



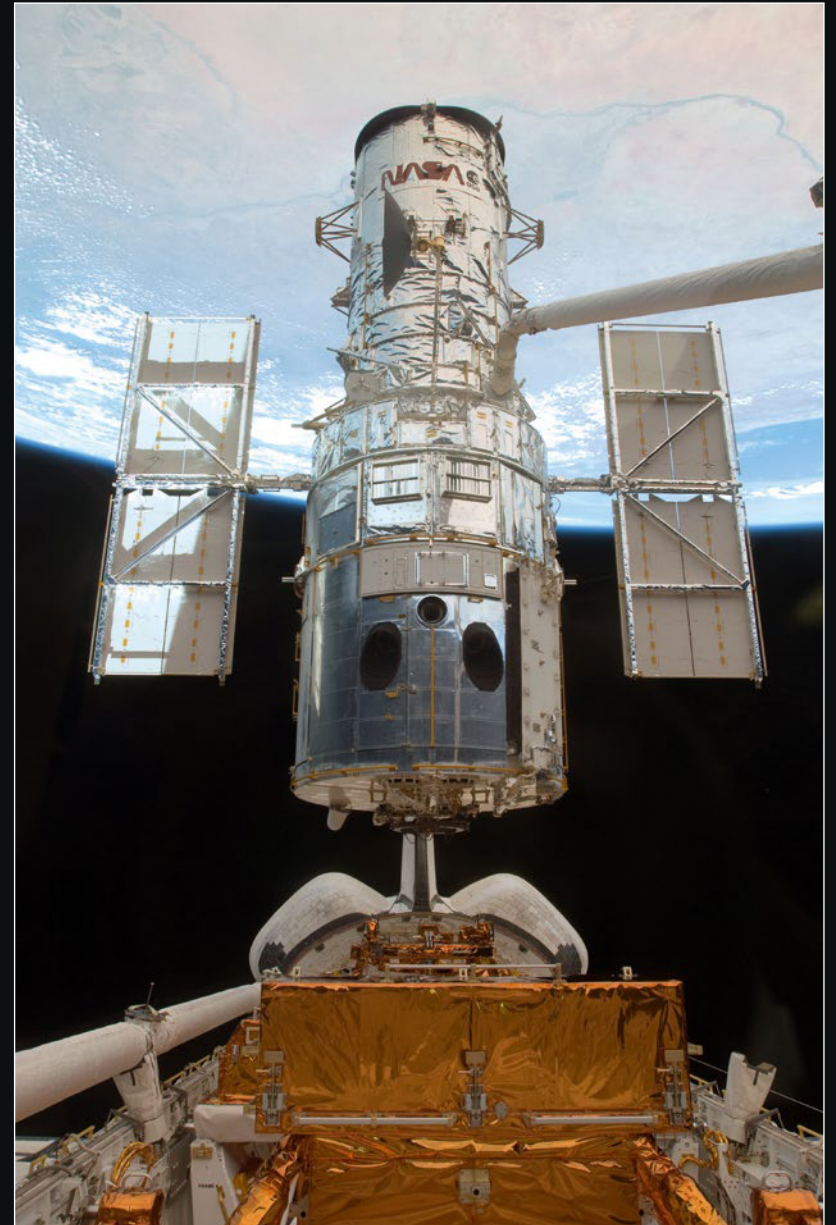
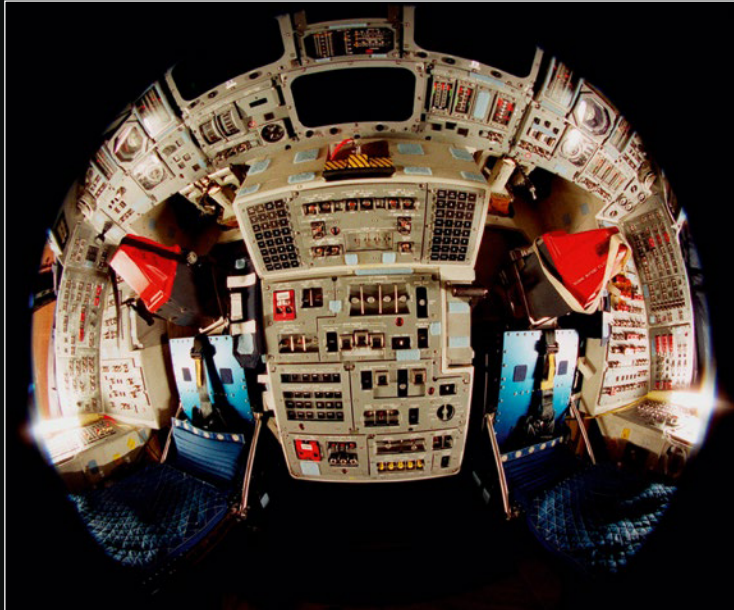


UNE ICÔNE DU VOL SPATIAL

La flotte du STS (Système de transport spatial) de la Nasa était composée de 5 orbiteurs : Columbia, Challenger, Discovery, Atlantis et Endeavour. Au total, ces navettes spatiales ont effectué 135 missions et emmené 355 personnes dans l'espace. De tous les orbiteurs, c'est Discovery qui a réalisé le plus grand nombre de missions et transporté le plus grand nombre de passagers, tout en voyageant plus loin et plus haut que les autres. Discovery a également eu pour mission de lancer et déployer le télescope spatial Hubble en avril 1990, dans le cadre de la mission STS-31. En 2021, nous revisiterons cette célèbre mission à l'occasion du 40e anniversaire du programme de navettes spatiales.

LA MISSION

Le lancement et le déploiement du télescope spatial Hubble en avril 1990 constituent l'avancée la plus significative dans le domaine de l'astronomie depuis l'invention des lunettes astronomiques de Galilée. Il s'agit du premier grand télescope optique placé dans l'espace, le plus haut sommet. Placé au-dessus de la distorsion atmosphérique de la Terre, des nuages et de la pollution lumineuse, Hubble dispose d'une vue dégagée de l'univers. Les scientifiques utilisent Hubble pour observer les étoiles et les galaxies les plus lointaines, mais aussi les planètes de notre système solaire.



LE POINT DE VUE DE L'ÉQUIPE DE DESIGN

La navette spatiale est l'un des véhicules les plus complexes jamais élaborés. Pas facile donc d'en faire un set LEGO®. Nous devons créer un extérieur lisse et un intérieur suffisamment grand pour contenir la cargaison, mais le plus grand défi a été d'y intégrer un train d'atterrissage fonctionnel. C'était un véritable casse-tête d'essayer de coupler l'avant et le train d'atterrissage principal sans enlever l'espace de la soute et sans toucher à la structure du modèle. L'ingénierie complexe et la puissance de ces véhicules sont tout simplement époustouflantes, mais, personnellement, ce qui me fascine le plus dans le voyage dans l'espace, c'est l'aspect humain. C'est pourquoi la partie que je préfère dans ce modèle, ce sont les minuscules sièges bleus qui ont transporté 5 êtres humains lors de cette mission spéciale. Enfant, je passais des heures à construire mes propres versions du Lunar Lander et de l'orbiteur Discovery en briques LEGO. C'est pour cela que, lorsqu'on m'a demandé de travailler sur ce projet, je me suis senti vraiment heureux et chanceux.

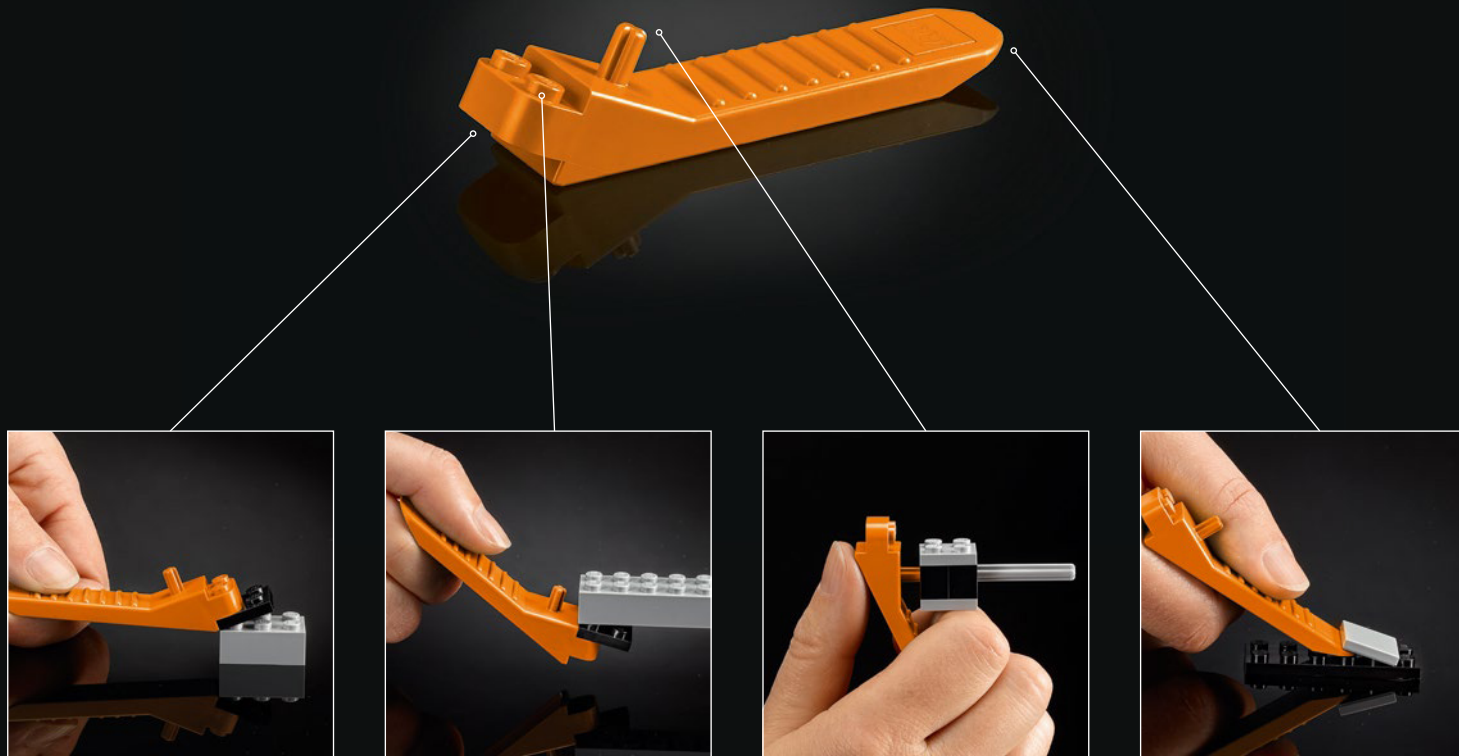
Milan Madge, designer LEGO®



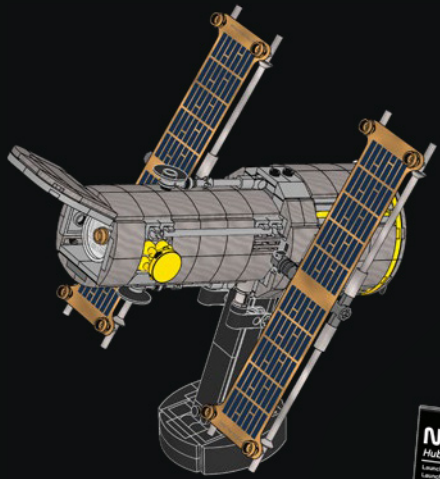
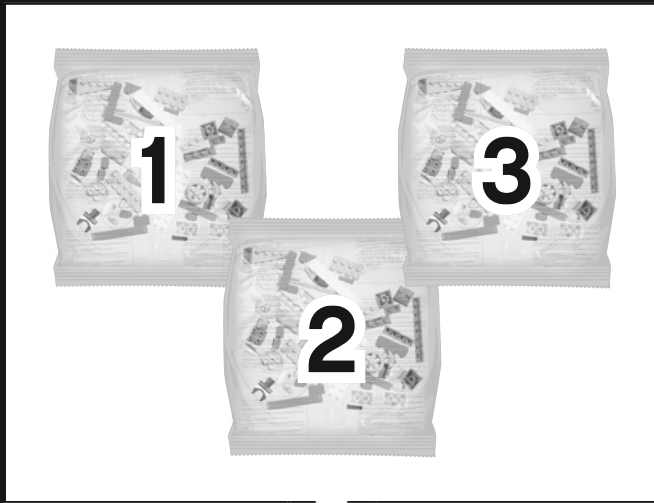


PROJETS FUTURS

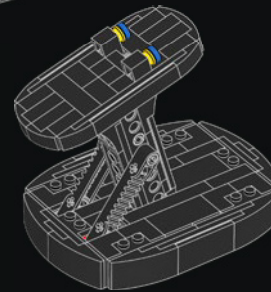
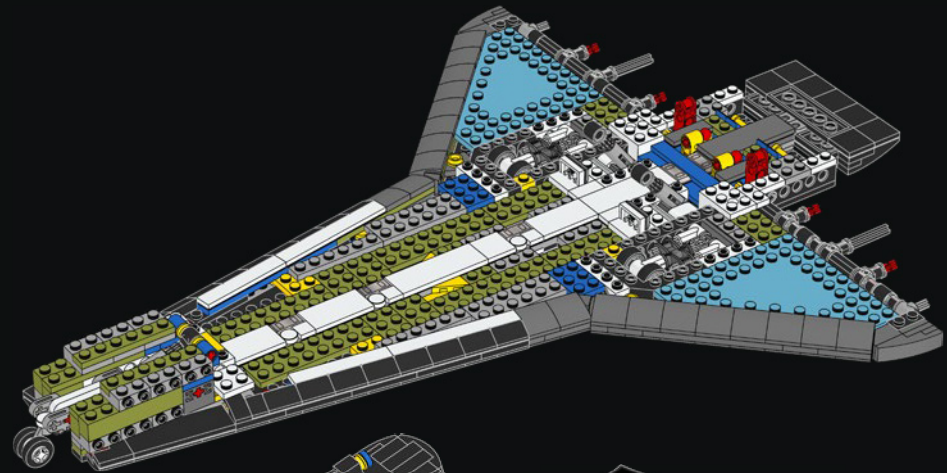
Après avoir mis un terme à son programme de navettes spatiales en 2011, la Nasa a créé des partenariats public-privé avec les sociétés Boeing et SpaceX afin de développer et exploiter une nouvelle génération de vaisseaux spatiaux et de systèmes de lancement, capables de transporter des équipages vers l'orbite terrestre basse et la Station spatiale internationale. En encourageant l'industrie à fournir des services de transport humain vers et depuis l'orbite terrestre basse, la Nasa peut se concentrer davantage sur la construction de vaisseaux spatiaux et de fusées et ainsi faire un autre pas de géant : envoyer des missions spatiales vers la Lune et Mars.



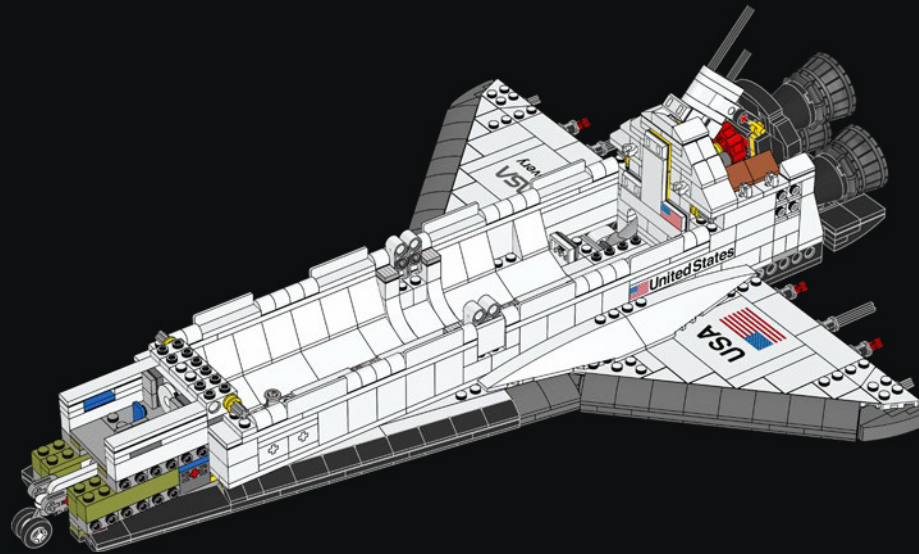
[LEGO.com/brickseparator](https://www.lego.com/brickseparator)

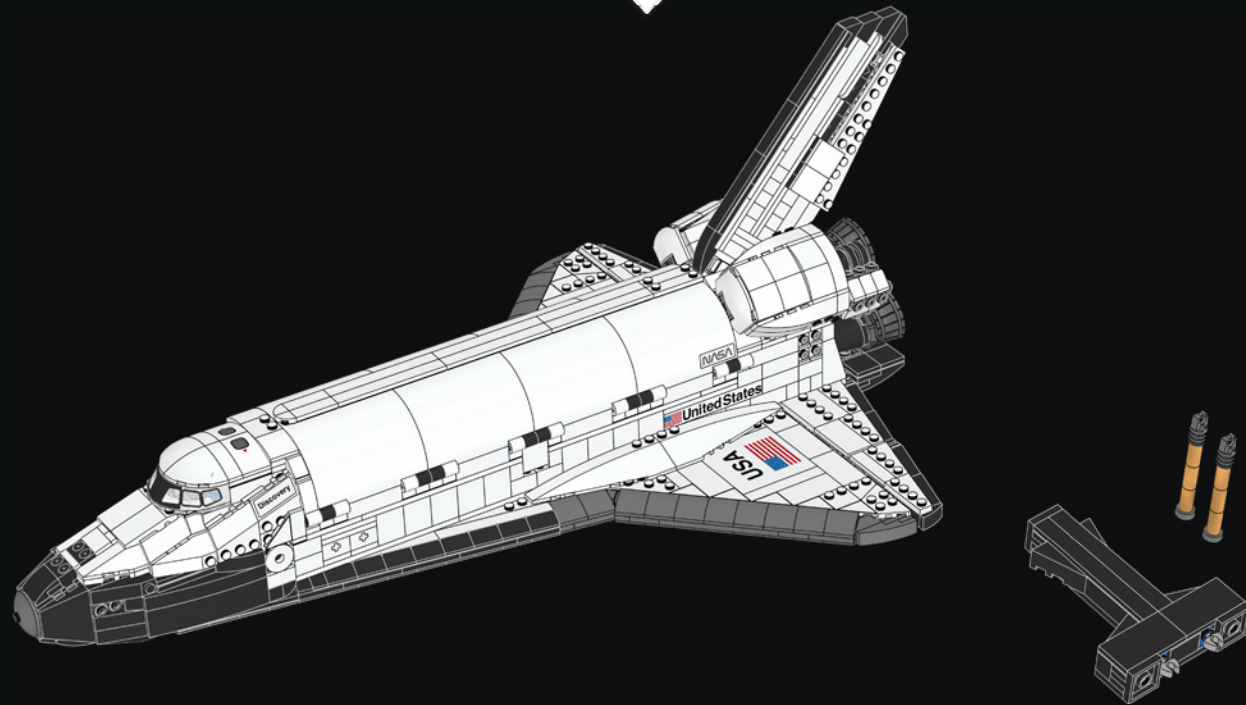


NASA **esa**
Hubble Space Telescope
Launch: April 24, 1990
Launch Weight: 13,200 lbs
Orbiting Altitude: 350 miles



NASA
Space Shuttle Discovery STS-31
Launch: February 24, 1984
Launch Weight: 22,000 lbs
Orbiting Altitude: 200 miles





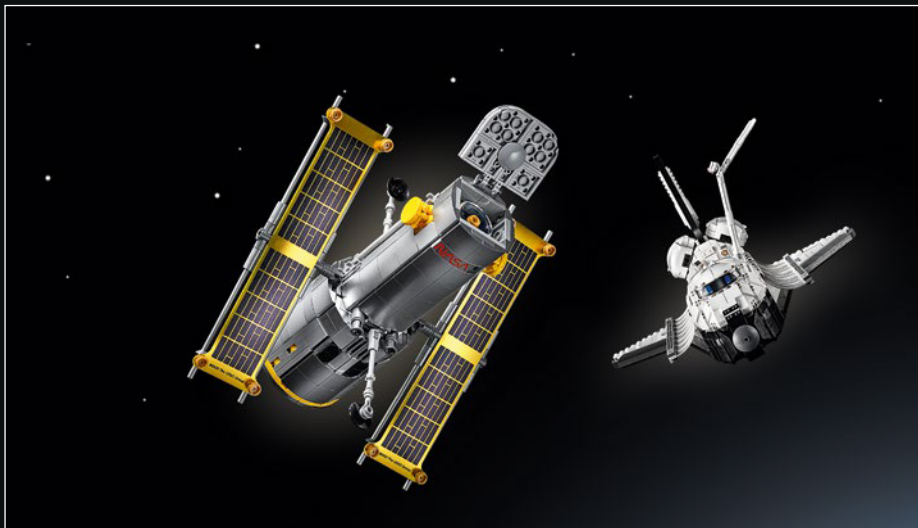
LE TÉLESCOPE SPATIAL HUBBLE

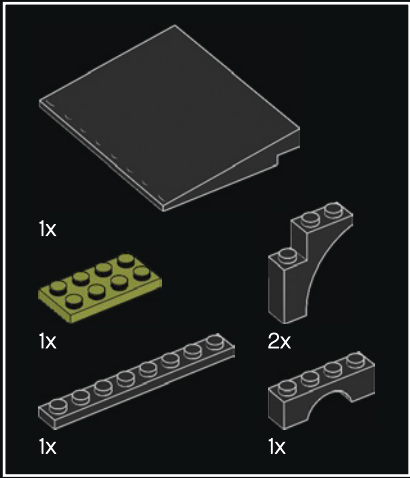
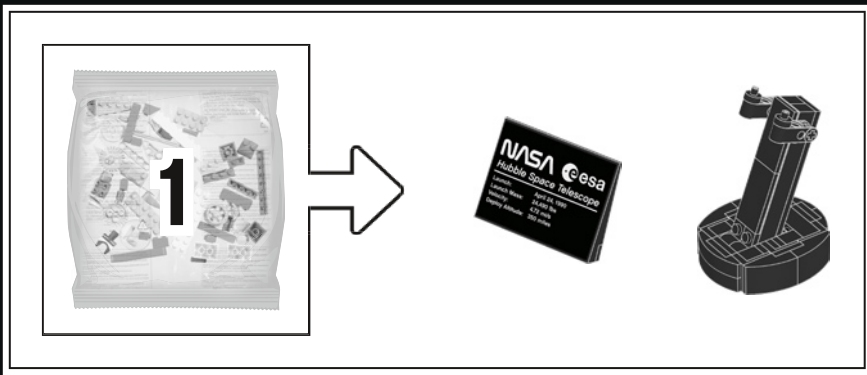
Le télescope spatial Hubble est le résultat de la collaboration entre la Nasa et son partenaire européen, l'Agence spatiale européenne (ESA). Grâce à sa position privilégiée à environ 550 km au-dessus de la Terre, le télescope de 13,2 m de long et 4,2 m de large peut détecter la lumière avec des « yeux » qui sont aujourd'hui 20 fois plus précis que les meilleurs télescopes terrestres.



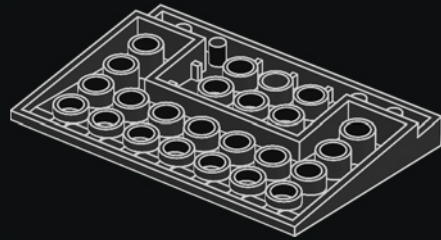
LE PREMIER GRAND OBSERVATOIRE DE L'ESPACE

La mission de Hubble était de passer au moins 15 ans à sonder les lieux les plus éloignés et les plus ténus du cosmos. Grâce à cinq missions de maintenance des navettes spatiales entre 1993 et 2009, cet objectif a été largement dépassé. Cela fait désormais plus de 30 ans que le télescope opère et observe l'univers. Depuis qu'il est en orbite, le télescope a recueilli plus de 1,4 million d'observations, qui ont donné lieu à la publication de plus de 17 000 publications scientifiques par des astronomes sur un large éventail de sujets.

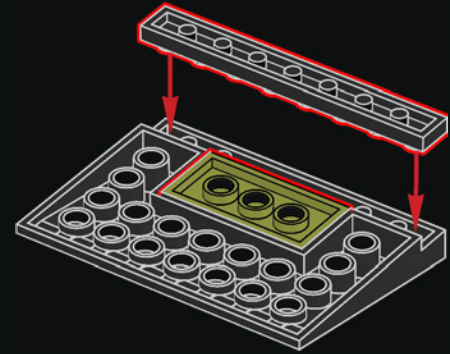




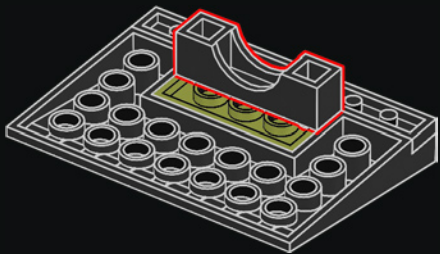
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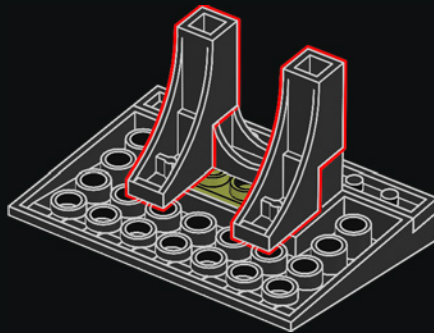
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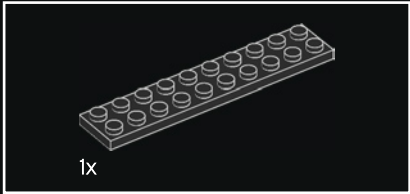
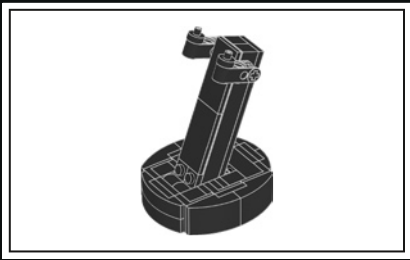


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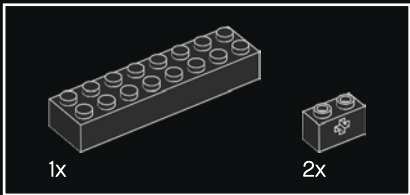
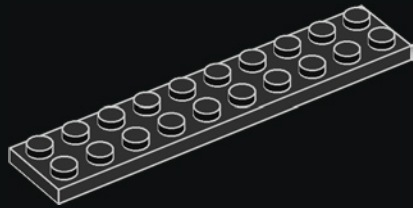
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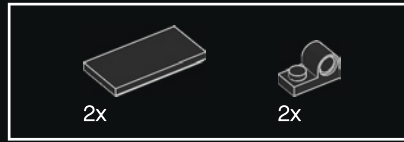
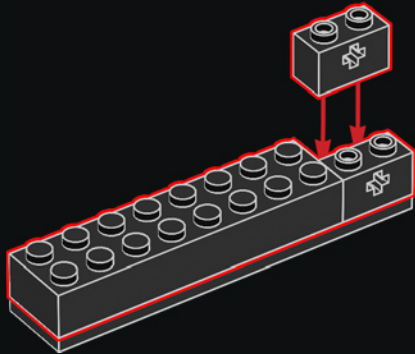
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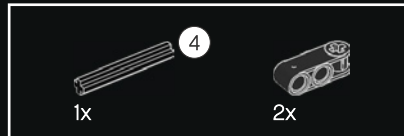
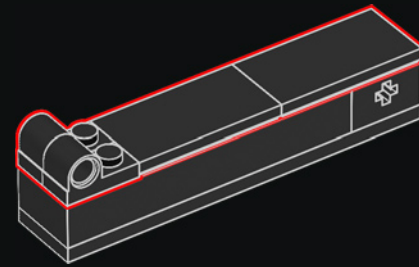
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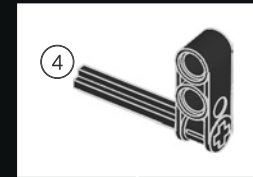
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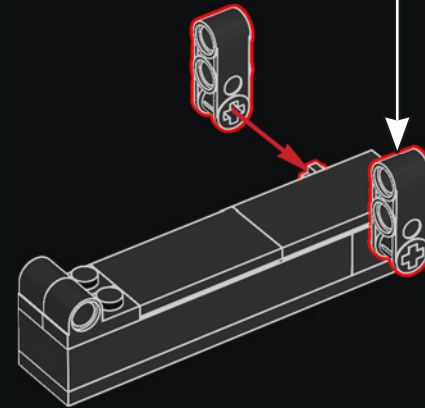
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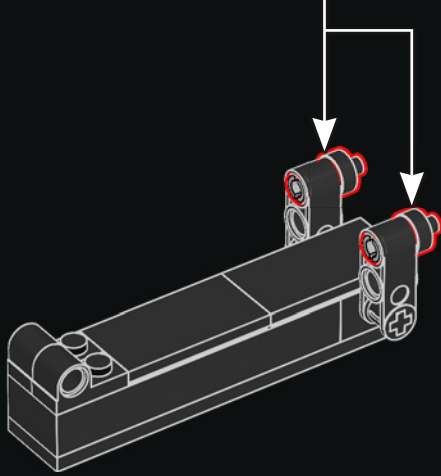
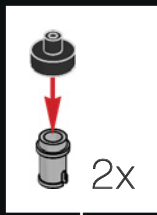


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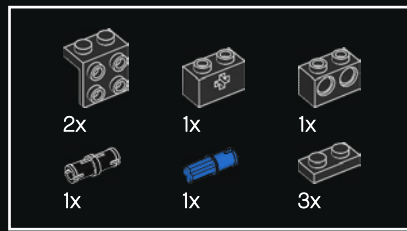
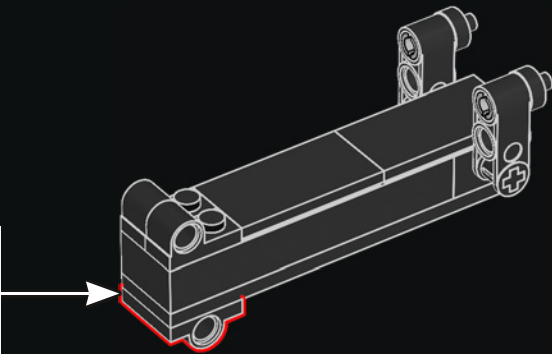




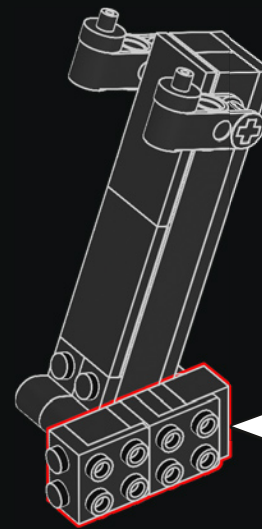
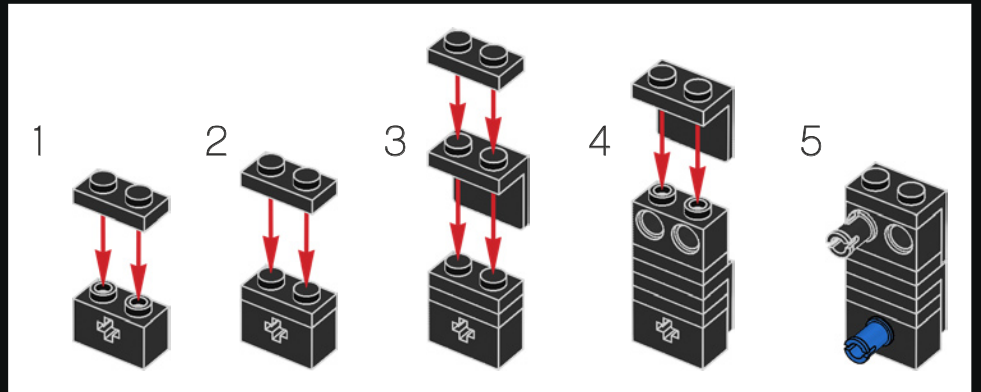
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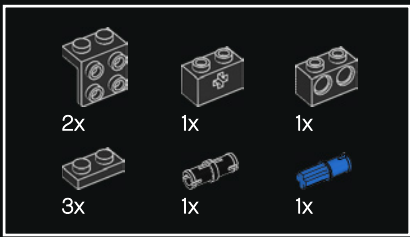


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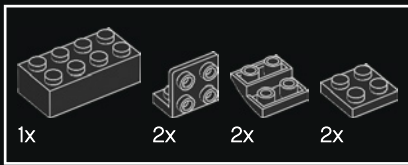
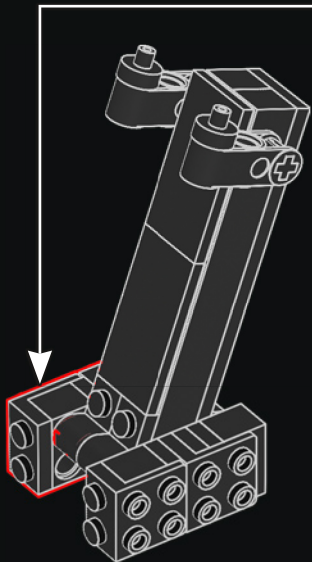
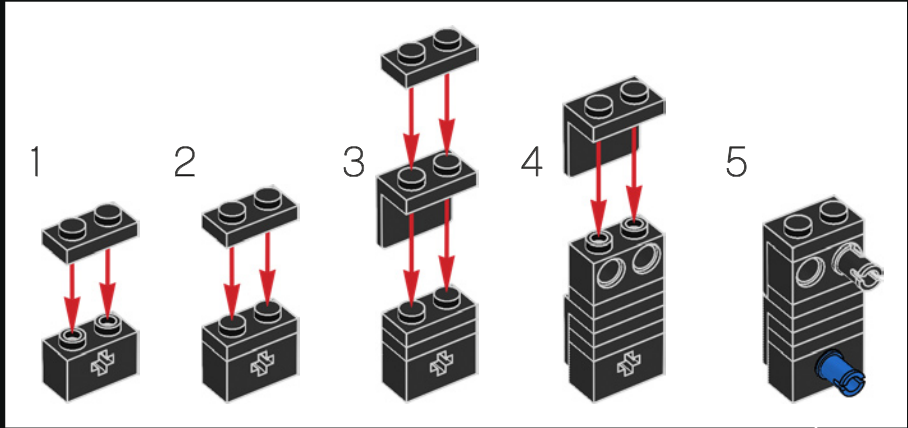


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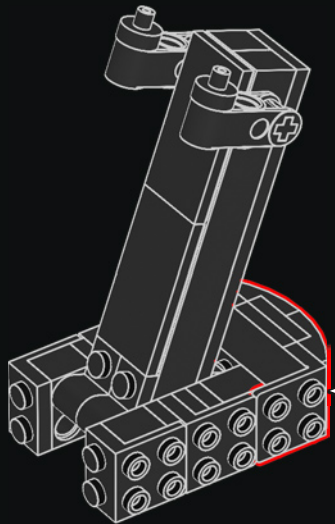
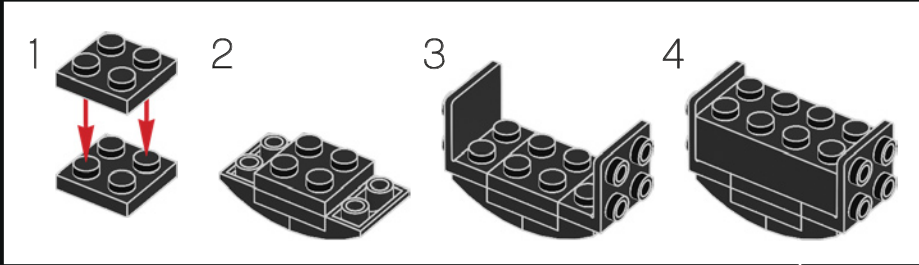


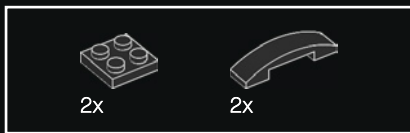


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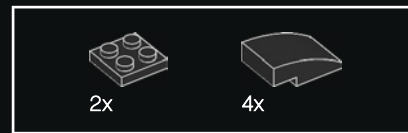
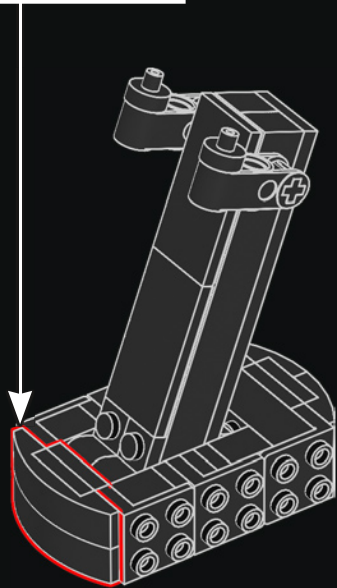
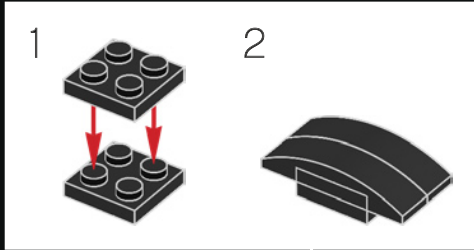


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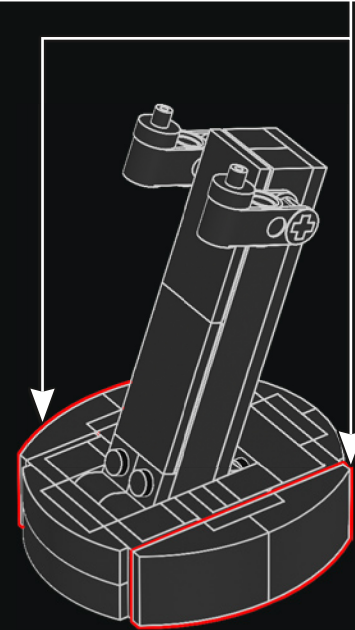
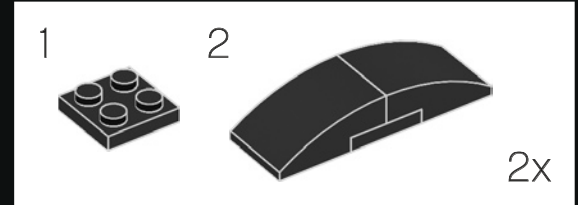




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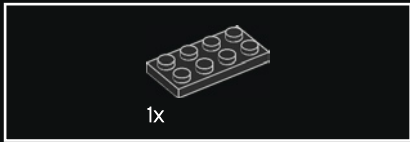
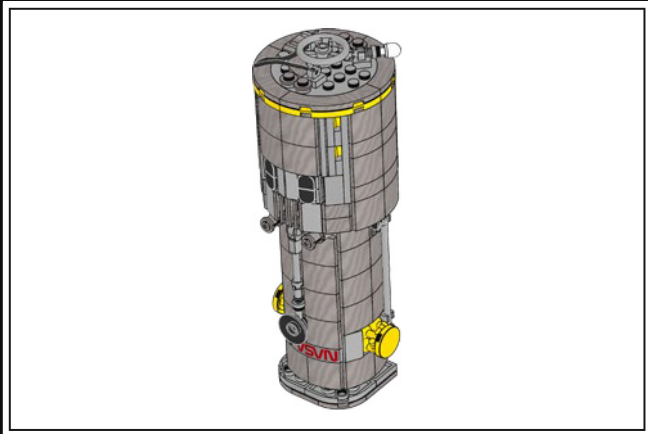
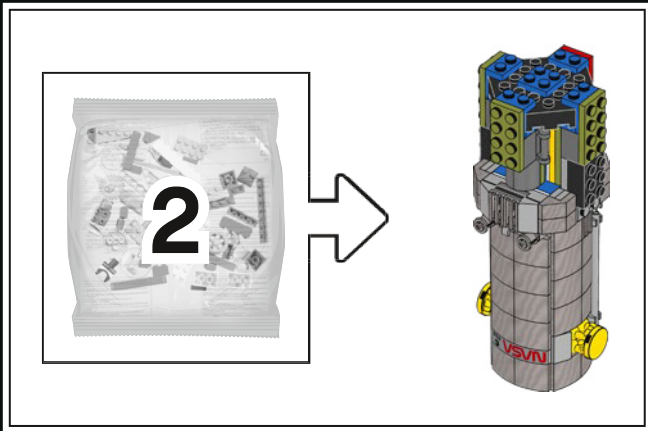


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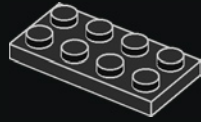


LE SAVIEZ-VOUS ?

