SERVICE MANUAL

Roughrider

McKEE BROS. LTD.

ELMIRA - ONTARIO

A Division of Durish Investment Corp. Ltd.

1200-7-70 RB.

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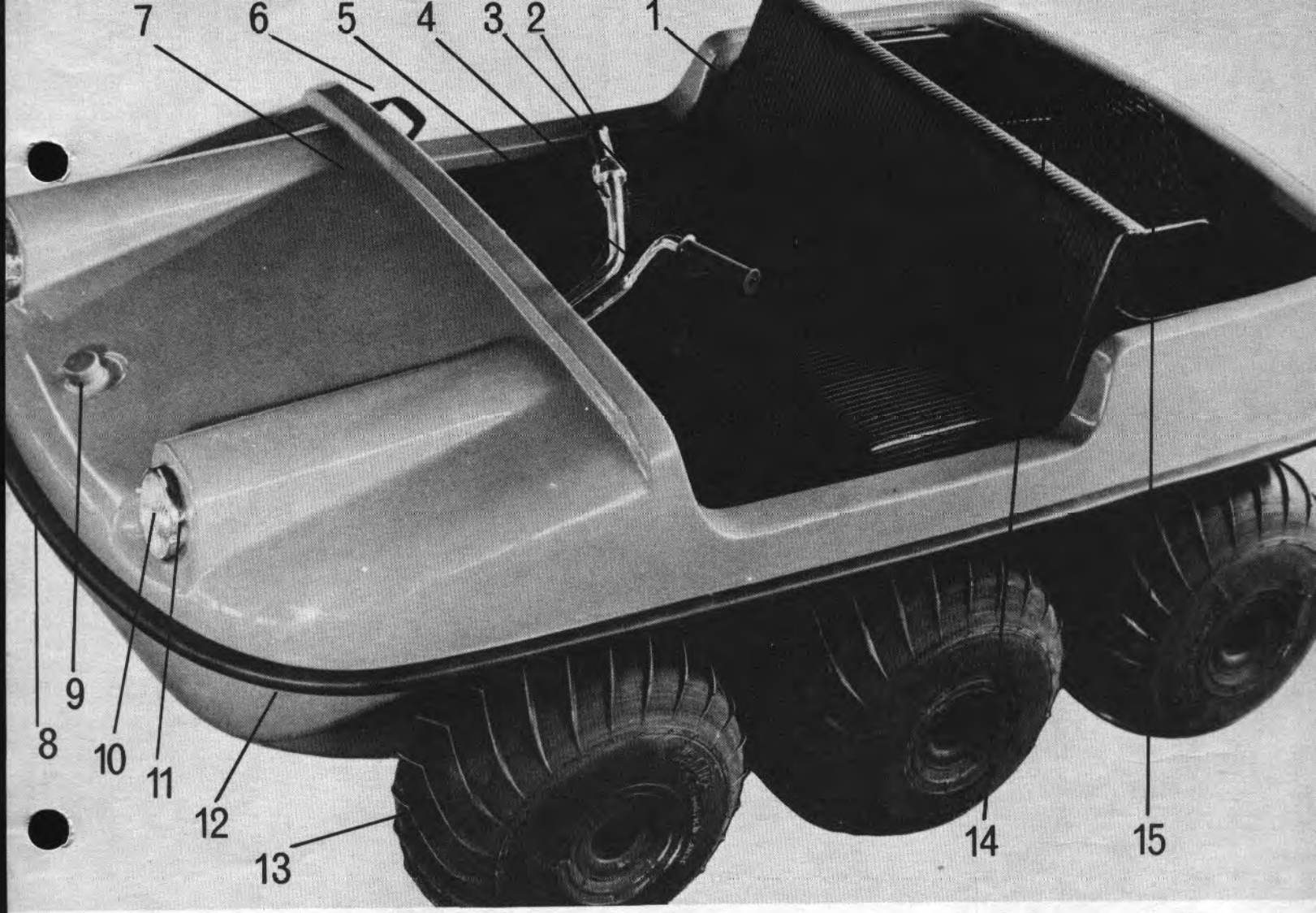

Illus. No.	Part No.	Description	Qty.
1	55-225A	Front Seat	1
2	55-209	Accelerator Grip	1
3	55-211	Steering Grip	1
4	55-193A	R.H. Steering Handle	1
5	55-194A	L.H. Steering Handle	1
6	55-231	Dash Handle	1
7	55-218	Upper Body	1
8	55-136	Rubber Bumper	1
9	55-254	Gas Tank Cap	1
10	55-135	Seal Beam	2
11	55-135	Seal Beam Rim	2
12	55-217	Lower Body	1
13	55-116	Hyflex Tires	6 (3 L.H. 3 R.H.)
14	55-240	Screen	1
15	55-156	Rear Tray	1

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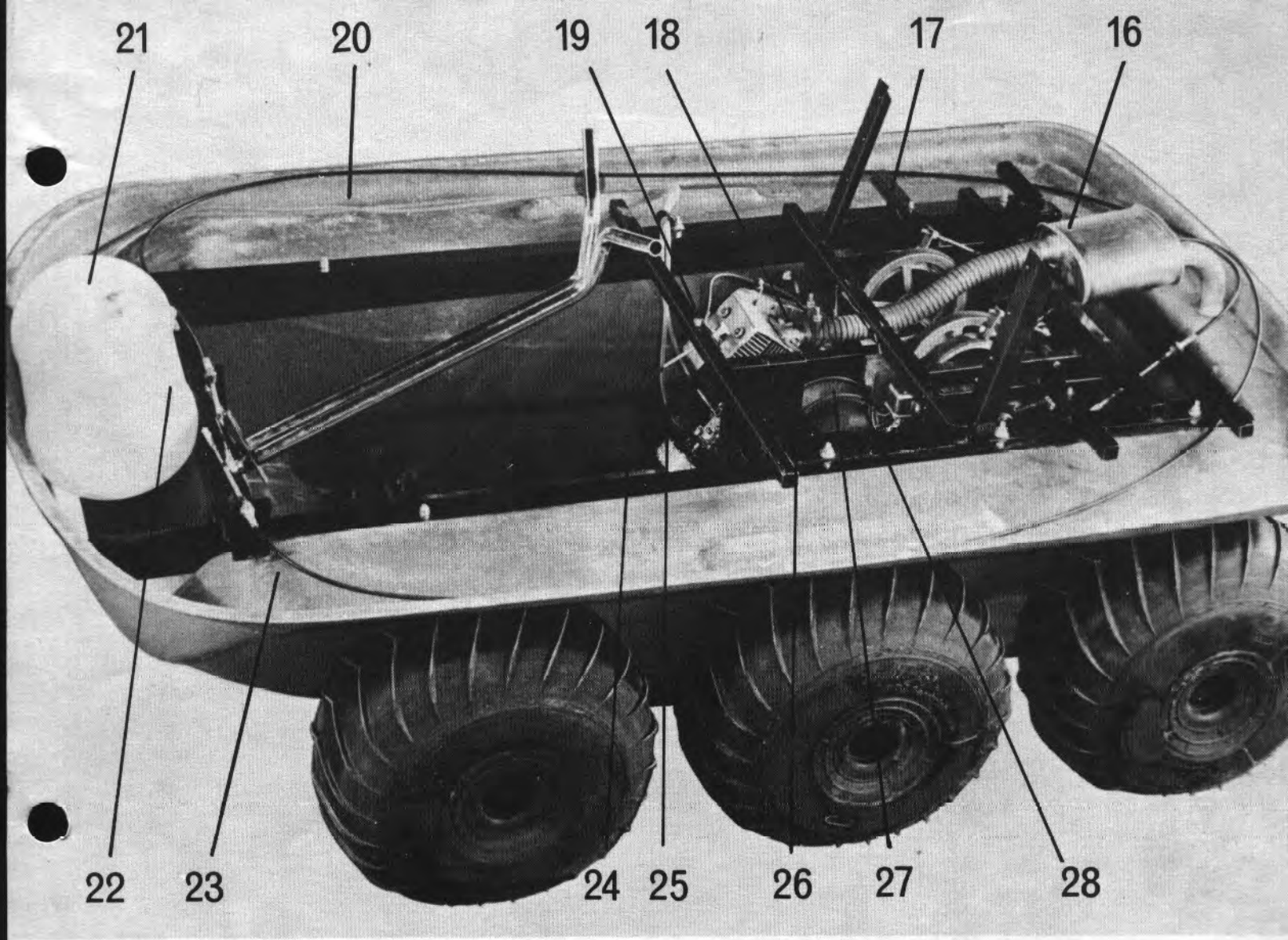

