

GEMINI ROBOT KITS

Torso Structure Assembly Instructions

PARTS LIST

Please check the following parts list to be sure that you have all the parts before you begin assembling this kit.

| <u>Description</u> | <u>Quantity</u> | <u>Part #</u> |
|--------------------------------------|-----------------|----------------|
| 4-40 x 1 Standoff | 2 | 67F4067 |
| LCD | 1 | EAY4008AT* |
| Function switch | 1 | MCS1241.0228.8 |
| Function switch | 1 | MCS1241.0229.8 |
| Function switch | 1 | MCS1241.0230.8 |
| Function switch | 1 | MCS1241.0231.8 |
| Function switch | 1 | MCS1241.0232.8 |
| Function switch | 1 | MCS1241.0218.3 |
| Switch hardware | 6 | 098.9201 |
| Speaker | 2 | 40-1203* |
| Stepper motor | 1 | K82815-P2 |
| 8-32 x 1 1/4 RH screw | 4 | 91783A201 |
| 8-32 x 3/4 FH screw | 4 | 91781A197 |
| Thumb wheel resistor and hardware | 1 | 31TS401 |
| 4-40 x 1/4 nylon spacer | 4 | 30F1436 |
| Right front leg | 1 | GITS-1 |
| Left front leg | 1 | GITS-2 |
| Right rear leg | 1 | GITS-3 |
| Left rear leg | 1 | GITS-4 |
| Upper torso clip | 8 | GITS-5 |
| Lower torso clip | 8 | GITS-6 |
| Torso shell clip | 4 | GITS-7 |
| Top strut | 3 | GITS-8 |
| Mid strut | 3 | GITS-9 |
| Bottom strut | 3 | GITS-10 |
| Disk drive shelf | 1 | GITS-11 |
| Keyboard shelf | 1 | GITS-13 |
| Rear keyboard support bracket | 1 | GITS-14 |
| Sonar Life/lite brack. | 1 | GITS-15A |
| LCD bracket | 1 | GITS-25 |
| Lower sonar bracket | 1 | GITS-36 |
| Front speaker mount | 1 | GITS-15B |
| LCD foam | 1 | * |

| | | |
|------------------------|----|-----------|
| Thumb wheel bracket | 1 | GITS-45 |
| Upper shell support | 2 | GITS-50 |
| 4-40 x 1/4 ss screw | 59 | 91783A106 |
| Front torso shell | 1 | GITS-37* |
| Rear torso shell | 1 | GITS-38* |
| Access door | 1 | GITS-39* |
| Handle cups | 2 | GITS-40* |
| Shoulder plate | 1 | GITS-23 |
| 4-40 x 3/8 ss screw | 16 | 91783A108 |
| Bottom base plate | 1 | GIBS-10 |
| Mother board mount | 1 | GIBS-22 |
| #4 lock washer | 28 | 92146A005 |
| #4 shoulder washer | 2 | 90062A005 |
| 4-40 Hex nut | 95 | 91841A005 |
| 4-40 nylon nut | 2 | 94812A112 |
| 4-40 x 1/2 nylon screw | 2 | 94611A110 |
| 8-32 x 3/8 RH bolts | 8 | 91783A192 |
| 8-32 Hex nut | 8 | 91841A009 |
| #8 lock washer | 8 | 92146A009 |
| Cotter pin | 1 | 98311A422 |
| 8-32 x 1/8 standoff | 4 | 30F1435 |
| nylon | | |
| 8-32 x 1 standoff | 4 | 35F560 |
| Lazy susan | 1 | 641-6 |
| Rubber feet | 4 | SJ-5023 |
| Head stop clip | 1 | GIHD-28 |
| 10-32 x 5/8 RH screw | 4 | 91783A830 |
| #10 shoulder washer | 4 | 90062A011 |
| Velcro | 4 | SJ3526 * |
| Velcro | 4 | SJ3527 * |
| Head bearing block | 1 | GIHD-25 |
| #4 flat washer | 4 | 92141A005 |

