

# INSTRUCTIONS FOR ASSEMBLING American ASTRONAUT 409

## AURORA

### IMPORTANT - READ THIS FIRST!

Before assembling model, study sketch carefully.

**Important**—Apply cement to inside surfaces only. Avoid getting cement on outer surfaces of model sections. Use cement very sparingly and avoid getting cement on hands, so as not to mar or smear plastic surfaces.

**Do not hurry.** Work carefully and patiently.

**Important Note:** Before proceeding to cement parts together, it is advisable to fit parts together dry (without cement) so that you may familiarize yourself with the parts and how they go together, also noting the points where cement is to be applied.

For best results assemble model exactly in the order indicated.

**This kit is molded of styrene plastic—Use only Aurora's Fireproof Styrene Cement and Aurora's Speed-Dry Enamel. Assure yourself of a perfect model every time!**



"THE ENAMEL WITH THE SPRAYED ON LOOK"



SPEED-DRY ENAMELS are AURORA'S REVOLUTIONARY NEW ENAMEL PAINTS developed after years of research especially for Plastic Models and other products of Wood, Metal, Glass or China.

LITHO. IN U. S. A.

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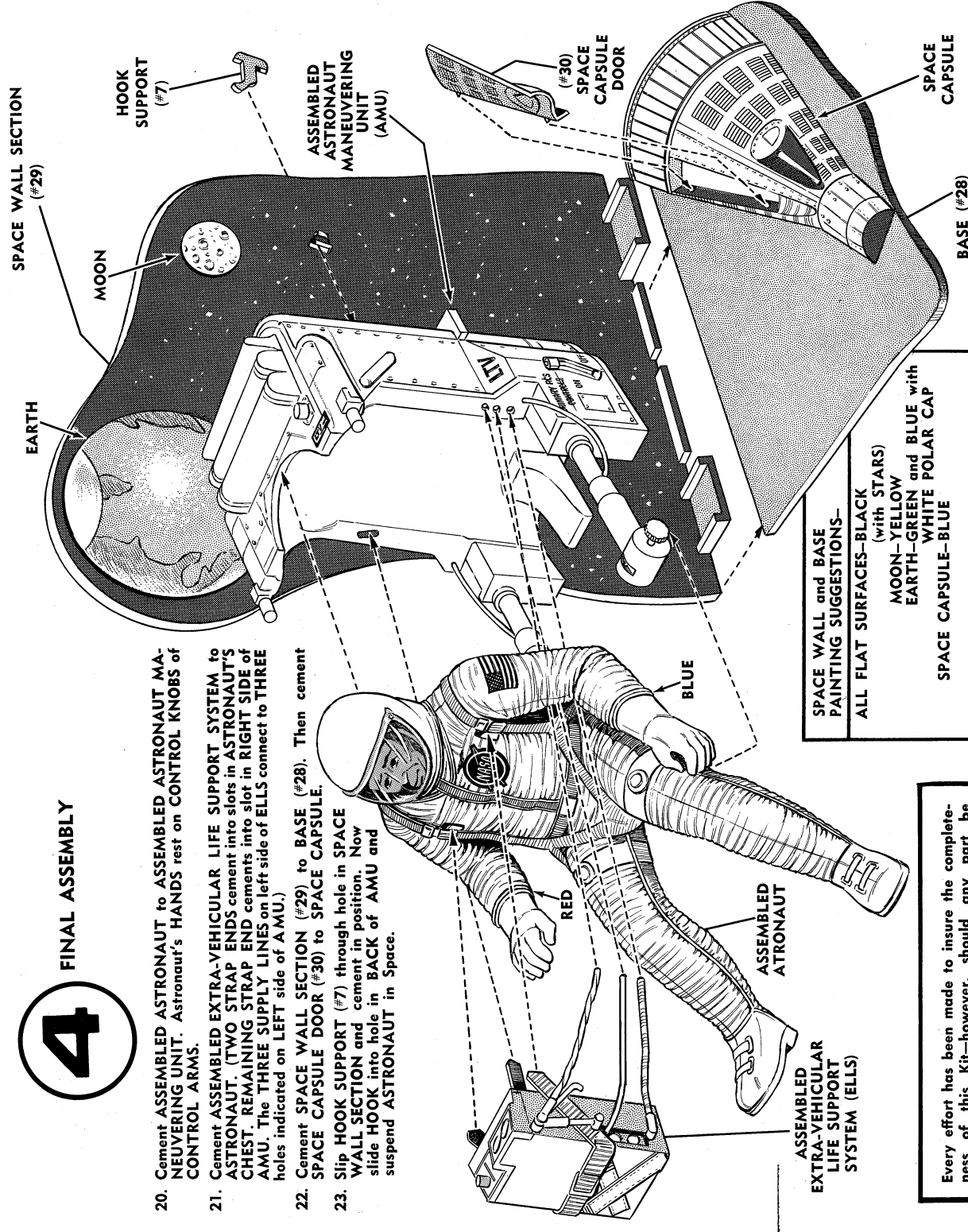
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**AURORA PLASTICS CORP.**  
West Hempstead, L. I., N. Y.