Illus. No.	Part No.	Description	Qty.
16	55-286A	Muffler	1
17	55-063	Drive Belts	2
18	55-153	Flexible Exhaust Pipe	1
19	55-212	Choke	1
20	55-208	Gas Line	2
21	55-253	Gas Tank (3 Gal.)	1
22	55-213	R.H. Steering Cable	1
23	55-214	L.H. Steering Cable	1
24	55-221	Air Filter	1
25	55-220	Carburetor	1
26	55-083	Torque Convertor	1
27	55-226	Rectifier	1
28	55-227	Starter Relay	1

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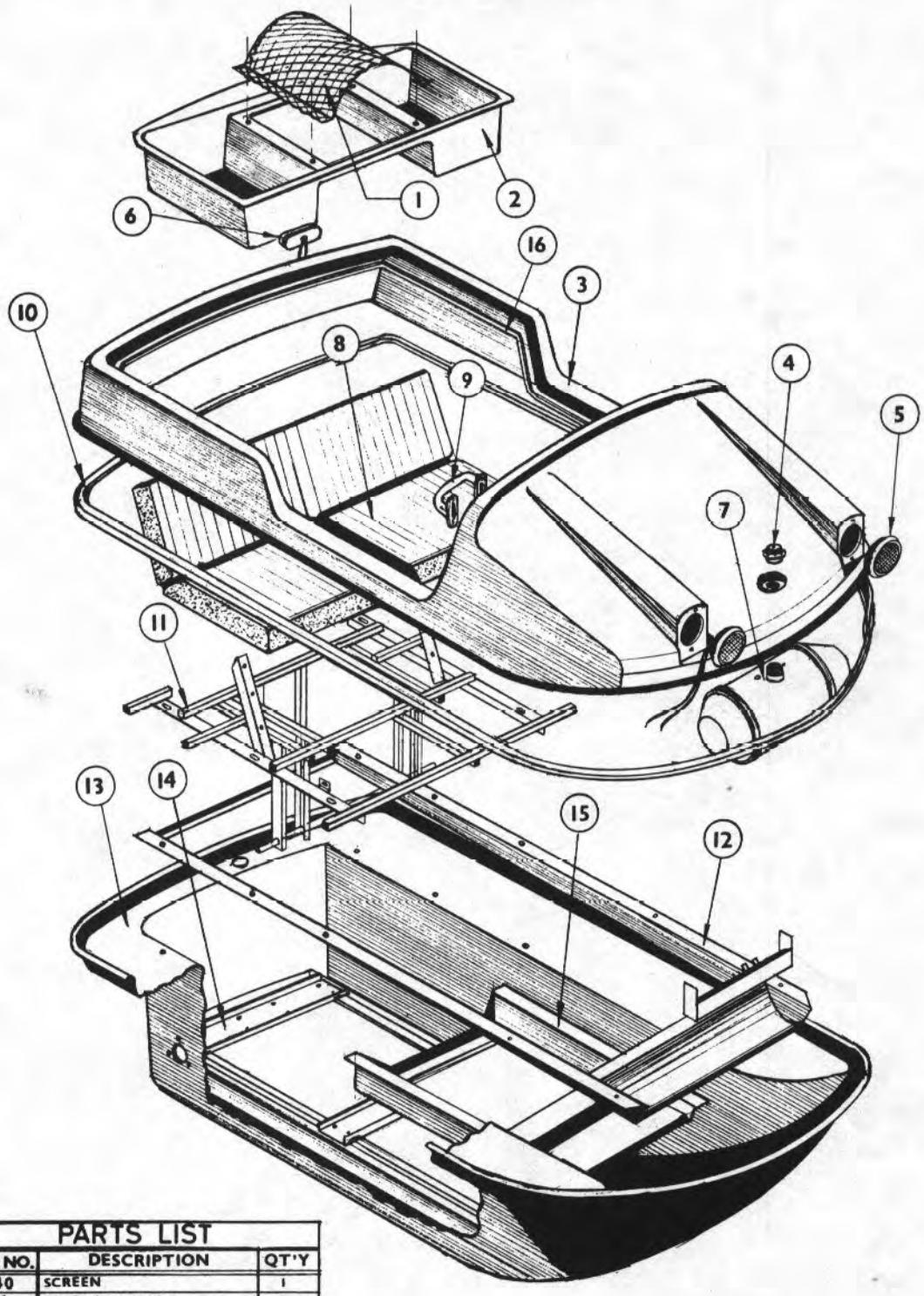
BODY ASSEMBLY



PARTS LIST

REF.NO.	PART NO.	DESCRIPTION	QT'Y
1	55-240	SCREEN	1
2	55-156	REAR DECK TRAY	1
3	55-218	UPPER BODY SHELL	1
4	55-254	FUEL CAP	1
5	55-135	HEADLIGHT	2
6	55-230	TAIL LIGHT	1
7	55-253	FUEL TANK	1
8	55-225A	SEAT ASSEMBLY	1
9	55-231	CHROME HANDLE	1
10	55-136	OUTSIDE TRIM MOULDING	1
11	55-001A	FRAME ASSEMBLY	1
12	55-140A	TOP FRAME ASSEMBLY	1
13	55-217	LOWER BODY SHELL	1
14	55-181A	BEARING FRAME	1
15	55-163	FLOOR BOARD	1
16	55-137	INSIDE TRIM	1

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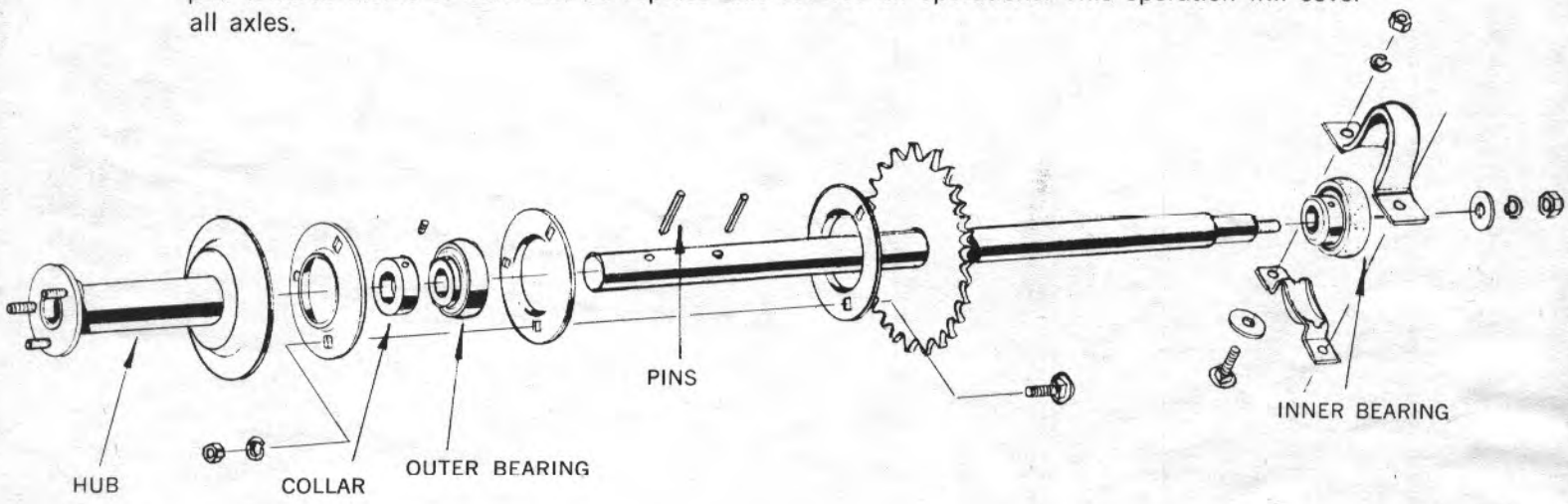
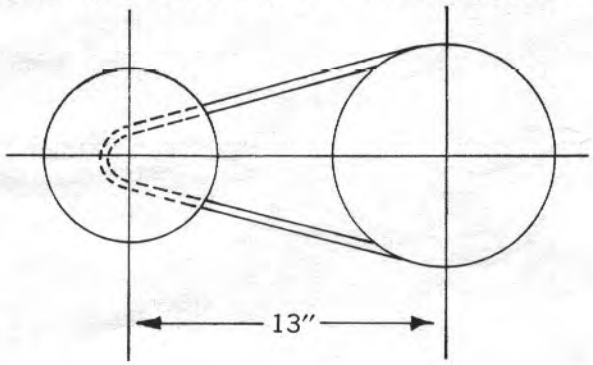
REMOVE AND REPLACE AXLE

Elevate machine to clear tires from ground. Use half inch socket 6" extension to remove tire. Remove drive pins from hub with a 5/16" punch, slide hub from axle. Loosen set screw on collar with 1/8" Allen wrench. Rotate collar in clockwise rotation to forward motion of axle. Remove chain lock and chain. Remove two bolts holding inner bearing to frame, lift the inside of axle and pull towards inside of machine. To replace axle reverse all operations. This operation will cover all axles.



