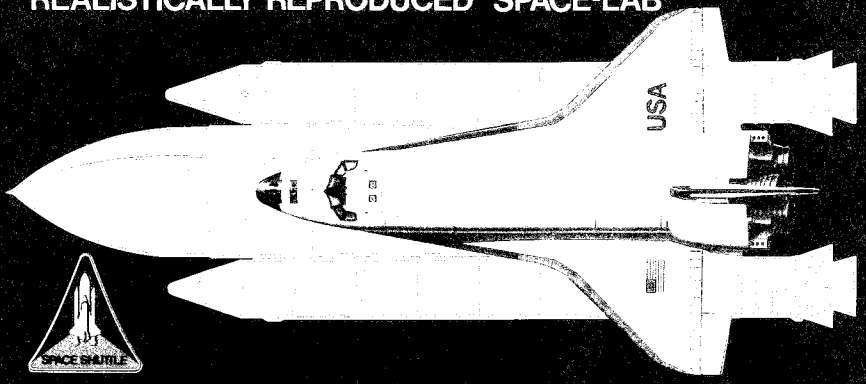
1/100th SCALE

Space Shuttle ORBITER

REALISTICALLY REPRODUCED "SPACE-LAB"



THIS KIT HAS BEEN PRODUCED BASED UPON DETAILED INFORMATION AND FULL CO-OPERATION SUPPLIED BY ROCKWELL INTERNATIONAL IN THE U.S.A.

TAMIYA

1098　1/100 オービター(英独改)

Space Shuttle ORBITER

Shuttle Between the Earth and Space

It took billions of dollars to launch various artificial satellites and spaceships. But all of these things were discarded after one-time use. This was too uneconomical and made it rather difficult to utilize space for human beings. The space shuttle is a new means of transportation devised to solve the problem and promote space development more economically. The shuttle means a bus, truck, train, etc. making frequent trips back and forth. The space shuttle, as the name implies, is a liner between the Earth and space and is often called "space ferry"..

Space Shuttle

The space shuttle basically comprises an orbiter, external fuel tank (ET) and two solid fuel rocket boosters (SRB). The orbiter plays the most important role, while the external fuel tank and rocket boosters are means for sending the orbiter into space. When the space shuttle is launched, the external fuel tank carries one rocket booster on each side and the orbiter on its back. The orbiter detaches the external fuel tank and rocket boosters on the way and performs various duties in space. It comes back to the Earth and undergoes maintenance and repair. Then, it is launched again with an external fuel tank and rocket boosters. At the time of launching, the whole space shuttle is about 56 meters long and weighs about 2,000 tons. It takes off with a thrust nearly 3,000 tons by fully operating the two rocket boosters and the three main engines of the orbiter.

Particulars of Orbiter

The orbiter, which is the most important constituent of the space shuttle, is a spaceship shaped like a stocky passenger plane with a delta wing. The overall length is 37 meters and the span is 23.7 meters. After reentry into the atmosphere, the orbiter can glide down and make a landing unlike conventional spaceships. After maintenance and repair, it can be launched again.

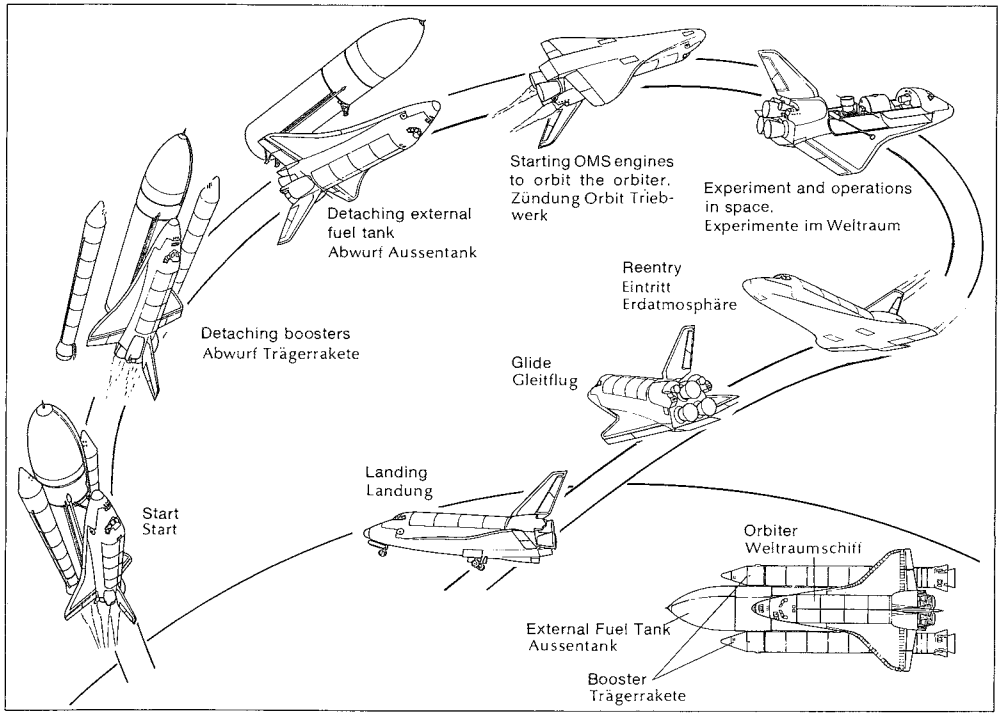
Most of the surface of the orbiter is covered with tiles made of silica of very high purity. These tiles are classified into two groups, one for high-temperature and the other for low-temperature, and these are used accordingly. Parts which become extremely hot such as the nose and the front edge of the wing are covered with heat resistant material of reinforced carbon. These heat resistant materials protect the orbiter from heat of friction which exceeds 1,400°C in some parts at the time of launching or reentry into the atmosphere. Thus, they make it possible to use the orbiter no less than 50 or 100 times.

The fuselage of the orbiter is partitioned into the cockpit and crew compartment in front, payload compartment at the center for carrying cargo, and engine room at the rear. The crew are four to seven. In addition to two pilots and one mission controller who controls the flight plan, the orbiter can carry four scientists and payload controllers who load and unload cargo for operation and experiments in space. This is a characteristic feature of the orbiter not ever seen in conventional spaceships. Furthermore, the scientists need only a few weeks' training before getting in the orbiter. No space suit is needed inside it and they can act in ordinary clothes.

The payload compartment is of a cylindrical shape 4.5 meters in diameter and has a cargo rack 18 meters long. Its top consists of large doors which open right and left from the center. Various things are put in this compartment. The maximum capacity is 29.25 tons.

On August 17, 1977, an experimental model of the orbiter named Enterprise succeeded in its first solo test flight from an altitude of 8,000 meters. The space shuttle has been launched 89 times. The orbiter is used now because the challenger was on explosion in 1986.

Some day, space colonies in which hundreds of thousands of people can live as well as space factories will be construcetd by the aid of the space shuttle. In no distant future, it will be nothing extraordinary that people travel in space.



From Exploration to Utilization of Space

On October 4, 1957, the Soviet Union succeeded in launching Sputnik I, the first artificial satellite in the world. And on Janauary 31, 1958, the United States launched Explorer I. Thus human beings took the first step to the advance into space. Early in the 1960's, manned space flights were repeated with the Russian Vostok and American Mercury spaceships as the start. In 1969, Project Apollo at last placed astronauts on the moon. Human beings tried to send space probes to other planets. To begin with, they were sent to Mars and Venus which are near to the Earth. The next targets included Mercury and Jupiter, and Saturn and Uranus which are very far from the Earth, and even the outside of the solar system. At the same time as such challenges to unknown space, a large number of meteorological satellites and communication satellites were launched. And in the 1970's, the Skylab Project of the United States and the Soyuz and Salyut spaceships of the Soviet Union let astronauts stay in space for a long time and make observations and experiments in the fields of astronomy, chemistry, biology, etc. While the challenges to space and explorations of it were continued, attempts were made to utilize space for human life and some of them have been already successful. To promote the utilization of space further, the Space Shuttle Project was started in 1972 by NASA (National Aeronautics and Space Administration) of the United States. Great hopes are entertained of the project which will open a new era of space.

* * *

Erforschung und Nutzbarmachung des Weltraumes

Am 4.Okt. 1957 wurde der erste russ. Satellit - Sputnik I - in den Weltraum geschossen. Am 31. Jan. 1958 folgten die Amerikaner mit dem - Explorer I -. Anfang der 60er Jahre folgte der bemannte Raumflug mit dem russ. Vostok und dem US Mercury am Start.

1969 brachte das US Projekt Apollo die esten Menschen auf den Mond.

Nun wurde versucht, auch andere Planeten zu erreichen : Mars, Venus waren der Erde am Nähsten. Die nächsten Ziele waren Merkur, Jupiter, Saturn und Uranus - weit entfernt der Erde, ja sogar ausserhalb des Sonnensystems..

Zur gleichen Zeit wurden viele meteorlogische und Übertragunssatelliten abgeschossen.

In den 70er Jahren brachte das US Skylab Projekt und die russ. Sojus und Salute Programme die Astronauten zu längeren Aufenthalten in den Weltraum. Beobachtungen auf dem Gebiet der Astronomie, der Chemie und der Bilologie wurden durchgeführt. Für die weitere Erforschung und Nutzbarmachung des Weltraumes wurde nunmehr 1972 von der NASA das SPACE SHUTTLE Programm gestarted.

Der Start, immer wieder neu gebauter Satelliten und Weltraumschiffe kostet enorme Summen und alle Flugkörper konnten nur einmal verwendet werden.

Beim Space Shuttle kann das Weltraumschiff nach Beendigung der gestellten Aufgaben zur Erde zurückgleiten und wieder nach Wartung und Überholung neu gestarted werden. Die Treibstoff- und die Trägerraketen werden nach Ausbrennen abgelöst und kehren ebenfalls wieder zur Erde zurück. So können die Trägerraketen fast 20 mal verwendet werden.

Zur Zeit des Startes ist die ganze Space Shuttle ca 56 Meter lang und wiegt rund 2000 Tonnen. Bei vollem Einsatz der beiden Trägerraketen und der 3 Haupt - triebwerke hebt das Space Shuttle mit fast 3000 Tonnen ab.

Orbiter hat die Form eines aufgestockten Flugzeuges mit Deltaflügeln von 23,7 m Spannweite und Gesamtlänge ca 37 m.

Das Orbiter kann ur Erde zurückgleiten und wie ein normales Flugzeug landen, nach Wartung und Überholung bis 1oo mal eingesetzt werden.

Das grösste Problem, die Hitzebeständigkeit der Oberfläche konnte gelöst werden. Es wurden Platten aus Silika von sehr grosser Reinheit in zwei Gruppen verwendet : einmal für grösste Hitze - und für niedrigste Temperaturen. Teile die sich extrem hoch erhitzen wie Nase und Flügelkanten sind mit Material aus verstärktem Kohlenstoff bedeckt.. Beim Wiedereintritt in die Atmosphäre kann die Reibungshitze ca 1400 Grad Celsius erreichen.

Der Rumpf des Orbiter ist aufgeteilt in ein Cockpit und Besatzungsabteil, Nutzlastteil in der Mitte und Triebwerk im Heck. Die Crew besteht aus 4 - 7 Mann (2 Piloten, ein Kontroller für den Flugplan und Wissenschaftlern. Diese grosse Besatzung ist in früheren Raumschiffen nicht möglich gewessen.. Ausserdem, die Wissenschaftler benötigen nur einige Wochen Training vor dem Abflug.

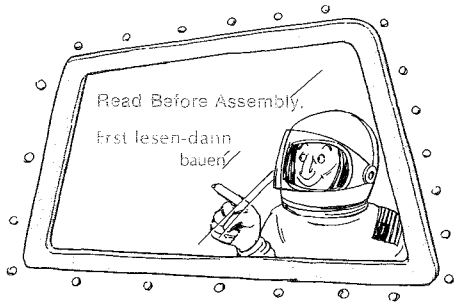
Kein Raumanzug wird gebraucht und es langt der „gute" Anzug.