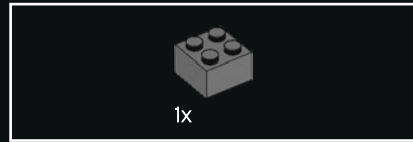
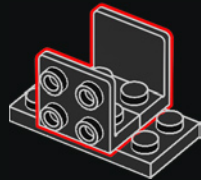
Conçu dans les années 1940, le télescope spatial Hubble n'a été lancé que plusieurs décennies plus tard, en 1990.



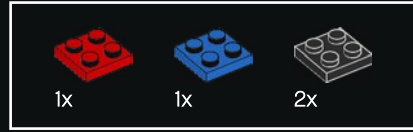
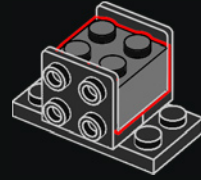
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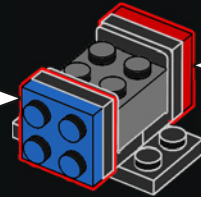
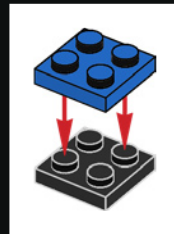
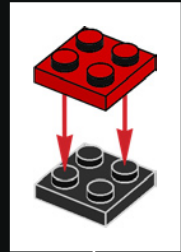
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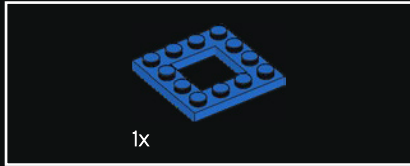
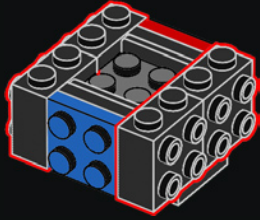


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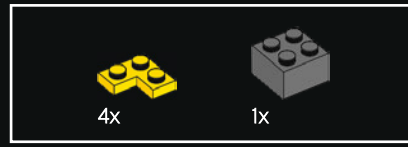
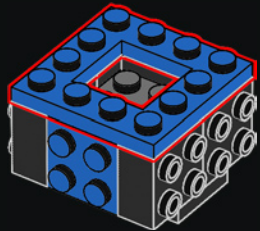




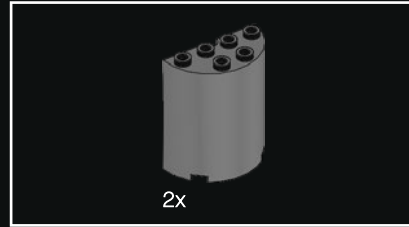
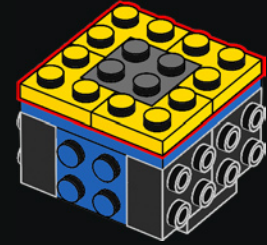
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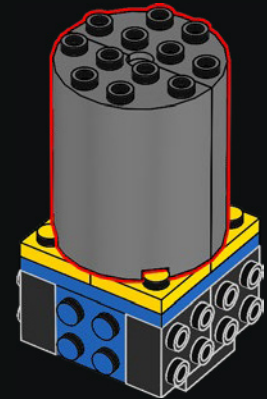
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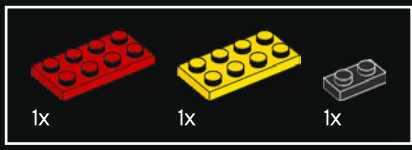


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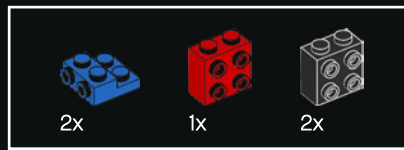
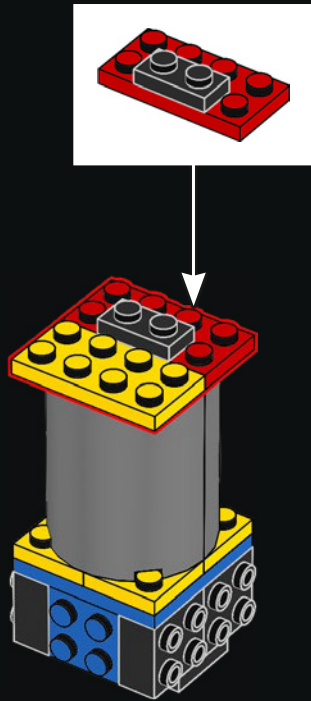


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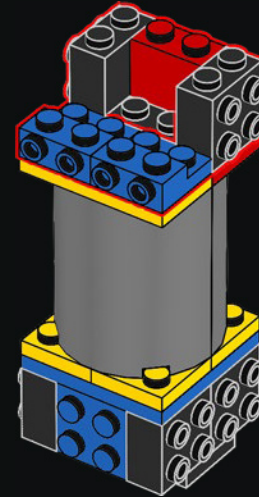




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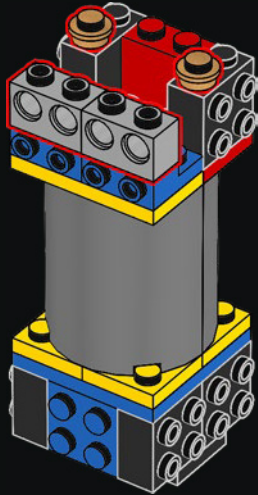


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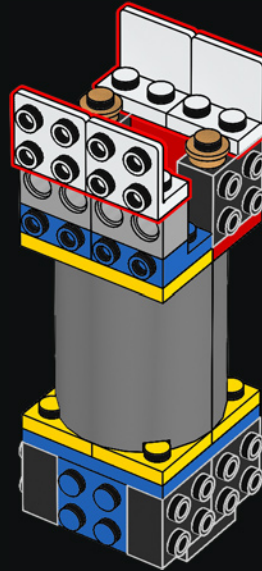


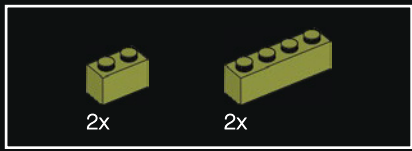


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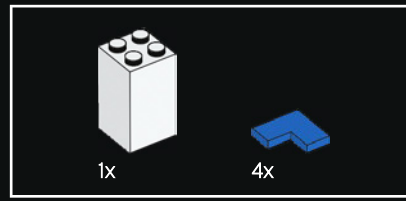
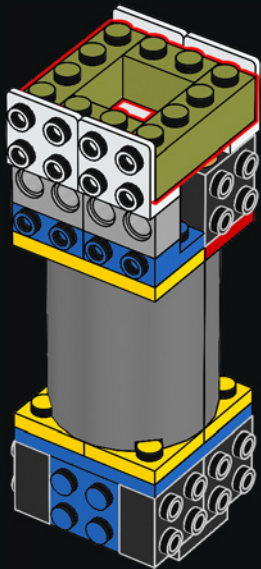


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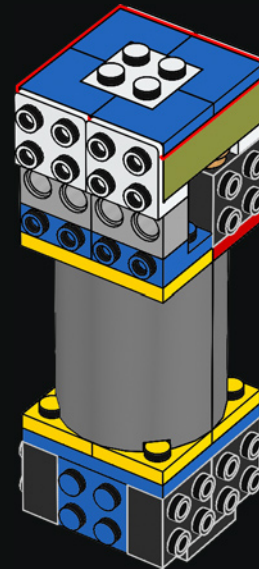


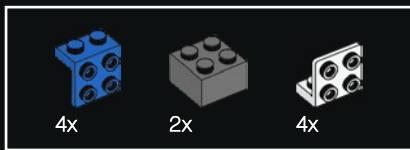


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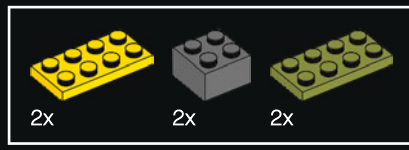
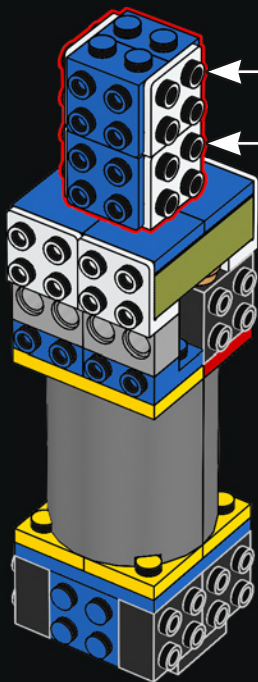
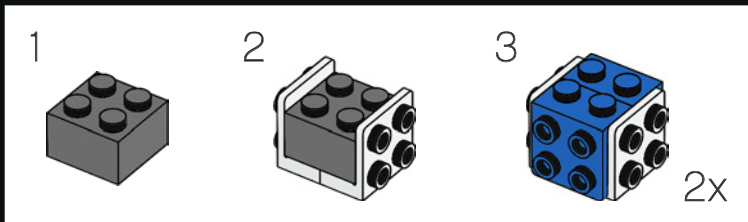


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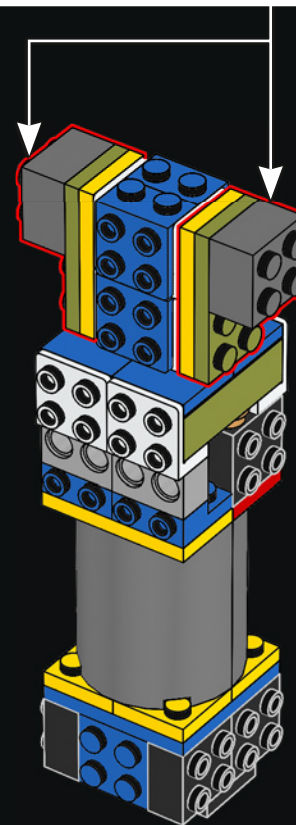
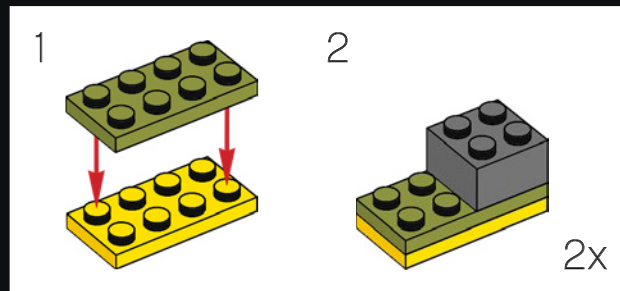


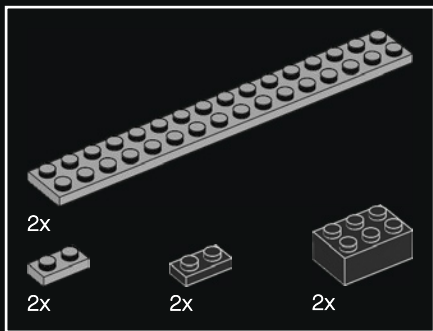


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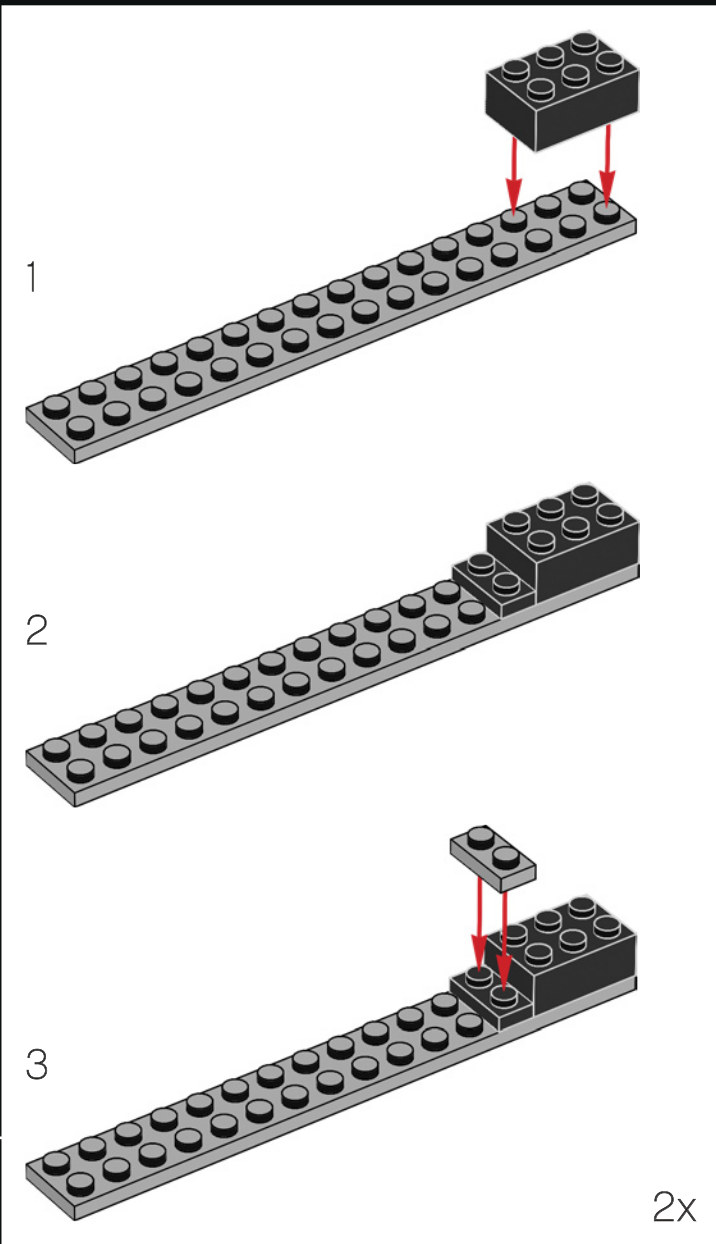
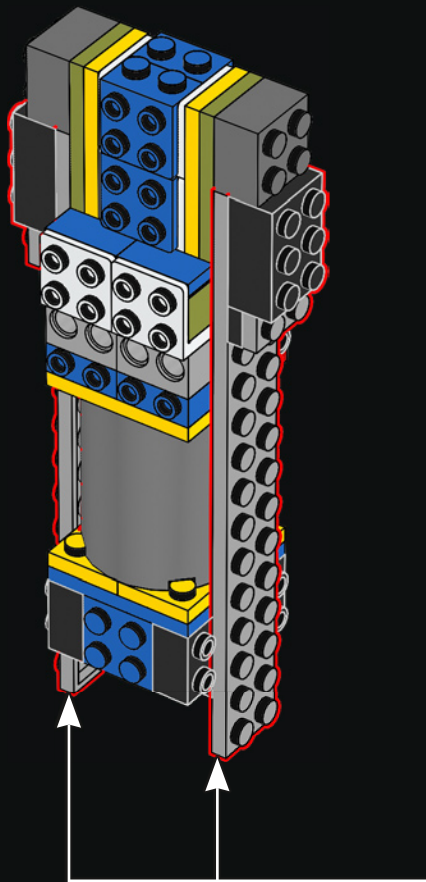


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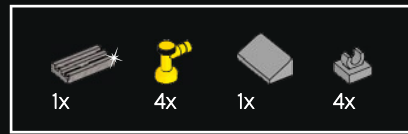
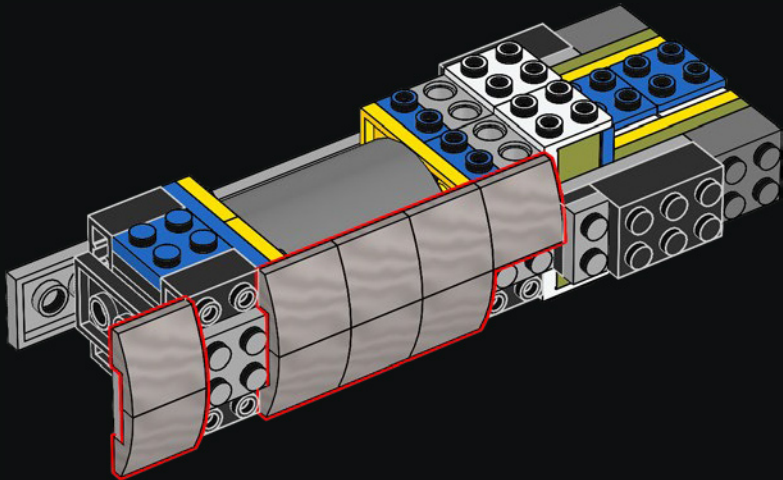


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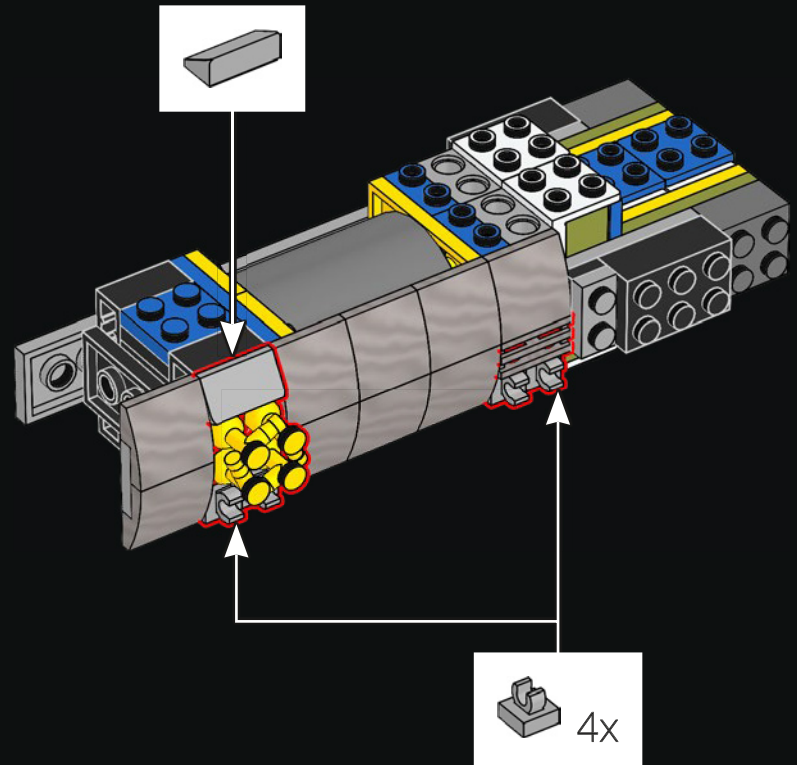




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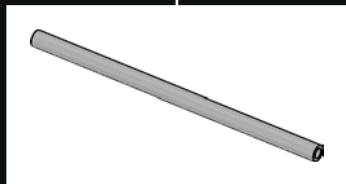
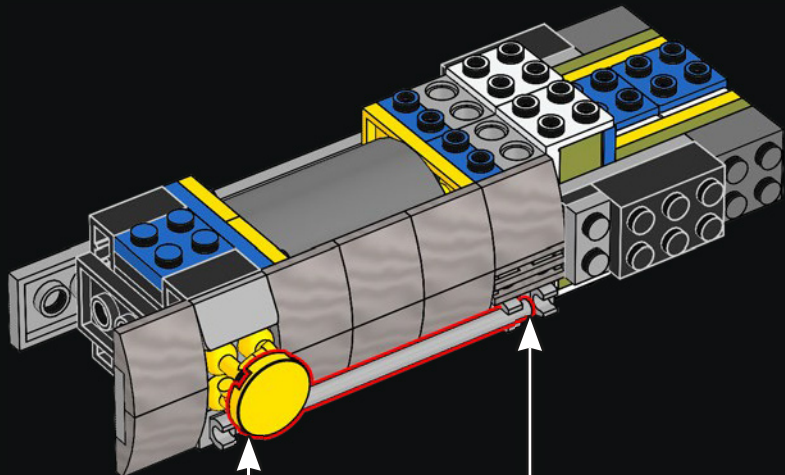


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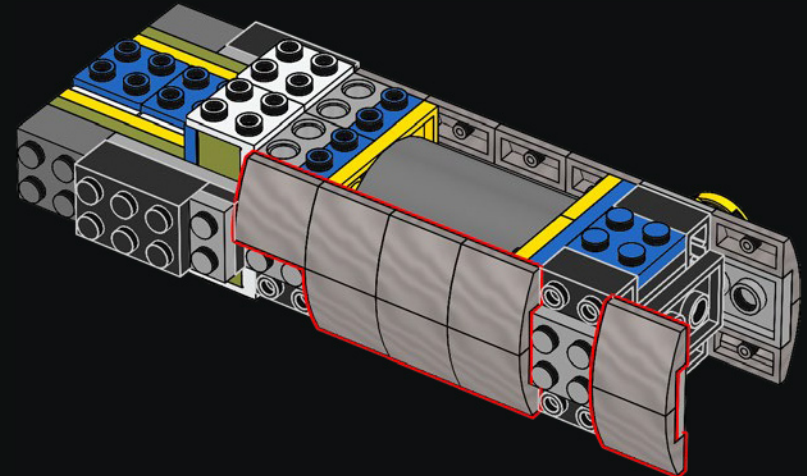


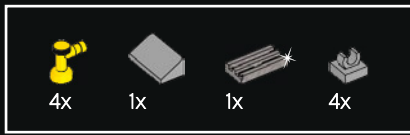


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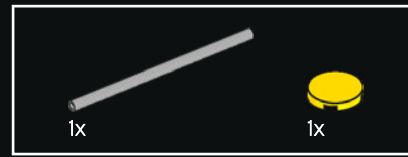
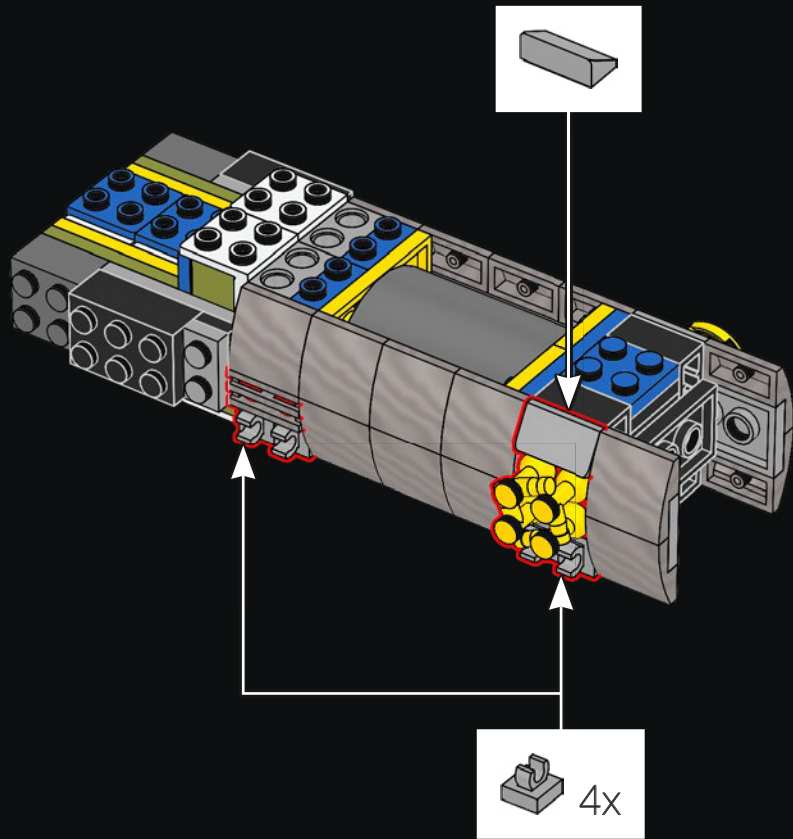


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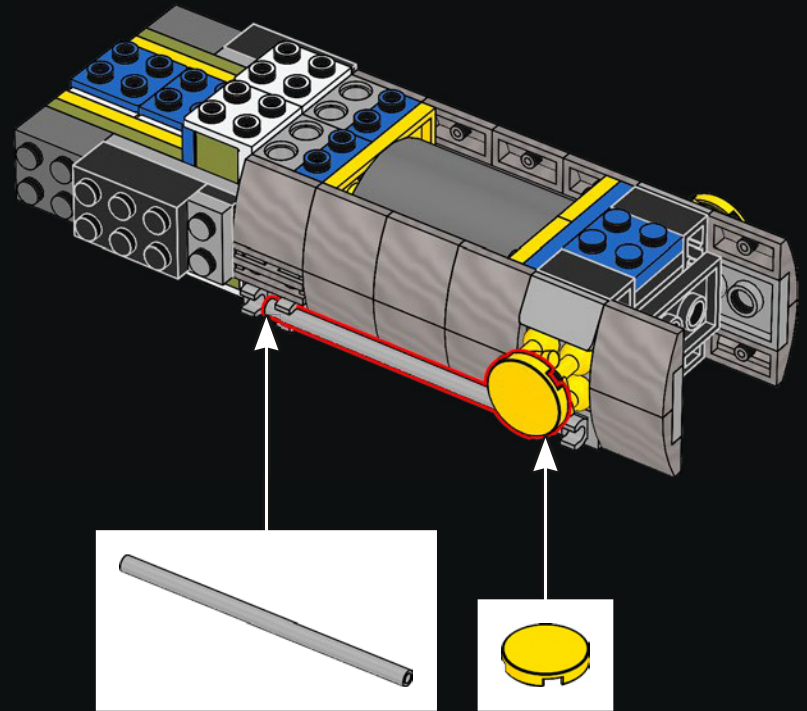


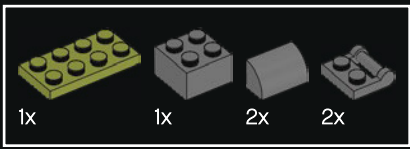


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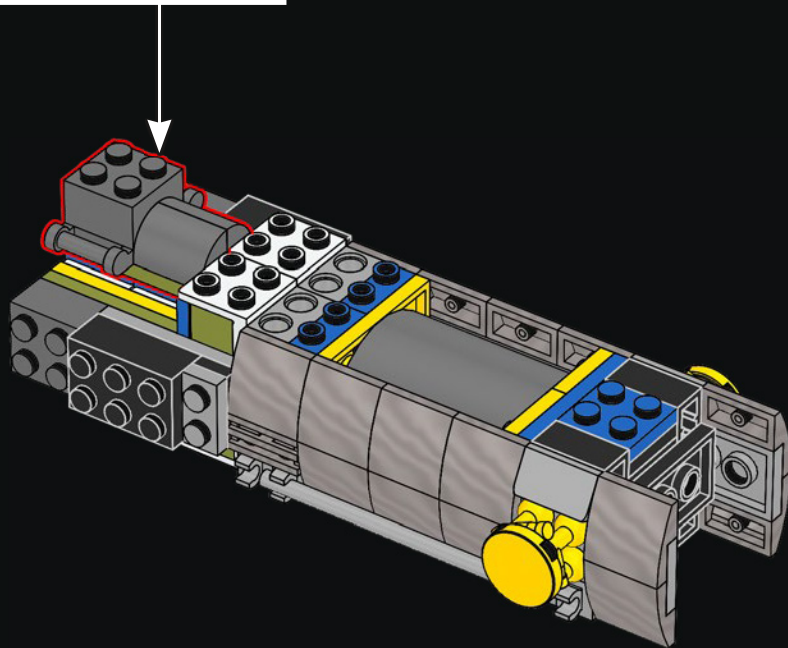
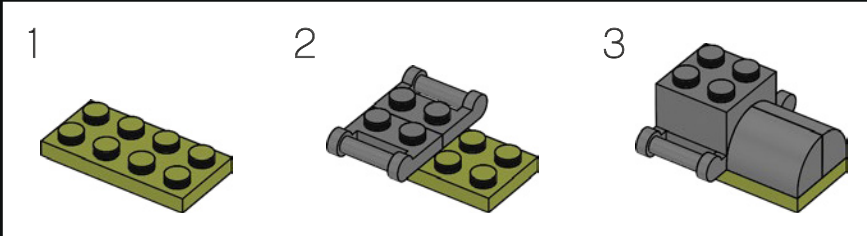


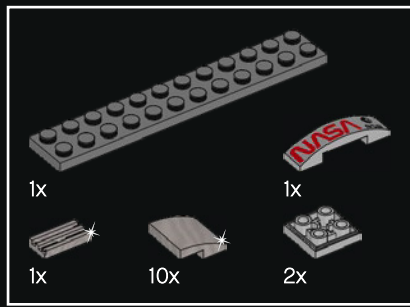
23



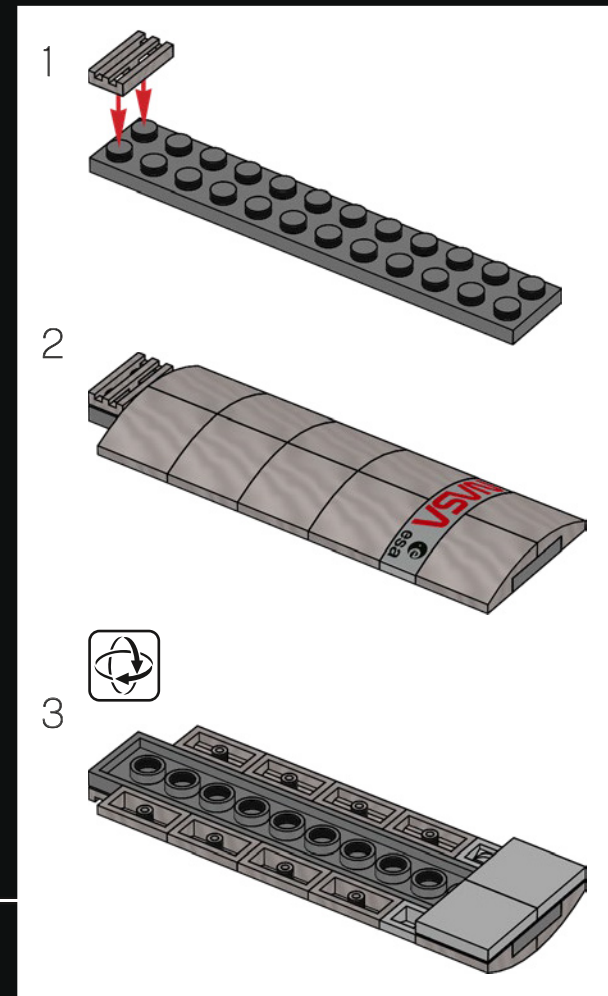
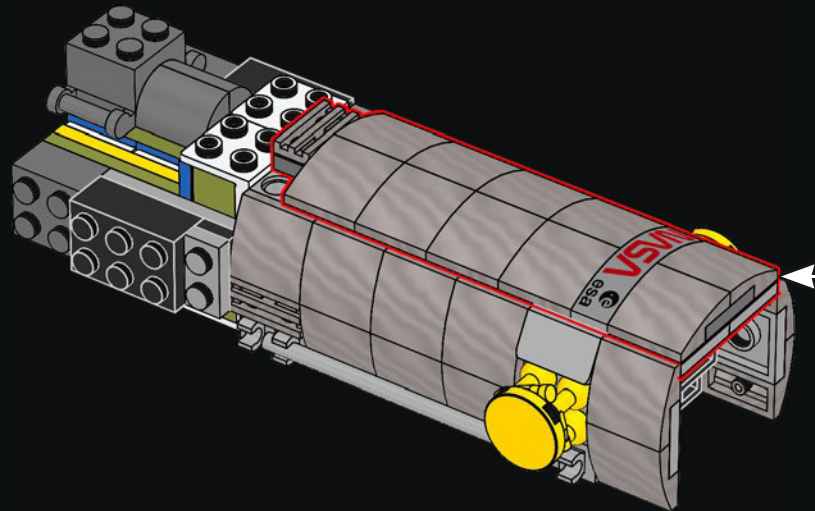


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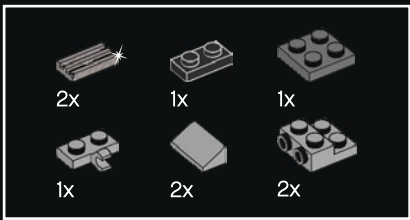


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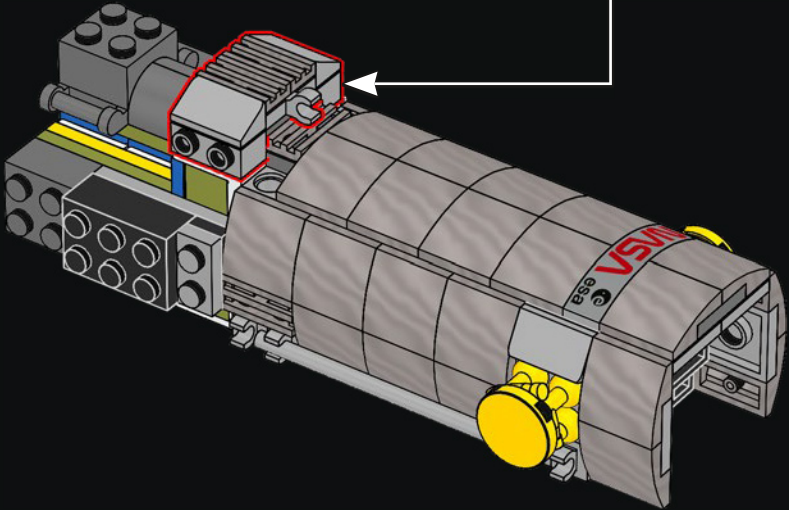
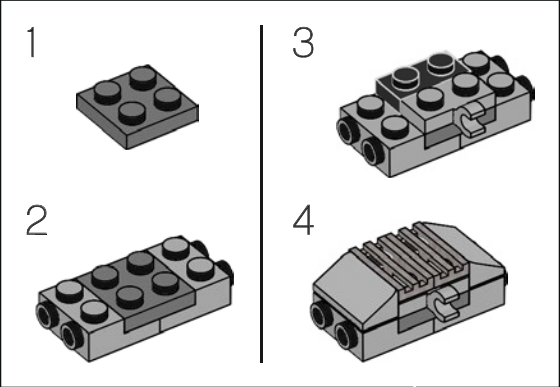


LE SAVIEZ-VOUS ?

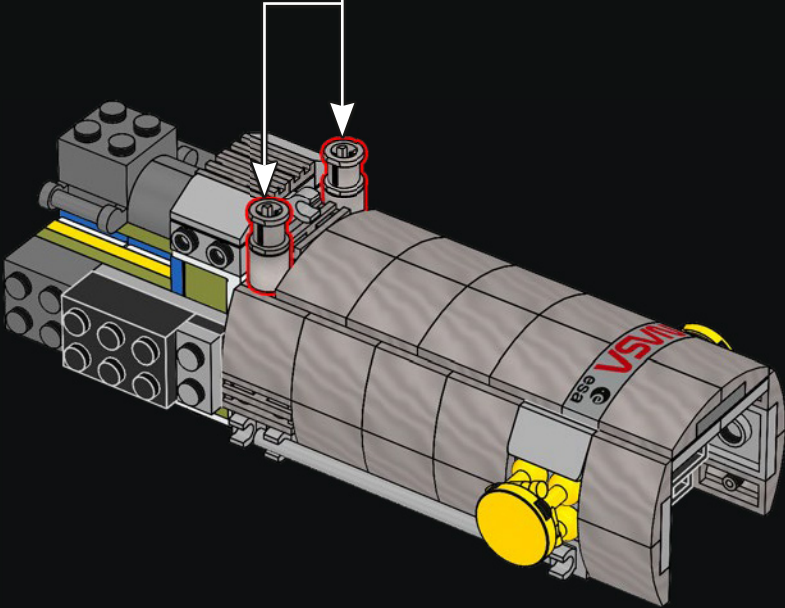
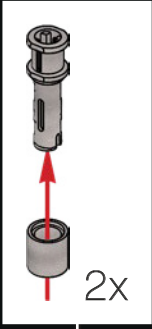
Le télescope spatial tient son nom de l'astronome américain Edwin Hubble (1889-1953).

