



# OPERATOR MANUAL

IMPORTANT INFORMATION, KEEP FOR OPERATOR

888-994-7636, fax 888-864-7636  
unifiedbrands.net

THIS MANUAL MUST BE RETAINED FOR FUTURE REFERENCE. READ, UNDERSTAND AND FOLLOW THE INSTRUCTIONS AND WARNINGS CONTAINED IN THIS MANUAL.

**FOR YOUR SAFETY** Do not store or use gasoline or other flammable vapors and liquids in the vicinity of this or any other appliance.

**NOTIFY CARRIER OF DAMAGE AT ONCE** It is the responsibility of the consignee to inspect the container upon receipt of same and to determine the possibility of any damage, including concealed damage. Avtec suggests that if you are suspicious of damage to make a notation on the delivery receipt. It will be the responsibility of the consignee to file a claim with the carrier. We recommend that you do so at once.

**Manufacture Service/Questions 888-994-7636.**

This manual provides information for:

## BUS-TRAC SYSTEM

### RETAIN THIS MANUAL FOR FUTURE REFERENCE

NOTICE: Due to a continuous program of product improvement, Avtec reserves the right to make changes in design and specifications without prior notice.

NOTICE: Please read the entire manual carefully before installation. If certain recommended procedures are not followed, warranty claims will be denied.

MODEL NUMBER \_\_\_\_\_

SERIAL NUMBER \_\_\_\_\_

INSTALLATION DATE \_\_\_\_\_

## INSTALLATION INSTRUCTIONS

**WARNING: THE UPPER AND LOWER TENSIONING BOLTS MUST BE MOVED EQUAL AMOUNTS.**

### I. BUS-TRAC INSTALLATION

- A. It is important that the Bus-Trac be mounted level in order to help ensure proper drive component alignment which minimizes drive train wear.
- B. If the unit is supported by a wall, shims can be placed between the Bus-Trac's frame and the top of the wall. These shims should be either welded in place or held in place by the bolts which secure the Bus-Trac frame to the wall.
- C. If the Bus-Trac is supplied with a stainless steel base, be sure that the floor area where the base is to be located is flat and level. Secure the base to the floor by bolting through the base frame into the floor. Secure the Bus-Trac frame to the base with the bolts supplied.

### II. CHAIN ASSEMBLY

- A. Normal operation of the Bus-Trac causes chain stretch and wear. The service life of the Bus-Trac chain expires when it has stretched 3%. The original AVTEC chain is installed with offset links which account for 3% of its total length. Stretch is compensated for by removal of the offset links. When all offset links are removed the chain has reached its service limit and must be replaced. Whenever chain replacement is required the associated sprockets should also be replaced.

- B. Interim tension can be maintained without removing any offset links. To do this, move the shafts outward as follows: [Refer to fig. 1]

1. Loosen the gearbox mounting bolts [4] and back-off the gearbox tensioning bolts [2].
2. Loosen the shaft bearing mounting nuts [4 per bearing]. [Top and bottom]
3. Loosen the end wear strip mounting nuts [3 per end piece].
4. Loosen the jam nuts on the bearing tensioning bolts.
5. Adjust tension on the driven chain by moving the bearings outward using the bearing tensioning bolts until the chain slack has been removed.

Adjust the tension by moving the driven shafts outward equally at both ends. Use a level to make sure that the shafts are vertical.



