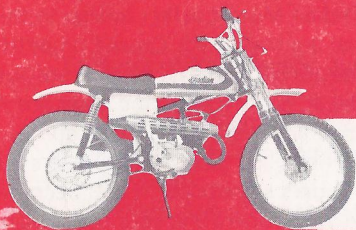
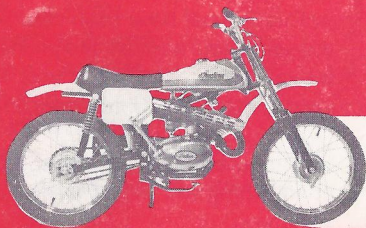


# OWNERS MANUAL



JUNIOR CROSS AUTOMATIC



JUNIOR CROSS 4 SPEED





## FOREWORD

The Indian Motorcycles covered in this Owners Manual are the Junior Cross Competition 4 Speed (Model JC-54) and easy-to-operate automatic (Model JC-5A). These fine bikes are American designed and engineered with safety-in-mind for Junior boys and girls. This Owners Manual is your Riders Handbook, it will become your best friend while operating your Junior Cross on the track or on the trail. The procedures contained in this manual have been carefully prepared to acquaint you with all the proper handling and servicing procedures that you will require to keep your motorcycle in top operating condition.

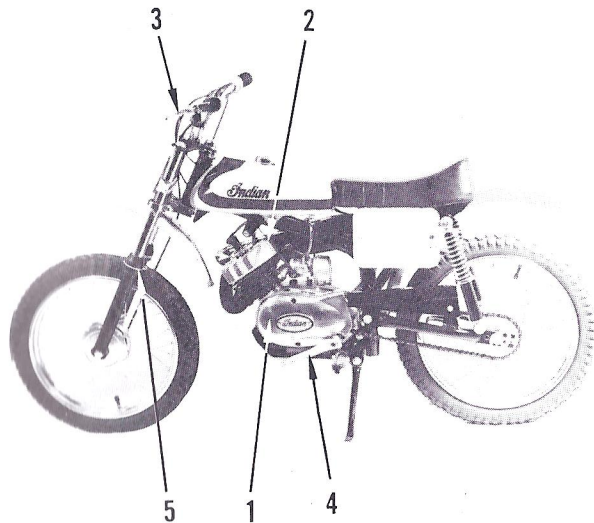
If you have any questions about your motorcycle at any time, the Indian Dealer will be happy to assist you.

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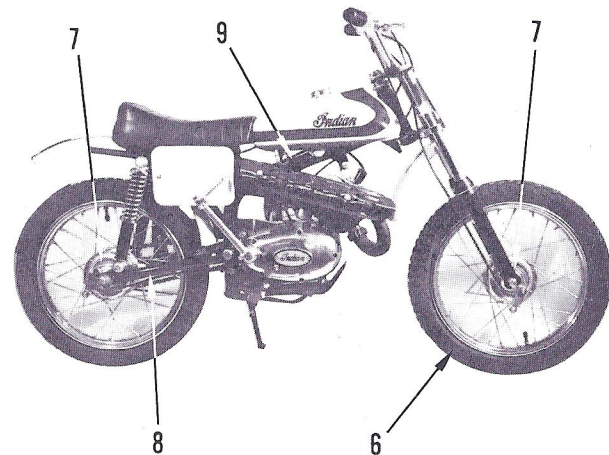
## FEATURES OF JUNIOR CROSS 4-SPEED



- (1) **50 cc Two-Stroke Engine** Incomparable single cylinder 3.9 hp 50 cc engine with a compression ratio of 9:1, engineered for reliability and long life.
- (2) **Cylinder and Cylinder Head** Light weight aluminum alloy cylinder head with maximum cooling efficiency.
- (3) **Easy-To-Operate Clutch** Hand operated multiple disc in oil clutch. Lever action is smooth for trail riding where frequent shifting is necessary.
- (4) **4-Speed Gear Box** Left foot controlled 4-speed constant mesh transmission. Perfectly selected gear ratios provide for flexible engine operation in all types of riding conditions.
- (5) **Telescopic Front Suspension** Front telescopic spring dampened forks to reduce road

shocks and for improved control and handling.

- (6) **14 Inch Wheels** 14-inch wheels for maximum rider safety and control. Not available on other minicycles in the same class.
- (7) **Internal Expanding Front and Rear Brakes** Internal expanding front and rear brakes to make sure and fast stops. Front brake is hand operated. Rear brake is foot-controlled.
- (8) **Rear Swing Arm Suspension With Shock Absorber** Rear swing arm suspension with shock absorber providing for improved comfort and handling.
- (9) **Light Weight Frame** Strong light weight frame design making the Junior Cross 40 pounds lighter than minicycles in its class.



# SPECIFICATIONS

## JR. CROSS 4-SPEED

ENGINE Model P4S							
Type	Single cylinder, two stroke, cast-iron cylinder and light alloy head						
Bore & Stroke	38.8 mm x 42 mm						
Displacement	49.6 cc						
Compression Ratio	9:1						
Brake Horse Power @ rpm	3.9 hp @ 7000 rpm						
Carburetion	Dell'Orto - 19 mm						
Ignition	Flywheel magneto, 18W-6V, external high tension coil						
Starting System	Kick starting with folding crank						
Recommended Fuel	Premix 20:1, regular gas and SAE 30, 2-stroke oil						
Fuel Tank Capacity	1 gallon						
Clutch	Multiple disc in oil, hand operated						
Transmission Oil Capacity	16 ounces						
TRANSMISSION 4-speed, constant mesh, left foot controlled							
1 down, 3 up with the following ratios:							
Overall:1				Internal 1			
1st	1:15.22	3rd	1:6.64	1st	1:3.30	3rd	1:1.44
2nd	1:9.55	4th	1:5.30	2nd	1:2.07	4th	1:1.15
Countershaft Sprocket							14 tooth
Rear Wheel Sprocket							26 tooth

Engine Weight	27 pounds
<b>DIMENSIONS</b>	
Wheelbase	38½"
Seat Height	24"
Seat Width	6½"
Handlebar Width	23"
Footpeg Height	8½"
Ground Clearance	8"
Dry Weight	79 pounds
Overall Length	57"
<b>SUSPENSION</b>	
Front	Telescopic, spring dampened
Rear	Swing arm with shock absorber
<b>WHEELS AND BRAKES</b>	
Front Tire	Knobby 2¼ x 14"
Rear Tire	Knobby 2¼ x 14"
Front Brake	Hand operated internal expanding
Rear Brake	Foot operated internal expanding
Wheels	Spoke
AVAILABLE COLORS	Green, red, yellow

