

# ***Trike Assembly\* & Owners Manual***



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**Attach this coupon to your receipt and present both to dealer if service is required.**

Owner's name \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

Date purchased \_\_\_\_\_ Model no. \_\_\_\_\_ Serial no. \_\_\_\_\_

Dealer's name \_\_\_\_\_

Address \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

### **Miami Sun EV-3 Limited Warranty**

Subject to the following terms, limitations and condition this is your limited warranty.

1. FRAME, is warranted to be free from defects in materials and workmanship for 3 years from the date of purchase. Bending of frame and any other components along with industrial and/or commercial use are excluded from this warranty. Bending is abuse and not covered.
2. The Electric Motor (excluding brushes) is warranted to be free from defects in materials and workmanship for 1 year from date of purchase.
3. The fork, rear unit and other components (excluding tires, tubes, cables and brake shoes) are warranted for 90 days from date of purchase.

All claims must be submitted with your bill of sale and serial number. Shipping and labor charges are not included in the warranty. This limited warranty does not cover personal injuries, damage or failure due to accident, alteration, abuse, wear and tear, neglect, improper assembly or maintenance.

The warranty is void if the trike is sold, given away, modified, used in stunts, ridden off road, rented, used in commerce or any similar activities.

Miami Sun EV-3 liability under this warranty is no greater than the amount of the original purchase and will not be liable for incidental or consequential damages.

**See your authorized *Miami EV-3 Sun* dealer for service and replacement.**

We included in the preparation of this manual WARNINGS and INFORMATION for your safety.

- **GENERAL WARNING:** Riding an electric powered trike can be hazardous. When on a trike you could have an accident resulting in injury or even death. This manual makes an effort to give you enough information that could prevent riding into danger. We can not cover all contingencies but hope to make you an informed and aware rider.
- Municipal bicycle regulations also apply to tricycles. Most states and municipalities have regulations. It's up to you to research those regulations and become informed. Your dealer may be able to help you with this information. Since you will be sharing the road at times with other vehicles a good rule to follow is "If you can't do it with a car or bicycle, don't do it with a trike."
- A trikes widest point is behind you, if the front goes by an obstacle there is no guarantee that the rear wheels will also clear. When riding, you must give clearance to the edge of the road or sidewalk. Stay clear of potholes and be aware that you can lose control if any wheels should drop into a hole or ditch.
- Always ride defensively. Watch out for the unexpected. This means everything from cars to children, pets and rough road surfaces. Be prepared to avoid danger. **ALWAYS WEAR A BICYCLE HELMET.** We recommend buying your helmet from a dealer that can fit and instruct you on the correct way to wear a helmet. Protecting your head is your primary safety responsibility.
- Always wear a CPSC, ANZI, ASTM, or SNELL approved bicycle helmet. CPSC is the federal standard and all helmets must comply by 1999.

### **CHECKLIST BEFORE RIDING**

- Check your tires for proper air pressure. If you need to inflate them do not inflate over the recommended air pressure on the side wall of your tires. If using a compressor or the air hose at a gas station be very careful not to blow the tire off the rim. Check the hardness of the tire and stop inflating to check the air pressure. Do not over inflate.
- Test your front brake and rear brake and make sure they stop the trike. If you have any doubts do not ride your trike and see your dealer. All EV-3 trikes are equipped with front and rear brakes as standard equipment. Under no circumstance should the brakes be removed. They are also your parking brakes. When stopping your Trike apply both the front and rear brakes together for a safe smooth stop.
- Check that the handlebar is tight and that the ends are plugged. Now check the saddle for tightness.
- Safety check: Apply your front and rear brakes and rock your trike back and forth. If you hear or feel a movement coming from the fork or front wheel or any other part of the trike, **DO NOT RIDE.** Have your dealer or qualified mechanic check the trike.