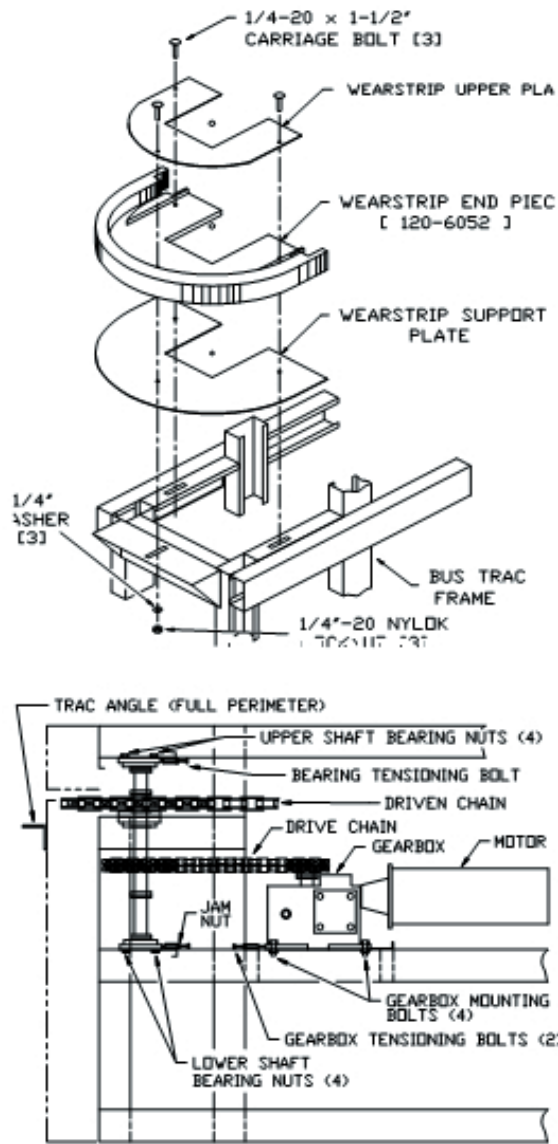


Fig. 1

6. When the slack has been removed,
  7. Tighten the jam nuts on the bearing tensioning bolts.
  8. Tighten the shaft bearing mounting nuts.
  9. Tighten the wear strip mounting nuts.
  10. Remove the slack from the drive chain by moving the gearbox/motor assembly using the gearbox tensioning bolts.
  11. Tighten the gearbox tensioning bolt jam nuts.
  12. Tighten gearbox mounting bolts.
- C. When the shaft bearings and/or wear strips have reached their outward limits, additional tension is achieved by removing offset links from the driven chain. When all of the offset links have been removed and the shaft bearings and/or wear strips have reached their outer limits, the chain is considered to have reached its service limit. Any additional wear would require replacement of the driven chain and associated sprockets.
- D. Offset links are removed by removing the cotter pins from the roller chain shafts and removing the end plate[s]. Re-assemble the roller chain and insert new cotter pins to hold the end plate[s] in place.

- E. If the tray carrier attachment brackets must be replaced, care must be taken when tightening the nuts which hold the brackets in place. Over torquing the nuts could pull the shoulders off of the roller chain shafts [Refer to fig. 2].

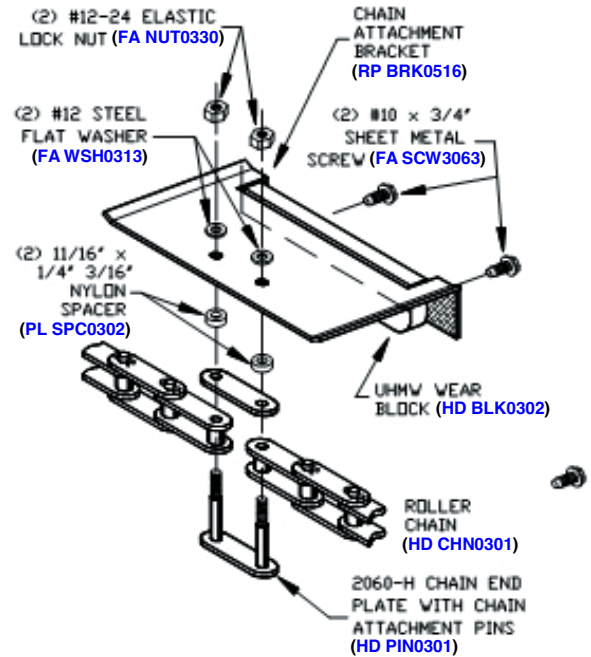


Fig. 2

### III. MOTOR

- A. Brush replacement @ 2500 hours or one [1] year.

### IV. BEARING MAINTENANCE

- A. Lubricate [using Zirk fittings] after one [1] month or 250 hours of operation.
- B. Lubricate after every four [4] months or 500 hours of operation thereafter.

Recommended lubricants:

Lubrico Type M-6

AVTEC part no. FL LUB0302 Bearing Grease

### V. CHAIN MAINTENANCE

- A. Use a spray lubricant on the drive and driven chains after one [1] month or 250 hours of operation.
- B. Lubricate after every four [4] months or 500 hours of operation thereafter.