# SPECIFICATIONS

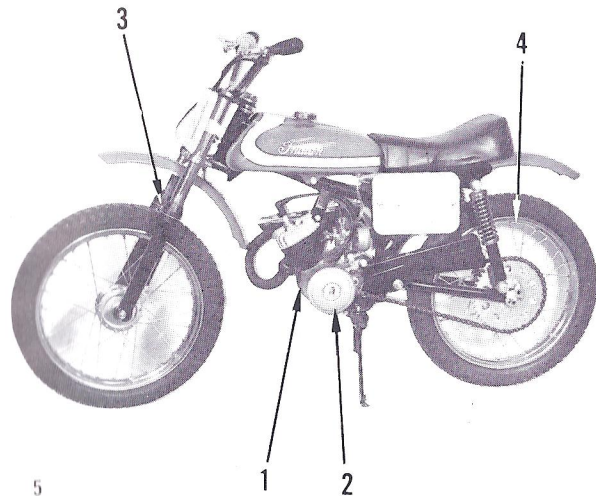
## JR. CROSS AUTOMATIC

<b>ENGINE</b> - S5K1K	
Type	Single cylinder, two stroke
Bore & Stroke	38 mm x 42 mm
Displacement	47.6 cc
Compression Ratio	6.5:1
Brake Horse Power @ rpm	2.5 hp @ 5000 rpm
Carburetion	Dell'Orto - 14 mm
Ignition	Flywheel magneto, 18W-6V
Starting System	Kick starting
Recommended Fuel	Premix 20:1, regular gas and SAE30, 2-stroke oil
Fuel Tank Capacity	1 gallon
Transmission	Single speed
Clutch	Automatic centrifugal force in oilbath (1/2" x 3/16")
Transmission Oil Capacity	8 ounces
Gear Ratios	1:3.467
Countershaft Sprocket	11 tooth
Rear Wheel Sprocket	43 tooth
Engine Weight	18 pounds

<b>DIMENSIONS</b>	
Wheelbase	36"
Seat Height	24"
Seat Width	6½"
Handlebar Width	23"
Footpeg Height	8½"
Ground Clearance	8"
Dry Weight	69 pounds
Overall Length	55"
<b>SUSPENSION</b>	
Front	Telescopic, spring dampened
Rear	Swing arm with shock absorber
<b>WHEELS AND BRAKES</b>	
Front Tire	Knobby 2¼ x 14"
Rear Tire	Knobby 2¼ x 14"
Front Brake	Hand operated internal expanding
Rear Brake	Hand operated internal expanding
Wheels	Spoke

AVAILABLE COLORS . . . . . Green, red, yellow

## FEATURES OF JUNIOR CROSS AUTOMATIC



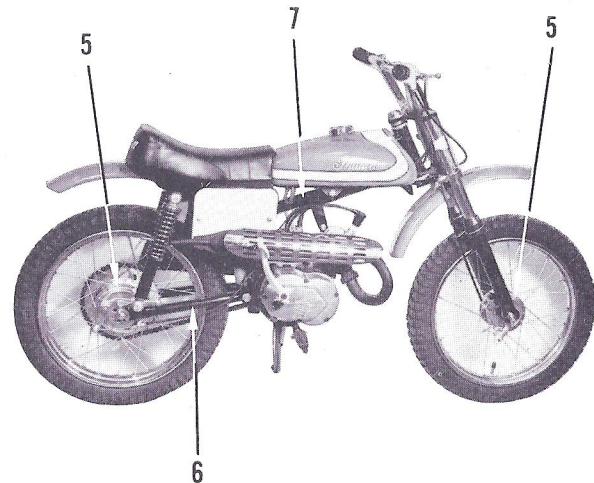
- (1) **48 cc Two-Stroke Engine** Dependable 2.5 hp single cylinder 48 cc engine with compression ratio of 6.5:1 and 14 mm Dell'orto carburetor.
- (2) **Automatic Transmission** Centrifugal force automatic transmission for ease of operation. Single-speed action that blends smoothly with the 48 cc engine.
- (3) **Telescopic Front Suspension** Front telescopic spring dampened forks to reduce road shocks and for improved control and handling.
- (4) **14-Inch Wheels** 14-inch wheels for maximum rider safety and control. Not available on other

minicycles in the same class.

- (5) **Internal Expanding Front and Rear Brakes** Hand controlled front and rear internal expanding brakes to make sure and fast stops.

- (6) **Rear Swing Arm Suspension With Shock Absorber** Rear swing arm suspension with shock absorber providing for improved comfort and handling.

- (7) **Light Weight Frame** Strong light weight frame design making the Junior Cross 40 pounds lighter than minicycles in its class.



## OPERATING TIPS

Junior Cross Owners should make both daily and periodic inspections to prolong the life of their motorcycles and to help prevent riding accidents.

Junior Cross Owners should, on a regular basis, check for the tightness of all important parts. This will also help prevent accidents and mishaps during riding.

**Engine Warm-Up** Always warm up the engine at a low speed for two minutes before riding. This will allow oil to begin proper circulation and the carburetor time to function properly when the engine is cold.

**Racing the Engine** Do not race the engine at high speed without a load. The engine if raced under these conditions will be sometimes seriously harmed.

**Starting the Motorcycle and Shifting Gears** Start the motorcycle gently in accordance with instruction in this manual. Excessive high light load speed upon starting is also harmful to your engine. No gear shifting is necessary for the automatic but the 4-speed gears should be shifted in accordance with the speeds given in this manual to prevent engine damage.

**Change 4-Speed Gears Gently** Gently change gears of your 4-speed by pressing or pulling gear change lever lightly with your toe while the clutch is engaged. Do not change gears roughly since rough handling will result in rapid wear of the gearing.

**Operation of Junior Cross with Air Cleaner Removed** Do not operate your Junior Cross with the air cleaner removed from the carburetor. If you do, dirt and dust will be inhaled into the engine causing more rapid wear.

**Break-In Tips** Do not ride at high speeds, carry loads, or operate your Junior Cross for long periods of time for the first 500 miles. Half throttle operation is recommended for this break-in period. This will allow the rings in your engine to properly seat.