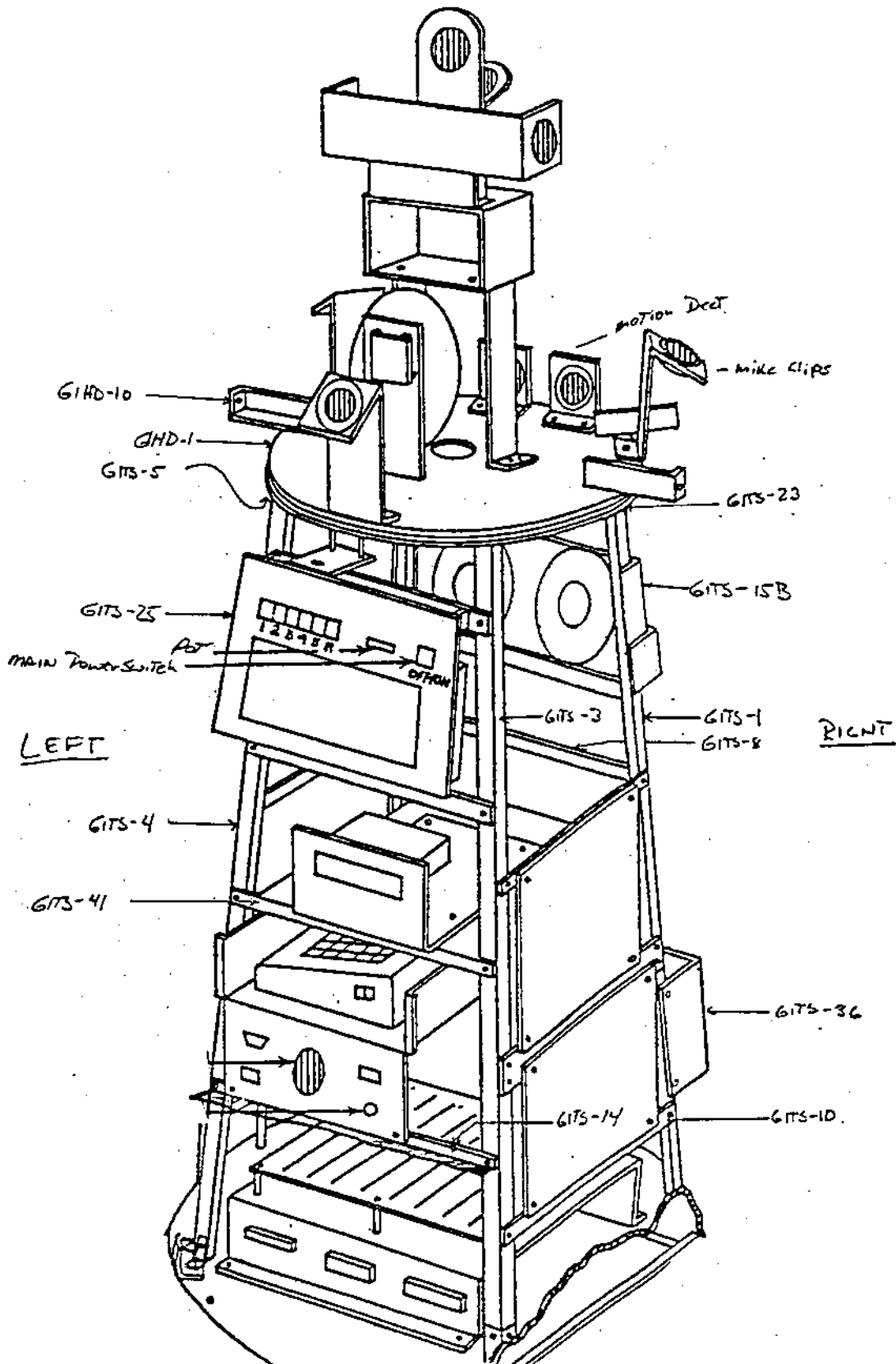
* Not included with GEMINEX kit

Gear is installed as factory modification.