Recommended lubricants:

McMaster Carr No. 6159K11 Roller

Chain Lubricant

### VI. OPERATION

- A. The Bus-Trac is equipped with one or more pairs of push buttons which are used to start and stop the motor. Depressing any of the start buttons will start the tray carriers in motion. Depressing any of the stop buttons will stop the motor. These switches are intended to start and stop the motor at the beginning and end of the busing period or whenever the Bus-Trac will not be used for an extended period of time.
- B. The tray carrier speed can be changed [when the Bus-Trac is on] by turning the speed control knob. Turn the knob counter-clockwise to slow the Bus-Trac and clockwise to increase speed. [Maximum speed is approximately sixteen feet per minute (16 fpm).

- C. An optional limit switch may be provided which will turn off the Bus-Trac if something becomes caught on the tray carrier[s] or if something protrudes too far beyond the edge of the tray carrier(s). To resume Bus-Trac operation, clear the obstruction, then press the start button.

## VII. ELECTRICAL REQUIREMENTS

120 vac, 20 amps, 60 hz

## VIII. CLEANING

**WARNING: DO NOT HOSE DOWN THE BUS-TRAC, AS THIS MAY REMOVE LUBRICANTS FROM THE CHAIN, CAUSING PREMATURE WEAR.**

**WARNING: DO NOT USE STEEL WOOL, SOS OR BRILLO PADS OR OTHER ABRASIVE PADS OR CLEANERS ON ANY PART OF THE UNIT, AS IT WILL MAR THE FINISH.**

- A. It is important to keep the AVTEC Bus-Trac clean in order to avoid an unsanitary condition. The AVTEC Bus-Trac is designed with easy cleaning in mind. It is recommended that electrical power be turned OFF while cleaning. Removable baskets can be cleaned in all types of dish machines. Sponge the exterior of the unit clean with warm, soapy water and wipe with a clean towel.
- B. Individual 2 and/or 3 tier tray carriers may be removed for cleaning and will fit in any 20" x 20" dish rack. Carriers are located on certain tray hanger rungs, according to specific operation.