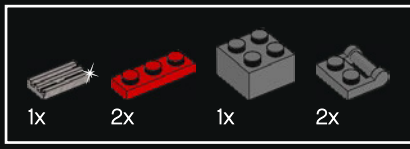


26

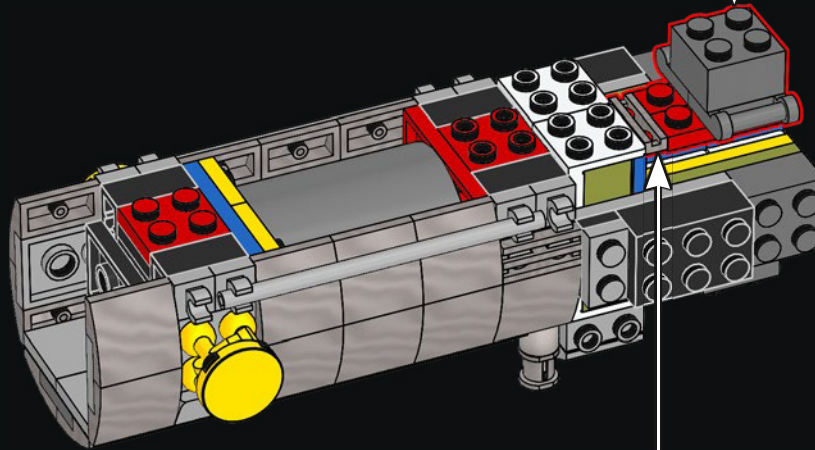
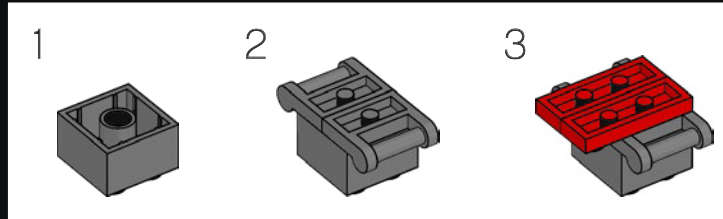


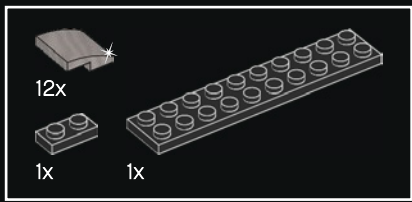
27



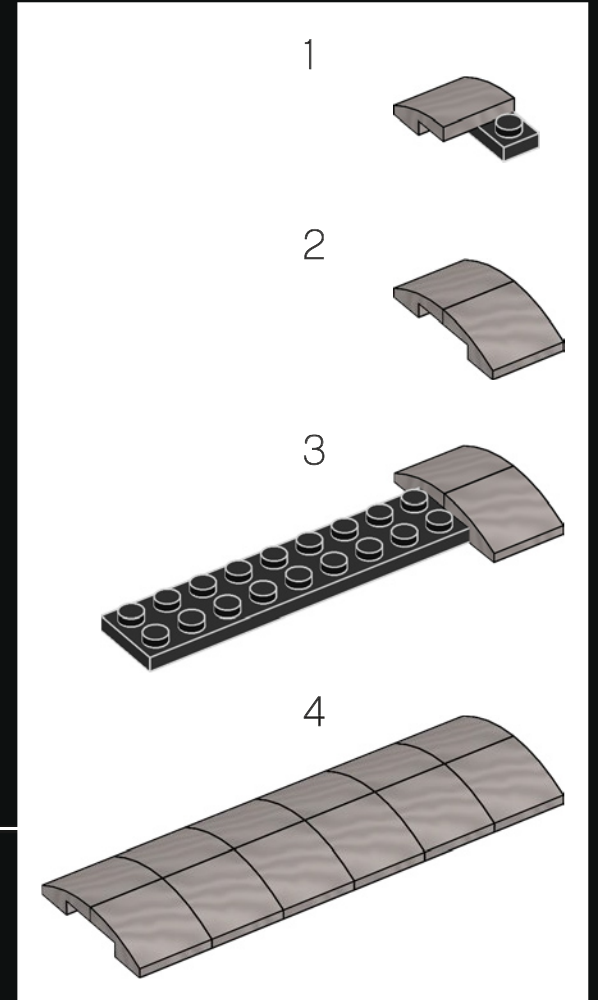
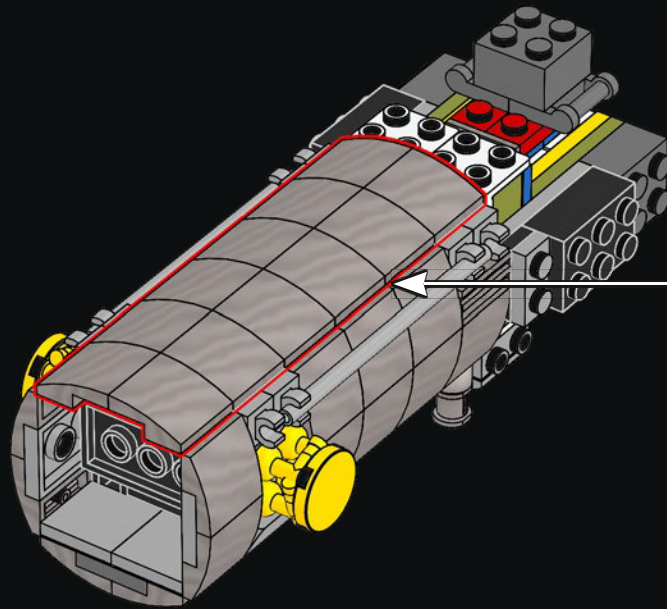


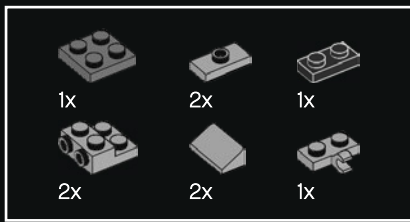
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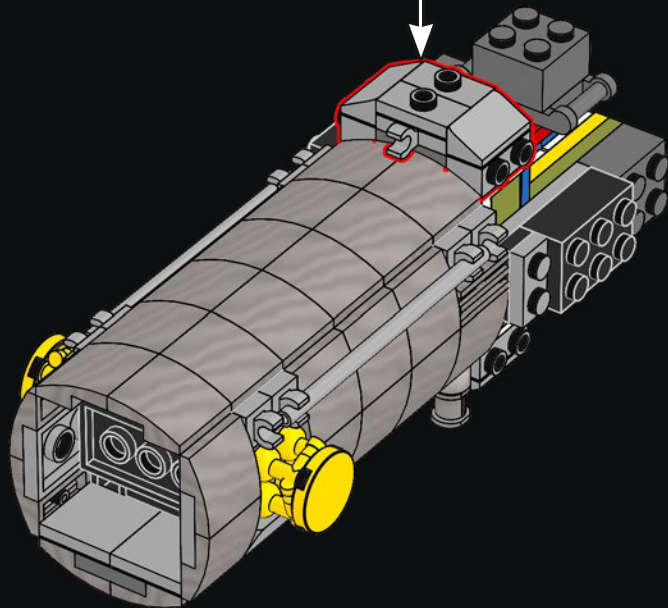
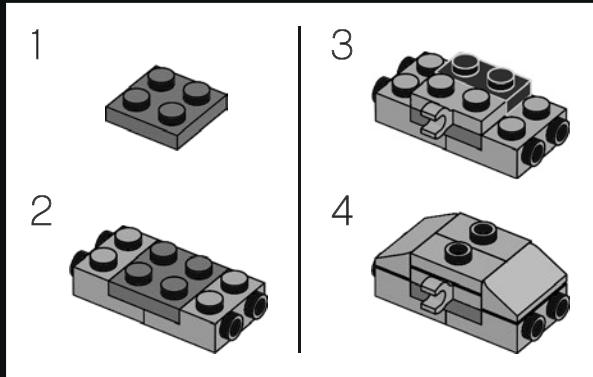


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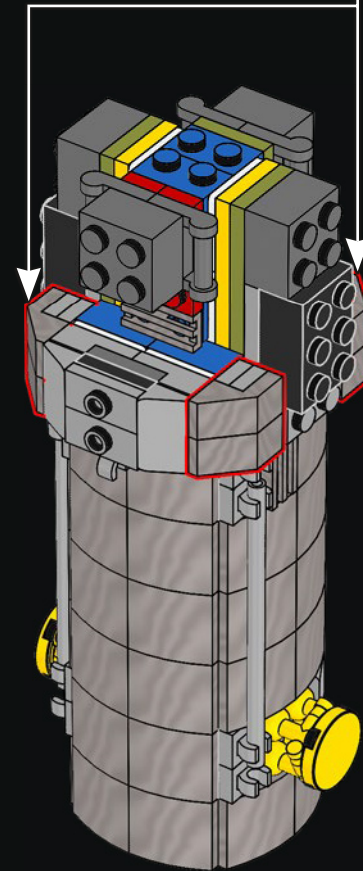
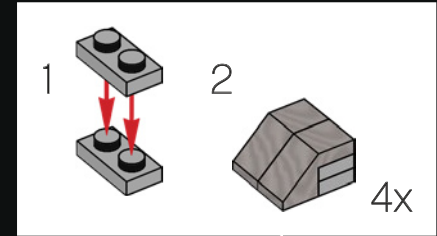


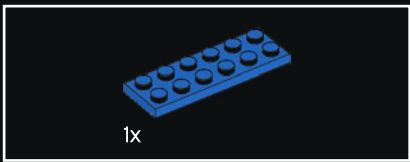


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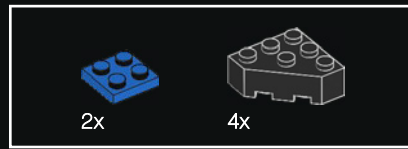
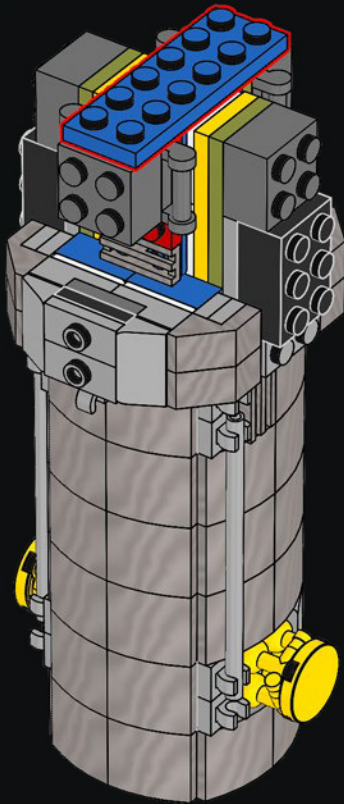


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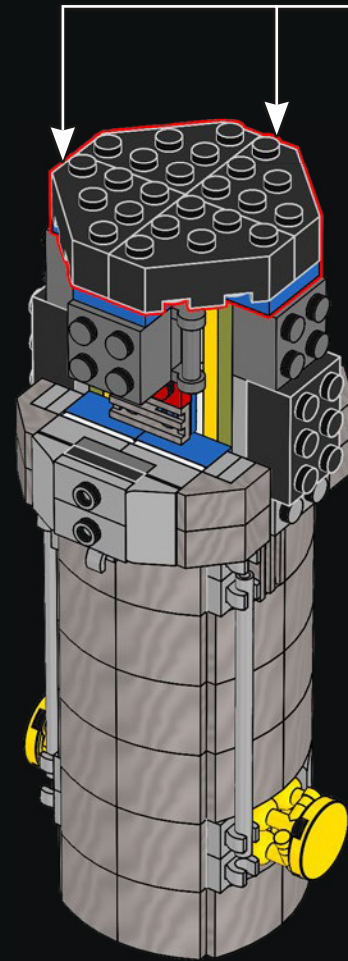
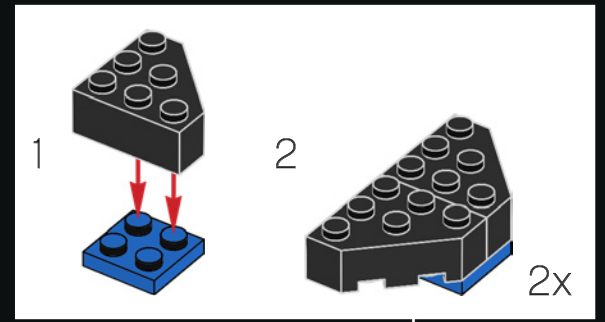


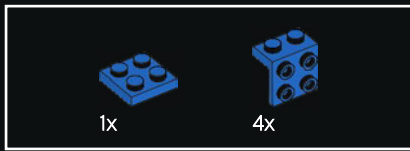


32

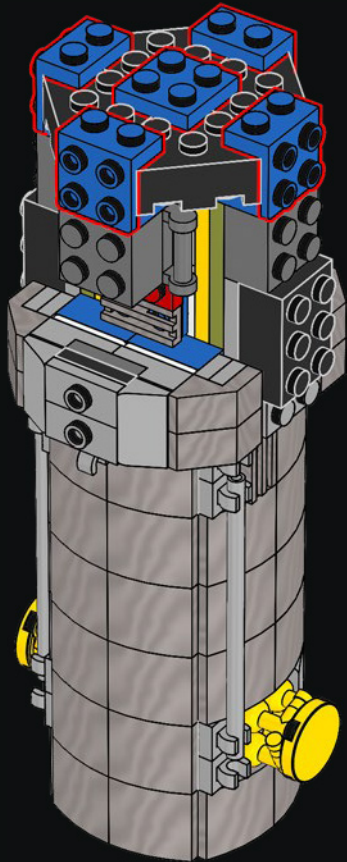


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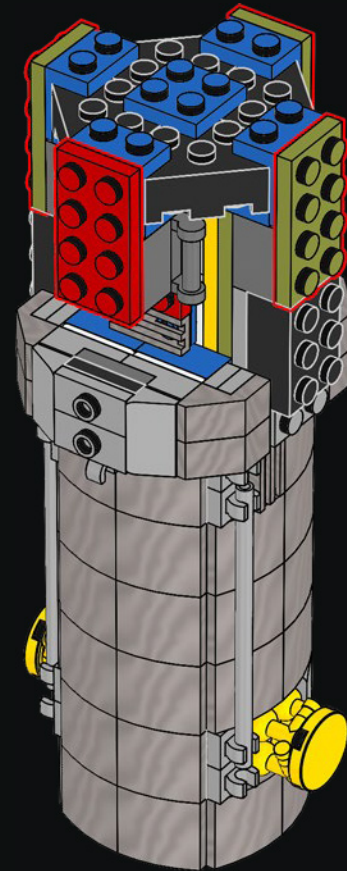




34

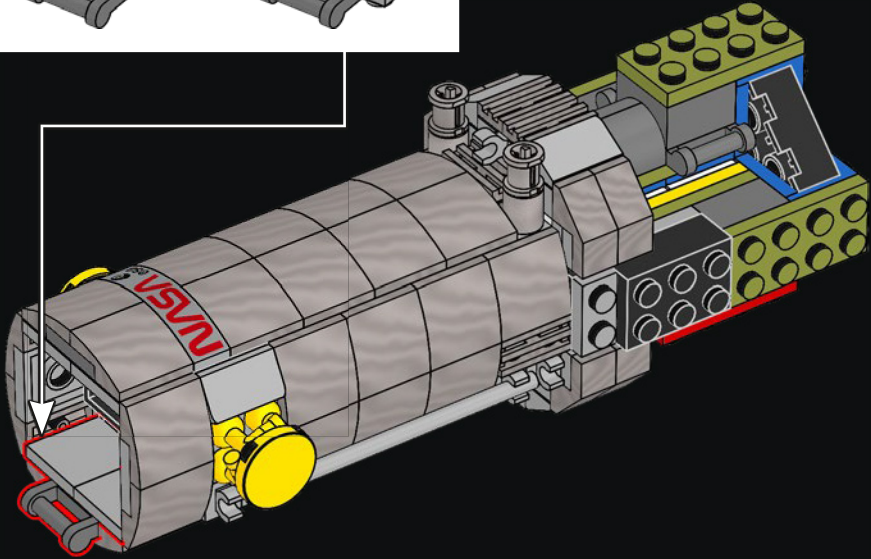
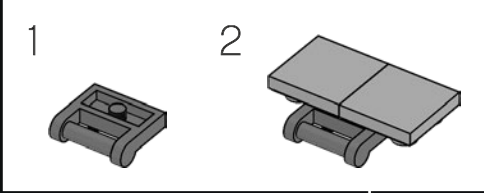


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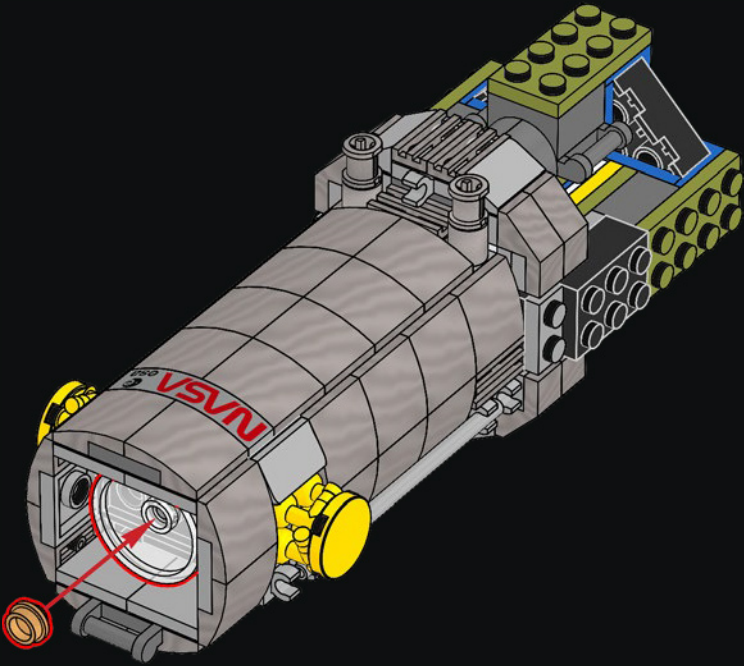


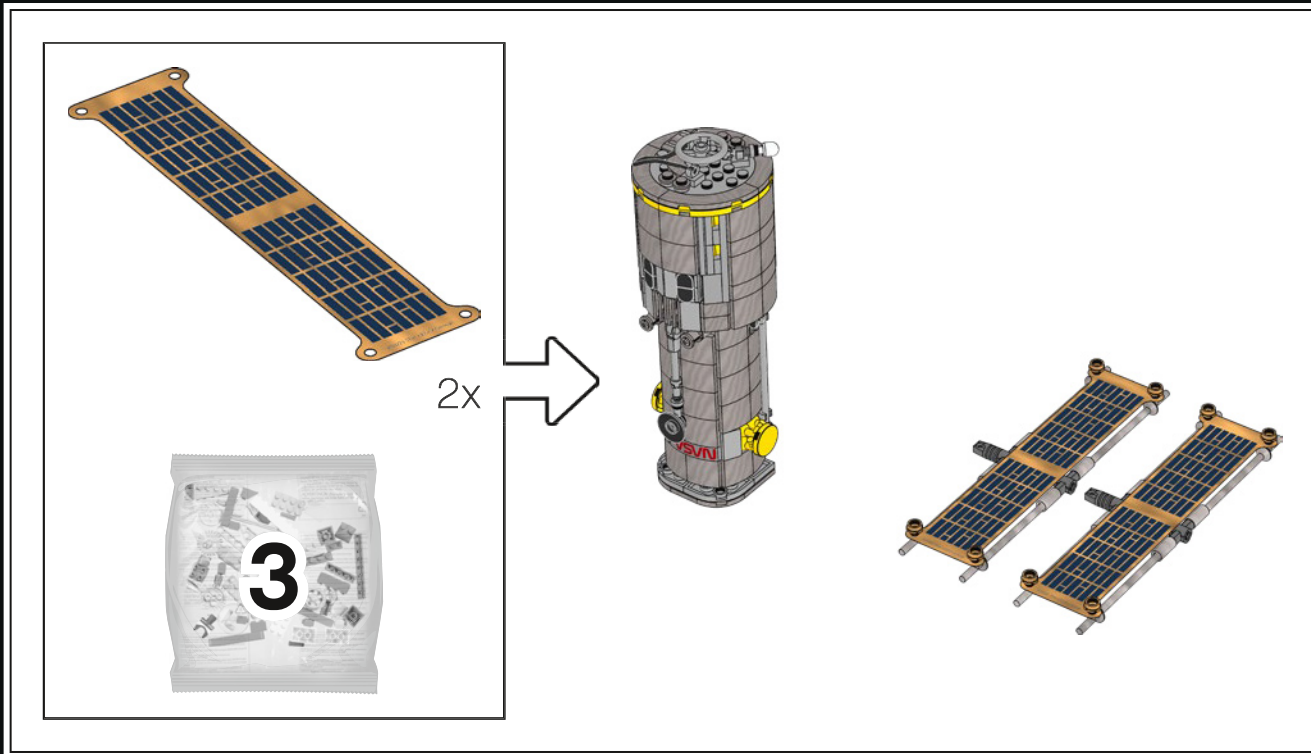


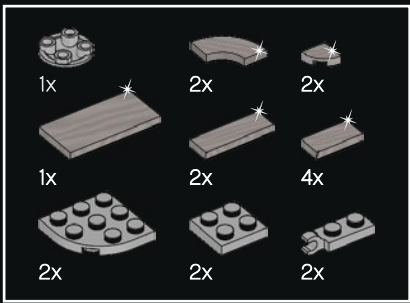
36



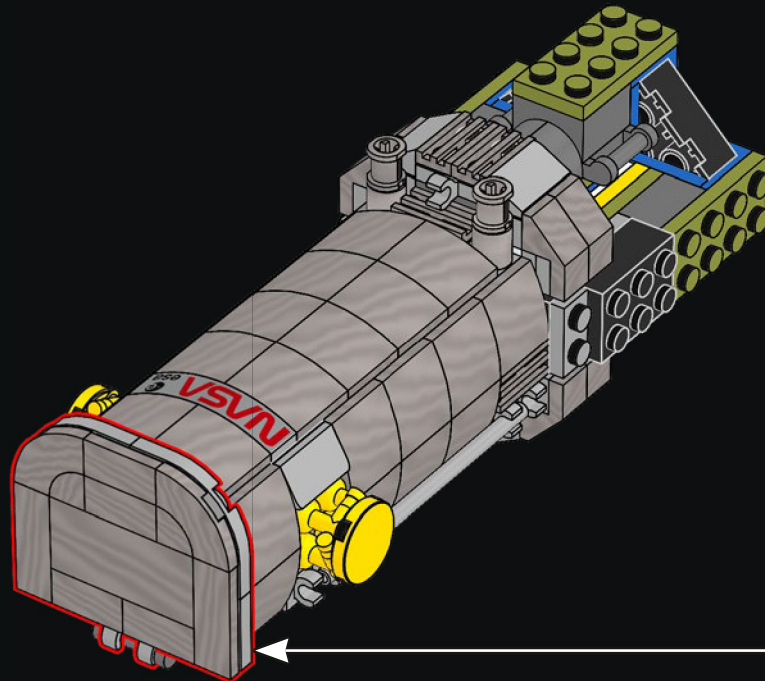
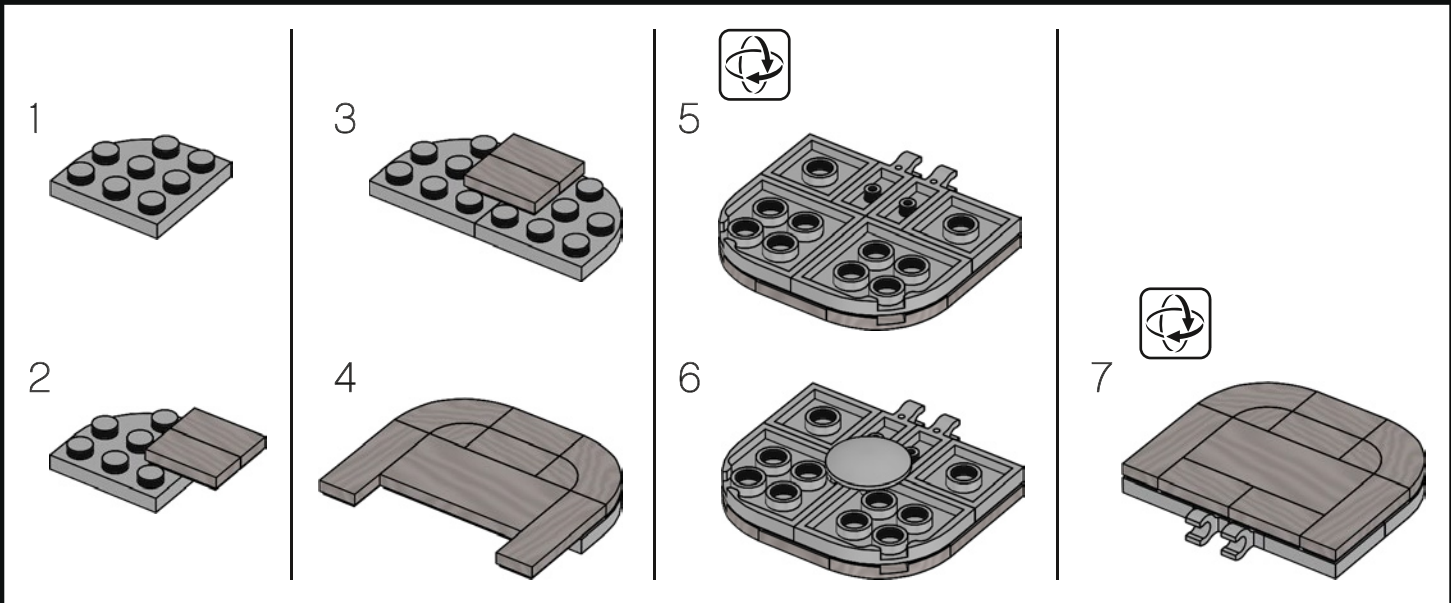
37





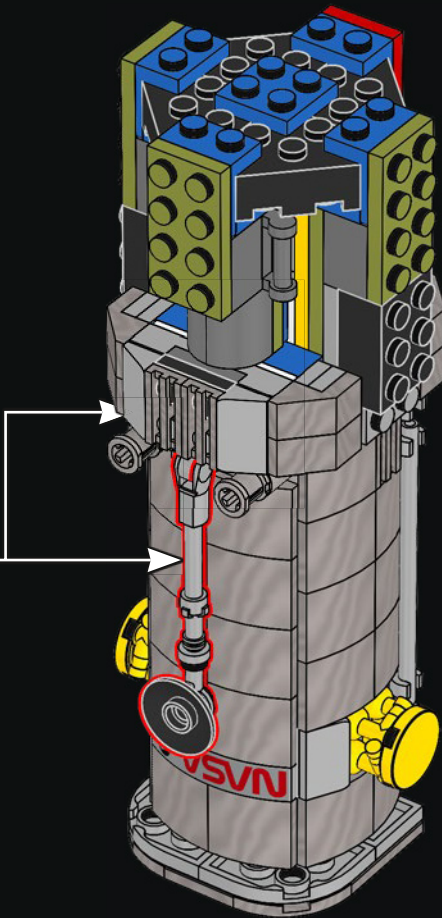
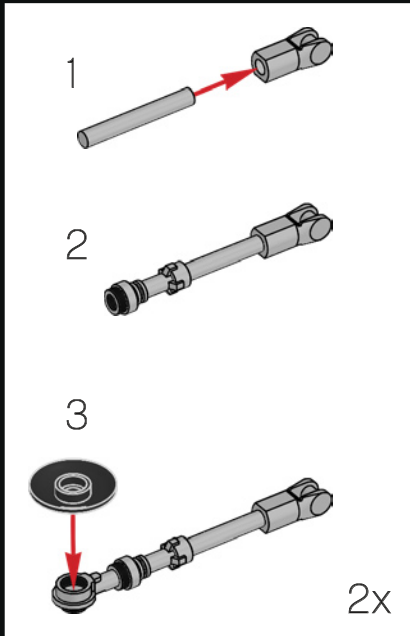


38

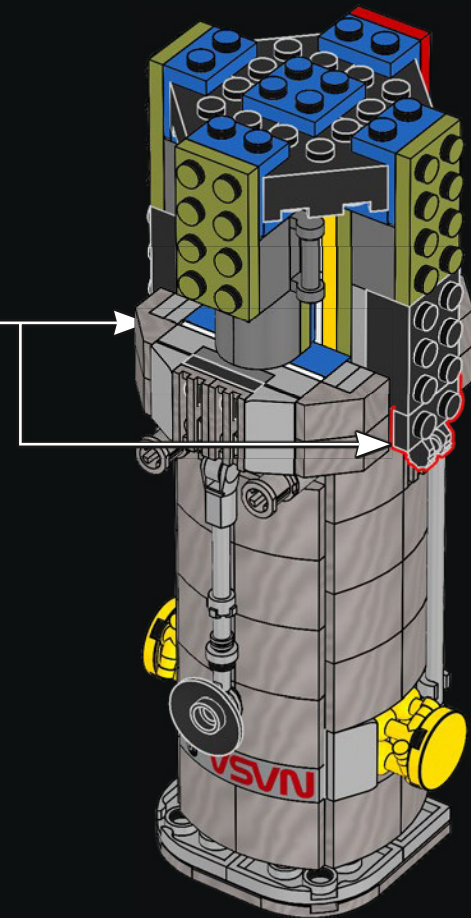


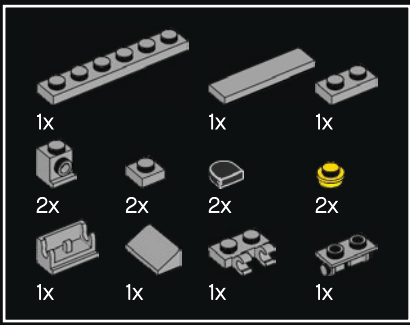


39



40



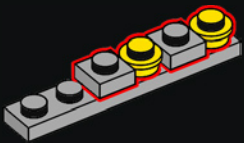


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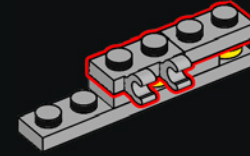
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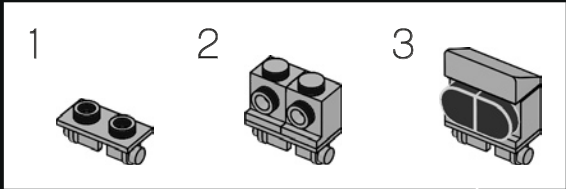
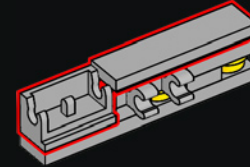
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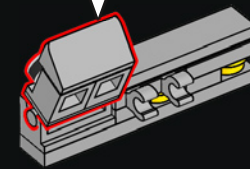
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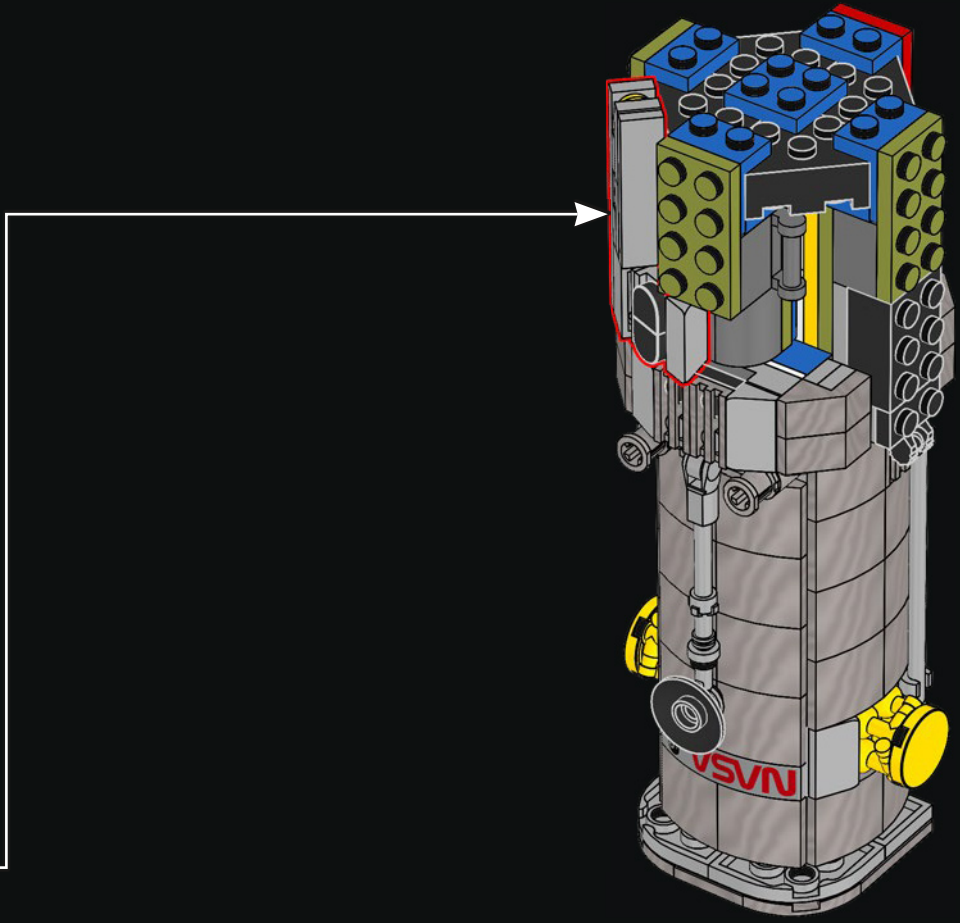


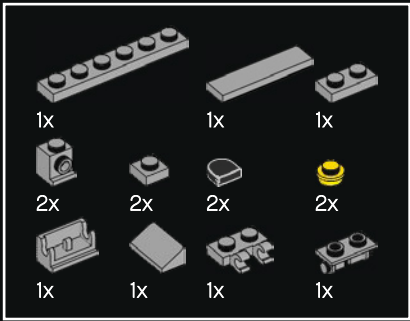
4



5





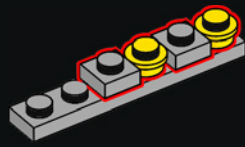


42

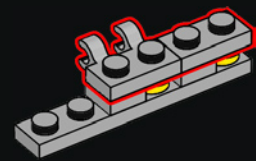
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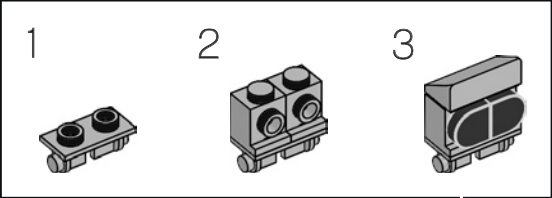
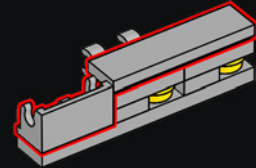
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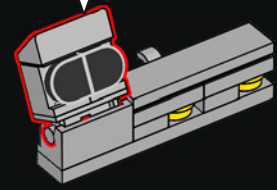
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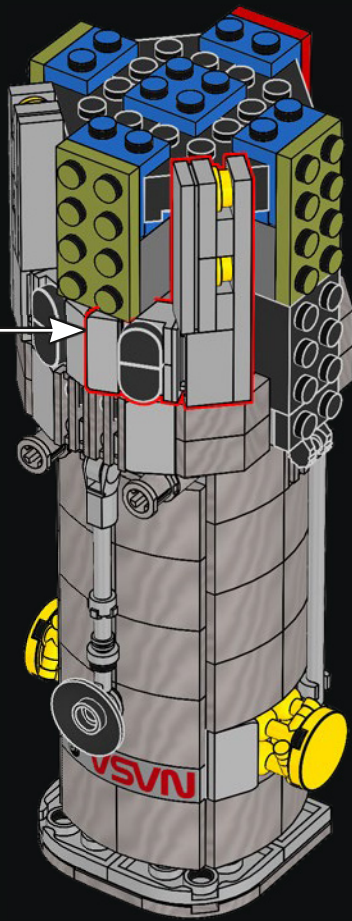


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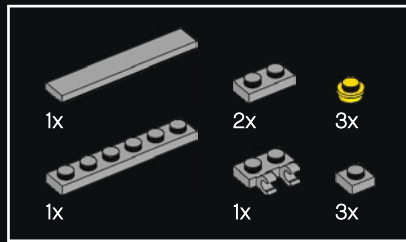
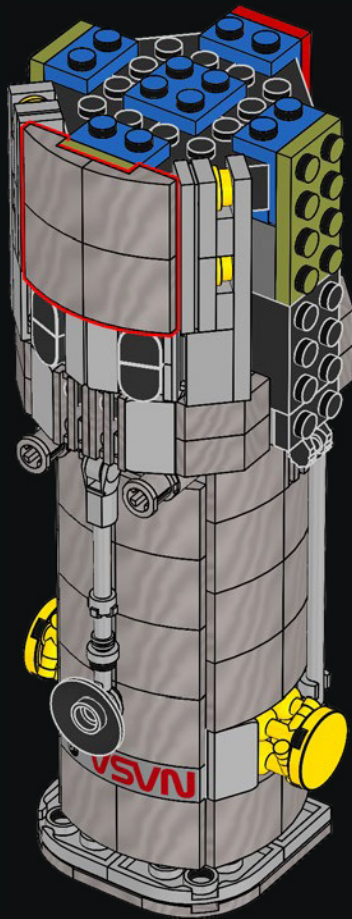
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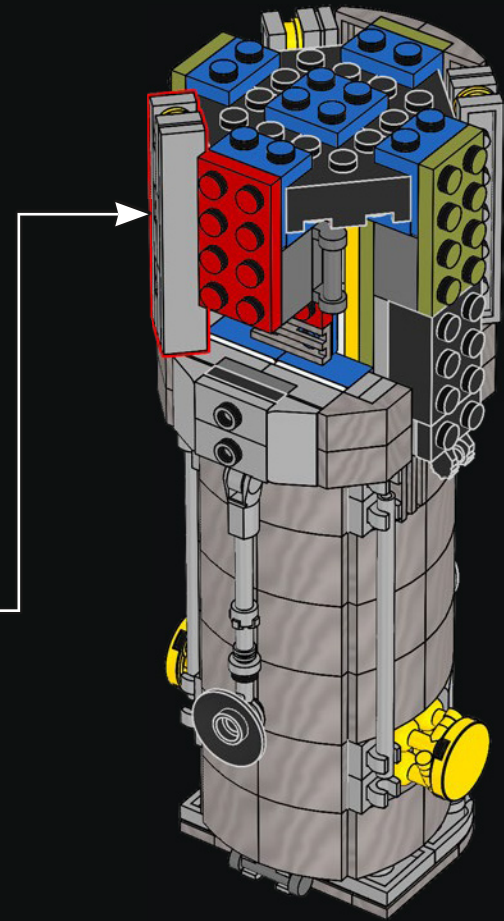
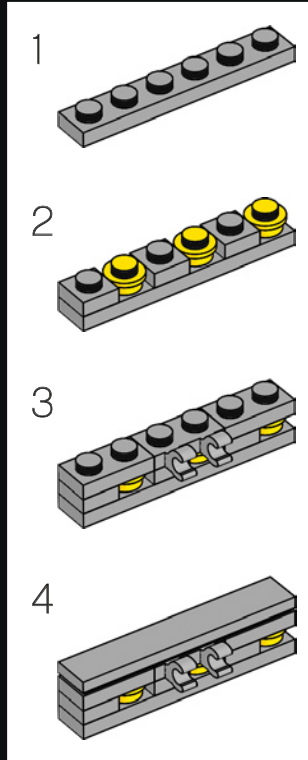


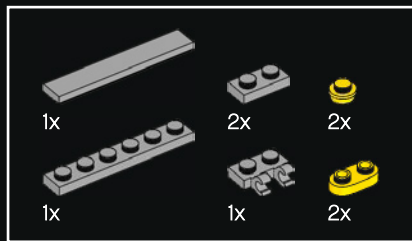


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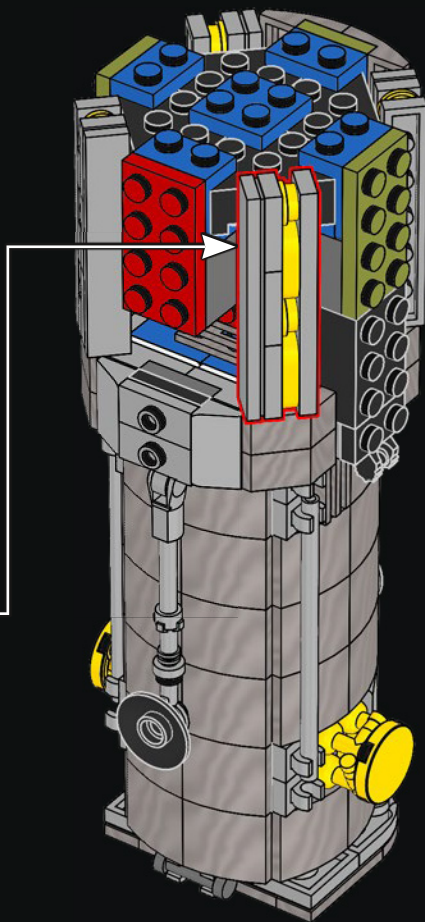
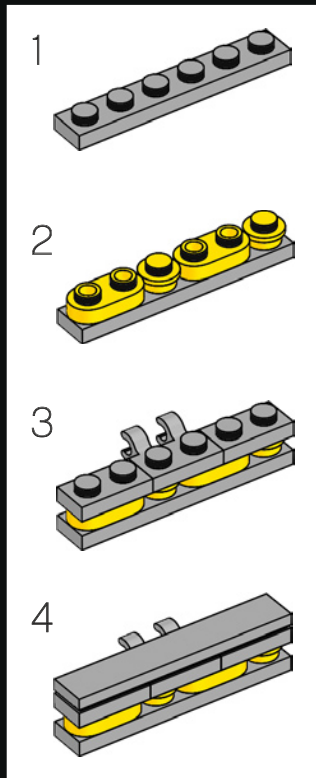


44

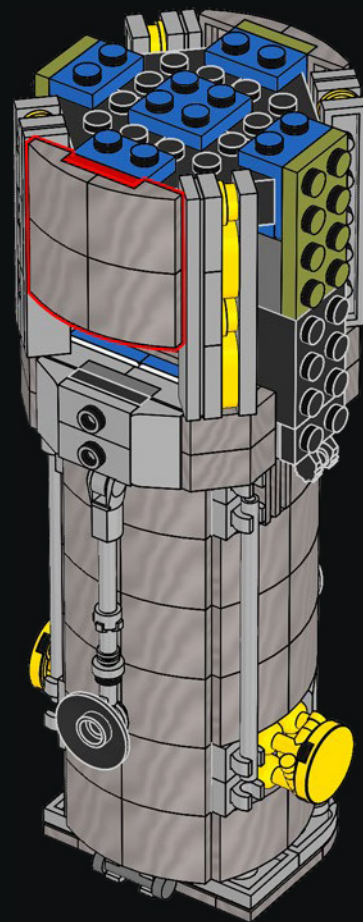


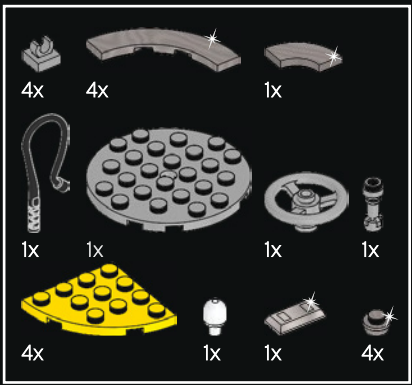


45



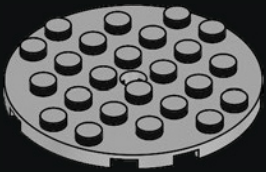
46



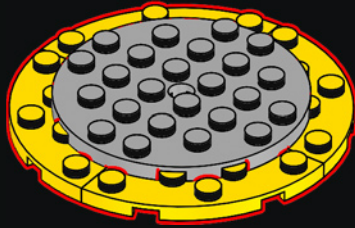


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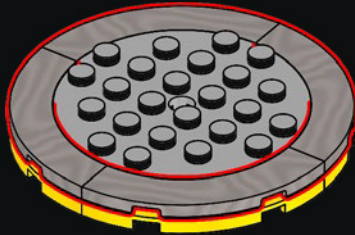
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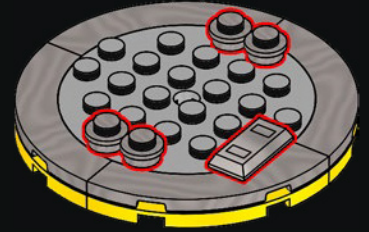
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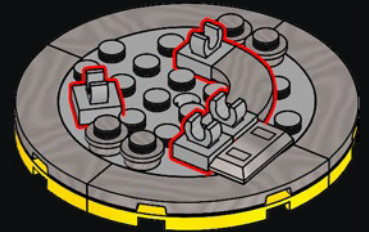
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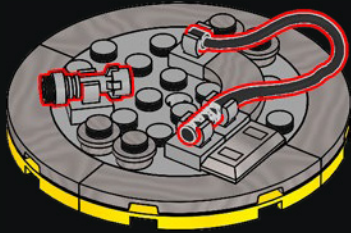
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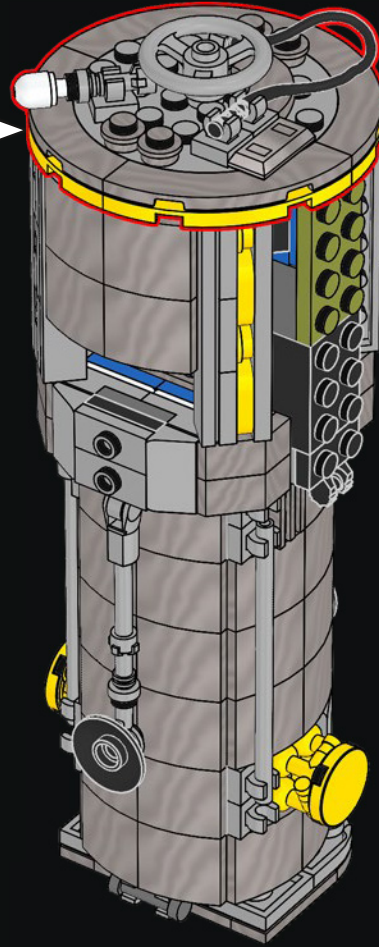
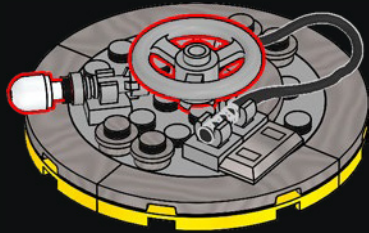
5