Das Nutzlastabteil ist 18 Meter lang und 4,5 Meter im Durchschnitt. Die gesamte Decke kann nach beiden Seiten geöffnet werden. Die max. Beladung beträgt 29,25 Tonnen.

Am 17. August 1977 wurde der erste Testflug des Weltraumschiffes Orbiter - gennant Enterprise - er folgreich aus 8000 Meter Höhe gestarted.

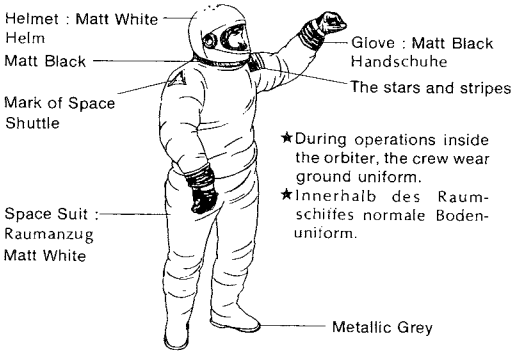
Das Spaceshuttle wurde 89 mal gestartet. Das Raumfahrzeug wird heute an Stelle der 1986 explodierten Challenger verwendet.

In nicht zu weiter Ferne wird es auch nichts Aussergewöhmliches sein, so mal kurz zum Spass, in den Weltraum zu reisen.

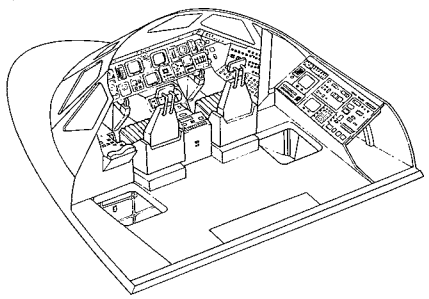


☆Study the instructions and photographs before commencing assembly.
☆You will need a sharp knife, a screwdriver, a file and a pair of pliers.
☆Do not break parts away from sprue, but cut off carefully with a pair of pliers. Use cement sparingly. Use only enough to make a good bond.
☆Apply cement to both parts to be jointed.
This mark shows the colour.
☆Vor Beginn die Bauanleitung studieren und den Nummern nach die Elemente zusammenbauen.
☆Bauteile nicht vom Spritzling abbrechen, vorsichtig abschneiden oder abzwicken.
☆Teile vor Kleben zusammenhalten, auf genauen Sitz achten. Nicht zuviel Klebstoff verwenden. Kleine Teile hält man mit Pinzette fest.
Zeichen für Bemalung

Space Suit of Orbiter Crew
Raumanzug der Orbit-Crew

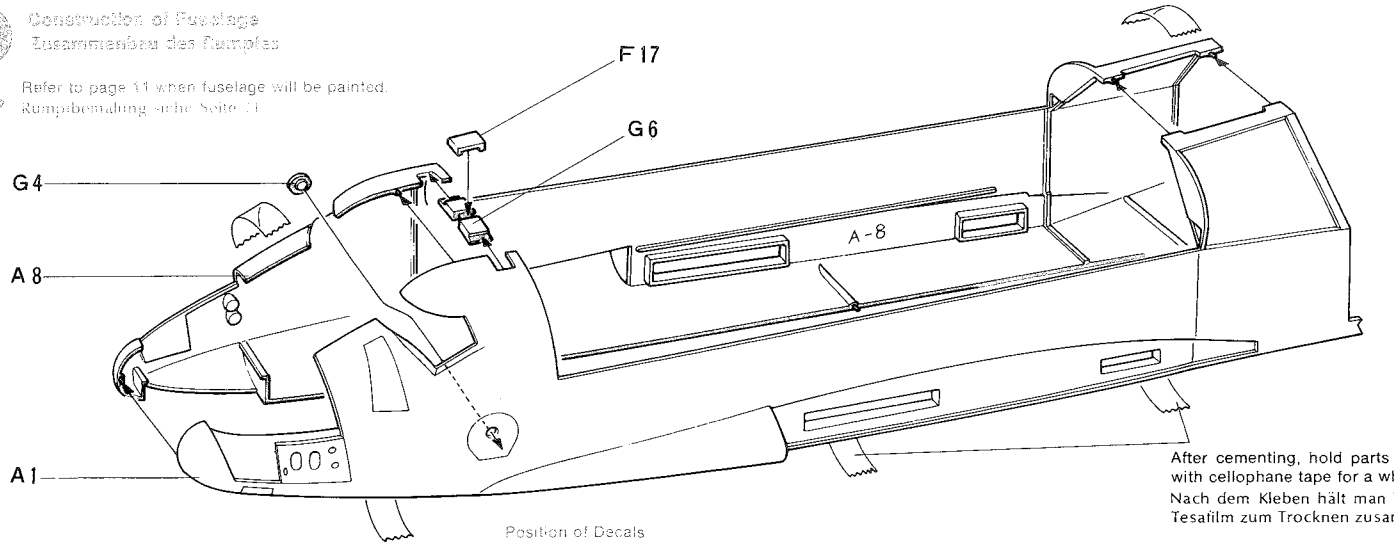


Cockpit



1 Construction of Fuselage
Zusammenbau des Rumpfes

Refer to page 11 when fuselage will be painted.
Rumpfbemalung siehe Seite 11

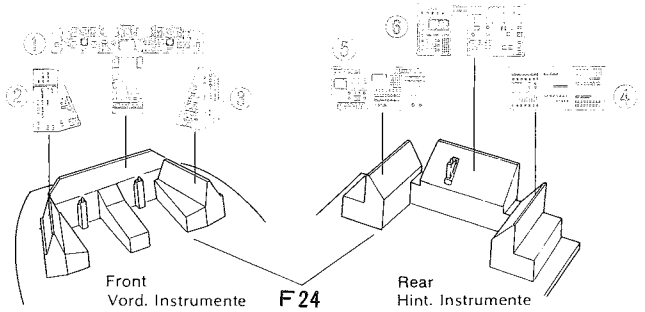


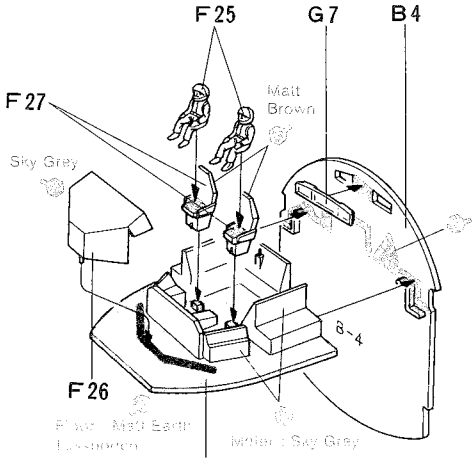
After cementing, hold parts together with cellophane tape for a while.
Nach dem Kleben hält man Teile mit Tesafilm zum Trocknen zusammen.

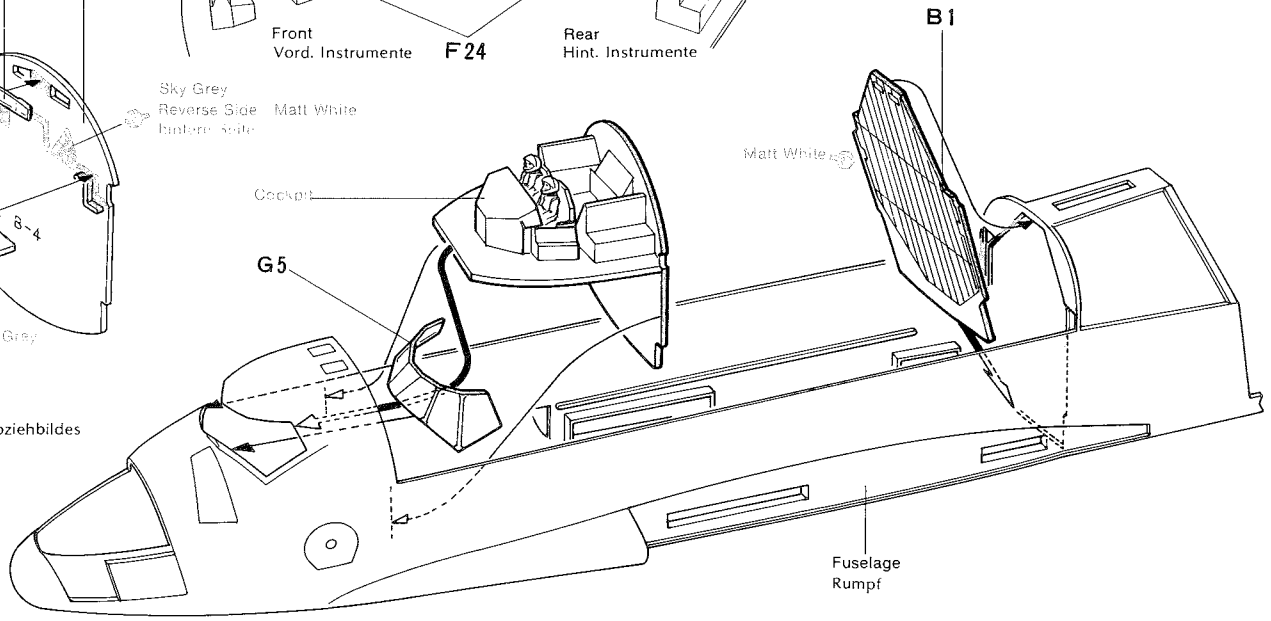
2 Cockpit

☆Fix proper parts to F24 after applying decals to F24.
☆Die Teile nach Anbringung der Abziehbilder auf die Platte F24 kleben.

Position of Decals
Abziehbilder für Instrumente







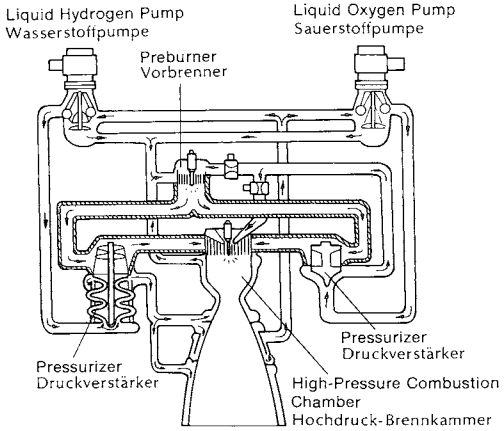
ITEM 60401

Main Engines

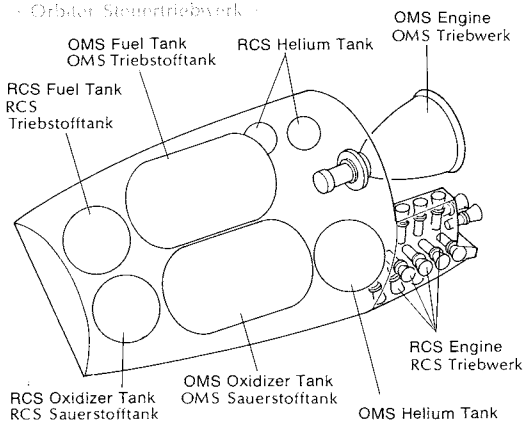
The orbiter has three main engines which are liquid rocket engines using liquid hydrogen as fuel and liquid oxygen as oxidizer. They are used only for launching together with two solid fuel booster rocket engines. Liquid hydrogen and liquid oxygen contained in the external fuel tank are separately sent to a preburner and make incomplete combustion. (They do not explode completely because the quantity of hydrogen is larger than oxygen.) Some liquid hydrogen gets into a different path, cools the engine parts, becomes gas and enters the preburner. Oxygen is added to the incomplete combustion gas and this mixture is explosively burned in a high pressure cobustion chamber to produce great power for launching.

