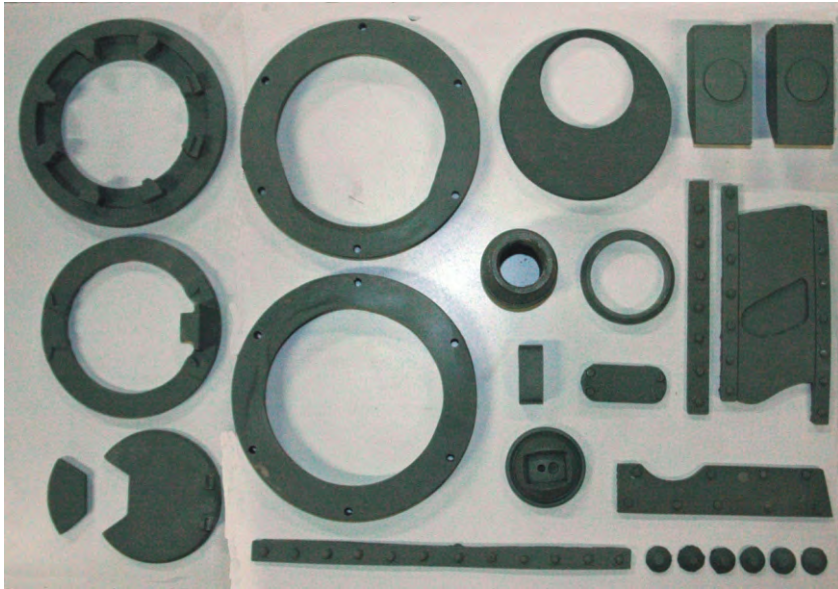


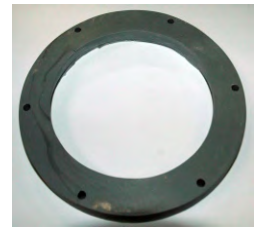
# Brumbar Parts

## Bag 1 Contents (18 Parts - 26 Pieces)

Note : Quantity of part indicated in ( )



(1) Barrel Ball Front Plate  
BRA005-401R



(1) Barrel Ball Back Plate  
BRA005-402R



(6) Bolt Cover  
BRA005-403R



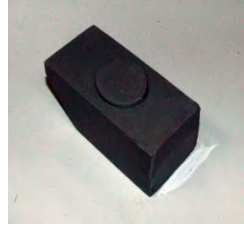
(1) Barrel Alignment Plate  
BRA005-404R



(1) Barrel Muzzle  
BRA005-405R



(1) Barrel Step Down Ring  
BRA005-406R



(2) Muffler Support Block  
BRA005-407R



(2) Upper Deck Bolt Detail - A  
BRA005-408R



(2) Upper Deck Bolt Detail - B  
BRA005-409R



(1) Commander's Hatch Mounting Ring  
BRA005-410R



(1) Commander's Hatch Hinge Ring  
BRA005-411R



(1) Commander's Hatch  
BRA005-412R



(1) Commander's Hatch Viewing Door  
BRA005-413R



(1) Ball Mount Detail  
BRA005-414R



(1) Ball Machine Gun Mount  
BRA001-434R



(1) Drier's View Port  
BRA002-408R



(1) Driver's View Port Bolt Detail  
BRA005-417R



(1) Periscope Guide Rails  
BRA005-418R

# Brumbar Parts

## Bag 2 Contents (17 Parts - 23 Pieces)

Note : Quantity of part indicated in ( )



(2) Rear Tow hook  
Brace  
BRA001-430R



(2) Rear Tow Hook  
BRA001-431R



(2) Front Tow Hook  
BRA001-432R



(1) Antennae  
BRA001-435R



(2) Muffler Stack Top  
Detail  
BRA005-422R



(1) Upper Deck View  
Port-A (large)  
BRA005-424R



(1) Upper Deck View  
Port-B (small)  
BRA005-425R



(5) Side View Port  
BRA005-426R



(1) Triangular Air  
Vent  
BRA005-428R



(1) Upper Periscope  
BRA002-405R



(7) Tie Down Hook  
BRA005-430R



(1) Hull Machine  
Gun  
BRA001-439R

# Brumbar Parts

## Bag 3 Contents (4 Parts - 34 Pieces)

Note : Quantity of part indicated in ( )



(2) Brake Access Panel  
Hinge Half (Male)  
BRA005-432R



(2) Brake Access Panel  
Hinge Half (Female)  
BRA005-433R



(14) Hinge Half (Male)  
BRA005-434R



(14) Hinge Half (Female)  
BRA005-435R

## Bag 4 Contents (1Part - 36 Pieces)

Note : Quantity of part indicated in ( )

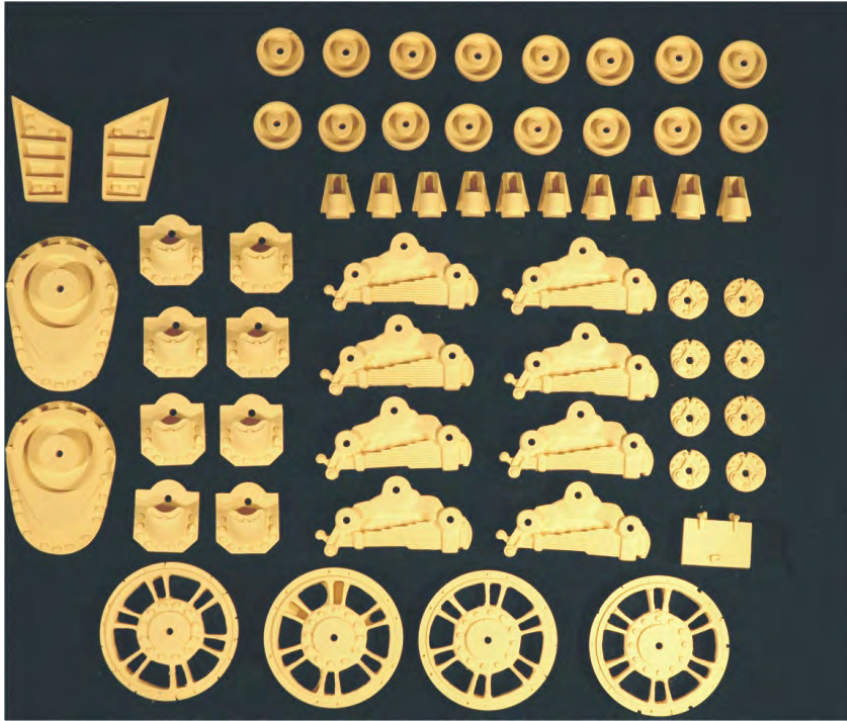


(36) Road Wheel  
BRA005-436R

# Brumbar Parts

## Bag 5 Contents (16 Parts - 62 Pieces)

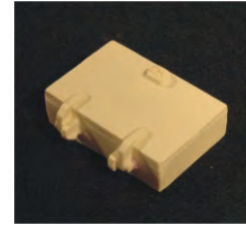
Note : Quantity of part indicated in ( )



(8) Suspension Block  
BRA001-602R



(4) Drive Wheel  
BRa001-603R



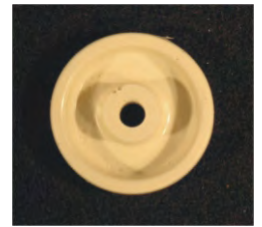
(1) Radiator Fill Box  
BRA005-415R



(1) Right Side Idler Brace  
BRA001-605R



(1) Left Side Idler Brace  
BRA001-606R



(12) Return Roller  
BRA001-621R



(8) Suspension Block Cover  
BRA001-622R



(8) Suspension Arm  
BRA001-623R



(10) Bumper  
BRA001-624R



(2) Drive Gear Housing  
BRA001-625R



(1) Headlight  
BRA001-636R

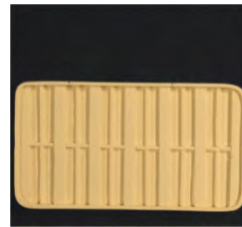
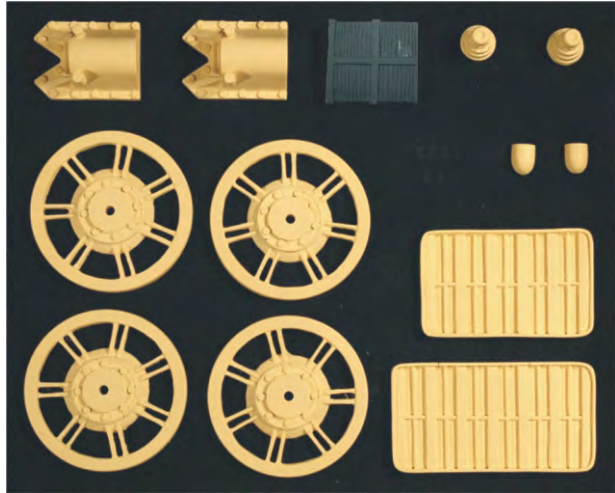


(1) Headlight Bracket  
BRA001-637R

# Brumbar Parts

## Bag 6 Contents 7 Parts - 13 Pieces)

Note : Quantity of part indicated in ( )



(1) Large Engine Grill  
BRA001-613R



(1) Small Engine Grill  
BRA001-614R



(4) Idler Wheel  
BRA001-615R



(2) Idler Mount  
BRA001-617R



(2) Idler Mount Cap  
BRA001-618R



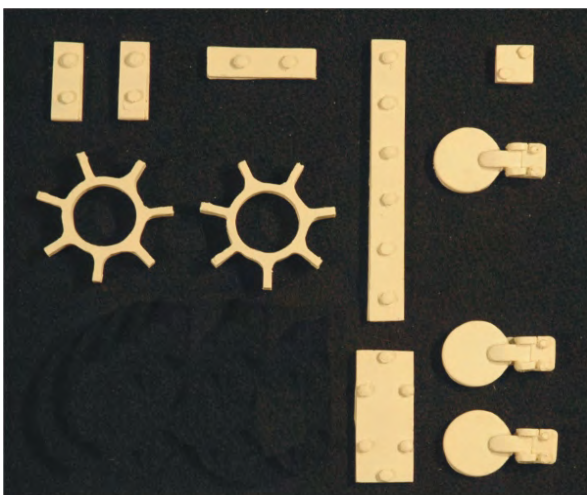
(2) Brake Access Cover Vent  
BRA001-620R



(1) Wooden Jack Block  
BRA005-437R

## Bag 7 Contents (7 Parts - 11 Pieces)

Note : Quantity of part indicated in ( )



(2) Idler Spacer  
BRA001-612R



(3) Chassis Service Hatch/Gas Cap  
BRA001-626R



(1) Rear Bolt Detail #1  
BRA001-628R



(2) Rear Bolt Detail #2  
BRA001-629R



(1) Rear Bolt Detail #3  
BRA001-630R



(1) Rear Bolt Detail #4  
BRA001-631R



(1) Rear Bolt Detail #5  
BRA001-632R

# Brumbar Parts

## Bag 8 Contents (1 Part - 212 Pieces)

Note : Quantity of part indicated in ( )



(212) Track Link  
BRA001-902P

## Bag 9 Contents (1 Part - 212 Pieces)

Note : Quantity of part indicated in ( )



(212) Track Pin  
BRA001-901P

## Bag 10 Contents (1 Part - 1 Piece)

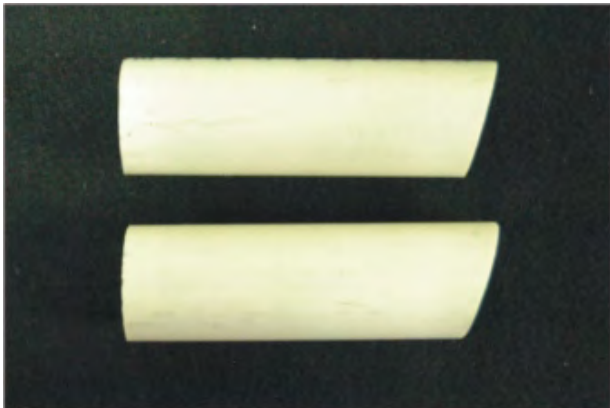
Note : Quantity of part indicated in ( )



(1) Barrel Ball Mantlet  
BRA005-441P

## Bag 11 Contents (2 Parts - 2 Pieces)

Note : Quantity of part indicated in ( )

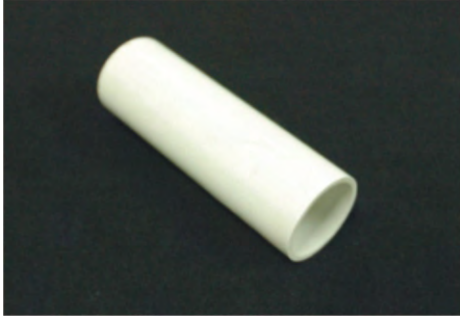


(2) Muffler Body  
BRA005-607T

# Brumbar Parts

## Bag 12 Contents (1 Part - 1 Piece)

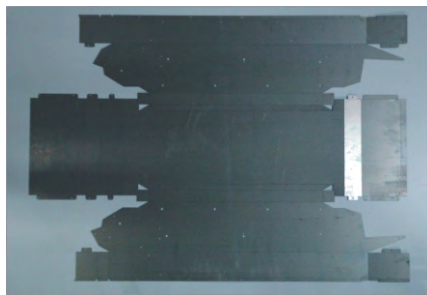
Note : Quantity of part indicated in ( )



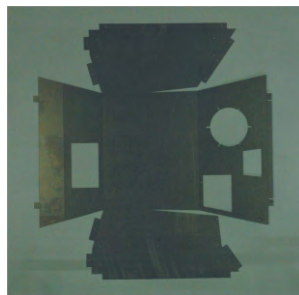
(1) Barrel  
BRA005-440T

## Bag13 Contents (7 Parts - 7 Pieces)

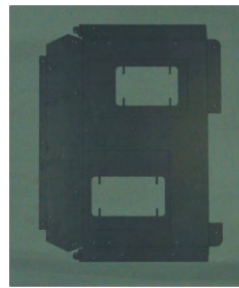
Note : Quantity of part indicated in ( )



(1) Chassis  
BRA005-701AM



(1) Superstructure  
BRA005-701BM



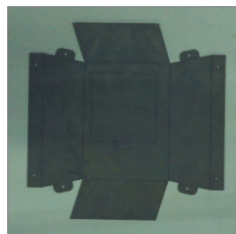
(1) Engine Cover Deck  
BRA005-701CM



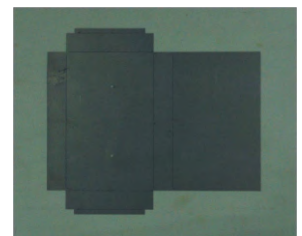
(1) Machine-gunner's Box  
BRA005-701DM



(1) Driver's Box  
BRA005-701EM



(1) Combat Access  
Box  
BRA005-701FM

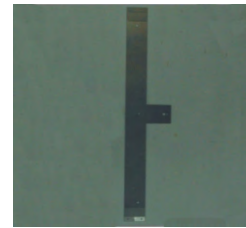
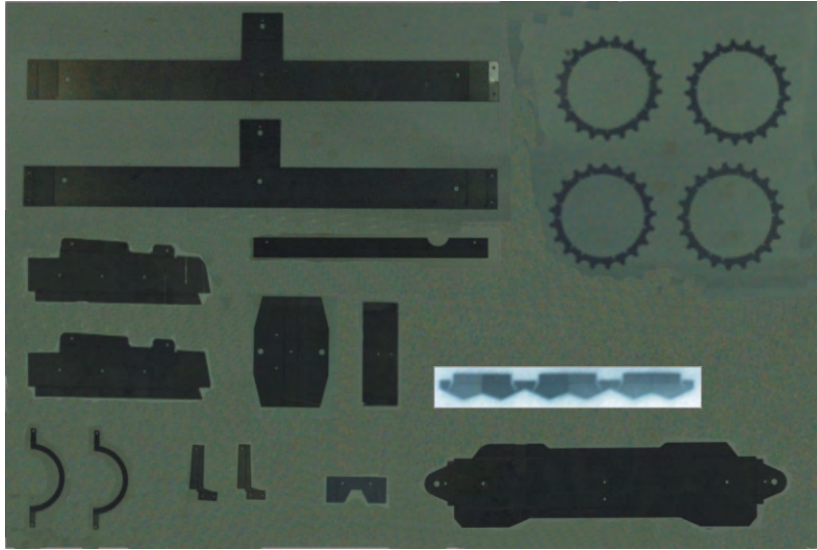


(1) Storage Box  
BRA005-701GM

# Brumbar Parts

## Bag14 Contents (11 Parts - 23 Pieces)

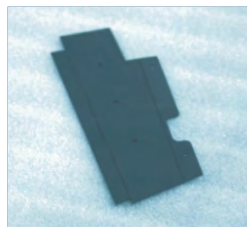
Note : Quantity of part indicated in ( )



(2) Return Roller Axle Support  
BRA005-702M



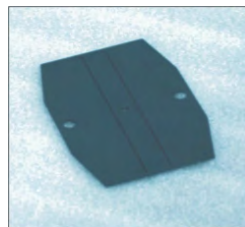
(2) Spare Wheel Bracket (Flat)  
BRA005-703M



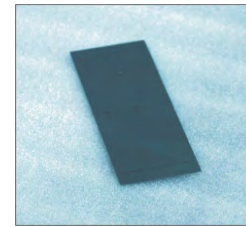
(2) Air Intake Manifold  
BRA005-704M



(6) Air Intake Manifold Fin  
BRA001-510M



(1) Towing Bracket  
BRA001-702M



(1) Towing Bracket Housing  
BRA001-703M



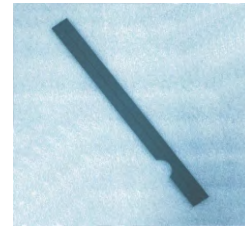
(1) Rear Tow Bracket Reinforcement  
BRA005-706M