6

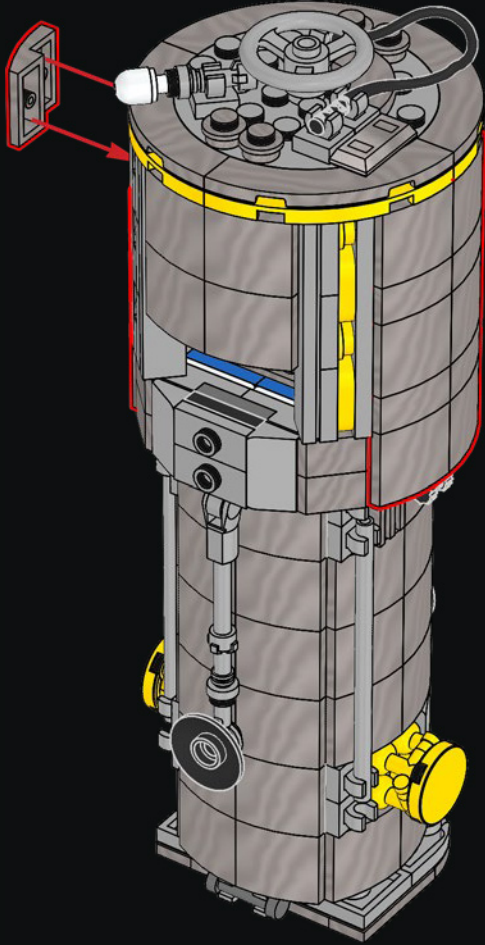


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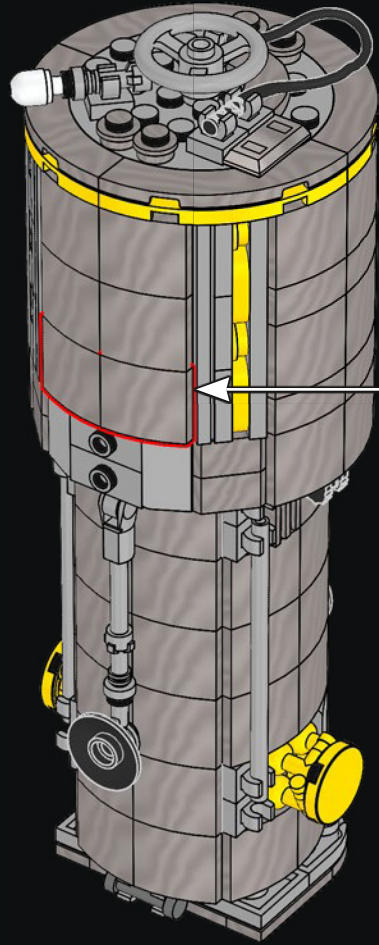
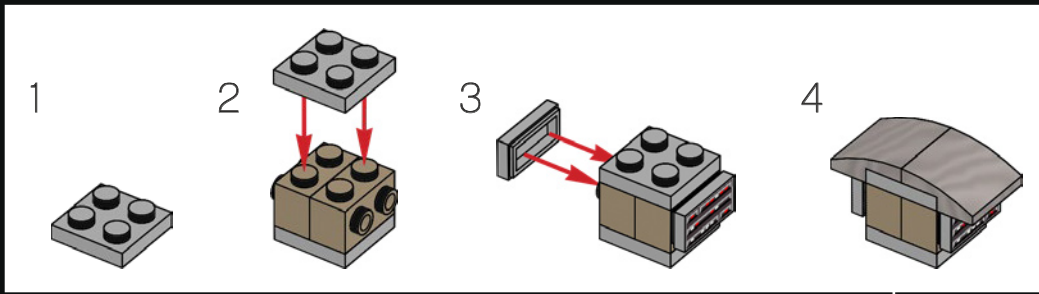


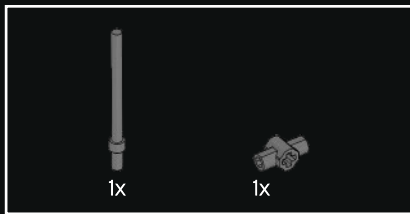
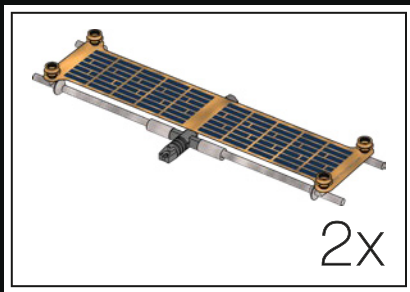
48



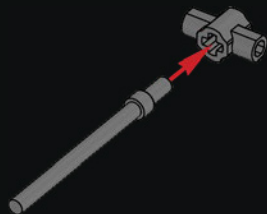


49

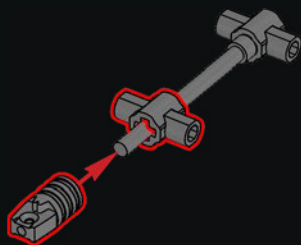




50



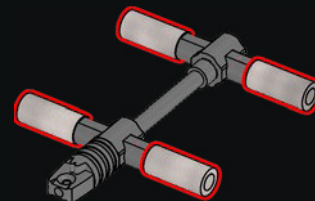
51



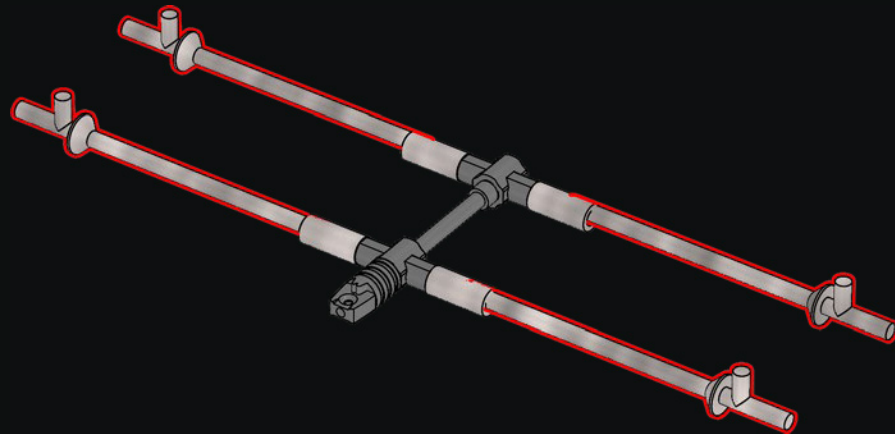
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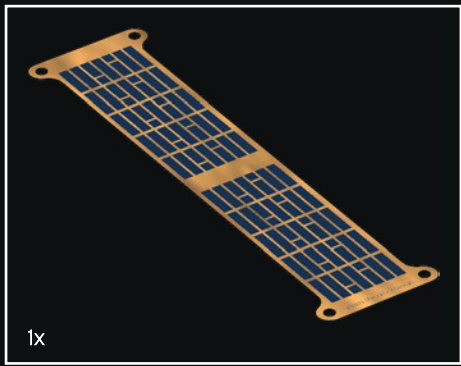


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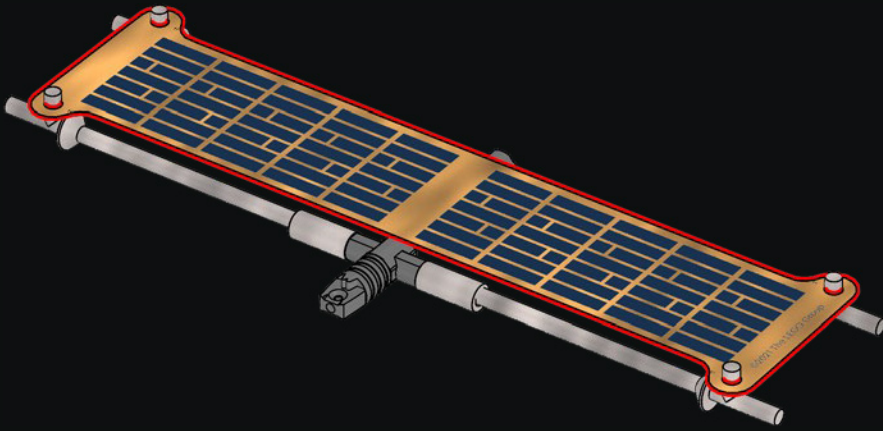


53

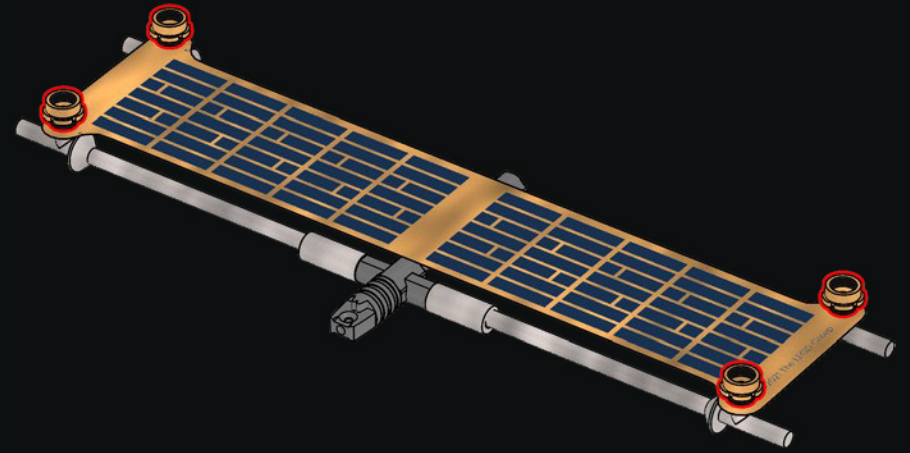




54



55

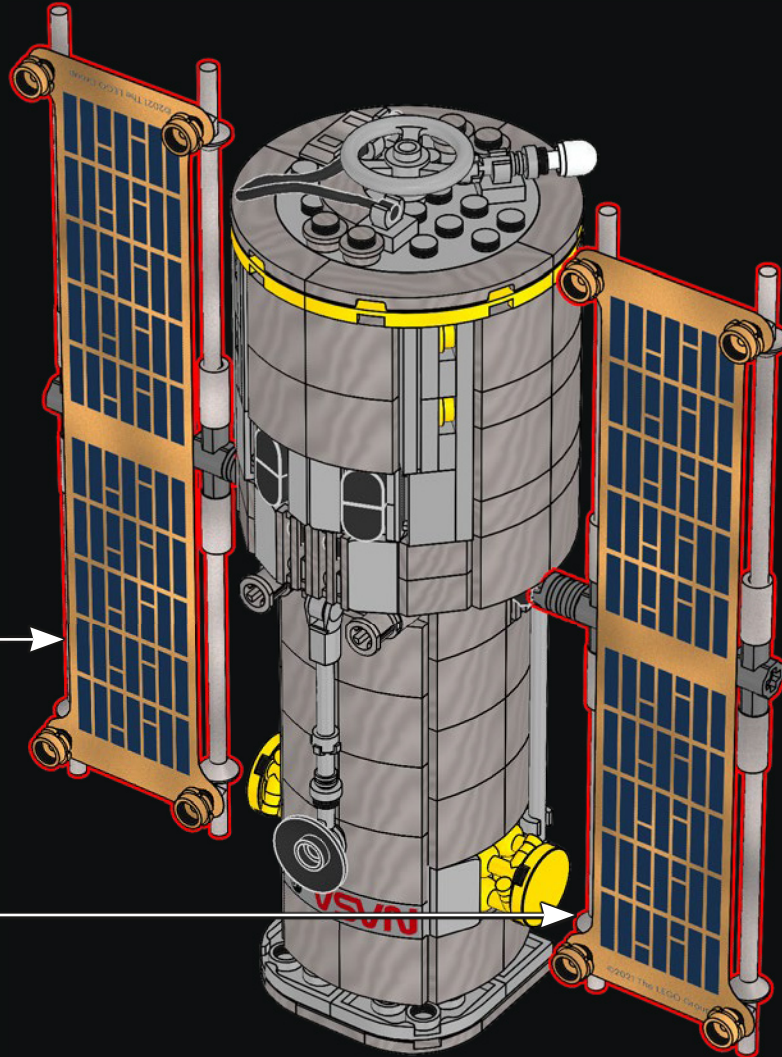


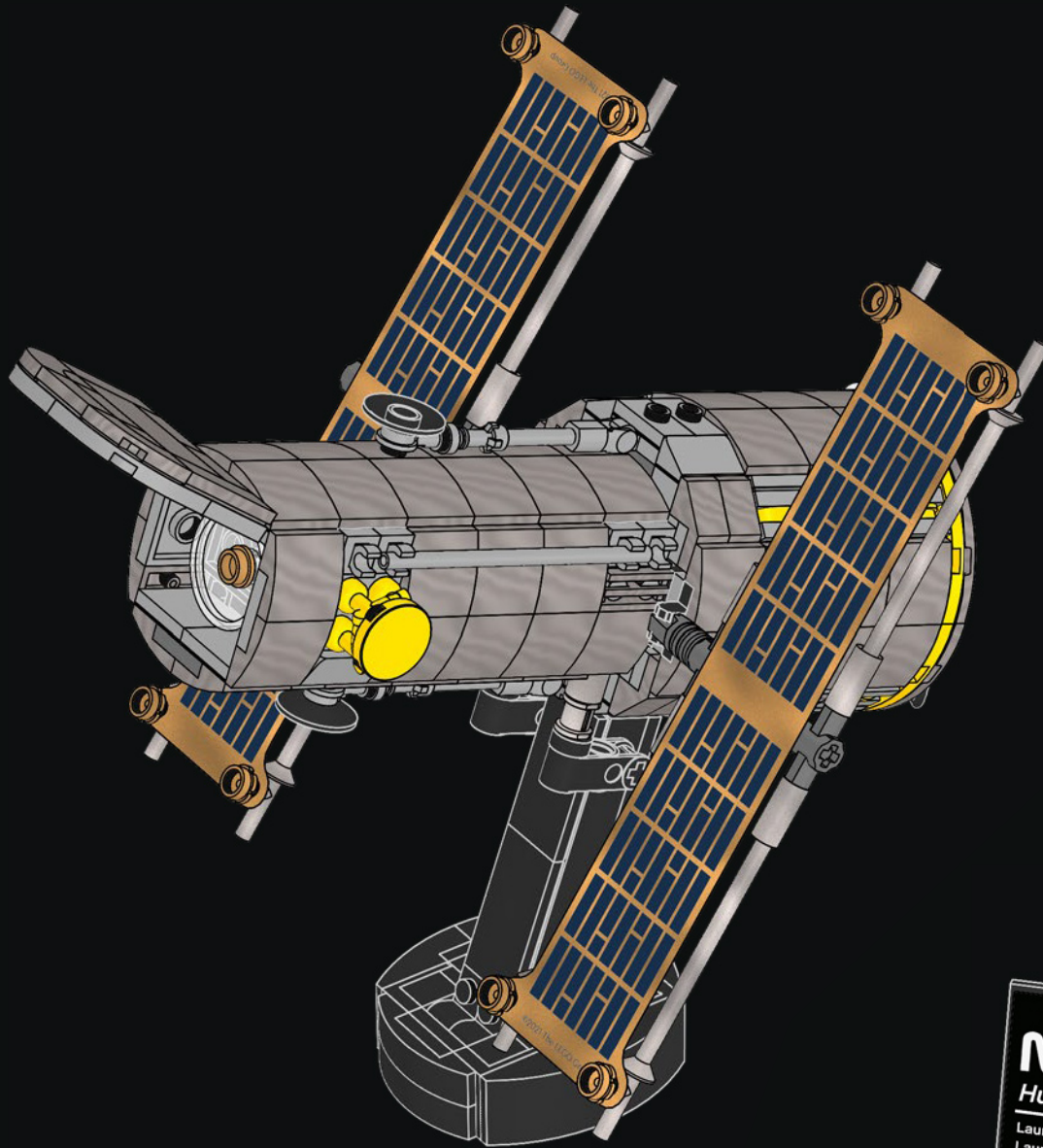
2x

LE SAVIEZ-VOUS ?

C'est le télescope spatial Hubble qui enregistre les images les plus profondes de l'univers, notamment de galaxies distantes de plus de 13 milliards d'années-lumière.

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NASA  **esa**
Hubble Space Telescope

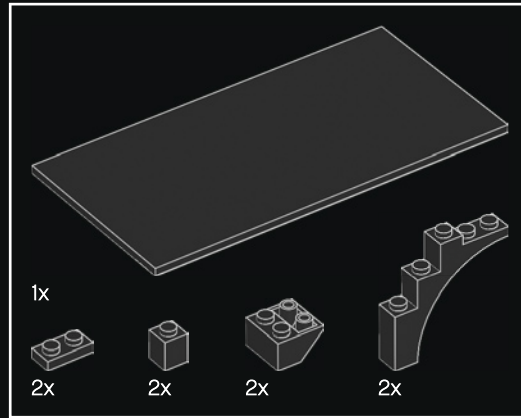
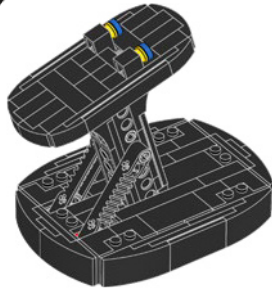
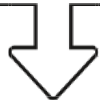
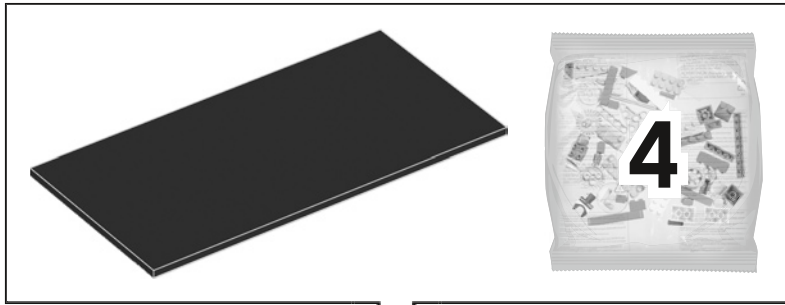
Launch: April 24, 1990
Launch Mass: 24,490 lbs
Velocity: 4.72 mi/s
Deploy Altitude: 350 miles

LA NAVETTE SPATIALE DISCOVERY

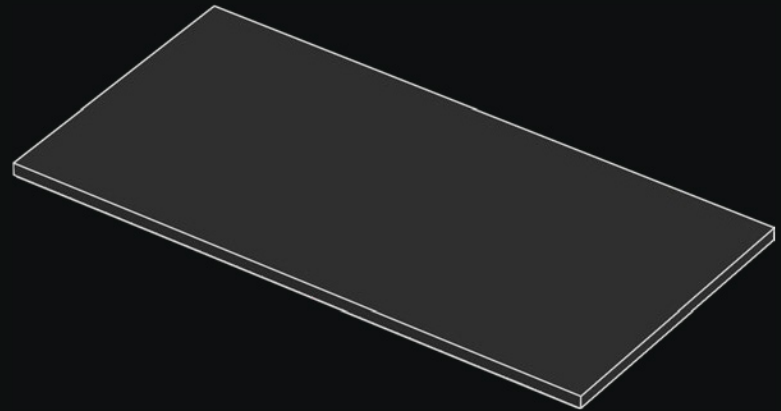
Le programme de navettes spatiales a vu le jour en raison de la nécessité de créer des véhicules spatiaux réutilisables, capables de transporter de grosses cargaisons en orbite. Troisième « véhicule orbital » de la Nasa, Discovery (OV-103) a été lancé en novembre 1983. Il a effectué 39 missions, parcouru 238 kilomètres, réalisé 5 830 orbites autour de la Terre et passé près de 365 jours dans l'espace au cours de ses 27 années de service. La mission de 5 jours visant à déployer Hubble a été lancée depuis le Centre spatial Kennedy de la Nasa le 24 avril 1990. Les concepteurs ont créé le télescope de manière à ce qu'il rentre parfaitement dans la soute de la navette.







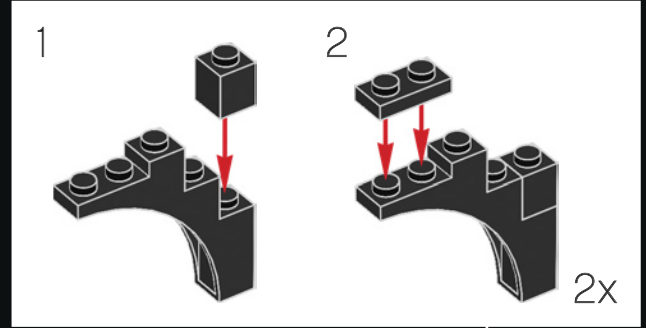
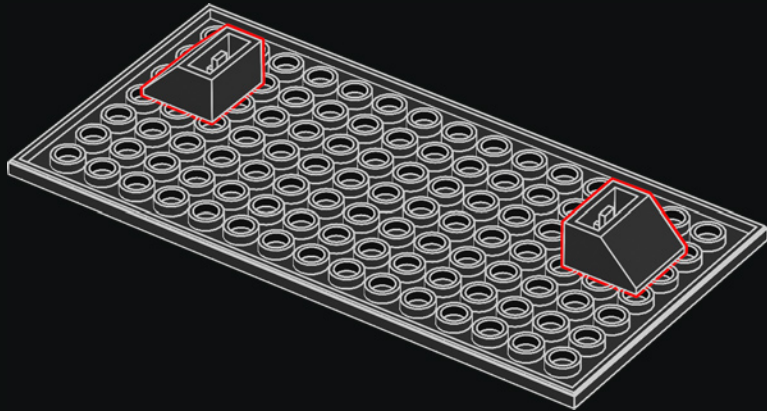
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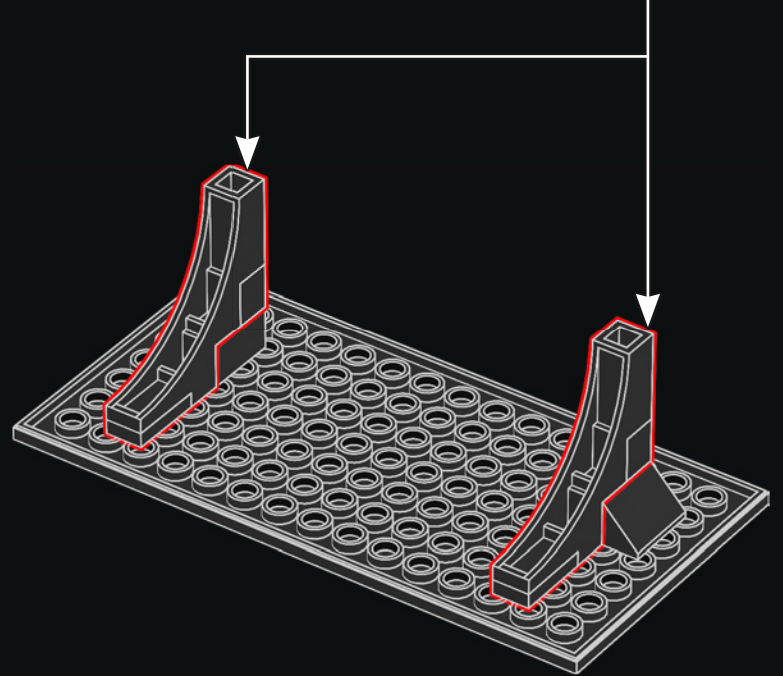
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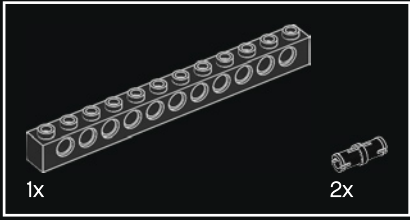
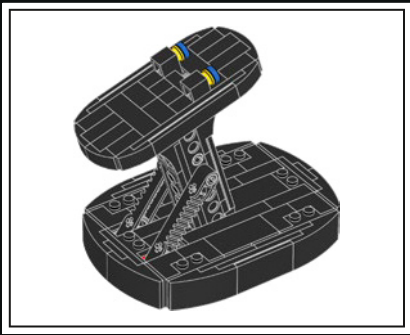


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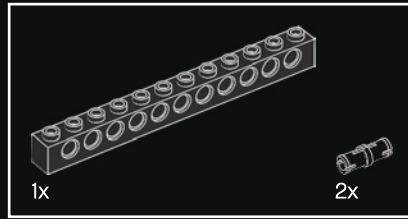
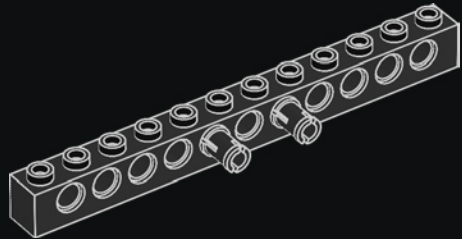


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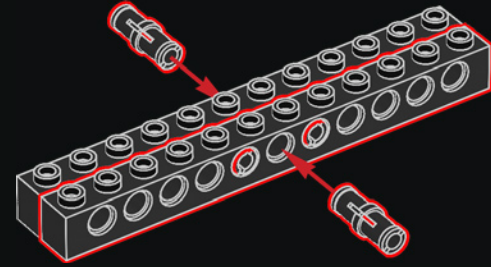




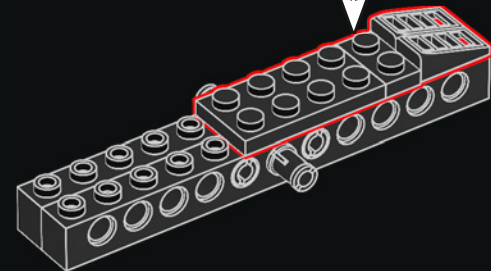
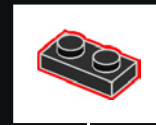
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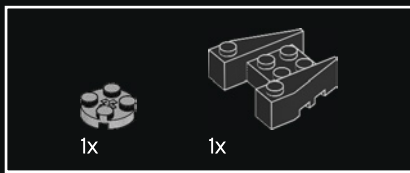


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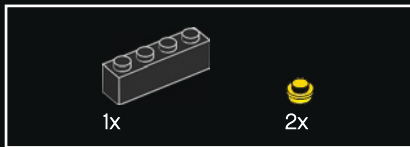
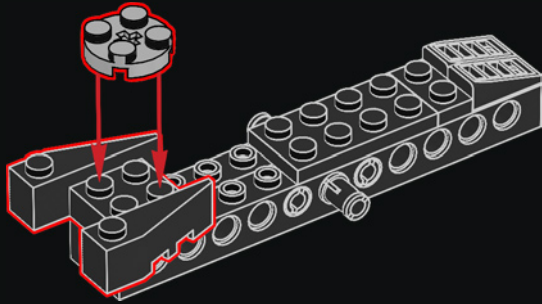


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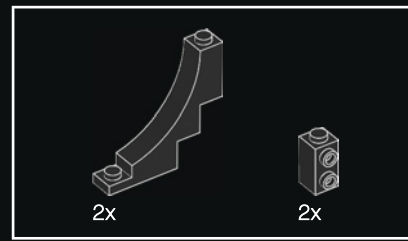
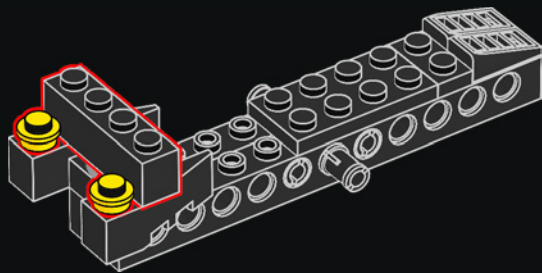




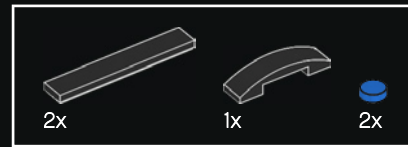
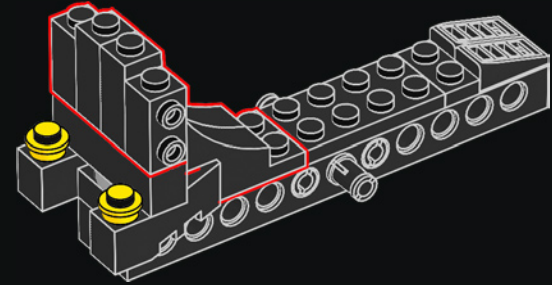
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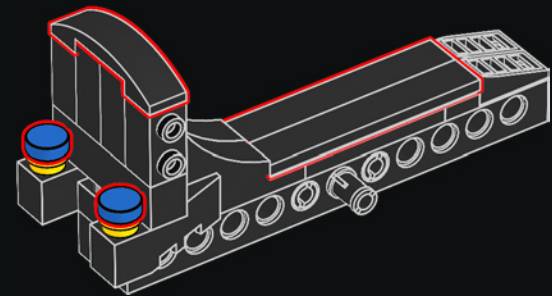
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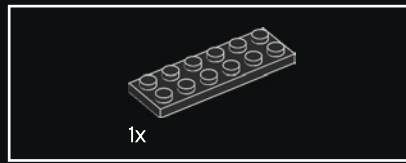
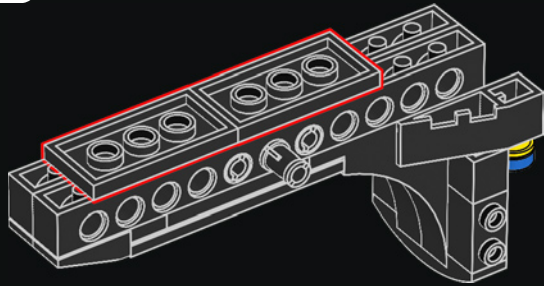


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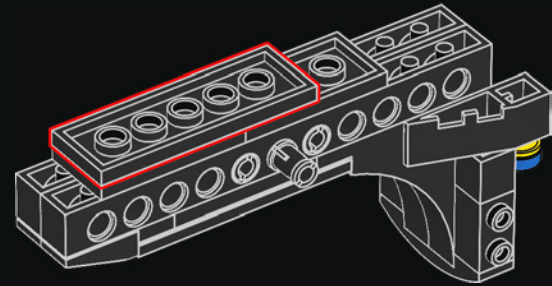


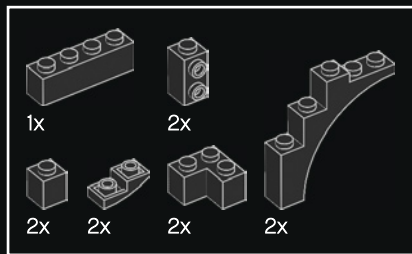


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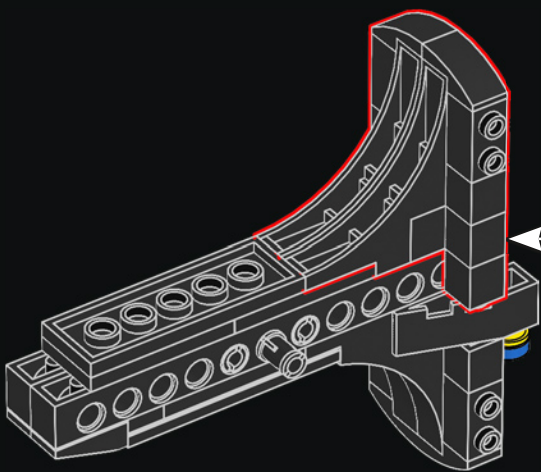
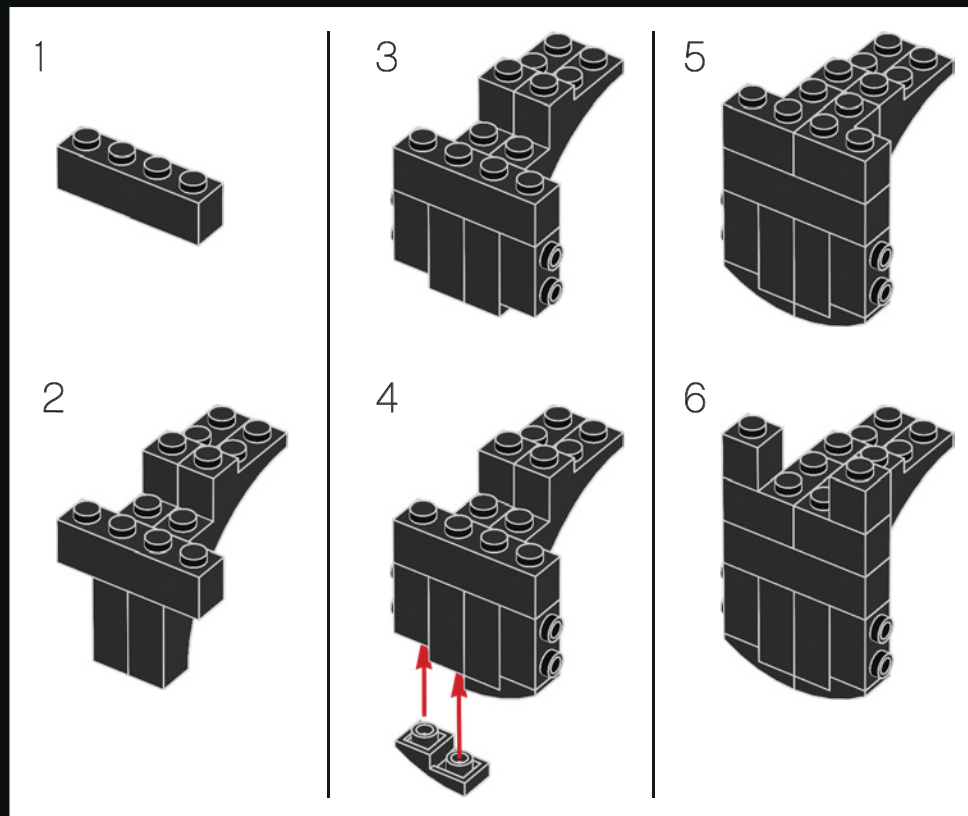


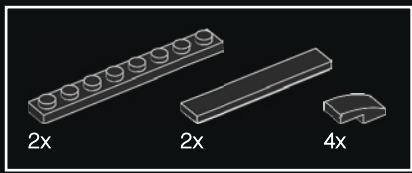
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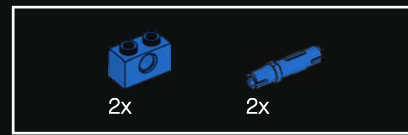
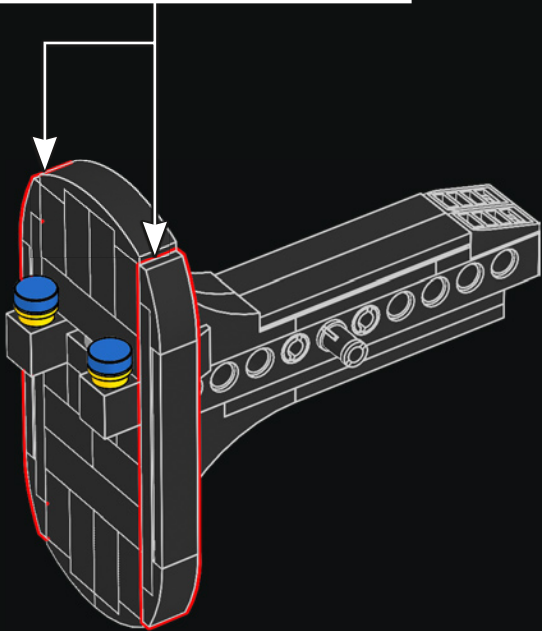
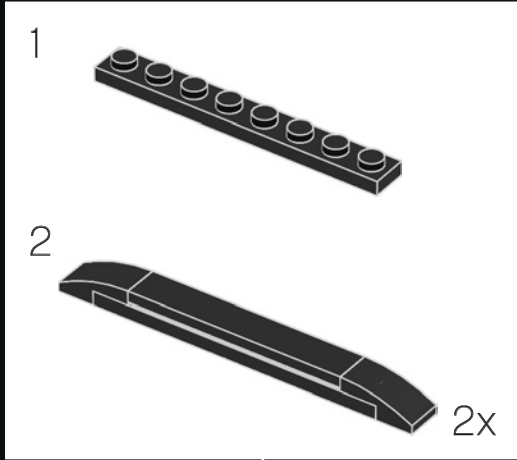


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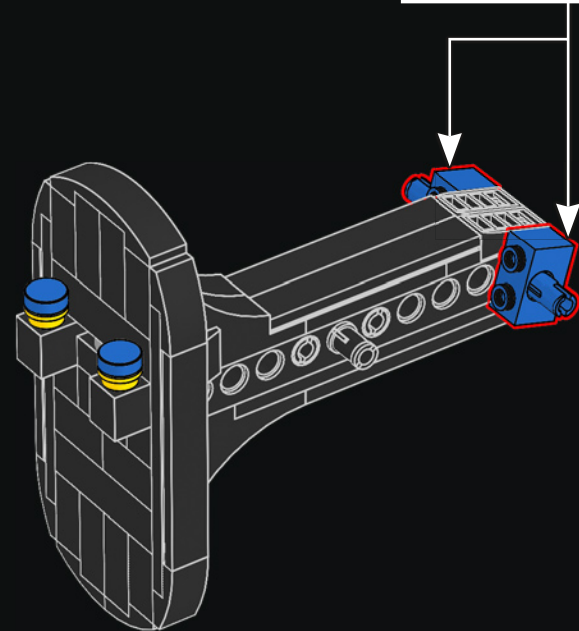
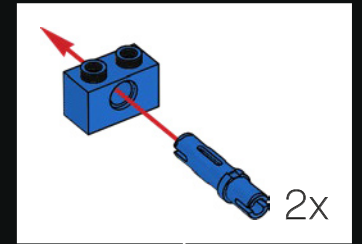