## IMPORTANT SAFETY INSTRUCTIONS FOR BUS-TRAC

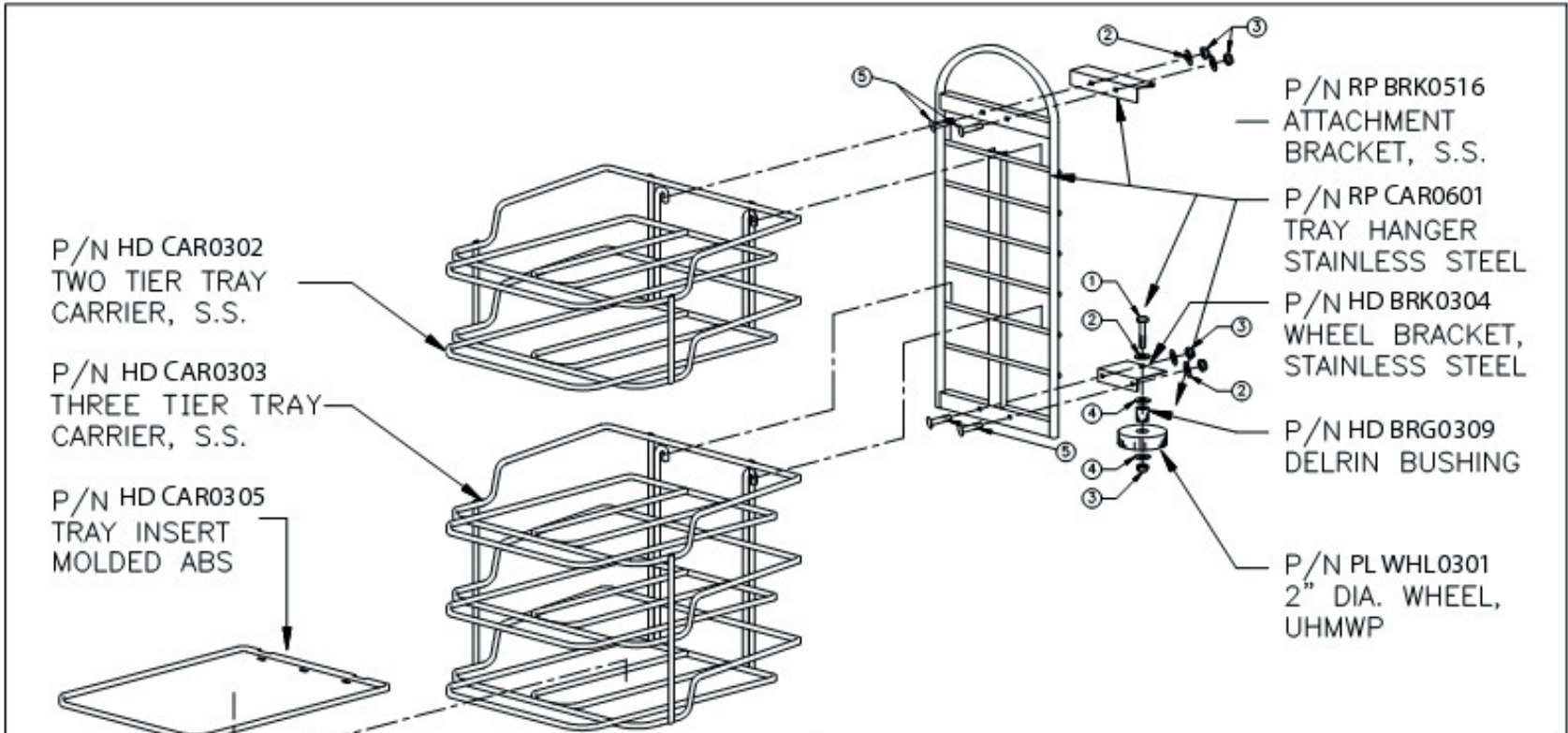
**WARNING: WHEN USING ELECTRIC APPLIANCES, BASIC PRECAUTIONS SHOULD ALWAYS BE FOLLOWED, INCLUDING THE FOLLOWING:**

- A) **READ ALL THE INSTRUCTIONS BEFORE USING THE APPLIANCE.**
- B) **TO REDUCE THE RISK OF INJURY, CLOSE SUPERVISION IS NECESSARY WHEN AN APPLIANCE IS USED NEAR CHILDREN.**
- C) **DO NOT CONTACT MOVING PARTS.**
- D) **ONLY USE ATTACHMENTS RECOMMENDED OR SOLD BY THE MANUFACTURER.**
- E) **DO NOT USE OUTDOORS.**
- F) **FOR A PERMANENTLY CONNECTED APPLIANCE - TURN THE POWER SWITCH TO THE OFF POSITION WHEN THE APPLIANCE IS NOT IN USE AND BEFORE SERVICING OR CLEANING.**

## SAVE THESE INSTRUCTIONS

**GROUNDING INSTRUCTIONS FOR PERMANENTLY CONNECTED APPLIANCES**

**THIS APPLIANCE MUST BE CONNECTED TO A GROUNDED, METAL, PERMANENT WIRING SYSTEM; OR AN EQUIPMENT-GROUNDING CONDUCTOR MUST BE RUN WITH THE CIRCUIT CONDUCTORS AND CONNECTED TO THE EQUIPMENT-GROUNDING TERMINAL OR LEAD ON THE APPLIANCE.**



P/N HD CAR0302  
TWO TIER TRAY  
CARRIER, S.S.

P/N HD CAR0303  
THREE TIER TRAY  
CARRIER, S.S.

P/N HD CAR0305  
TRAY INSERT  
MOLDED ABS

P/N RP BRK0516  
ATTACHMENT  
BRACKET, S.S.