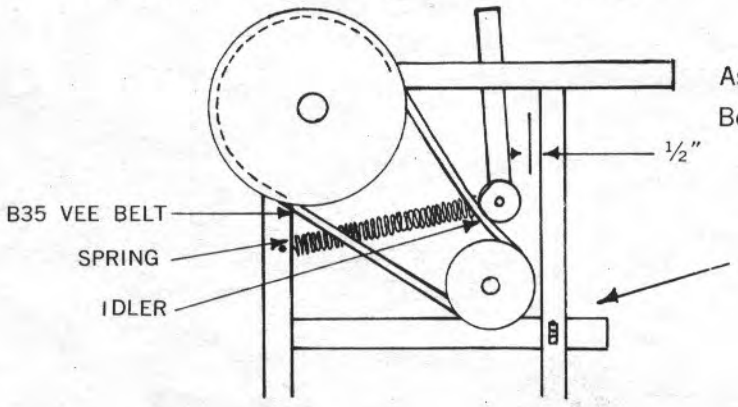
ENGINE TO TORQUE CONVERTOR TRANSMISSION



To adjust center distance, loosen nuts on rubber engine mounts and slide engine to correct position.

CLUTCH BELTS

Clutch belts are adjusted by moving countershaft support bracket "A" up or down. Adjustment should be made so that idler pulleys run approximately 1/2" inside frame upright as shown. Use a piece of 1/2" thick material as a gauge.



As belts wear, adjust position of countershaft downward. Belts will require adjustment after initial wear-in period.

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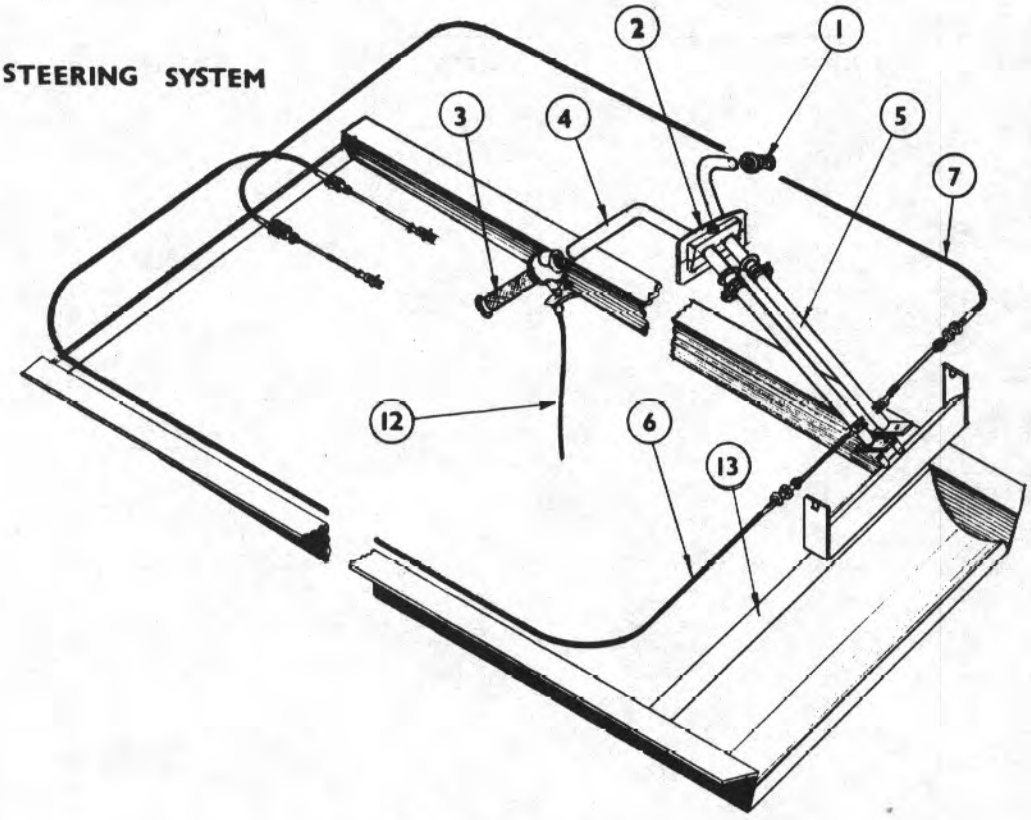
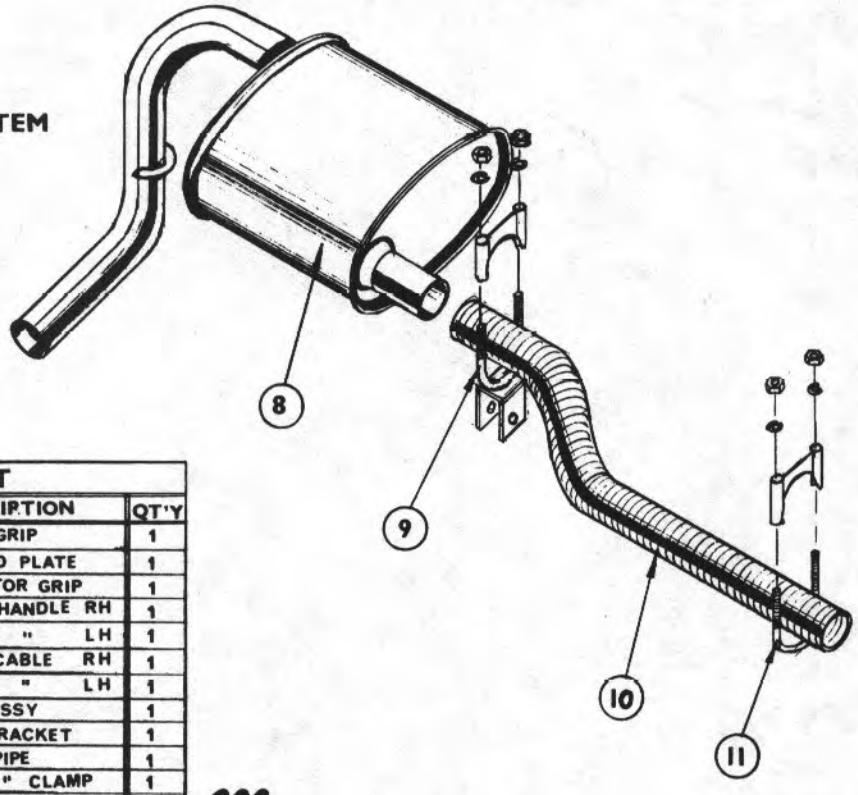
STEERING AND EXHAUST SYSTEMS

STEERING SYSTEM



EXHAUST SYSTEM



PARTS LIST			
REF.NO.	PART NO.	DESCRIPTION	QT'Y
1	55-211	STEERING GRIP	1
2	55-238	DASHBOARD PLATE	1
3	55-209	ACCELERATOR GRIP	1
4	55-193A	STEERING HANDLE RH	1
5	55-194A	" " LH	1
6	55-213	" CABLE RH	1
7	55-214	" " LH	1
8	55-286A	MUFFLER ASSY	1
9	55-248A	" BRACKET	1
10	55-153	EXHAUST PIPE	1
11	55-250	" " CLAMP	1
12	55-210	ACCELERATOR CABLE	1
13	55-140A	TOP FRAME ASSY	1