(1) Idler Axle Bracket  
BRA001-704M



(4) Metal Drive Sprocket Wheel Attachment  
BRA001-700M



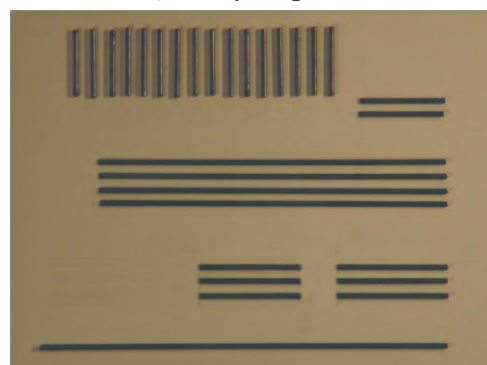
(1) Rear Brace  
BRA001-705M



(2) Rear Fender Brace  
BRA005-705M

## Bag15 Contents (5 Parts - 31 Pieces)

Note : Quantity of part indicated in ( )



3" Bogey Axle - 16 Pieces - BRA001-801M

3.75" Idler Axle - 2 Pieces - BRA001-802M

15.5" Suspension Axle - 4 Pieces - BRA001-803M

4.5" Return Roller Axle - 6 Pieces - BRA001-804M

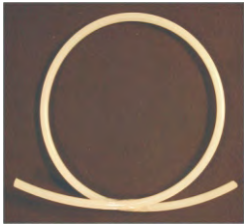
18" Drive Axle - 1 Piece - BRA001-805M



# Brumbar Parts

## Bag 16 Contents (1 Part - 1 Piece)

Note : Quantity of part indicated in ( )



(1) Spacer Material - 36" Length  
BRA001-806T

## Bag 17 Contents (1 Part - 50 Pieces)

Note : Quantity of part indicated in ( )



(50) 1/4" Push Nut  
BRA001-807M

## Bag 18 Contents (1 Part - 50 Pieces)

Note : Quantity of part indicated in ( )



(50) 4-40 x 1/4" Screw (machine)  
BRA001-808M

## Bag 19 Contents (1 Part - 60 Pieces)

Note : Quantity of part indicated in ( )

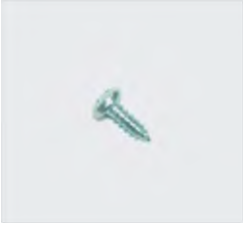


(60) 1/8" x 5/16"  
Aluminum Pop Rivets  
BRA001-809M

# Brumbar Parts

## Bag 20 Contents (1 Part - 20 Pieces)

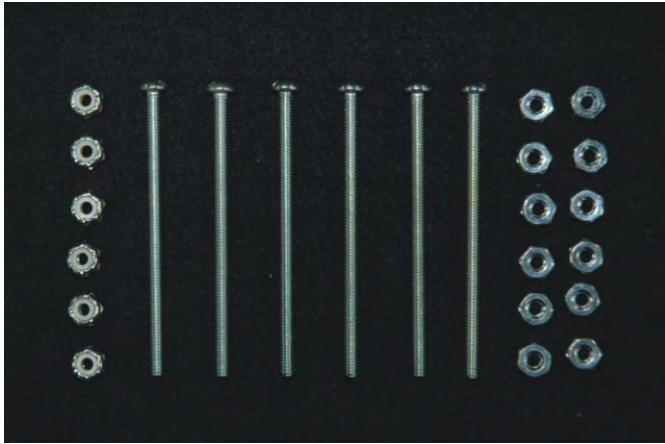
This part supplied with all tanks purchased after Feb 20, 2007.



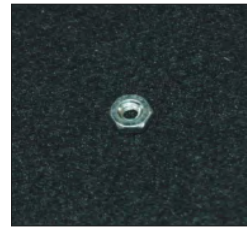
(20) #6x 1/2" (Sheet Metal)  
BRA001-810M

## Bag 21 Contents (3 Parts - 24 Pieces)

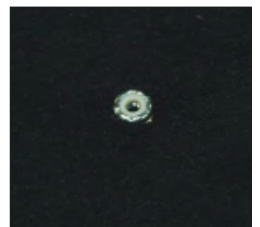
This part supplied with all tanks purchased after Feb 20, 2007.



(6) #8-32x3 Bolts  
BRA005-801M



(12) #8x32 Nuts  
BRA005-802M



(6) #8x32 Lock  
Nuts  
BRA005-803M

## Bag 22 Contents (1 Part - 1 Piece)

Note : Quantity of part indicated in ( )



(1) Instruction CD  
BRA005-ICD

# Brummbar

## Assembly Instructions

### General Instructions

1. Check that you have received all parts for your new 1/6 scale model of the Brummbar. Go to your enclosed CD or to the Field of Armor's website at "[www.fieldofarmortanks.com](http://www.fieldofarmortanks.com)" for a complete list of all parts.
2. Wipe down all metal parts with a laquer thinner or acetone solution- Make sure when doing so that there are no open flames or embers that may cause a fire while doing this.
3. At certain stages of assembly you may want to pre-paint some areas so that you don't have to dis-assemble parts of your work later. For example all the running gear pieces, the Chassis side wall they install against and the well under the fenders. **NOTE:** DO NOT paint any surface that you will be gluing something to.
4. Effort should be taken not to lose any of the perforated metal pieces that remain in the flat metal structures (please note that some of these pieces may have come loose during shipping) as some are used as actual parts such as hatches and doors and some are to remain in place.
5. Any additional parts and materials over and above those listed in the parts section of these Instructions and that may be obvious in the instruction photographs are the responsibility of the purchaser.
6. Should you receive a chassis that has come apart during shipping or comes apart from bending and re-bending (the seams are designed to be bent several times before coming apart) do not be too concerned as it can be easily repaired by using some scape 20 gauge metal cut into strips approximately 1/2 " x 2" - 2 1/2" long. Bend the strip to 90 degrees or to suit the angle being repaired and drill 1/8" holes to accept Pop Rivets. Place the angle over the area to be repaired spaced at 4" - 6" intervals and drill matching holes in the metal pieces being repaired. Secure with Pop Rivets. See Figures 6a, 6b and 6c below.

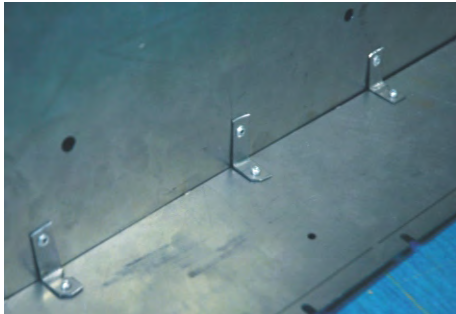


Figure 6a

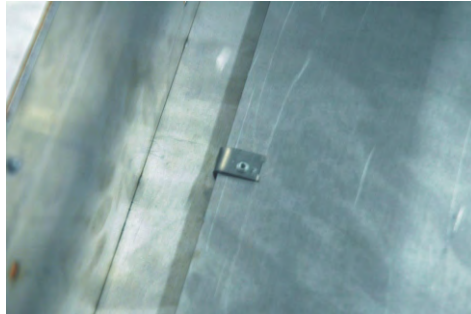


Figure 6b

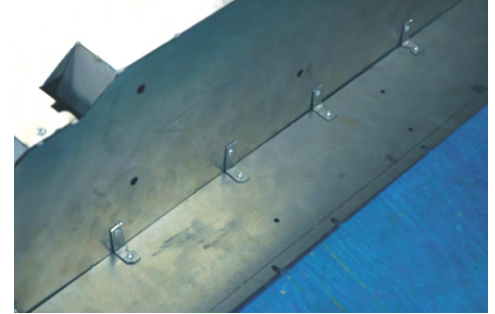


Figure 6c

7. Fill any holes and gaps with Bondo. Remove excess Bondo from surfaces using an exacto knife blade or something similar once it has set up but not hardened completely. When the Bondo has hardened sand smooth with a fine grit sandpaper.
8. It is recommended that the modeler use Super-glue when gluing Resin or Plastic Parts to other Resin or Plastic parts. When gluing Resin or Plastic Parts to Metal make sure that the Metal is free of grease and/or oil and glue using Epoxy.
9. Some Resin parts when they come out of the molds tend "naturally" to take on a slight curve - should you encounter any such parts in your kit this can be eliminated by applying moderate heat and adjusting the part to its proper configuration.

# Brummbar

## Assembly Instructions

### General Instructions

10. For handles (not provided) to Engine Access Doors, Commander's Hatch (Cupola), Combat Compartment Access Doors and top of Superstructure Access Hatches it is suggested the modeler drill holes in the metal (in the approximate location shown in the photographs) to accept a bent 1/16th inch copper wire and secure in place with Epoxy (See Figure A).



Figure A

11. Using a piece of scrape metal it is advisable to create a stop for the Engine Access Doors , Combat Compartment Access Doors and top of Superstructure Access Hatches and the Brake Access Covers by Pop Riveting it to the underside of the opening and protruding into the opening (see Figure B). On larger doors (i.e. Engine Cover Deck Doors) or those that don't seat properly you may want to create a stop on the two sides of the opening as well.

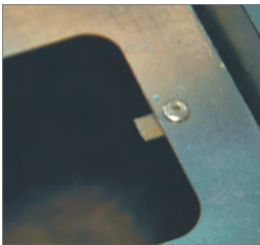


Figure B

12. Some parts will require sanding before application.

13. Sand the metal surface area to which a part is to be applied and also when securing metal to metal. This will ensure a more secure bond.

14. All references to left and right assumes you are sitting in the tank facing forward.

# Brumbar Assembly Instructions

## Chassis

Welcome to the world of “Battle Ready Armor”

**Step 1.** After opening the large bundled package of metal parts and containing seven parts in all, begin with the longest of the seven pieces which is the main chassis piece (see Figure 1a).

**NOTE:** This piece is folded in a particular manner and to avoid these pieces from breaking apart during assembly, you should only unfold it as illustrated below and in a slow manner so as to maintain the integrity of the steel as much as possible.



Figure 1a

**Step 2.** Fold out the side piece that lays on top raising it up at the seam just below the lower row of axle holes to a 90 degree angle to the bottom (see Figures 2a and 2b) .

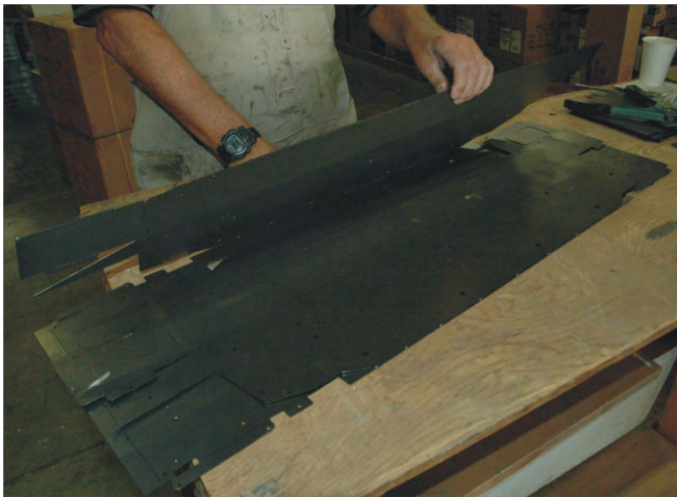


Figure 2A



Figure 2b

**Step 3.** Raise the other side to a 90 degree angle (see Figure 3a).



Figure 3a

# Brumbar Assembly Instructions

## Chassis

**Step 4.** Raise the tabs at the four corners of the Chassis bottom (see Figures 4a and 4b).



Figure 4a

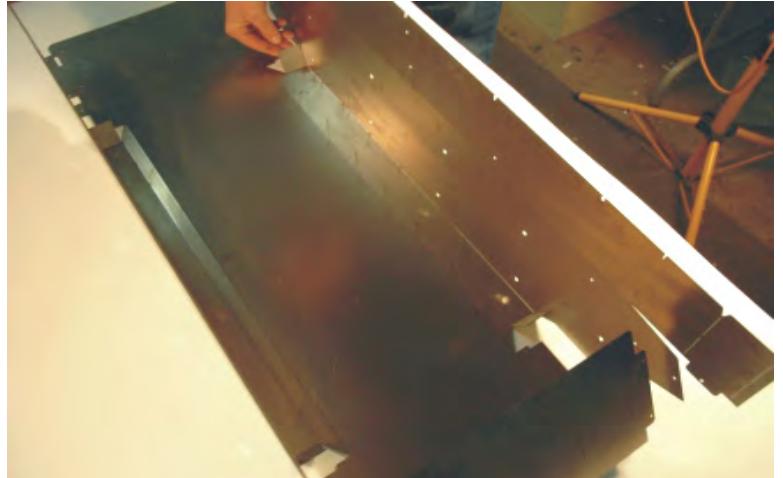


Figure 4b



Figure 5

**Step 5.** Now that we have the tabs bent we must create the bottom stiffener.

**NOTE:** Creating the bottom stiffener channels is a bit tricky and when the operation is complete they should protrude from the bottom exterior rather than into the interior..

So to begin, place the bottom of the chassis body on a flat surface and move it to the edge along the inner most seam. Bend the entire side down to a 90 degree angle (see Figure 5).



Figure 6a

**Step 6.** Holding the narrow side securely in place, bend the entire side back up at the next seam outward to a 90 degree angle to create the stiffener channel (see Figures 6a and 6b).



Figure 6b

# Brumbar Assembly Instructions

## Chassis

**Step 7.** Bend pop rivet tabs on both the front and rear panels to 90 degrees (see Figures 7a, 7b and 7c).

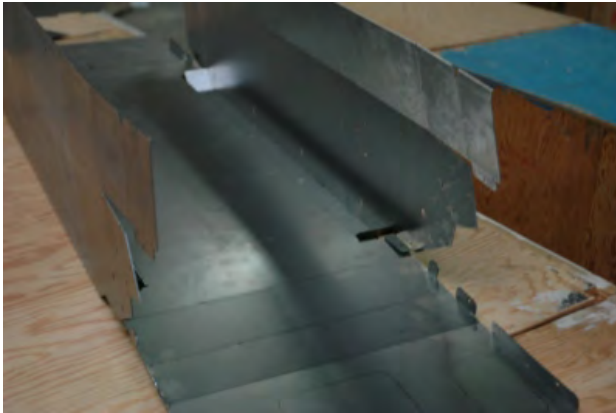


Figure 7a



Figure 7b



Figure 7c

**Step 8.** Raise the end pieces of the front panel of the Chassis and begin to shape them to match the pop rivet holes in the Chassis sides and secure with Pop Rivets (see Figures 8a, 8b and 8c).



Figure 8a

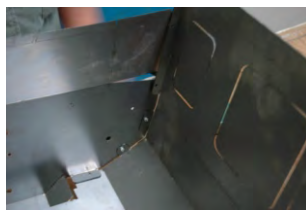


Figure 8b

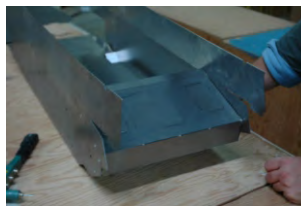


Figure 8c

**NOTE:** Bend the stiffener tab at the top of the front panel 90 degrees inward (see Figure 8d)

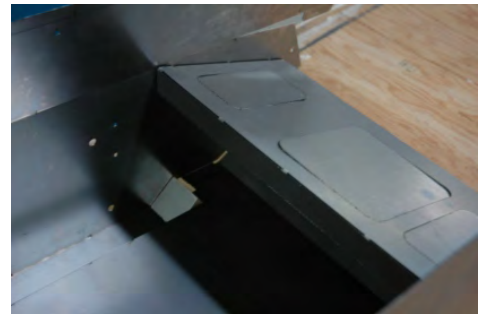


Figure 8d

**Step 9.** Raise the end pieces of the rear panel of the Chassis and begin to shape them to match the pop rivet holes in the Chassis sides and secure with Pop Rivets (see Figures 9a, 9b, And 9c).



Figure 9a



Figure 9b



Figure 9c

**NOTE:** Bend the stiffener tab at the top of the rear panel 90 degrees inward (see Figure 9d)



Figure 9d

# Brumbar Assembly Instructions

## Chassis

**Step 10.** Before bending the track fender into place bend the flaps along the edge down at a 90 degree angle to what will become the fender top (see Figures 10a, 10b and 10c).



Figure 10a

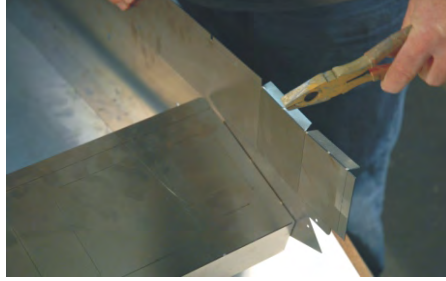


Figure 10b



Figure 10c

**Step 11.** Bend the fender down at a 90 degree angle to the Chassis body to create the fender top (see Figures 12a and 12b).



Figure 11a



Figure 11b

**Step 12.** Bend down the tab on the fender fronts (see Figure 12a) and then bend down the fender fronts themselves (see Figure 12b) to an angle that is consistent with the pop rivet hole (see Figure 12c) in the Chassis body. Align the pop rivet holes and secure with a pop rivet (see Figure 12d).



Figure 12a



Figure 12b



Figure 12c



Figure 12d

**NOTE:** When this step is completed the fender fronts should look like Figure 12e.



Figure 12e



# Brumbar Assembly Instructions

## Chassis

**Step 13.** Bend down the tab on the fender backs as you did on the fender fronts and then bend down the fender backs themselves (see Figure 13a) to an angle that is consistent with the pop rivet hole (see Figure 13b) in the Chassis body. Secure with a pop rivet (see Figure 13d). The end result should look like Figure 13d.



Figure 13a

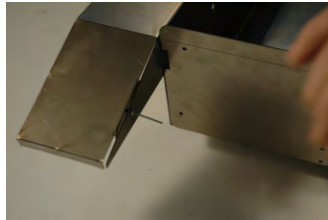


Figure 13b



Figure 13c



Figure 13d

**Step 14.** Locate the Rear Fender Braces as shown in Figure 14a and bend the tabs so that they are at 90 degree angles to the triangular brace (see Figure 14b).



