

**INSTALLATION INSTRUCTIONS
&
OPERATOR INSTRUCTION MANUAL**

FOR THE SUPERARM 2000E

MOTORHOME LIFTS (124 MHL)

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S/N _____

DATE PURCHASED _____

**GIVE THIS OWNERS MANUAL TO THE CUSTOMER
UPON COMPLETION OF INSTALLATION**

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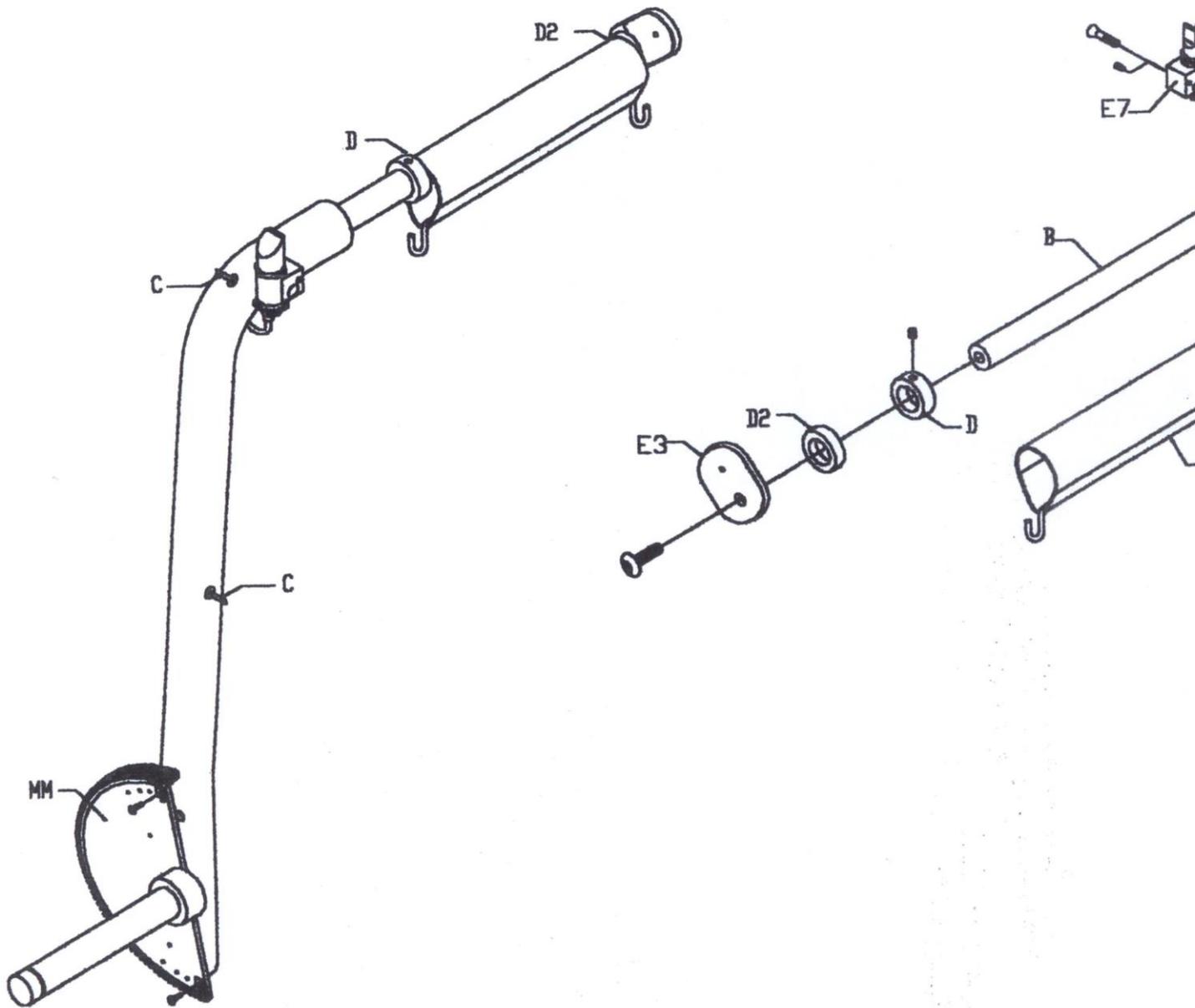
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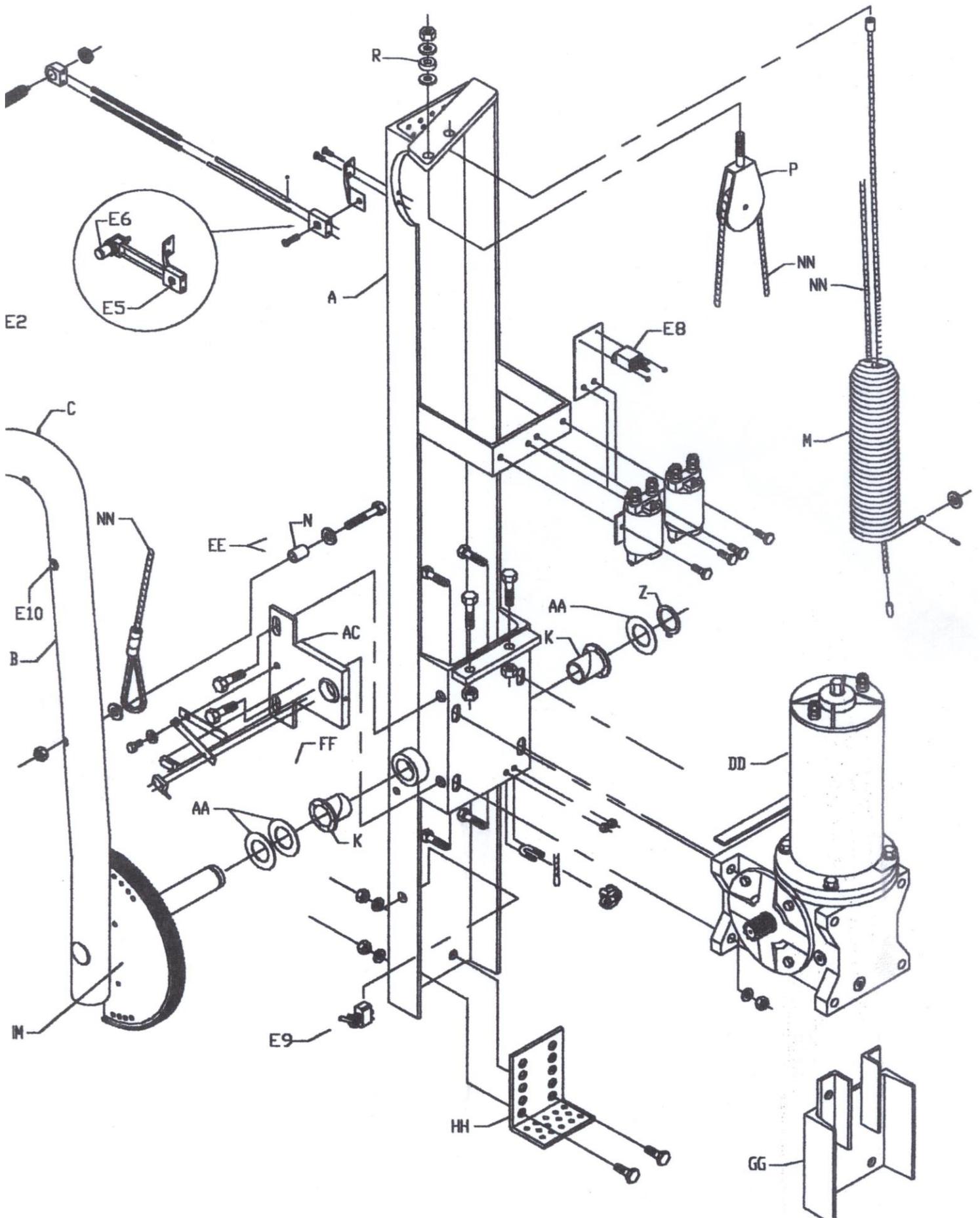
OPEN VAN DOORS. BRING THE LIFT ARM DOWN TO 45° AS SHOWN BY USING THE LOWER SWITCH LOCATED ON THE ARM. POSITION CHAIR WITH REAR WHEELS CLOSE TO VEHICLE BUMPER PREFERABLE. HOWEVER, SOME USERS FIND THAT LOADING WHILE FACING INTO THE VEHICLE IS MORE COMFORTABLE.