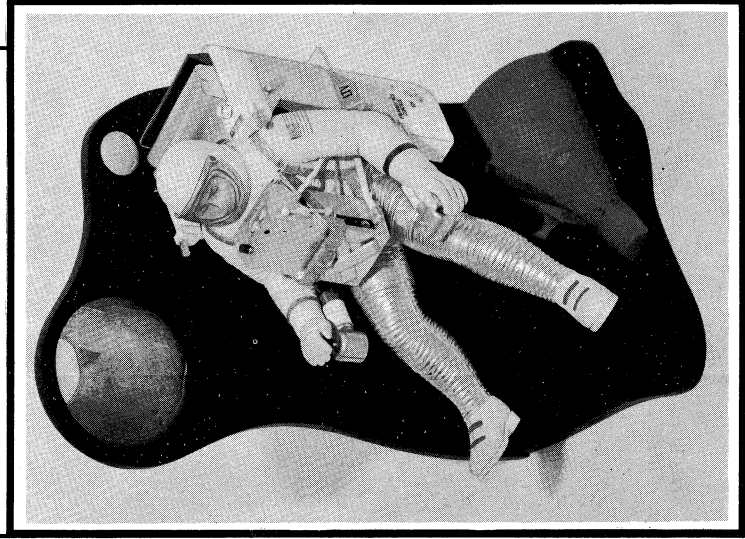
# 4

## FINAL ASSEMBLY

- Cement ASSEMBLED ASTRONAUT to ASSEMBLED ASTRONAUT MANEUVERING UNIT. Astronaut's HANDS rest on CONTROL KNOBS of CONTROL ARMS.
- Cement ASSEMBLED EXTRA-VEHICULAR LIFE SUPPORT SYSTEM to ASTRONAUT. (TWO STRAP ENDS cement into slots in ASTRONAUT'S CHEST. REMAINING STRAP END cements into slot in RIGHT SIDE of AMU. The THREE SUPPLY LINES on left side of ELLS connect to THREE holes indicated on LEFT side of AMU.)
- Cement SPACE WALL SECTION (#29) to BASE (#28). Then cement SPACE CAPSULE DOOR (#30) to SPACE CAPSULE.
- Slip HOOK SUPPORT (#7) through hole in SPACE WALL SECTION and cement in position. Now slide HOOK into hole in BACK of AMU and suspend ASTRONAUT in Space.



**YOUR COMPLETED MODEL WILL LOOK LIKE THIS**



Every effort has been made to insure the completeness of this Kit—however, should any part be missing, write directly to:

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West Hempstead, L. I., N. Y., Dept. M

(When writing please print your NAME and ADDRESS PLAINLY)

Mail this coupon and 25c  
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CUT ALONG LINE

# AMERICAN ASTRONAUT

tions between the EVA astronaut and the space craft. Box like in appearance, it is 18 inches high, 10 inches wide and 6 inches deep. It weight 42 pounds.

The ELSS unit contains an ejector pump for circulation, a heat exchanger for cooling and water removal and a 30 minute emergency oxygen supply. It does not contain its own normal oxygen supply for extra-vehicular use, but is designed to be used in conjunction with another oxygen source such as the space craft supply. An electrical connection for communications and bio-instrumentations is provided by a cable assembly connecting the suit to the unit.

The ELSS is stowed in the Gemini crew compartment and is handed to the EVA astronaut who then dons it by strapping it to his restraining harness.