Figure 14a



Figure 14b

**NOTE:** Bend the tabs on the two pieces so that one has the tabs bending to the left and the other bends them to the right so that when completed they are a mirror image of one another.

**Step 15.** Align the holes in the Rear Fender Brace with the hole in the chassis located just under the fender at the rear as shown in Figure 15a and 15b and secure in place with Pop Rivets. Align the hole in the Rear Fender Bracket and the hole in the top fender and secure with a Pop Rivet (see Figure 15c).



Figure 15a



Figure 15b



Figure 15c

**Step 16.** Locate the two (2) Return Roller Axle Supports (see Figure 16a). On one piece, bend each end into the configuration shown in Figure 16b, and bend the center tab to the configuration shown in 16c. Bend the second piece into the a mirror image of the first one. When completed the each piece should resemble the piece shown in Figure 16d.

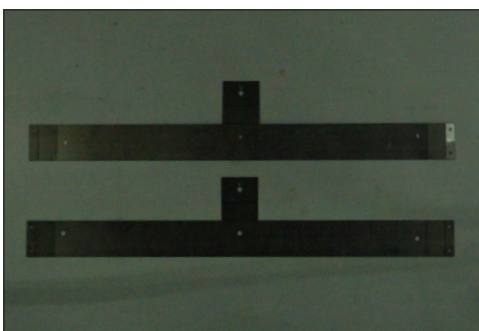


Figure 16a



Figure 16b



Figure 16c

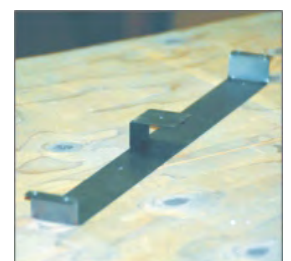


Figure 16d

# Brumbar Assembly Instructions

## Chassis

**Step 17.** Install the Return Roller Axle Support - one to either side of the Chassis as shown in Figure 17a making sure the Axle holes in each piece line up with the Axle holes in the Chassis (the Axle holes at the rear are slightly lower than the others). This can be done easily by inserting a Return Roller Axle into the Axle holes making sure it is at a 90 degree angle to the body.(see Figure 17d and the inset). Secure each piece in place using Pop Rivets. The Pop Rivets should be installed from the outside as shown in Figure 17b.



Figure 17a



Figure 17b

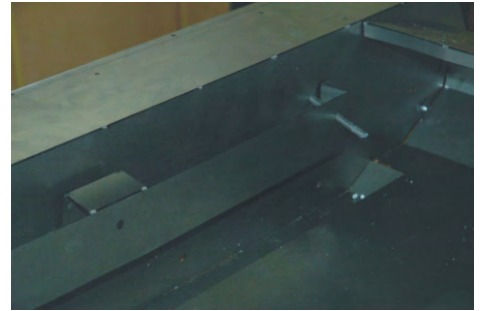


Figure 17c



Figure 17d



Figure 17e

**Step 18.** You have now completed the assembly of the Chassis body and it should appear as it does in the photograph (Figure 18a) to the right.

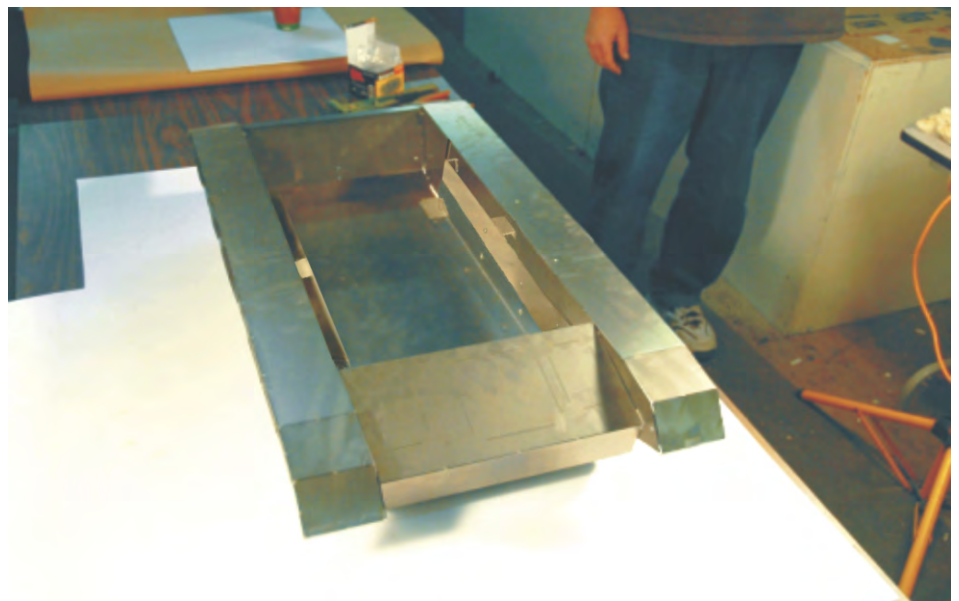


Figure 18a

# Brumbar Assembly Instructions

## Running Gear

**IMPORTANT:** You have now completed the first major portion of the of the tank, the Chassis, The next step is to install the running gear. By following the instructions that follow it will insure that you will not assemble or place parts onto the superstructure out of order and should therefore avoid having to DIS-assemble anything in order to complete a specific task.

**Step1.** Locate the three following parts - the Idler Axle Bracket, the Towing Bracket and the Towing Bracket Housing (See Figure 1a). Also locate the Rear Towing Bracket Reinforcement piece (see Figure 1b).



Figure 1b



Figure 1a



Figure 2a



Figure 2b

**Step 2.** Bend the tabs on the Idler Axle Bracket as shown in Figure 2a and 2b.

Bend the tabs on the Towing Bracket Housing as shown in Figures 2c and 2d.



Figure 2c

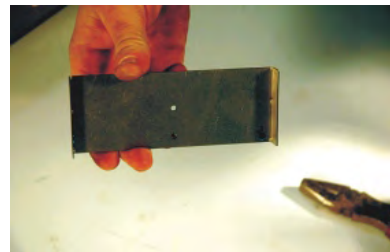


Figure 2d

Bend the side tabs of the Rear Towing Bracket Reinforcement piece to 90 degree and secure it to the Towing Bracket with Pop Rivets as shown in Figure 2e and 2f.

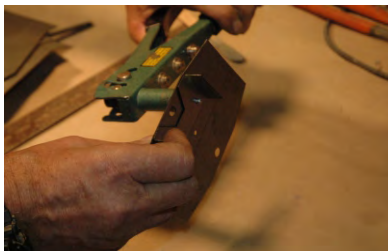


Figure 2e



Figure 2f

Fold the sides of the Towing Bracket along the seams as shown in Figure 2g and 2h until it looks like the Bracket in Figure 2i.



Figure 2g



Figure 2h

**NOTE:** The Rear Towing Bracket Reinforcement piece may not appear in some of the supporting photography in these Instructions.



Figure 2i

# Brummbar Assembly Instructions

## Running Gear

**Step 3.** Place the Towing Bracket Housing against the Idler Axle bracket as shown in Figure 3a and line up the holes. Next place the Towing Bracket in the Towing Bracket Housing (See Figure 3b) and line up the bottom hole. The entire assembly should look as it appears in Figure 3c. Secure using a Single Pop Rivet in the bottom hole only.

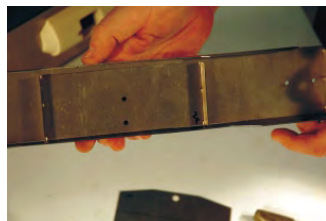


Figure 3a



Figure 3b

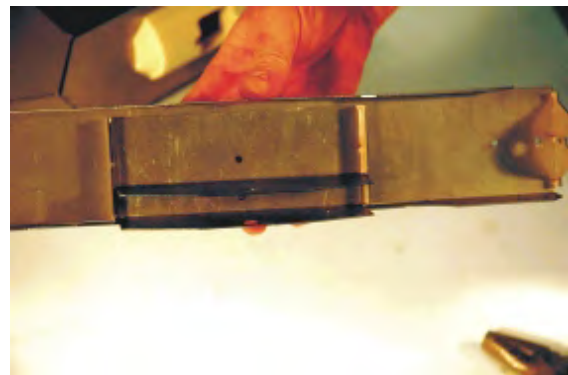


Figure 3c

**Step 4.** Place the Idler Axle Bracket, Towing Bracket, Towing Bracket Housing Assembly at the rear of the Chassis and align the hole in the lower center of the Chassis with the hole just above the Towing Bracket (see Figures 4a). Secure the Bracket Assembly in place with a Pop Rivet (see Figures 4b, 4c and 4d). When the assembly is in place it should look like it does in Figure 4e.



Figure 4a



Figure 4b



Figure 4c

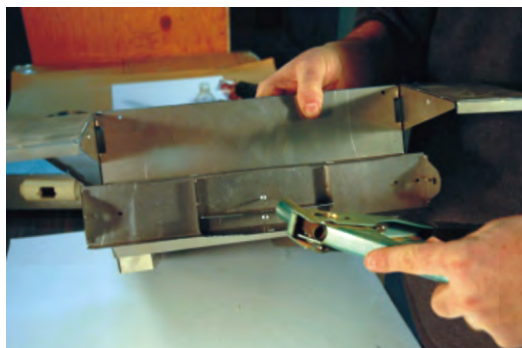


Figure 4d

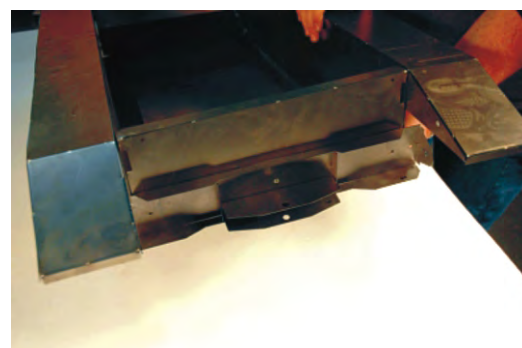


Figure 4e

**Step 5.** Locate the two (2) Idler Mounts and the two (2) Idler Mount Caps as shown in Figure 5a. Secure the Idler Mount Caps to the Idler Mounts with Super-glue.

**NOTE:** Placing the Idler Mount Caps on the Idler Mounts is optional at this point and may not appear in some of the supporting photography for this portion of the Instructions.



Figure 5a

# Brumbar Assembly Instructions

## Running Gear

**Step 6** Place the Idler Mount assemblies in place. Mark the screw holes and pre-drill for two (2) #6 x ½” Sheet Metal Screw. Fasten with the two (2) #6 x ½” Sheet Metal Screws - one screw in the end (see Figure 6a) and one screw in the back which is installed from inside the Chassis (see Figure 6b).



Figure 6a

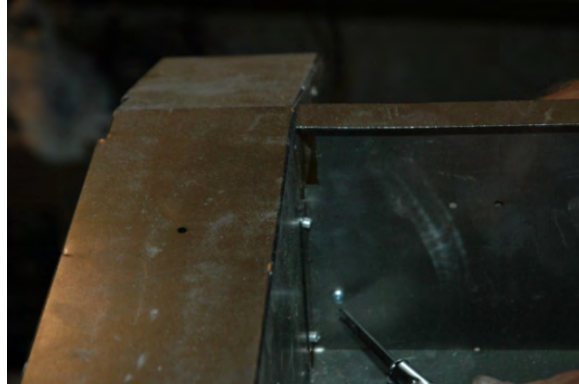


Figure 6b



**Step 7.** Insert one (1) 3.75” Idler Axle in each Idler Mount Assembly. (See Figure 7a) Secure the axle in place with epoxy

**NOTE:** For maximum adhesion roughen the metal before installation,

Figure 7a

**Step 8.** With the Chassis portion of the tank sitting right side up insert the four (4) 15.5 “ Suspension Axles into each of the four lower holes in the Chassis. See Figures 8a.



Figure 8a

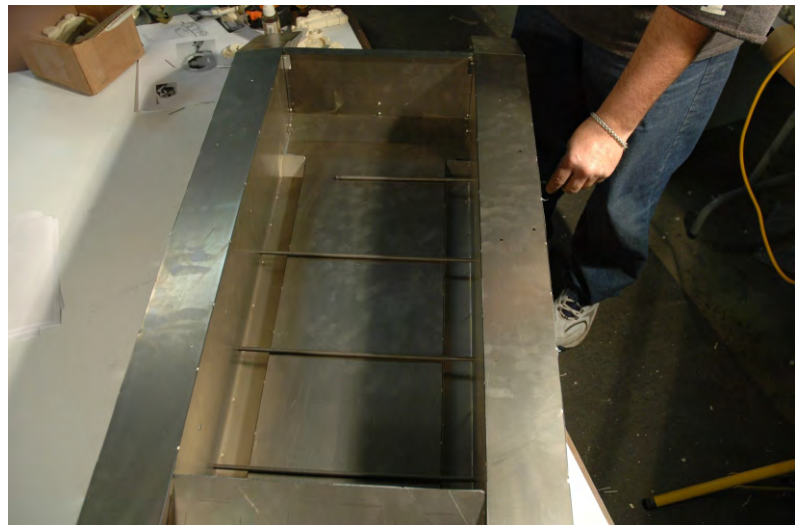


Figure 8b

**Note:** The Suspension Axles should be laying flat across the Chassis bottom spanning the stiffening channels that run the length of the Chassis on either side. See Figure 8b.

# Brumbar Assembly Instructions

## Running Gear

**Step 9.** Turn the tank Chsassis so that the bottom side is facing up. Locate 8 each of the following: Suspension Blocks, Suspension Block Covers and Suspension Arms. Four of each part will be used on each side of the tank (See Figure 9a).



Figure 9a

**NOTE:** Follow the same photographs and instructions shown for each side of the tanks running gear from Step 9 through Step 18.

**NOTE:** For maximum adhesion roughen the metal surface area to receive a resin part with a minimum of 80 grit sandpaper before applying Epoxy.

**TIP:** By using a few dabs of Super-glue on each resin piece and hitting it with “kicker” it will hold the resin piece in place while the Epoxy cures.

**Step 10.** Position four (4) of the Suspension Blocks on the axles so that the concave protrusion is away from the bottom and toward the top of the fender skirt. Fasten them in place using epoxy (See Figures 10a and 10b).



Figure 10a



Figure 10b

**Step 11.** When the Suspension Blocks are securely in place install one (1) Suspension Arm onto each of the axles (See Figure 11a) so the rounded portion of the center hole fits into the concave of the Suspension Block (See Figure 11b) and so that the detail on the Suspension Arm is facing outward .

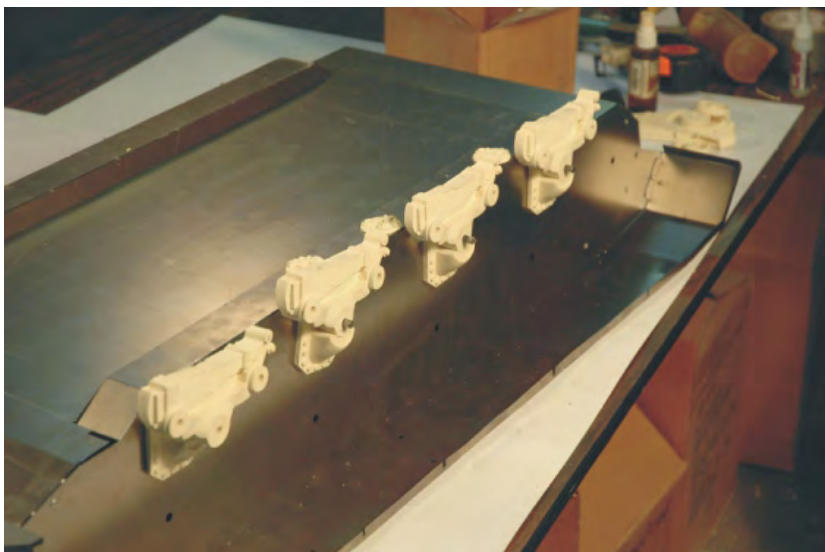


Figure 11a



Figure 11b

# Brumbar Assembly Instructions

## Running Gear

**Step 12.** Install the 3" Bogey Axles onto the Suspension arms - two (2) per Suspension Arm - one (1) axle on each end. Secure the axles in place with Epoxy making sure that the axle is flush with the inside face of the Suspension Arm. See Figures 12a and 12b.

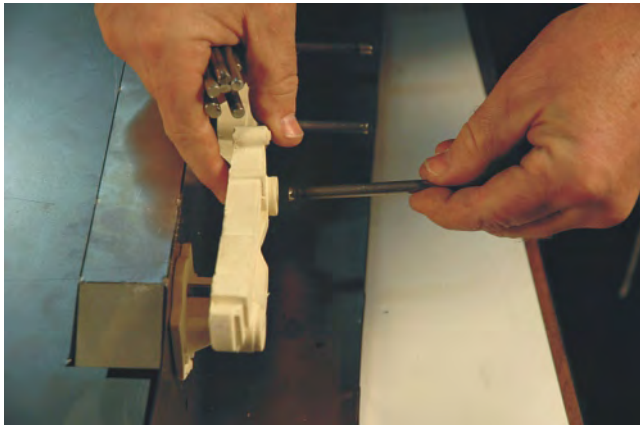


Figure 12a

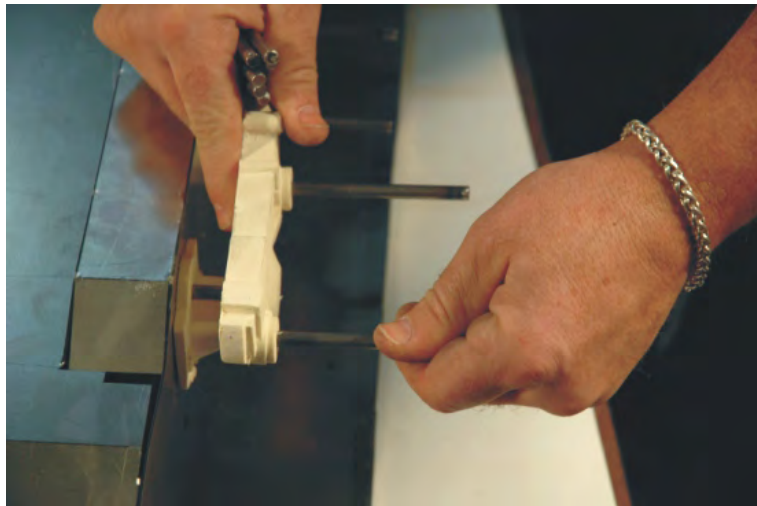


Figure 12b

**Step 13.** Installing the Suspension Block Covers. Slide the Suspension Block Cover over the axle detail side facing outward and align the notch in the Suspension Block Cover with the pin on the Suspension Block. (See Figures 12 a and 12b) Secure in place with Super-glue making sure not to get any on the Suspension Arm.