ATTACH WEBBING RINGS TO HOOKS ON EITHER SIDE OF HOOK SLEEVE, USUALLY NEAR SILVER COLLARS ON THE ARM. USING THE UP SWITCH AT THE BEND OF THE ARM, RAISE THE ARM ENOUGH TO PRODUCE TENSION ON THE WEBBING STRAPS (VISUALLY CHECK BOTH SIDES OF HOOK UPS). USING THE UP SWITCH ENTER INTO THE VEHICLE.

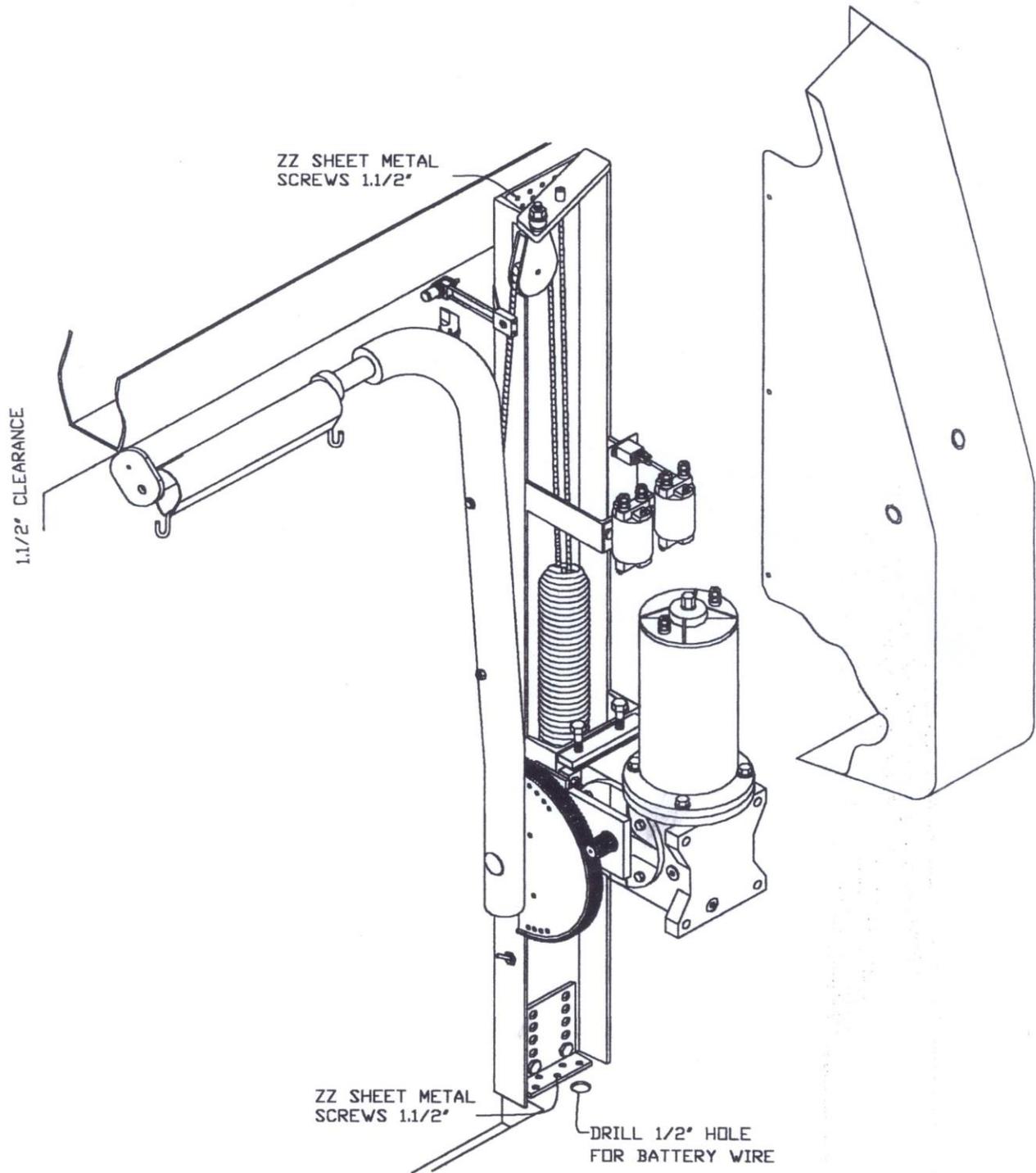
WHEN THE CHAIR IS RESTING ON THE VEHICLE'S FLOOR, UNHOOK WEBBING RINGS FROM THE HOOKS ON THE ARM. RETURN THE ARM TO AN UPRIGHT POSITION AND CLOSE THE DOOR(S). EXIT THE VEHICLE IN THE SAME MANNER.

SUPER ARM LIFT





SUPER ARM LIFT



INSTALLATION OF THE SUPERARM LIFT

(Vans)

1. Remove the lift cover.
2. Place the body of the lift into position as shown in the drawing on page 5, or down into van's step so that the arm will clear door opening at top (1 ½" to 1 ¾"). This clearance is needed in case the person puts their hand on the bar. The top of the arm should be parallel with the top of the door opening. To achieve the correct vertical position, use the adjustable Floor Mount Bracket (HH). If necessary to make the lift shorter, the bottom of the lift body can be cut off and the 7/16" mounting holes can be re-drilled. You may also order a lift extension bracket (GG) to make the lift longer if needed.
3. On vans with sliding doors be sure you do not install screws into sliding door track. You must install above track so that it does not interfere with the door. Use one #12 screw at top and bottom of main body (A), to hold in place temporarily. If all is OKAY then use all mounting screws. Screws must go into metal. Use no less than 6 screws at top of Main Body (A) and no less than 6 screws in floor mount bracket (HH). There should be NO play or shift when the lift is secured correctly.
4. **ELECTRICAL HOOKUP:** Drill ½" hole through floor directly beneath solenoids (Y) Run #8 power wire to hot side of battery or to vans starter solenoid (if hot with key off). (See Superarm Lift wiring diagram on Page 7 for proper hookup of switches, motor, solenoids, etc.) NOTE: There are 3 different wiring diagrams, one for each lift, the Superarm Lift, Motorhome Lift, and Basement Model Motorhome Lift.