### Gasoline Recommendations

Use premium gasoline. Do not use low lead. Use only 2-stroke motorcycle oil

Premix a gas-to-oil mixture of 20:1 in a 2½ or 5 gallon can. This mixture can be used in your Junior Cross from time of break-in through normal operation.

Assure that dirt, dust or water does not become mixed with the fuel.

Fill gas tank only to ¾ capacity to prevent running over in parked position.

### Transmission Oil Recommendations

Use only SAE 30 weight oil in the transmission of your Junior Cross.

Always drain used oil from your Junior Cross before refilling.

After filling, double check the oil filler plug and drain plug for tightness. In the case of 4-speeds, always check tightness of oil inspection screw.

**Washing Your Junior Cross** A clean machine is a matter of pride and it is also wise to keep your motorcycle in tip-top condition. Wipe dirt off the surface with a wet cloth or a cloth soaked in warm soapy water. If oil spots have to be removed wipe with cloth soaked in gasoline.

## RIDING HINTS

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## STARTING JUNIOR CROSS 4-SPEED

1. Assure that gear shift lever is in neutral position.
2. Turn the fuel cock lever to the "ON" position (Figure 1).
3. Choke the engine and depress primer button (Figure 1).
4. Open the throttle (Figure 2) about  $\frac{1}{4}$  to  $\frac{1}{2}$  turn and kick the kick starter.
5. After the engine fires, warm up the engine at medium speed.
6. When the engine is sufficiently warm, open the choke.

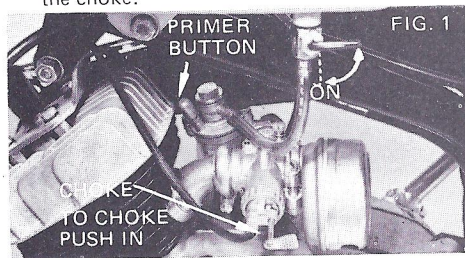


FIG. 1

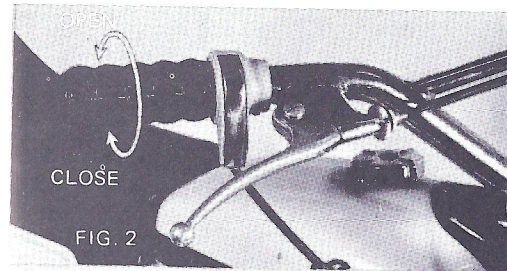


FIG. 2

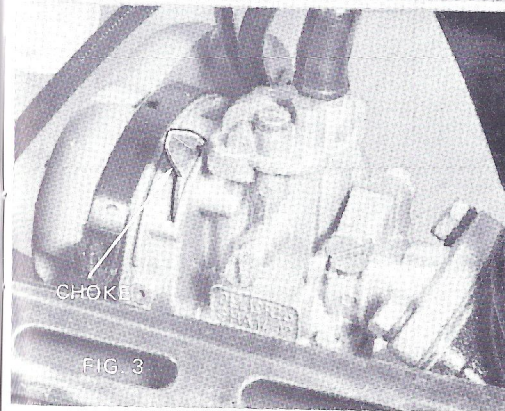


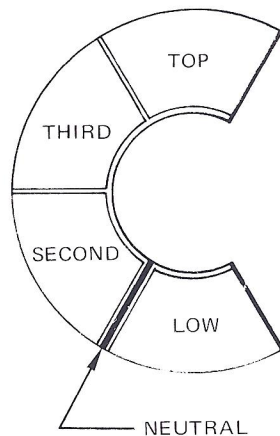
FIG. 3

## STARTING JUNIOR CROSS AUTOMATIC

1. Assure that throttle is fully closed.
2. Turn fuel cock lever to the "ON" position (Figure 1).
3. Push down automatic choke lever on carburetor to engage choke (Figure 3).
4. Kick engine over with kick starter.
5. Hold the left brake lever in and idle the engine.
6. After about 60 seconds and while still holding the front brake, turn throttle (See Figure 2) slowly until click is heard (Automatic choke disengaging).

## GEAR CHANGING (4 SPEED ONLY)

1. Pull in clutch lever fully and change gears by moving gear change lever gently up or down with toe to change gears
2. To engage low gear, depress gear change lever down one time from neutral. To engage second, third, and top gear, pull up with toe to three positions above neutral. The operating angle between low and neutral and between neutral and second is approximately one half that between other gears to allow for rapid gear changing for racing and trail riding



Gear	Normal Riding
Low	0 to 7 mph
Second	5 to 16 mph
Third	14 to 22 mph
Top	Over 17 mph

Gear	High Speed Operation
Low	0 to 10 mph
Second	8 to 19 mph
Third	17 to 26 mph
Top	Over 22 mph

## HIGH SPEED OPERATION

For high speed riding on your Junior Cross, it is recommended that a spark plug with a higher heat range be used. Standard plug for your Junior Cross 4-speed is B7H. When riding at high speed, use a B77HC or B8HS spark plug. Standard plug for your Junior Cross automatic is a B7H. When riding at high speed use a B8H spark plug.

## RIDING ON HILLS

### Hill Climbing

1. Your Junior Cross 4-speed can climb most hills in high gear. Your Junior Cross Automatic is capable of climbing hills with a 30° grade. While ascending steep hills in your 4-speed or when carrying a heavy load, shift down to third, second or low as required.
2. When shifting gears in your 4-speed while climbing, make the shift as rapidly as possible. This will prevent the motorcycle from losing its momentum. When climbing hills with your automatic, do not throttle down at any time.

### Riding Down Hill

1. For 4-speed and automatic Junior Cross Motorcycles, always close the throttle and apply front and rear brakes at the same time to reduce speed while descending.
2. When descending steep hills on your 4-speed down shift to third, second, or first as required to help brake the motorcycle.

Close the throttle for using the engine of either Junior Cross as a brake.

Always apply the front and rear brakes at the same time with the same pressure.

## STOPPING AND PARKING

### Stopping Your 4-Speed

1. Apply front and rear brake at the same time to stop or brake your motorcycle. The motorcycle may skid or slide if only the rear brake is applied during quick stops. The front brake is hand-operated. The rear brake is foot controlled.
2. Shift into the neutral gear position after the motorcycle stops.

### Stopping Your Automatic

1. Apply front and rear brake at the same time as above. Both front and rear brakes are hand-operated on your automatic.
2. The automatic has a single speed transmission, to stop fully close the throttle.