P/N RP CAR0601  
TRAY HANGER  
STAINLESS STEEL

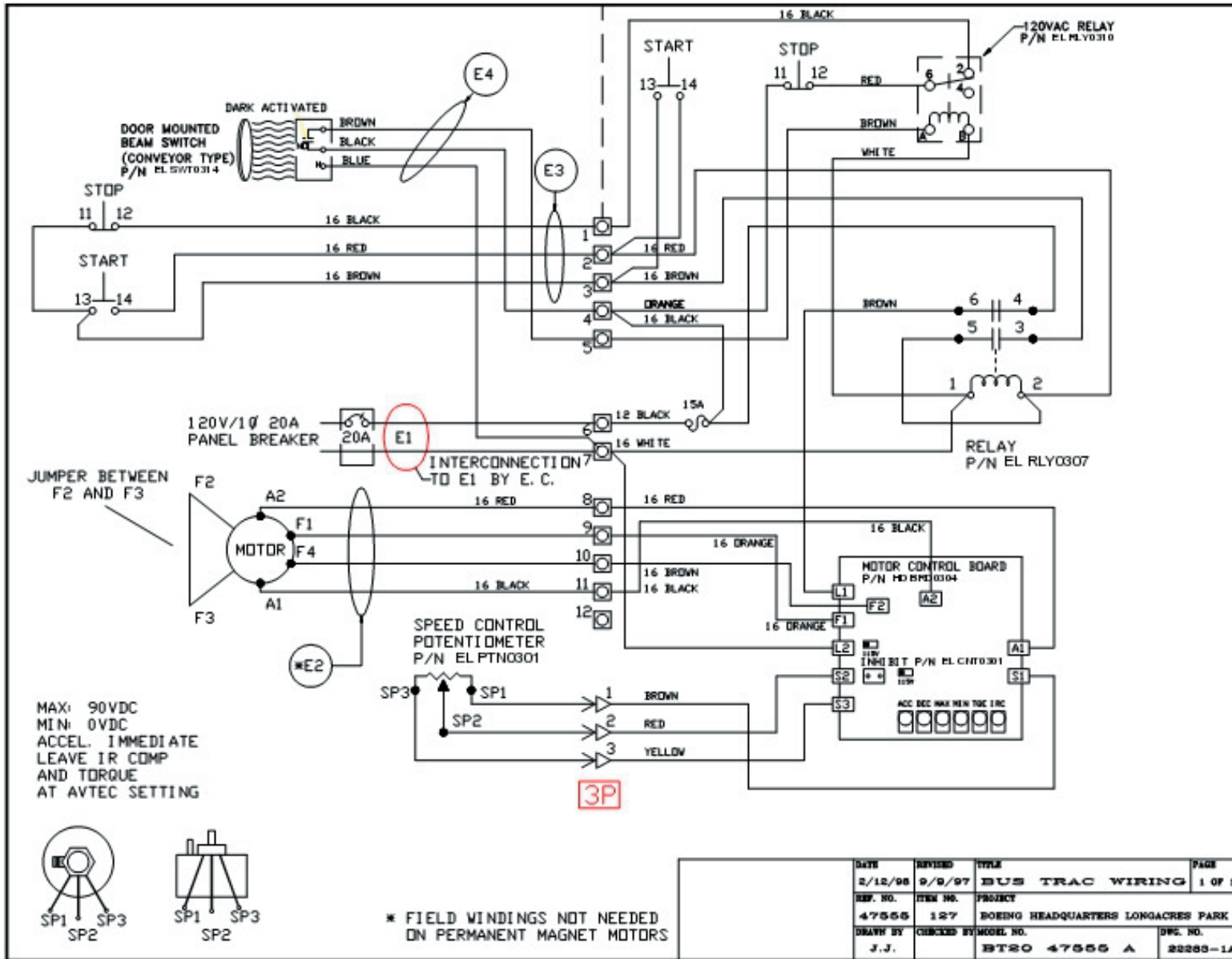
P/N HD BRK0304  
WHEEL BRACKET,  
STAINLESS STEEL

P/N HD BRG0309  
DELRIN BUSHING

P/N PL WHL0301  
2" DIA. WHEEL,  
UHMWP

LEGEND	
①	P/N FA BLT4107 1/4-20 x 1 1/4" BOLT, S.S.
②	P/N FA WSH047 1/4" FLAT WASHER, S.S
③	P/N FA NUT0416 1/4-20 LOCK NUT, S.S.
④	P/N FA WSH0318 1/4" THRUST WASHER, NYLON
⑤	P/N FA BLT0304 1/4-20 x 5/8" CARRIAGE BOLT, S.S.