Figure 13a



Figure 13b



Figure 13c

**Note:** The Suspension Block and the Suspension Block Cover can be assembled prior to their being secured to the Chassis. Make sure when doing it this way that axle holes are aligned properly and that when securing the assembly to the Chassis that axle holes on the Assembly line up with the axle holes in the Chassis. Also when finally installing the axle make sure that you have inserted the Suspension Arm in place properly.

# Brummbar Assembly Instructions

## Running Gear

**Step 14.** Balance the amount of the axle exposed beyond the Suspension Block Cap piece so that it is the same on both sides (Approx. 1/4") of the tank and secure the axle in place with a Push Nut. See Figures 14a and 14b.

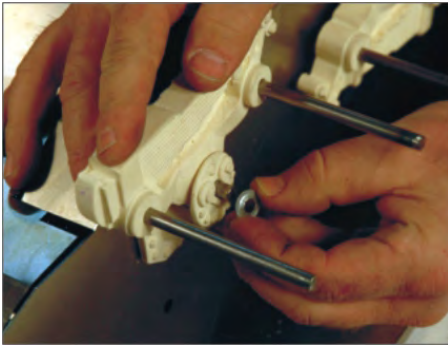


Figure 14a



Figure 14b

**Step 15.** Install the 18" Drive Axle and install in the front of the Chassis in the axle hole. Locate the Drive Gear Housing. (See Figure 15a) and install it as over the axle and securing it in place with Epoxy as shown in Figures 15b and 15c.



Figure 15a

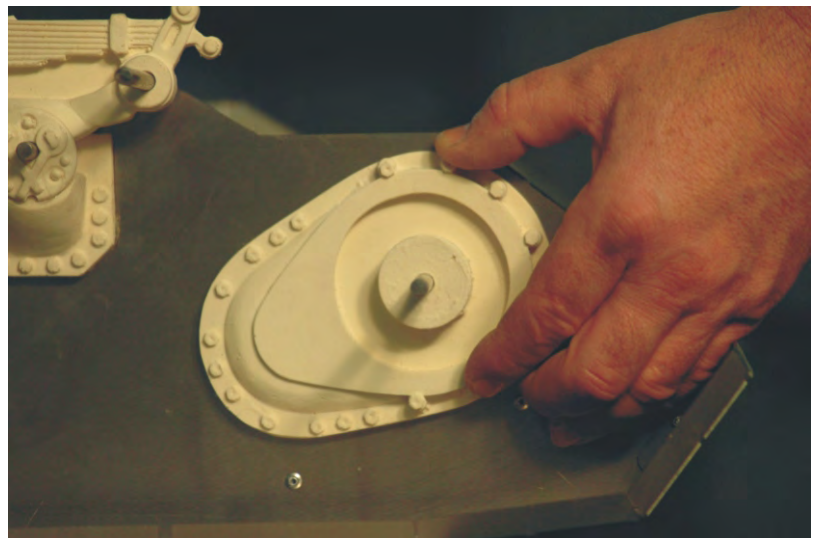


Figure 15b



Figure 15c

**Step 16.** Locate the Left and Right Idler Braces and install them in the location shown in Figures 16a and 16b directly behind the Idler Mount. Secure in place using Epoxy.



Figure 16a



Figure 16b



# Brumbar Assembly Instructions

## Running Gear

**Step 17.** Locate the ten (10) Bumpers and allocate 5 per side. Installing the Bumpers - Starting at the REAR install one (1) on either side of the Rear Suspension Assembly (See Figure 1a). Install one (1) of each of the remaining three (3) Bumpers toward the front on each of the other three (3) Suspension Assemblies. Line the tops of the Bumpers with the tops of the Suspension Blocks and so the widest part of the Bumper is 1/4" away from the Suspension Block (See Figure 3c).



Figure 17b



Figure 17a



Figure 17c

**Step 18.** Locate the Idler Wheels and the Idler Spacer (See Figure 18a). Using Super-glue secure the Idler Spacer to the inside face of one of the Idler Wheels making sure that it is centered around the axle hole in the wheel (See Figures 18b and 18c) and so that the prongs on the Idler Spacer are centered between the spokes of the Idler Wheel (See Figure 18d). Using one of the short axles as a guide place the second Idler Wheel in place on the axle and align the spokes so that one Wheel is the mirror image of the other and secure using Super-glue (See Figures 18e and 18f). Install an 11/16" long section of Spacer Material on the Idler Axle and mount the Idler Wheel Assembly on the Idler Axles. Secure in place with a Push Nut.

**Note:** This procedure can be undertaken directly onto Idler Axle in place on the installed Idler Axle.



Figure 18a



Figure 18b

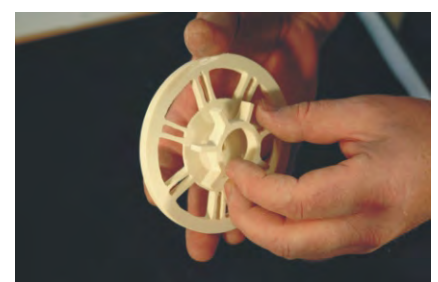


Figure 18c



Figure 18d



Figure 18e



Figure 18f

# Brummbar Assembly Instructions

## Running Gear

**Step 19.** Locate the bag of 36 Road Wheels. On each of the Bogey Axles place one (1) Road Wheel with the detail portion facing inward (See Figure 19a). Slide a 1/4" length of Spacer Material over each of the Bogey Axles (See Figure 19b). Place a second Road Wheel on each of the Bogey Wheels with the detail portion facing outward (See Figure 19c). There should be approximately 1/4" of axle exposed when the Wheels and the Spacer Materials are installed. Secure in place with Push Nuts.

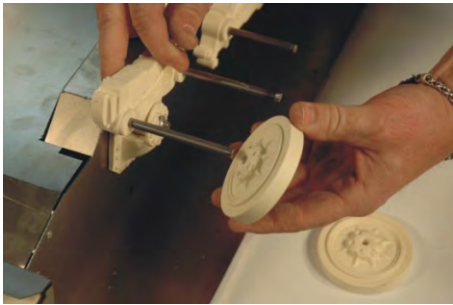


Figure 19a



Figure 19b



Figure 19c



Figure 19d



Figure 19e

**Step 20.** Install the six (6) 4.75" Return Roller Axles (three (3) per each side) in the axle holes in the upper part of the Chassis (See Figure 20a) just under the fenders through to the Interior Return Roller Support and secure the inside of the Axle in place with a Push Nut. Install a 1-1/4" long piece of Spacer Material on the Return Roller Axle (See Figure 20b). Slide one (1) Return Roller Wheel with the detail portion to the inside (See Figure 20c). Install a 1/4" long piece of Spacer Material over the axle (See Figure 20d). Install a second Return Roller Wheel on the axle and with the detail portion facing outward (See Figure 20e). Secure with a Push Nut (See Figure 20f).



Figure 20a



Figure 20b



Figure 20c



Figure 20d



Figure 20e



Figure 20f

# Brumbar Assembly Instructions

## Running Gear

**Step 21.** Each side of the tank has a pair of Drive Wheels (See Figure 21a) that need some assembly before being installed. Pre-drill the Resin portion of the Drive Wheels at the twelve (12) dimples around the outside edge and start two (2) 4-40 x 1/4" machine screws (See Figure 21b). Place the slots on the metal portion of the Drive Wheel over the screws and position it so that it fits into the rabbet around the outer edge of the resin piece (See Figure 21c). Secure the metal portion of the Drive Wheel to the resin portion using ten (10) additional machine screws (See Figure 21d).



Figure 21a

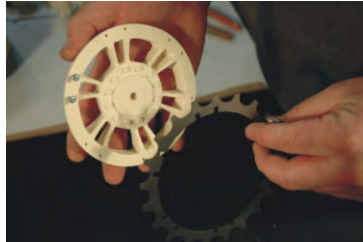


Figure 21b

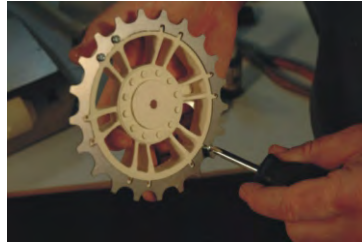


Figure 21d



Figure 21c

**Step 22.** Install the 18" Drive Axle at the front of the tank through the holes provided. Place an approx. 11/16" long piece of Spacer Material (See Note A Below) over the Axle (See Figure 22a). Install one (1) Drive Wheel onto the axle with the metal piece to the inside (See Figure 22b). Install a 1/2" length of Spacer Material (See Note A Below) and install the second Drive Wheel with the metal portion facing outward (See Figure 22c). Secure in the Drive Wheels in place with a Push Nut (See Figure 22d).



Figure 22a

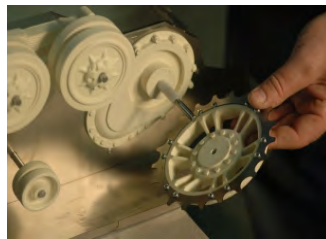


Figure 22b



Figure 22c

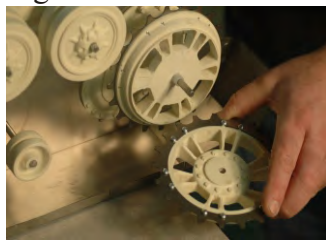


Figure 22d

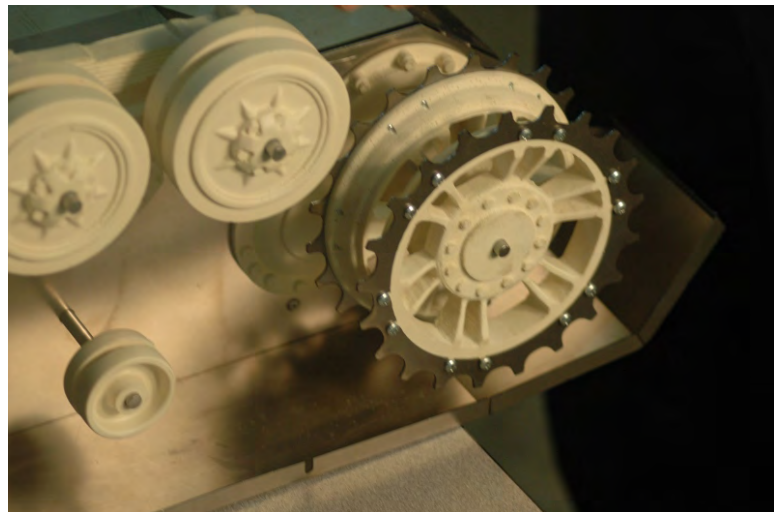


Figure 22f



Figure 22e

**Note A:** The length of the Spacer Material between the Drive Gear Housing and the inside Drive Wheel and the distance between the two (2) Drive Wheels should be determined by laying an assemble section of track over the cogs of the metal gear portion of the Drive Wheels and measuring the distance between the two (2) wheels (See Figure 21g).

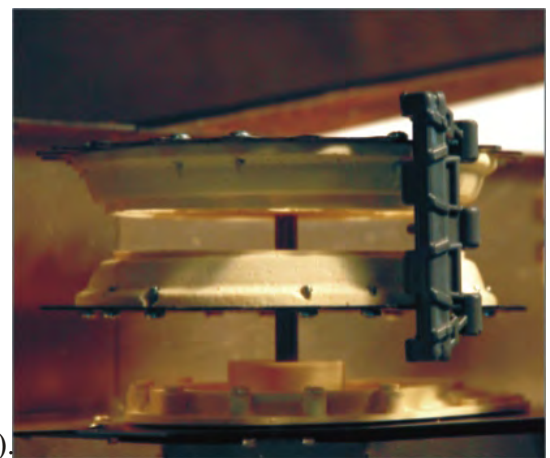


Figure 21g

**General Note:** If any of the axles when the final installation of the wheel assemblies is completed and any of the axles protrude more than 1/4" past the wheel OR are aesthetically unpleasing cut them off to the desired length.

# Brummbar Assembly Instructions

## Running Gear

**Step 22.** Assemble the tracks. Fit the three (3) tabs of one piece of Track into the three (3) depressions of a second piece and insert a Track Pin (See Figures 22a and 22b). Repeat this process with half the track pieces to form one single track assembly (See Figure 22c). Assemble the remainder of the pieces to create the second track assembly.

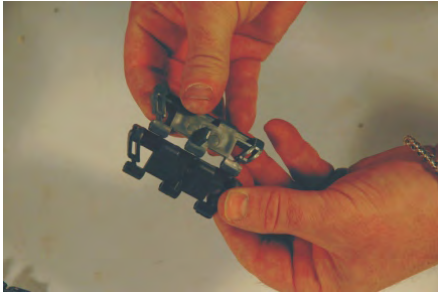


Figure 22a

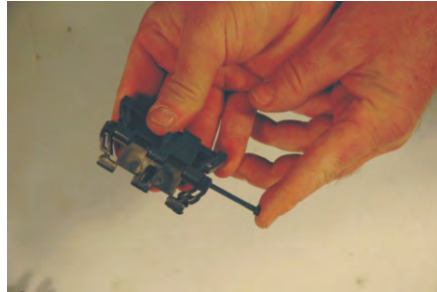


Figure 22b

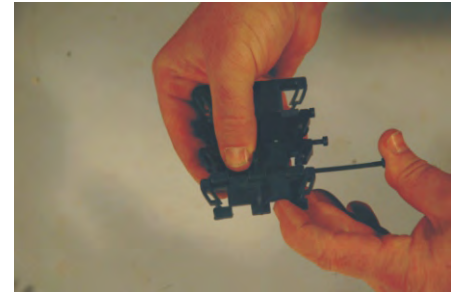


Figure 22c

**Step 23.** To assure the alignment of drape a piece of track over the drive Wheels and the Road Wheels and the Return Rollers (See Figures 23a and 23b). The tongue on the underside of track piece should run smoothly through the space between the wheels (See Figure 23c). Make adjustments to the Spacer Material as required to assure proper tracking.

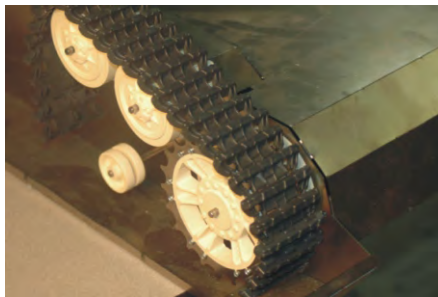


Figure 23a

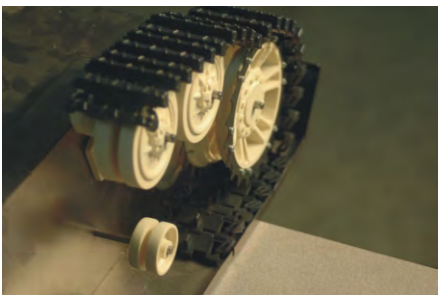


Figure 23a

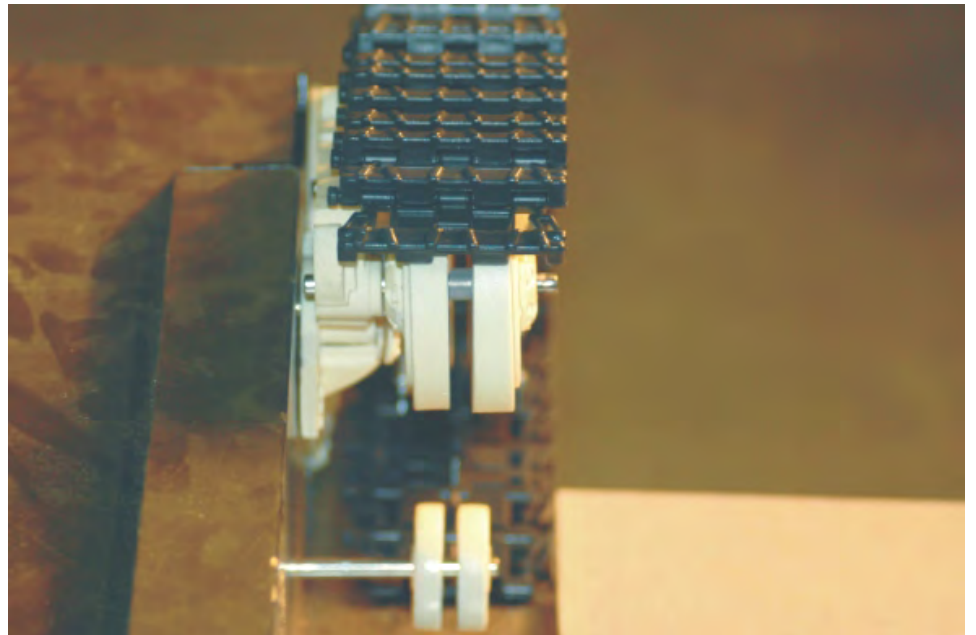
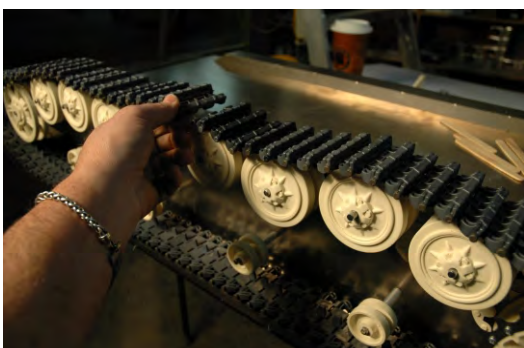


Figure 23b

**Step 24.** Lay the track assemblies over the Wheels and Rollers making sure that the tracks are engaged with the Drive Wheel Sprockets and insert the last Track Pin (See Figure 24 a). If there is too much slack in the track or the track is not long enough either remove a Track Link or add one as the case may be to complete the installation (See Figure 24b).