### Parking (4-Speed or Automatic)

1. Depress the "Kill" button with your left thumb
2. Close the fuel cock lever
3. Push the footstand down with your left foot and lean motorcycle to left until it rests on stand.

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## SPECIAL TOOLS

The special service tools required to maintain your Junior Cross are as follows:

Part No.	Used On	Application
*V2-1	Clutch	Extractor for the clutch bearer disk
V42-1	Engine	Extractor for the crank shaft
V2-3	Transmission	Extractor for the gear box sprocket
V1-2	Engine	Extractor for the flywheel magneto
V2-4	Engine	Extractor for the engine sprocket
*V2-6	Clutch	Holding wrench for the clutch stud disc.
*V2-11	Clutch	Wrench for clutch adjustment
V29-1	Engine	Holding wrench for the flywheel magneto

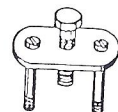
\*Junior Cross 4-Speed only



U1-2



U2-3



U2-1



U2-4



U2-6



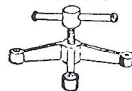
U2-8



U2-11



U29-1



U42-1

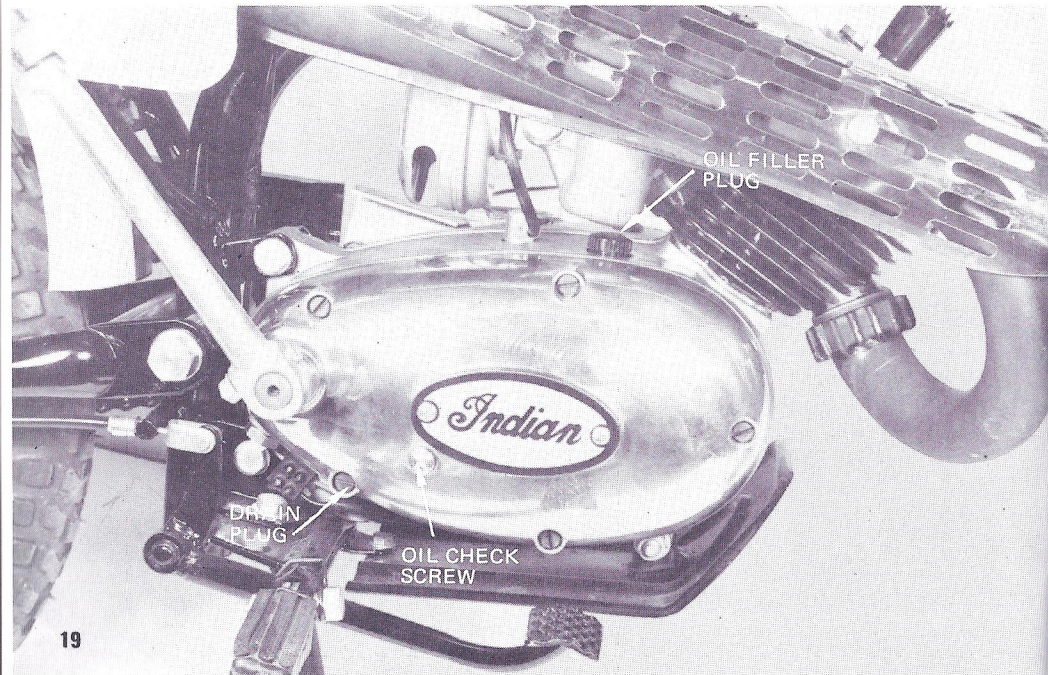
## DAILY INSPECTION

### INSPECT THE MOTORCYCLE DAILY BEFORE RIDING

1. Does steering feel light;
2. Is front brake lever play correct?
3. Is there too much rear brake travel?
4. Does clutch work properly?
5. Is engine oil at proper level?
6. Do you have enough fuel to get you there?
7. Is front tire pressure within 25 psig?
8. Is rear tire pressure within 25 psig?
9. Do you notice any loose hardware?
10. Is the drive chain properly adjusted and lubricated?
11. Does throttle operate correctly?

## PERIODIC INSPECTION

Ref Letter	Item	Mileage 200 New Machine	Mileage 500 New Machine	Regular Maintenance Intervals After Break-In
A	Change gear box oil	x	x	Every 500 Miles
B	Check and Adjust Clutch	x	x	Every 1000 Miles
C	Check and Adjust Throttle	x	x	Every 1000 Miles
D	Check and Adjust Hand Brake Levers	x	x	Every 1000 Miles
E	Check and Adjust Foot Brake Travel	x	x	Every 1000 Miles
F	Check and Adjust Carburetor	x	x	Every 2500 Miles
G	Check and Clean Air Cleaner	x	x	Every 1000 Miles or sooner if used in dirt conditions
H	Clean Carbon from Muffler and Inner Pipe	x	x	Every 2500 Miles
I	Clean, Adjust, and Oil Chain	x	x	Every 1000 Miles
J	Inspect and Tighten Spokes	x	x	Every 1000 Miles
K	Check for and Tighten Loose Hardware	x	x	Daily and every 1000 miles
L	Clean Spark Plug	x	x	Every 1000 Miles
M, N	Inspect Tires and Pressure	x	x	Daily and every 300 miles