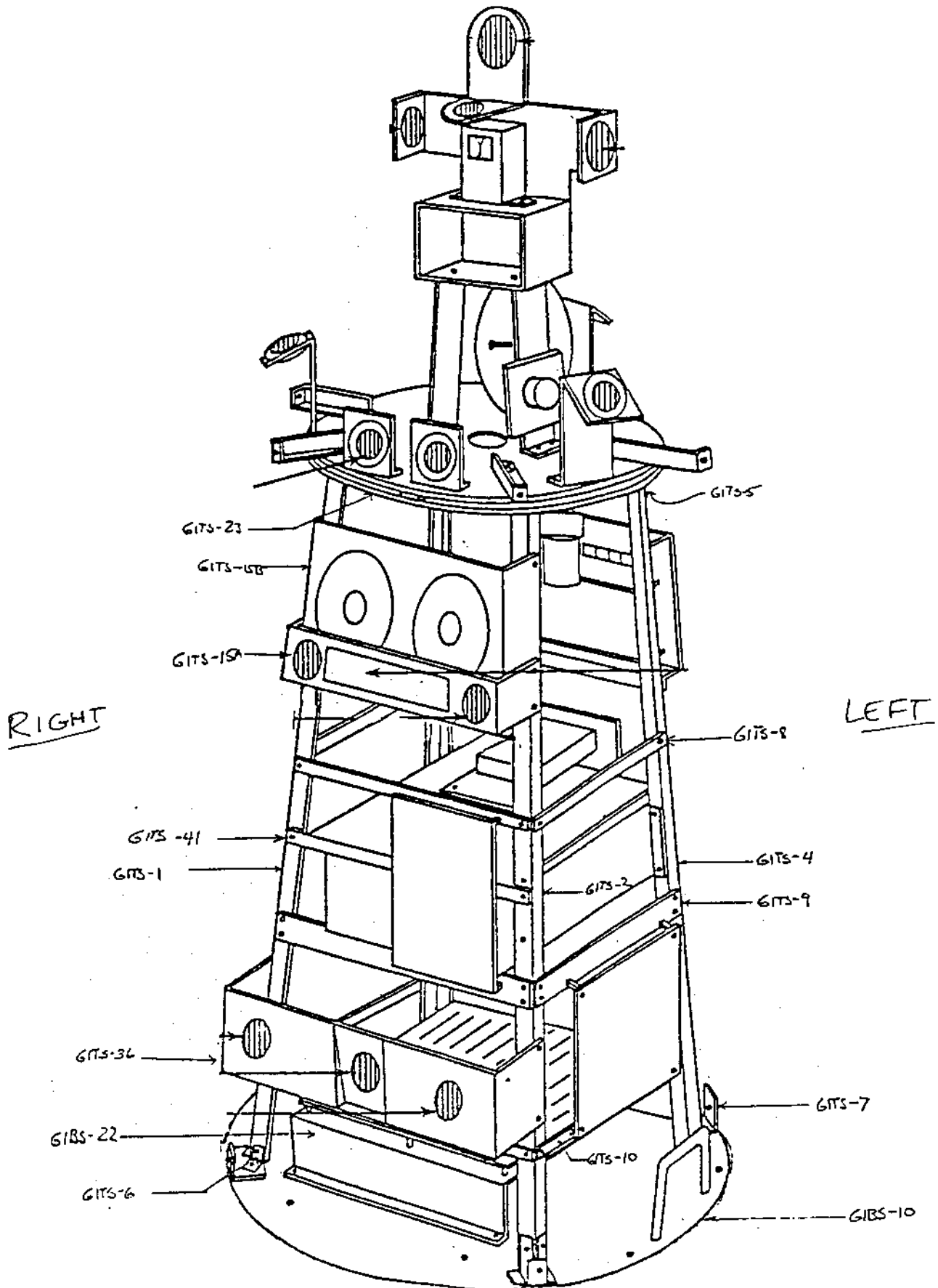
PARTS IDENTIFICATION

The following two figures identify major parts and their locations. Refer to these figures in the following instructions.

REAR VIEW

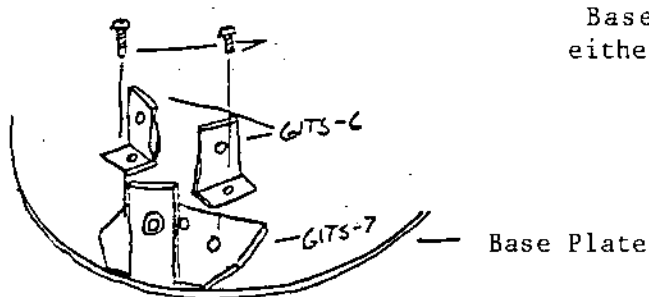


FRONT VIEW



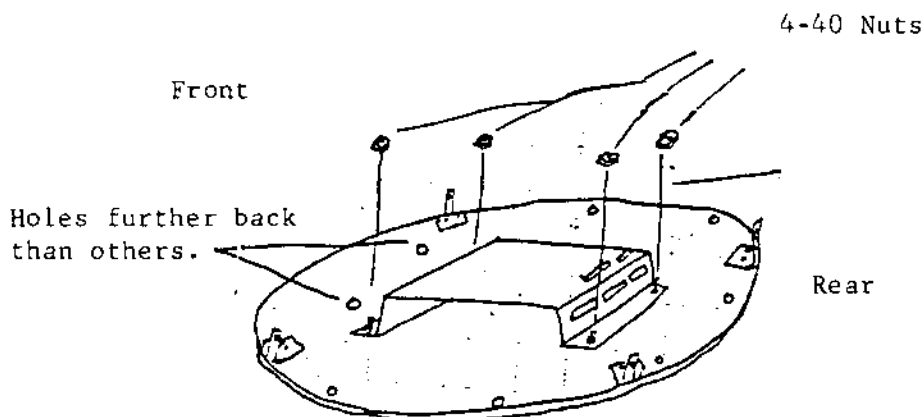
ASSEMBLY INSTRUCTIONS

1. Mount four torso shell (GITS-7) with lower torso clips (GITS-6) to the bottom base plate (GIBS-10) as shown using 4-40 x 3/8" screws and nuts. Use LockTite on each screw but do not tighten at this time.