**Note:** It is advisable to remove the track during the remainder of the assembly process. This will keep the tank from shifting and rolling about while you are working.

Figure 24a



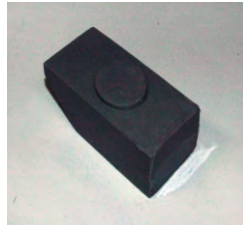
Figure 24b

# Brumbar Assembly Instructions

## Muffler Assembly and Installation

**Step 1.** Locate the two Muffler Blocks (see Figure 1a).

Figure 1a



(2) Muffler Support  
Block  
BRA005-407R

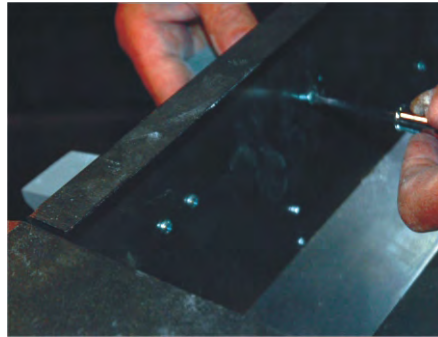
**Step 2.** Hold the Muffler Block up to the rear of the Chassis against the vertical surface and center it over the holes with the bottom of the Muffler Block against the top bar of the Idler Axle Bracket. Mark the Muffler Block with the two (2) holes per Block and pre-drill the Muffler Blocks to accept the Two (2) #6x1/2 inch Sheet Metal Screws (see Figure 2a).

Figure 2a



**Step 3.** Holding the Muffler Block in place secure it with the two (2) #6x1/2 inch Sheet Metal Screws from the inside of the Chassis (see Figure 3a).

Figure 3a



**Step 4.** Locate the two (2) Muffler Stack Top Details and the two (2) Muffler Bodies (see Figures 4a and 4b). Using Super-glue attach the Muffler Stack Top Detail to the Muffler Body (see Figure 4c and 4d).



Figure 4a

(2) Muffler Stack Top  
Detail  
BRA005-422R

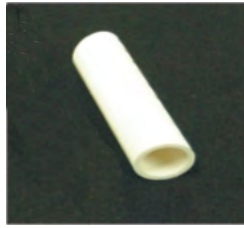


Figure 4b

(1) Muffler Body  
BRA005-607P



Figure 4c



Figure 4d

**Step 5.** Mount the Muffler Body Assemblies to the Muffler Blocks (see Figure 5a).

**NOTE:** You can mount the Muffler Body Assemblies to the Muffler Blocks now or wait until the end when your Tank Assembly is more complete. Waiting until the end will keep Muffler Body Assemblies out of the way while working on other things.



Figure 5a

# Brumbar Assembly Instructions

## Superstructure, Machine-gunner's Box, Driver's Box and Combat Access Box Assembly

**Step 1.** Locate the Superstructure which is the second largest piece in the bundle of seven (see Figure 1a) comes with the side panels folded in (see Figure 1b).

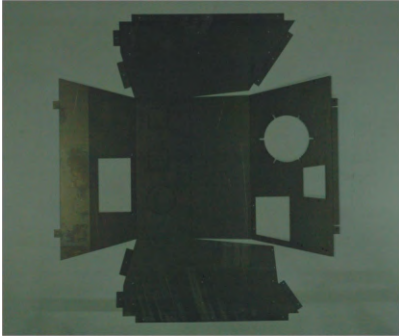


Figure 1a



Figure 1b

**Step 2.** Begin by slowly unfolding the folded panels outward to an angle of approximately 110 degrees to the horizontal (see Figure 2a and 2b).



Figure 2a



Figure 2b

**NOTE:** because of the configuration of the side panels there is a moment created that tends to want to have the side lay down and so it may be required that you prop them up in some manner or have an extra set of hands to assist you until the sides are attached to either the front panel or the rear panel.

**Step 3.** Bend the tabs on the lower back side of the side panels of the Superstructure to 90 degrees. Bend the tabs upper back side of the side panels to approximately 85 degrees. Bend the tabs on the front side of the side panels to approximately 75 degrees (see Figures 3a and 3b).

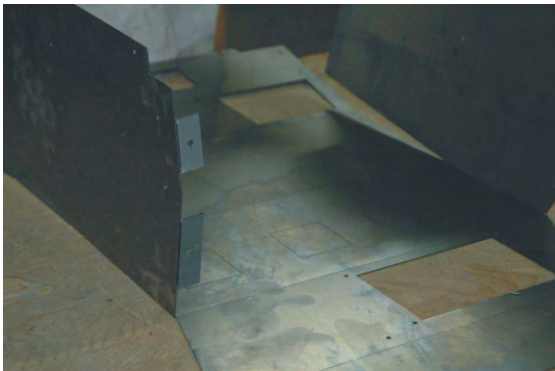


Figure 3a

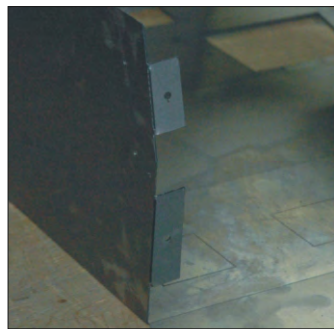


Figure 3b

**Step 4.** Raise the front panel and further adjust the tabs on the side panels so they align with the holes in the front panel (see Figure 4a and 3b). Secure in place with Pop Rivets.



Figure 4a



Figure 4b

# Brumbar Assembly Instructions

## Superstructure, Machine-gunner's Box, Driver's Box and Combat Access Box Assembly

**Step 5.** Raise the rear panel and further adjust the tabs on the side panels so they align with the holes in the rear panel (see Figure 5a). Secure in place with Pop Rivets.



Figure 4a

**Step 6.** Bend the flange at the bottom of the Front Panel so that it is 90 degrees to the horizontal and bend the stiffener tab at the bottom of the rear panel inward so it is perpendicular to the back side wall.(see Figure 6a and 6b). Turn the Superstructure upright to prepare for the installation of the Machine-gunner's Box, the Driver's Box and the Combat Access Box (see Figures 6a and 6b) .



Figure 6a



Figure 6b

**Step 7.** Locate the Machine-gunner's Box piece (see Figure 7a). Bend the tabs to 90 degrees (see Figure 7b) and then bend down the triangular side piece 90 degree (see Figure 7c). Bend down the front panel to meet the side panel (see Figure 7d).



Figure 7a

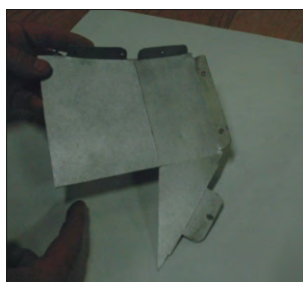


Figure 7b

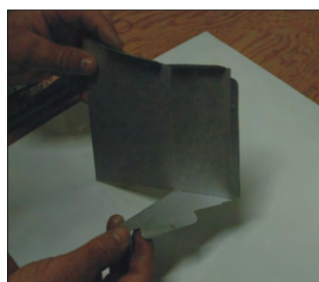


Figure 7c

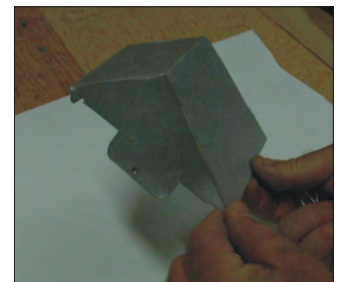


Figure 7d

# Brumbar Assembly Instructions

## Superstructure, Machine-gunner's Box, Driver's Box and Combat Access Box Assembly

**Step 7. (Cont'd.).** When the piece complete it should look like Figures 7e and 7f.

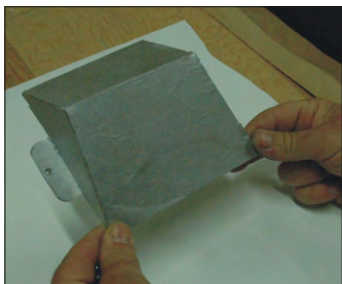


Figure 7e



Figure 7f

**Step 8.** Insert the Machine-gunner's Box piece into the opening and secure in place with Pop Rivets (see Figures 8a and 8b).

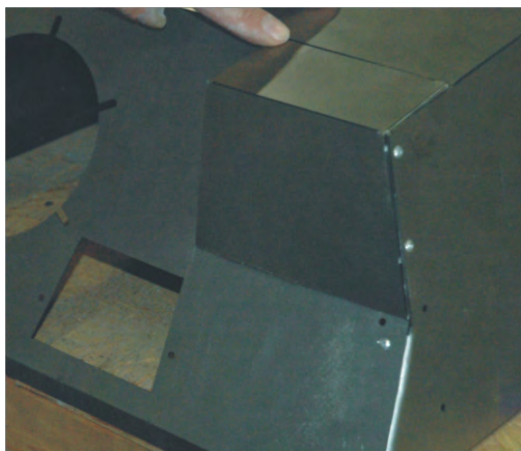


Figure 8a

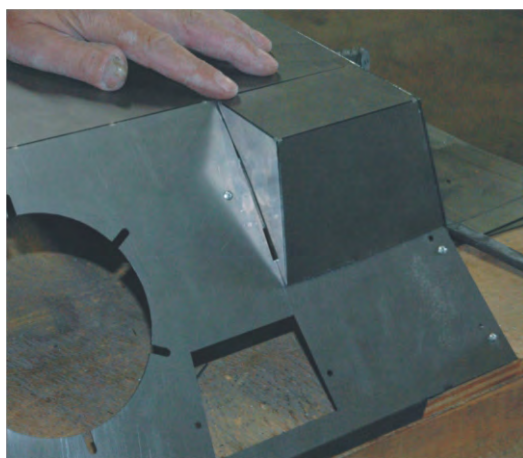


Figure 8b

**Step 9.** Locate the Drivers Box piece (see Figure 9a). Bend the side arm on one side down 90 degrees and then bend the tab back at 90 degrees (see Figures 9b). Bend the side arm on the other side down 90 degrees but do not bend the tab (see Figure 9c). The end result should look like Figures 9d and 9e.

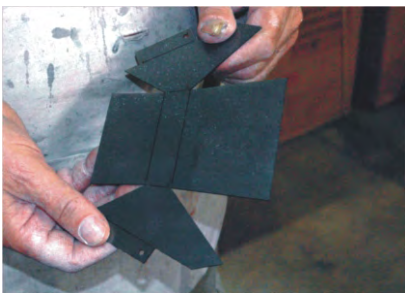


Figure 9a



Figure 9b



Figure 9c



Figure 9d



Figure 9e



# Brumbar Assembly Instructions

## Superstructure, Machine-gunner's Box, Driver's Box and Combat Access Box Assembly

**Step 10.** Insert the Drivers Box piece into the opening of the Superstructure as shown in Figures 10a and 10b. From inside the Superstructure bend the tab back that you had left unbent (see Figure 9c). Align the holes in the Driver's Box with the holes in the Superstructure and secure with Pop Rivets. Your Superstructure should now look like Figure 10d.



Figure 10a



Figure 10b

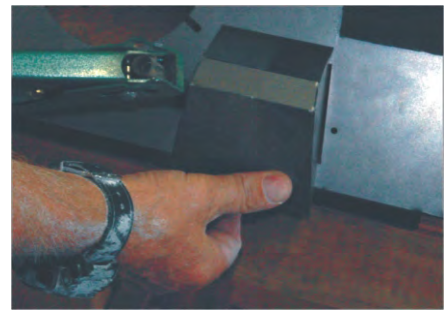


Figure 10c

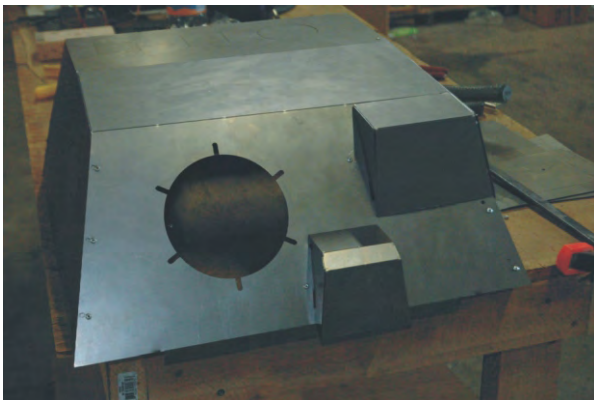


Figure 10d

**Step 11.** Locate the Combat Access Box (see Figure 11a). Making sure the Doors are on the Right Hand Side, Bend up the tabs toward what will be the inside of the Combat Access Box (see Figure 11b). Fold in the top, bottom and sides of the Combat Access Box (see Figure 11c) and secure with Pop Rivets (see Figure 11d).



Figure 11a



Figure 11b



Figure 11c



Figure 11d

# Brummbar Assembly Instructions

## Superstructure, Machine-gunner's Box, Driver's Box and Combat Access Box Assembly

**Step 11. (Cont'd)** Pop Rivet all joints (see Figure 11e) and then bend the Mounting tabs over to 90 degrees (see Figure 11f and 11g). When completed the Combat Access Box should look like the one in Figure 11h.



Figure 11e



Figure 11f

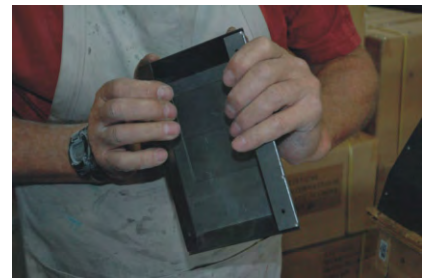


Figure 11g



Figure 11h

**Step 12.** Align the holes in the Combat Access Box with the holes at the rear of the Superstructure and from the inside of the Superstructure secure the Combat Access Box in place with Pop Rivets (see Figures 12a and 12b).



Figure 12a



Figure 12b

**Step 13.** The Superstructure Assembly is now complete but **DO NOT** attach it at this point to the Chassis. You will need to install the Barrel and Barrel Ball (Spherical Internal Gun Mantlet). Press on for assembly instructions of the Barrel and Barrel Ball.

# Brumbar Assembly Instructions

## Barrel and Barrel Ball Mantlet Assembly

**Step 1.** Locate the Barrel Ball Mantlet as shown in Figure 1a. Using three, approximately 4" long, pieces of masking tape, align the seams of the mold removal cuts and place the tape over the seam to hold it temporarily in position (see Figure 1b). Permanently fuse the sides of the seams together using Super-glue or Styrene Glue (see Figures 1c).



Figure 1a

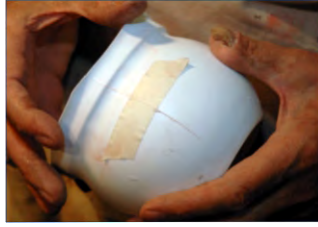


Figure 1b



Figure 1c

**Step 2.** Locate the Barrel Alignment Plate as shown in Figure 2a and slip it inside the cavity of the Barrel Ball Mantlet. Place a dab of Super-glue on opposite sides of the Barrel Alignment Plate (see Figure 2b) and pull the Barrel Alignment Plate into position against the indented rim at the rear of the Barrel Ball Mantlet making sure that it is parallel to the recessed front surface of the Barrel Ball Mantlet or perpendicular to what would be an imaginary horizontal center line through the length the Barrel Ball Mantlet (see Figure 2c). With a small bead of Super-glue secure the Barrel Alignment Plate securely to the Barrel Ball Mantlet (see Figure 2d).



Figure 2a



Figure 2b



Figure 2c



Figure 2d

**Step 3.** Trim the excess Styrene so that it is flush with the Barrel Alignment Plate (see Figure 3a and 3b). Sand down any rough edges, fill any imperfections using Bondo or Bondo Brand's Glazing and Spot Putty and sand again until all edges are smooth and there are no ridges or projections - particularly along the rear edge at the Barrel Alignment Plate.



Figure 3a



Figure 3b



Figure 3c



Figure 3d

**Step 4.** Locate the Barrel and set in the concave depression in the front of the Barrel Ball Mantlet centering it and trace a line around the outer edge (see Figure 4a). Using a sharp knife make a cut that breaks the surface of the material and follows the traced line (see Figure 4b). Make a cross shaped cut across the face of the depression (see Figure 4c) and snap out the four pieces you have created (see Figures 4d and 4e).



Figure 4a



Figure 4b



Figure 4c



Figure 4d



Figure 4e

# Brummbar

## Assembly Instructions

### Barrel and Barrel Ball Mantlet Assembly

**Step 5.** Insert the Barrel into the opening you have just created in the front of the Barrel Ball Mantlet (see Figure 5a). Push the Barrel back through the Barrel Ball Mantlet and through the hole in the Barrel Alignment Plate (see Figure 5b). The hole in the Barrel Alignment Plate is angled to create the Barrel/Mantlet offset that is unique to the Brummbar however there may have to be some adjustments made to the opening. It may also require some sanding to get the Barrel to fit just right if the Barrel Alignment Plate has not been installed just exactly parallel with the front surface of the Barrel Ball Mantlet as outlined in Step 2. Secure in position using Super-glue. At this point you can cut the Barrel end off to match the slope of the Barrel Alignment Plate for authenticity (see Figure 5c) but it not necessary to make the assembly operate properly. The Assembly thus far should look like Figure 5d.



Figure 5a



Figure 5b



Figure 5c



Figure 5d

**Step 6.** Locate the Barrel Step Down piece and secure it to the front end of the Barrel using Super-glue (see Figure 6a). Now locate the Barrel Muzzle piece and slide it into the Barrel Step Down Piece (see Figure 6b) and secure it in place using Super-glue (see Figure 6c).