DATE 02-25-99	SCALE NTS	TITLE BUS TRAC: UPRIGHT AND CARRIER DETAIL	
DWG. NO. MANBT.DWG	ITEM NO.		
DRAWN BY C. STYLES	CHK'D BY	MODEL NO. BT*0	FIG. 3



# Parts List

ITEM NO.	PART NUMBER	DESCRIPTION
1	HD BLK0302	UHMW Wear Block
2	HD CAR0305	Bus- Trac Carrier Plastic Insert
3	HD CAR0302	2 Tier Tray Carrier S/S
4	HD CAR0303	3 Tier Tray Carrier S/S
6	RP CAR0601	Bus Trac S/S Upright w/integrated Wheel and chain attachment brackets
7	HD BRG0309	Wheel Insert
8	PL WHL0301	Wheel UHMW
9	RP BRK0610	S/S Lockout Bracket
10	HD BRK0304	Wheel Bracket
11	RP BRK0515	Chain Attachment Bracket "A"
12	RP BRK0516	Chain Attachment Bracket "B"
13	EL FUS0307	Fuse, 10 amp
14	EL BLK0315	Fuse Holder
15	RP PLT0301	Chain End Plate w/attachment
16	HD BRG0302	Bearing
17	HD RED0303	Gear Reducer [24MDVD]
18	HD RED0304	Gear Reducer [930MDVD]
19	EL SWT0304	Switch [Start] -Green w/N.O. Contact Block
20	EL SWT0305	Switch [Stop]-Red w/N.C. Contact Block
23	EL TPE0302	Reflector (arm mounted small round 1")
24	EL SWT0314	Beam Switch (arm mounted)
25	HD BEA0314	Beam Switch (wall Mount)
26	EL TPE0306	Reflector (sill mounted small rectangle)
27	EL PTN0301	10K ohm Potentiometer
28	HD BRD0304	DC Motor Control Board
29	HD BRS0301	Brush Motor Replacement 3/4 hp
30	HD BRS0303	Brush Motor Replacement 1 hp
31	EL MTR0203	Motor, 3/4 hp
32	EL MTR0331	Motor, 1 hp
33	FA NUT0416	1/4-20 Fiber Nut
34	FA WSH047	1/4-20 Washer S/S
35	FA BLT4107	1/4-20 x 1 1/4 Bolt S/S
36	FA WSH0318	Black Plastic Spacer