## PRECAUTIONS

- A trike does not handle like a bicycle, therefore, you cannot lean into a turn. All wheels must be on the ground at all times. Do not make sudden changes of direction you could unbalance the trike and have an accident.
- We suggest you practice riding in a quiet area to get the feel of the trike.
- When beginning to ride, stay at a slow speed. You must acclimate yourself to handling and turning this three wheeler. If you feel insecure, slow down, and proceed at a slower pace. With practice, you will get comfortable riding and stopping.
- Never ride with your ears covered with earphones or anything else that would prevent hearing. Hearing your surroundings is important for your safety.
- We recommend that you not ride at night, or at times of reduced visibility. If you should ride at night or during reduced visibility, you must outfit your trike with a front white light and a rear red light . Relying solely on reflectors is not adequate protection. Most municipalities require lights for night riding. Your bicycle dealer can help you in selecting the correct lighting system for your needs.
- Avoid riding on rainy days since you don't have the same control, handling, and stopping power as on a dry day.
- When making a turn or stopping use hand signals to show your intent. To signal use your left arm while maintaining control of the throttle with your right.
- Always ride with the flow of traffic never against traffic
- The rear basket is only intended for light storage. **DO NOT EVER PUT A CHILD, PERSON OR PET IN THE BASKET!** They could be seriously injured by the turning wheel and/or the moving parts. There is also the risk of the passenger falling out of the basket. The trike is made for one person only and the basket is not built to hold a passenger.
- **Weight capacity is 250 lbs.**

## GETTING STARTED

### TO GET STARTED

1. Turn the key in the control box (located under your seat) to the on position. A red LED light will go on showing that the battery is in operation.
2. Pedal until a fast walking speed is achieved twist your control grip and the motor will start.
3. You're on your way.

If the switch is left on and the trike is not in use, the system will shut down in five minutes. To restart you must reset the system by switching the key off, then on again.

A flashing LED light on the control unit means insufficient battery power. This would be time to recharge.

You can control the rate of power with your throttle grip. The more you twist, the more power. Practice the various twist positions to get familiar with the power released. We recommend using a combination of Electric power with pedal power to extend your powered range. It's also good for your own physical fitness.

If you slow below a walking speed the motor will cut off and you need to pedal assist again to turn it back on.

Take special care to SLOW DOWN in turns. With electric power you can easily go into a turn too fast and turn the trike over causing injury or even death. TAKE TURNS SLOWLY, brake before turning and practice turns in an open area so that you will be comfortable taking them.

When your ride is over turn off the key and take it with you. NEVER LEAVE THE KEY IN THE CONTROL BOX. ALWAYS LOCK YOUR TRIKE if you are no using it. THIS IS NOT A TOY!!

Do not allow children to operate this trike without adult supervision.

### **RECHARGING THE BATTERY**

Keep the charger in a protected and covered area. The charger cannot be exposed to water or humidity and must be used in a well-ventilated space preferably outdoors under a covered and dry area.

The battery case can be removed by unhooking the holding strap, disconnecting the control cable and bringing in the battery to connect to the charger.

If the motor is used for a long time and overheats it will shut off. It can be started again after it cools off. The same thing applies to the charger if it gets too hot it will shut off and restart when cooled down.

If the battery charge gets very low the red LED will blink and the motor will shut off. It's now time to recharge the battery.

To recharge the battery use only the charger provided with the EV-3. Any other charger could seriously damage the batteries and motor or injure the user.

Our charger can be plugged into a standard 110v receptacle. The battery connection is a three-prong plug with a lock ring. Please keep water away from the charger and battery case. Our charger is calibrated to correctly charge our battery and you should check the lights until full charge is achieved. Full charge takes from 6 to 8 hours. The green light on the charger will blink until there is a full charge then it will stay a steady green.

If a month goes by between riding the trike, recharge the battery before using.

This Pb-acid battery does not remember its charge. Multiple charging does not shorten its life.

Do not allow children to touch the battery.