Figure 6a



Figure 6b



Figure 6c

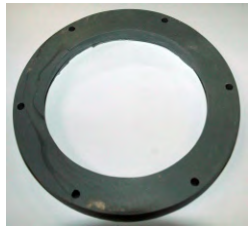
# Brummbär Assembly Instructions

## Installation of Barrel and Barrel Ball Mantlet Assembly into the Superstructure

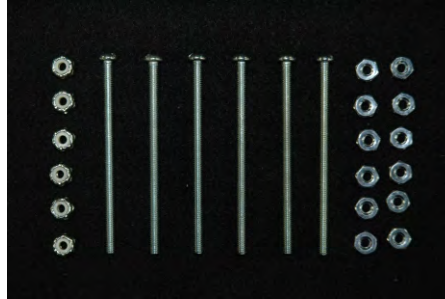
**Step 1.** Locate the Barrel Ball Front Plate, Barrel Ball Back Plate and the six (6) #8-32x3 bolts, twelve (12) #8x32 Nuts and six (6) #8x32 Lock Nuts.



(1) Barrel Ball Front Plate



(1) Barrel Ball Back Plate



(6) #8-32x3 Bolt  
(12) #8x32 Nut  
(6) #8x32 Lock Nut

**Step 2.** Inset the 6 Bolts into the Barrel Ball Front Plate (see Figure 2a and 2b). NOTE: please make sure the articulation shown in Figure 2c is to the bottom when installing this piece.



Figure 2a



Figure 2b



Figure 2c

**Step 3.** Making sure the articulated portion of the ring is at the bottom center of the opening of the Superstructure fit the bolts into the slots in the Superstructure and slide the Barrel Ball Front Plate against the front face of the Superstructure.



Figure 5a



Figure 5b



Figure 5c

**Step 5.** Thread two (2) #8x32 Nuts onto each bolt (see Figure 5a) and snug them up to the inside surface of the Superstructure (see Figure 5b and 5c) making sure that the Barrel Front Plate is centered on the opening. **DO NOT** tighten down the nuts until back Plate is in position - see Step 7



# Brumbar Assembly Instructions

## Installation of Barrel and Barrel Ball Mantlet Assembly into the Superstructure

**Step 6.** Slide the Barrel and Barrel Ball Assembly into the opening in the Superstructure that is now framed by the Barrel Ball Front Plate (see figure 6a) until it is firmly seated against the Barrel Ball Front Plate (see Figure 6b).



Figure 6a

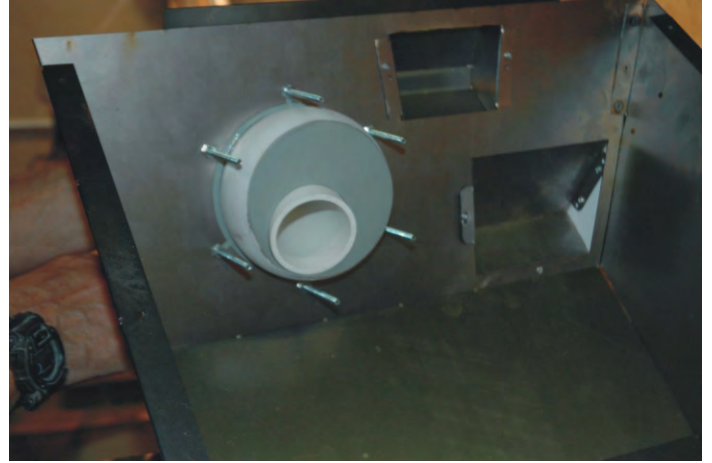


Figure 6b

**Step 7.** Align the six (6) Bolts with the holes in Barrel Ball Back Plate (see Figure 7a and 7b) making sure that the beveled edge of the Barrel Ball Back Plate is facing toward the Barrel Ball. Having not tightened down the Nut on the six (6) Bolts will allow you the flexibility to carry out this action without any struggle. Next, place the Lock Nuts onto the six (6) Bolts (see Figure 7c) to temporarily hold the Barrel Ball Back Plate in position and then tighten down the Nuts to secure the Barrel Ball Front Plate in position and then tighten down the second nut to lock the first one in place.



Figure 7a

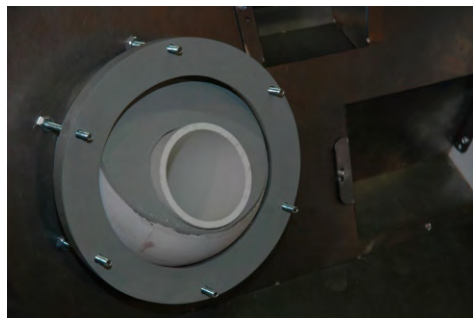


Figure 7b

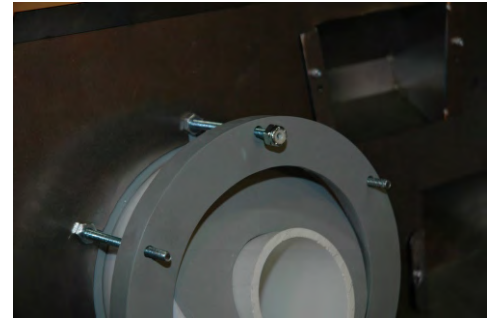
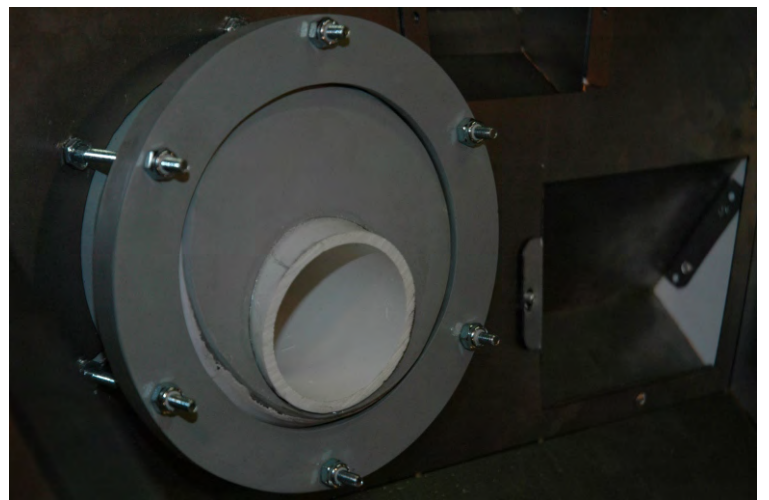


Figure 7c

**Step 8.** Tighten down the Lock Nuts against the Barrel Ball Back Plate (see Figure 8a) to create a tension against the Barrel Ball so that there is a degree of difficulty to move the Barrel and Barrel Ball Assembly back and forth sideways or up and down.

Figure 8a



# Brumbar Assembly Instructions

## Installation of Barrel and Barrel Ball Mantlet Assembly into the Superstructure

**STEP 9.** When the installation is complete the Superstructure should resemble Figure 9a.

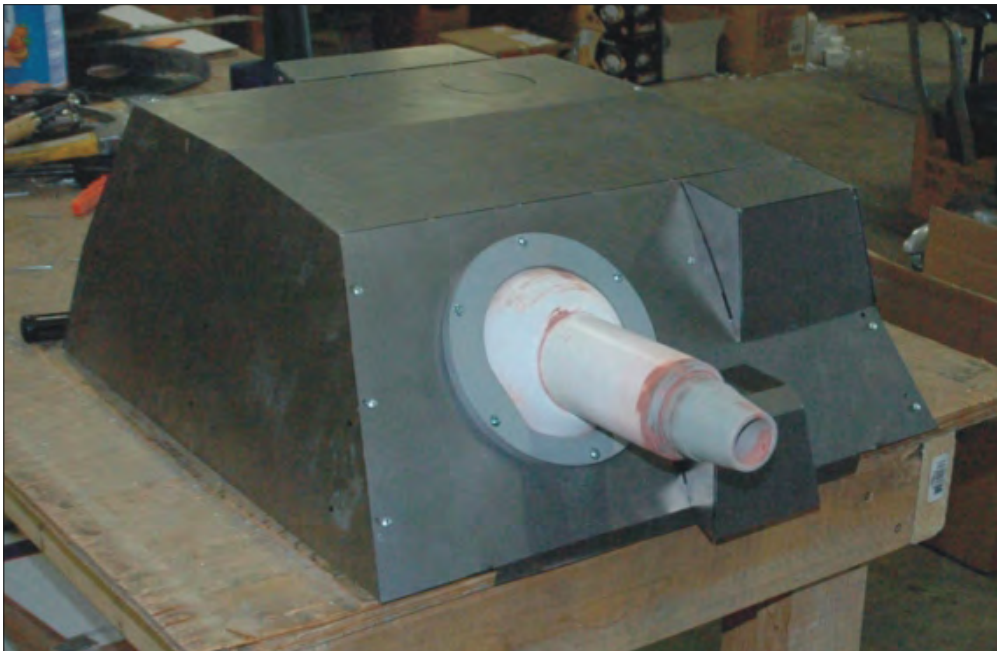


Figure 9a

# Brumbar Assembly Instructions

## Rear Deck and Manifold

**Step 1** The Engine Cover Deck is the third of the larger pieces in the bundle (See Figure 1a and 1b).

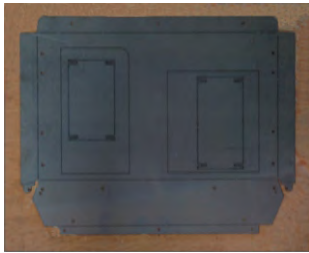


Figure 1a



Figure 1b



**NOTE:** There are break out pieces in the access door portions of Engine Deck Cover and can be removed at this stage (see Figure 1c), may have fallen out during shipping or can be left in until a later date. These pieces will eventually have to be removed to accommodate the Engine Grills. For this demonstration we have chosen to remove them.

**Step 2.** Fold the Tabs at the ends of the Side Panels inward to approximately 85 degrees (see Figure 2a), then raise the Side Panels to about 70 degree to the horizontal (see Figure 2b).



Figure 1d



Figure 1b

**Step 3.** Raise the Rear Panel up (see Figure 3a and 3b) until the holes in the Rear Panel align with the hole in the Tabs of the Side Panels. Secure in place with Pop Rivets (see Figures 3c and 3d).

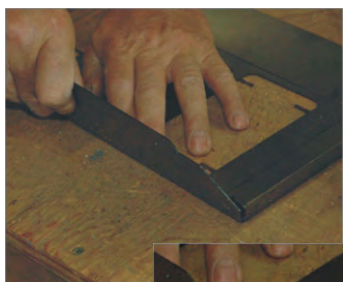


Figure 3a



Figure 3b



Figure 3c



Figure 3d

**Step 4.** When completed the assembly should look like Figure 4a.



Figure 4a



# Brumbar

## Assembly Instructions

### Rear Deck and Manifold

**Step 5.** There are two (2) Air Intake Manifold pieces and six (6) Intake Manifold Fins. They are assembled using one (1) Air Intake Manifold piece and three (3) Intake Manifold Fins (See Figure 5a).

**Step 6.** Bend the tabs at the top and bottom of the Air Intake Manifold pieces to an angle complimentary to the slot in the Intake Manifold Fins (See Figure 6a) and also bend the tabs with the holes in them on the Intake Manifold Fins to a 90 degree angle (See Figure 6b)

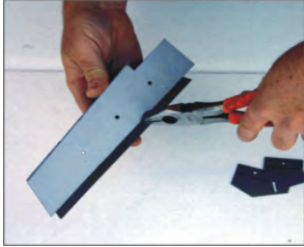


Figure 6a



Figure 6b

**Note:** Remember there is a left side and a right side and so the tabs on the Intake Manifold Fins need to be in the opposite direction for each side.

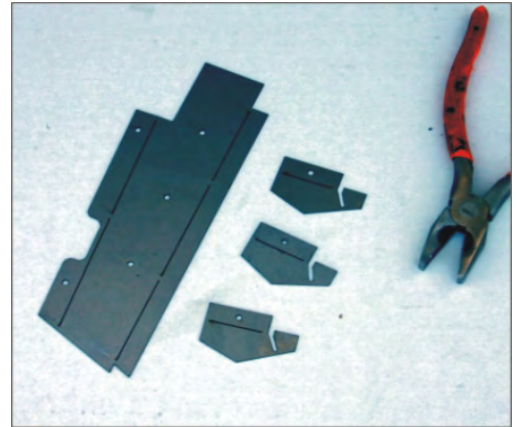


Figure 5a

**Step 7.** Slip the slots in the Intake Manifold Fins and align the holes in the with the holes in the Air Intake Manifold and secure with Pop Rivets. (See Figure 7a) When complete you should have two Manifold Assemblies that are the mirror image of one another and resemble Figure 7b.

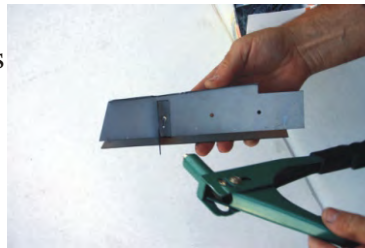


Figure 7a

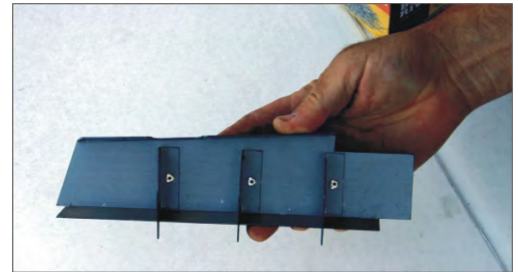


Figure 7b

**Step 8.** Install the Manifold Assemblies on the right and left sides of the Engine Cover Deck (see Figure 8a). The holes in the top Tab of the Manifold Assembly will line up with the holes in the Engine Cover Deck. Secure with Pop Rivets (see Figure 8b)



Figure 8a



Figure 8b

**Step 9.** Pull the bottom of the manifold Assembly outward until the fins are touching the inside of the Side Panel (see Figure 9a).



Figure 9a

**Step 10.** Bend the flange at the front of the Top Panel upward to about 85 degrees to the horizontal. This will allow for the attachment of the Engine Deck Cover to the Superstructure. (See Figures 10a and 10b)



Figure 10a

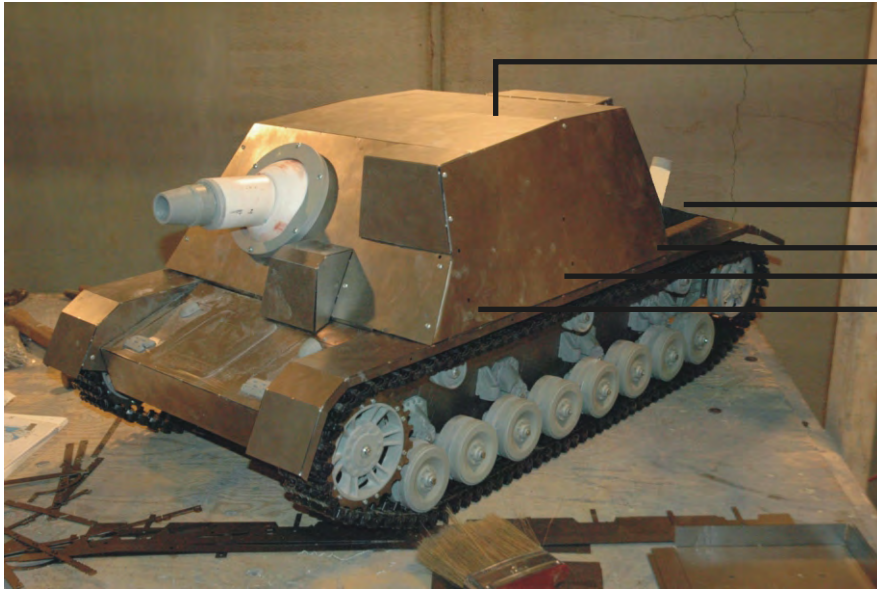


Figure 10a

# Brummar Assembly Instructions

## Chassis, Superstructure and Engine Cover Deck and Manifold Assembly

**Step 1.** You are now ready to attach the Superstructure and the Engine Cover Deck to the Chassis. Beginning with the Superstructure align the three (3) holes in the Tabs at the bottoms of the Side Panels of the Superstructure with the holes in the Chassis Fenders. Secure in place with Pop Rivets from the underside of the fenders. If you have not removed the Tracks to continue your assembly process you will need to do that to facilitate this procedure.



Superstructure

Manifold Assembly Location

Approximate position of hole location for Pop Rivet on the underside tabs of the Superstructure.

### IMPORTANT

If it is your intention to install drive motors and a Radio Control System (upgrade kits coming soon) at a later date then you may want to secure the Upper Deck to the Chassis only at the side tabs and using Self-tapping or Sheet metal Screws rather than Pop Rivets.

Figure 1a

**Step 2.** Having secured the Superstructure to the Chassis the next step is to attach the Engine Cover Deck complete with Manifold Assembly into place. Place the Engine Cover Deck in place on the Chassis at the rear of the Superstructure so that the Flange at the bottom of the Rear Panel of the Engine Cover Deck laps over (to the outside) the Chassis and making sure the holes in the Superstructure align with the hole in the front Tab of the Engine Cover Deck (see Figure 2a).



Figure 2a

### IMPORTANT

If it is your intention to install drive motors and a Radio Control System (upgrade kits coming soon) at a later date then you may want to secure the Engine Cover Deck to the Chassis using Self-tapping or Sheet Metal Screws rather than Pop Rivets in the spot (there is one location on either side and one in the center) indicated by the Arrow in Figure 3b.

**Step 3.** Secure the Engine Cover Deck to the Chassis using Pop Rivets (See Figures 3a, 3b and 3c).



Figure 3a



Figure 3b

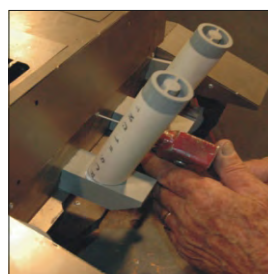


Figure 3c



Figure 3b

# Brummbar Assembly Instructions

## Chassis, Superstructure and Engine Cover Deck and Manifold Assembly

**Step 4.** Secure the Engine cover deck to the Superstructure using Pop Rivets (See Figure 4a, 4b and 4c).



Figure 4a



Figure 4b



Figure 4c

### IMPORTANT

If it is your intention to install drive motors and a Radio Control System (upgrade kits coming soon) at a later date then you may want to secure the Engine Cover Deck to the Superstructure using Self-tapping or Sheet Metal Screws rather than Pop Rivets in the three (3) spots shown in Figures 4a, 4b and 4c.