Haupttriebwerke

Der Orbiter hat 3 Haupttreibwerkein Raketenantriebsform mit flüssigem Wasserstoff und Sauerstoff. Diese Triebwerke werden nur zum Starten mit den beiden Trägerraketen eingeschaltet. Der Triebstoff befindet sich in dem Aussentank und wird von da aus in die Vorbrenner gepumpt. Es erfolgt jedoch keine komplette Verbrennung, da der Anteil an Wasserstoff grösser ist als Sauerstoff. Ein Teil des Wasserstoffes kühlt die Triebwerke, wird zu Gas und geht zum Vorbrenner. Sauerstoff wird diesem Gemisch beigefügt und diese Mischung verbrennt explosionsartig in der Hochdruckkammer um die grosse Antriebskraft beim Start entwickeln zu können.

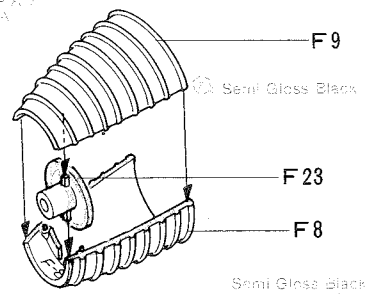


Orbiter Maneuvering System Engine
Orbiter Steuertriebwerk



Construction of Main Engine
Haupttriebwerk

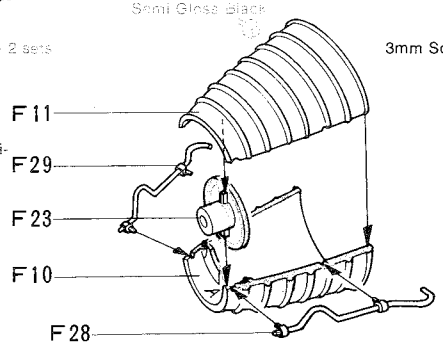
Nozzle A
Düse A

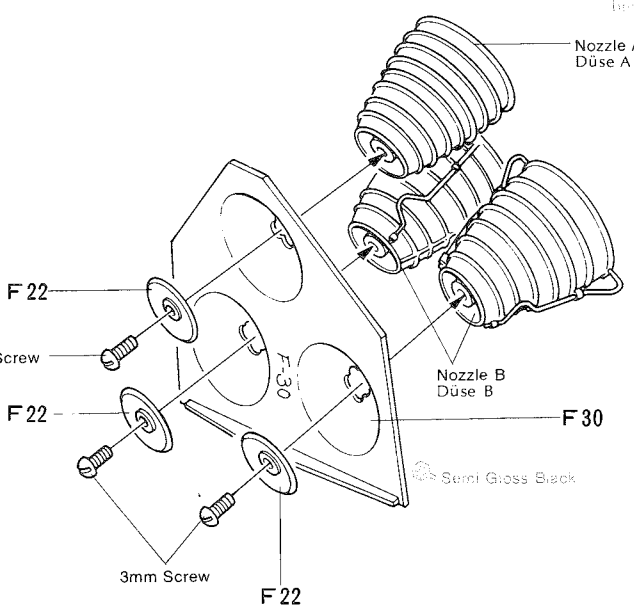


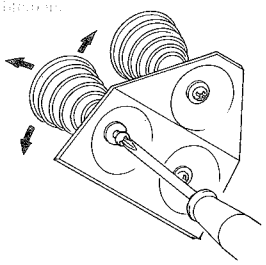
Nozzle B Make 2 sets
Düse B 2 Satz

Semi Gloss Black

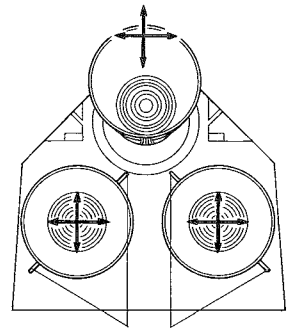
★ There are two F10 parts and two F11 parts. Fix A to A and B to B.
★ F10 und F11 gibt's zweimal. Z zu A und B zu B.







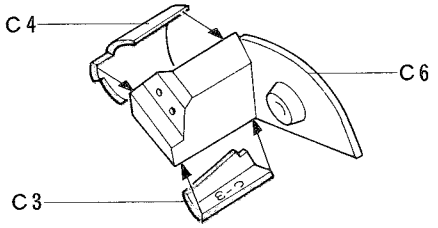
Fix nozzle at angle
Die Düsen im Winkel einbauen



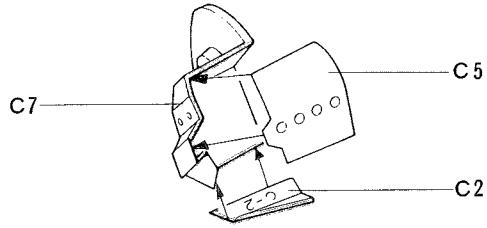
Including at an angle of 45 degrees
Neigung 45 Grad

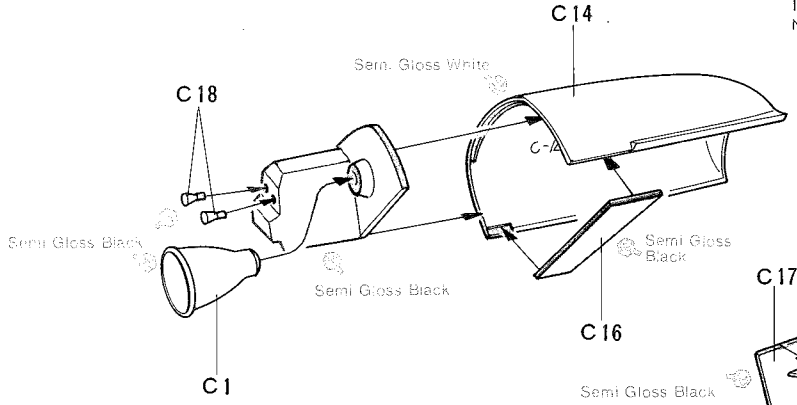
Construction of Auxiliary Engines
Hilfstriebwerke

Auxiliary Engine : Left
Hilfstriebwerk : links

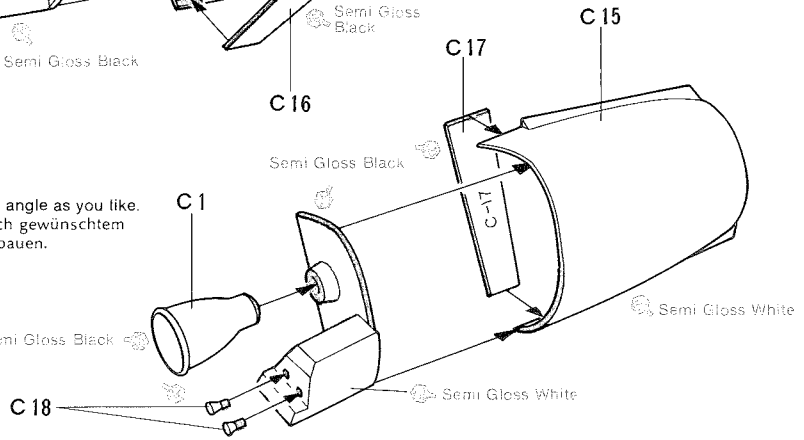


Auxiliary Engine : Right
Hilfstriebwerk : rechts





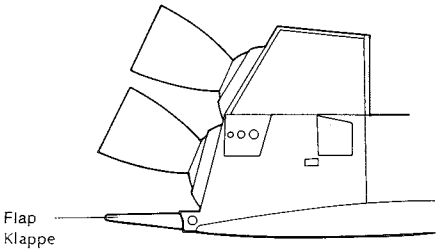
★ Fix C1 at angle as you like.
★ C1 je nach gewünschtem Winkel einbauen.



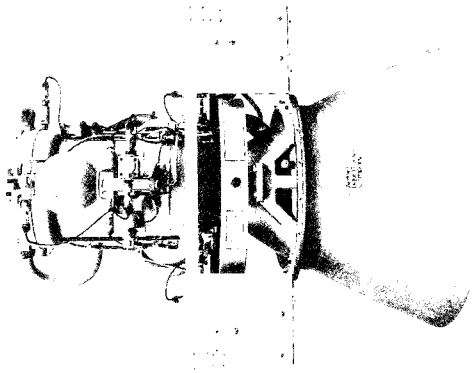
Fixing of Engines
Einbau des Triebwerkes

Fixing of Flap
Einbau der Klappe

There is a flap at the tail end of the orbiter. Like the elevons of the main wing, the flap helps to stabilize the plane during glide and to shorten the ground run after landing.
Am Heck des Orbiter ist eine Klappe. Diese ist ein Stabilisator beim Gleitflug und als Bremse nach der Landung.

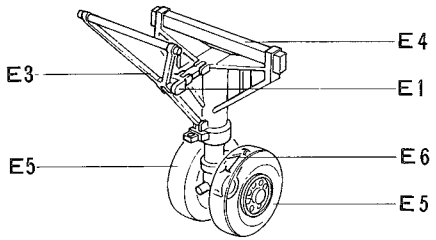


OMS Engine
OMS Triebwerk

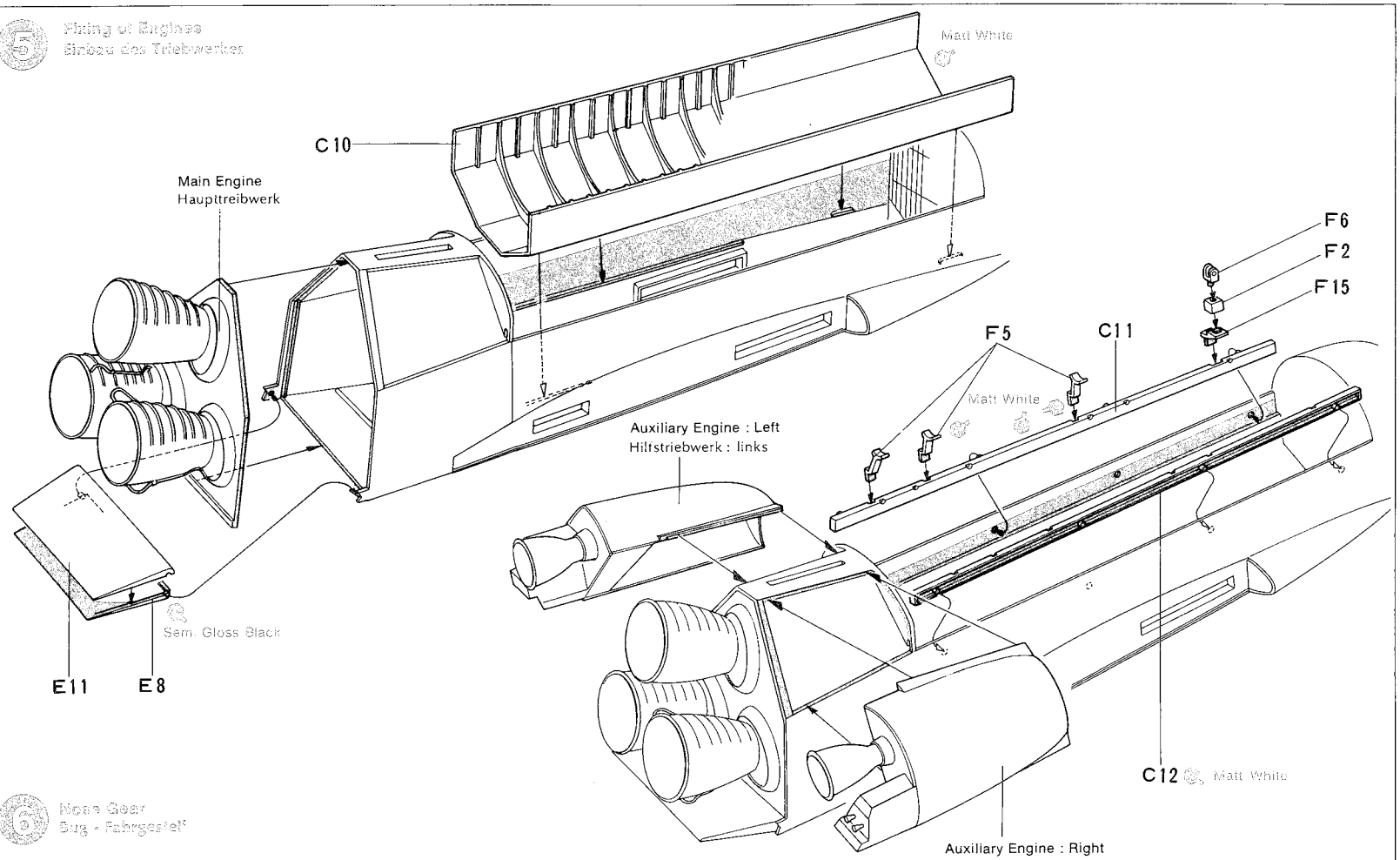


Nose Gear
Bug - Fahrgestell

Select either in a state of staying on the land or in a state of flying in the air.
Fahrgestell kann ausgefahren oder eingezogen gebaut werden.