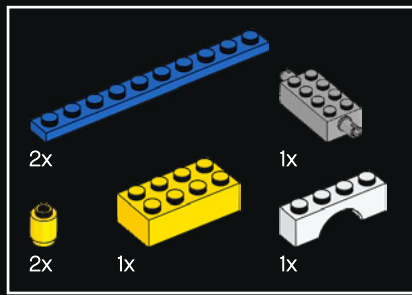


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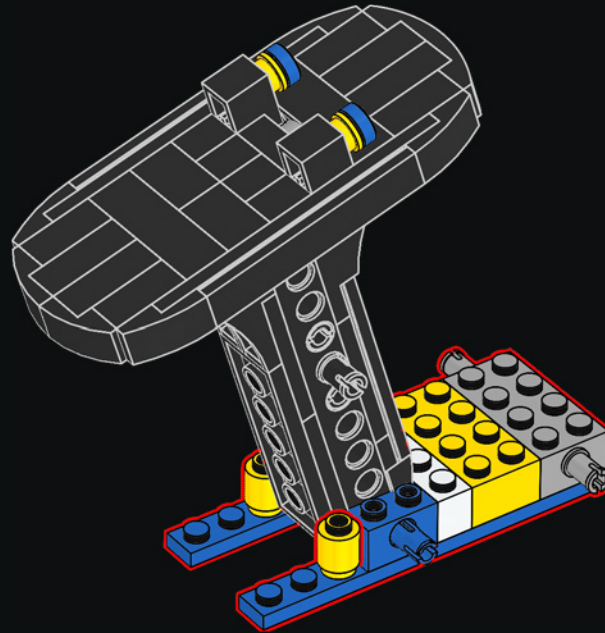
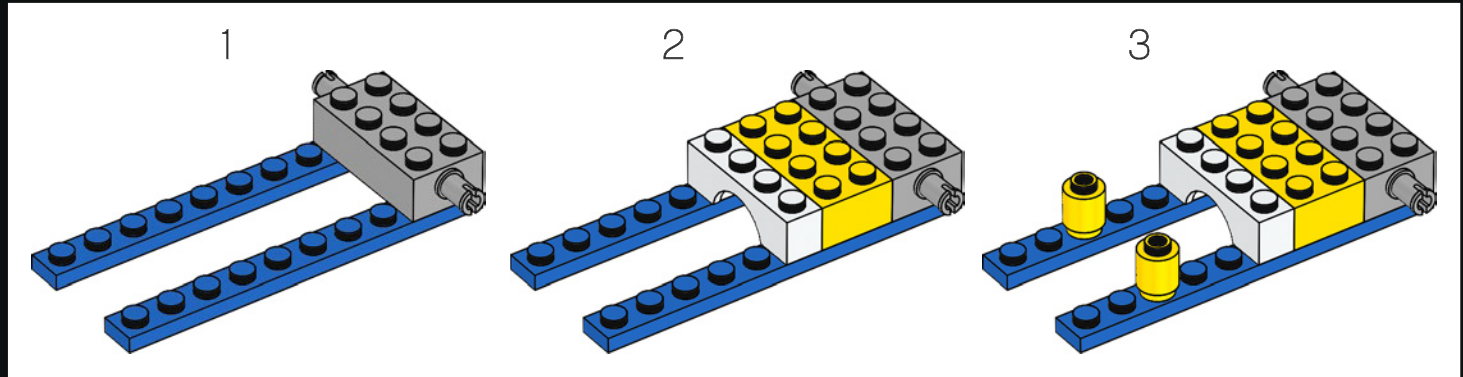


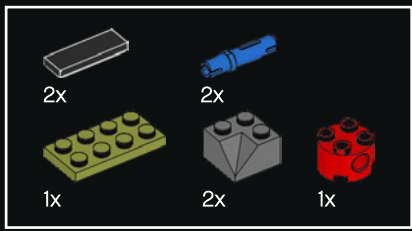
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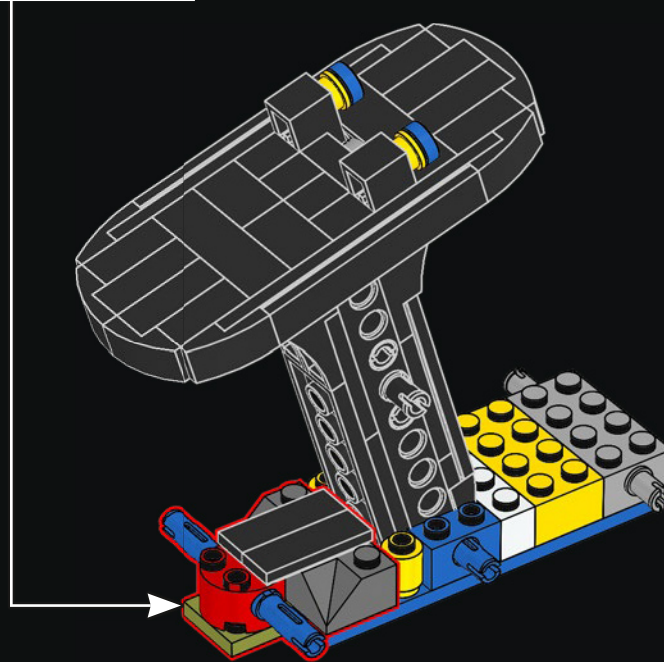
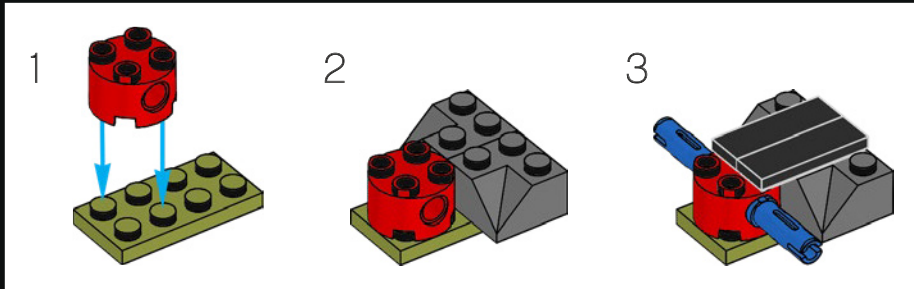


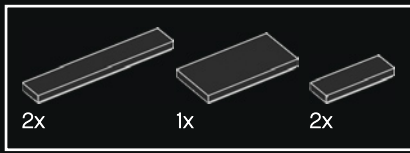
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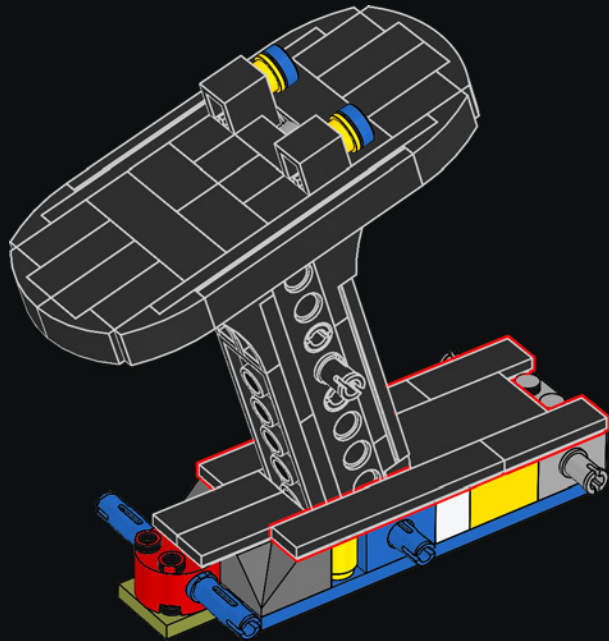


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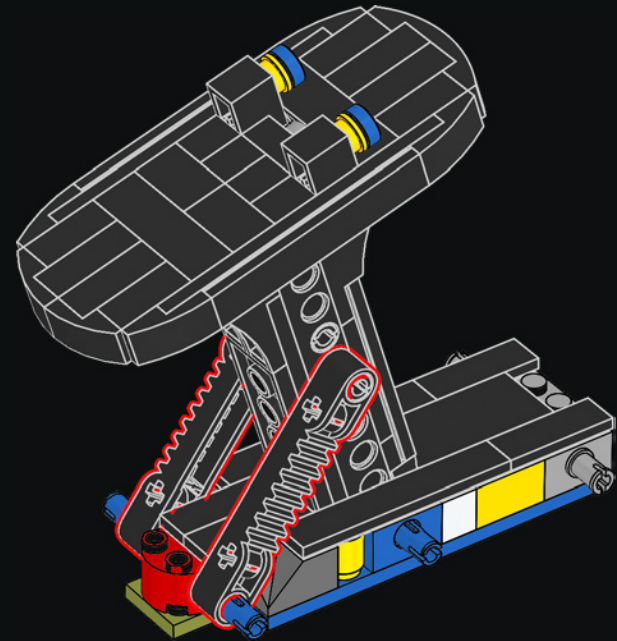


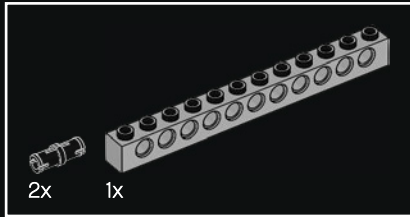
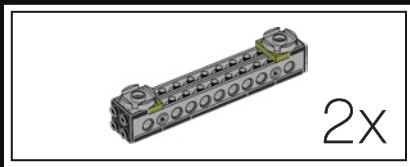


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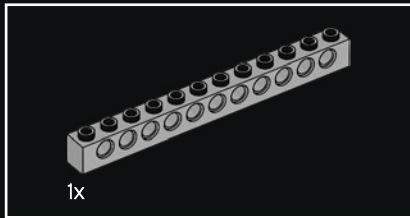
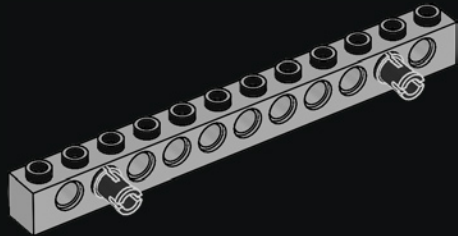


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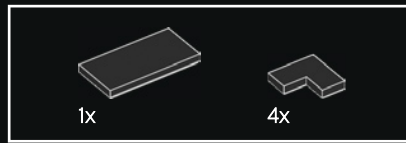
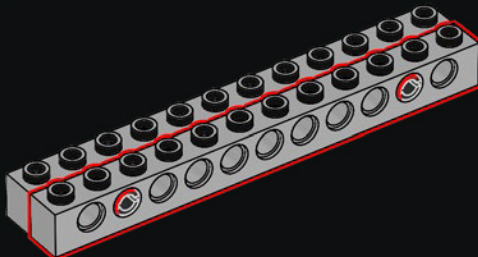




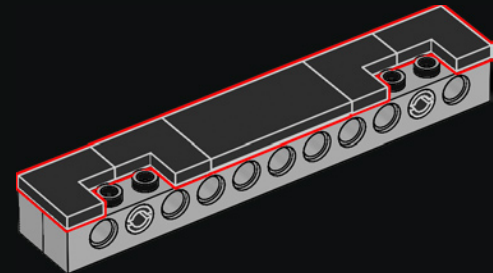
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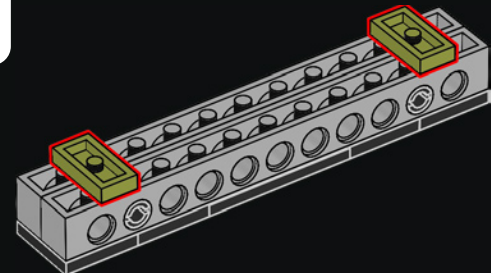
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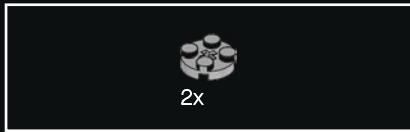
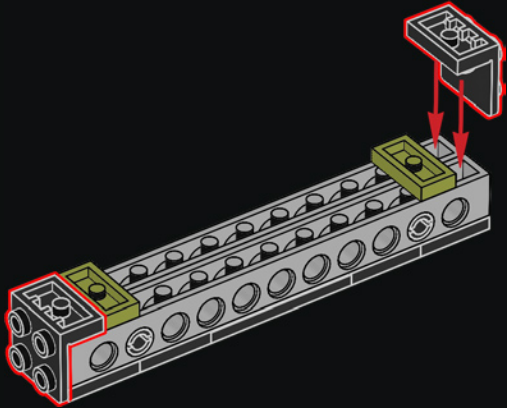


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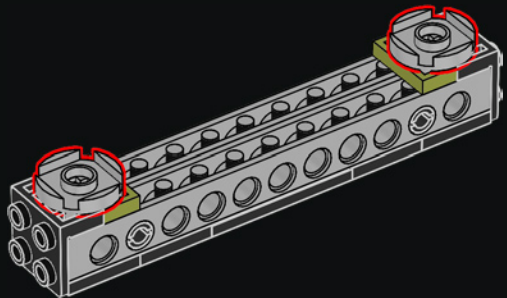




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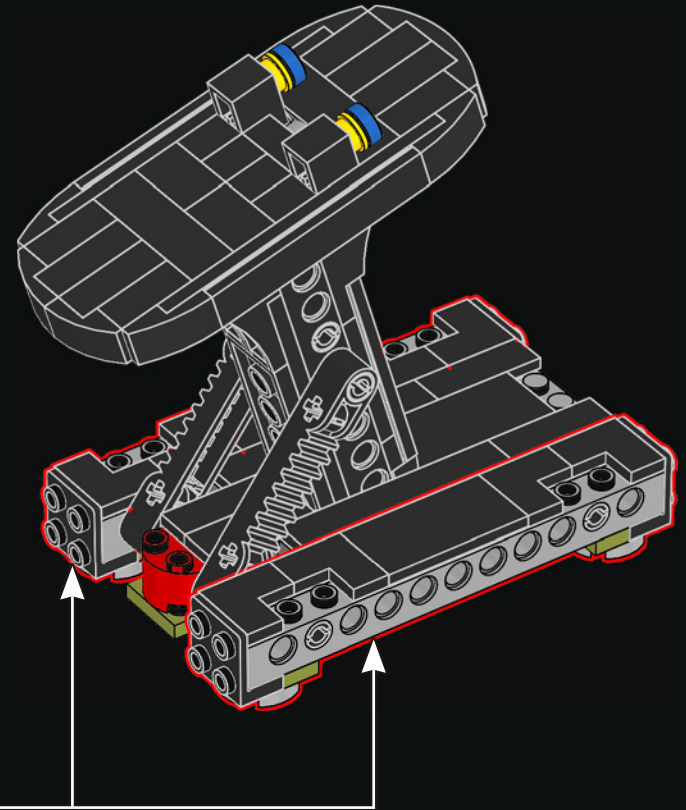


22



2x

23



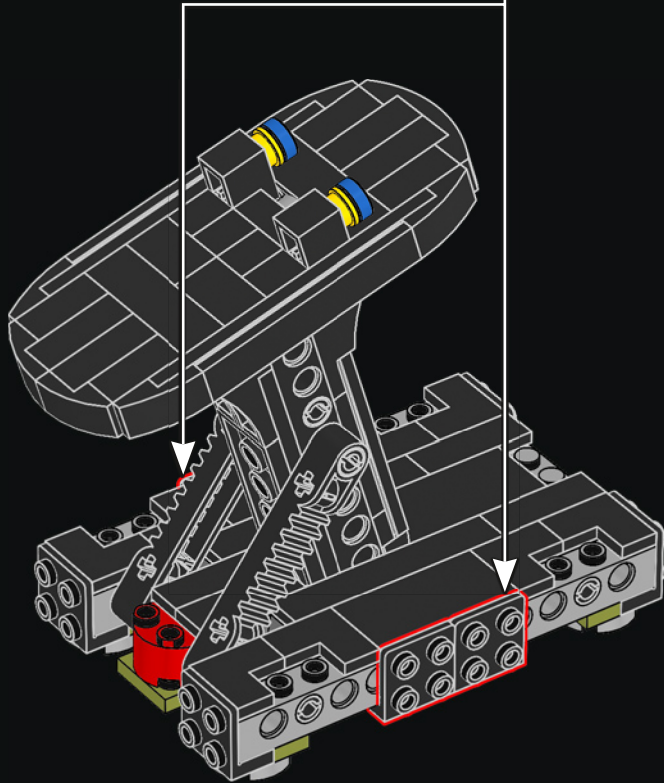


4x

24

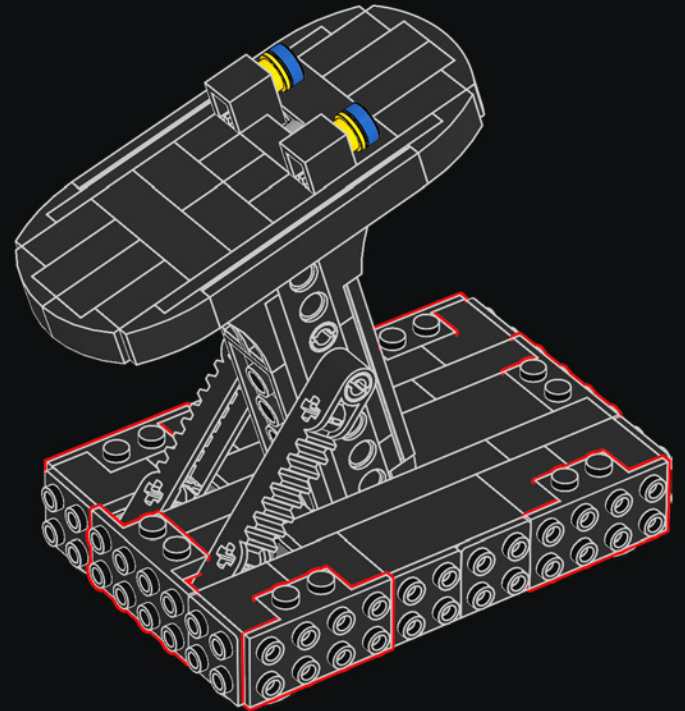


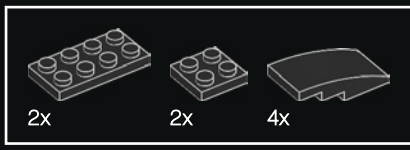
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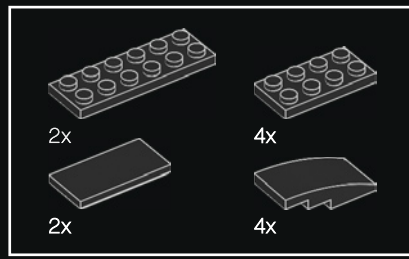
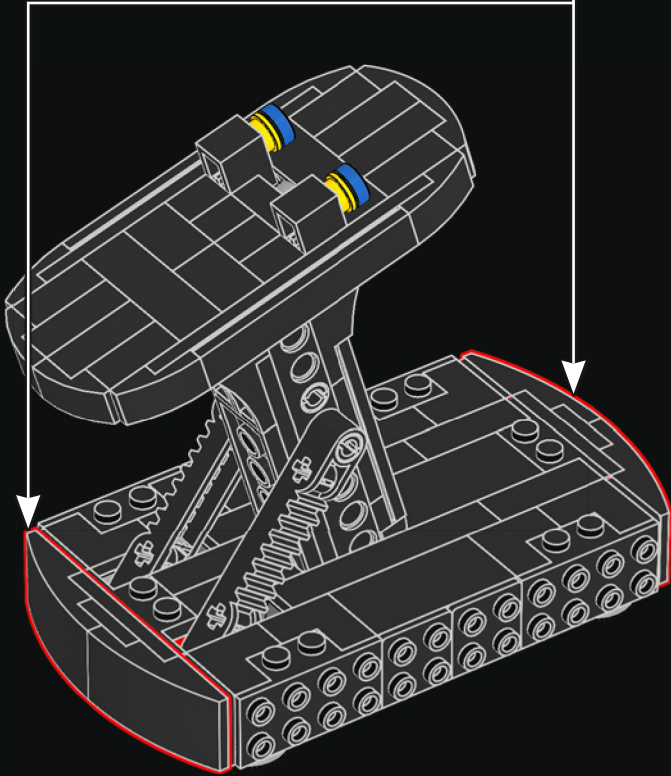
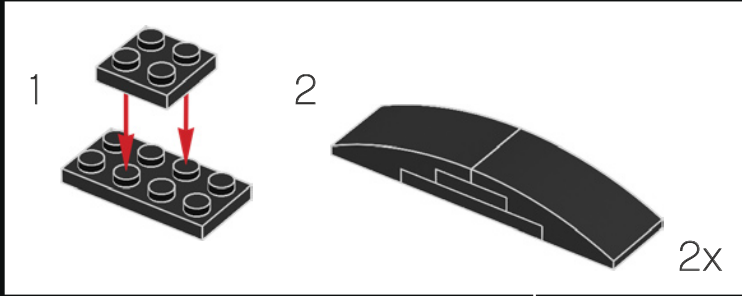
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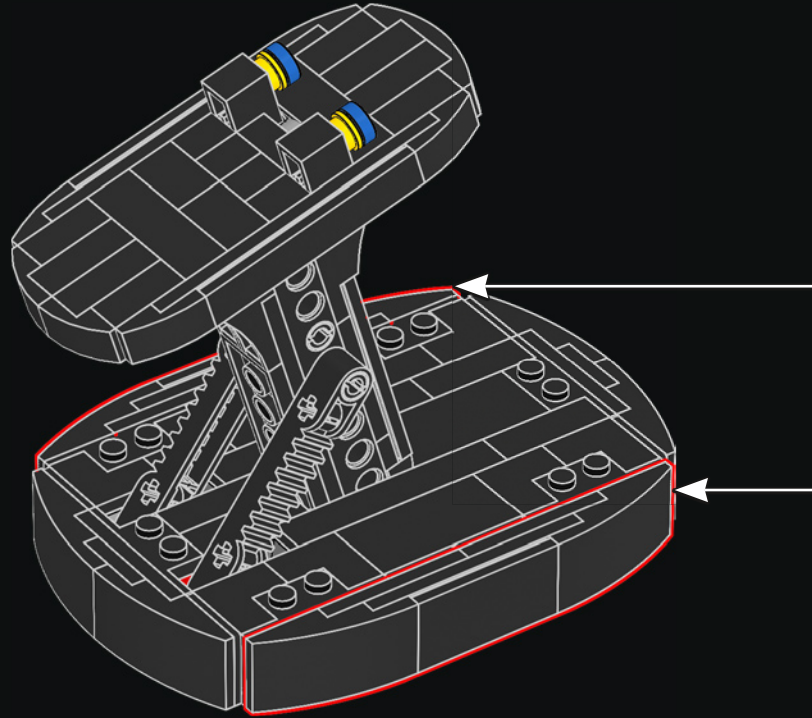
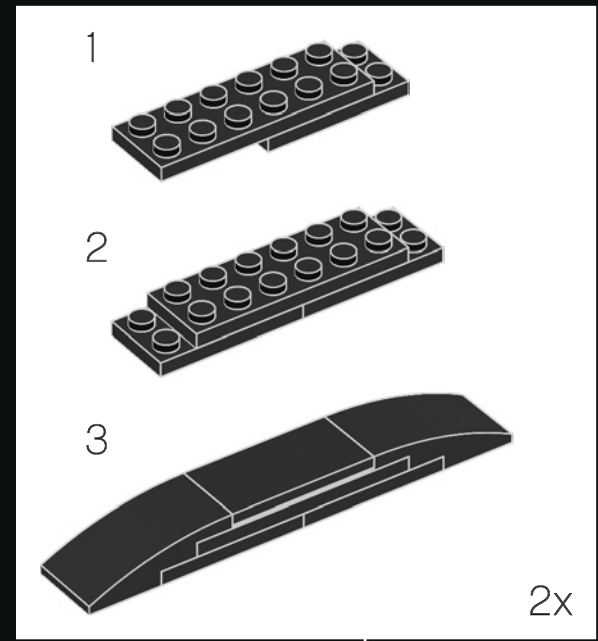


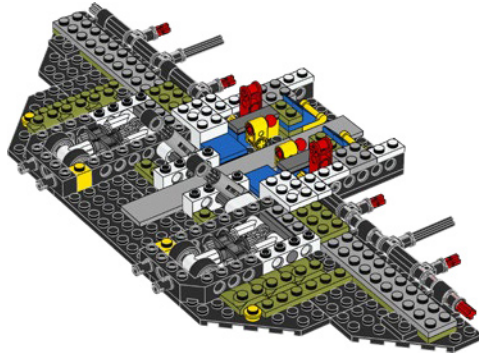
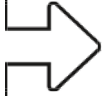


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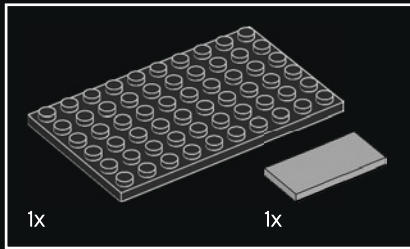
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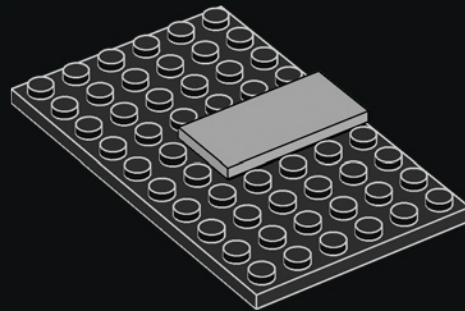


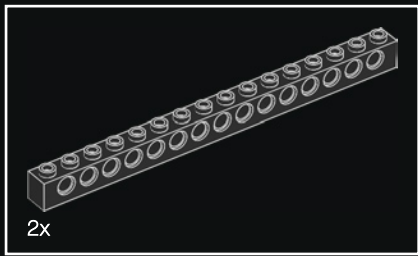
LE SAVIEZ-VOUS ?

Discovery a emmené 222 personnes au cours de ses années de service, le plus grand nombre de personnes jamais transportées dans une navette.

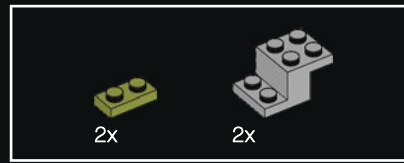
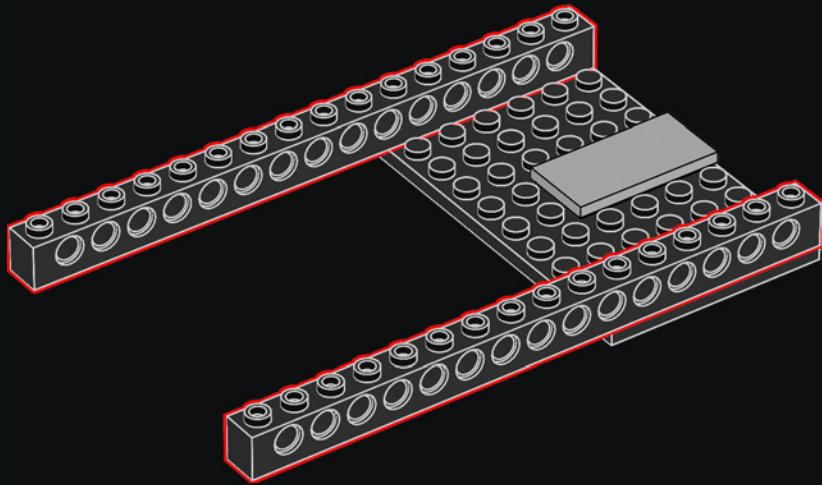


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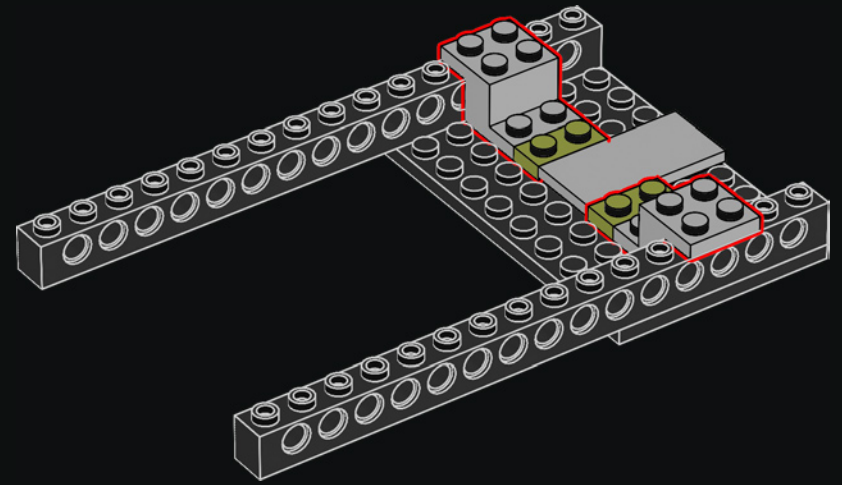




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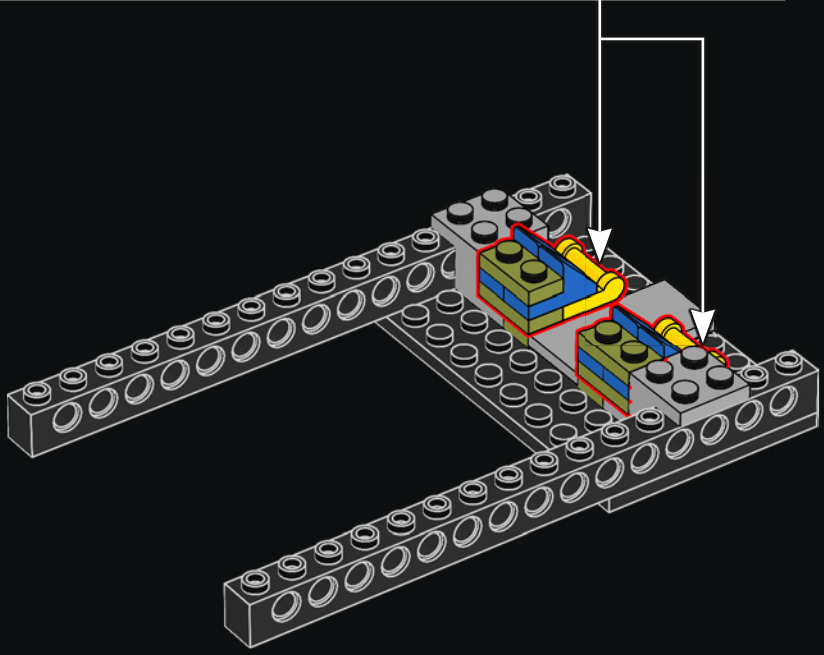
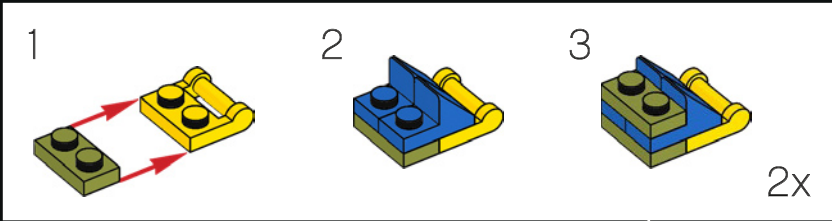


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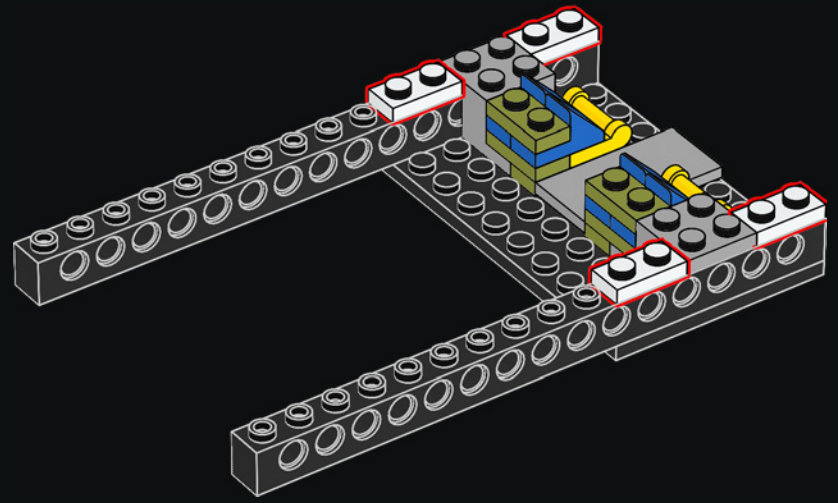




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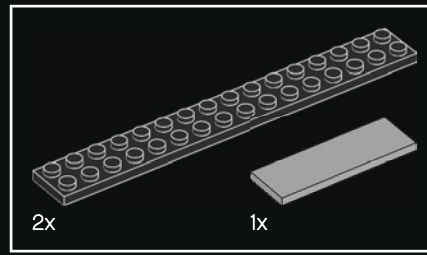
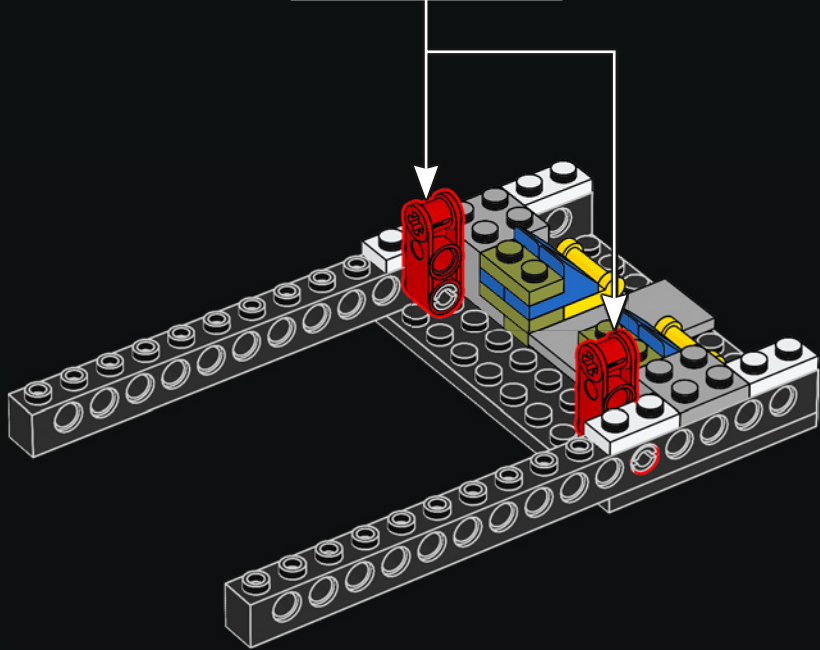
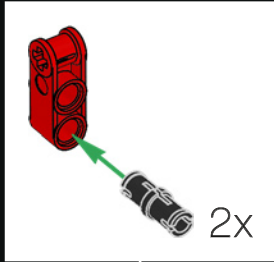


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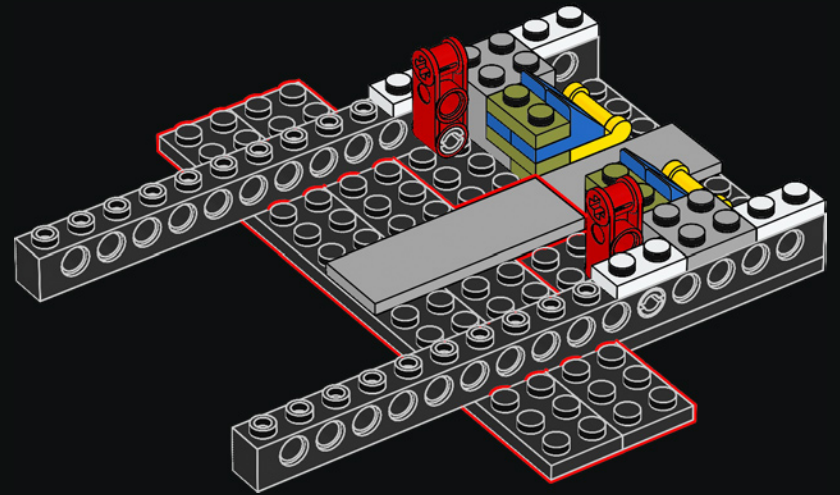




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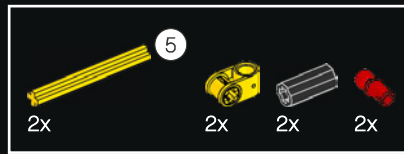
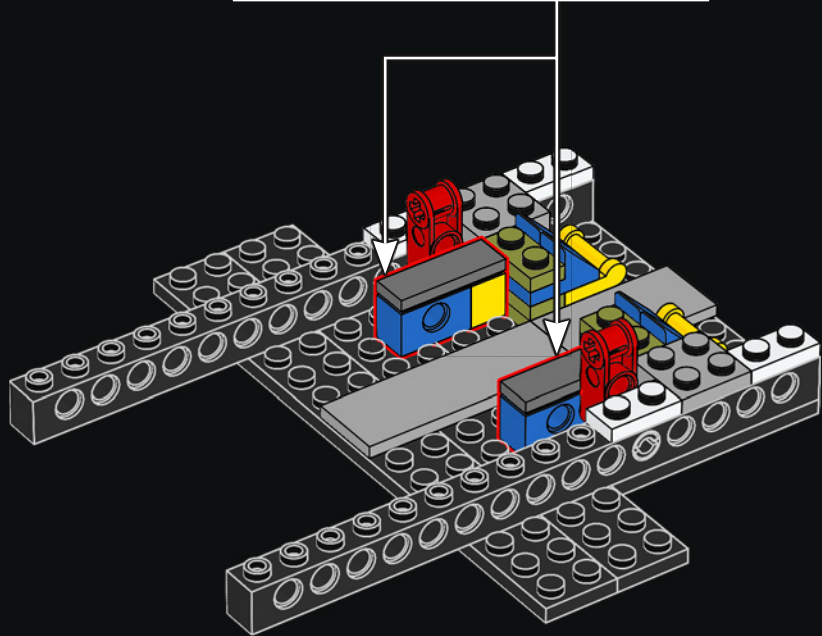
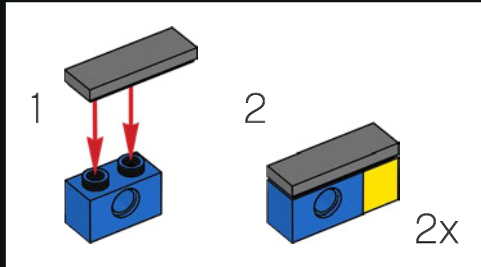


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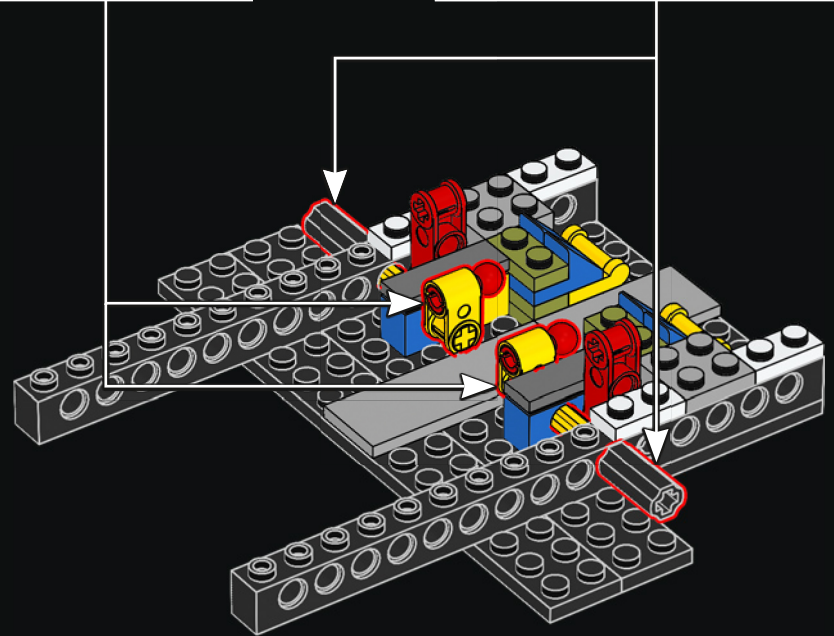
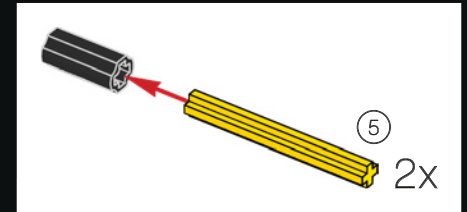
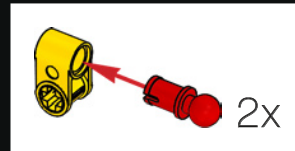




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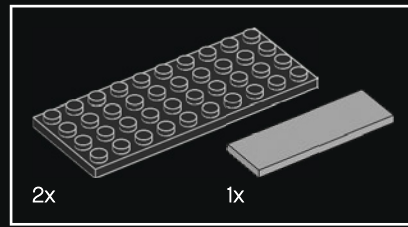
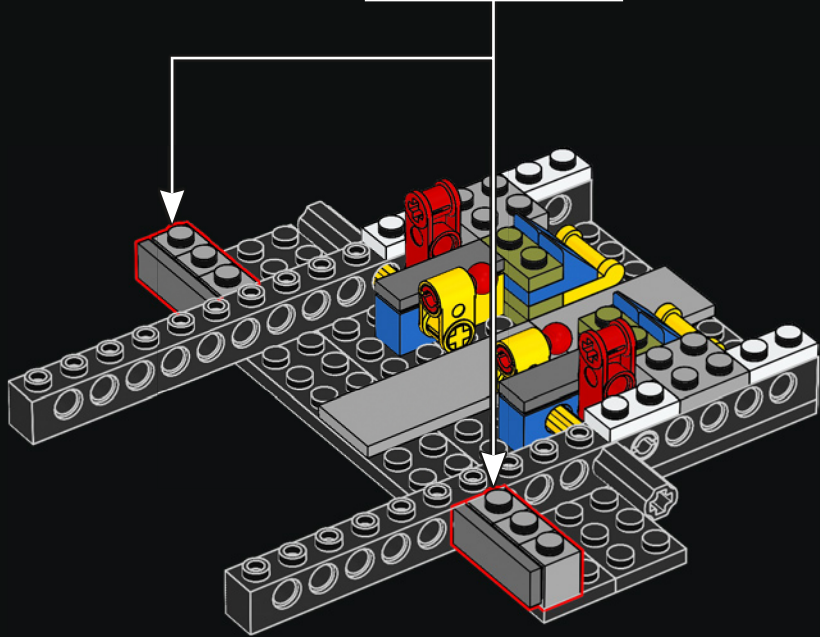
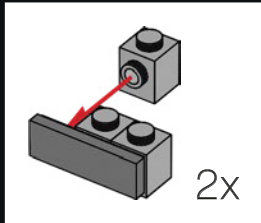