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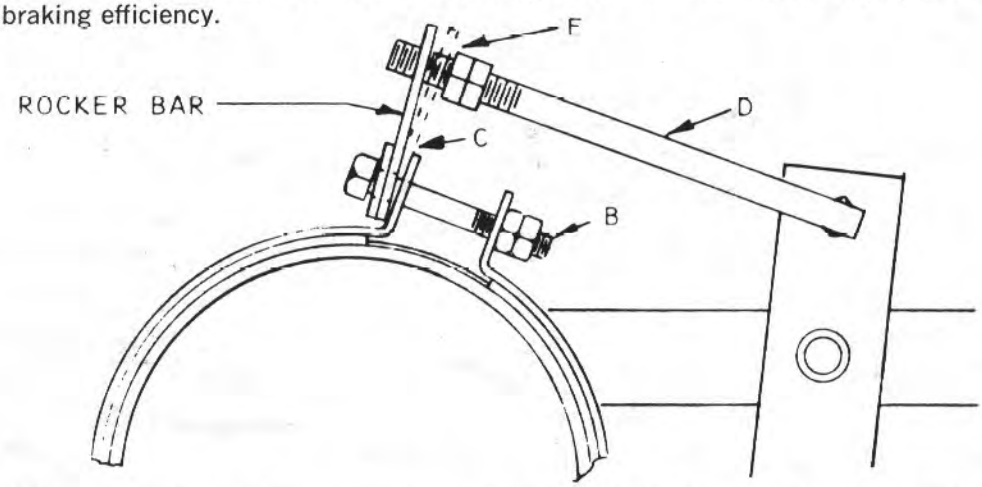
BRAKE ADJUSTMENT

Tighten bolt "B" to the point where the rocker bar can be sprung back to leave a ⅛" opening at "C" while the brake band is clamped tight. Do not set bolt too tightly as this will decrease braking efficiency.

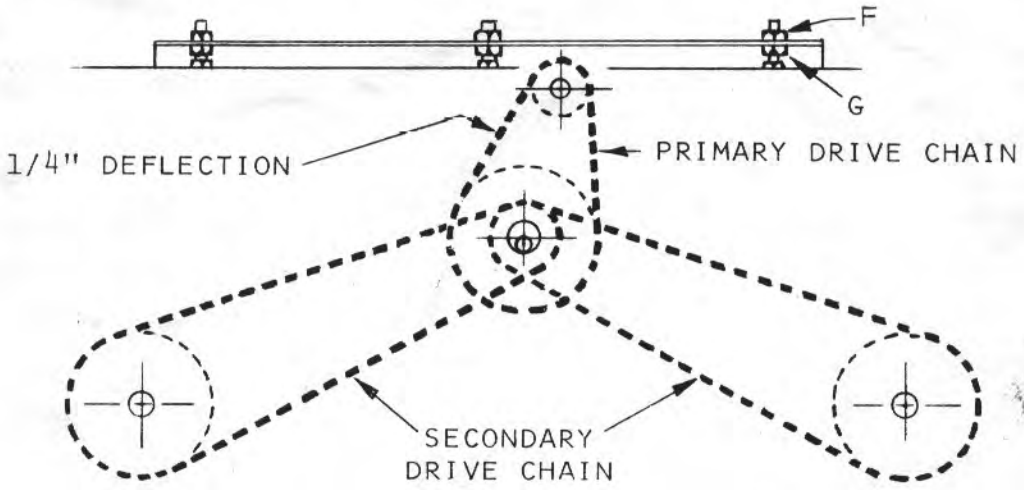


After rocker bar is properly adjusted, set jam nuts on Brake rods "D" so that there is 1/16" clearance at "E" with rocker bar in position shown by dotted lines.

Note:
The brakes will require adjustment after first few hours use.

CHAIN DRIVE

To adjust primary drive chain, loosen jam nut on inside end of cam shaft, insert a bar through hole in the shaft and rotate shaft forward until chain is at desired setting. This chain should have approximately ¼" deflection on slack side as shown. Always rotate cam shaft forward so that it is locked in the direction chain rotates.



To tighten secondary drive chains, first loosen the six nuts "F" on top of frame, then turn the lower nuts "G" upward to desired setting. Adjust each nut in sequence on both sides of frame. The slotted holes on frame allow chains to tighten equally.

Note:
Do not overtighten chains, allow approximately ¼" deflection on slack side.

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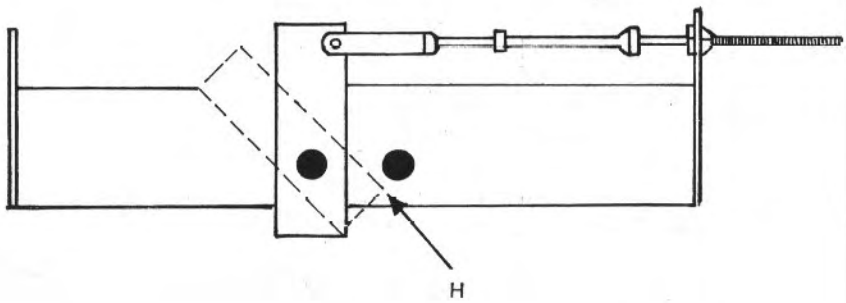
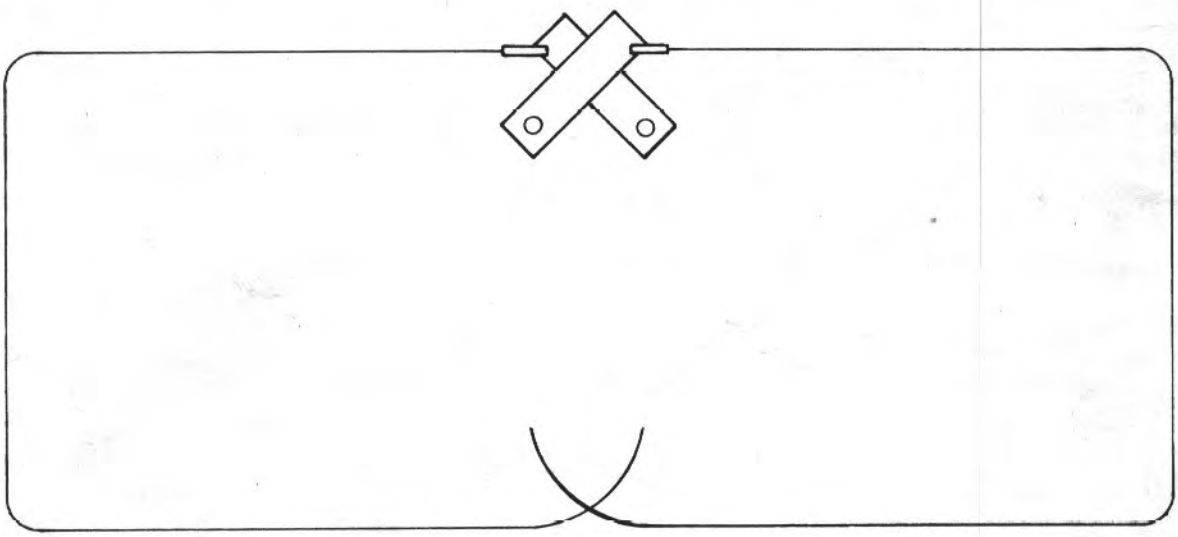
STEERING CONTROLS

Movement of either steering hand should be limited by the lug stopping against the opposite handle as shown at "H". Adjust cables so that this occurs with brakes on full. This will protect the cables and brakes from undue strain.



Note:

Cables cross over as shown. Right handle disengages right belt, causing machine to turn to the right. Pulling handle all the way down will lock the brake in a turn.



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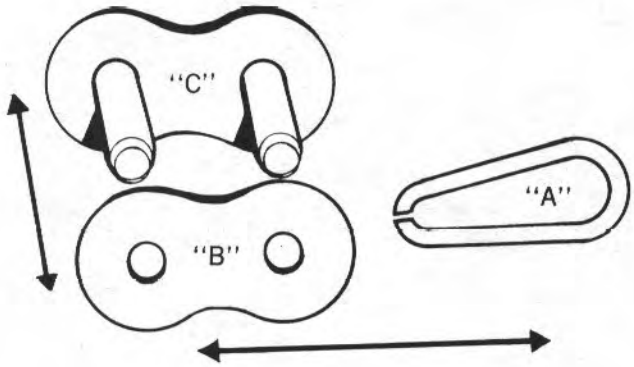
REPLACE MASTER LINK ASSEMBLY

1. Slide the lock off the master link "A".
2. Remove the connector plate "B".
3. Pull out the master link "C".



AIR FILTER

The air filter located on the top of the carburetor should be checked after every 25 hours of operating depending on the circumstances under which the vehicle is used. If the filter is clogged and is not changed, normal breathing is restricted causing serious wear and poor performance.