A newer, more complete extra-vehicular life support system has been developed by the Astronautics Division of LTV Aerospace Corporation. Originally scheduled for use by Astronaut Eugene Cernan on the Gemini 9 space walk mission, technical difficulties have held back its use in the 2 man Gemini series. The Astronaut Maneuvering Unit (AMU) developed for the Air Force, contains the elements of a full-size spacecraft. It has a propulsion system for space operations, an automatic attitude stabilization system to hold the astronaut in a chosen position, two way communications with the parent space craft, telemetry for collecting bio medical data on the astronaut and the information on the AMU systems, a malfunction detection system, plus oxygen pressure and temperature system to provide a comfortable suit environment in the vacuum and temperature extremes of space.

Because of the storage limitations, the AMU back pack is carried aloft in the Gemini's equipment adapter section outside the crew compartment in the aft portion of the spacecraft. The AMU will be used along with the ELSS chest pack, because of the size limitations. The chest pack will be used for leaving and re-entering the space craft. The astronaut will use it and an umbilical cord connecting it to the Gemini to move to the AMU back pack and put it on. The astronaut will then "plug in" the back pack, detach the Gemini umbilical oxygen and electrical lines and operates like an independent space vehicle.

With the use of the AMU pack, astronauts are expected to achieve greater tasks as they progress along the frontiers of space. Tasks such as assembling space stations in orbit, erecting and servicing space structures, maintaining and repairing spacecraft, transferring from vehicle to vehicle inspecting and servicing satellites, carrying out space rescue and performing numerous separations which will advance man's mastery of space are to be hopefully looked forward to in the near future.

On Friday afternoon, November 11, 1966 the twelfth of the two man Gemini series lifted off the launch pad at Cape Kennedy, Florida. Two days later, on Sunday, Astronaut Edwin (Buzz) Aldrin walked and worked outside of his Gemini spacecraft for more than two hours. With the Gemini capsule linked to the Agena rocket, Aldrin maneuvered in space on a tether line this twelfth and final space walk mission of the Gemini series. His mission was a complete success.

Preceded by the space walks of Astronauts Eugene Cernan and Richard Gordon accomplished on previous Gemini missions, Aldrin was to both walk in space and perform mental tasks in order to test the space suit and the mechanisms which enable the astronaut to operate in space. The previous missions had been hindered by a rapid increase in the astronaut's heart rate, exertion and general fatigue. Astronaut Aldrin performed his tasks without the extra-exertion and returned to the Gemini capsule in good condition.

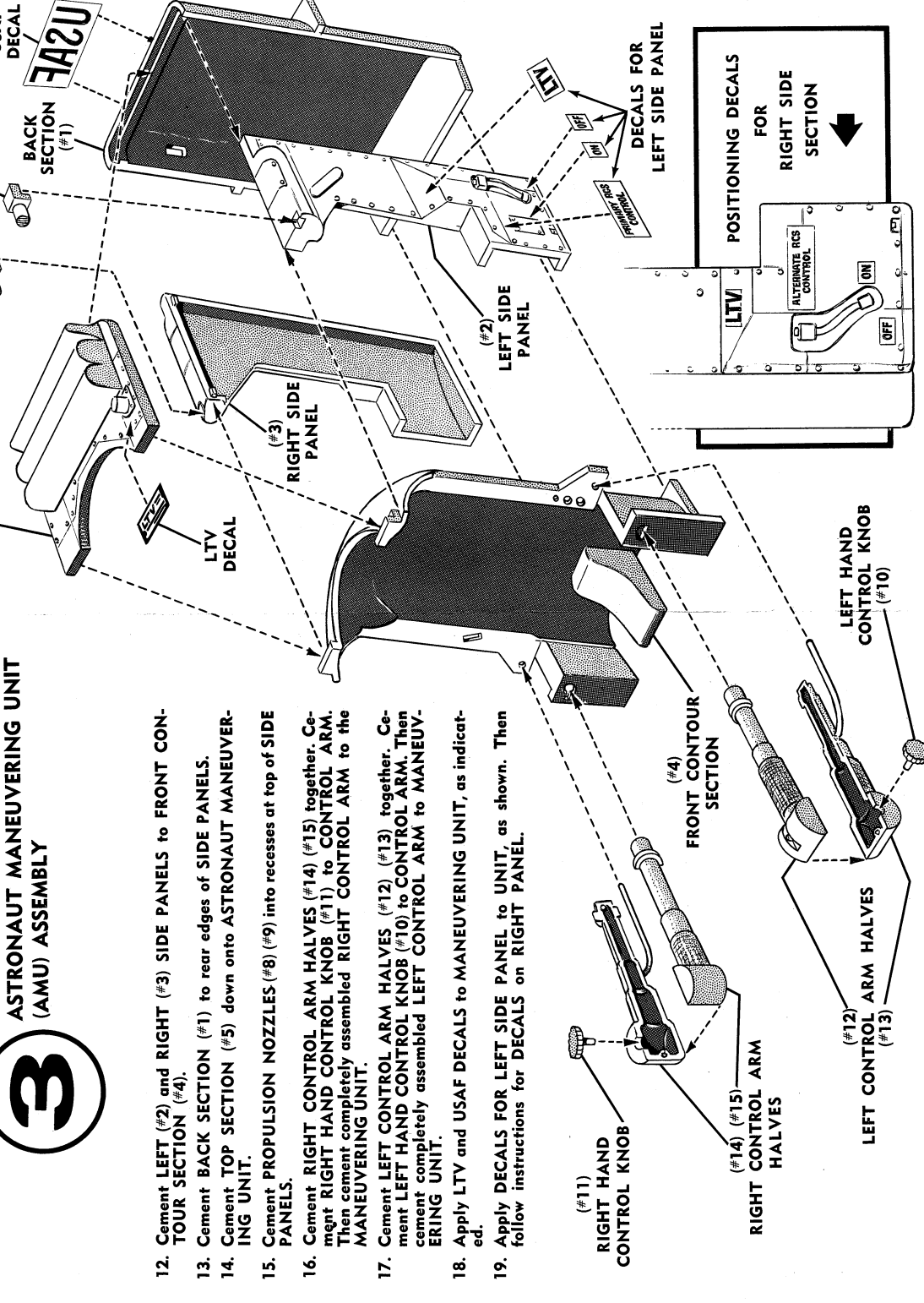
The extremely technical mechanisms which allow the astronaut to perform EVA missions (extra-vehicular-activity) have been developed through years of research. The Gemini extra-vehicular space suit is made up of seven layers.