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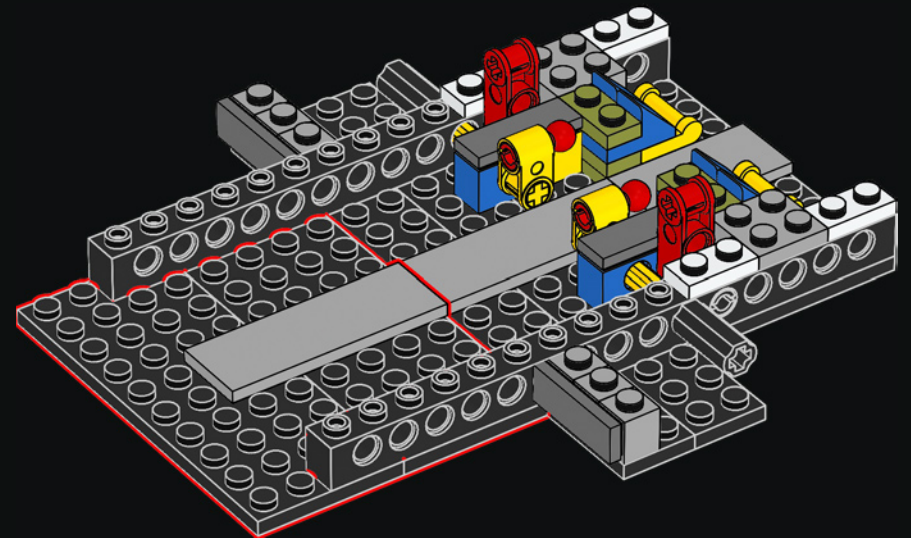


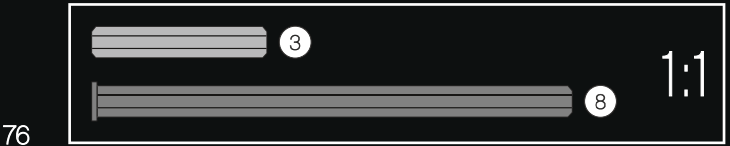
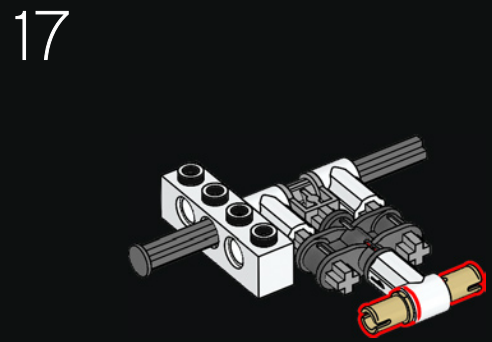
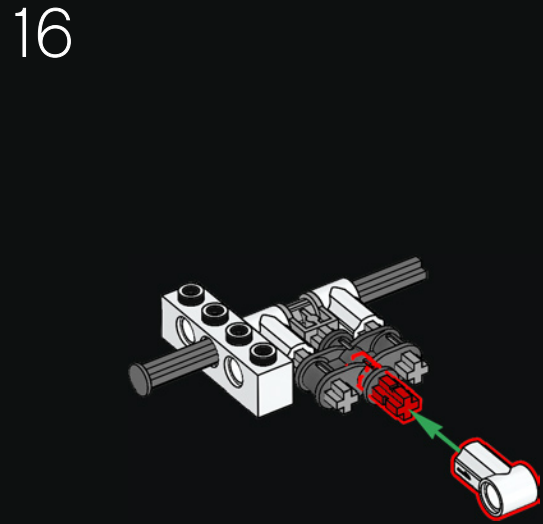
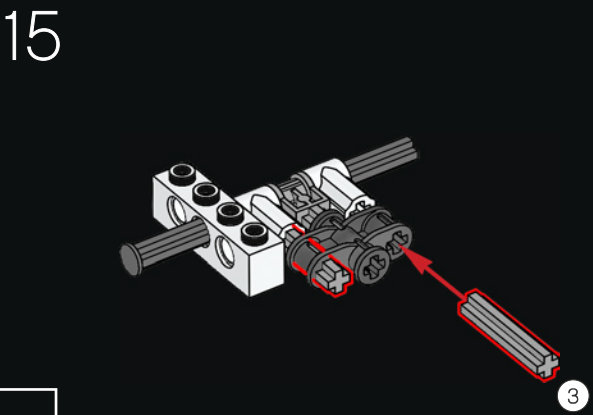
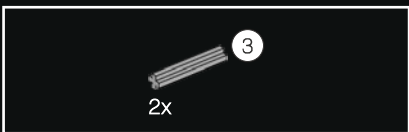
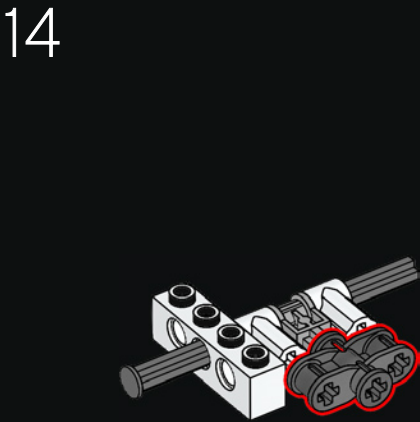
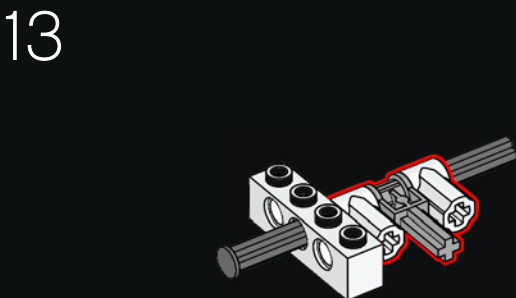
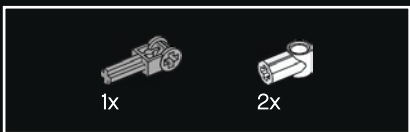
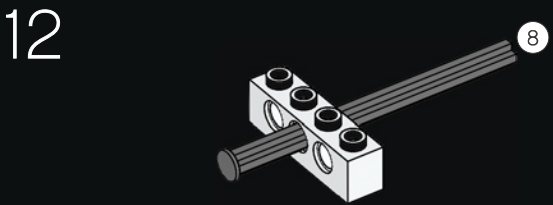
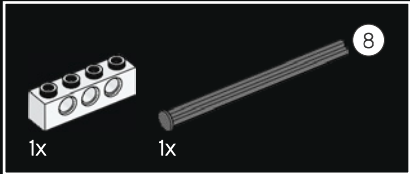
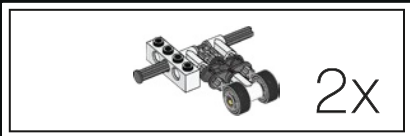


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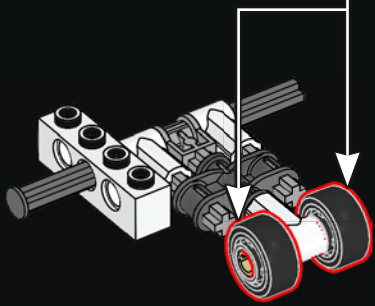
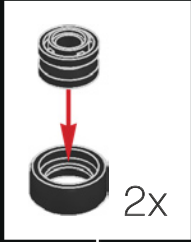
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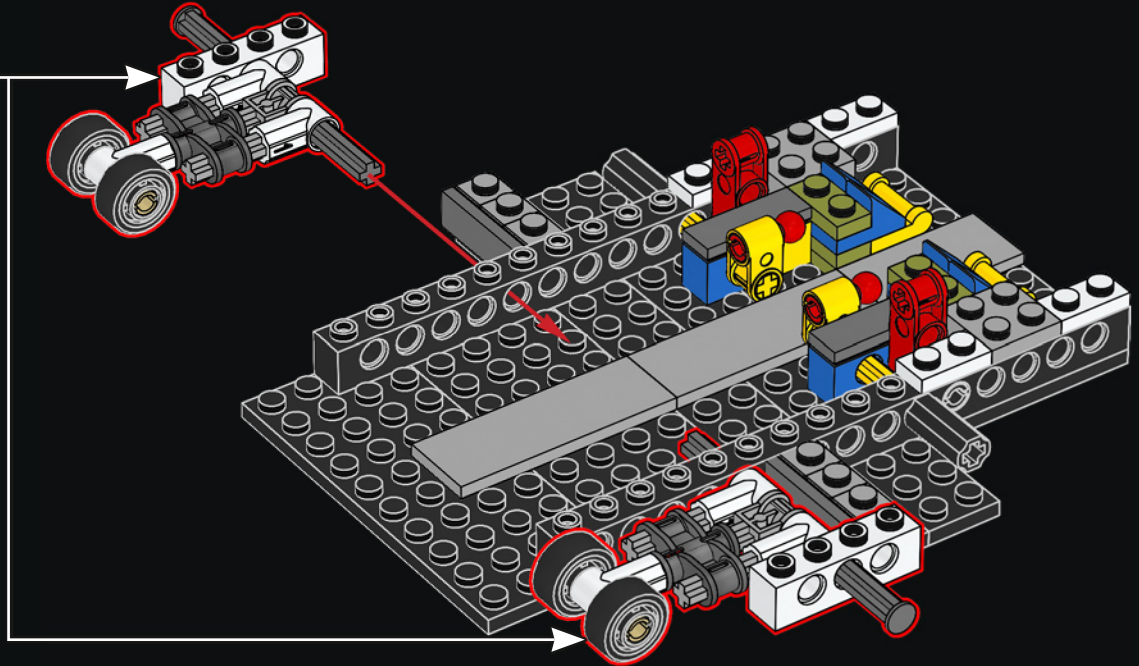


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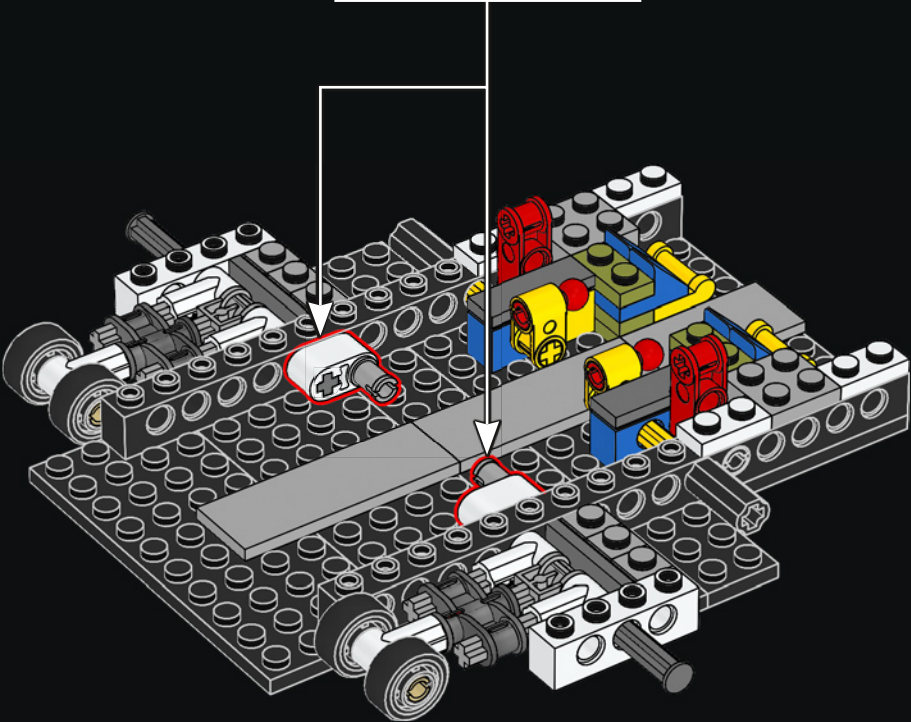
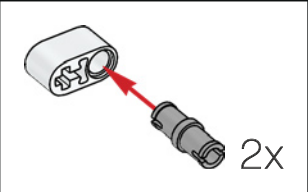
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19



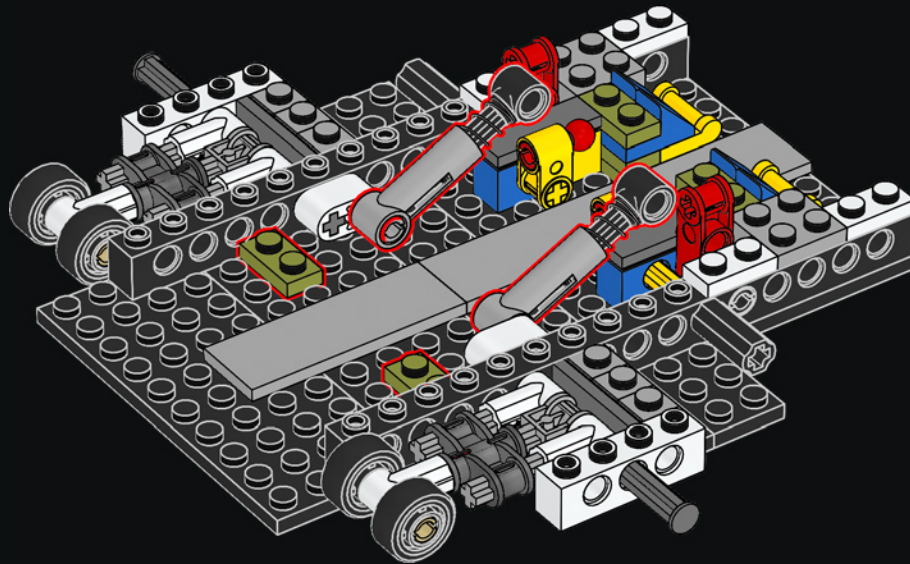


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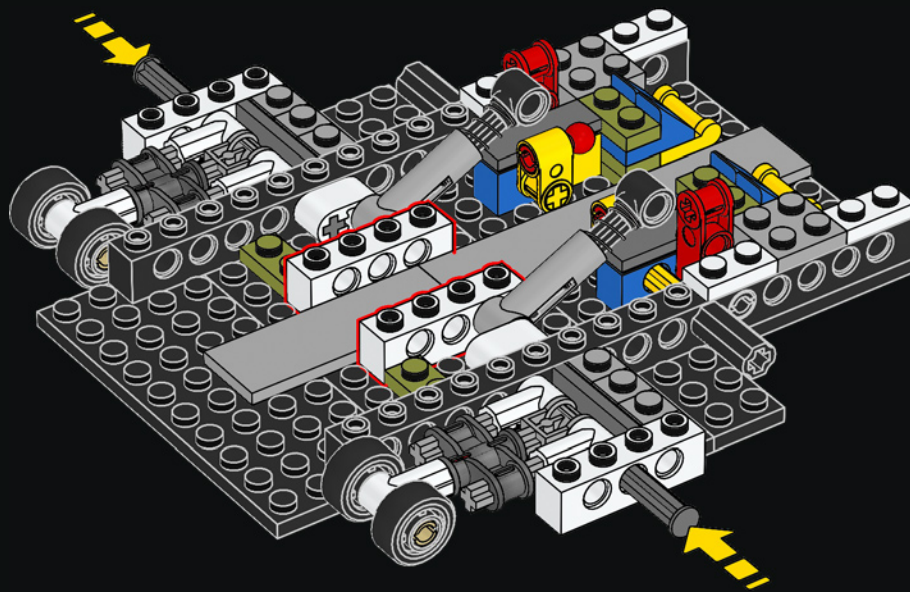


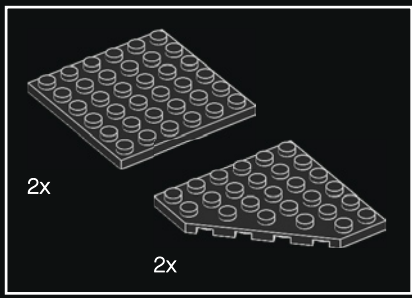


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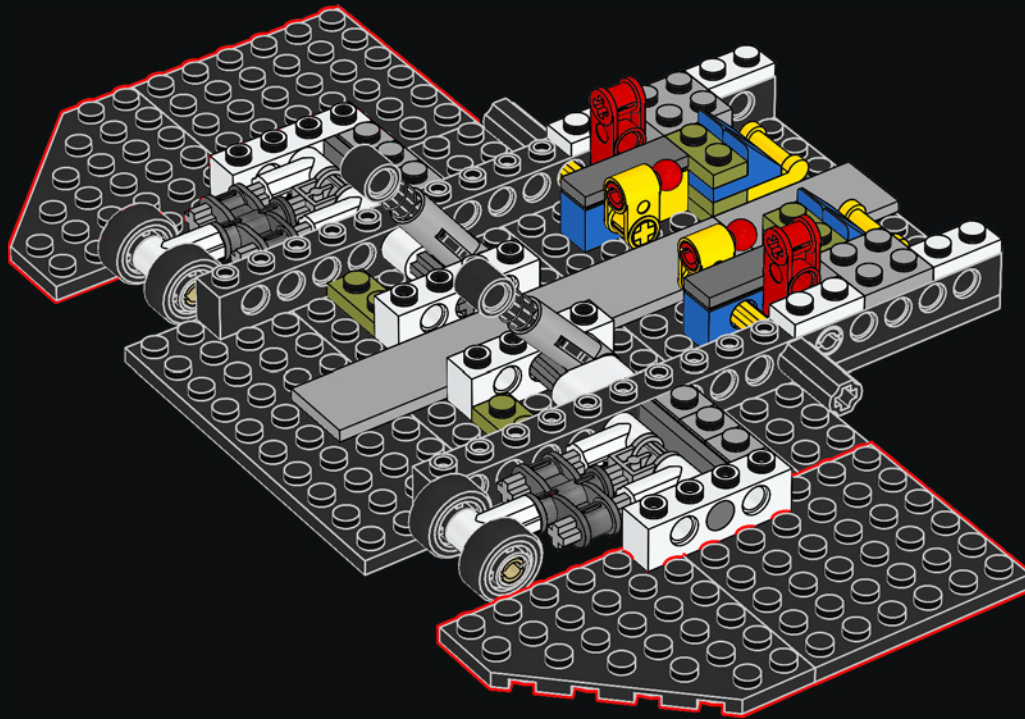


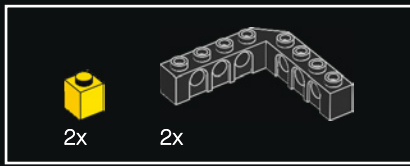
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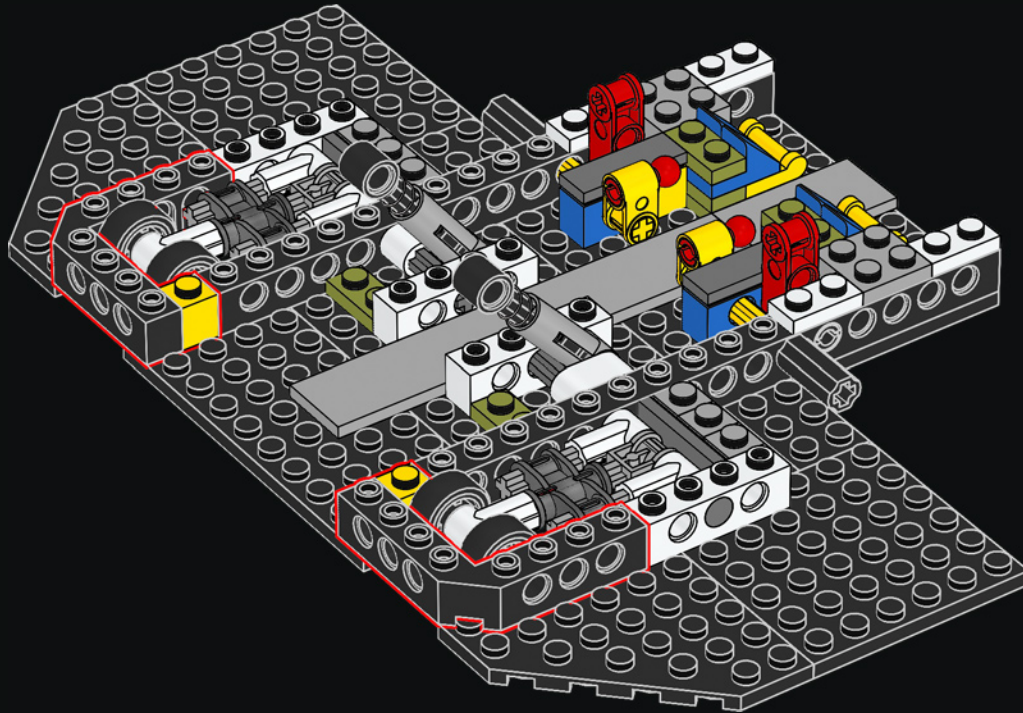


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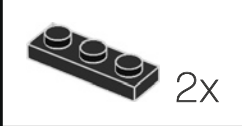
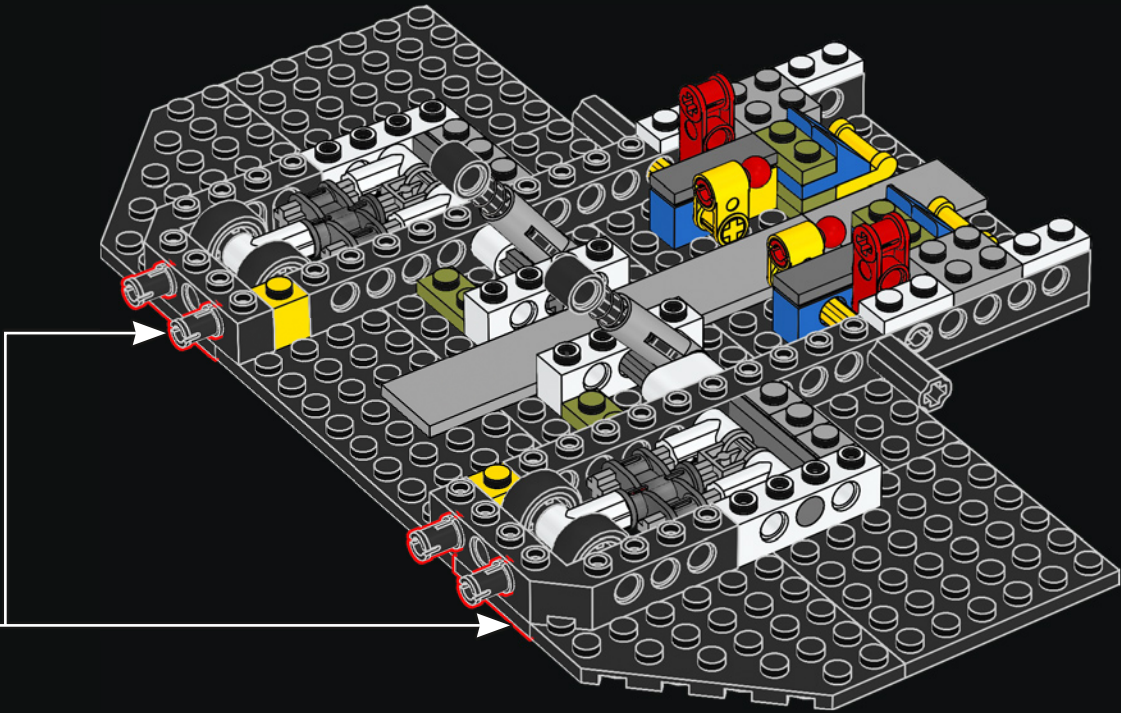


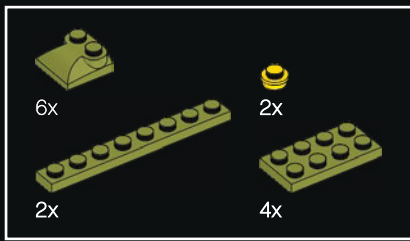
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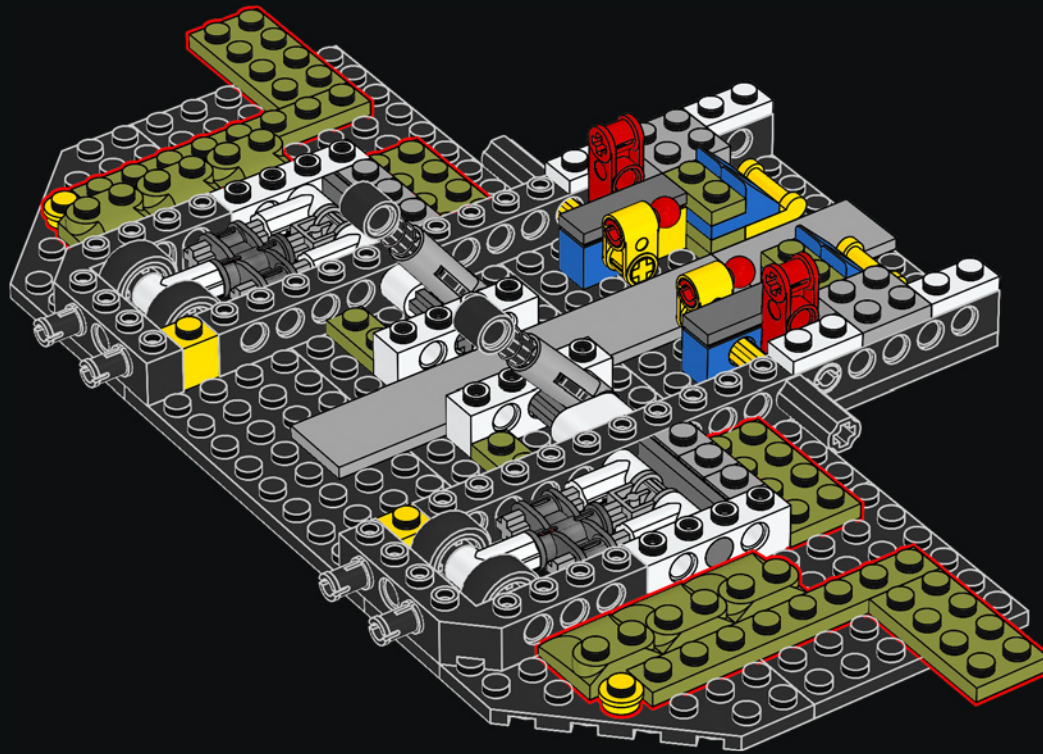


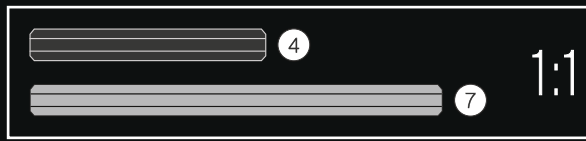
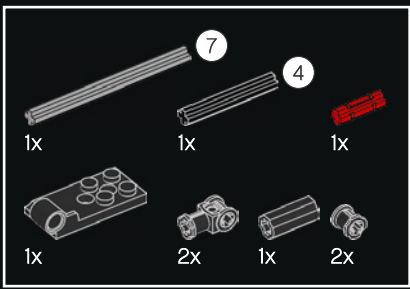
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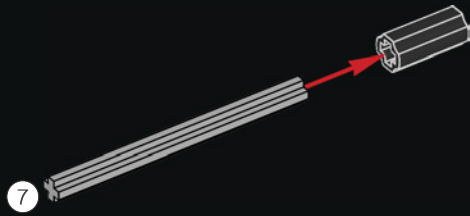
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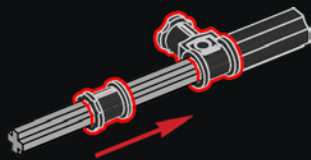


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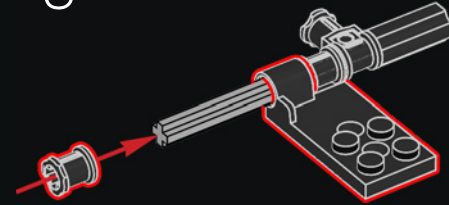
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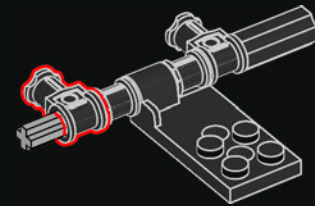
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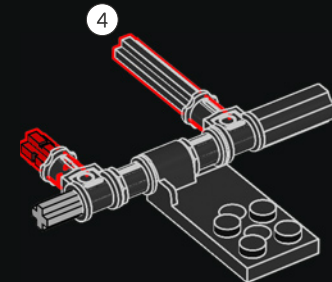
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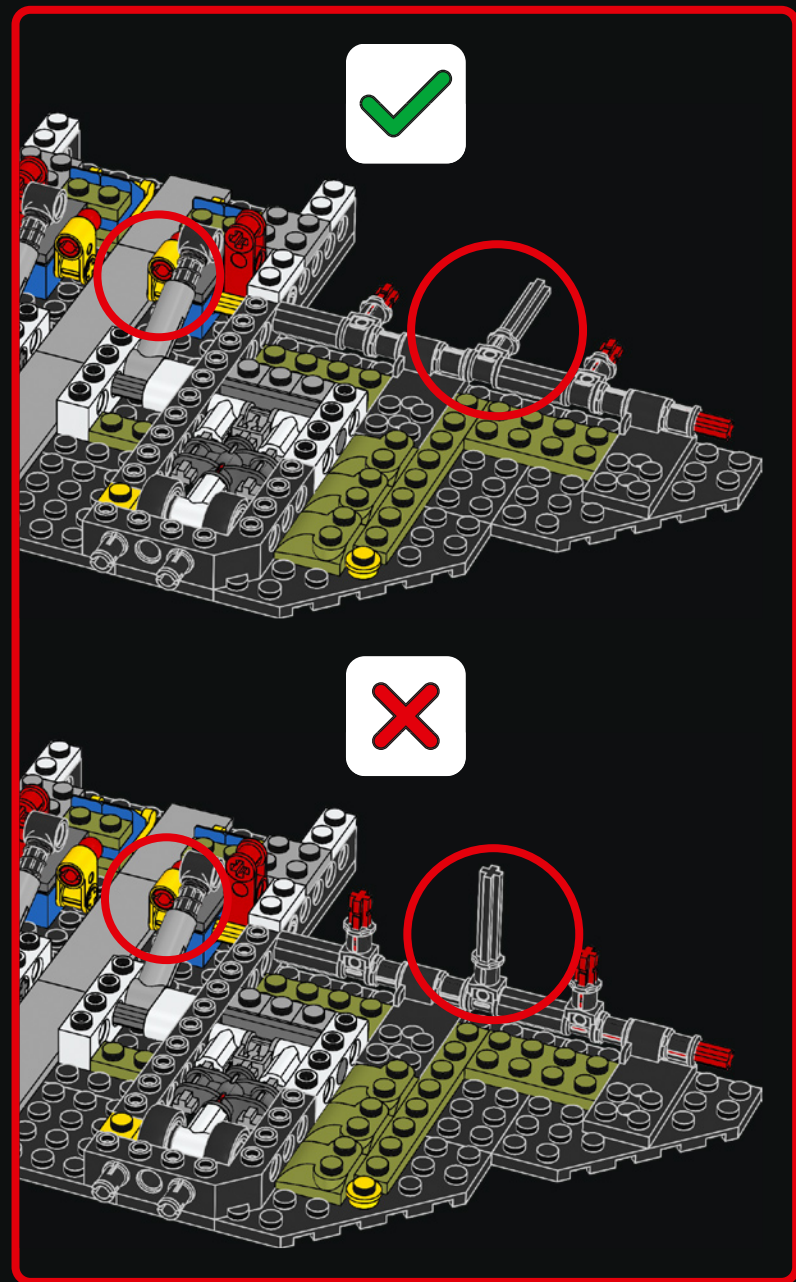
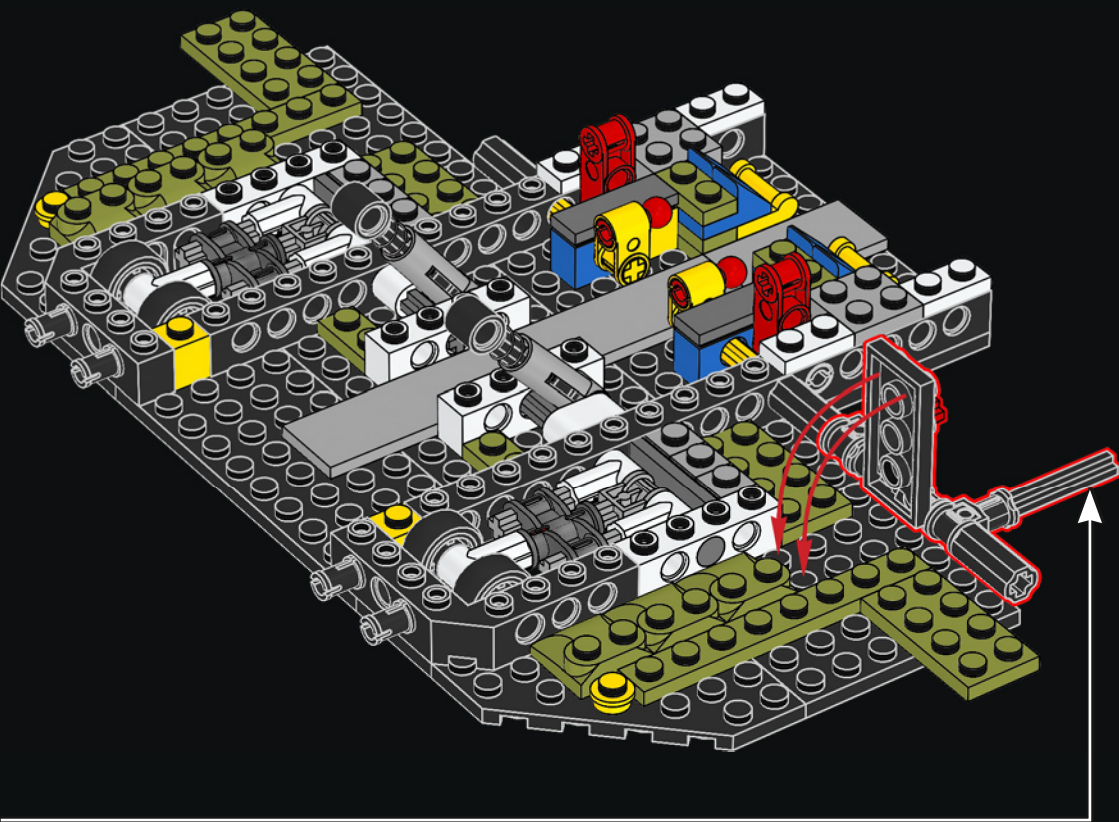


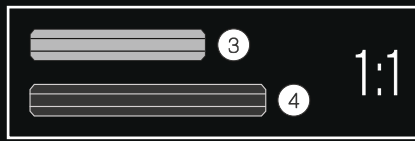
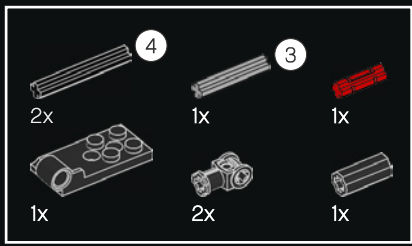
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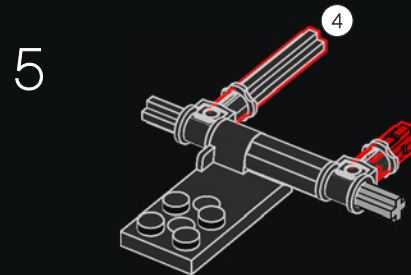
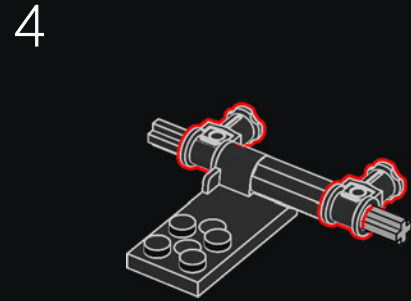
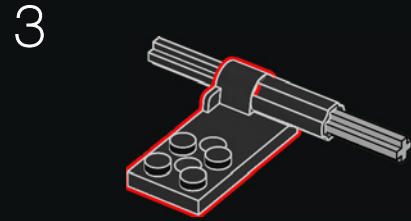
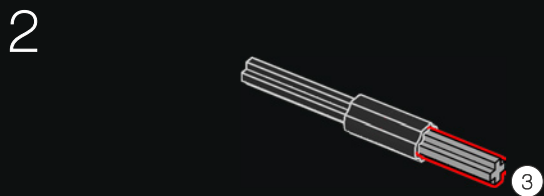
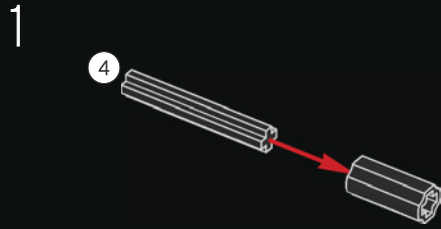
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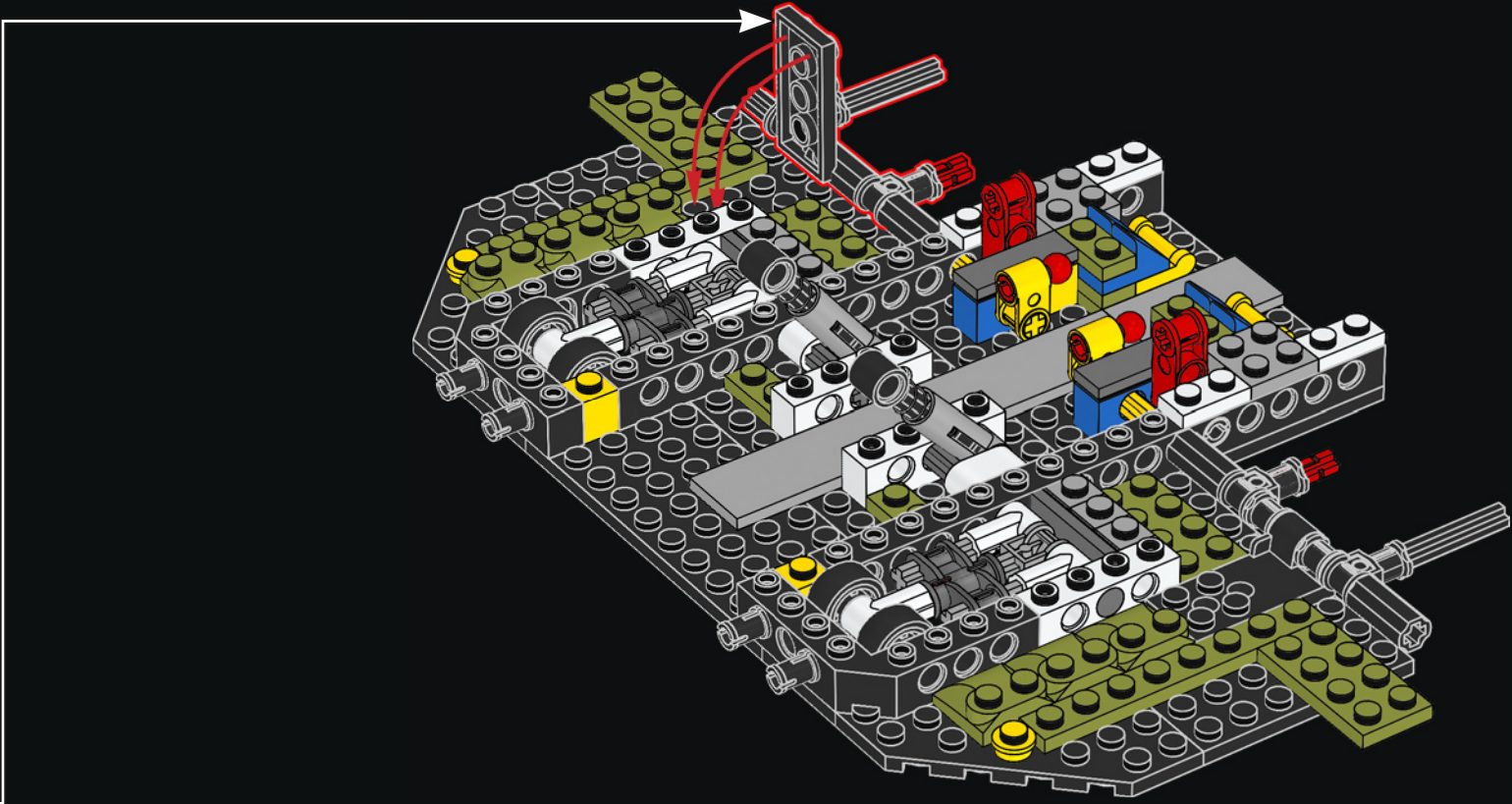