# EV-3 Trike Parts List & Description



# EV-3 Trike Parts List & Description

1	6702181	Basket fittings	24	6702201	Freewheel adapter screw only
2	6702180	Basket trike white vinyl coated	25	67135	Front hub axle cap assembly
3	67142	Battery assembly 36v.	25a	67144	Front hub axle nut
3	67148	Battery case (w/o batteries)	26	67133	Front hub motor
3a	67149	Battery charger	26a	67138	Front hub motor brush set
4	6702146	Brake cable 890 X 760 mm Blk. Frt.	26b	67134	Front hub retaining clip
5	1427	Brake cable rear black		67146	Front hub sensor
6	6702145	Brake lever w/lock left (front)	26c	67145	Front hub sensor magnet
7	67152	Brake lever w/lock right (rear)	27	67137	Handlebar grips 7/8 & 1" black
8	13395	Brake shoe front cantilever white	28	3330	Handlebar hi-rise Wald # 870
9	6702290	Brake unit front Cantilever w/locking lever	29	35002	Headset 30.0 X 27.0
10	67143	Brake unit rear band brake	30	41118	Pedal 1/2 "
11	67154	Brake unit rear band brake axle adapter	31	6702191	Rear axle 15mm
12	67147	Cable clip w/screw		6702203	Rear axle key for 15mm axle
13	1603	Chain 1/2 X 1/8 112L	33	6702204	Rear axle nut for 15mm axle
	6702171	Chain 1/2 X 1/8 50L for conversion		6702193	Rear axle spacer Idler side L.H.
14	6702295	Chainguard CP hockey stick style OPC		6702192	Rear axle washer R.H.
15	22240	Crank B.B. parts set 24 TPI	35	6702184	Rear unit bearing 15mm (also fits rear wheels)
16	6702068	Crank chainring 1/2X1/8"X36T	36	6702210	Rear unit hardware 4pc set
17	2232	Crank one piece 5-1/2"	37	67132	Rear unit housing electric blue
18	67141	Electric/mechanical Speed control switch	38	6702140	Saddle hardware western
19	67139	Electronic control unit	39	6702135	Saddle support bar
19a	67140	Electronic control unit key switch w/2-keys	40	6702132	Saddle Western Imported
20	6702155	Fender front 24" S.S. w/braces	40	6702130	Saddle Western USA
21	67131	Fork w/pivots electric blue	41	6702175	Seat post chrome 28.6mm
22	67130	Frame electric blue	42	57380	Stem 6" X .875mm
23	18521	Freewheel 22T	43	67136	Throttle cable
24	6702199	Freewheel adapter 15mm w/2 screws	44	67153	Throttle unit

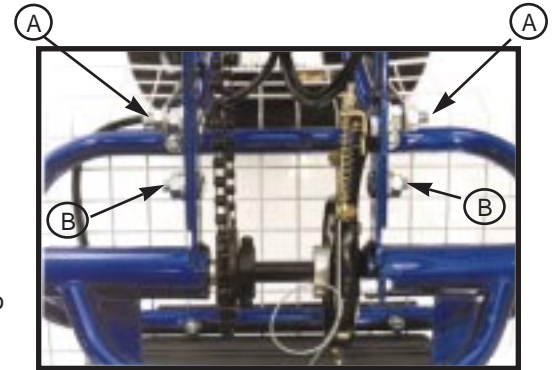
8 Torque Specifications			Torque Specifications (cont.)		
Axle nut front	180 to 240	inch pounds	Pedals	350	inch pounds
Brake front cantilever pinch bolt	36 to 48	inch pounds	Rear unit attaching nuts	300 to 400	inch pounds
Brake lever bolt	24 to 36	inch pounds	Saddle clamp nut	200 to 300	inch pounds
Brake rear drum cable pinch nut	48 to 72	inch pounds	Seat post binder nut	150 to 180	inch pounds
Crank arm fixed cone	min. 300	inch pounds	Seat strut (lower) nut	300 to 400	inch pounds
Crank arm lock nut	min. 240	inch pounds	Stem binder nut	170 to 180	inch pounds
Headset lock nut	min. 300	inch pounds	Stem expander bolt	175 to 250	inch pounds

### Assembly

#### Step 1) Attaching Rear Unit To Frame

Installing the rear unit to the frame is a simple matter of attaching two pairs of long and short carriage bolts. Please proceed in the following sequence:

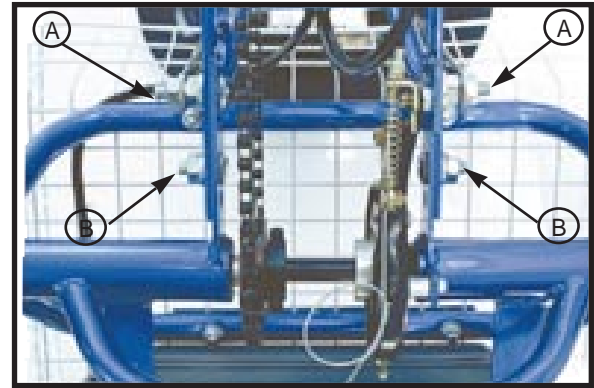
- A. Install loosely the two large carriage bolts **(A)** with their nuts and washers, to the two holes in the end of the trike frame stay. The heads of the bolts are on the inside of the frame.
- B. Slide the arms of assembled unit between rear frame stays, up to and between large carriage bolt heads and frame slot. Finger tighten nuts.
- C. Align the first most forward holes on unit arms with rear frame slot. Attach the two shorter carriage bolts **(B)** and finger tighten. Note that the heads are inside the frame. **(Fig. 1)**
- D. Make sure that axle flange on unit is to the right side of unit and frame. Also unit must be installed with support bars up, so that the basket can rest on them.