5. **WEBBING STRAPS:** POINT OF BALANCE IS VERY IMPORTANT. Attach webbing straps to wheelchair (see page 13). Then run lift up and down with no one in the wheelchair to make sure of lift arm clearance. Then test with a person in chair that is approximately the customers size and build, to adjust straps correctly. Be sure to test again with the customer themselves in the chair to be sure all webbing adjustments are correct for their balance point.
6. **ELECTRIC EYE:** To adjust Lift Arm Sensor & Over-door Lift Sensor SEE PAGE 9 of this instruction booklet.

ELECTRIC EYE INSTRUCTIONS

PARTS LIST

E1. ARM SENSOR

E2. RING NUTS

E3. ARM REFLECTOR

E4. OVERDOOR SENSOR

E5. OVERDOOR REFLECTOR TAPE (2 STRIPS, INCLUDED, USE BOTH)

- 1. The arm sensor must be aligned first. The overdoor sensor will not function until the arm sensor is correctly aligned.**
- 2. Remove green/blue foam from arm sensor, and blue ring nuts. Place sensor into aluminum block, with wire coming “down” towards the floor. Fasten blue ring nut to top of sensor so that it is flush with aluminum block. Flat face of sensor should be pointed at the end of the arm.**
- 3. Align sensor so the yellow light on sensor turns on. If unable to easily align sensor, utilize enclosed overdoor reflector tape to adjust. Start 2” away from sensor (minimum sensing distance), and incrementally mover further out until aligned with end of arm reflector.**
- 4. Find enclosed overdoor reflector tape strips. Clean and dry the support post between passenger and side doors. Starting from 2” away from overdoor sensor (minimum sensing distance), move towards support post and adjust bend/location of overdoor sensor bracket until sensor is aligned with post. WHEN BOTH EYES ARE ALIGNED, YOU SHOULD HERE A SMALL CLICK IN THE YELLOW RELAY CUBE. ARM SENSOR WILL HAVE A YELLOW LIGHT, OVERDOOR SENSOR WILL HAVE NO LIGHT.**
- 5. Mark correct spot on support post, peal protective back from reflector tape strips and place on post while making sure sensors stay active.**
- 6. The electric eye system has a red override button to be used ONLY if sunlight is preventing the IR beam from completing its circuit. If sunlight shines directly on the sensor, it stops the beam. This is the only factory approved time to utilize this switch.**