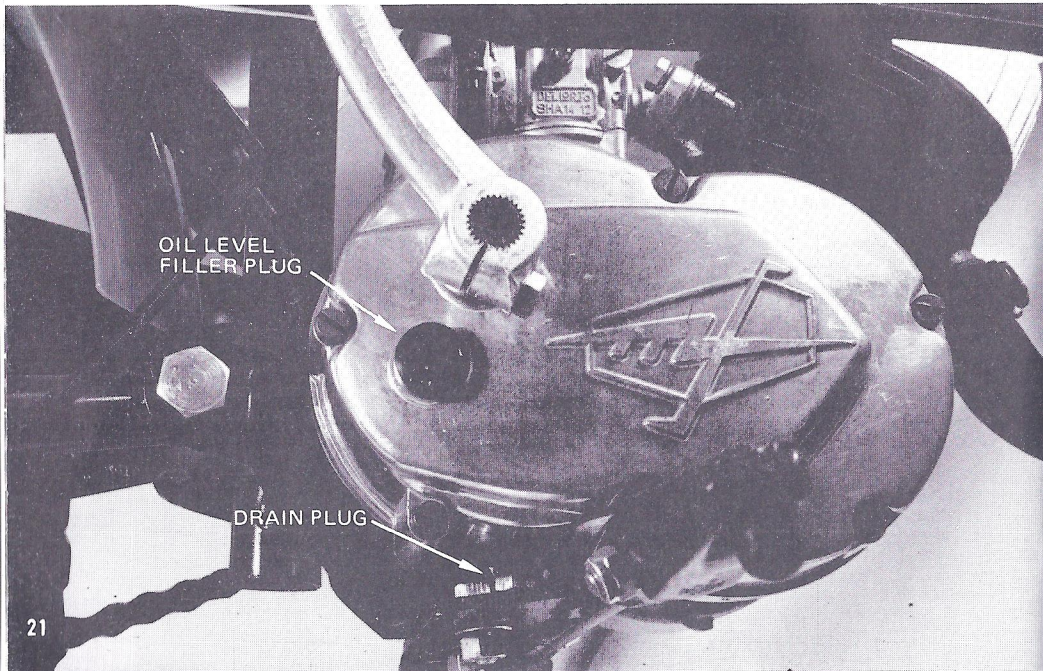
## CHANGING OIL

### 4-Speed

- a. Remove muffler and float bowl on carburetor.
- b. Locate oil check screw on right side of engine and remove to check for the presence of oil.
- c. Locate and remove drain plug. Drain oil from motorcycle.
- d. Replace drain plug and tighten.
- e. Replace oil check screw and place motorcycle in level position to prepare for oil filling procedure.
- f. Locate and remove oil level filler plug.
- g. Assuring that oil level filler plug has been removed, perform oil filling procedure as follows:
  - (1) Insert small funnel into oil fill hole located on right side of engine.
  - (2) Using SAE 30 weight oil or equivalent, carefully fill clutch box with 16 ounces of oil.
- h. After completing oil filling procedure, replace and tighten oil level filler plug.
- i. Reassemble carburetor float bowl and muffler assembly.
- j. As a preventive measure, recheck drain plug and tighten as necessary.

### Helpful Hints:

1. Drain oil when oil in engine is warm.
2. Do not operate with dirty oil. Check periodically and change as required. Frequent oil changes result in excellent operation.
3. Drain oil and replace drain plug. Lay bike on left side and remove "Indian" name plate and pour in 16 oz. of oil, replace name plate.



## CHANGING OIL

### Automatic

- a. Locate oil level filler plug and remove to check for the presence of oil.
- b. Locate and remove drain plug. Drain oil from motorcycle.
- c. Replace drain plug and tighten.
- d. Lean motorcycle to left from riding position to prepare for oil filling procedure.
- e. Assuring that oil level filler plug has been removed, perform oil filling procedure as follows:
  - (1) Insert small funnel into hole located on right side of engine.
  - (2) Using SAE 30 weight carefully fill clutch box with 8 ounces of oil.
- f. After completing oil filling procedure, replace and tighten oil level filler plug.

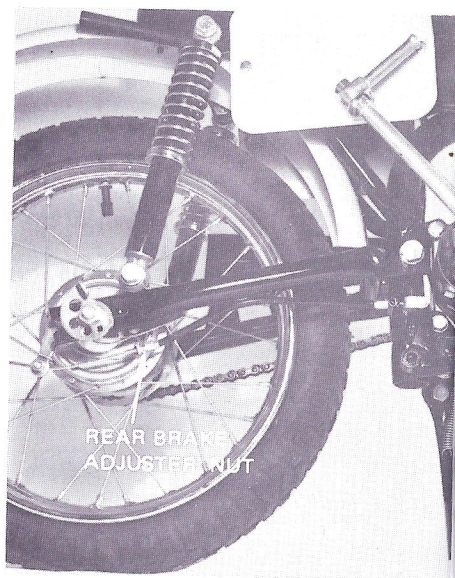
### Helpful Hints:

1. Drain oil when oil in engine is warm.
2. Do not operate with dirty oil. Check periodically and change as required. Frequent oil changes result in excellent operation.

## INSPECTING AND ADJUSTING BRAKES

### 4-Speed

- a. The front brake lever should have only 1/4" of play between tip of lever and tip of handlebar. Check the amount of play as follows:
  - (1) Sit on motorcycle in riding position.
  - (2) Check lever play of front brake lever by squeezing lever and measuring play.
  - (3) To assure that lever engages front brake properly, squeeze levers tightly and using feet try to push motorcycle forward.
  - (4) If front brake lever play is more than 1/2" or brake does not engage properly, simply adjust the handlebar lever screw or the adjuster on the front wheel.
- b. The rear brake foot controlled lever on the left hand side of the motorcycle near the engine should be checked in the same manner as the front brake lever only:
  - (1) Full weight of rider should be on motorcycle while making adjustment.
  - (2) Brake adjuster is on rear wheel of motorcycle.



### CAUTION:

The brakes are your "Life Line". Be sure to check them every time you ride your motorcycle.

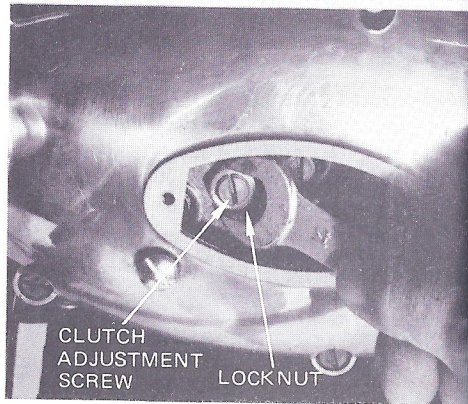
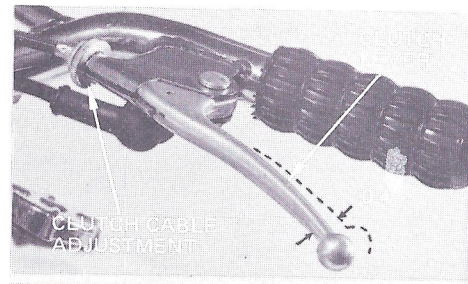
### Automatic

The front and rear brake levers of the automatic should have only 1/4" of play between tip of lever and tip of handlebar. Check the amount of play as follows:

- a. Sit on motorcycle in riding position.
- b. Check lever play of each brake lever by squeezing levers and measuring play.
- c. To assure that levers engage brakes properly, squeeze levers tightly and using feet try to push motorcycle forward.
- d. If brake lever play is more than 1/2" or brakes do not engage properly, simply adjust the handlebar lever screw or the adjuster on the front wheel.