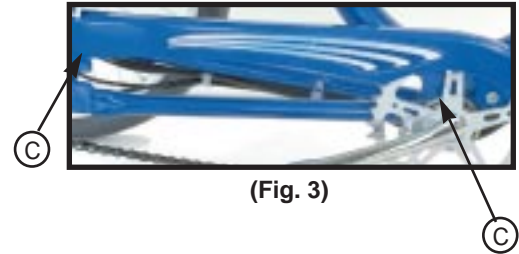
**(Fig. 1)**

## Step 2) Chain Installation & Adjustment of F.W. Unit

- A. Unsnap chain, thread chain around chainwheel and freewheel. Reconnect chain with two-piece connecting link.
- B. Slowly pull rear unit towards end of trike until chain slack is taken up.
- C. Tighten the two short carriage bolts. **(A) (Fig. 2)**
- D. Turn chainwheel and see if chain runs smoothly with no binding or excessive noise. If not, loosen bolts, move unit slightly forward. Tighten bolts and check chain function again.
- E. Make sure the chain runs straight and true with the chainwheel.
- F. If chain now runs O.K. tighten all four carriage bolts **(A & B)** securely, taking care that the unit does not shift. **(Torque 300 to 400 in.lbs.)**
- G. Now install chainguard using two screws **(C)** provided. Make sure chain does not rub on chainguard. **(Fig. 3)**



**(Fig. 2)**



**(Fig. 3)**

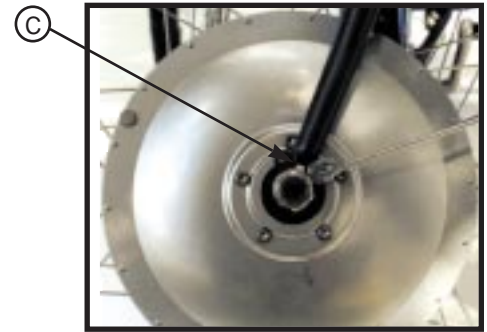
***Note: Long bolts (A) will hold seat brace in Step 10***

### Step 3) Front Wheel Alignment & Attachment

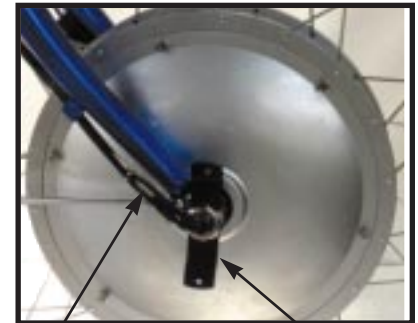
- A. Place fender braces on each side of axle. Attach fender braces to fork eyelets with screws provided. **(Fig. 4)**
- B. Remove axle nuts and safety washers. Drop wheel in fork and center. Electric wires belong on the same side as the chainwheel.
- C. Replace safety washers and install axle cover bracket **(A)** on side that has the wires. **(Fig. 5)**
- D. Thread on axle nuts, center wheel and tighten. **(Torque 180 to 240 in. lbs.)**
- E. Connect wires **(B)** and install axle cover with two metal screws to the cover bracket. **(A)**

Please note to take extra care in connecting the male and female plugs **(B)** on the wire and be sure that the parts are well seated.

- F. **“Warning: Do not ride without safety fork washers. (C)”**



**(Fig. 4)**



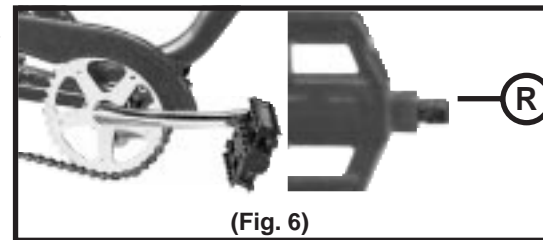
**(Fig. 5)**

**(B)**

**(A)**

## Step 4) Attaching Pedals

- A. Each pedal axle is marked with "R" (right) or "L" (left) (**Fig. 6**). Install them in their correct position. Note that the left pedal tightens by turning counter clockwise and that the right tightens clockwise. The right side is the chain side.  
(**Torque 300 in. lbs.**)