**Step 5.** Your Brummbar should now resemble the photograph show in Figure 5a and 5b.



Figure 5a



Figure 5b

# Brummbar

## Assembly Instructions

### Spare Wheel Holder and Spare Wheels

**Step 1.** Locate the two (2) Spare wheel Holders.



(2) Spare Wheel Bracket

**Step 2.** There two (2) bends to be made on each leg of the Spare Wheel Holder piece (see Figure 2a). First bend the Tab downward at the first seam to 90 degrees and then bend the Tab out ward to 90 degrees so that the plane with the hole in it at the end of the Tab is parallel to the plane of the half moon shape of the main part of the piece (see Figure 2b). Do the same to both sides. Repeat the process for the second Spare Wheel Holder.



Figure 2a



Figure 2b

**Step 3.** Place the Spare Wheel Holder into position at the upper left and upper right of the rear panel of the Engine Cover Deck and align the holes. Secure with Pop Rivets (see Figures 3a, 3b, and 3c). Adjust the Spare Wheel Holders (they may gotten askew during the Pop Riveting process) so that they are square in alignment and ready to accept two Spare Wheels (see Figure 3d).



Figure 3a



Figure 3b



Figure 3c



Figure 3d

**Step 4.** To install To install the Spare Wheels (four (4) extras are included for this purpose) cut a piece of 1/4" dowel that will fit exactly through the thickness of two Wheels, one on top of the other(see Figure 4a) and using Super-glue secure the two wheels together making sure the details on the Wheels are both facing in the same direction (see Figures 4b and 4c)



Figure 4a



Figure 4b



Figure 4c

**NOTE:** The Spare Wheel Holder will accept the width of only one Wheel and fits between the now conjoined pair of Wheels. The Wheels should slip into the Spare Wheel Holder snugly and so there is no reason to secure them in that position (see Figure 4d)..



Figure 4d

# Brummbar Assembly Instructions

## Engine Access Doors, Hinge and Engine Grill Assembly

**Step 1.** Gently twist the individual Engine Access Doors from the Engine Deck Cover (they are attached with two small stitches of metal that allow easy removal) and attach two (2) sets of hinges to the wide door panel and three (3) sets of hinges to the long door panel (see Figure 1a).

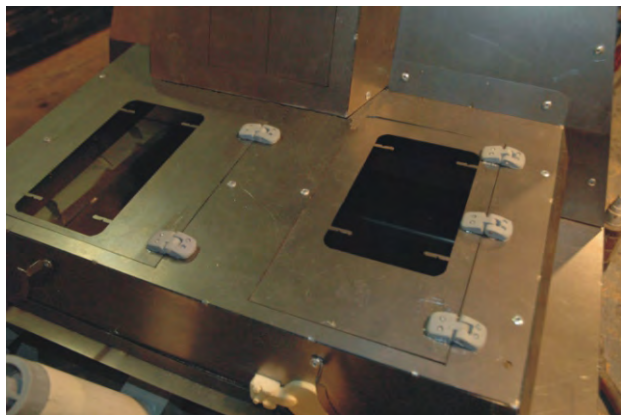


Figure 1a

**NOTE:** Assemble the hinge halves by drilling a hole through each part and inserting a pin (see Figures 1b, 1c and 1d) through the two halves (here in the shop we use 1/16" copper wire for the pin) and then install them to the door side only.



Figure 1b



Figure 1c



Figure 1d

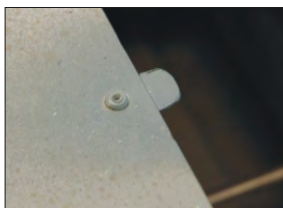


Figure 1e

**NOTE:** Using a piece of scrape metal it is advisable to create a stop for the Engine Access Doors (See Figure 1e) (and the Brake Access Covers) to close against by Pop Riveting it to the underside of the opening and protruding into the opening.

**Step 2.** Take each of the Engine Access Doors and install the Engine Grills in them. First bend the four (4) Metal Tabs into what would be where the Engines would be (see Figures 2a and 2b). Lay the Access Door face down and fit the Engine grill into the opening in the metal so that the face of the grill is flush with the metal (see Figure 2c). Bend the Metal Tabs over the Resin Grill piece and place a dab of Epoxy on the back side of each Metal Tab to hold the Grill securely in position (see Figure 2d).



Figure 2b

Figure 2a



Figure 2c

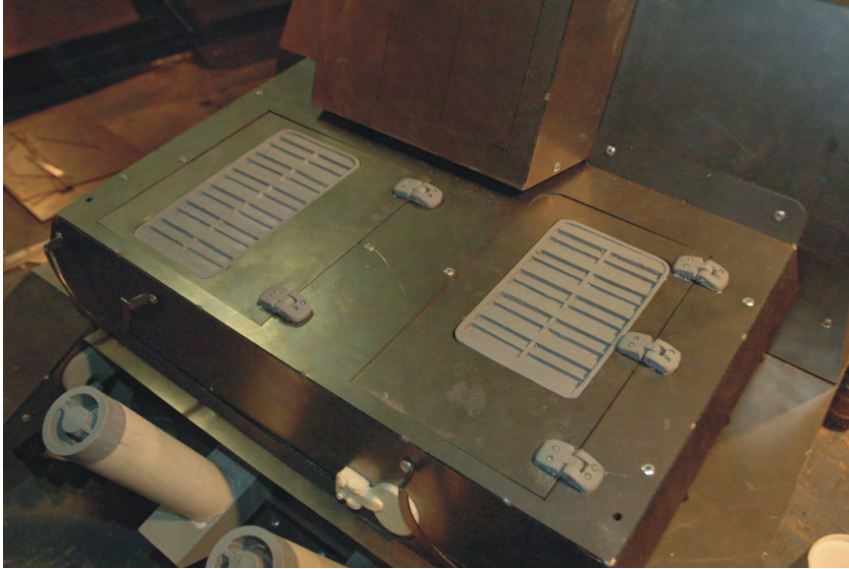


Figure 2d

# Brumbar Assembly Instructions

## Engine Access Doors, Hinge and Engine Grill Assembly and Rear Brace and Gas Cap Placement

**Step 3.** Place the Engine Access Doors back into their respective openings in the Engine Cover Deck and secure them in place by fastening the other half of the Hinge to the Engine Cover Deck with Epoxy (see Figure 3a).



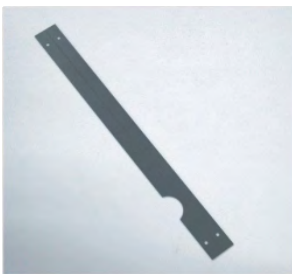
**NOTE:** Here in the shop we use a piece of 1/16th inch copper wire bent into a “U” shape as access door handles. We then drill two small holes in the Access Doors to accept the legs of the “U”. You, of course can use develop your own handle solution (see Figure 3b).



Figure 3b

Figure 3a

**Step 4.** Locate the Rear Brace (see Figure 4a) and the Gas Cap (see Figure 4b). Bend the Rear Brace to 90 degrees along the seam (see Figure 4c). Lay the Rear Brace across the bottom of the rear panel of Engine Deck Cover. Align the holes in the Rear Brace with those in the rear panel of the Engine Deck Cover and secure in place with Pop Rivets - one (1) on each side (see Figures 4d and 4e).



Rear Brace

Figure 4a



Gas Cap

Figure 4b



Figure 4c

**Step 5.** Mount the Gas Cap above the Rear Brace in the half circle. Secure using Epoxy (see Figures 5f and 5g).



Figure 4f



Figure 4g



Figure 4d



Figure 4e

# Brumbar

## Assembly Instructions

### Individual Part Placement

#### Headlight and Headlight Bracket

Install the Headlight Bracket By drilling holes in the fender to suit the holes in the Headlight Bracket and secure in place using sheet metal screws or a suitable nut and bolt making sure their length doesn't interfere with the Treads (See Figure A). Secure the Headlight into the bracket using Super-glue (See Figure B).



(1) Headlight Bracket



(1) Headlight



Figure A

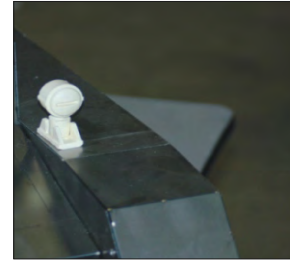


Figure B

#### Front Tow Shackle

There are two (2) Front Tow Shackles and they are located at the front of the Chassis (one on each side) adjacent to the fender with the cant of the legs on the Shackle facing inward (See Figure A).



(2) Front Tow Shackle



Figure A

#### Rear Tow Hooks

**Step 1.** There are two (2) Two Hook Assemblies comprised of a Tow Hook and a Tow hook Brace (See Below).

**Step 2.** Using Super-glue attach one (1) Tow Hook Brace to each Tow Hook as shown in Figure 2a.



Figure 2a



(2) Rear Tow Hook



(2) Rear tow Hook Brace

**Step 3.** Install the rear Tow Hooks (one (1) on either side) to the position shown in Figures 3a and 3b using epoxy.



Figure 3a

# Brumbar Assembly Instructions

## Individual Part Placement

### Hull Machine Gun and Ball Machine Gun Mount, Ball Mount Detail, Wooden Jack Block, Upper View Port-A (large) and Upper View Port-B (small).



(1) Hull Machine Gun



(1) Ball Machine Gun Mount

These two (2) parts go together. Clean the excess resin from the Hull Machine Gun and square off the muzzle. Using a sharp knife or a saw separate the Hull Machine Gun from bulbous end (See Figure A). Inset the Hull Machine Gun into the large hole in the Ball Machine Gun Mount and secure in place using Super-glue (See Figure B and C). See the breakaway on the next page for the mounting position.



Figure A



Figure B



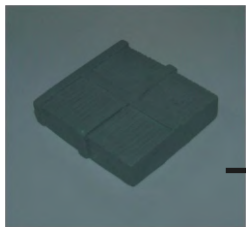
Figure C

**NOTE:** See the Diagram drawing below for the location of the Wooden Jack Block, Ball Machine Gun Mount Assembly and the Ball Mount Detail.

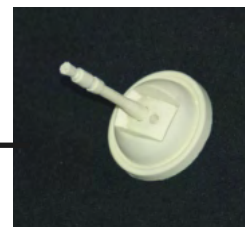
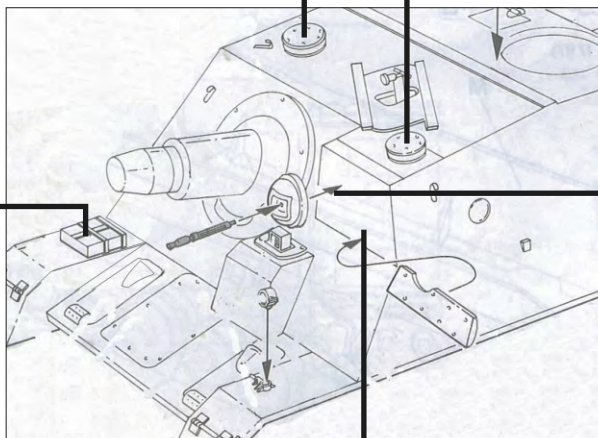
(1) Upper Deck View Port-A (large). Install 1 1/2" in from the front edge of the top of the Superstructure and 2 3/4" from the side.



(1) Upper Deck View Port-B (small). Install 1 1/2" in from the front edge of the top of the Machine-gunner's Box and 1" in from the side.



(1) Wooden Jack Block  
Install the Wooden Jack Block to the Position shown.



Ball Machine Gun Mount Assembly (see above). Install in the recess of the Ball Mount Detail.



(1) Ball Mount Detail - Install at the base of the Machine-gunner's Box. This should be done prior to installing the Ball Machine Gun Mount Assembly



# Brumbar Assembly Instructions

## Individual Part Placement

### Cupola

Before placing the Cupola there is some assembly required. Locate the Commander's Hatch Mounting Ring, the Commander's Hatch Hinge Ring, the Commander's Hatch and the Commander's hatch Viewing Door.



Commander's Hatch Mounting Ring



Commander's Hatch Hinge Ring



Commander's Hatch



Commander's Hatch Viewing Door



Hinge Assembly

Using a short section of 1/16" copper wire and lay it across the two elevated hinge posts of the Commander's Hatch and secure in place with Epoxy (see Figure A). Locate the Commander's Hatch Viewing Door and fit it into the angled portion of the Commander's Hatch. Trim and shape the Commander's Hatch Viewing Door to assure a proper fit. With an assembled hinge join the Commander's Hatch Viewing Door to the Commander's Hatch by securing it with Super-glue.



Figure A

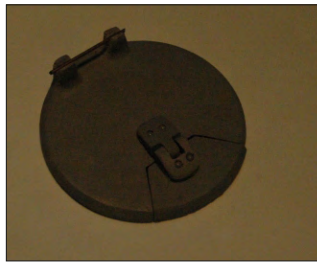


Figure B

Fit the Copper Pin that you have just secured to the Commander's Hatch into the groove of the Commander's Hatch Hinge Ring (see Figure C). Sand the Hinge portion of the Commander's Hatch Hinge Ring down so that the surfaces on either side of the copper hinge pin down so that they are flush with the top of the copper hinge pin.



Figure C

With a Piece Of Styrene shaped to go over the Hinge area of the Commander's Hatch Hinge Ring and secure it in place with Super-glue making sure not to get any glue on the copper hinge pin (see Figure D and Figure E).



Figure D



Figure E

# Brummbar Assembly Instructions

## Individual Part Placement

### Cupola (Cont'd.)

Taking the Commander's Hatch Mounting Ring align the Notches in the ring with the Protrusions on the Commander's Hatch hinge Ring (NOTE: It will only fit one way) and snap the pieces together. Some sanding may be required to have the Commander's Hatch sit correctly in the assembly. It should sit so that the bottom of the Commander's hatch is parallel and flush with bottom surface of the Commander's Hatch Hinge Ring.



Figure F



Figure G

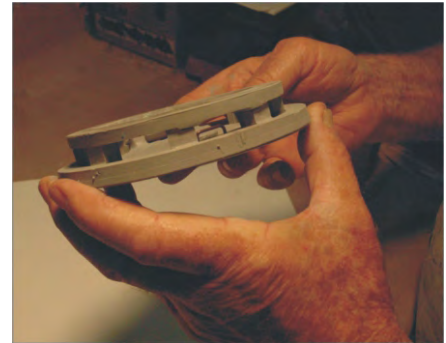


Figure H

When you are happy with the fit of the assembly take apart and reassemble it in a secure manner using a dab of Super-glue at each of the posts that separate the two rings and pressing it together firmly until the glue has dried.

When the assembly is complete it should look like Figures I and J below.



Figure I

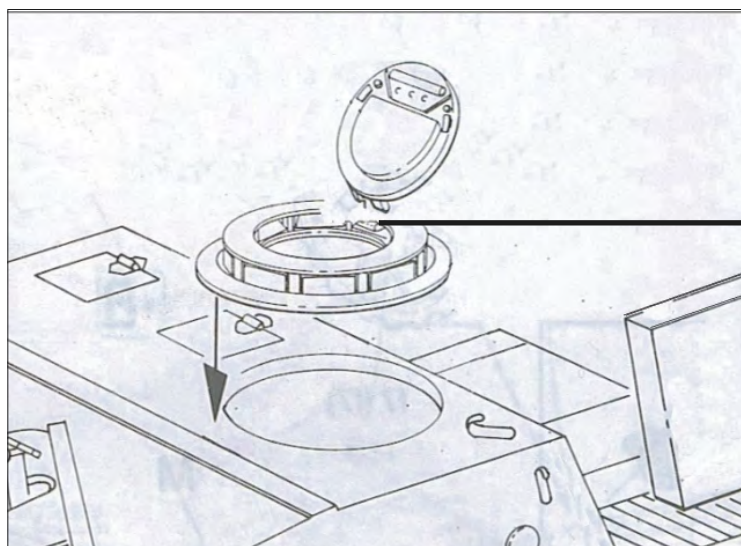


Figure J

**NOTE:** The Commander's Hatch is designed so as not to be opened as one unit. It is necessary to first open the Commander's Hatch Viewing Door before the Commander's Hatch per see will open.

Install the Cupola onto the upper surface of the Superstructure with the hinge portion of the Assembly directly to the rear and the edge of the Commander's Hatch Mounting Ring flush with the rear edge of the top of the Superstructure as shown in the Mounting Diagram below.

Mounting Diagram



(1) Commanders Hatch (Cupola)  
Assembly

# Brumbar

## Assembly Instructions

### Individual Part Placement

#### Brake Access Panel Doors, Hinges and Vents

Locate two (2) sets of hinge halves as shown below (Note: One (1) set of hinges is supplied as an extra set) Assemble the hinge halves by drilling a hole through each part and inserting a pin through the two halves. Here in the shop we use 1/16" copper wire for the pin.



(3) Brake Access Panel Hinge Half - A



(3) Brake Access Panel Hinge Half - B



Brake Access Panel Hinge Assembly



(2) Brake Access Cover Vent

Gently twist the individual Brake Access Doors from the front of the Chassis (they are attached with two small stitches of metal that allow easy removal). Attach One (1) sets of hinges door panel to the door side only.

Using Epoxy attach the Brake Access Cover Vent to the Brake Access Door in the center of each door approximately 3/8 inches down from the top edge (see Figure A)..