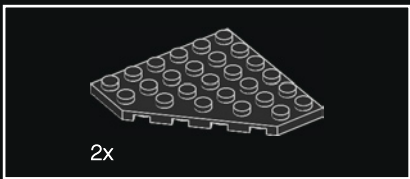




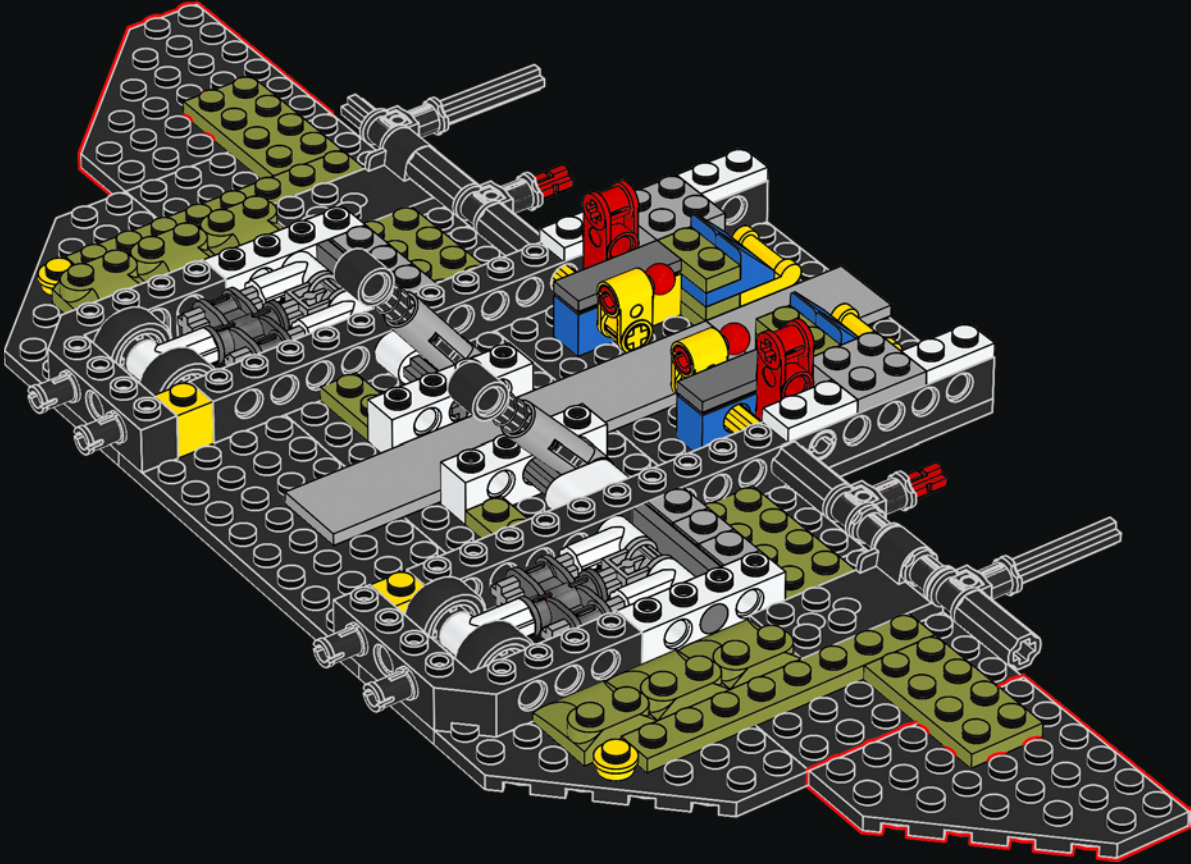
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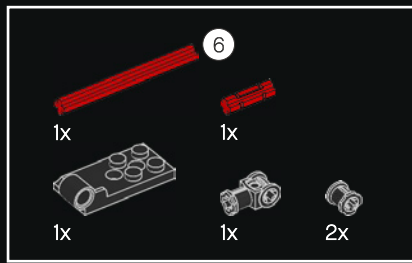




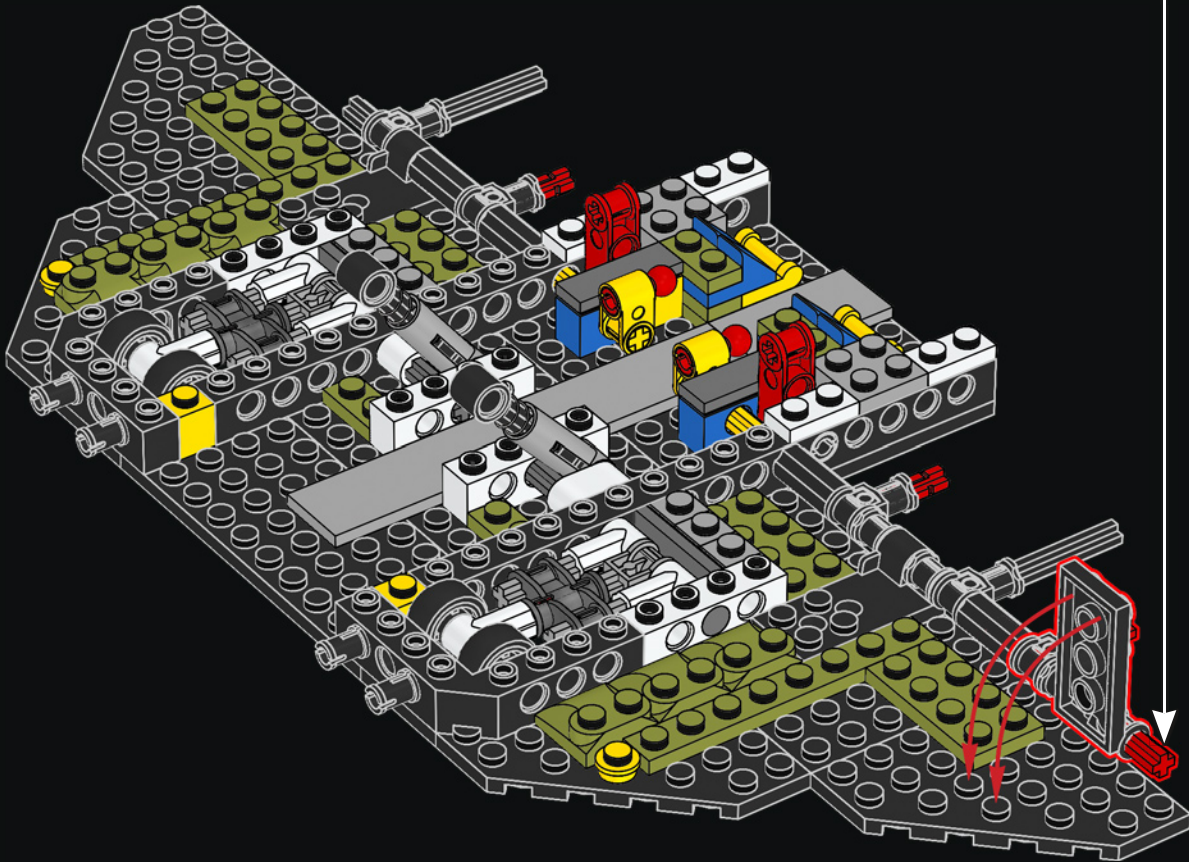
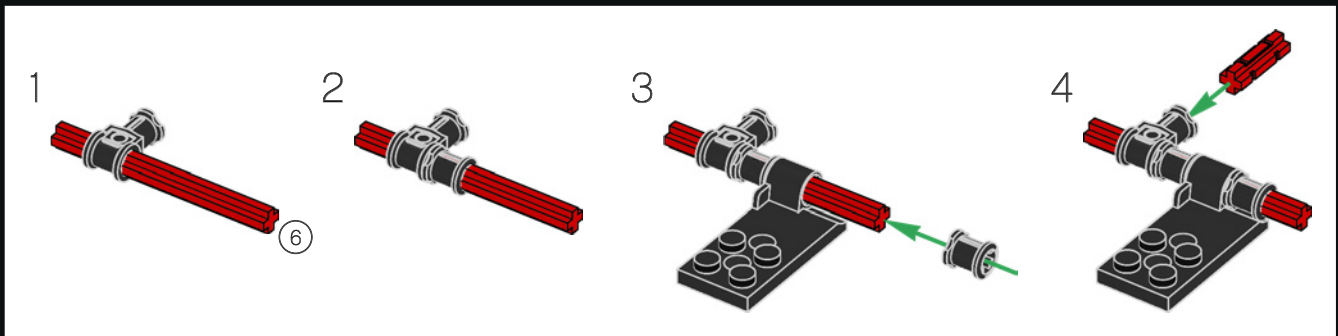


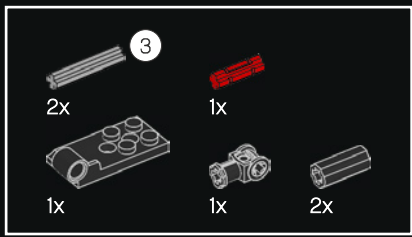
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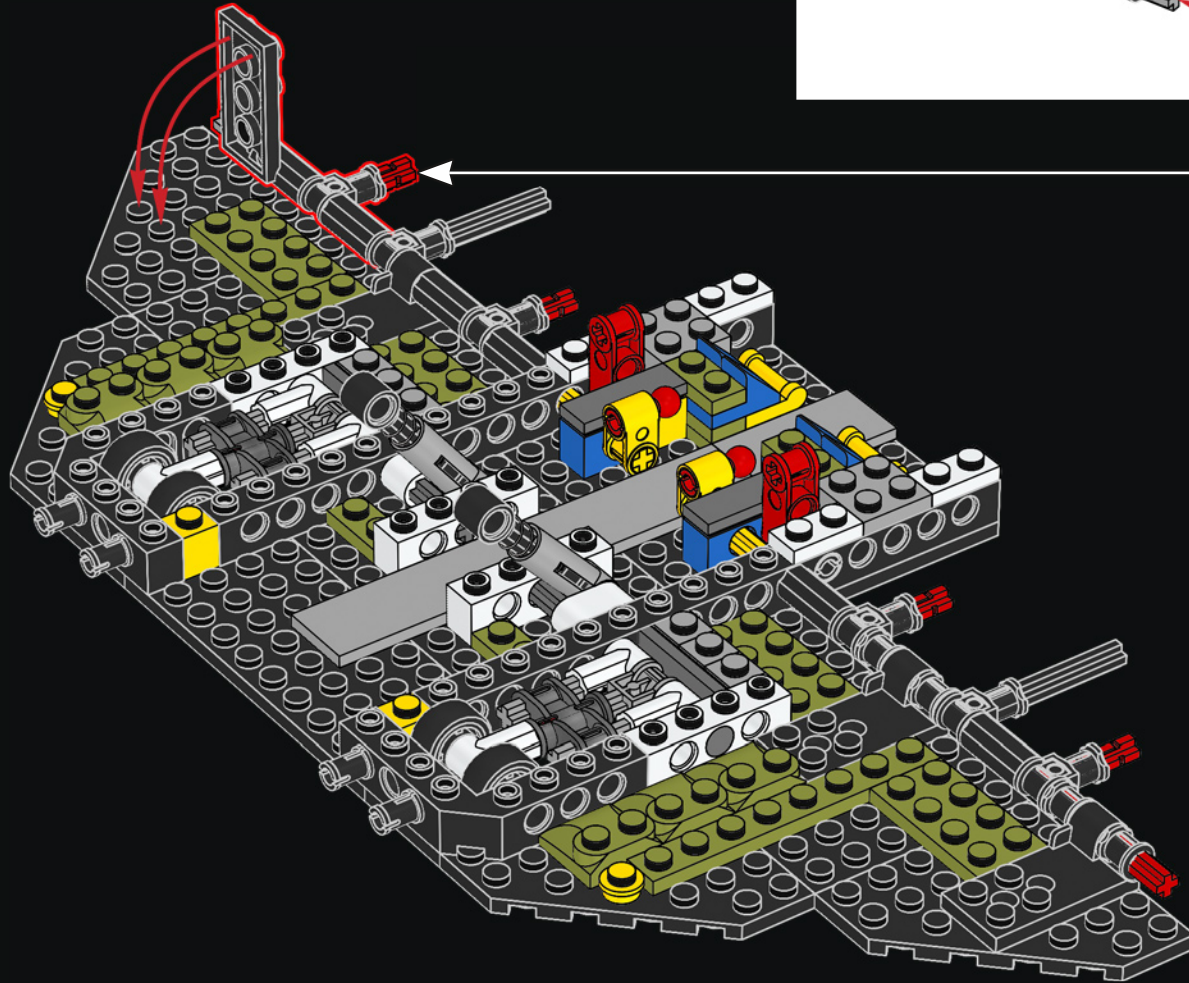
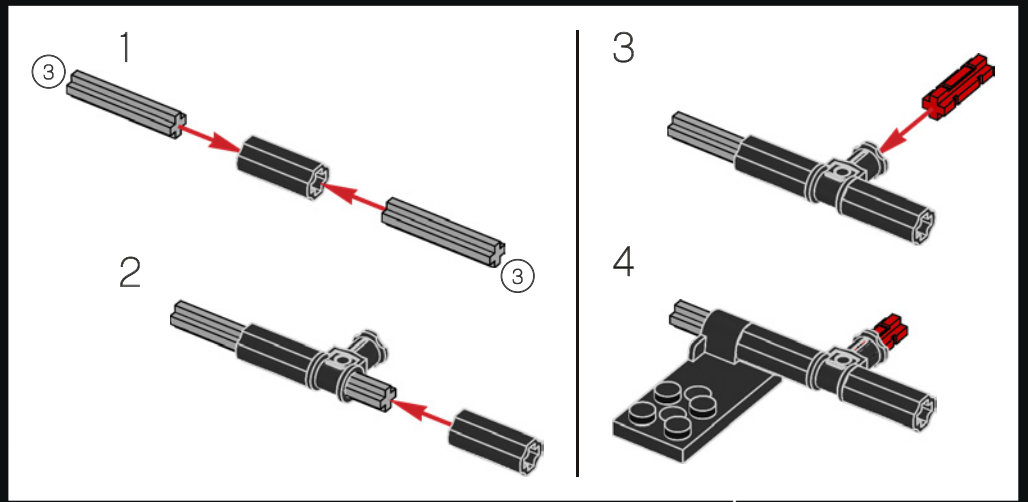


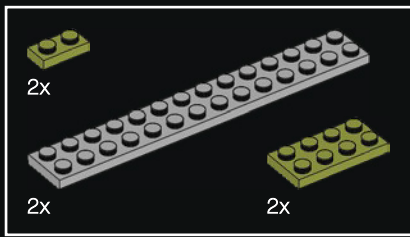
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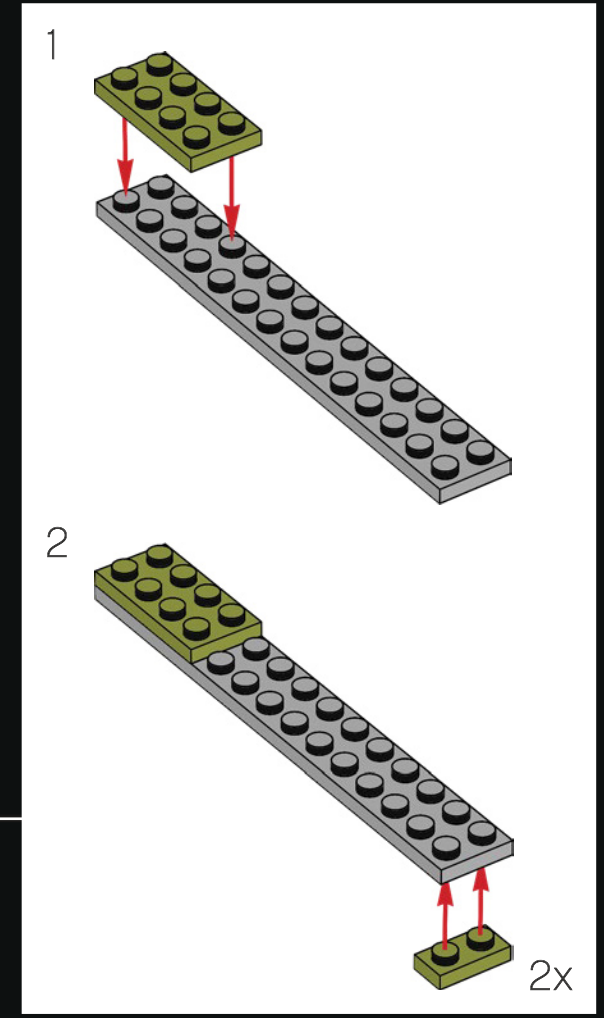
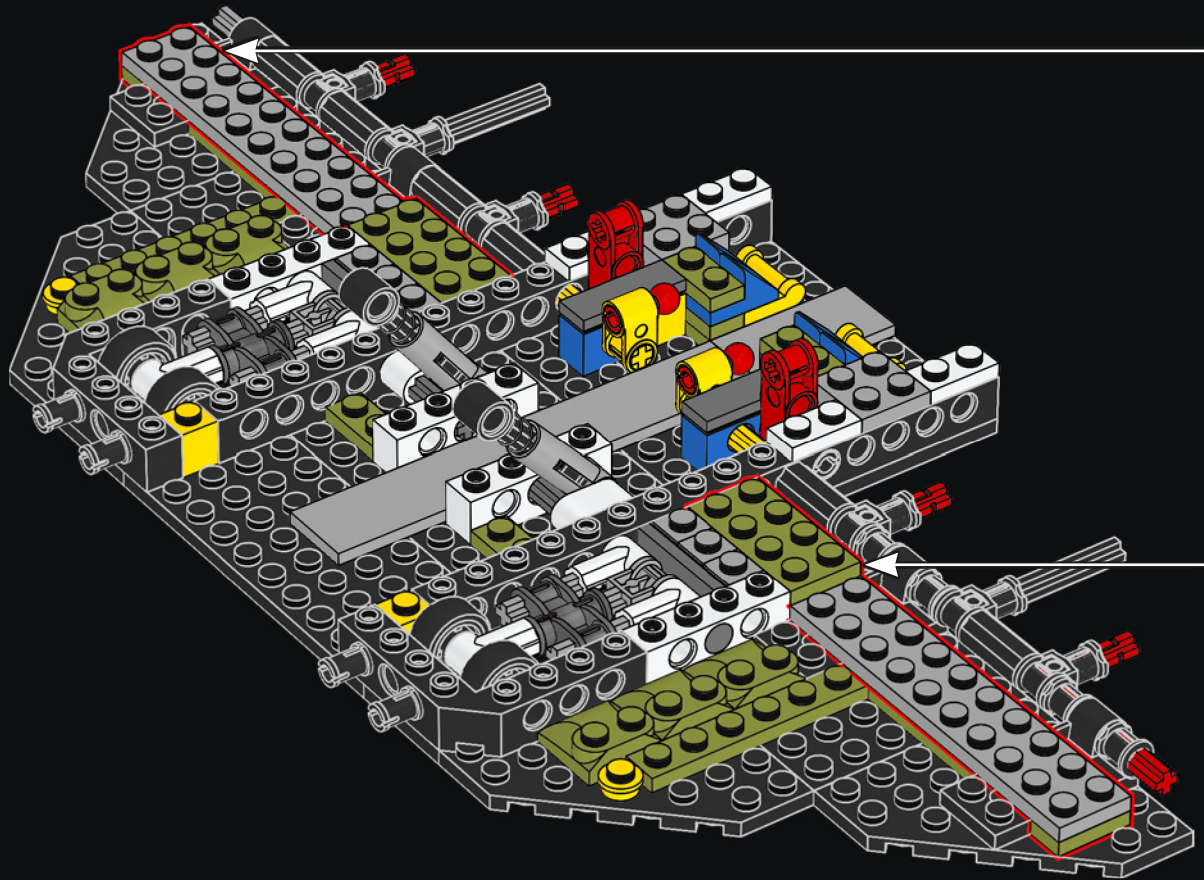


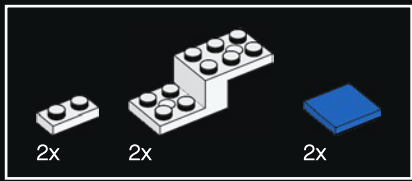
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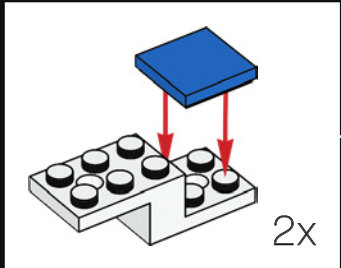
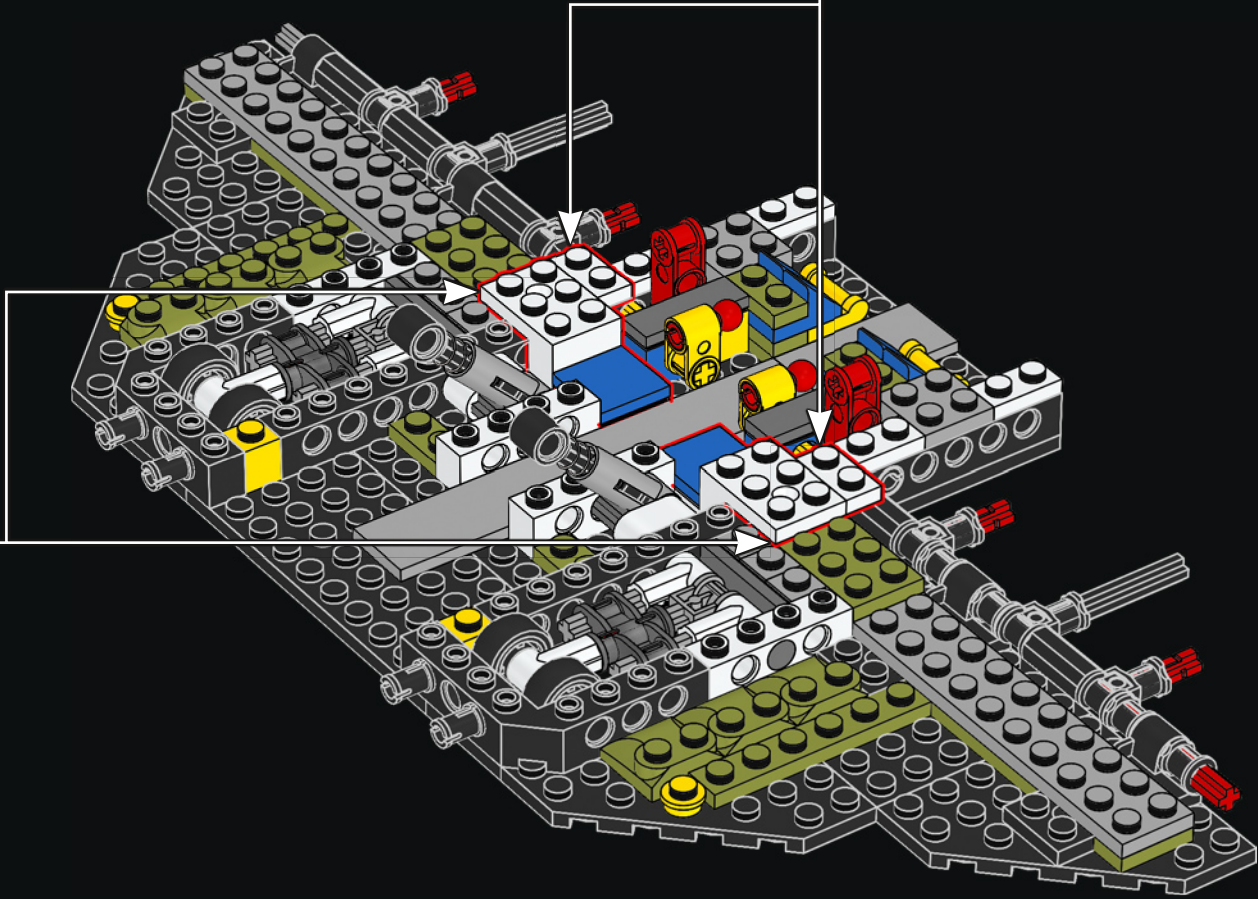
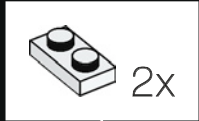


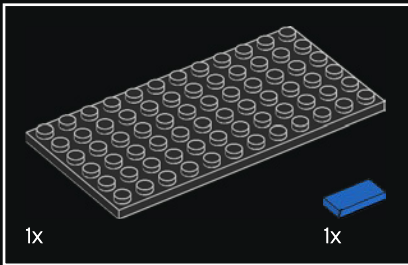
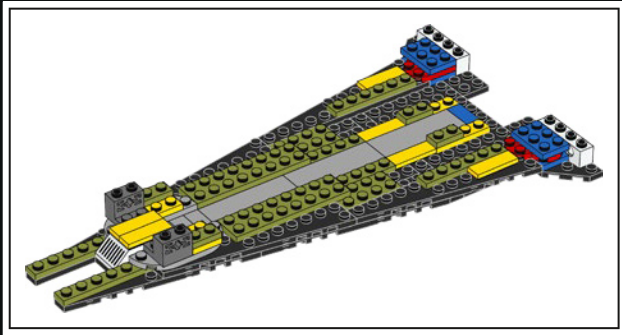
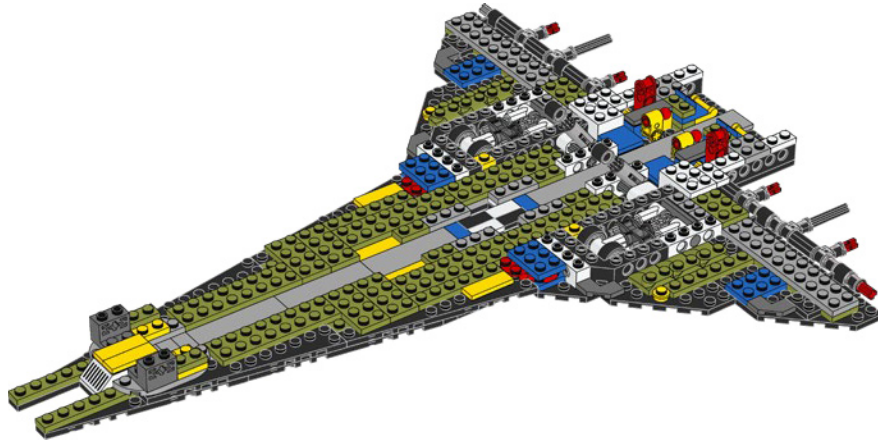
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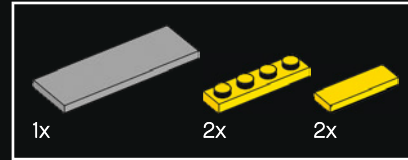
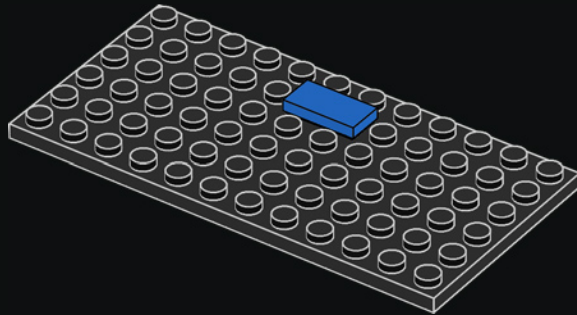


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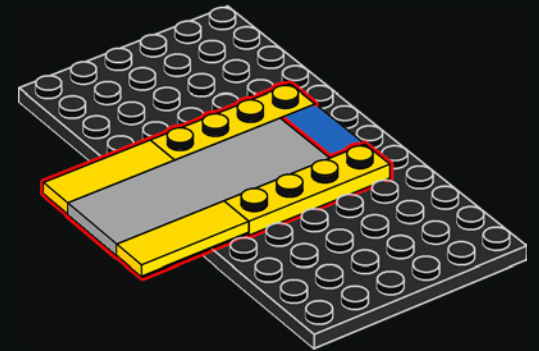


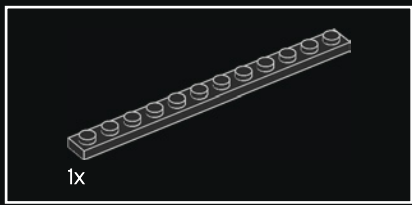


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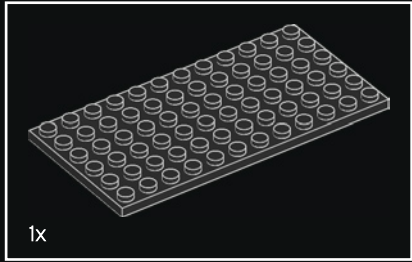
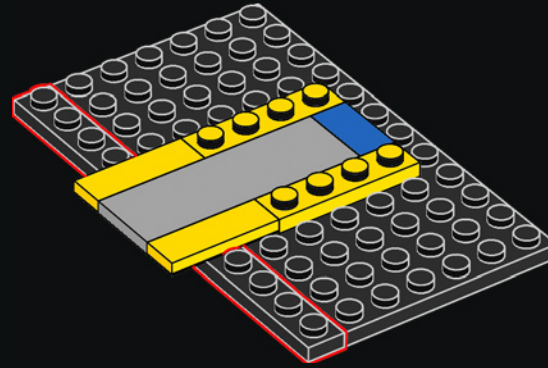


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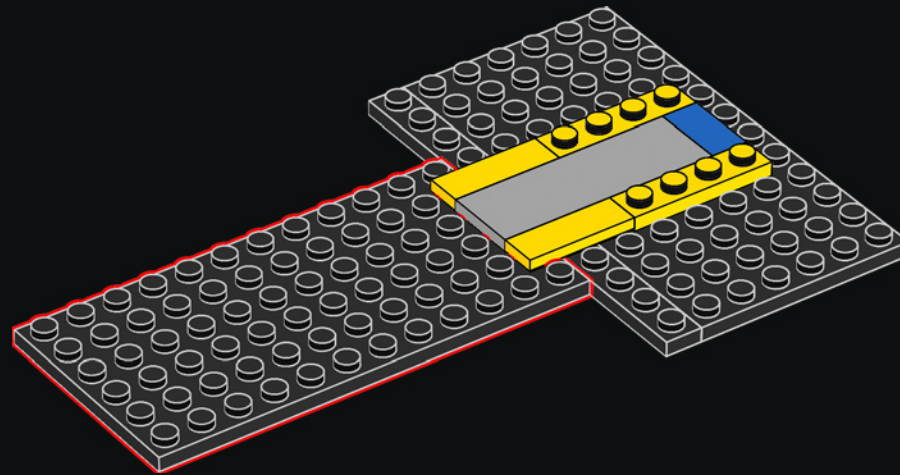


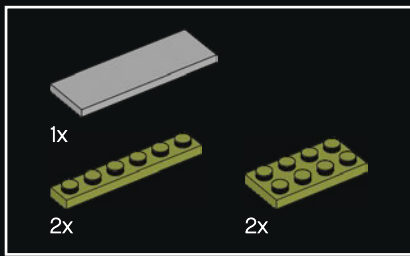


36

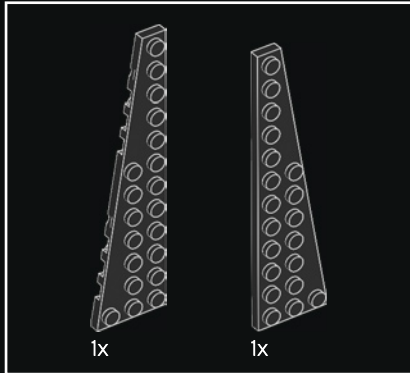
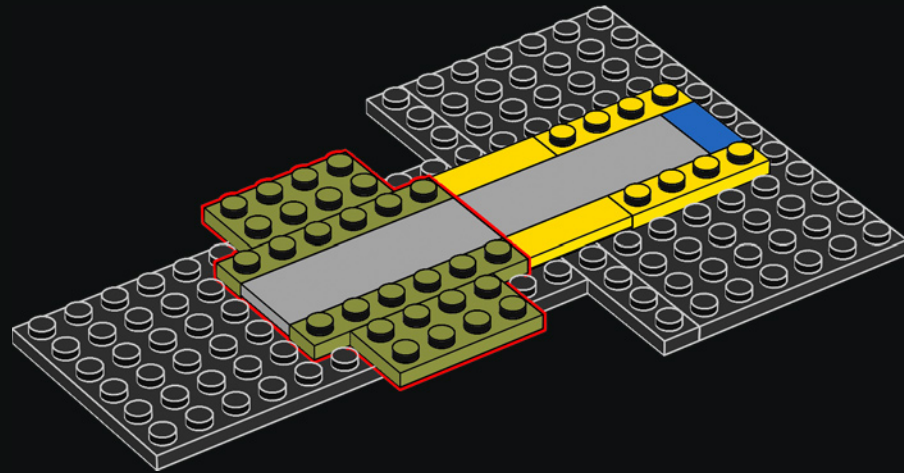


37

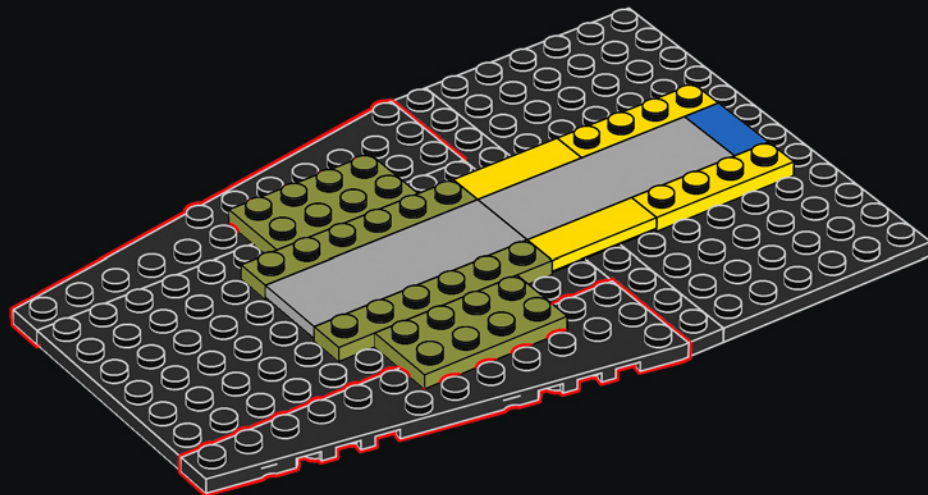


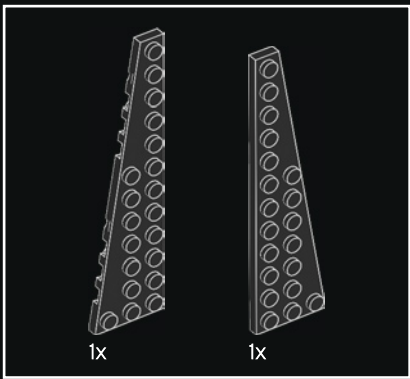


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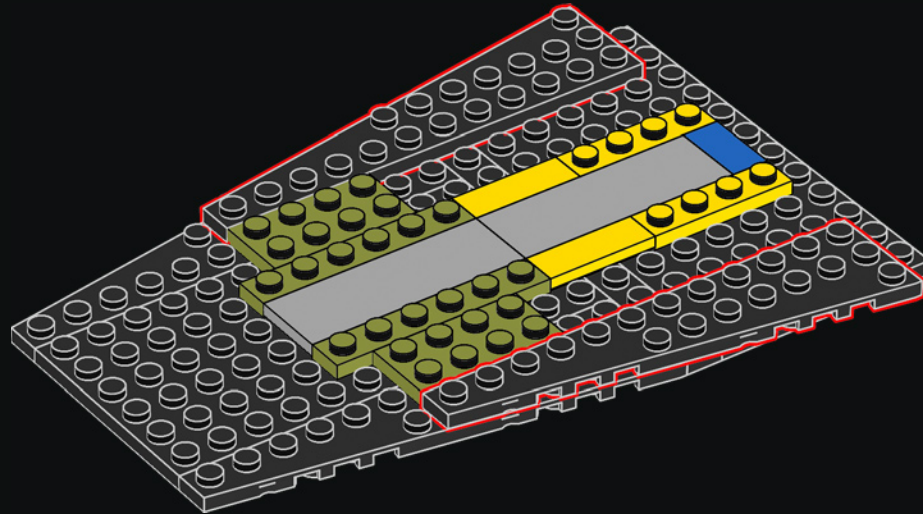


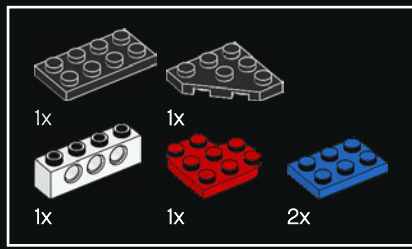


LE SAVIEZ-VOUS ?

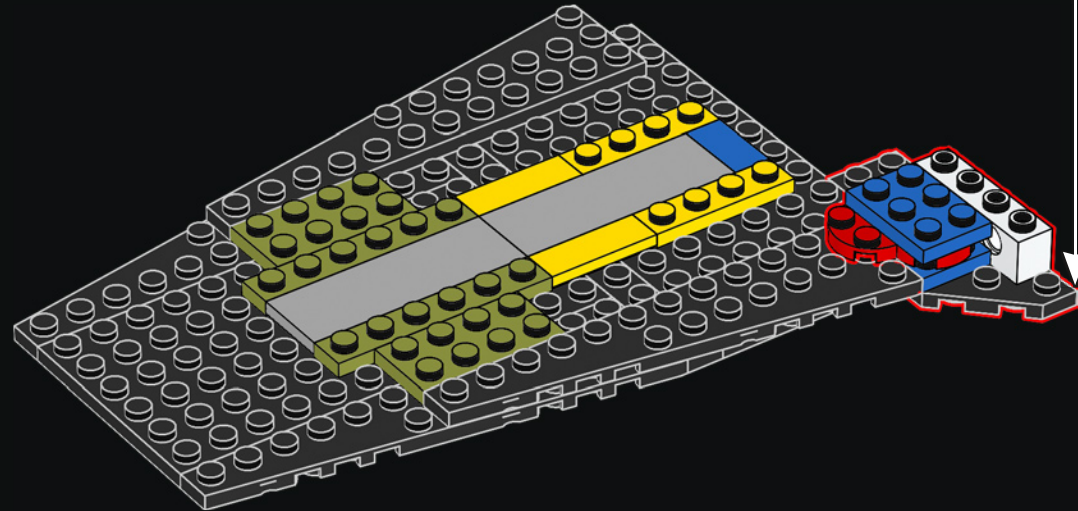
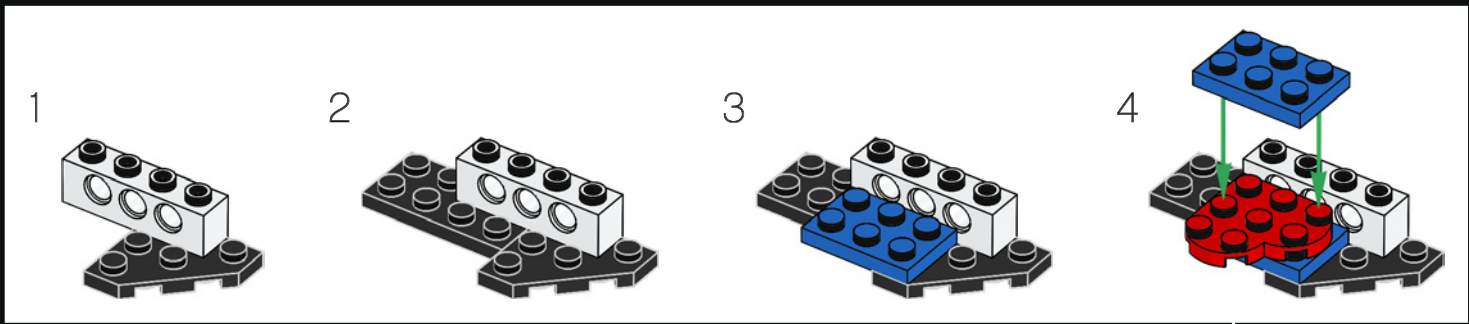
Avec sa vitesse orbitale de 28 158 km/h, la navette spatiale a permis à son équipage de voyager suffisamment vite pour voir un lever ou un coucher de soleil toutes les 45 minutes.