## Step 5) Attaching Rear Wheels

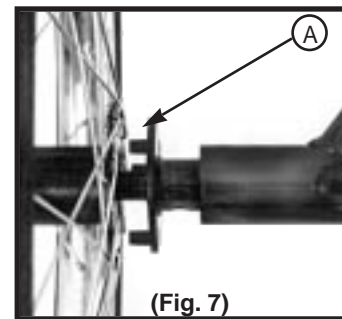
- A. Both wheels are the same. The hub flanges have three holes that fit the studs on the axle flange. (**A**) Install the drive wheel first, (right side) (**Fig. 7**). Add axle washer on the outside and snug down locking nut.

**Over-tightening will damage the bearings.**

- B. Now put the second wheel on left side. This wheel is the idler. First slip on the spacer, then the wheel, followed by a washer and the locking nut until it touches the bearing. Now back off nut 1/8 of a turn.

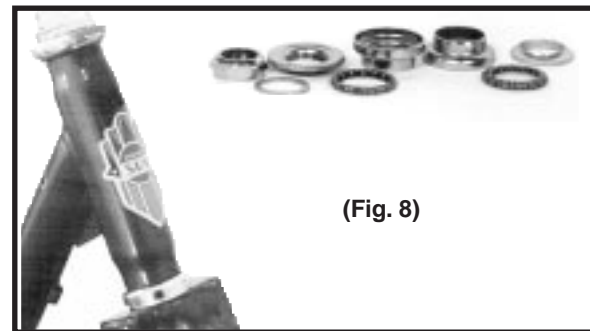
**Again Do Not Over Tighten. Leave Some Play.**

- C. **VERY IMPORTANT:** It is critical for the protection of the bearings, that you inform your customer that the idler wheel requires a slight amount of play in order to prevent bearing damage.



## Step 6) Steering Head Adjustment

- A. Place trike in an upright position on floor, loosen head lock nut and the adjusting cone.
- B. Re-tighten adjusting cone finger-tight. Turn the fork from side to side. Fork should turn with no rocking or free play.
- C. Securely tighten head locking nut down onto washer.  
(**Torque min. 300 in. lbs.**)



### Step 7) Attaching Stem & Handlebar

- A. Loosen expander bolt on stem and insert stem into head tube.
- B. Insert handlebar through stem, center it and adjust to desired angle. Tighten handlebar binder nut securely. **(Torque 170 to 180 in. lbs.)**
- C. Place handlebar and stem at right angle to length of trike and tighten stem expander bolt securely. **(Torque 175 to 250 in. lbs.)**
- D. **“Warning: The stem minimum insert mark must be inside the head tube.”**



(Fig. 9)

### Step 8) Installation of Cantilever Brakes

- A. Loosen screw on brake lever attachment bracket until lever slides over left handle of handlebar. Do not tighten screw yet.
- B. Slide grip on handlebar, making sure that grips are all the way to the end of the handlebar. **Do not use any type of lubricant to install grips.**
- C. Slide brake lever back, as close as possible, to grip on handlebar. Turn lever to desired angle and tighten securely. **(Torque 24 to 36 in. lbs.)**
- D. Install brake arms by inserting the end of the spring into the middle hole on the fork stud and tighten arm.
- E. Insert the cable end-nipple into slot on brake lever.
- F. Insert the cable into link wire.
- G. Set link wire end-fitting into hook side of brake arch. Install the cable through the link wire housing and fixing bolt.
- H. Push both brake arches toward the rim, allowing 3 mm. clearance between brake shoes and rim. Tighten the wire fixing nut. **(Torque 36 to 48 in. lbs.)**
- I. Cut off excess cable, leaving about 25 mm. Put protective cap on cable end and crimp with pliers.
- J. **“Warning: Removal of the front reflector bracket could result in serious injury if the brake cable snaps and the link wire snags the front tire.”**



(Fig. 10)



(Fig. 11)

### Step 9) Attaching Throttle and Band Brake To Right Hand Side Of Handlebar.

- A. Loosen screw and slide brake lever to end ,do not tighten screw yet. **(Fig. 12)**
- B. Slide throttle control to end of bar and back off a bit to prevent binding. Adjust to correct position and tighten.
- C. Slide brake lever back to end of throttle control then turns to correct angle and tighten. **(Torque 24 to 36 in. lbs.)**
- D. Go to band brake **(Fig. 13)** attached to rear unit and thread cable thru band brake spring and binder bolt.
- E. Engage brake and tighten pinch bolt securely. **(Torque 48 to 72 in. lbs.)**