## ADJUSTING THE CLUTCH (4-SPEED ONLY)

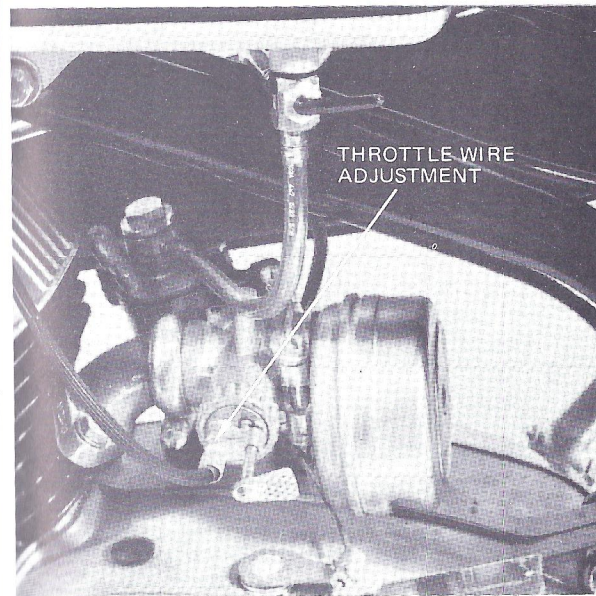
- a. Squeeze clutch lever and check play at end of clutch lever. There should be 0.4 inches of play at end of clutch lever before the clutch begins to disengage.
- b. To adjust clutch lever, adjust clutch cable adjuster on clutch lever. If additional adjustment is required, remove right engine inspection plate and adjust clutch adjustment screw and lock nut.
  - (1) If clutch slips — Turn adjuster counter-clockwise.
  - (2) If clutch drags — Turn adjuster clockwise.
  - (3) Clutch shaft must have 1/16" free play.



## ADJUSTING THROTTLE

### 4-Speed

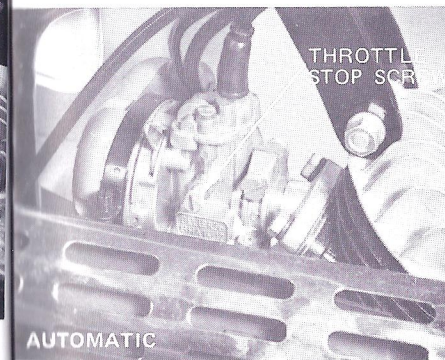
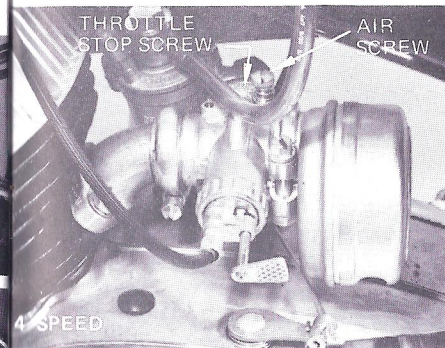
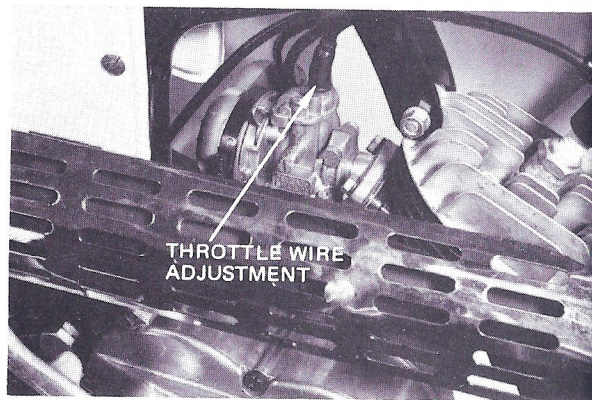
- a. Sitting in riding position, slowly twist grip assembly and assure that engagement of throttle is felt after 1/8" movement of grip.
- b. Adjust throttle wire adjustment as necessary.



## ADJUSTING THROTTLE

### Automatic

- a. Visually inspect twist grip assembly to assure that rubber grip has 1/8" clearance at handlebar tip to prevent drag.
- b. Sitting in riding position, slowly twist grip assembly and assure that engagement of throttle is felt after 1/8" movement of grip.
- c. Adjust throttle wire adjustment screw.



## ADJUSTING CARBURETORS

- a. Use the air screw to adjust the carburetor.
  - (1) Turn air screw (clockwise) lightly down onto its seat.
  - (2) Back air-screw out 1/2 - 1-1/2 turns.
- b. Start engine, if engine does not run smoothly, turn air-screw 1/4 turn in and adjust engine idle for 2,000 rpm operation with throttle stop screw.
  - (1) Turn throttle stop screw in to increase RPM.
  - (2) Turn throttle stop screw out to decrease RPM.

### Helpful Hints:

1. Adjust carburetor when the engine is warm.
2. Defective operation of the engine during acceleration or at high speeds is sometimes a sign of a defective ignition system. Determine the cause before adjusting the carburetor.

## CLEANING AND ADJUSTING SPARK PLUGS

### 1. To clean spark plug:

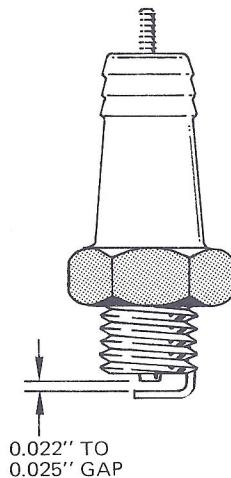
- Remove spark plug from engine.
- Clean with approved cleaning solvent or gasoline using a wire brush.
- Wipe dry with a clean shop rag.

### 2. To adjust the spark plug:

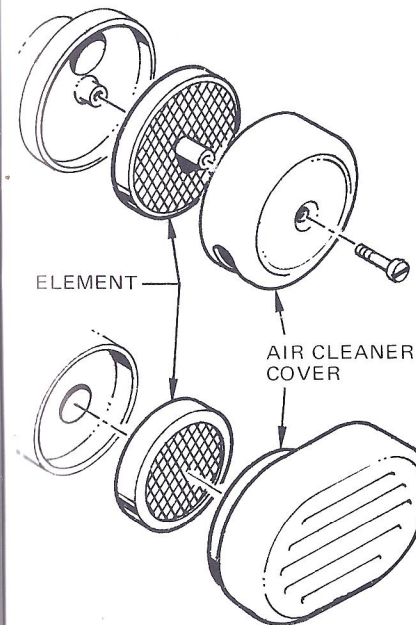
- Check spark plug gap.
- If gap is not within 0.022" to 0.025", set as required.
- Install spark plug.