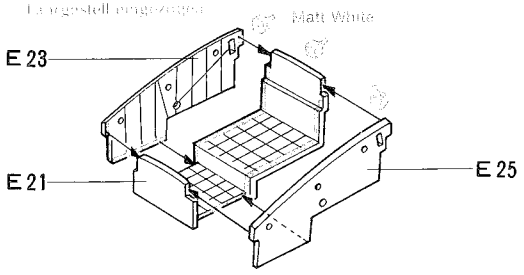
Fixing of Engines
Einbau des Triebwerkes



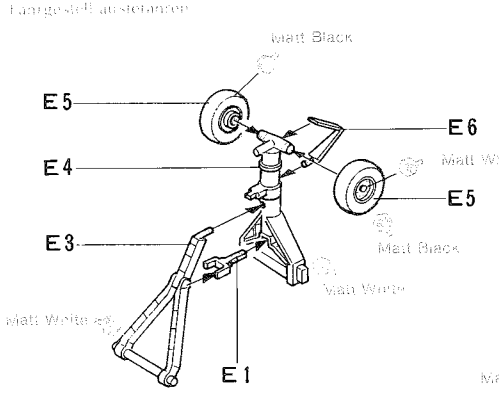
Nose Gear
Bug - Fahrgestell

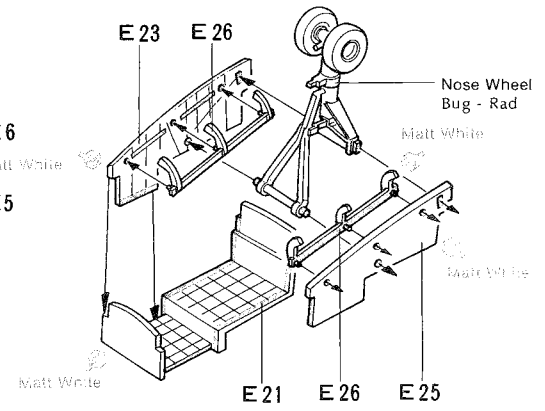
☆Select either in a state of staying on the land or in a state of flying in the air.
☆Fahrgestell kann ausgefahren oder eingezogen gebaut werden.

In a state of flying in the air
Fahrgestell eingezogen



In a state of staying on the land
Fahrgestell ausgefahren





7 Fixing of Nose Gear
Bug-Fahrgestell Einbau

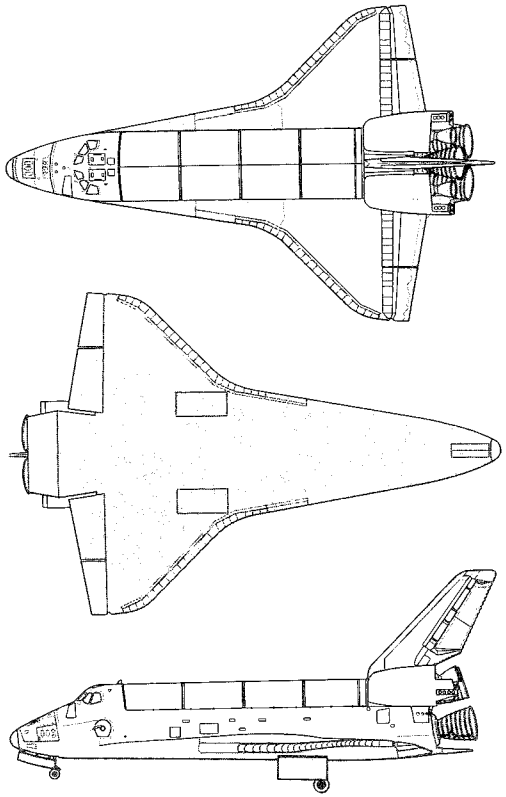
It is recommended to fix nose gear after the painting of plane.

Bugfahrwerk erst nach Bemalen des Raumschiffes einbauen.

The surface of the orbiter is subjected to intense heat up to 1,440° C by friction with the atmosphere when it is launched and particularly when it reenters the atmosphere on its way back to the Earth. To resist the intense heat, the entire surface of the orbiter is covered with heat resistant tiles of silica, etc. The figures below show the kinds of the heat resistant tiles and the temperatures which differ according to places.

Die Oberfläche des Orbiter ist bis zu 1440 Grad Celsius hitzebeständig gegen die grosse Reibung vor Allem beim Wiedereintritt in die Erdatmosphäre. Das Bild unten zeigt die Silikatplatten für die verschiedenen Temperaturen.

- Heat Resistance 1649° C Reinforced Carbon - Carbon
  Hitze-Widerstand 1649°- verstärkt. Kohlenstoff
- Heat Resistance 1260° C High-Temperature Reusable Surface
  Hitze-Widerstand 1260° - Höcksteemp. Oberfläche
- Heat Resistance 649° C Low-Temperature Reusable Surface
  Hitze-Widerstand 649° - Niedertemp. Oberfläche
- Heat Resistance 443° C Coated Nomex Felt
  Hitze-Widerstand 443° - überzog. Nomex Filz

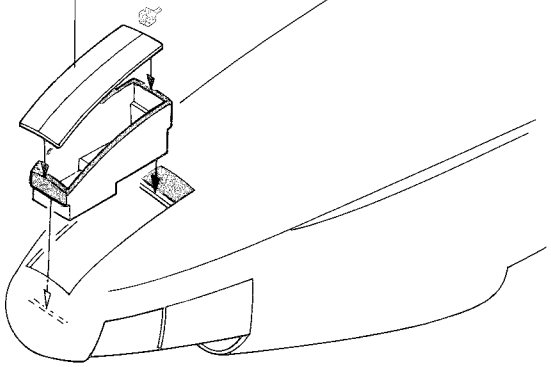


7 Fixing of Nose Gear
Bug Fahrgestell Einbau

In a state of flying in the air
Fahrgestell eingezogen

Surface : Semi Gloss Black
Oberfläche
Reverse Side : Matt White
Umgekehrte Seite

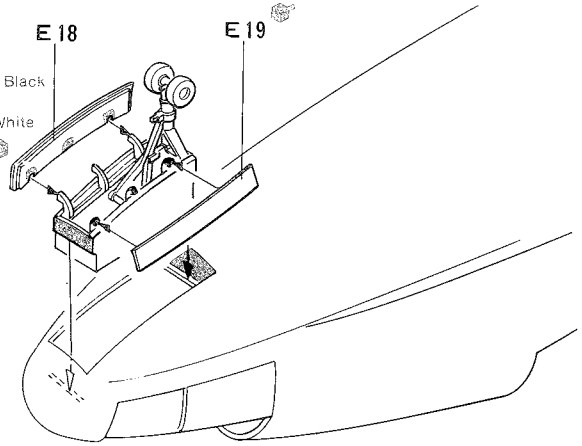
E20



In a state of staying on the land
Fahrgestell ausfahren

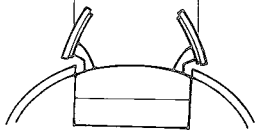
Surface : Semi Gloss Black
Oberfläche
Reverse Side : Matt White
Umgekehrte Seite

E18 E19



Fix E18 and E19 at angle
E18 und E19 im Winkel einbauen

E18 E19



8 Wing
Tragflächen

Wing : Left
Tragflächen : links

When the model in a staying state is to be put on a stand, make a hole from the back side.
Als Standmodell : Löcher von hinten einbohren.

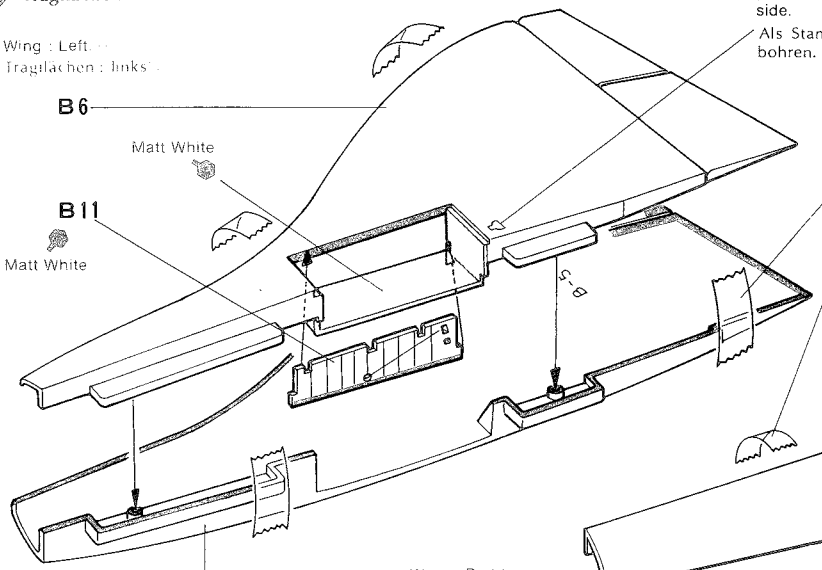
After cementing, hold parts together with cellophane tape for a while.
Nach dem Kleben hält man Teile mit Tesafilm zum Trocknen zusammen.

B6

Matt White

B11

Matt White



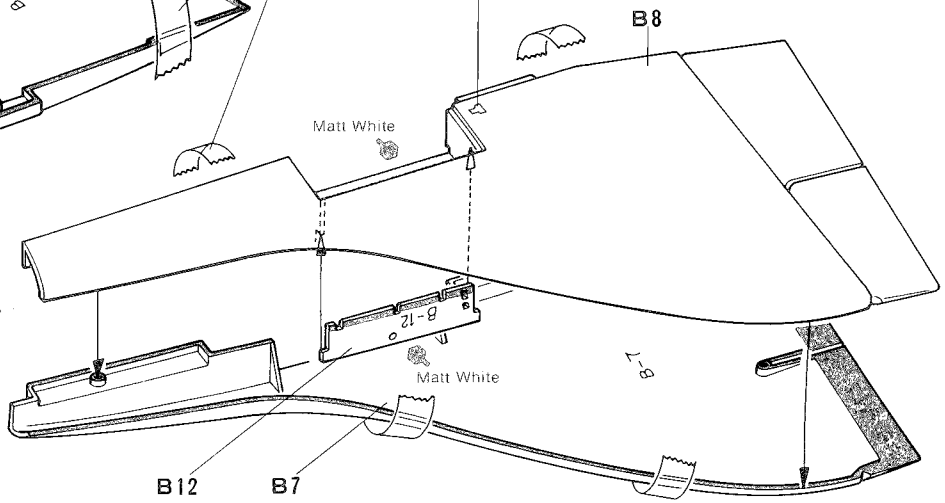
B5

Wing : Right
Tragflächen : rechts

When the model in a staying state is to be put on a stand, make a hole from the back side.
Als Standmodell : Löcher von hinten einbohren.