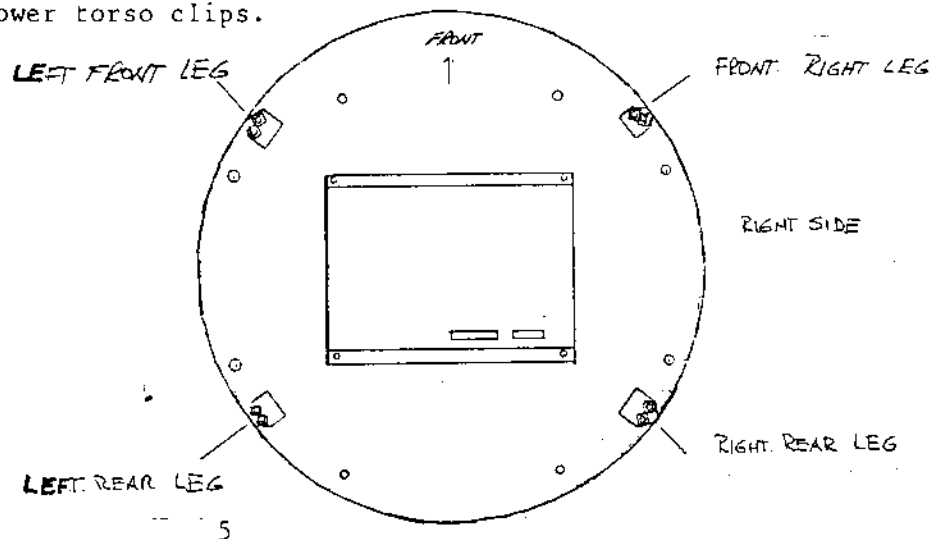


Base Plate can be assembled on either side

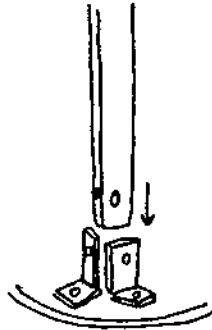
2. Install mother board mount (GIBS-22) to base plate with 4 4-40 nuts using LockTite. Make sure slots in mother board mount are facing rear.



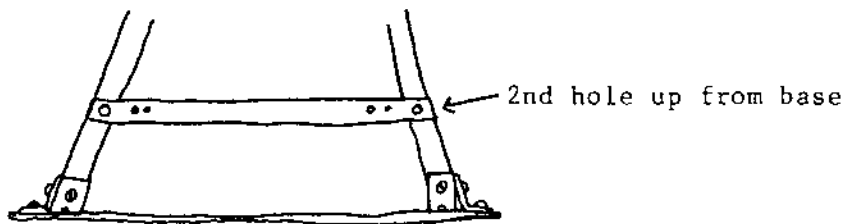
3. Mount legs to the lower torso clips.



Legs fit into the torso clips as shown. They must angle towards the center holes of the base plate. Use 8 4-40 x 1/4" screws and LockTite.



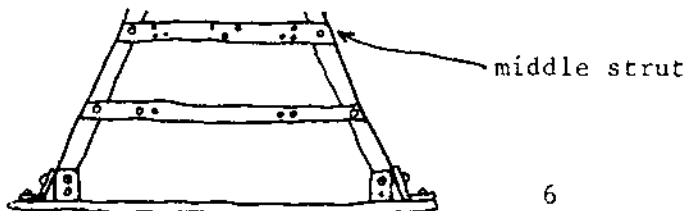
4. Mount the front, right and left bottom struts (GITS-10) with 2, 1/4" 4-40 screws, nuts and LockTite to robot right, left and front.



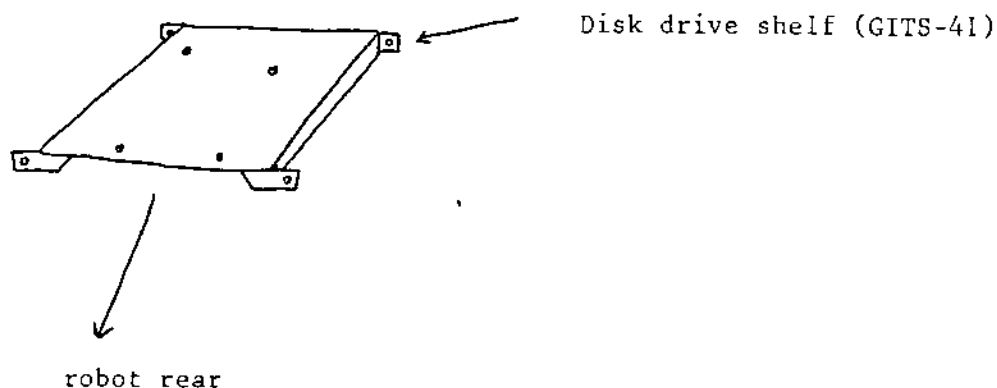
5. Mount rear keyboard support bracket (GITS-14) with 2, 4-40 screws, nuts and LockTite. This is an angled bracket.