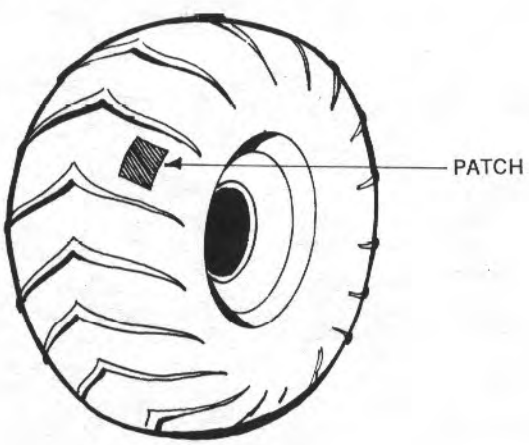
TIRE MAINTENANCE

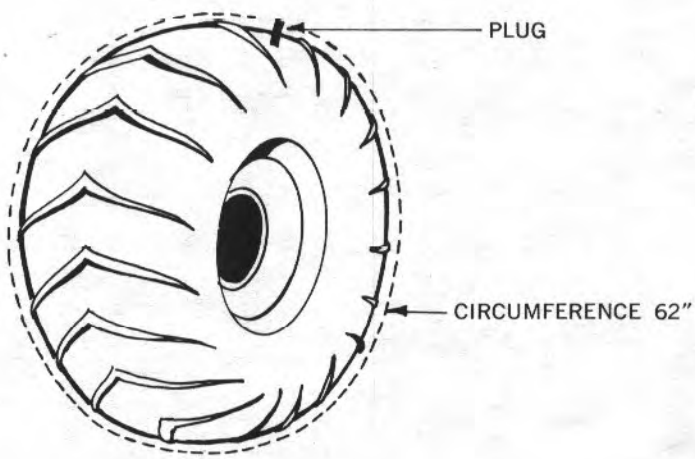
Tire pressure should be set at approximately 2 lbs. If a guage is not available, inflate the tire to a height of 20 inches. Do not over inflate as it will void the warranty of the tire manufacturer. Another method is to put a measuring tape around the tire and inflate to 62" circumference,

If a tire on one side of the vehicle is over-inflated, it will tend to veer in opposite direction requiring constant steering correction to maintain a straight course.

REPAIRING TIRES

Depending on the size of cut, patching can be done by a bicycle patch or a tubeless tire plug.





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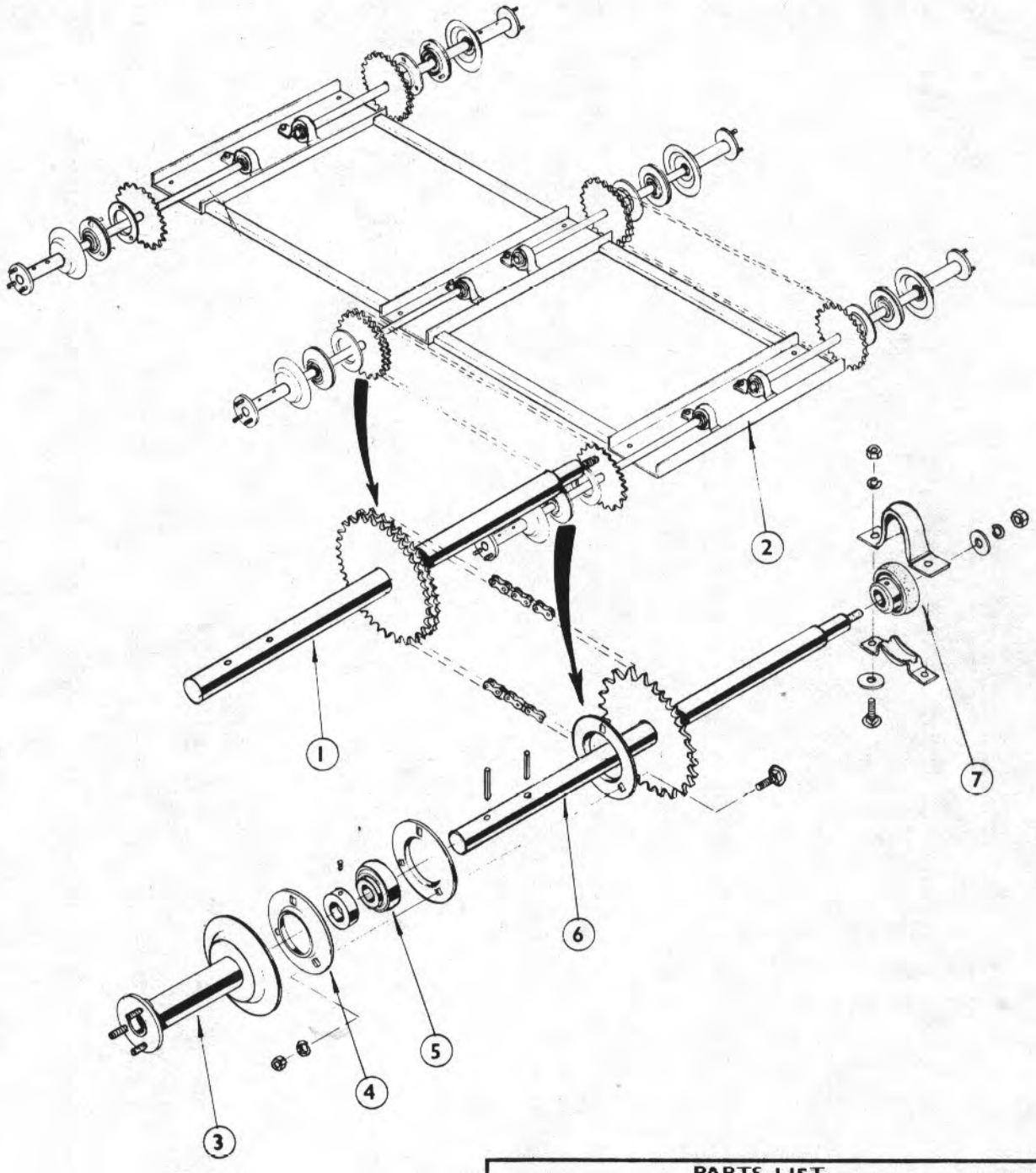
FRAME AND AXLE ASSEMBLY



PARTS LIST			
REF. NO.	PART NO.	DESCRIPTION	QT'Y
1	55-093A	CENTRE AXLE ASS'Y	2
2	55-181A	LOWER FRAME ASS'Y	1
3	55-203A	AXLE SLEEVE ASS'Y	6
4	K-001	FLANGETTE 52 MSCI	18
5	K14-001	OUTER BEARING 7/8 KOYO RA014-2RS C/W L.COLLAR	6
6	55-092A	FRONT/REAR AXLE ASS'Y	4
7	K12-002	INNER BEARING POLLARD LPBR 3/4"	6

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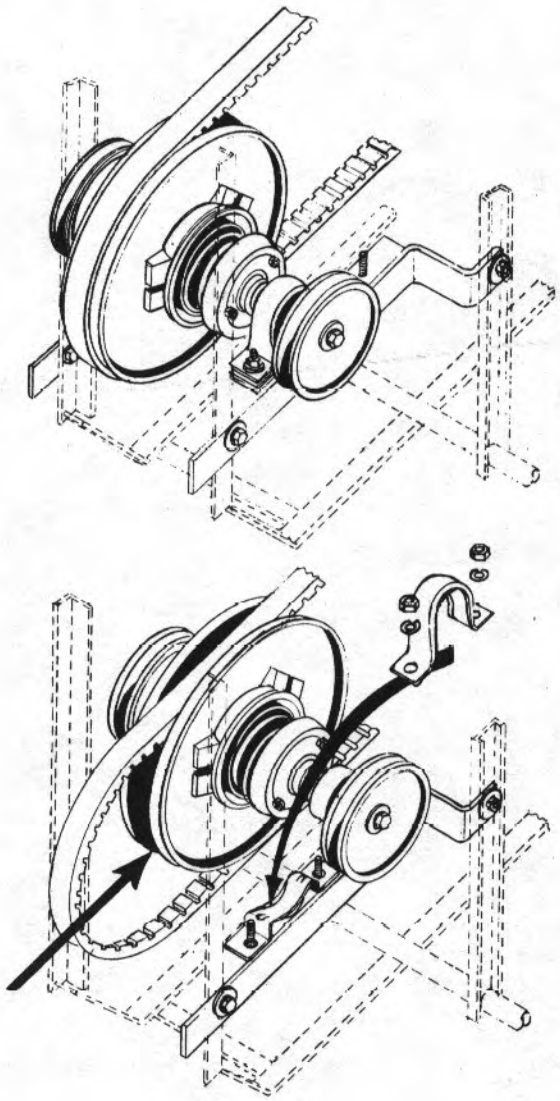
CHANGE TORQUE CONVERTER BELT



1. Remove 4 nuts holding the inner bearings on shaft of driven torque converter.
2. Slide torque converter assembly forward until belts fall free.
3. Slide belts off end of shaft.
4. Reverse steps to replace new belt.

