISSION COUNTERSHAFT	1
44	KCGE2-032	TRANSMISSION COOLING FAN "CCW"	1
45	KCGE2-08	COUPLING SPROCKET BUSHING (NOT SHOWN)	2
46	KC1-1	HYDROSTATIC TRANSMISSION, "CW"	1
51	KCGE1-032	DRIVE WHEEL AXEL SUPPORT, L.H.	2
52	KCGE2-10	DRIVE BELT, FINAL	2
53	KCG2-02	DRIVE TIRE	2
54	KCGE1-30	DRIVE WHEEL AXEL	2
55	KCGE1-031	DRIVE WHEEL AXEL SUPPORT, R.H.	2
56	KCGE1-23	NEUTRAL ROD BRACKET, LONG	2
57	KCGE3-09	TRANS. COUPLING SPROCKET	1
58	KCGE1-15	NEUTRAL ROD, LONG	1
59	KCGE2-05	COUPLING SPROCKET	3
60	KCGE1-24	NEUTRAL ROD BRACKET, SHORT	1
61	KCGE2-12	TRANSMISSION OUTPUT SPROCKET	2
62	KCGE2-03	DRIVE TIRE INNER TUBE (NOT SHOWN)	2
63			
64			





REF NO.	PART NO.	DESCRIPTION OF PART	QTY USED
26	KCG1-49	FUEL TANK CAP GASKET	1
27	KCG1-48	FUEL TANK BAFFLE TUBE	1
28	KCG3-14	FUEL FILLER BAFFLE	1
29	KCG3-07	FUEL TANK	1
30	KCG1-26	FUEL TANK BAND	2
31	KCG2-11	ENGINE OUTPUT SPROKET	1
32	KCGE1-01	STEERING LEVER	2
33	KCGE2-50	STEERING LEVER HAND GRIP	2
34	KCGE3-74	PRIMARY DRIVE IDLER SHEAVE	1
35	KCGE1-71	PRIMARY DRIVE SHEAVE PLATE	1
36	KCGE1-70	PRIMARY DRIVE IDLER BRACKET	1
37	KCGE1-72	PRIMARY DRIVE IDLER PLATE	1
38	KCGE1-79	SPRING, TENSION IDLER	1
39	KCGE1-73	PRIMARY DRIVE IDLER LOWER	1
40	KCGE1-76	ADJUSTER ROD	1
41	KCGE1-77	ADJUSTER COLLET	1
42	KCGE1-78	ADJUSTER ROD ANCHOR	1
43	KCGE1-80	SHEAVE SPACER, UPPER	1
44	KCGE1-75	IDLER, SPACER LOWER	1
45	KCGE3-81	ANCHOR STUD, TENSION SPRING	2
46	KCGE2-82	BEARING, IDLER, UPPER & LOWER	4
47	KCGE3-12	TRANS. INPUT SPROCKET BUSHING	1
48	KCG3-08	TRANSMISSION INPUT SPROCKET	1
49	KCGE2-06	COUPLING SPROCKET W/ ADAPTER PLATE	1
50	KCGE3-17	DRIVE WHEEL BELT SPROCKET	1
51	KCGE2-25	STEERING LEVER BUSHING (NOT SHOWN)	2
52	KC2-36	PLUNGER SLEEVE (STEERING)	2
53	KCE2-83	PRIMARY DRIVE BELT (3V 375)	2
53	KCG2-83	PRIMARY DRIVE BELT (3V 475)	2



REF. NO.	PART NO.	DESCRIPTION OF PART	QTY. USED
49	KCG2-22	SEAT PAD	1
50	KCGE2-20	SEAT BACK CUSHION	1
51	KCGE2-28	SEAT SHELL TRIM	1
52	KCGE2-21	SEAT HIP PAD	2
53			1
54	KCE1-36	BODY SHELL	1
55	KCGE2-381	NON SKID PATCH RH	1
56	KCGE2-29	BODY SHELL TRIM	1
58	KCGE2-19	BLADDER COVER	1
59	KCGE2-18	BLADDER (NOT SHOWN)	1
60	KCGE1-382	NON SKID PATCH LH	1
61	KCGE2-50	STEERING LEVER HAND GRIP	2
62	KCGE1-37	SEAT SHELL, FIBERGLASS	1
63	KCGE2-27	SEAT RESTRAINT BELT	1
64	KCGE1-12	HINGE BRACKET, BODY	2
65	KCGE1-13	HINGE BRACKET, SEAT	2
66	KCG1-20	SEAT THROTTLE BOARD HINGE PLATE	2
67	KCG1-21.1	SEAT THROTTLE HINGE BRACKET, RH (21.2 LH)	1
68	KCG1-32	SEAT THROTTLE BOARD	1
69	KCGE2-48	KRAZY KARS DECAL (BACK OF SEAT)	1
70	KCGE2-26	SAFETY DECAL	1
71	KCGE2-23	HOOD LATCH ASSEMBLY	4