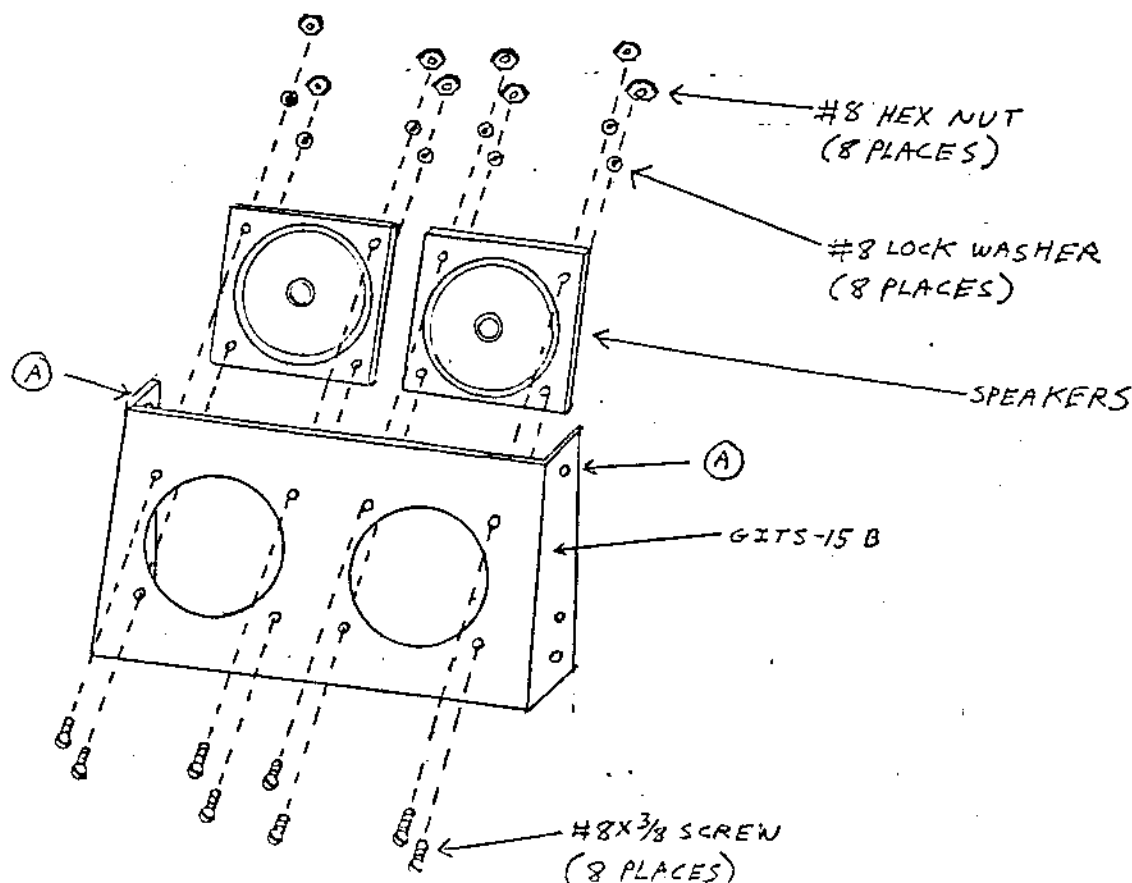
6. Mount middle struts (GITS-9) to front, right, and left with 4-40 1/4" screws, nuts and LockTite.



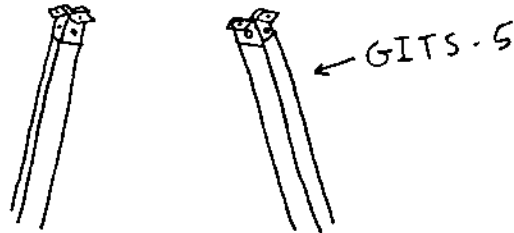
7. Mount the keyboard shelf (GITS-13) to the rear keyboard support bracket (GITS-14) with 2, 4-40 screws, nuts and LockTite on the underside of the keyboard support bracket. Secure the other side of the keyboard shelf to the front middle strut (GITS-9) with a 1/4 4-40 screw and nut.
8. Install disk drive shelf (GITS-41) to the right and left, front, right, and left rear legs with 4 holes closer to the robot rear mount using 4 4-40 screws, nuts and LockTite.