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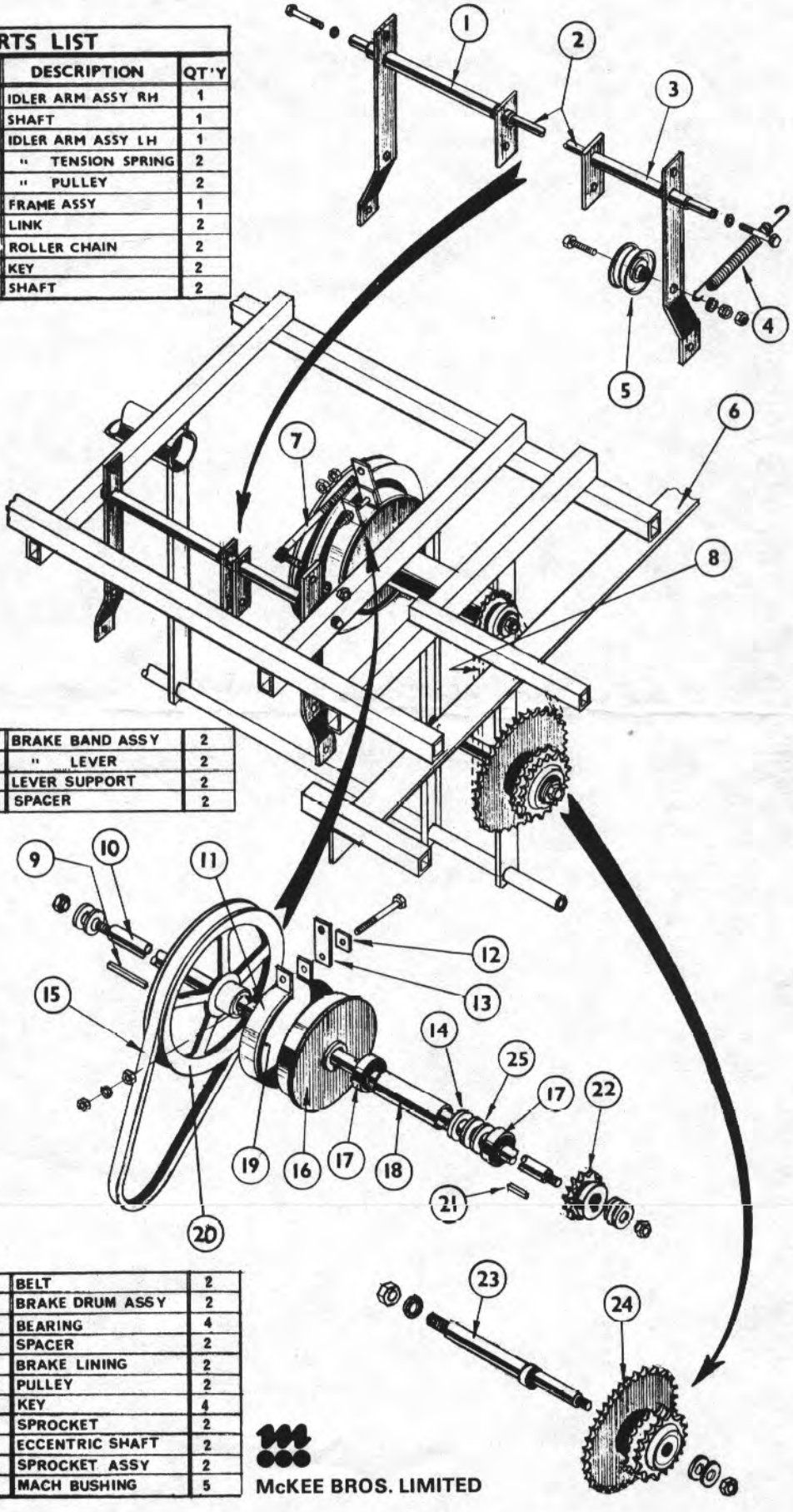
DRIVE TRAIN ASSEMBLY

PARTS LIST			
REF.NO.	PART NO.	DESCRIPTION	QT'Y
1	55-046A	IDLER ARM ASSY RH	1
2	55-052	SHAFT	1
3	55-201A	IDLER ARM ASSY LH	1
4	55-197	" TENSION SPRING	2
5	55-110	" PULLEY	2
6	55-001A	FRAME ASSY	1
7	55-179A	LINK	2
8	H40-51	ROLLER CHAIN	2
9	E33-9	KEY	2
10	55-067	SHAFT	2
11	55-173A	BRAKE BAND ASSY	2
12	55-182	" LEVER	2
13	55-183	LEVER SUPPORT	2
14	55-175	SPACER	2
15	55-063	BELT	2
16	55-069A	BRAKE DRUM ASSY	2
17	K10-001	BEARING	4
18	55-103	SPACER	2
19	55-147	BRAKE LINING	2
20	55-070	PULLEY	2
21	E33-3	KEY	4
22	55-096	SPROCKET	2
23	55-064	ECCENTRIC SHAFT	2
24	55-087A	SPROCKET ASSY	2
25	55-265	MACH BUSHING	5



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REPAIR BODY — FIBERGLASS

1. Be sure that the body is dry and clean where it is to be repaired.
2. (a) Where necessary cut back fractured material to sound part of the body.
   (b) Feather the hole, remove all paint and residue from area which patch will contact.
   (c) Where necessary form a suitable backing on which to build up new material.
3. Cut glass fabric or mat to shape and place on cellophane.
4. Prepare and activate, only enough resin to take care of a given patch.
5. Distribute the activated resin over the area of mat. Place another sheet of cellophane on top and with a blunt spreader squeegy the resin thoroughly through the mat being careful to work out all air entrapments.
6. Paint the area to be prepared with resin and put the patch in place. With your hands and the spreader, form the mat through the cellophane firmly into all contours.
7. After the resin has set, you may remove the cellophane, not before. Rough sand shiny surface before applying next patch.
8. After enough material has been laminated to re-establish the original thickness of the section, you are ready to sand and finish.

LUBRICATION

Normally the McKee all terrain vehicle requires no lubrication. All bearings are sealed etc. However, as the machine is amphibious, it will hold water if left out in the rain. Be sure and drain before using; drain plugs are located at the rear of the machine. Remove plugs and park machine on a steep incline for better drainage. Grease chains if machine has been used with water trapped in bottom.

FUEL MIXTURE

Your McKee all terrain vehicle is equipped with a JLO Model 230 engine. This engine gets its lubricant from the fuel. Use a good grade two-cycle engine oil for best results; **Never** use ordinary auto engine oil. We recommend Bardal VBA or Castrol Super Two Stroke Oil, using a 40 to 1 mix. If using a 20 to 1 mix, the high speed jet on the engine carburetor must be set richer to allow the heavier mixture to flow.

TOO MUCH FUEL

Open choke and throttle completely. Turn the engine over a few times. If engine still does not start, remove spark plug and turn engine several times. Now replace spark plug and start engine.

NO FUEL

Check whether carburetor or fuel lines are plugged. Clean filter screen at carburetor, fuel line and fuel strainer.

ENGINE RUNS UNEVENLY OR CEASES TO RUN

Spark plug is fouled or carburetor setting is too rich.