B8

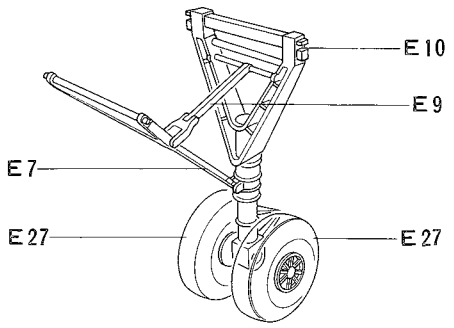
Matt White



Matt White

B12 B7

9 Fixing of Main Landing Gear
Fahrgestell Einbau



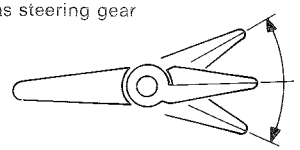
Vertical Tail Plane

The rudder attached to the vertical tail plane of the orbiter is used not only to change the direction of the plane but also as an air brake. It can perform these two functions at the same time. At the time of descent, however, it is not very effective because the plane lifts its nose up. So the main wing is equipped with elevons which serve as both an elevator and aileron. The elevons help to control the plane so that it can make a stable landing on a desired point.

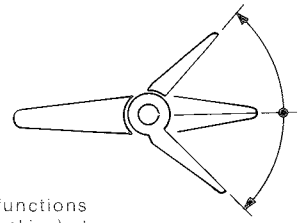
Die Ruderanlage des Orbiter

Das Ruder dient nicht nur der Steuerung des Orbiter, sondern auch zur Abbremsung. Beide Vorgänge können zur gleichen Zeit ausgeführt werden. Im Gleitflug jedoch werden die Tragflächenruder eingesetzt, vor Allem, um genaue Landungen auszuführen.

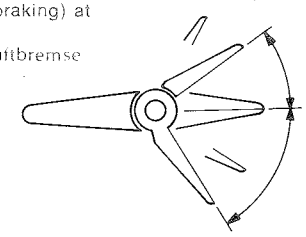
Motion of rudder as steering gear
Seitenruder



Motion of air brake
Luftbremse



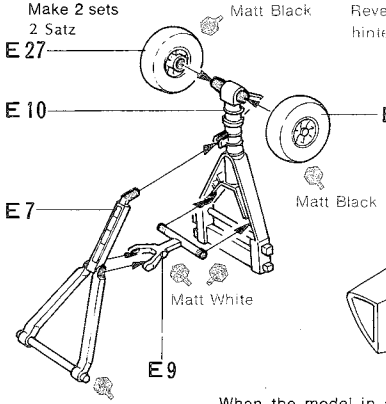
Performing two functions (steering and air braking) at the same time.
Seitenruder und Luftbremse

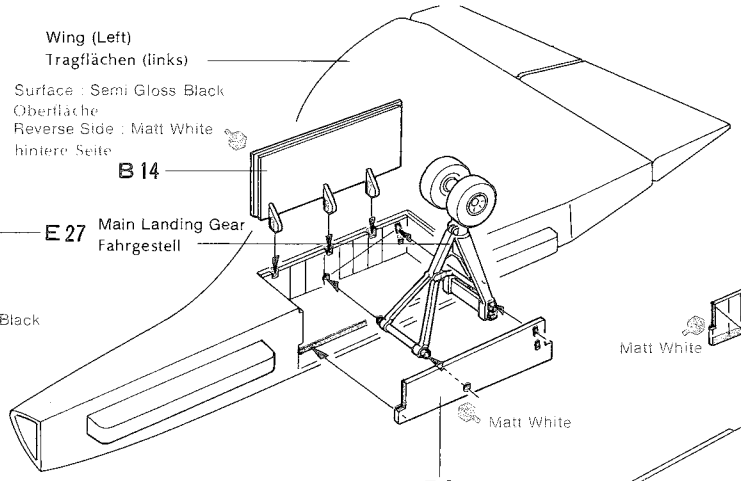


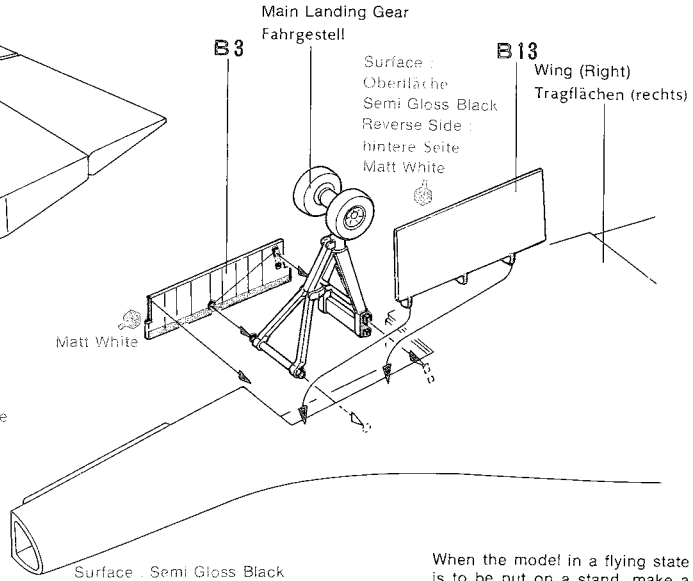
9 Fixing of Main Landing Gear
Fahrgestell Einbau

In a state of staying on the land
Fahrgestell ausgefahren

Make 2 sets
2 Satz

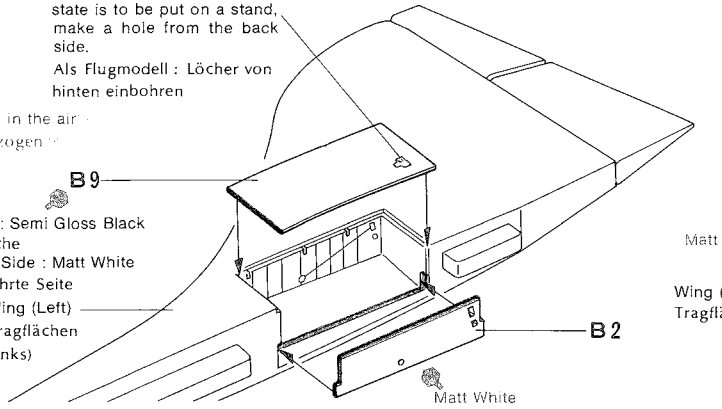


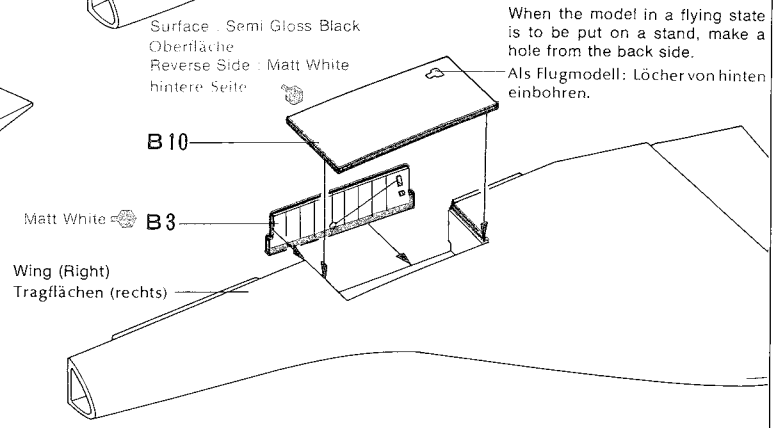




When the model in a flying state is to be put on a stand, make a hole from the back side.
Als Flugmodell : Löcher von hinten einbohren

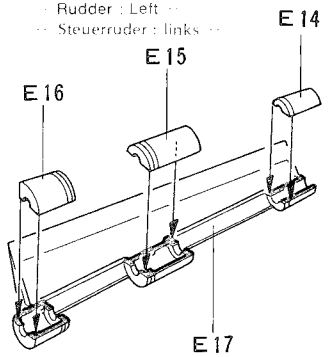
in a state of flying in the air
Fahrgestell eingezogen



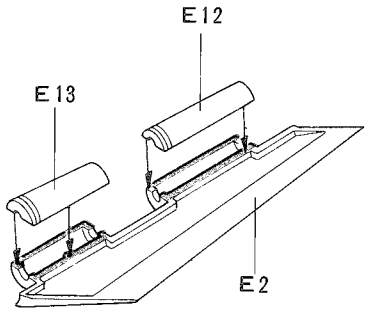


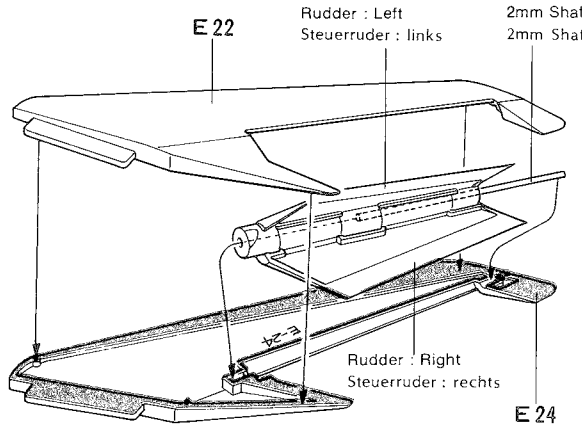
10 Rudder
Steuerruder

Rudder : Left
Steuerruder : links

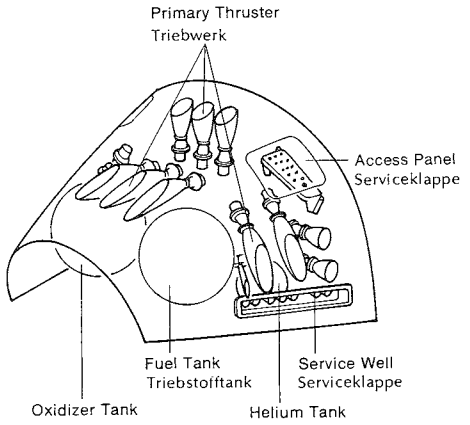


Rudder : Right
Steuerruder : rechts





Reaction Control System
Steuersystem



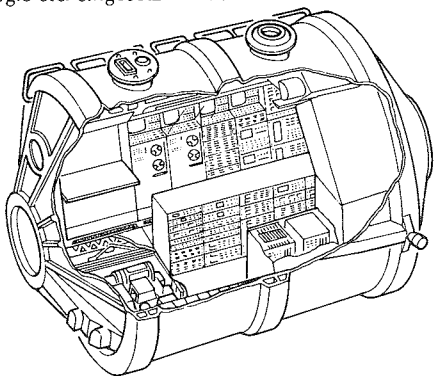
RCS Engine
RCS Triebwerke

Spacelab

The orbiter has a payload compartment which can carry about 30 tons of cargo. It is to carry a laboratory called spacelab, which will do various researches and experiments in the fields of astronomy, chemistry, biology, etc. It is anticipated that the spacelab will make remarkable achievements, such as new discovery and syntheses of new substances, by utilizing space of vacuum and gravity.

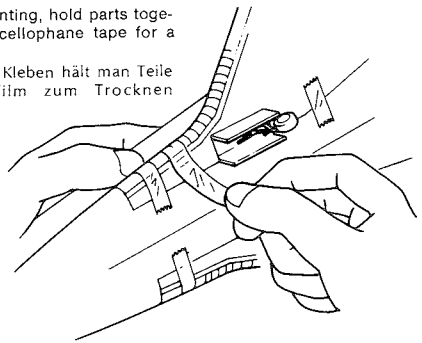
Spacelab

Das Raumschiff hat eine Nutzlastabteil in welchem ca 30 Tonnen zugeladen werden können.. Es kann ein Laboratorium (Spacelab) für verschiedene Untersuchungen und Experimente auf dem Gebiete der Chemie, Physik, Biologie etc. eingesetzt werden.