PART#

A MAIN BODY (3 STYLES) SA, MH & BMH

B LIFT ARM (3 STYLES) SA, MH & BMH

C MINI TOGGLES (2 ON SA) (1 ON BMH)

D COLLAR (ADJUSTABLE)

D2 COLLAR (THIN)

E STEEL O-RINGS (OPTIONAL)

E1 ARM SENSOR

E2 ANGLE CAP & RING NUT

E3 ARM REFLECTOR

E4 OVER-DOOR REFLECTOR TAPE (OR MOUNT BLOCK)

G RING RETAINER (METAL)

G2 RING RETAINER REFLECTOR (VAN LIFT ONLY)

J HOOK SLEEVE ASSEMBLY

K NYLON BEARINGS 2 REQUIRED

MR/ML LARGE SPRING (COIL)

N LARGE CABLE BUSHING ASSEMBLY

O PLASTIC CABLE LOOP THIMBLE

P CABLE PULLEY

R THRUST BEARING

Y SOLENOIDS (2 REQUIRED)

Z SNAP RING

AA SPACER WASHERS

BB SPUR GEAR (MUST KNOW TYPE OF GEARBOX)

CC GEAR REDUCER BOX

DD 12 V. MOTOR (HAS MANUAL CRANK DOWN CAPABILITY)

EE FULL IN/OUT LIMIT SWITCH ASSEMBLY (NEED LIFT S/N)

FF SWITCH MOUNT BRACKET (NEED LIFT S/N)

GG LIFT EXTENSION BRACKET (OPTIONAL)

HH MOUNTING BRACKET

LL 3/8 X 1 MOUNTING BOLTS (2 REQUIRED)

MM RING GEAR (MUST BE WELDED ON)

NN LARGE CABLE (NEED LIFT S/N)

XX LIFT COVER (NEED LIFT S/N)

AB-R/L LIFT FENDER

AC HEAVY DUTY BEARING PLATE

AFL LONG FUSE STRAPS (2)

AFS SHORT FUSE STRAPS (4)

AG IN LINE FUSE HOLDER

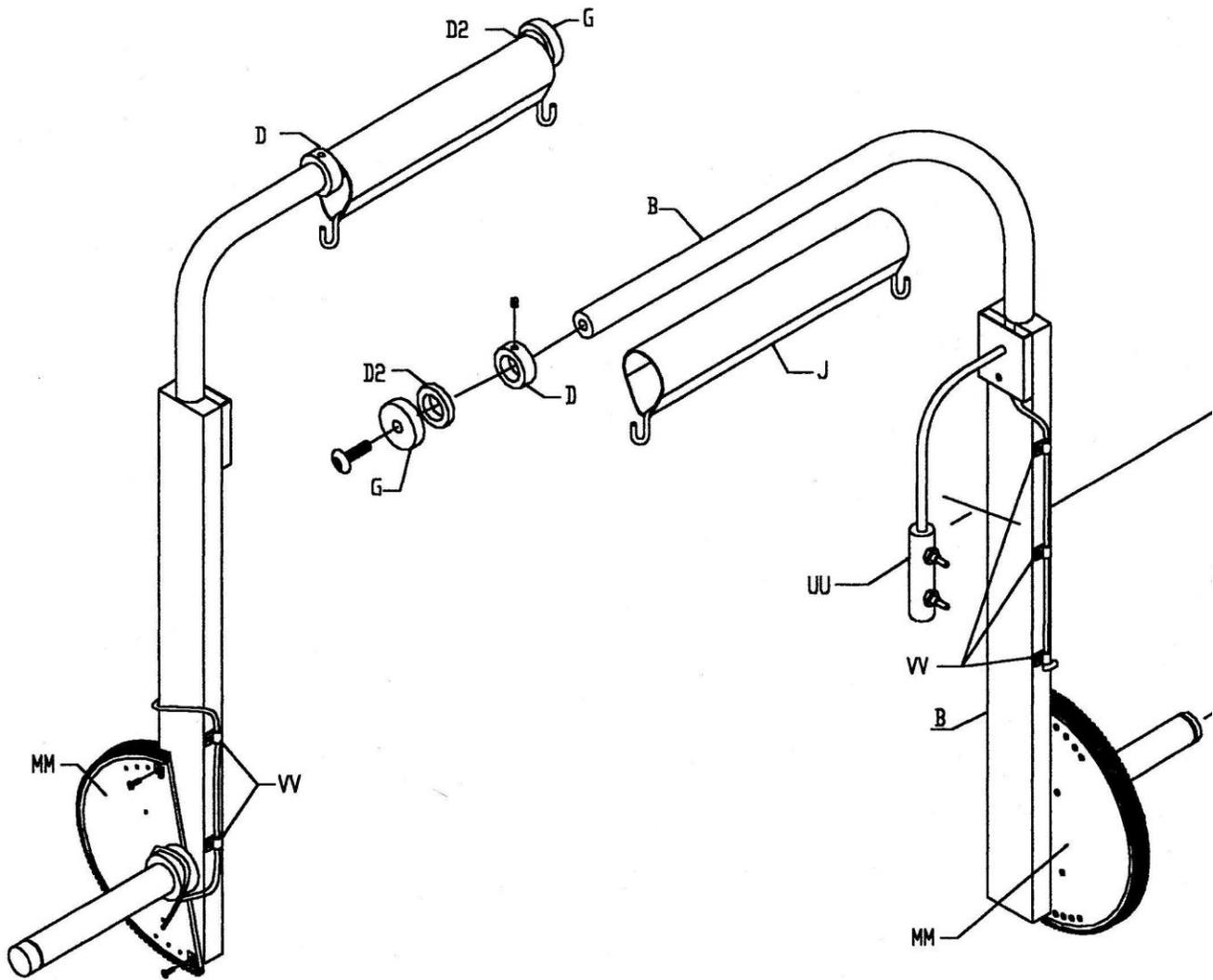
AP #8 POWER CABLE (16 FT)