1. White cotton constant wear undergarment with pockets around the waist to hold biomedical instrumentation equipment.
2. Blue nylon comfort layer.
3. Black neoprene-coated nylon pressure garment.
4. Restraint layer of dacron and teflon link net to restrain pressure garment and maintain its shape.
5. Thermal protective layer of seven layers of aluminumized mylar with spacers between each layer.
6. Micrometeoroid protective layer.
7. White HT-1 nylon outer layer.

For extra-vehicular activity, the astronaut will carry a detachable over visor which has attachment points on both sides of the helmet and can be swiveled into position over the faceplate. The faceplate is a polycarbonate material which provides impact and micrometeoroid protection. The outer visor is gold coated and provides protection for the eyes from solar glare.

When the astronaut is outside the space craft, the suit automatically pressurizes to 3.7 pounds per square inch to provide pressure and breathing oxygen. During the Gemini 9, 10, 11, and 12 flights the astronaut received their "life support" either from an umbilical cord attached to the space capsule or from an Extra-vehicular Life Support System (ELSS). The ELSS, developed by NASA for basic extra-vehicular activities provides electrical, mechanical and life support connec-

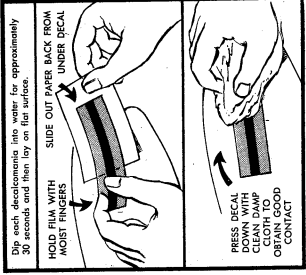
## 3 ASTRONAUT MANEUVERING UNIT (AMU) ASSEMBLY



12. Cement LEFT (#2) and RIGHT (#3) SIDE PANELS to FRONT CONTOUR SECTION (#4).
13. Cement BACK SECTION (#1) to rear edges of SIDE PANELS.
14. Cement TOP SECTION (#5) down onto ASTRONAUT MANEUVERING UNIT.
15. Cement PROPULSION NOZZLES (#8) (#9) into recesses at top of SIDE PANELS.
16. Cement RIGHT CONTROL ARM HALVES (#14) (#15) together. Cement RIGHT HAND CONTROL KNOB (#11) to CONTROL ARM. Then cement completely assembled RIGHT CONTROL ARM to the MANEUVERING UNIT.
17. Cement LEFT CONTROL ARM HALVES (#12) (#13) together. Cement LEFT HAND CONTROL KNOB (#10) to CONTROL ARM. Then cement completely assembled LEFT CONTROL ARM to MANEUVERING UNIT.
18. Apply LTV and USAF DECALS to MANEUVERING UNIT, as indicated.
19. Apply DECALS FOR LEFT SIDE PANEL to UNIT, as shown. Then follow instructions for DECALS on RIGHT PANEL.