**TOOLS REQUIRED:**

Multi tester [Auto range]  
 Small Non-Metallic Screwdriver  
 Speed Indicator

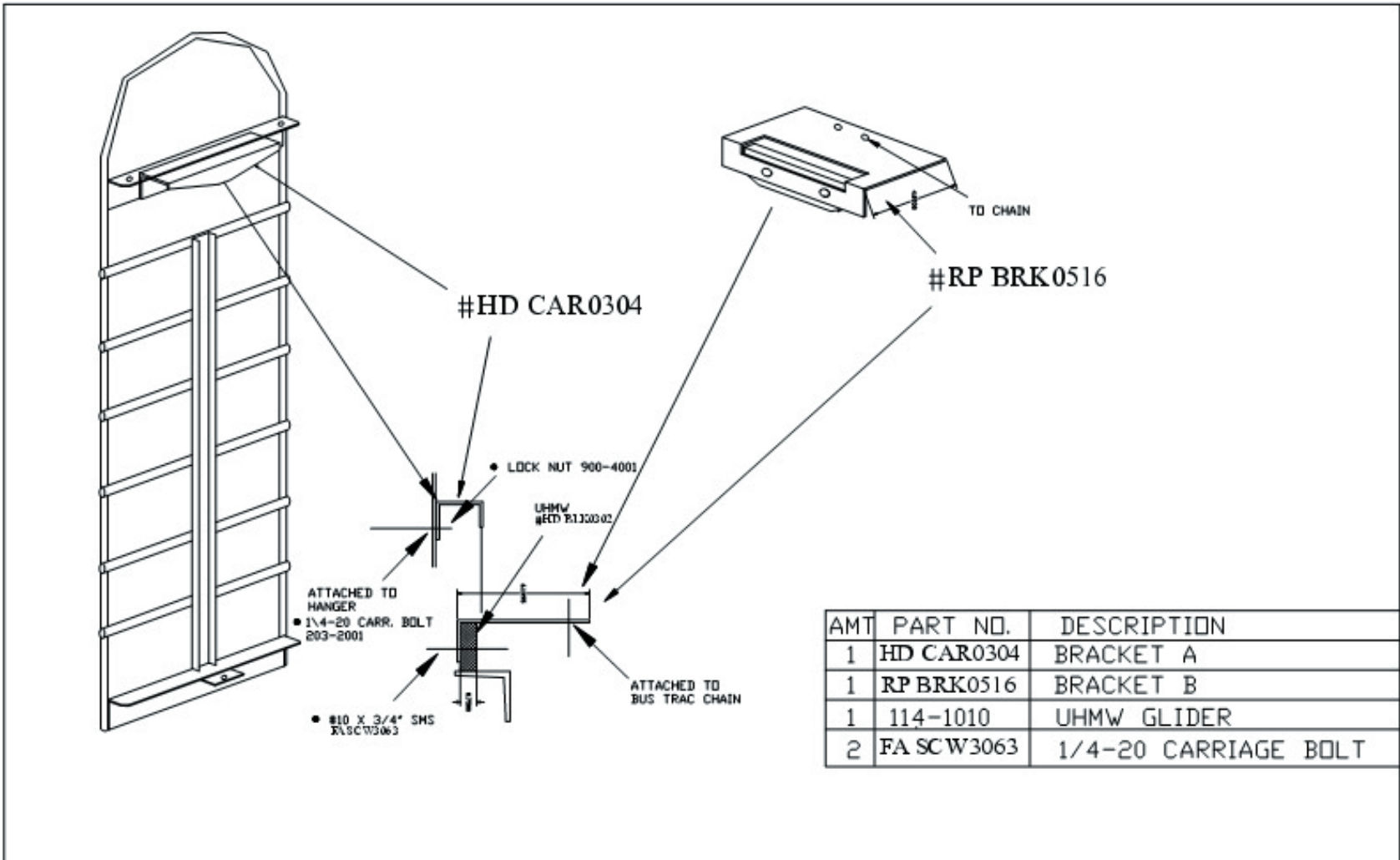
**Before connecting power supply:**

1. Set the two slide switches for the correct input voltage.
2. Set the MAX SPEED pot to full counterclockwise.
3. Set the MIN SPEED pot to full counterclockwise.
4. Set the IR COMP pot to the setting shown below for the correct horsepower.
5. Set the TORQUE pot to the setting shown below for the correct horsepower.

**With the power supply connected:**

1. Set the multi tester to VOLTS AC and measure the input voltage to the control. If incorrect, disconnect the power supply and correct the problem.
2. Disconnect the multi tester and set to measure VOLTS DC. Attach leads to the motor side of the control.
3. Set the speed indicator on the front panel to 100 or full speed.
4. Adjust the MAX SPEED pot until the VOLTS DC equals the armature voltage listed on the motor nameplate.
5. Calibration is complete.