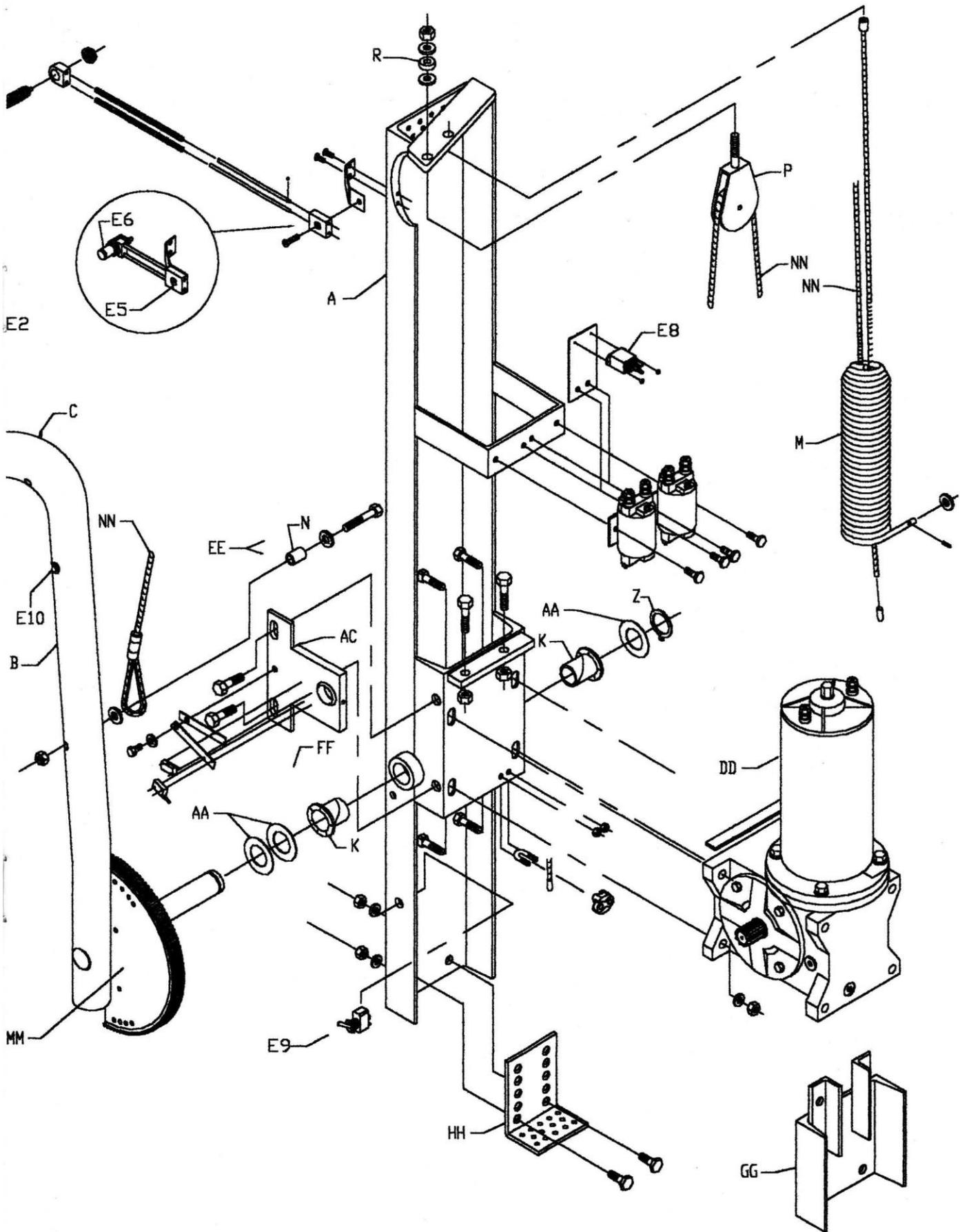
CW WIRING HARNESS

EE-W EE IN/OUT WIRING HARNESS

SA=SUPERARM LIFT MH=MOTORHOME LIFT BMH=BASEMENT MOTORHOME

MOTOR HOME LIFT





INSTALLATION OF THE MOTORHOME LIFT

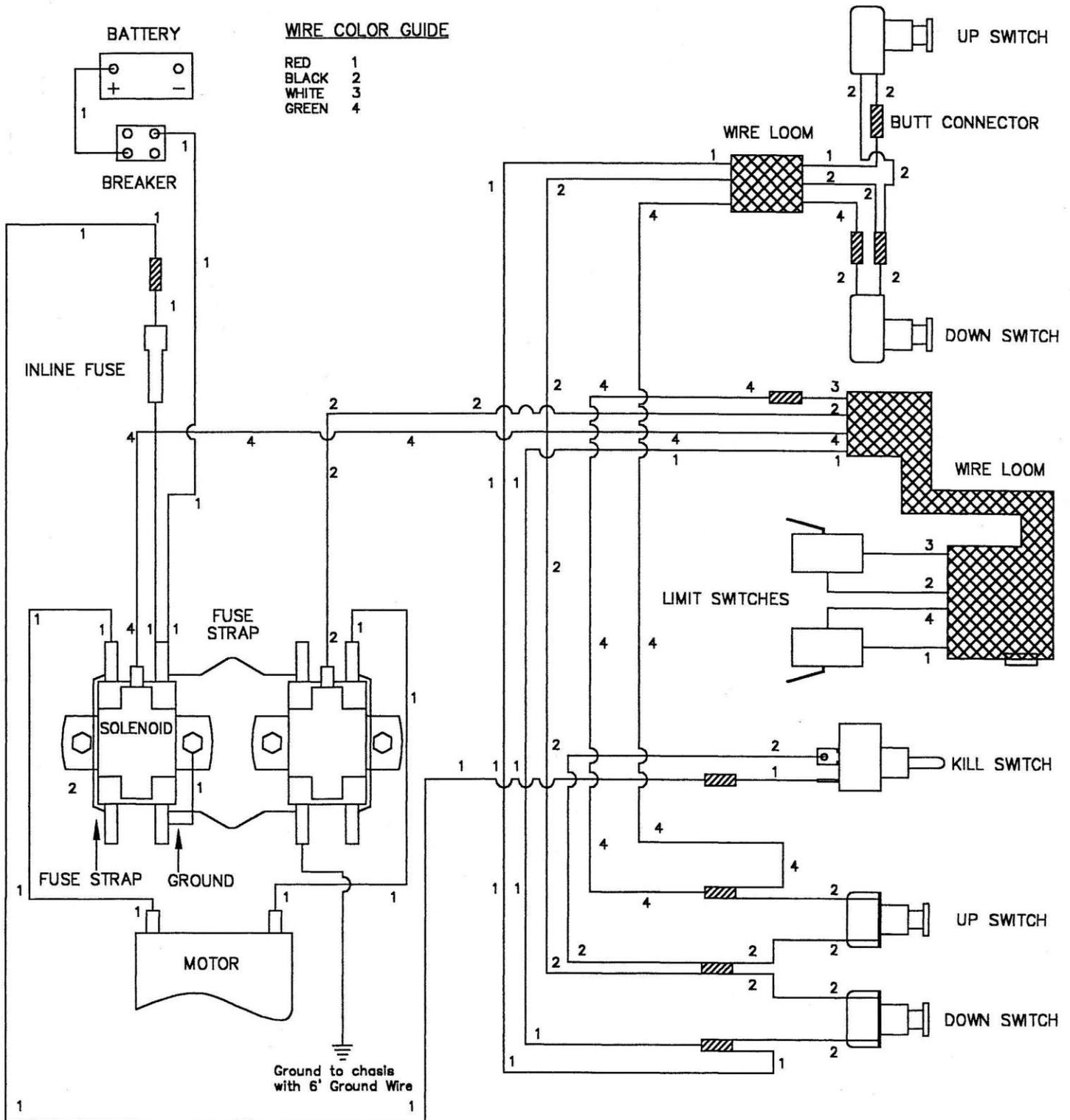
IMPORTANT: DOOR OPENING MUST BE AT LEAST 3" WIDER THAN THE WHEELCHAIR AT THE WIDEST POINT. The lift will take up 3 inches of the door opening. Most adult wheelchairs are 26 inches wide therefore they would need a 29 inch door opening.

1. Remove the cover
2. Check to see which side of lift was ordered. Set the lift in Motorhome on right side of door (or left is lift is a #124 L). Install as shown in drawing. (Cabinet may need to be altered).
3. Be sure the arm can clear the side of the door opening. The arm must clear door opening at top (1 ½" to 1 ¾"). This clearance is needed in case the person puts their hand on the bar. The top of the arm should be parallel with the top of the door opening. If the lift body is too long, the bottom of the lift body can be cut off and the 7/16 inch mounting holes can be redrilled, or the lift can be raised up to get the desired clearance.