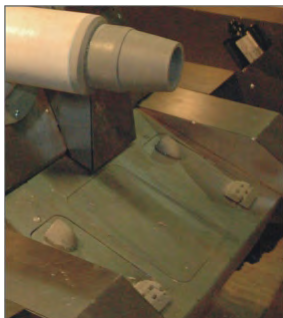
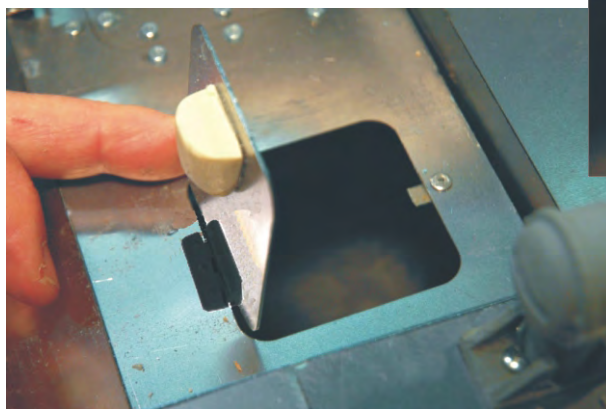
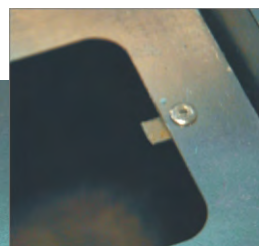


Figure A



Brake Access Assembly

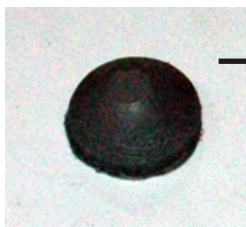


**NOTE:** Using a piece of scrape metal it is advisable to create a stop for the Engine Access Doors (See Figure 1e) (and the Brake Access Covers) to close against by Pop Riveting it to the underside of the opening and protruding into the opening.

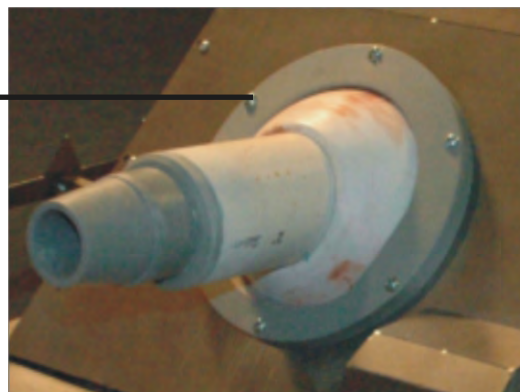
Place the Brake Access Doors back into their respective openings in the Chassis front secure them in place by fastening the other half of the Hinge to the Chassis. When done the Assmby should look like Figure A.

#### Bolt Covers

Drill out the backs of the six (6) bolt covers and place one each over the bolts that secure the Barrel Ball Assembly and the Barrel Ball Front Plate in place. Secure using Super-glue.



(6) Bolt Cover



# Brumbar

## Assembly Instructions

### Individual Part Placement

#### Driver's View Port, Driver's View Port Detail, Tie Down Hook, Periscope Guide Rails, Upper Periscope and Side View Port.

There are seven Tie Down Hooks on the Superstructure and they are located as indicated on the Diagram - one (1) on the Front, two (2) on either side and two (2) on the top.



(7) Tie Down Hook

Using Super-glue assemble the Periscope Guide Rails and the Upper Periscope (see Figure B).



(1) Periscope Guide Rails



(1) Upper Periscope

Using Super-glue assemble the Driver's View Port Bolt Detail and the Driver's View Port (see Figure A).



(1) Driver's View Port Bolt Detail



(1) Driver's View Port

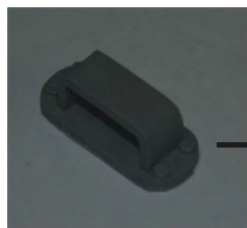


Figure A - Driver's View Port Assembly

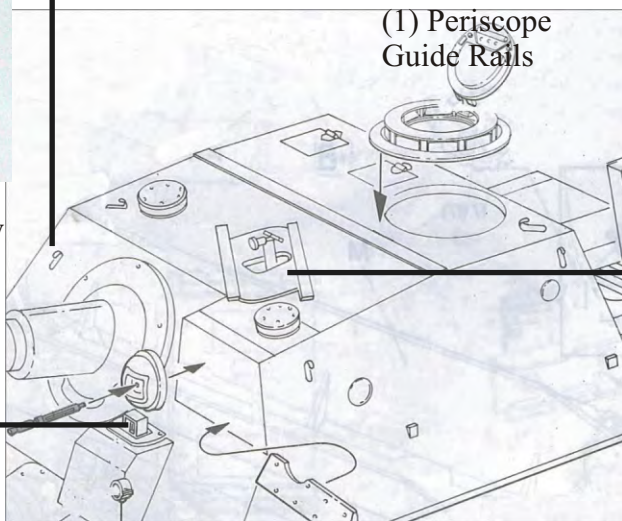
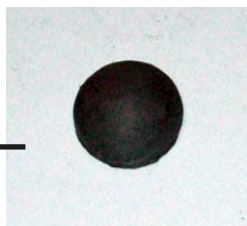


Figure B - Periscope Guide Rail Assembly  
Drill a 1/4" hole in Periscope Guide Rail and insert the leg of Upper periscope. Secure with Super-glue.

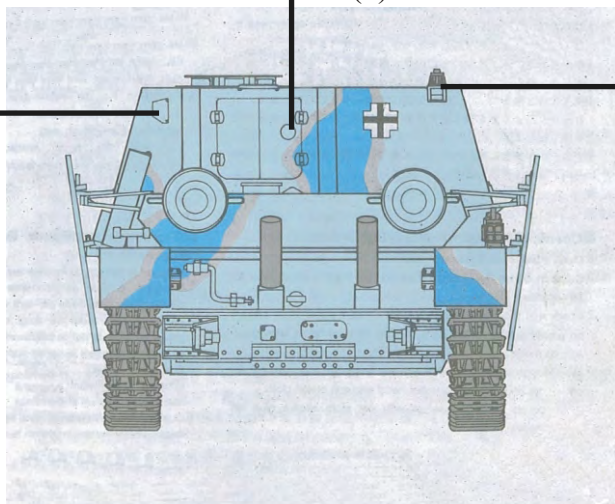
The five (5) Side View Ports are located two on either side and one (1) on the Combat Compartment Access door as shown on the Diagrams.



(5) Side View Port



(1) Triangular Air Vent



(1) Antennae Mount

# Brummbar

## Assembly Instructions

### Individual Part Placement

#### Upper Deck Bolt Detail- A, Upper Deck Bolt Detail-B, Door Hinges for Combat Compartment Access Doors and Door Hinges for Upper Superstructure Access Door



Apply the Bolt Details using one length of Detail-A and One of Detail-B butted side by side on either side of the seam at the bend in the Superstructure. The bolt heads are to be staggered. Enough length in each piece has been supplied to allow for that - trim as required to fit.

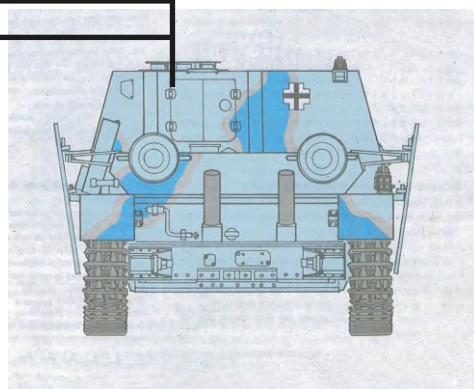
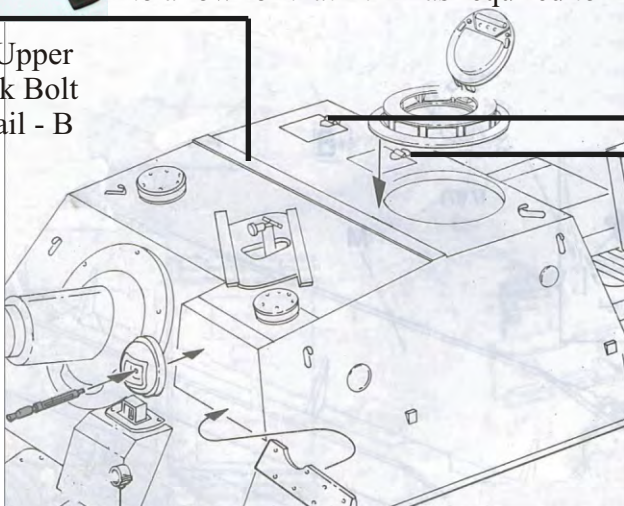


Hinge Assembly

Install the Hinge Assemblies to the Combat Compartment Access doors and the Access Hatches in the top of the Superstructure in the same manner as for the Engine Cover Deck Doors.

(2) Upper Deck Bolt Detail - A

(2) Upper Deck Bolt Detail - B



### Radiator Fill Box



(1) Radiator Fill Box

Install on the left side of the Motor Access Door and the right hand side and about 2/3 of the way up from the bottom and adjacent to the Large Engine Grill .

### Chassis Service Hatch

Install the Chassis Service Hatches on the left side of the Chassis. One (1) in front as shown in Figure A and one (1) in the rear as shown in Figure B.

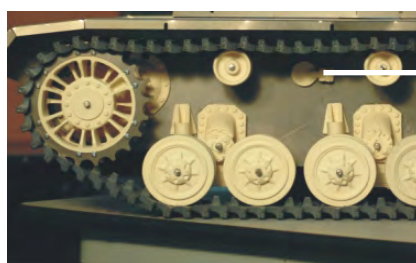


Figure A



(2) Chassis Service Hatch



Figure B

# Brumbar Assembly Instructions

## Individual Part Placement

### Storage Box

Some assembly is required. Begin by locating the piece as shown in Figure A and by bending the Tabs at either end of the box side panels (see Figures B and C).



Figure A

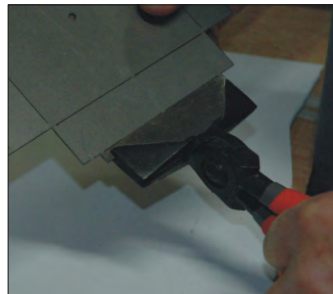


Figure B

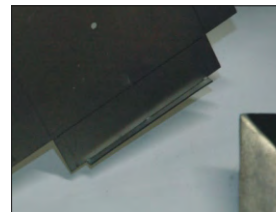


Figure C

Fold the side panels inward (see Figure D).



Figure D

Fold the top and bottom panels inward to meet the side panels (see Figure E).

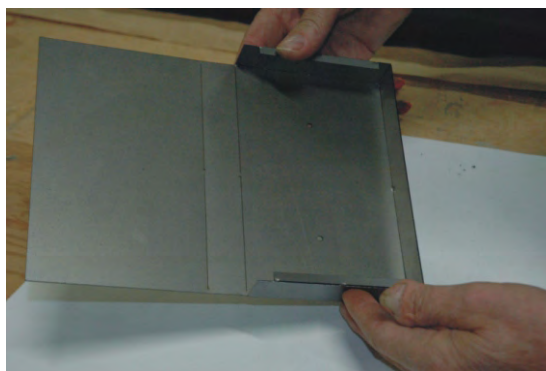


Figure E

You have already created the back in this process and to complete the box fold the front panel down to complete the Storage Box (see Figures F and G). Apply Epoxy to the side tabs to secure the front panel in place (see Figure H).

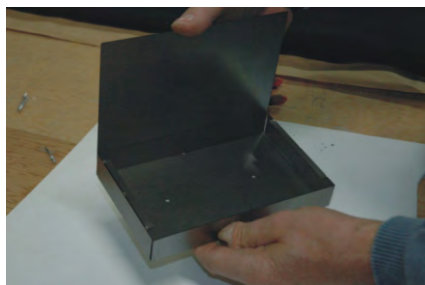


Figure F

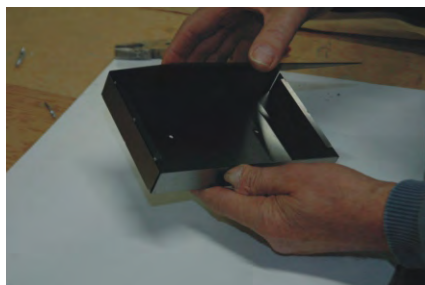
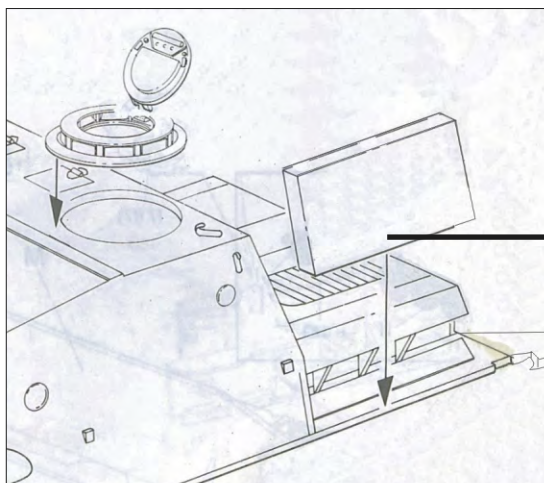


Figure G



Figure H



**NOTE:** Before securing the front panel, install the Storage Box to the side of the sloping side of the Engine Cover Deck. Align the holes in the Storage Box with those in the Engine Cover Deck and secure with Pop Rivets.

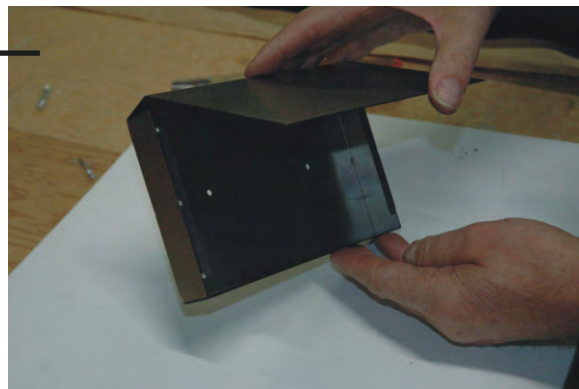


Figure I

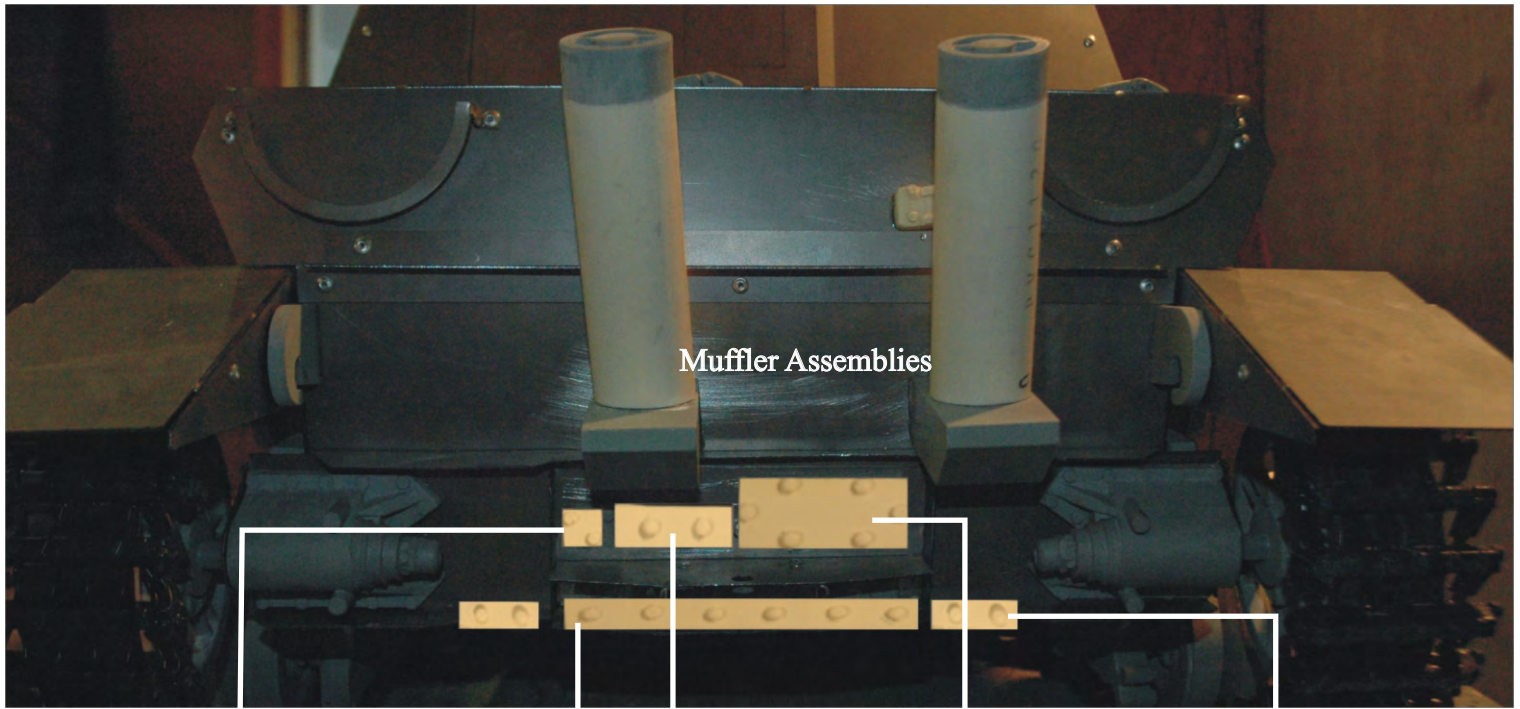
# Brummbar Assembly Instructions

## Individual Part Placement

### Bolt Details

Placement locations for Bolt Details #1, #2, #3, #4 and #5.

Rear View



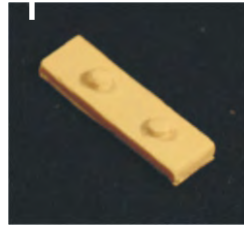
(1) Rear Bolt  
Detail #1

Install this Bolt Detail above the rear Towing Bracket inside the Towing Bracket Housing on the left side.



(1) Rear Bolt  
Detail #4

Install this Bolt Detail horizontally inside the Towing Bracket - Section as required to accommodate the Rear Towing Bracket reinforcement piece.



(1) Rear Bolt  
Detail #2

Install this Bolt Detail between Bolt Detail #1 and Bolt Detail #5 above the Towing Bracket.



(1) Rear Bolt  
Detail #5

Install this Bolt Detail above the rear Towing Bracket inside the Towing Bracket Housing on the right side.



(2) Rear Bolt  
Detail #3

Install one (1) Bolt Detail on either side between the Towing Bracket Brace and the Idler Mount Assembly