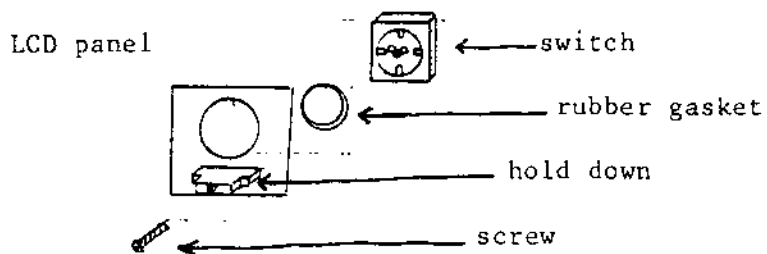
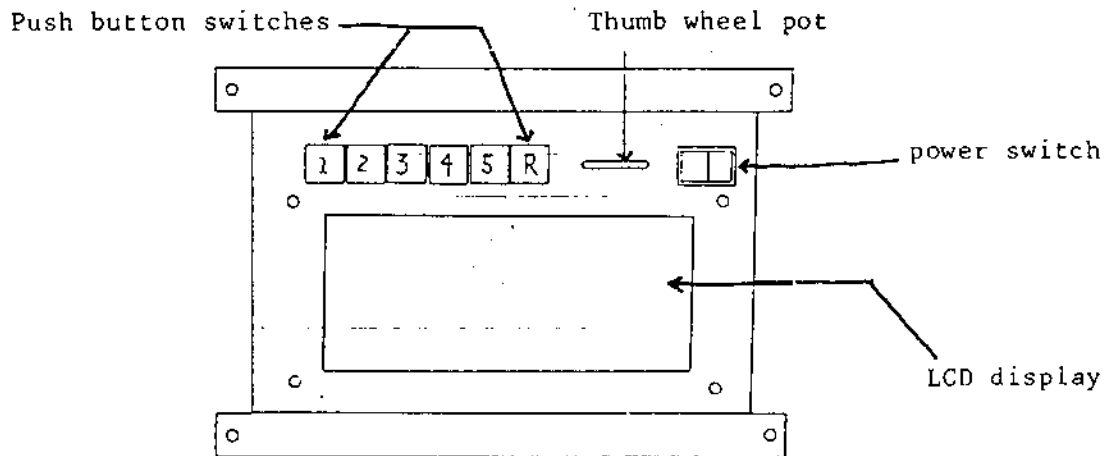
9. Mount top struts (GITS-8) to front, left, and right sides with 2, 4-40 screws, nuts and LockTite.
10. Install speakers to speaker brackets (GITS-15B) with 3/8" #8 screws, lock washers, nuts; four on each speaker. If you have purchased a Geminex Kit omit this step.



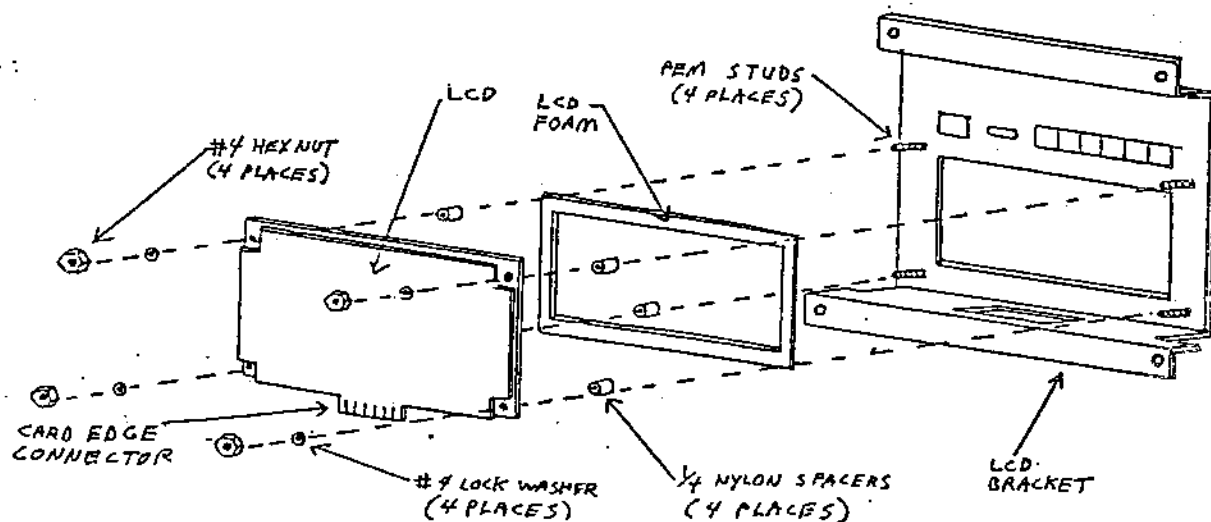
11. Mount the speaker bracket assembly (GITS-15B) in front of the robot frame with 2 4-40 1/4" screws, nuts and LockTite in the top hole of each side in A only (see step 10).
12. Mount upper sonar life light bracket (GITS-15A) with 4 4-40 3/8" screws, nuts and LockTite on lower part of speaker bracket (GITS-15B).
13. Attach upper torso clips (GITS-5) to tops of front and rear legs with eight 1/4" 4-40 screws, nuts and LockTite.