4. If the motorhome wall is weak or does not have good support beams around the door you may need to use a steel or aluminum plate on the outside of the motorhome and bolt the lift through the wall and outside plate. Use one #12 screw at top & bottom of main body (A), to hold in place temporarily. If all is OK then use all mounting screws. Use #12 screws at top of Main Body (A) and use #12 sheetmetal screws in floor mount bracket (JJ). The floor mount bracket (JJ) is a 5" piece of angle that should be mounted to the floor on the inside of the 6" channel lift body. Screws are supplied with the lift. (Make sure lift is in solid).
5. We have supplied at the bottom of the motorhome lift a limit switch for safety. When the switch is turned off, it will prevent the arm from moving until switch is turned on again. The reason for this is so that children cannot play with the lift or the switch cannot be accidentally pushed and the arm begin moving thus damaging the door.

ELECTRICAL HOOKUP: drill ½" hole through floor below solenoids (Y) , run #8 wire (16 ft. of #8 is supplied with lift) to hot side of battery or to vehicles starter solenoid (if hot with key off). Connect to hot side (positive). (See Motorhome Lift wiring diagram on Page 12) for proper hookup of switches, motor, solenoids, etc.) **NOTE:** There are 2 different wiring diagrams, one for the Superarm Lift and one for the Motorhome Lift.