FOR SUGGESTED DETAIL PAINTING SCHEME - SEE ILLUSTRATIONS. Paint parts as indicated and allow to dry before assembling.

For best results, use only AURORA'S SPEED-DRY ENAMEL - ONE COAT COVERS - DRIES IN 30 MINUTES - NO BRUSH MARKS.

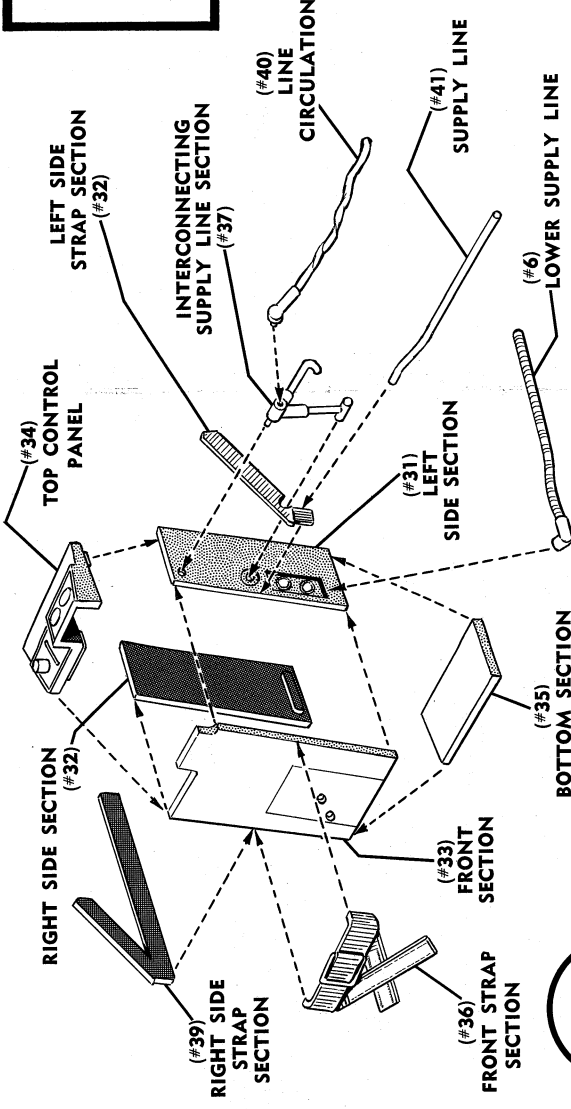


### PAINTING SUGGESTIONS -

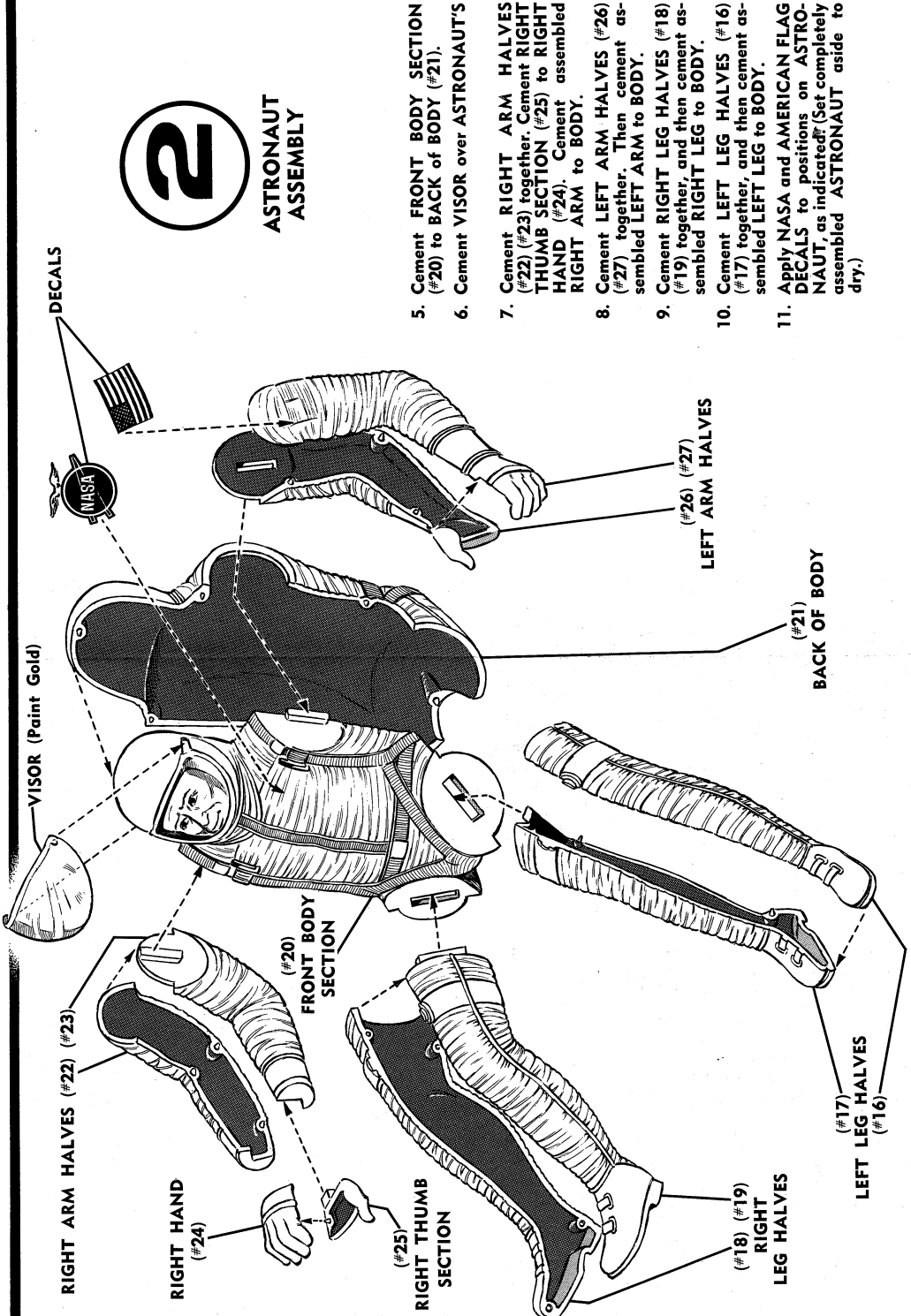
ELLS-SILVER  
SUPPLY LINES-WHITE  
STRAPS and HARNESS-SILVER  
ASTRONAUT UNIFORM-WHITE and SILVER  
VISOR-GOLD  
AMU-LT. BLUE and WHITE  
TANKS-SILVER and RED  
CONTROL KNOBS-BLACK

1. Cement RIGHT (#32) and LEFT (#31) SIDE SECTIONS to FRONT SECTION (#33). Then cement TOP CONTROL PANEL (#34) and BOTTOM SECTION (#35) into position.
2. Cement FRONT STRAP SECTION (#36) to front of EXTRA-VEHICULAR LIFE SUPPORT SYSTEM. Then cement RIGHT (#39) and LEFT (#32) SIDE STRAP SECTIONS to RIGHT and LEFT SIDES of SYSTEM.