(Fig. 12)



(Fig. 13)

### Step 10) Western Seat Assembly & Installation

- A. Place seat upside down. Clip on the two seat brace clips to seat brace **(Fig. 14)**. Remove two nuts from studs in back of seat and attach brace to seat. Tighten nuts. (Facing Forward: Brace should be in front of studs).
- B. Reposition saddle clamp so that seat post is toward middle. Place seat post on seat and tighten seat post clamp snugly.
- C. Place seat post into seat tube of trike. Put the middle holes on the seat brace into the two long carriage bolts **(Fig. 15)**. Attach nuts.
- D. Adjust seat to desired height and tighten seat post binder securely. **(Torque 150 to 180 in. lbs.)**
- E. Tighten saddle clamp bolt **(Fig. 14)** securely. **(Torque 200 to 300 in. lbs.)**
- F. Tighten seat brace carriage bolts **(Fig. 15)** on frame securely. **(Torque 300 to 400 in. lbs.)**
- G. Tighten seat brace clips **(Fig. 15)** securely.
- H. **“Warning: The seat post minimum insert mark must be inside the seat tube.”**



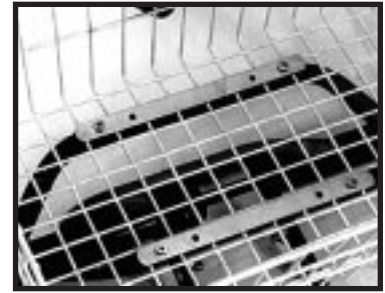
(Fig.14)



(Fig. 15)

**Step 11) Attaching Vinyl Basket**

- A. With the reflector bracket on basket facing rear, center the basket onto the rear unit basket support bars.
- B. Align the two holes of unit basket support bar with the holes of the basket attaching brace (**Fig. 16**). Attach nuts and bolts and finger tighten. Repeat for other bar.
- C. Tighten all nuts and bolts securely .
- D. **Warning: Never put a child, person or pet in the basket.**

**(Fig.16)****Step 12) Install Battery Pack**

- A. Place the battery pack into its steel bracket and attach the safety strap. (**Fig. 17**)

**(Fig.17)****Step 13) How To Attach Reflectors**

- A. Attach the white reflector to the reflector bracket on fork (**Fig. 18**).
- B. Attach the red reflector to the reflector bracket on rear of basket (**Fig. 19**).
- C. Attach the wheel reflectors opposite valve stems on the spokes (**Fig. 20**).

**Step 14) Check Tire Inflation**

Inflate tires per tire manufactures recommendation printed on the sidewall of the tire.

**Step 15) Final Check**

Double check that all fasteners are tightened properly.

**(Fig.18)****(Fig.19)****(Fig.20)**

## Optional Trike Coaster Brake & 3-Speed Coaster Brake Conversion Instructions

### Step 1-A)

Prepare CB hub unit by attaching sprocket with concave side facing outward from hub. Concave sprocket faces in for the 3-spd. C.B.

### Step 2-A)

Slide spacing washers on to axle on brake arm side of CB unit. No washers are used on 3-spd. C.B. hub unit.

**Note:** When installing a coaster brake or 3-spd. coaster brake, you must substitute the fixed sprocket for the free wheel.

### Step 3-A)

Place CB or 3-spd. C.B. hub unit into special frame conversion slot brackets located on top of rear bottom frame stays, attach nuts. **(Fig.22)**

### Step 4-A)

Attach chain (84 Links) to chainwheel and outer CB or 3-spd. C.B. sprocket and connect connecting link.

### Step 5-A)

Pull hub towards rear to remove slack in chain, align unit at a right angle to frame, lightly tighten nuts.

### Step 6-A)

Turn chainwheel and note. Chain condition, chain must run smoothly with no binding or excessive noise. If not, loosen nuts and re-adjust unit. If O.K., tighten nuts securely and attach brake strap to bottom left stay.