ENGINE CONTINUES RUNNING ALTHOUGH SWITCHED OFF

1. Carburetor setting is too lean (re-adjust).
2. Heat value of spark plug is too low (use plug with higher heat value).

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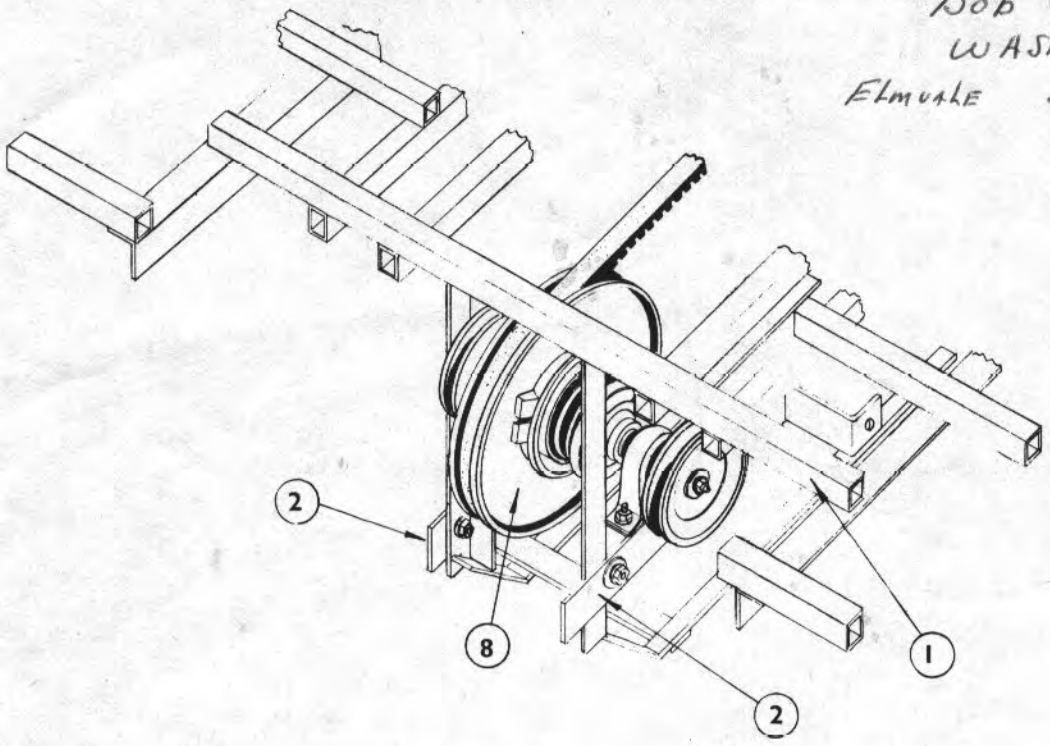
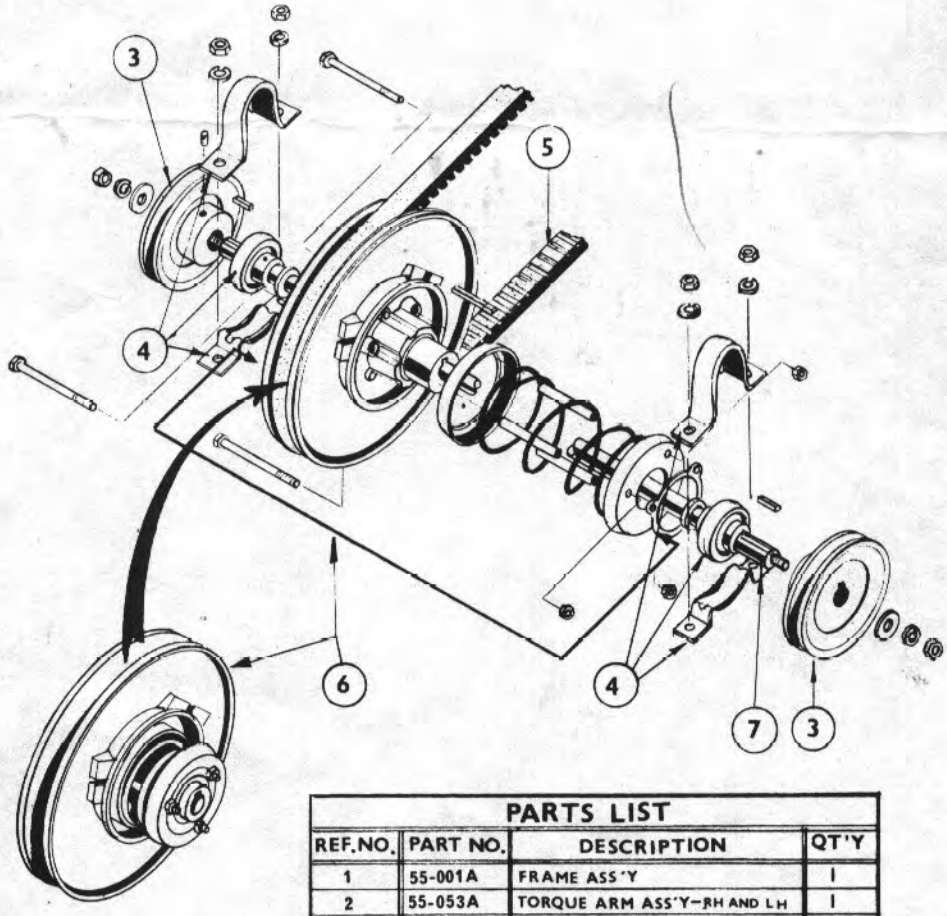
TORQUE CONVERTER ASSEMBLY

Bob Crole
WASAGA Camping
Elmvale 322-2690





PARTS LIST			
REF.NO.	PART NO.	DESCRIPTION	QT'Y
1	55-001A	FRAME ASS'Y	1
2	55-053A	TORQUE ARM ASS'Y–RH AND LH	1
3	55-060	PULLEY HB4.7 3/4 BORE 3/16 KW	2
4	55-057	PILLOW BLOCK	2
5	55-062	BELT GATES NO. 9803-2422	1
6	55-061	PULLEY SALISBURY NO. 136700	1
7	55-059	SHAFT 3/4 DIA CRS	1
8	55-200A	SHAFT/PULLEY ASS'Y	1

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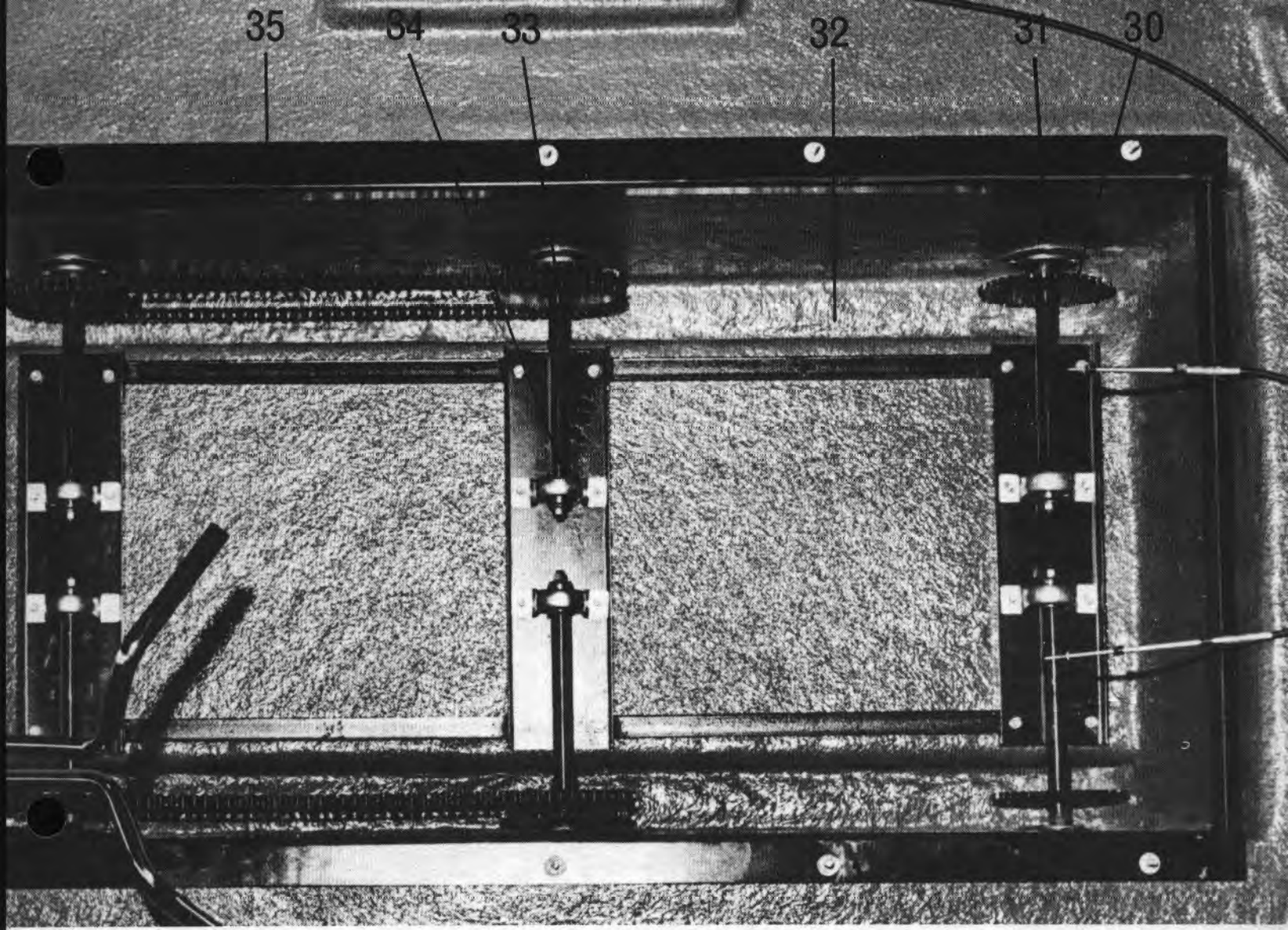