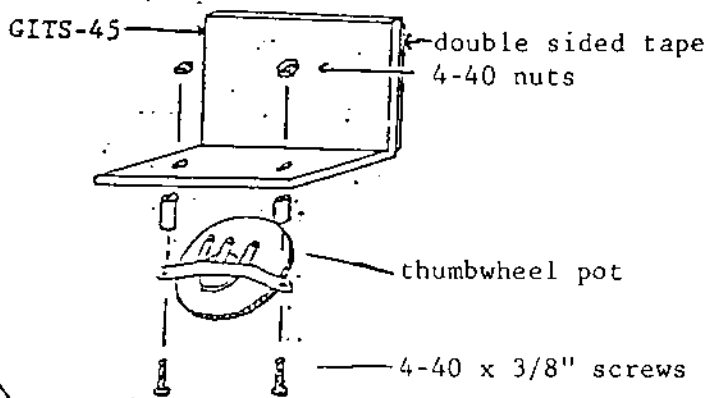
14. Attach the function switch to the LCD Panel (GTS-25) as shown below.



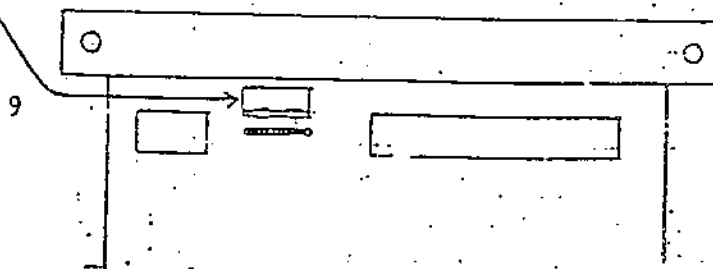
Rear View of LCD Panel



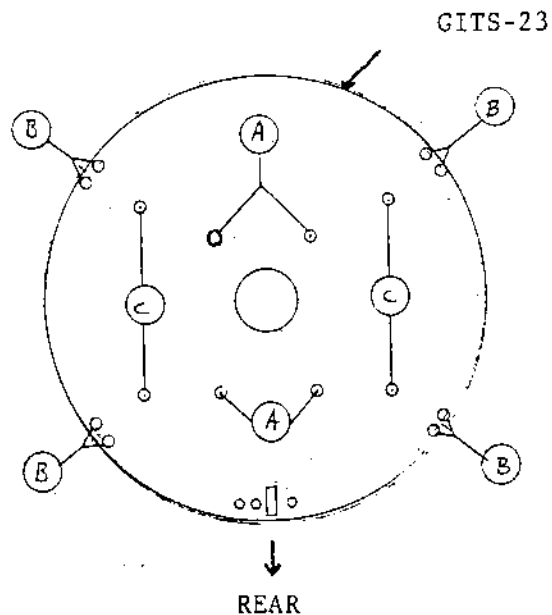
- 15 Lay the LCD foam on the back of the LCD bracket. Then slide four 1/4 nylon spacers on the pem studs located on the back of the bracket. Slide the LCD display over these pem studs with the Card Edge connector passing through the bottom panel. Install four #4 lock washers and four #4 hex nuts. If you did not purchase a kit which includes an LCD, omit this step.
16. Mount the thumb wheel potentiometer to bracket with 4-40 screws and nuts as shown below. Push double sided tape to top rear of bracket. Use 1/4" spacers between pot and bracket.



Stick wheel through slot and press tape onto rear of LCD panel (GTS-25).