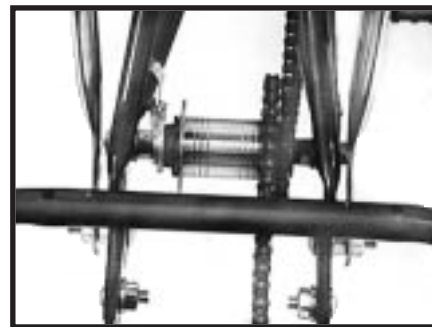
### Step 7-A)

Attach fixed sprocket onto rear trike axle. See **Fig. 4B** (pg. 9) and **step 8** (pg. 11)

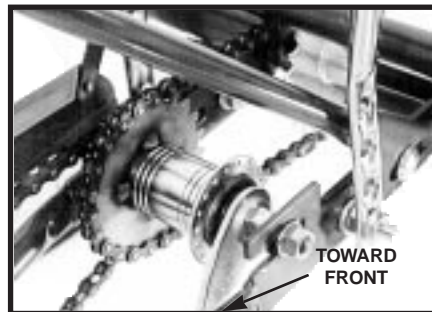
**You are now ready to attach the rear unit to the trike.**

### *Helpful Hint:*

*The trike CB & 3-spd. C.B. hub units are adjusted & aligned the same way as you would a CB wheel on an ordinary bike.*



**(Fig. 21)**



**(Fig. 22)**

**Step 8-A) Rear Unit Installation**

See Step 1 of assembly instructions on page 8.

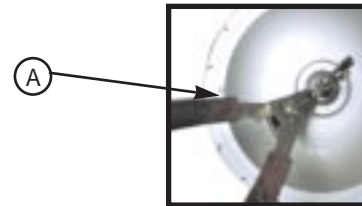
**Step 9-A) Chain Installation & Adjustment**

1. Thread small 50 Link chain over CB or 3-spd. C.B. welded sprocket and unit fixed sprocket. Connect the connecting link, align both sprockets, install axle key and tighten set screw.
2. Slowly pull unit towards end of trike until chain slack is taken up.
3. Tighten the two small carriage bolts.
4. Turn chainwheel and see if chain runs smoothly with no binding or excessive noise. If not, loosen bolts, move unit slightly forward. Tighten bolts and check chain function again.
5. If chain now runs O.K. tighten all four carriage bolts securely, taking care that the unit does not shift.

(Fig. 23)  
Wire side



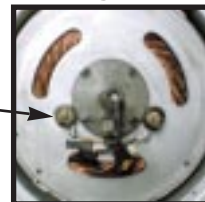
(Fig. 24)  
Magnet side



(Fig. 25)



(Fig. 26)



(Fig. 27)



(Fig. 28)

## Electric Motor Maintenance

Your hub motor is designed to be virtually maintenance free. If you notice a decline in performance (other than a low battery charge) it is most likely time to change the brushes inside the motor. It is advised that you bring your trike to the dealer for this service.

1. Turn your trike upside down.
  - a. Disconnect the power leads to the motor.
  - b. Remove axle nuts, washers and retaining clips.
2. Loosen brake and remove front wheel assembly.
3. Remove the 6 hex head screws (A) locknut and snapping from wire side of hub (Fig. 25).
4. Carefully remove cover plate to expose brush housings (Fig. 26).
5. Carefully remove black brush housing caps and remove old brushes (B) (Fig. 27).
6. Reinstall new set of brushes (Fig. 28). Always replace both brushes at the same time to promote even wear.
7. Re-attach cover plate and **DO NOT FORGET THE RETAINING CLIP!**
8. Re-install wheel onto trike, see page 10 Step 3.

## Miami Sun EV-3 Specifications:

Voltage:	36 volt DC
Batteries:	3-12volt Sealed Gel Cell pbAcid (no memory)
Top Speed*:	9 mph
Range*:	15 miles per charge
Charge time:	6 to 8 hours
Charger:	UL approved fully automatic
Wheel size:	24X1.75" front, 20X1.75" rear
Electric controls :	Solid state Mechanical-electric speed control Thermal overload protection Replaceable fuses
Security:	Key switch Parking brakes
Safety:	Motor engages only after pedaling Automatic low speed cutoff Spring loaded twist grip throttle Automatic shut down if not in use Low charge indicator Front and rear hand brakes with parking locks
Weight capacity:	250 lbs. (passenger and cargo)
Color:	Electric blue
Options:	3-speed coaster brake system and coaster brake system

\* Speed and distance are with out pedal assistance. Individual results will vary due to conditions.

Specifications subject to change without notice.