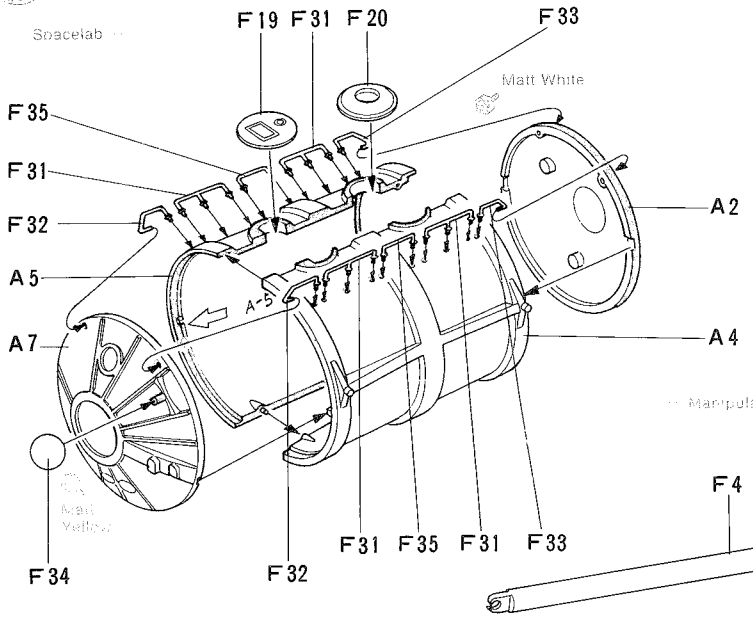


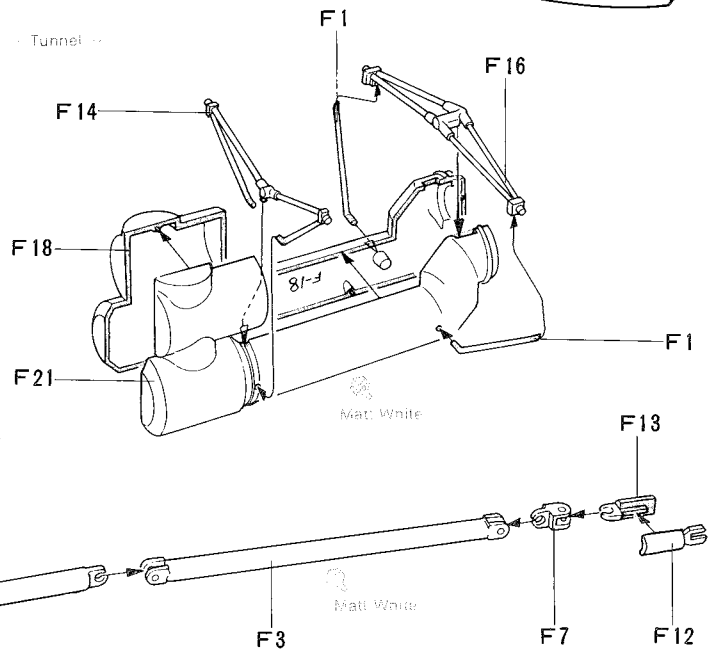
11 Fixing of Wing
Einbau der Tragflächen

After cementing, hold parts together with cellophane tape for a while.
Nach dem Kleben hält man Teile mit Tesafilm zum Trocknen zusammen.



12 Spacelab

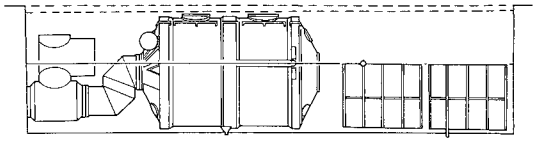




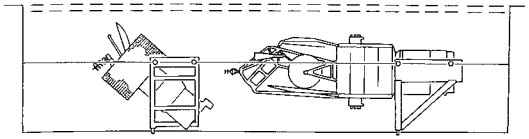
Payload
Nutzlast-Laboratorium

The payload carries, for instance, equipment as shown in the figures below.
Im Nutzlastraum können lasten, wie unten gezeigt geladen werden.

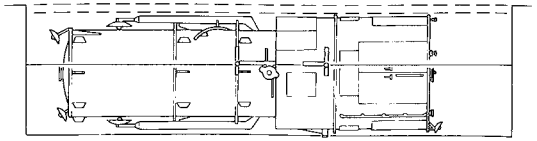
Spacelab + Pallet
Spacelaboratorium und Paletten



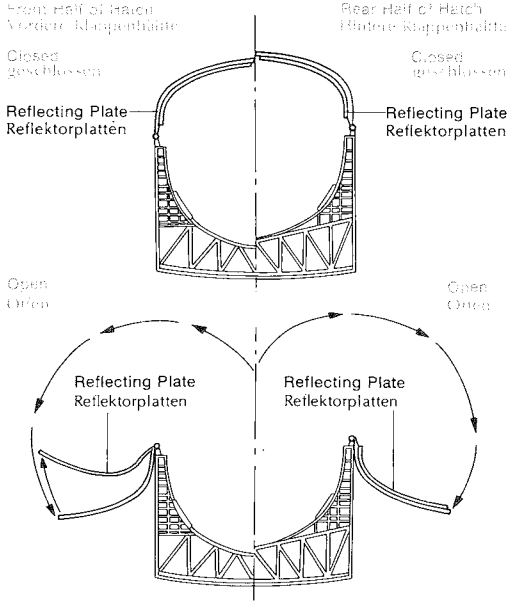
International Telecommunication Satellite
Intern. Übertragungs-Satelliten

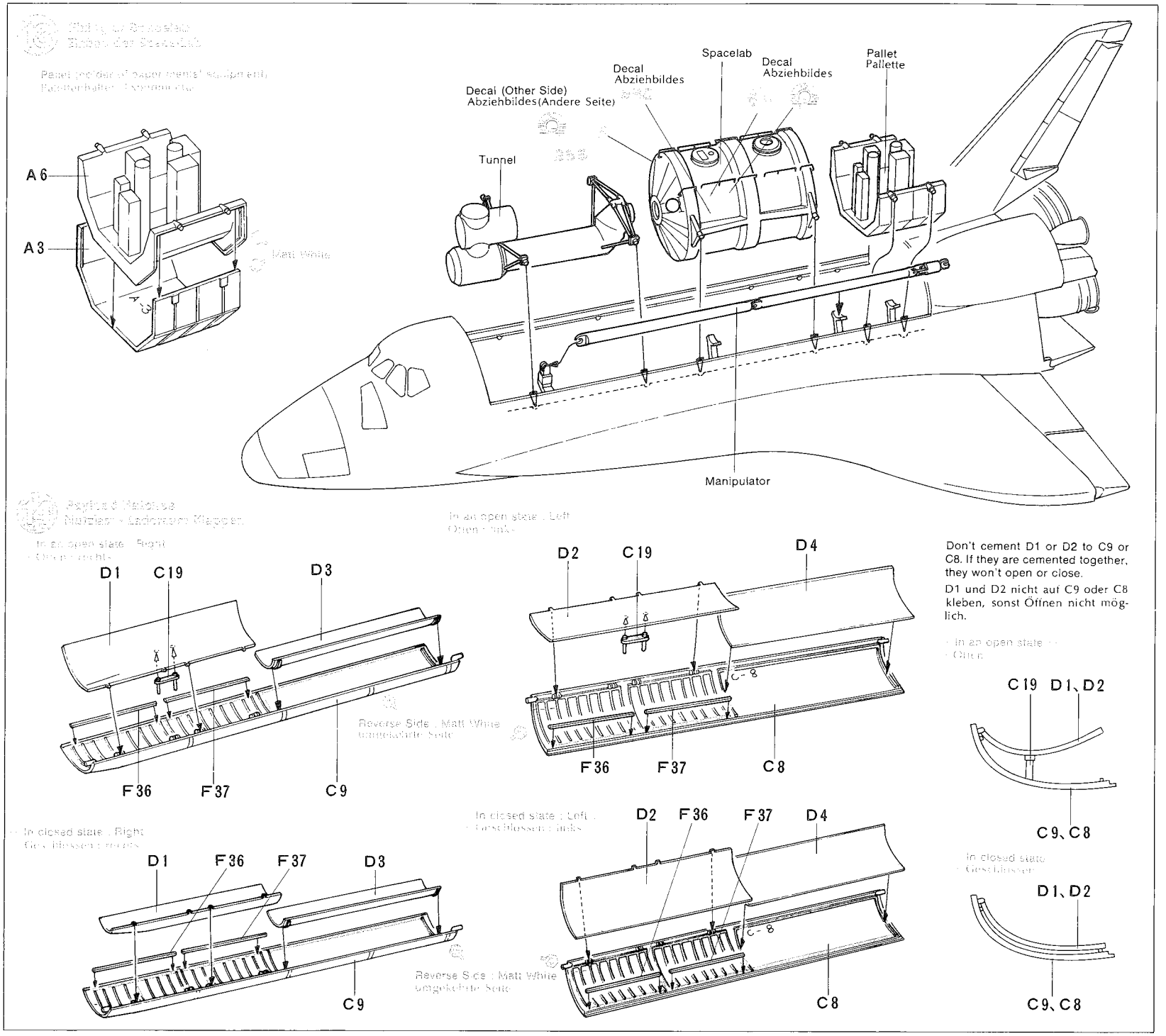


Space Telescope
Weltraum-Teleskope



Four reflecting plates are attached to the inside of payload hatches. The angle of two front plates can be adjusted according to the direction of the sun.
Vier Reflektorplatten sind in der Innenseite der Laderaumtüren angebracht. Der Winkel der vorderen Platten kann je nach Sonneneinfall verstellt werden.

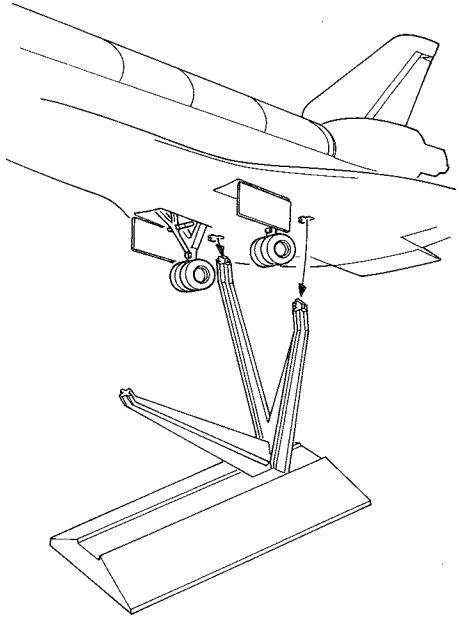




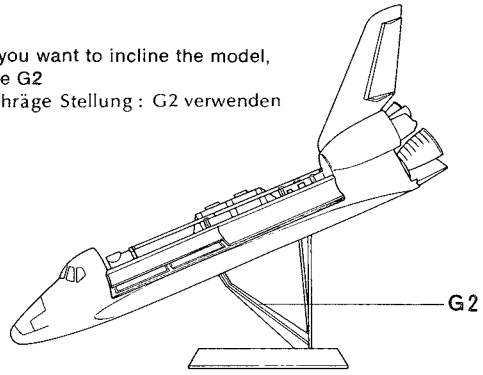
Don't cement D1 or D2 to C9 or C8. If they are cemented together, they won't open or close.
D1 und D2 nicht auf C9 oder C8 kleben, sonst Öffnen nicht möglich.

15 Stand
Ständer

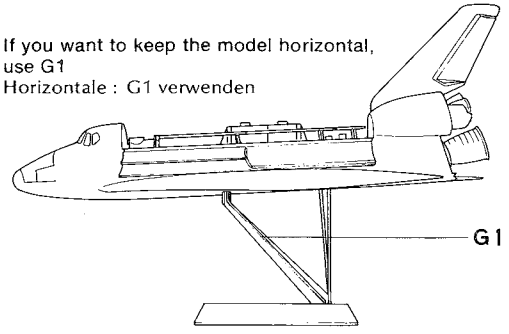
The model in a state of staying on the ground can be fixed to a stand as shown in the figure below.
Als Standmodell kann ein Ständer angebracht werden.