GROUNDING: Make sure lift is well grounded to motorhome frame. (use #8 wire supplied with Lift).

SUPERARM MOTORHOME WIRING SCHEMATIC



NOTE: The above schematic is for a left hand lift. On a right hand lift there are only two changes on the schematic. (1) The green and black leads on the small posts of the Selenoids are reversed. (2) On the Limit Switches the set of white and black wires are reversed with the green and red.

MAINTENANCE FOR ALL SUPERARM AND MOTORHOME LIFTS

MAINTENANCE/SERVICE: SERVICE AND CHECK FOR SAFETY EVERY 6 MONTHS. A CAN OF GRAPHITE LUBE COMES WITH EACH LIFT. MAKE VISUAL INSPECTION OF CABLES FOR ANY FRAYING, CHECK GEARS AND PULLEY FOR WEAR, AND CHECK ALL SCREWS AND BOLTS FOR TIGHTNESS. MAKE SURE ALL SWITCHES ARE WORKING PROPERLY. BE SURE TO ALERT CUSTOMER TO ANY AND ALL REPAIR WORK YOU FEEL MAY BE NECESSARY. ONCE PER YEAR YOU SHOULD REMOVE COVER, AND LUBE ALL WORKING PARTS INCLUDING GEARS.

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GEARBOX OIL: All lifts come with the gear box oil already in them. The oil we use is Mobile SHC-634 and is a synthetic oil that should work well between 200 degrees and 40 degrees below zero. The amount used is approximately 1 ½ quarts of oil per gear box. Oil level does not need to be checked unless any visible signs of leakage occur. If visible leakage does occur the gear box must be repaired or replaced. To refill gear box, motor and gearbox must be removed from lift. Then remove set screws on top and breather cap on end. Fill gearbox to bottom of breather cap hole through set screw hole.

MOLY GRAPHITE LUBRICANT: Use for lubing both gears. Use on gears every 3-6 months. Apply with brush that is attached to the lid of the Moly Graphite Lube can that came with your lift.

MOTORCYCLE CHAIN LUBE: (Not supplied with lift) can Be used for nylon bearings, pivot shaft, pulley or metal thrust bearings at top of pulley. You should lube if and whenever wearing sound of squeak is heard.

INSTALLER INSPECTION CHECK LIST

INSTALLER MUST FOLLOW EACH STEP OF THIS CHECK LIST FOR CORRECT INSTALLATION. THE SAFETY OF THE CUSTOMER CAN BE JEOPARDIZED BY A POOR INSTALLATION.

- _____ 1. PHYSICALLY CHECK TIGHTNESS OF ALL MOUNTING SCREWS AND BOLTS ON BODY OF LIFT. DO NOT ASSUME THEY ARE TIGHT !!!!.**
- _____ 2. CHECK ALL WIRING CONNECTIONS AND PLUG IN TERMINALS TO BE SURE THEY ARE ON CORRECTLY AND TIGHT.**
- _____ 3. (SUPERARM VAN LIFT ONLY) CHECK TO SEE THAT THE OVERHEAD SENSOR IS WORKING CORRECTLY. WITH SENSOR IN PLACE (RED LIGHT ON), TEST TO BE SURE LIFT WILL NOT OPERATE WHEN ELECTRIC EYE SENSOR BEAM IS INTERFERRED WITH BY HAND OR HEAD.**
- _____ 4. (SUPERARM VAN LIFT ONLY) MAKE SURE THAT THE LIFT ARM SENSORS ARE WORKING CORRECTLY. WITH SENSORS IN PLACE (RED LIGHTS ON), TEST TO BE SURE LIFT WILL NOT OPERATE WHEN ANY PART OF THE PERSONS BODY OR CHAIR INTERFERES WITH THE ELECTRIC EYE SENSOR BEAM.**
- _____ 5. IN AND OUT LIMIT SWITCHES MUST BE WORKING SO THAT LIFT WILL NOT OVERRUN THE GEARS STOPPING POINT.**
- _____ 6. RUN THE LIFT IN AND OUT WITH THE WHEELCHAIR ON IT BEFORE LETTING THE CUSTOMER TRY IT. TRY WITH SOMEONE ABOUT THE CUSTOMERS SIZE AND WEIGHT, THEN TRY WITH CUSTOMER.**
- _____ 7. MAKE SURE HAND CANNOT BE PINCHED BETWEEN THE LIFT ARM AND THE TOP OF DOOR OPENING.**
- _____ 8. GIVE THIS INSTRUCTION BOOKLET AND THE CAN OF MOLY LUBE TO THE CUSTOMER. TELL THEM TO READ INSTRUCTION BOOK FOR MAINTENANCE.**

WARNINGS; INSTRUCT CUSTOMER TO BE AWARE OF POSSIBLE DANGER BECAUSE OF THE GREAT AMOUNT OF POWER OF THE ARM LIFT. THEY MUST ALSO BE CAREFUL TO KEEP FINGERS, ELBOWS AND HANDS FREE OF PINCH AREAS. MAKE SURE HEAD IS TILTED BACK TO CLEAR DOOR OPENING WHILE LOADING AND UNLOADING SO THEY DON'T GET THEIR HEAD CAUGHT BETWEEN THE ARM AND THE TOP OF THE DOOR OPENING.