Illus. No.	Part No.	Description	Qty.
30	55-092A	Rear Axle (front same)	4
31	K14-001	Outer Bearing	6
32	55-001A	Lower Frame	1
33	55-093A	Middle Axle	2
34	K12-002	Inner Bearing	6
35	55-140A	Top Frame	1

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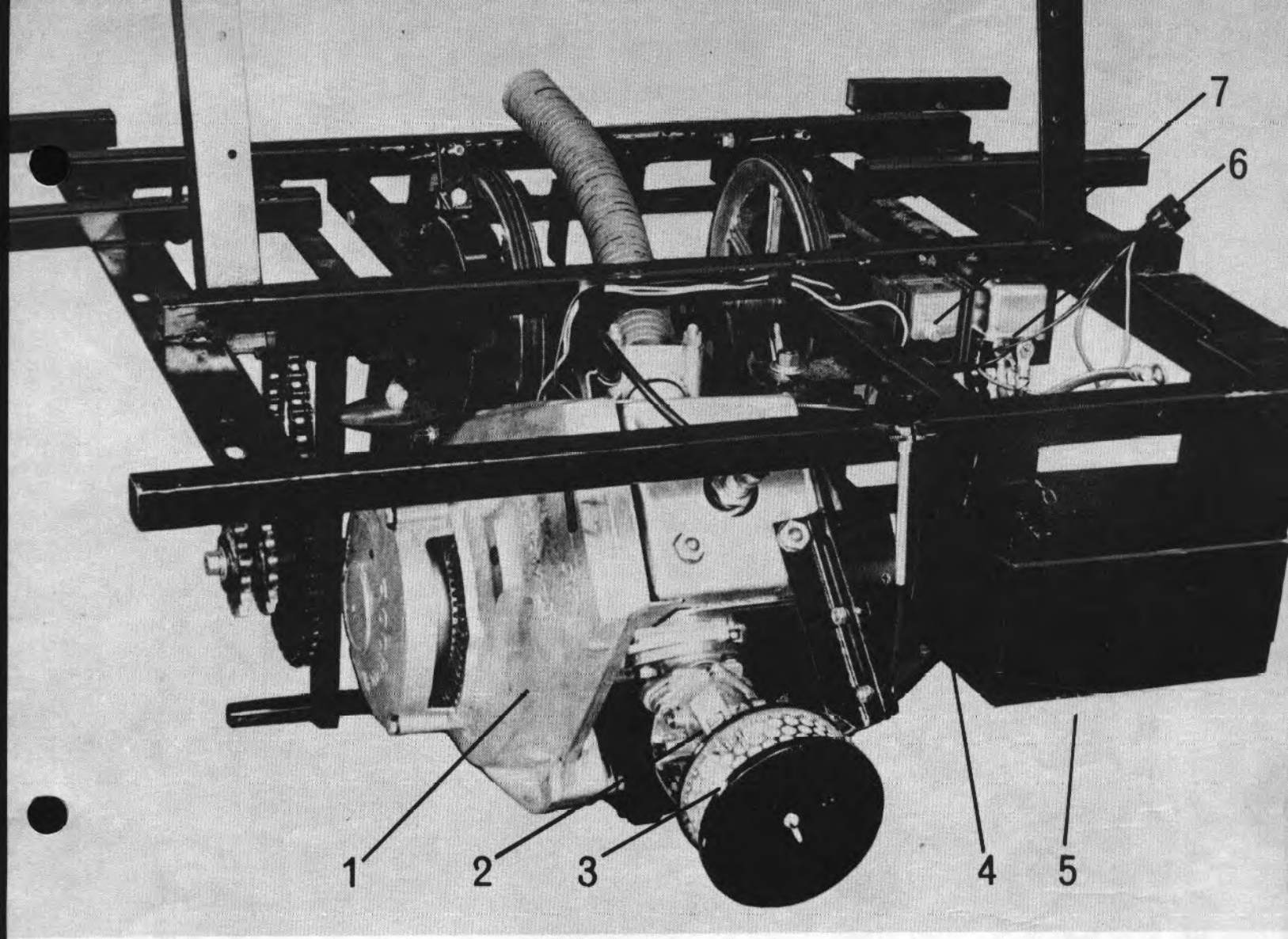

Illus. No.	Part No.	Description	Qty.
1	55-219A	Motor	1
2	55-220	Carburetor	1
3	55-221	Air Filter	1
4	55-212	Choke	1
5	55-104A	Battery Box	1
6	55-227	Relay	1
7	55-226	Rectifier	1

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SAFETY PRECAUTIONS

1. Do not operate vehicle in a closed building unless you pipe out the exhaust fumes.
2. Make sure hands and clothing are at a safe distance from all movable parts before starting.
3. Never run vehicle without front floor pan.
4. Do not add fuel with engine running. Always shut the engine off and allow for cooling if possible.
5. Do not over-fill gas tank. Leakage around cap may occur when operating over rough terrain or on a steep incline.
6. Always remove key from ignition switch when vehicle is parked.
7. Always check vehicle for gas leakage before smoking.
8. Make sure ignition switch is in "off" position before working on vehicle. Best results is to remove key.

SERIAL NUMBERS

A plate attached to the frame under the rear tray carries the serial number and model number of the vehicle. The complete number must be quoted in all correspondence relating to the vehicle

ENGINE AND ACCESSORIES

Your McKee all terrain vehicle is equipped with a JLO Model 230, two-cycle engine, 14 h.p. at 5000 r.p.m. Maximum ground speed at 5000 r.p.m. is 30 m.p.h.

The exhaust system is connected by a flexible pipe. The muffler is mounted at the rear of the vehicle.

A see-through fuel tank is located at the front of the vehicle.

The engine generator provides 12 volts, 40 watts. A key switch on the dash is used for starting the vehicle and is also the switch for the lights.

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CARBURETOR RE-ADJUSTMENT

Changing carburetor settings on two-cycle engines alters the amount of lubrication the engine receives. If adjustment is necessary, stop engine then turn idle fuel and main fuel adjustments all the way in until they bottom lightly. **Do not force closed.**

Tillotson Carburetor — Idle 1 turn open — Main 1½ turns open.

Walbro Carburetor — Idle ¾ turn open — Main 1 turn open.

Final adjustment is made with engine running at normal operating temperatures. Main Fuel adjustment may be leaned **slightly** for better performance. DO NOT RUN ENGINE AT "TOO LEAN A CARBURETOR SETTING."

SPARK PLUG

Remove spark plug and check condition after every 25 hours of running. Replace plug if carbon fouled or has cracked porcelain. Do not sandblast, wire brush, scrape or otherwise service plug in poor condition. Best results are obtained with a new plug. Adjust spark plug gap to .020" and retighten spark plug to 27 foot lbs.

Bosch or Champion heat value according to operation conditions

	L99	L230	L295	L300	L340
Mainly at Medium Load	W175TI L95Y	M240T1 K9	M240T1 K9	M240T1 K9	M240T1 K9
Mainly at full load	W225T1 L87Y	M240T1 K9	M240T1 K9	M280T31 K7	M280T31 K7
For racing	W240T1 L81Y L82Y	M280T31 K57R	M280T31 K57R	M310T31S K54R	M310T31S K54R

SPARKPLUG FACES

WHITE COLOUR

Spark Plug is too hot. Take plug with higher heat value.

BLACK COLOUR

Spark plug is too cold. Take plug with lower heat value.
The right plug should be brown. Prior to changing plug, control carb. setting. The white colour of a spark plug can also be due to a too lean carb. setting.

Note:

To avoid spark plug fouling, do not let engine run at idling speed for a long time.

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