If you want to incline the model, use G2
Schräge Stellung : G2 verwenden

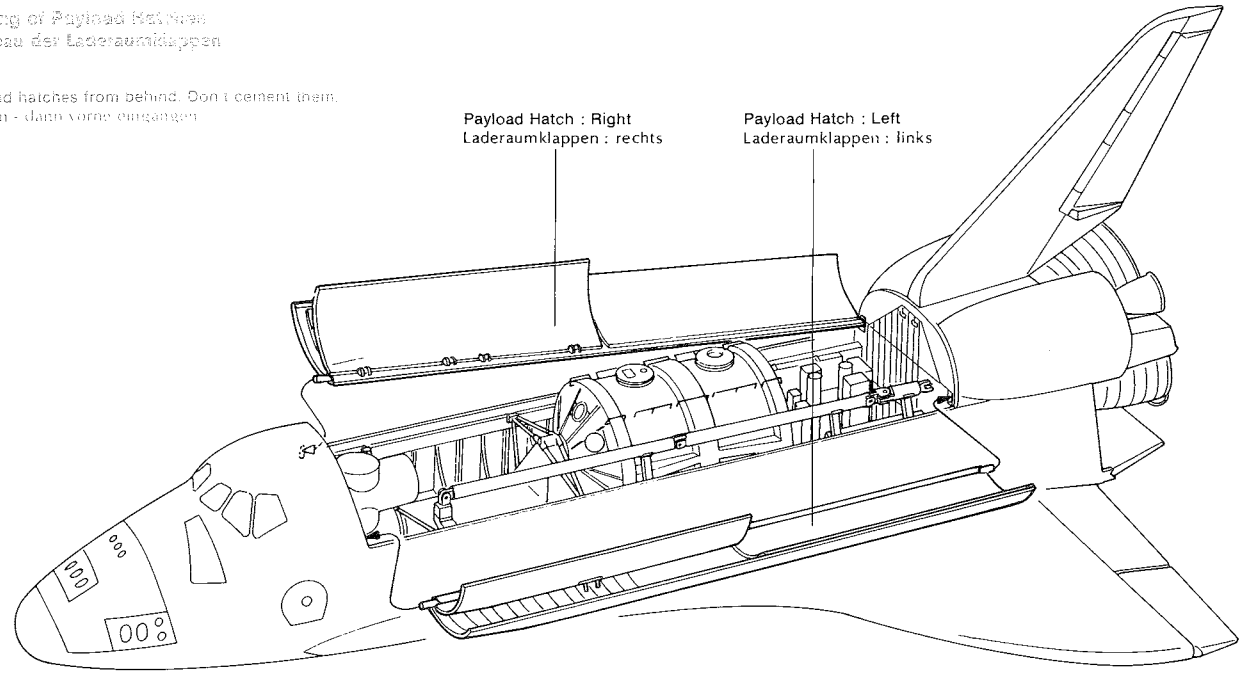


If you want to keep the model horizontal, use G1
Horizontale : G1 verwenden



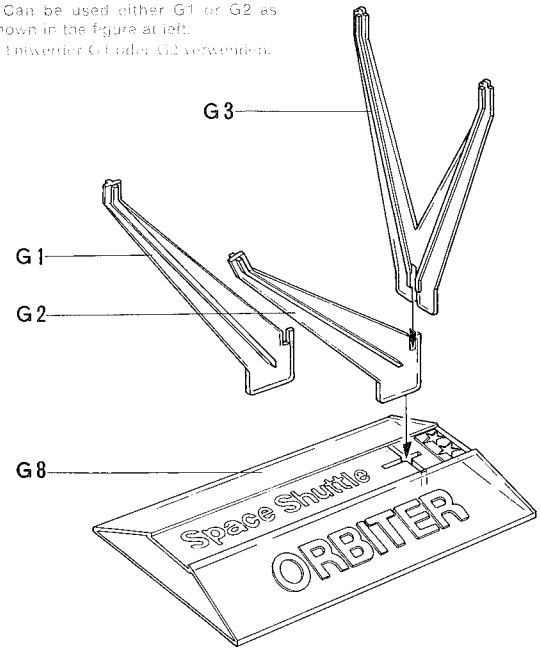
15 Fitting of Payload Hatches
Einbau der Laderaumklappen

☆Fit payload hatches from behind. Don't cement them.
☆erst hinten - dann vorne eingehen

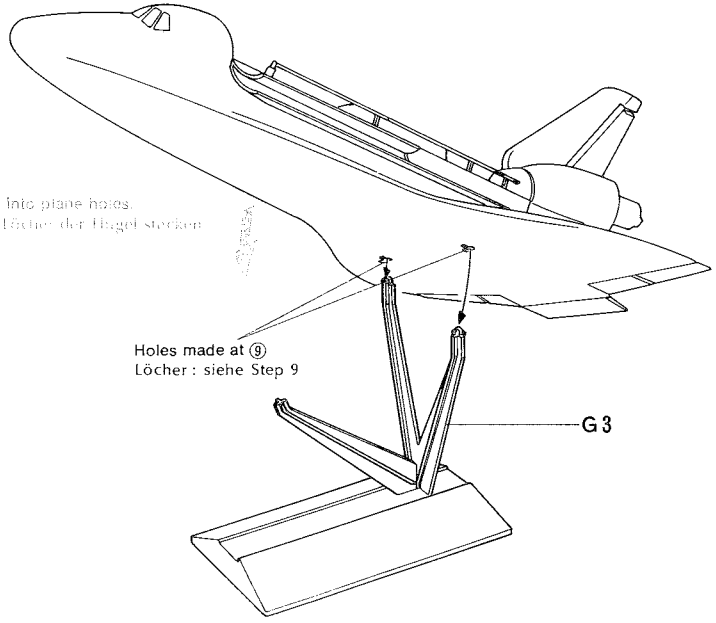


15 Stand
Ständer

☆Can be used either G1 or G2 as shown in the figure at left.
☆Entweder G1 oder G2 verwenden.



☆Insert only G3 into plane holes.
☆G3 nur in die Löcher der Flugel stecken



PAINTING

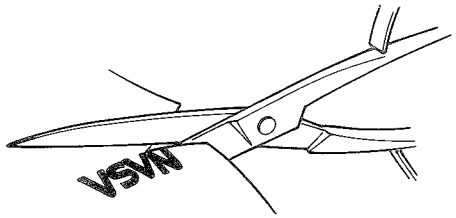
Da die Farben unter der englischen Bezeichnung zu erhalten sind, geben wir nur die englischen Namen an. **Keine Farben** auf **Nitrobasis** verwenden!!
Wir übernehmen keine Haftung für Schäden die durch falsche Farbenwahl entstehen. Nur **Farben verwenden,** die **für Polystyrol Plastik geeignet** sind.

Paint the orbiter according to the colours of heat resistant tiles used. The lower surfaces of the wing and fuselage are covered with high temperature tiles of semi gloss black. The upper surfaces of the wing and fuselage and the sides of the fuselage are white. Parts which become the hottest, such as the nose and the front edges of the wing, are covered with heat resistant material of reinforced carbon-carbon, and these parts should be painted matt greyish green.

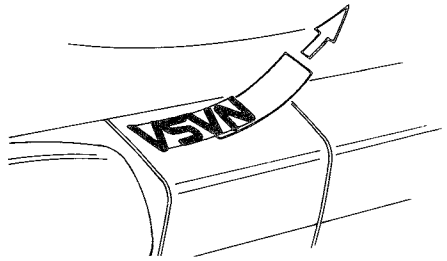
Die Bemalung erfolgt den entsprechenden Hitze abweisenden Silikatplatten.
Die Unterseite des Rumpfes und der Tragfläche ist semi gloss black. Die Oberseite und die Seiten der Tragflächen ist semi gloss weiss. Teile die der grössten Hitze ausgesetzt sind wie Nase und vord. Flügelkanten sind matt gray/green zu bemalen.

- High-Temperature, Reusable Surface Insulation
  Höchsttemperatur Ogerflächen Isolierung
- Low-Temperature Reusable Surface Insulation
  Niedrigsttemp. Oberflachen Isolierung
- Hinge of Rudder
  Ruder-Aufhängung
- Reinforced Carbon-Carbon
  verstärkter Kohlenstoffbelag
- Inside of Payload, Spacelab
  Ladeinnenraum und Laboratorium
- Tyre
  Reifen
- Wall of Cockpit, Meter
  Wände des Cockpit
- Floor of Cockpit
  Boden des Cockpit
- Seat
  Sitz

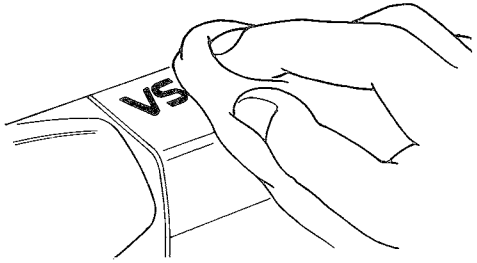
① A decal to be applied should be cut off beforehand.
② Dip it in water. When the backing film arches, remove from the water to place on a cloth such as a towel.
③ A minute or two later, hold edge of the backing film to slide the decal onto the model from the backing film.



④ Then, put a little of water on your finger to wet the decal so that the latter will be moved more easily onto the right spot.
⑤ Press the decal down with a soft cloth such as towel to force air bubbles out of underside of the decal. Continue the work until the excess water, too, will be fully absorbed. When the surface to be applied with a decal is uneven or curved, press the decal down with a steamed towel so that the warmed, wet decal will fit the surface well. Cut off the excess transparent portion around a decal before applying. When so done, you can expect a sharp finish with the decal precisely in its specified place.

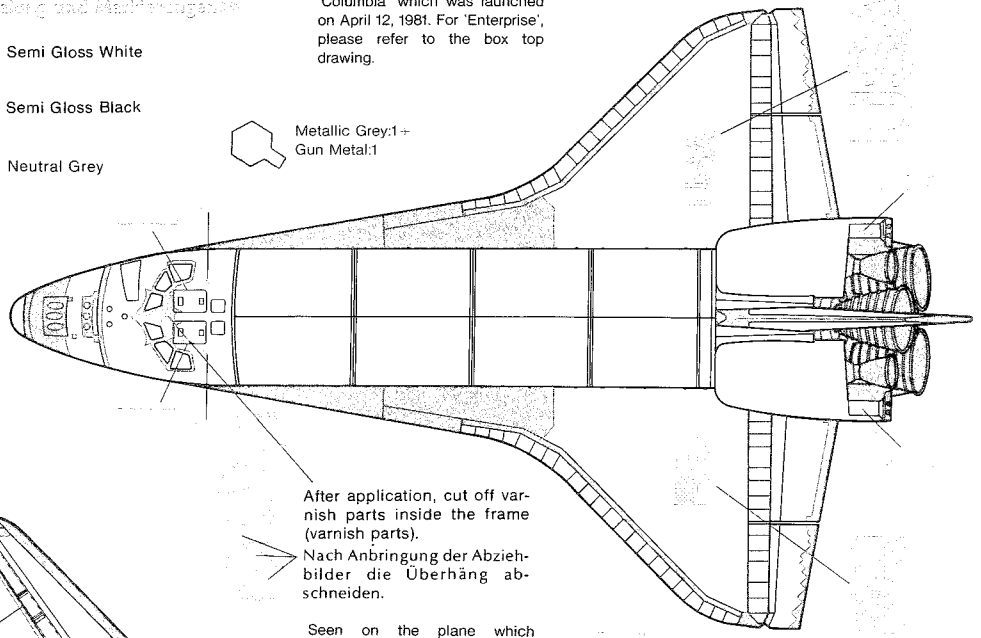


① Bild erst genau ausschneiden.
② In Wasser legen, wenn Bild abhebt, auf trockenen Stoff legen.
③ 1-2 Minuten später, Papier an Ecken halten und Bild abschieben auf Modell.
④ Etwas Wasser auf Finger und Bild auf genauen Platz schieben.
⑤ Mit Stoff Luftblasen herausdrücken, überflüssiges Wasser aufsaugen Wenn Fläche uneben oder geboggen ist, Bild mit nassem heissem Tuch aufdrücken.



★Painting shown below is for 'Columbia' which was launched on April 12, 1981. For 'Enterprise', please refer to the box top drawing.