90VDC [180VDC]	1HP [2HP]	3/4HP [1-1/2HP]	1/2HP [1HP]	1/4HP [1/2HP]	1/8HP [1/4HP]
TORQUE					
IR COMP					

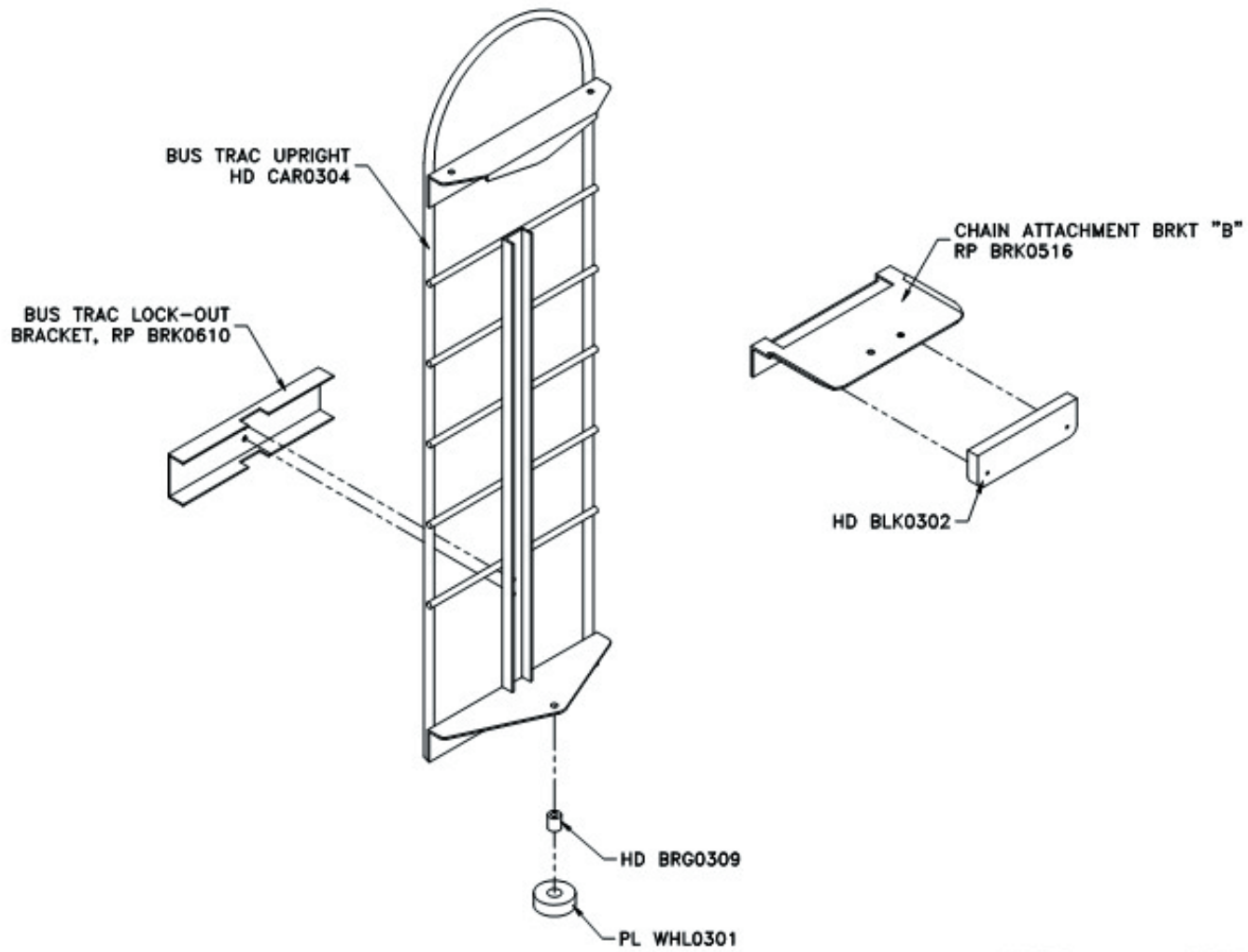


AMT	PART NO.	DESCRIPTION
1	HD CAR0304	BRACKET A
1	RP BRK0516	BRACKET B
1	114-1010	UHMW GLIDER
2	FA SCW3063	1/4-20 CARRIAGE BOLT

THIS DWG LAST UPDATED : 19980805.0600

TOLERANCE: ALL DIMENSIONS +/- .016" (1/32"), ALL ANGLES +/- 1°

DATE: 8/5/98	GAUGE:	DESCRIPTION: BUS TRAC HANGER - RETRO-FIT	QTY.
PROJECT FILE NO.	MATERIAL:	NEW STYLE UPRIGHT HANGER	
DRAWN BY: SP	AREA:	PROJECT: ONE SET PER HANGER	DWG. NO.: BTRETROA



LASER: GRAIN: QTY.:

DATE: 20061005	GAUGE:	DESCRIPTION: BUS TRAC HANGER	QTY.:
PROJECT/REF NO.: X	MATERIAL:	THIS DWG LAST ISSUED : 20061005.0942	
DRAWN BY: MY	AREA:	PROJECT NAME: X	DWG. NO.: UPRIGHT-ISO

PRESENT BUS-TRAC HANGER  
(Complete Part Number RP CAR0601)

# Schematic