3. Cement INTER-CONNECTING SUPPLY LINE SECTION (#37) to LEFT SIDE of ELLS. Then cement pin on end of CIRCULATION LINE (#40) into recess in INTER-CONNECTING SUPPLY LINE.
4. Cement SUPPLY LINE (#41) and LOWER SUPPLY LINE (#6) to LEFT SIDE of ELLS. (Set completely assembled ELLS aside to dry.)

## 1 EXTRA-VEHICULAR LIFE SUPPORT SYSTEM (ELLS) ASSEMBLY



## 2 ASTRONAUT ASSEMBLY



5. Cement FRONT BODY SECTION (#20) to BACK of BODY (#21).
6. Cement VISOR over ASTRONAUT'S
7. Cement RIGHT ARM HALVES (#22) (#23) together. Cement RIGHT THUMB SECTION (#25) to RIGHT HAND (#24). Cement assembled RIGHT ARM to BODY.
8. Cement LEFT ARM HALVES (#26) (#27) together. Then cement assembled LEFT ARM to BODY.
9. Cement RIGHT LEG HALVES (#18) (#19) together, and then cement assembled RIGHT LEG to BODY.
10. Cement LEFT LEG HALVES (#16) (#17) together, and then cement assembled LEFT LEG to BODY.
11. Apply NASA and AMERICAN FLAG DECALS to positions on ASTRONAUT, as indicated. (Set completely assembled ASTRONAUT aside to dry.)