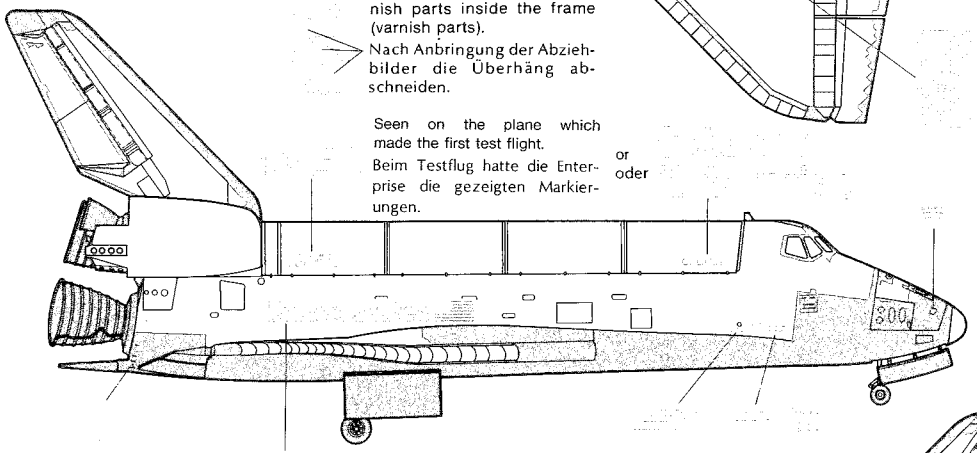
- Semi Gloss White
- Semi Gloss Black
- Neutral Grey
- Metallic Grey:1 + Gun Metal:1



After application, cut off varnish parts inside the frame (varnish parts).
Nach Anbringung der Abziehbilder die Überhäng abschneiden.

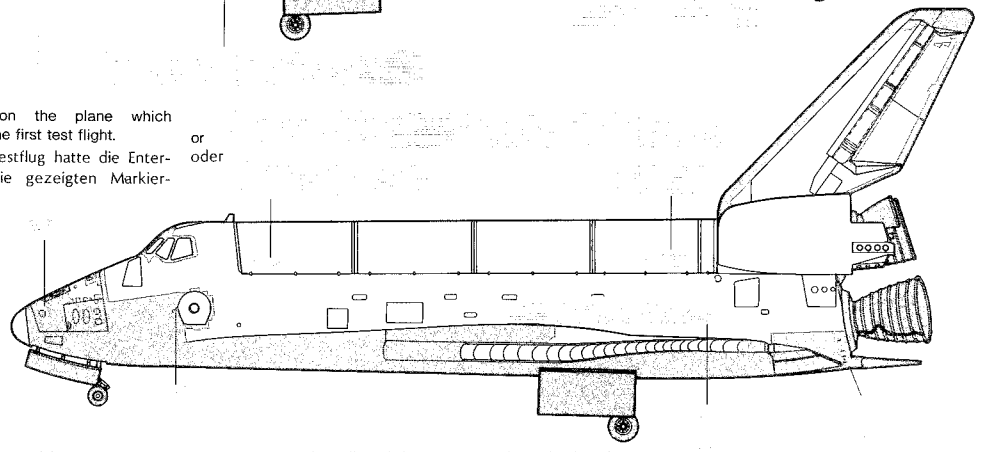
Seen on the plane which made the first test flight.
Beim Testflug hatte die Enterprise die gezeigten Markierungen.

or
oder



Seen on the plane which made the first test flight.
Beim Testflug hatte die Enterprise die gezeigten Markierungen.

or
oder

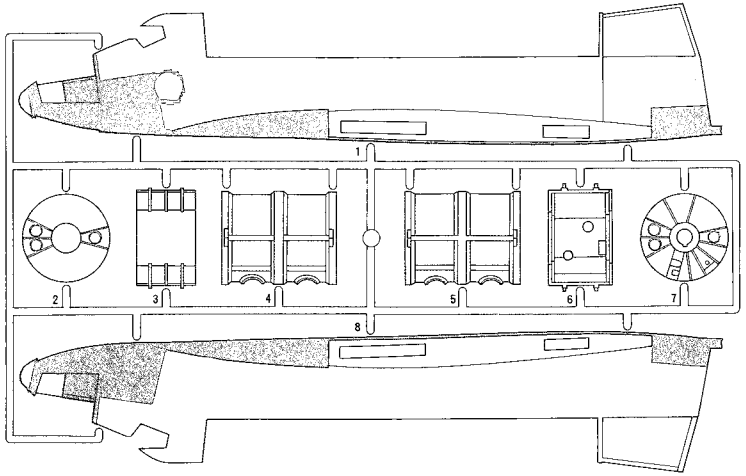


★Enterprise is for trial of gliding and landing. It has not been launched to the space.
★Die Enterprise dient als Versuchsobjekt für Gleitflug und Landung. Sie wurde nie in den Weltraum geschossen.

PARTS

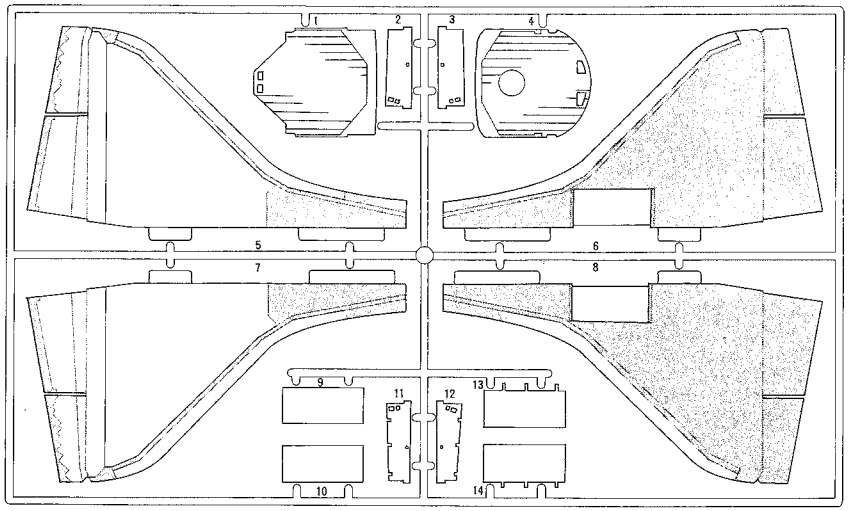
A PARTS

Semi Gloss White
Semi Gloss Black
Matt White
Neutral Grey



B PARTS

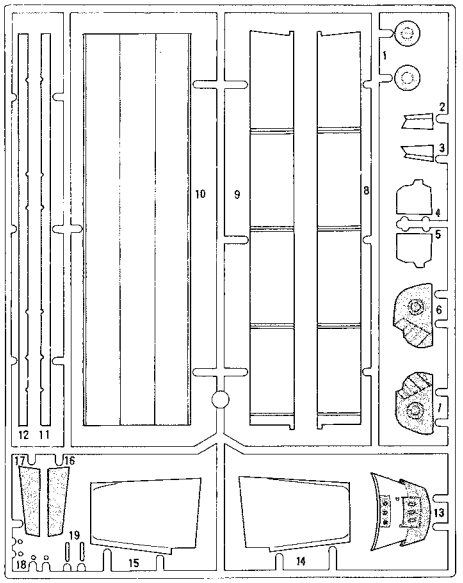
Semi Gloss White
Semi Gloss Black
Matt White
Neutral Grey



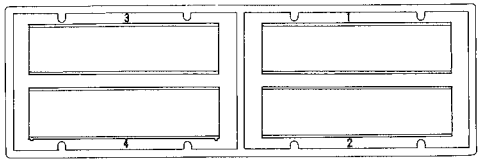
Metallic Grey:1
+Gun Metal:1

C PARTS

Semi Gloss White
Semi Gloss Black
Matt White

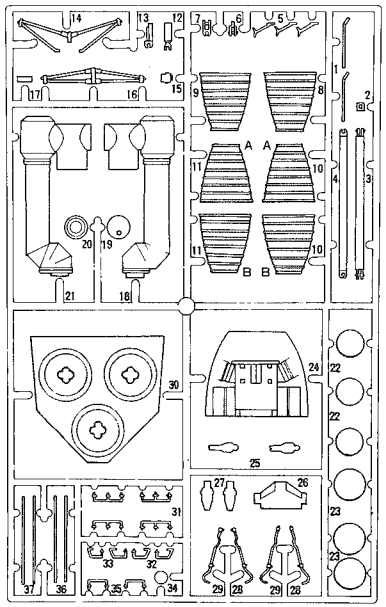


D PARTS (Plated Parts)



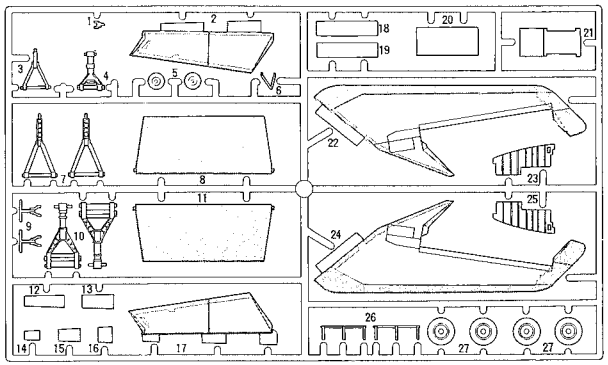
E PARTS

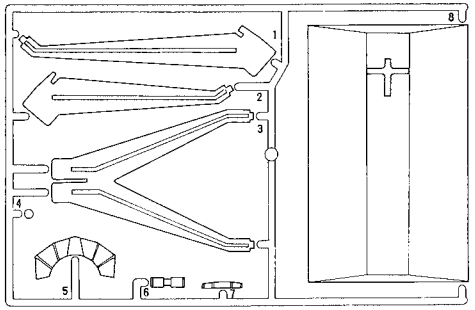
Matt White
Semi Gloss Black
Sky Grey
Matt Earth
Matt Brown



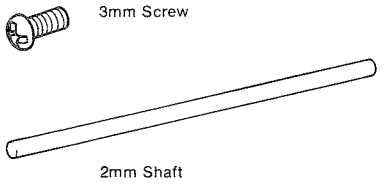
F PARTS

Semi Gloss White
Matt White
Semi Gloss Black
Matt Black
Neutral Grey
Metallic Grey:1
+Gun Metal:1





Metal Parts



TAMIYA

TAMIYA, INC.
3-7, ONDAWARA, SHIZUOKA-CITY, JAPAN.

PRINTED IN PHILIPPINES

1/100TH SCALE

Space Shuttle ORBITER

REALISTICALLY REPRODUCED "SPACE-LAB"

TAMIYA

スペースシャトル・オービター

MARKING & PAINTING

⚠注　意 ●このキットは組み立てモデルです。作る前に必ず説明書を最後までお読みください。また小学生などの低年齢の方が組み立てるときは、保護者の方もお読みください。また接着剤や塗料は、必ずプラスチック用をお使いください。(別売) ●工具の使用には十分注意してください。特にナイフ、ニッパーなどの刃物によるケガや事故に注意してください。●接着剤や塗料は使用する前にそれぞれの注意書きをよく読み、指示に従って正しく使用し、使用するときは換気に十分注意してください。●小さなお子様のいる所での工作はやめてください。小さな部品の飲み込みや、ビニール袋をかぶっての窒息などの危険な状況が考えられます。

⚠CAUTION ●Read carefully and fully understand the instructions before commencing assembly. A supervising adult should also read the instructions if a child assembles the model. ●When assembling this kit, tools including knives are used. Extra care should be taken to avoid personal injury. ● Read and follow the instructions supplied with paint and/or cement, if used (not included in kit). Use plastic cement and paints only. ●Keep out of reach of small children. Children must not be allowed to suck any part, or pull vinyl bag over their heads.

●万一不良、不足部品などありました場合は、当社カスタマーサービスまでご連絡ください。

《お問い合わせ番号》
静岡 **054-283-0003**
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営業時間/平日▶8:00～20:00　土、日、祝日▶8:00～17:00

★スペースシャトルには2000年頃から新規のマーキングが採用されています。
新規のマーキングで仕上げる方は下図を参考にしてください。
★From around 2000 onward, new markings were applied to the space shuttles. Refer to diagram below for applying decals.

★下記の機体名から1つ選んでください。
★Select 1 name from below.

Discovery
Atlantis
Endeavour