NOT TO BE USED BY ANYONE UNTRAINED IN ITS USE.
INFORM CUSTOMER ABOUT: HOW THE LIFT WORKS-WHEN TO USE THE SENSORS RED OVERRIDE BUTTON (VAN LIFT ONLY). AND WHERE TO TURN OFF THE POWER KILL SWITCH SO THERE IS NO BATTERY DRAINAGE (FOR LIFTS WITH ELECTRIC EYE SENSORS.)

**INSTALLERS SIGNATURE COMPANY INSTALLING INSTALLATION
DATE**

MANUAL OPERATION OF THE SUPERARM 2000E

IN/OUT MOTION

TOOLS NEEDED: 1/2" RATCHET WRENCH (OR METRIC 13)
A SHORT PIECE OF INSULATED WIRE (APPROX 1 FT.)
(Old Style Lifts used 9/16" Ratchet Wrench)

IF FOR SOME REASON THE LIFT STOPS AND WILL NOT OPERATE WITH THE NORMAL SWITCHES TRY THE FOLLOWING:

1. TO RAISE OR LOWER ARM MANUALLY, EITHER USE SLOT IN COVER OR REMOVE COVER AND ATTACH A STANDARD 1/2" SOCKET RATCHET WRENCH TO THE HEX SHAFT COMING OUT OF THE TOP OF THE MOTOR. TURN ONE DIRECTION OR THE OTHER TO MOVE THE LIFT ARM IN OR OUT. (BE CAREFUL IF COVER IS REMOVED THAT YOUR WRENCH DOES NOT TOUCH OTHER METALS AND SHORT OUT YOUR WIRING.)
2. TO MOVE LIFT MANUALLY, USING BATTERY POWER BUT BYPASSING SWITCHES, GET A SHORT PIECE OF WIRE (APPROX 1 FT.) TOUCH 1 END OF WIRE TO THE SOLENOID POST THAT HAS A WIRE RUNNING TO THE BATTERY. TOUCH OTHER END OF WIRE TO THE SMALL POST ON THE SAME SOLENOID. THE LIFT SHOULD MOVE IN OR OUT DEPENDING ON WHICH SOLENOID IS ACTIVATED.

ADDITIONAL TROUBLE SHOOTING GUIDE:

IF THE SOLENOID DOES NOT FUNCTION CHECK THE FUSE STRAPS ON SOLENOIDS. IF ALL STRAPS ARE OKAY, THEN LISTEN TO THE SOLENOID TO SEE IF YOU HEAR A CLICKING NOISE IN SOLENOID IF YOU DO NOT, THEN REPLACE SOLENOID.

IF YOU HEAR CLICKS IN BOTH SOLENOIDS AND THE LIFT STILL DOES NOT OPERATE, CONNECT BATTERY WIRE TO 1 POST OF MOTOR AND GROUND WIRE TO ANOTHER POST OF MOTOR IF THIS DOESN'T WORK THEN REPLACE MOTOR.

IF THE SOLENOIDS WORK BUT SWITCHES DO NOT, THEN REPAIR OR REPLACE WIRNG OR SWITCHES.

WARNING: WHEN YOU BYPASS THE LIMIT SWITCHES DO NOT OVERDRIVE THE ARM IN OR OUT. YOU MAY DAMAGE THE LIFT AND/OR LIMIT SWITCHES.

Superarm Lift Troubleshooting & Solutions

Solutions	Problem with Lift
Jump solenoids and usually it will be the solenoid you <u>think</u> is good. Camdec Solenoids are the same.	Lift only goes <u>one way</u> and <u>arm coasts</u> to a stop instead of coming to an abrupt halt.
Check fuse straps on Solenoids to see if they're making good contact. Also check Inline Fuse.	<u>Solenoids have power</u> but switches in arm don't.
Broken wire or bad crimp or connection.	Arm <u>goes all the way one direction</u> and only part of the way in the other direction.
Switch harness shorting out <u>inside</u> arm.	Lift <u>sparks</u> right where spur gear and arm gear touch.
Red to Red or white to green wires doesn't connect well. Also check power cable at battery connection.	Solenoids click but <u>motor does not turn</u> .
Power cable and ground cable are backward.	All the wiring on the Lift is correct, but when you operate switches in arm, it <u>goes the opposite direction</u> .
One solution is to check in/out limit switches.	2000E Lift <u>will not go in or out</u> even with override button.
The wire harness on button for the override button is bad at the switch.	2000E Lift will operate when reflectors line up with both sensors, but <u>won't work when you remove a reflector and the override button is pushed on</u> .
Wire in arm for sensor is pinched where the lower mini toggle is mounted. In one case it was the black wire. (Or Blue & Black Toggle wires.)	Lift <u>sensor lights won't shut off</u> when you turn off the kill switch. (under half moon gear)
Check wire harness first. But in one case it was a bad screw jack motor.	Screw jack (Linear actuator) on basement Lift only goes one direction and the rest of the Lift works fine.
Ground strap on solenoid is broken or loose.	<u>Lift doesn't operate</u> , but solenoids and switches are all good.
Bad relay.	SAR 2000E <u>Lift doesn't work</u> . All wiring, fuses & fuse straps are good and switches are good.
Buttons on body are normally closed and buttons in UU are normally open. Change buttons on body <u>to normally open</u> .	Motor home Lift 124 . When you hook power to solenoids they click, but buttons in #UU handle don't work & buttons on body do.
Wires – one black, the other blue – for the on/off switch getting bad connection or switch is bad.	2000E <u>electric eye lights are both on</u> whether override button is pushed or not.