#### Helpful Hints:

- When installing spark plug, first screw plug in by hand and then tighten securely with spark plug wrench.
- Do not attempt to clean plugs by burning the electrode.



## CLEANING AIR CLEANER



- Remove the air cleaner from the carburetor.
- Remove the air cleaner cover and then remove the cleaning element.
- Clean in solvent.
- Oil element with 30 weight oil.
- Replace the air cleaner in the reverse order of removal.

#### Helpful Hints:

If the air cleaner is soiled with dirt or water, clean air will not be supplied to your engine. Assure that air cleaner is free of dirt or water at all times.

## ADJUSTING DRIVE CHAIN

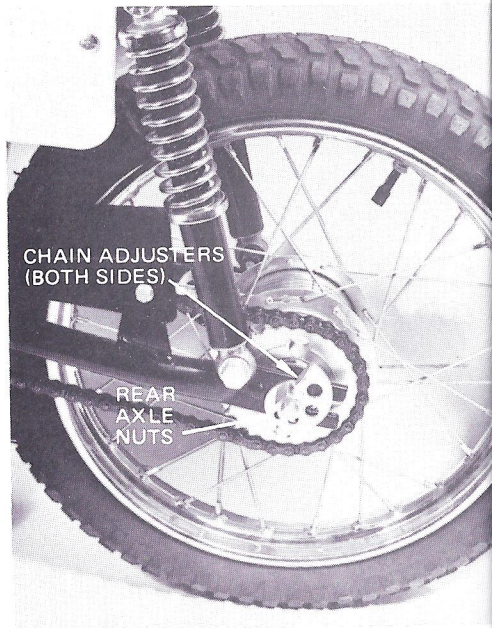
### To adjust drive chain:

- Loosen rear axle nuts and inspect the drive chain.
- There should be 0.4" to 0.8" of slack in the drive chain midway between the sprockets.
- Adjust tabs downward to tighten chain or upward to loosen chain.

### NOTE

Tabs must be adjusted evenly for proper adjustment.

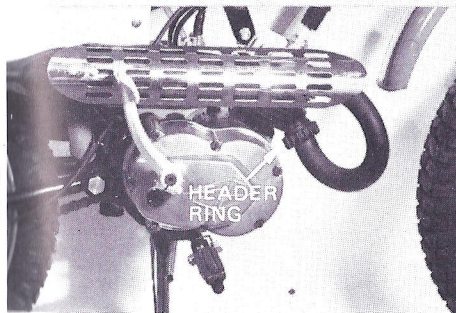
- Tighten the rear axle nuts.
- Wash the chain with gasoline and lubricate it with oil or chain grease periodically. Lack of proper lubrication can cause stiff chain links and will result in unusual sprocket wear.



## CLEANING THE MUFFLER

Periodically the muffler assembly should be removed and cleaned as follows:

- Unscrew the header ring or bolt and remove muffler from the motorcycle.
- Lightly tap the muffler pipe assembly with a rubber hammer to loosen carbon deposits within the muffler.
- Soak the muffler assembly in gasoline.
- Allow the muffler assembly time to dry thoroughly and then blow compressed air through the assembly.
- Replace the muffler assembly on the motorcycle in the reverse order of removal and tighten.



## IGNITION POINT INSPECTION AND ADJUSTMENT

### a. Ignition point inspection — cleaning.

- (1) Remove left engine cover to expose the flywheel.
- (2) Locate the points looking through the flywheel slot.
- (3) Manually rotate the flywheel counterclockwise until the points are fully open.
- (4) Obtain a clean white piece of bond paper (or a thin business card) and carefully insert between the points.
- (5) Manually rotate the flywheel counterclockwise until the points close and carefully draw the paper out.
- (6) Inspect the paper for signs of dirt or soil.
- (7) If paper is clean proceed to step (b). If paper is dirty, repeat steps (3) through (6) until all dirt and oil is removed from points.

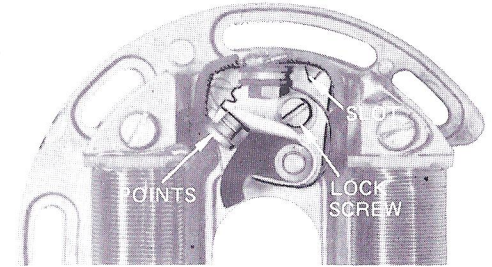
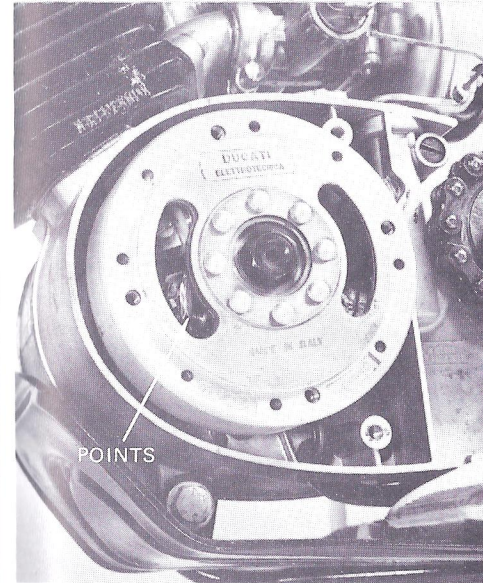
### b. Ignition point gap inspection

- (1) Manually rotate flywheel until the piston is at T.D.C.
- (2) Using feeler gauge check that the point gap is between 0.012 and 0.015.

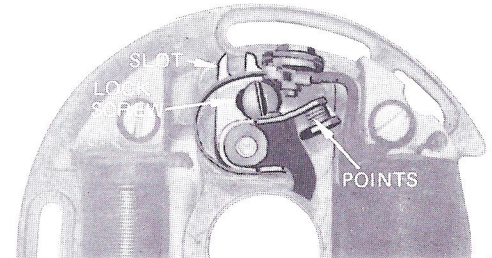
### c. Ignition point gap adjustment (if necessary)

- (1) Manually rotate flywheel until the piston is at T.D.C.
- (2) Insert feeler gauge between points and loosen the back plate lock screw of points.
- (3) Carefully insert screwdriver head into convenience slot and move back plate in the direction necessary to obtain correct feel gauge reading between 0.012" and 0.015".
- (4) Holding the back plate in the proper position, carefully tighten the back plate lock screw.