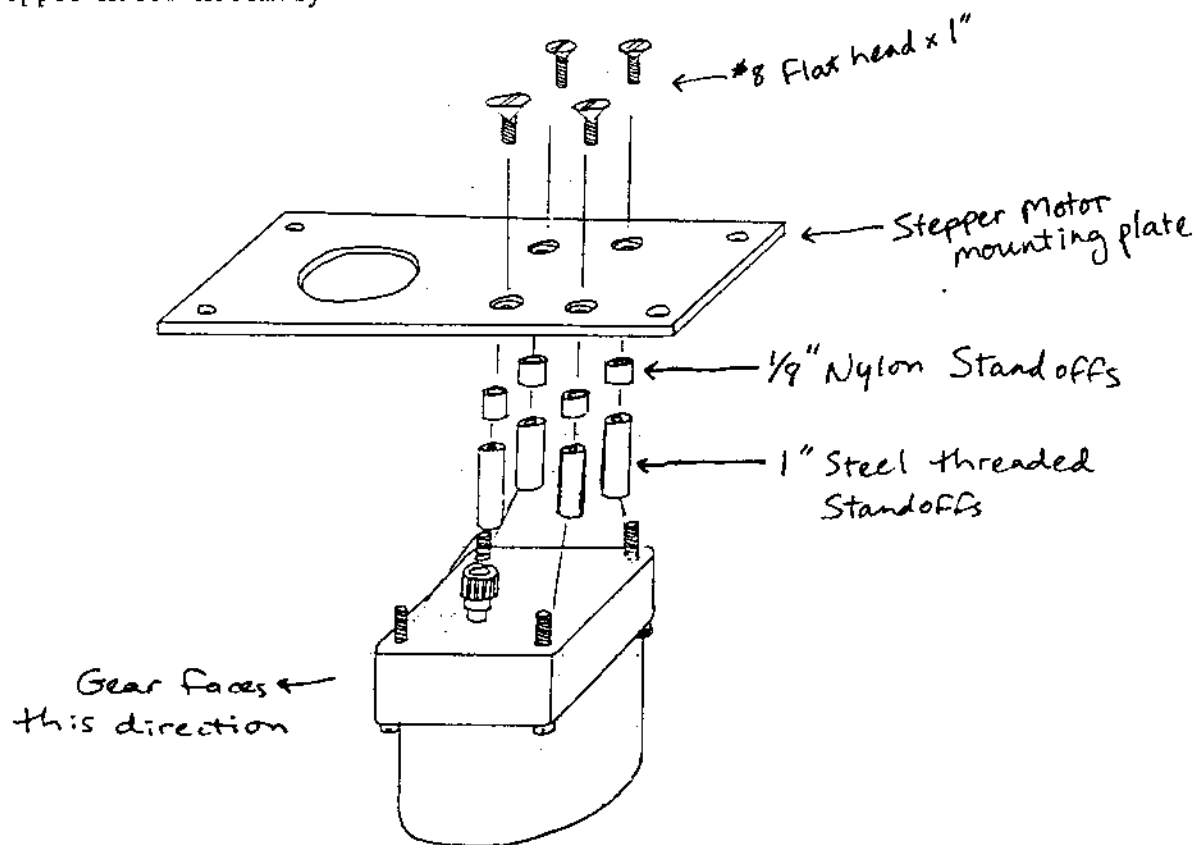


17. Install LCD housing assembly (GITS-25) to rear of robot with 4 4-40 x 3/8" screws and LockTite.
18. Push four 1/2" 4-40 nylon screws into the shoulder plate (GITS-23) at location A (see below). Push four 3/8" 4-40 nylon screws into shoulder plate at location B. The Lazy Susan holes are at locations C.



19. Mount shoulder plate (GITS-23) onto upper torso clips (GITS-5) on the very top of the robot assembly with #4 nuts and lock washers (8). Make sure the small square hole faces towards the rear of the robot.
20. Attach the Lazy Susan to the top side of GITS-23 with 4-40 3/8" screws with the washer on top through holes C noted in step 17. Tighten with #4 nut and lock washers. Stick large rubber pads on each corner of the Lazy Susan on the top as head spacers.
21. Mount stepper motor onto bearing block (GIHD-25) with four 1" standoffs, four 1/8" standoffs, and four #8 1" flat head screws.
22. Install bearing block assembly onto underside of the shoulder plate (GITS-23) onto pem studs A noted in step 17.

Stepper Motor Assembly



Mount assembly to underside of shoulder plate. Line up the large in the motor mounting plate with the large center hole in shoulder plate. Install with 4, 4-40x3/4" screws, nuts and LockTite.

23. Mount handles to the bottom base plate (GIBS-10) with #8 3/4" screws nylon.
24. Mount lower sonar mount (GITS-36) to front of robot with four 4-40 1/4" screws.