### d. Replace the left engine cover.



4 SPEED



AUTOMATIC

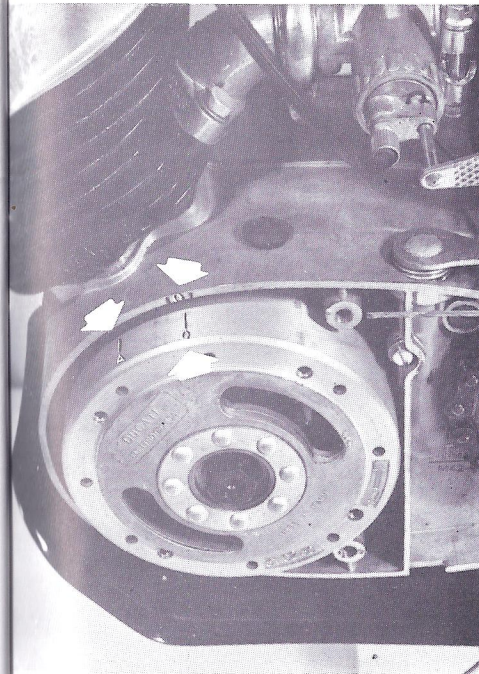
## TIMING INSPECTION AND ADJUSTMENT

Ignition timing is very critical and should be performed by a qualified mechanic. The step-by-step ignition timing procedure should be performed as follows:

- a. Remove the left engine cover to expose the flywheel.
- b. Contact breaker point gap adjustment.
  - (1) Locate the contacts through the flywheel slot.
  - (2) Use a dial indicator or insert a very thin strip of cellophane paper between contacts, stretched slightly, then manually rotate the flywheel slowly in the counterclockwise direction.
  - (3) Continue rotating the flywheel slowly until the dial indicator reads 2.5 mm for the 4 speed or 2.8 mm for the Automatic before top dead center (BTDC) or until the cellophane is seen coming out of the contacts. Stop rotation of flywheel at this point.
  - (4) Locate one mark on top of flywheel and one mark on the case. The mark "O" on the case represents top dead center (TDC) and the mark "A" on the flywheel represents BTDC.
  - (5) While observing the marks on the flywheel and the mark on the case, continue to slowly rotate the flywheel counterclockwise observing that the contacts open just as the mark "A" on the flywheel crosses the mark "O" on the case.
  - (6) Repeat steps (1) through (5) until satisfied that the contacts begin to open before the piston reaches 2.5 mm before TDC.
  - (7) If contact breaker gap is not within limits, adjust gap for 0.012 to 0.015 and repeat steps (1) through (6).
- c. Replace the left engine cover.

### Helpful Hints:

Dirty contact points will cause defective ignition — Keep them clean at all times.



## INSPECTION

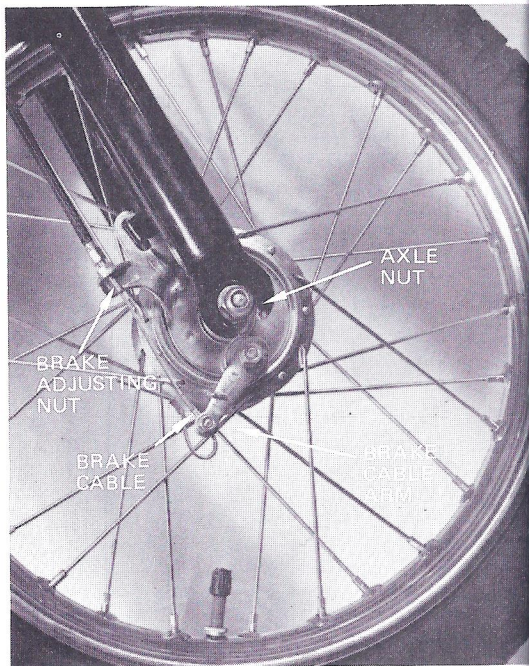
### TIGHTNESS OF NUTS AND BOLTS

Checking these nuts and bolts should be part of your daily and weekly inspections.

1. Front and rear axle nuts.
2. Upper and lower suspension nuts (front and rear).
3. Front and rear wheel spokes.
4. All engine cover bolts.
5. Drain plug.
6. Oil filler plug.
7. Fork crown bolts.
8. Foot peg assembly bolts.
9. Rear swing arm suspension bolts (top and bottom).
10. Foot stand bolt and nut.

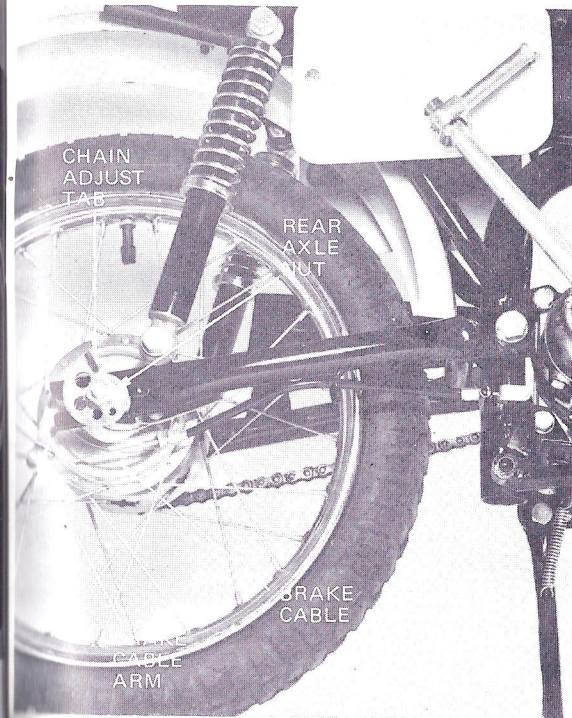
## REMOVING THE FRONT WHEEL

- Elevate the motorcycle front wheel by placing a block under engine.
- Remove the brake adjusting nut and remove brake cable from brake arm and holder.
- Remove the axle nut and pull out the axle.
- Remove the front wheel.



## REMOVING THE REAR WHEEL

- Remove the rear axle nuts and washers.
- Remove the chain adjustment tabs.
- Remove the brake cable from brake cable arm.
- Slide wheel as far forward as possible.
- Remove the drive chain.
- Remove the rear wheel.



## TROUBLES

When you encounter troubles, it is recommended that you take your Junior Cross to the nearest Indian Dealer for repairs. He is fully qualified to solve your problems.



THE

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