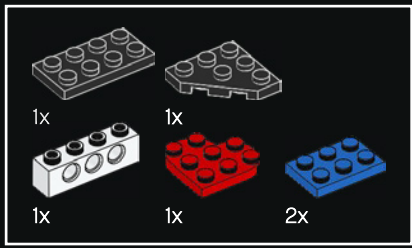
40



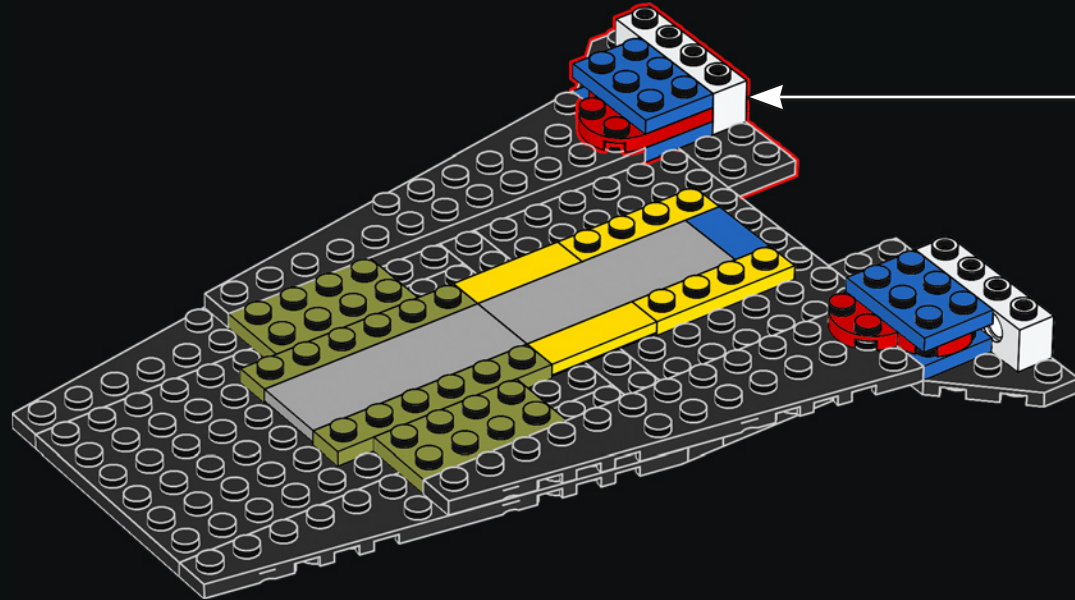
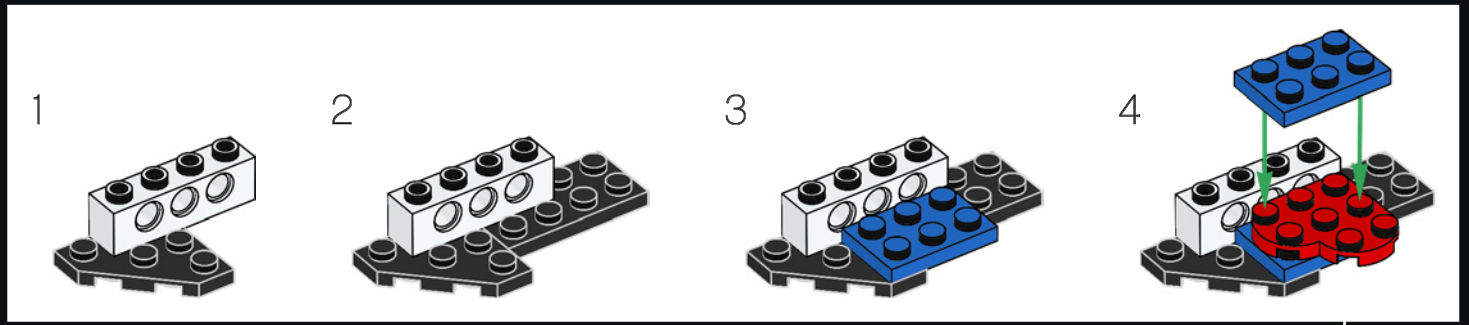


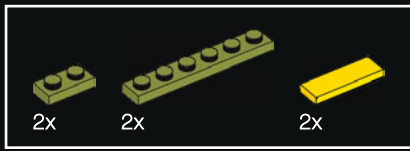
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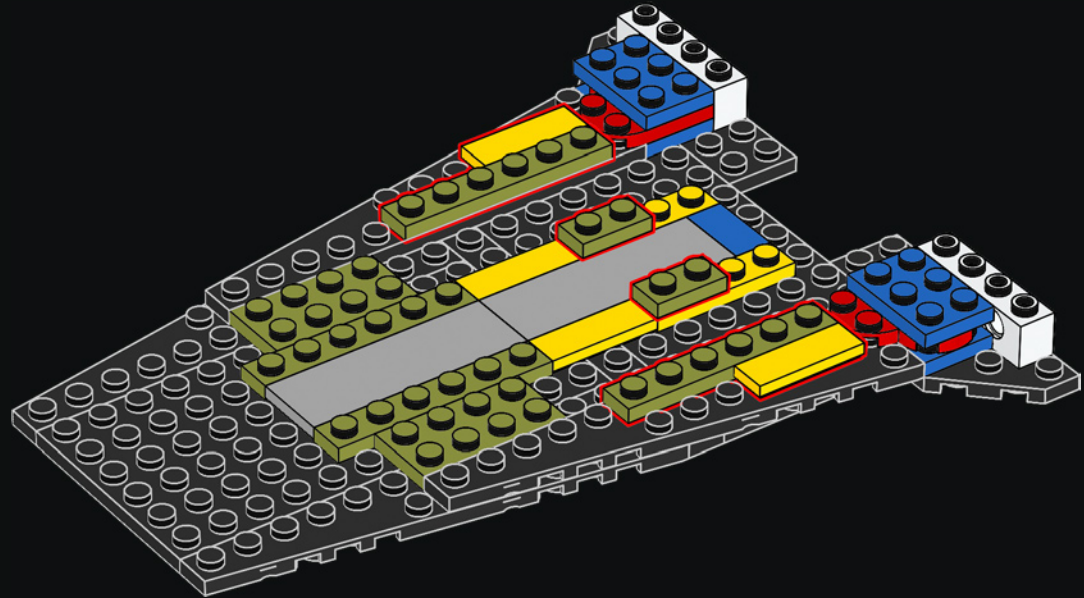


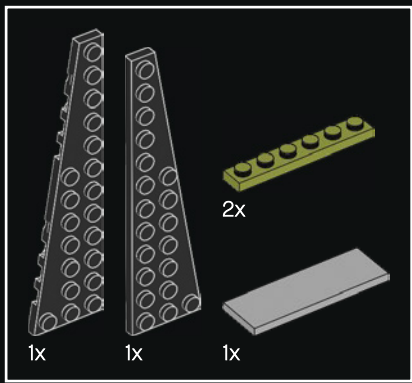
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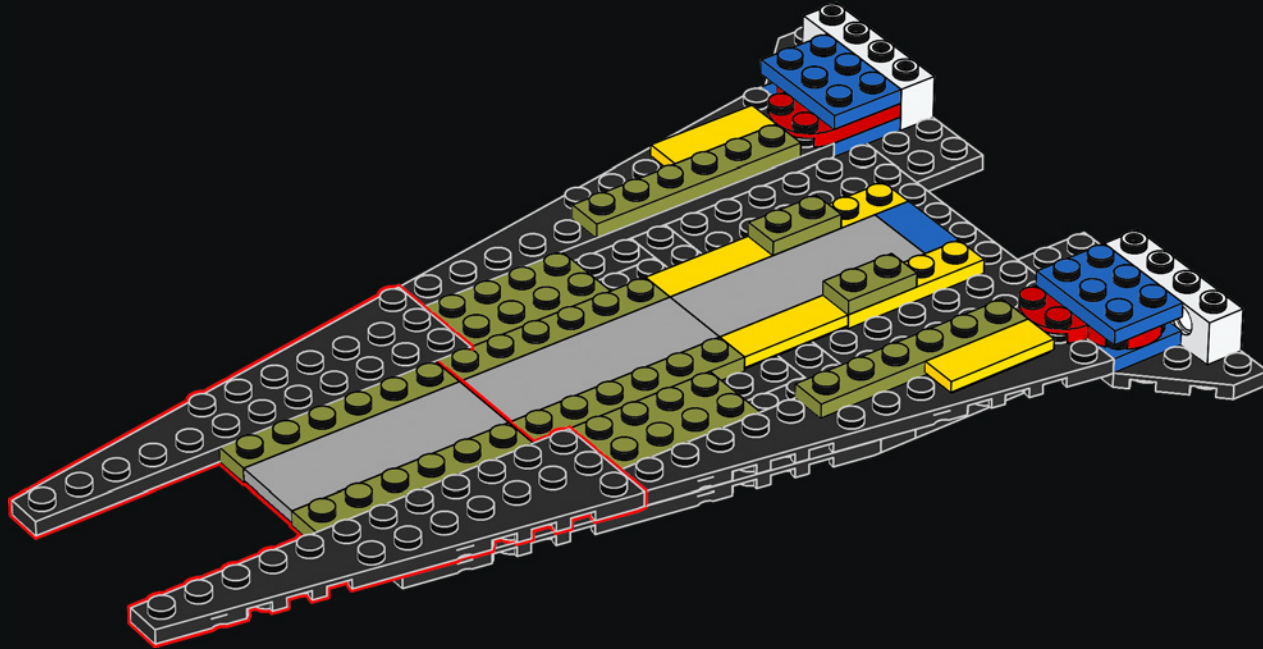


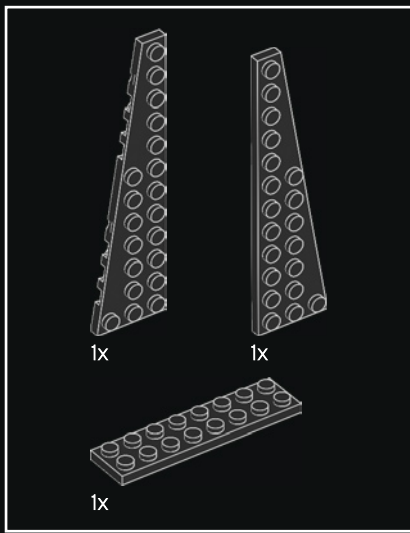
43



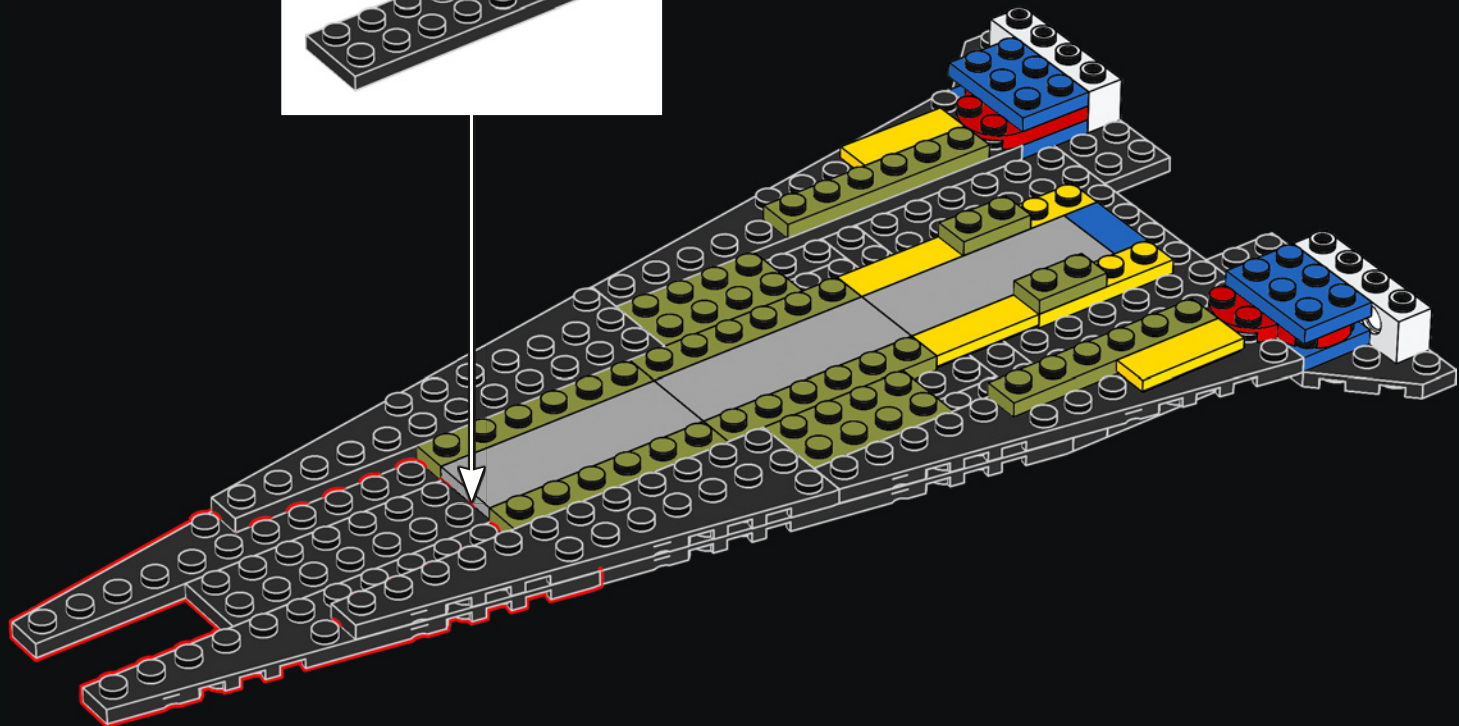
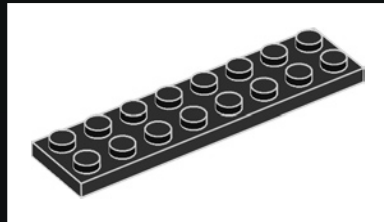


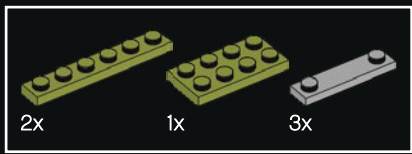
44



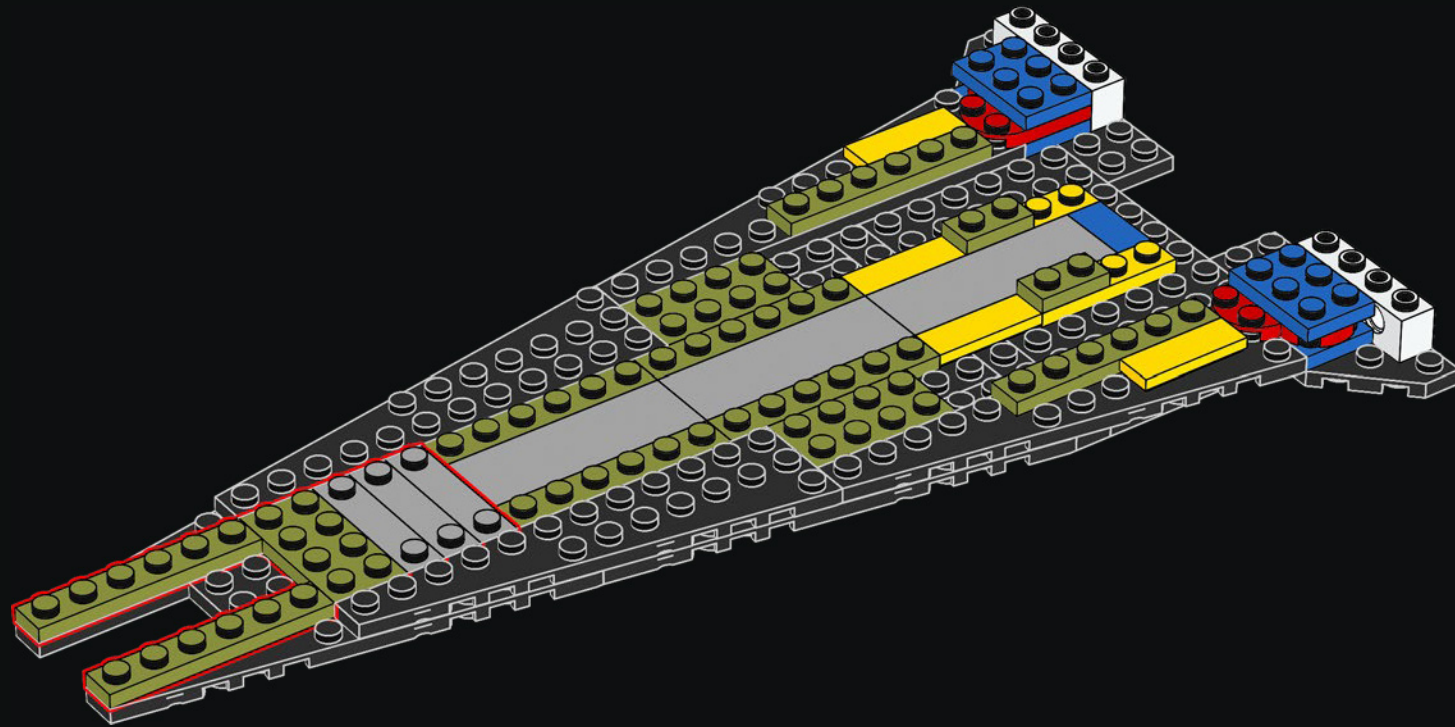


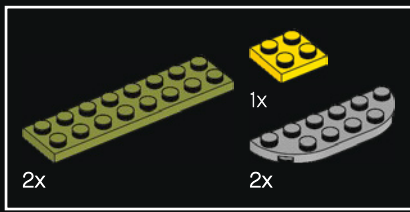
45



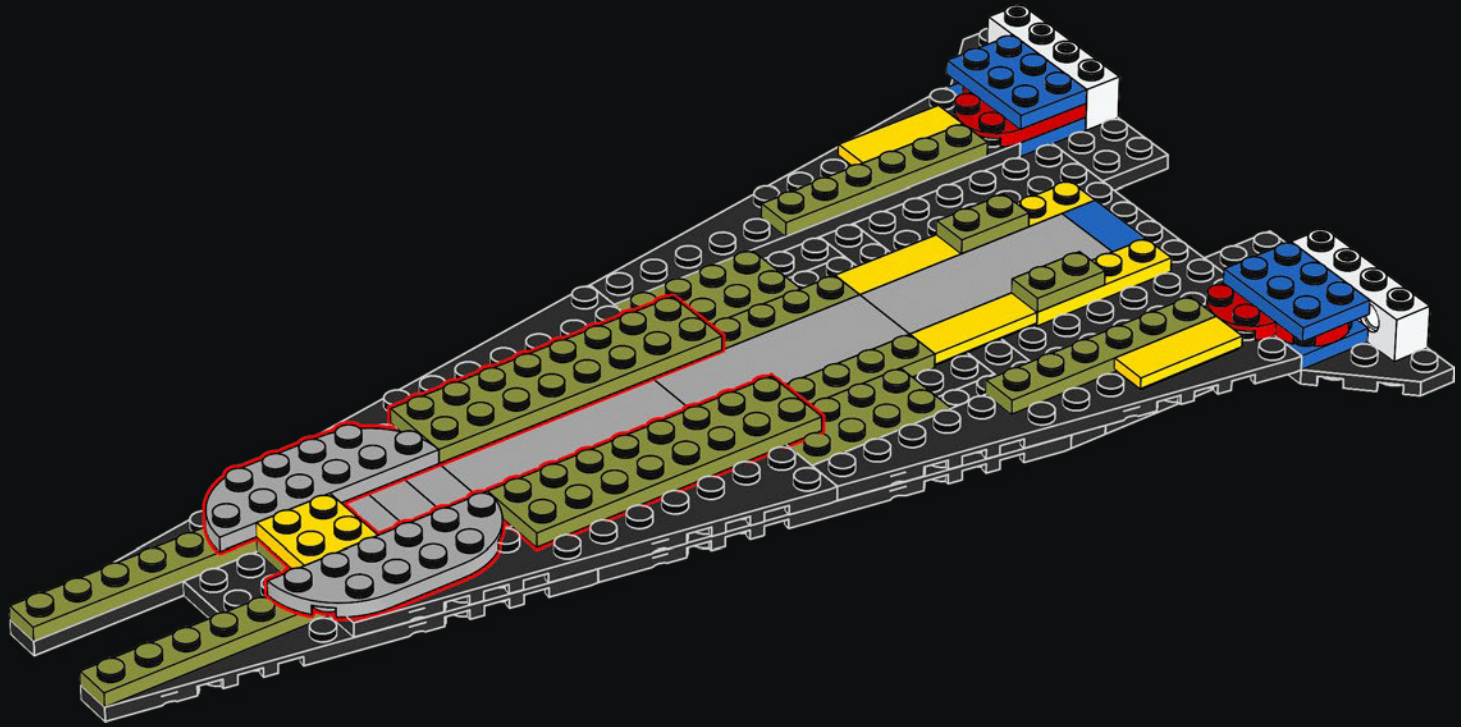


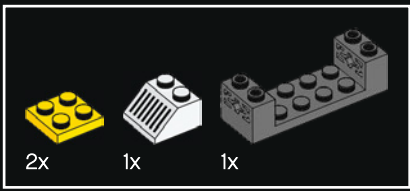
46



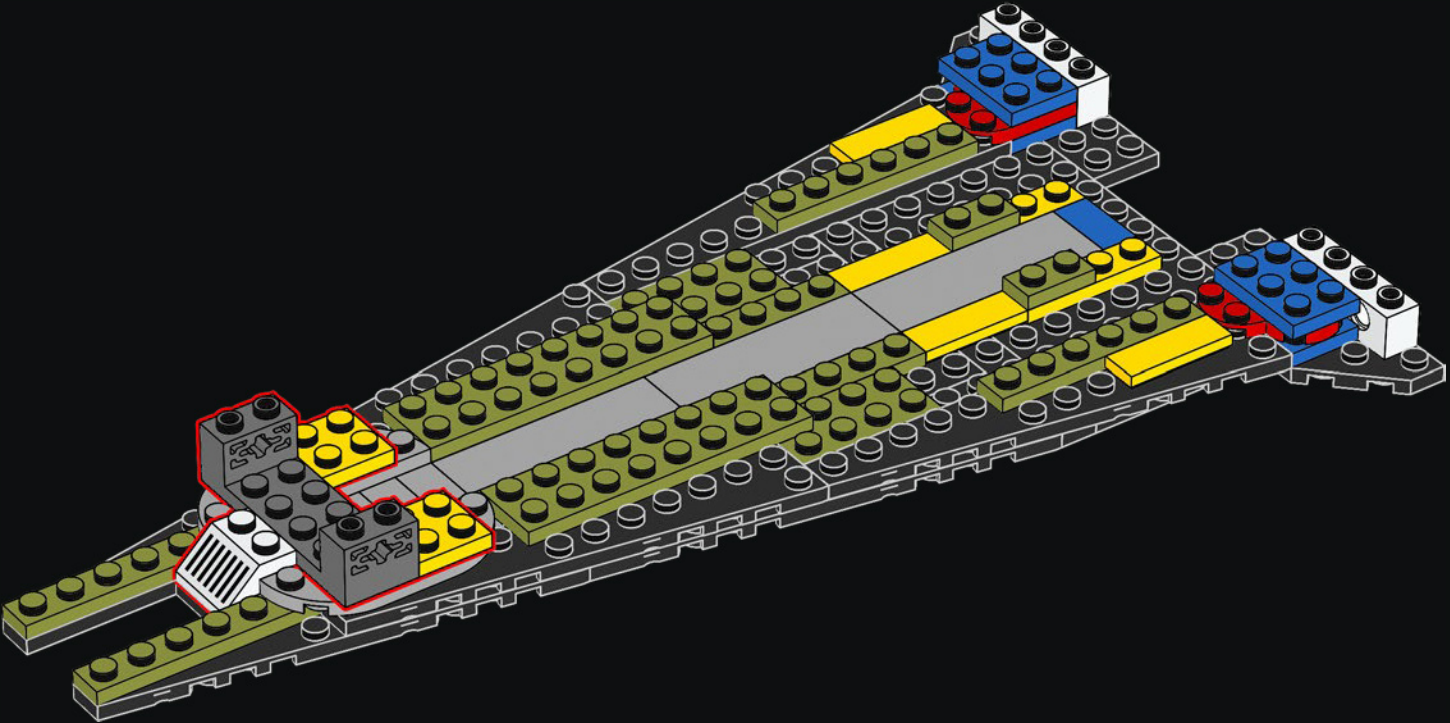


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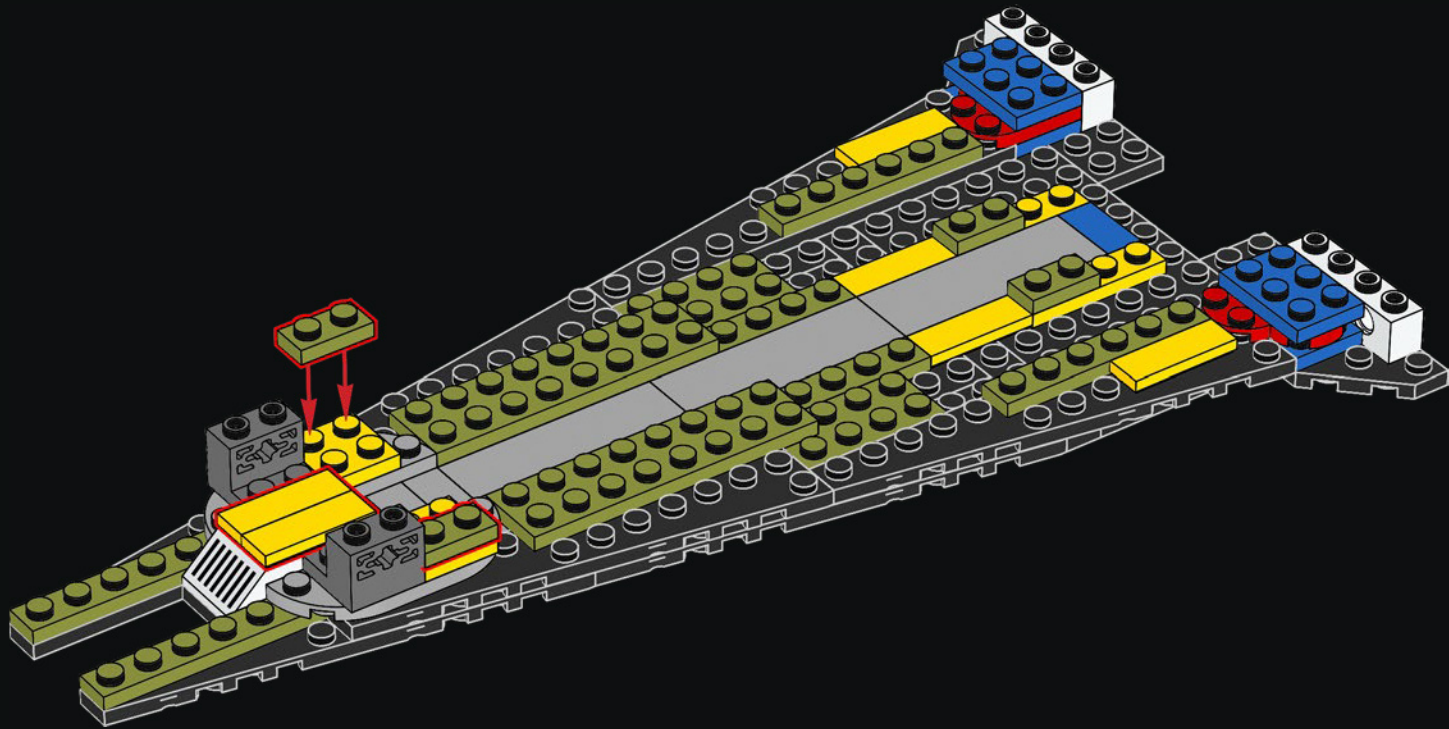


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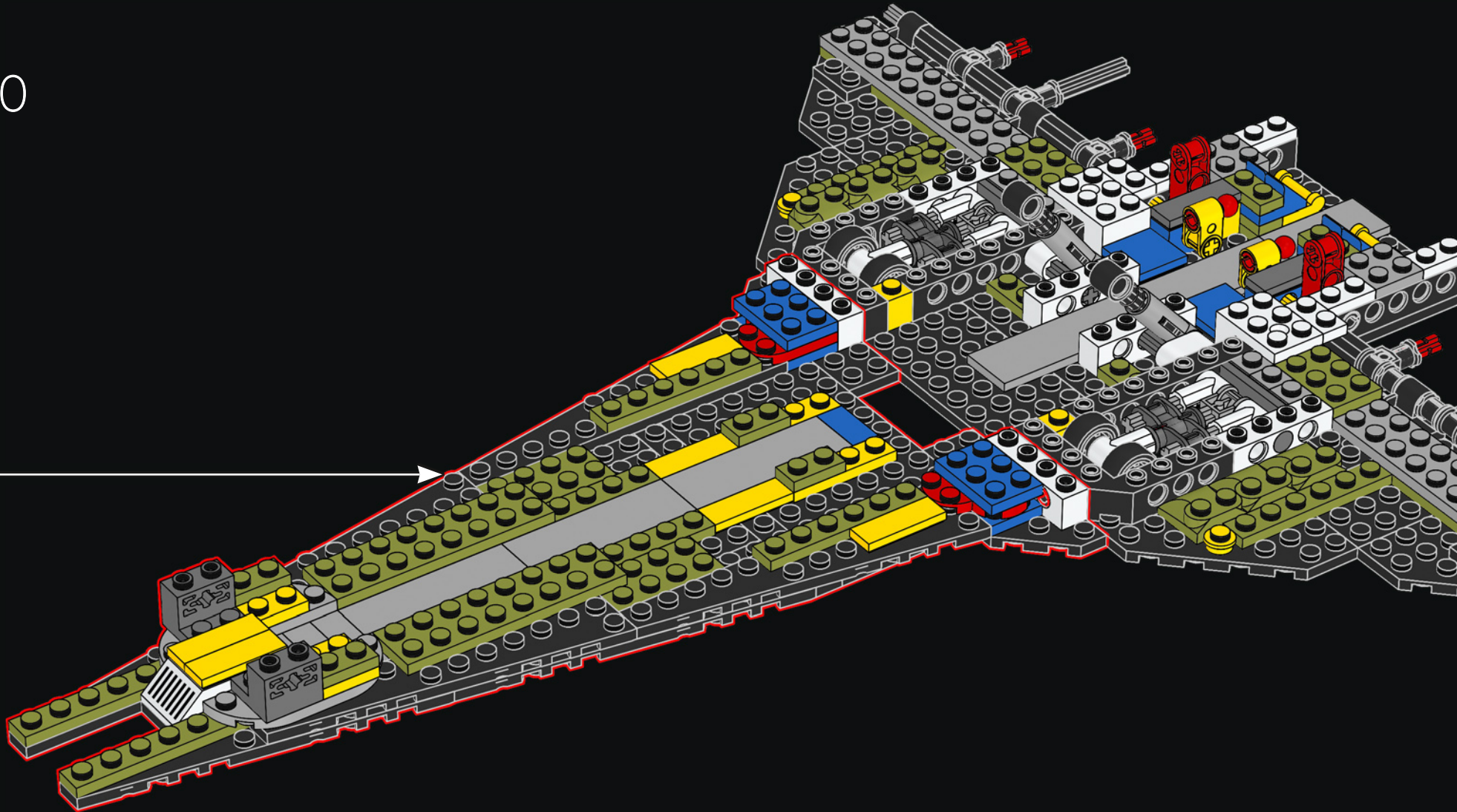


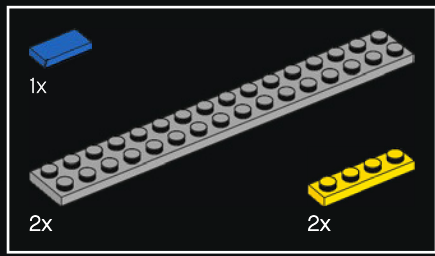


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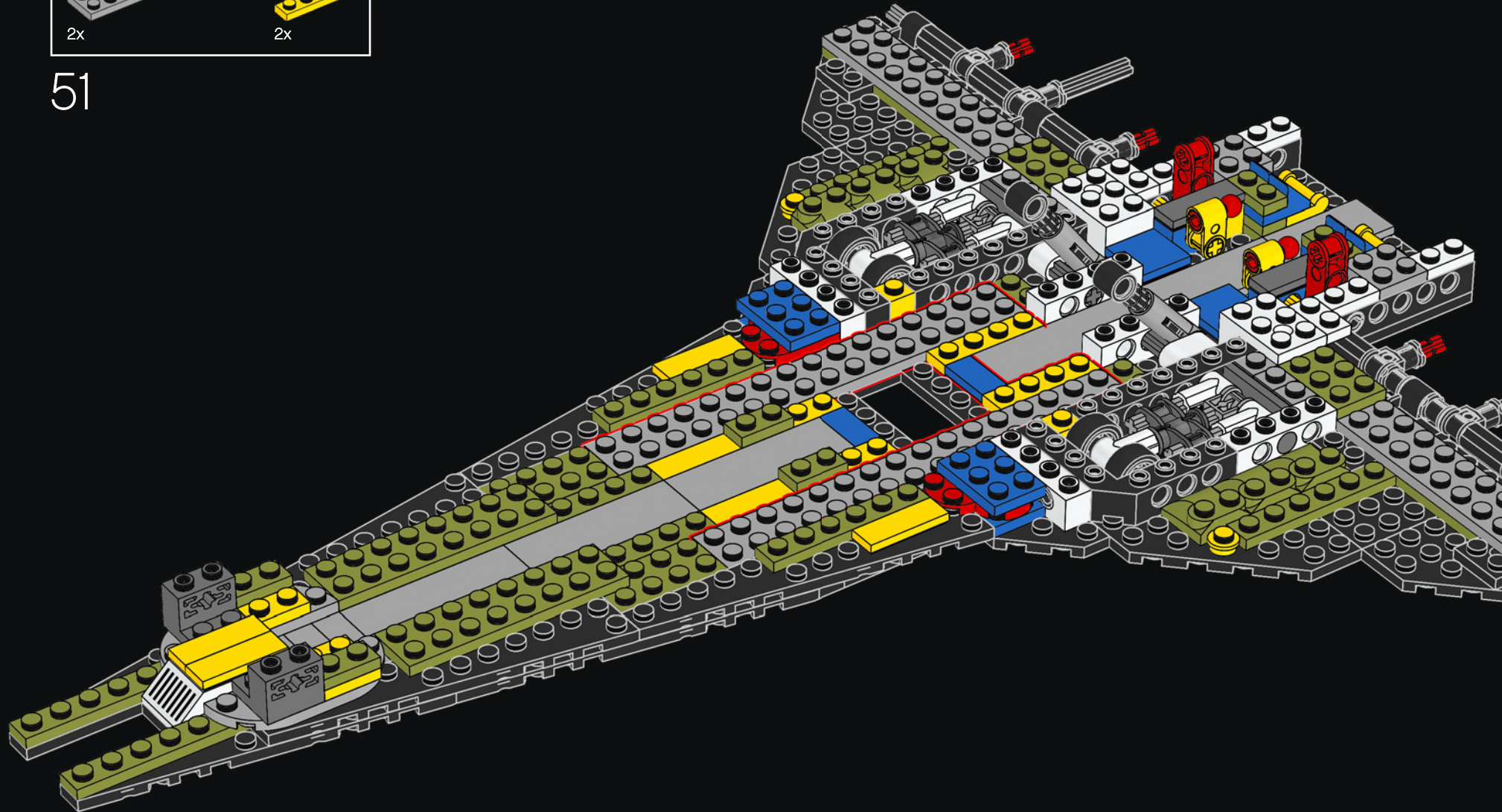


50



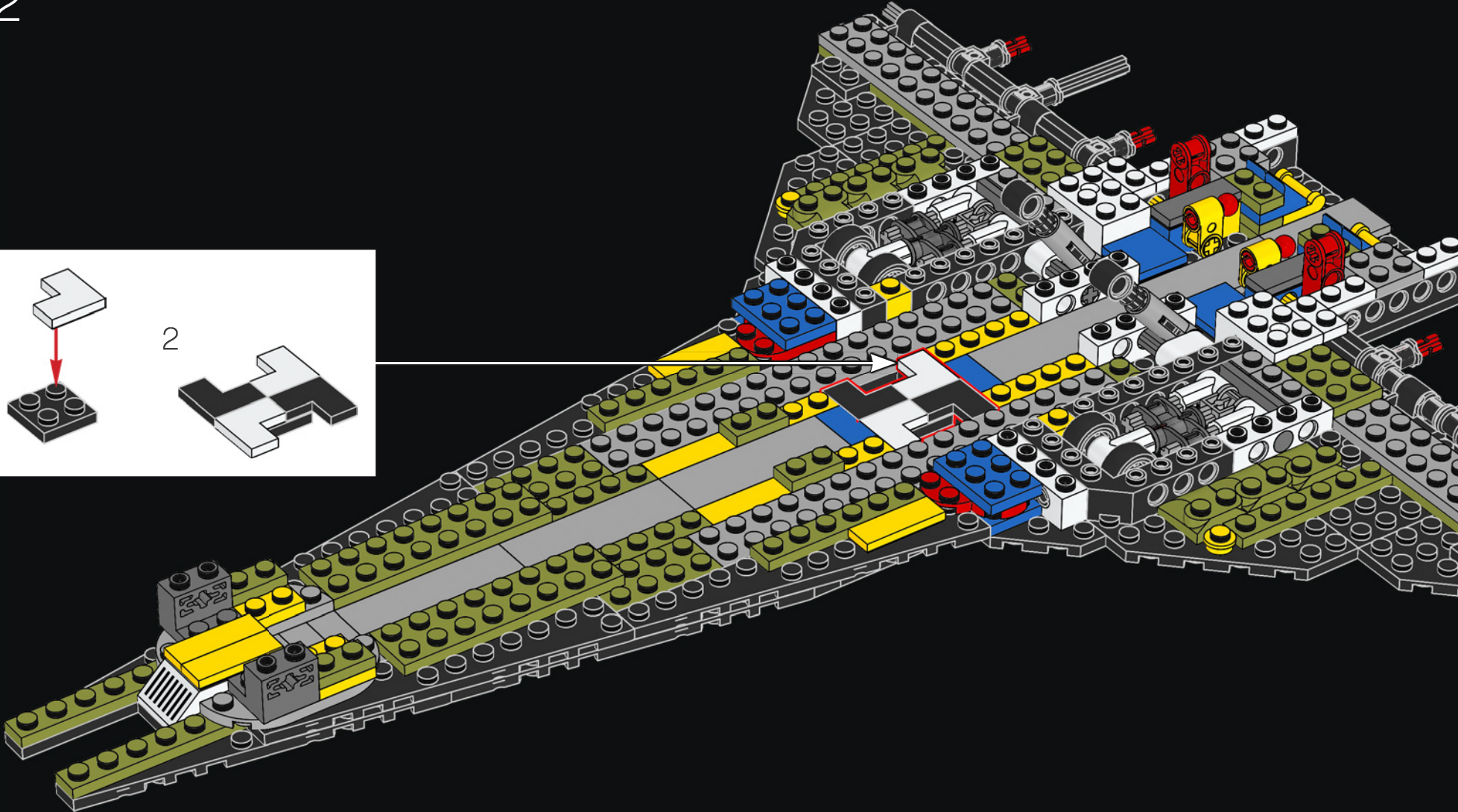
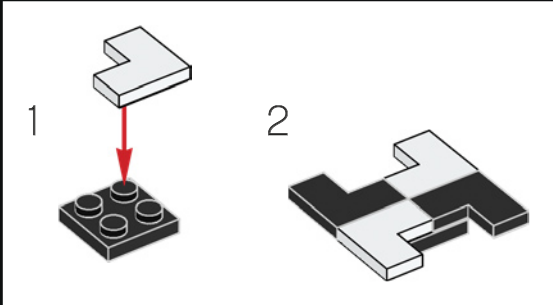


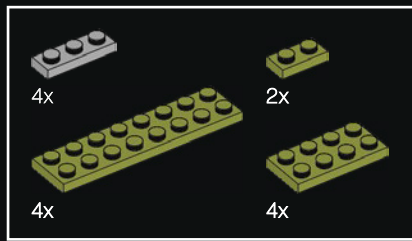
51



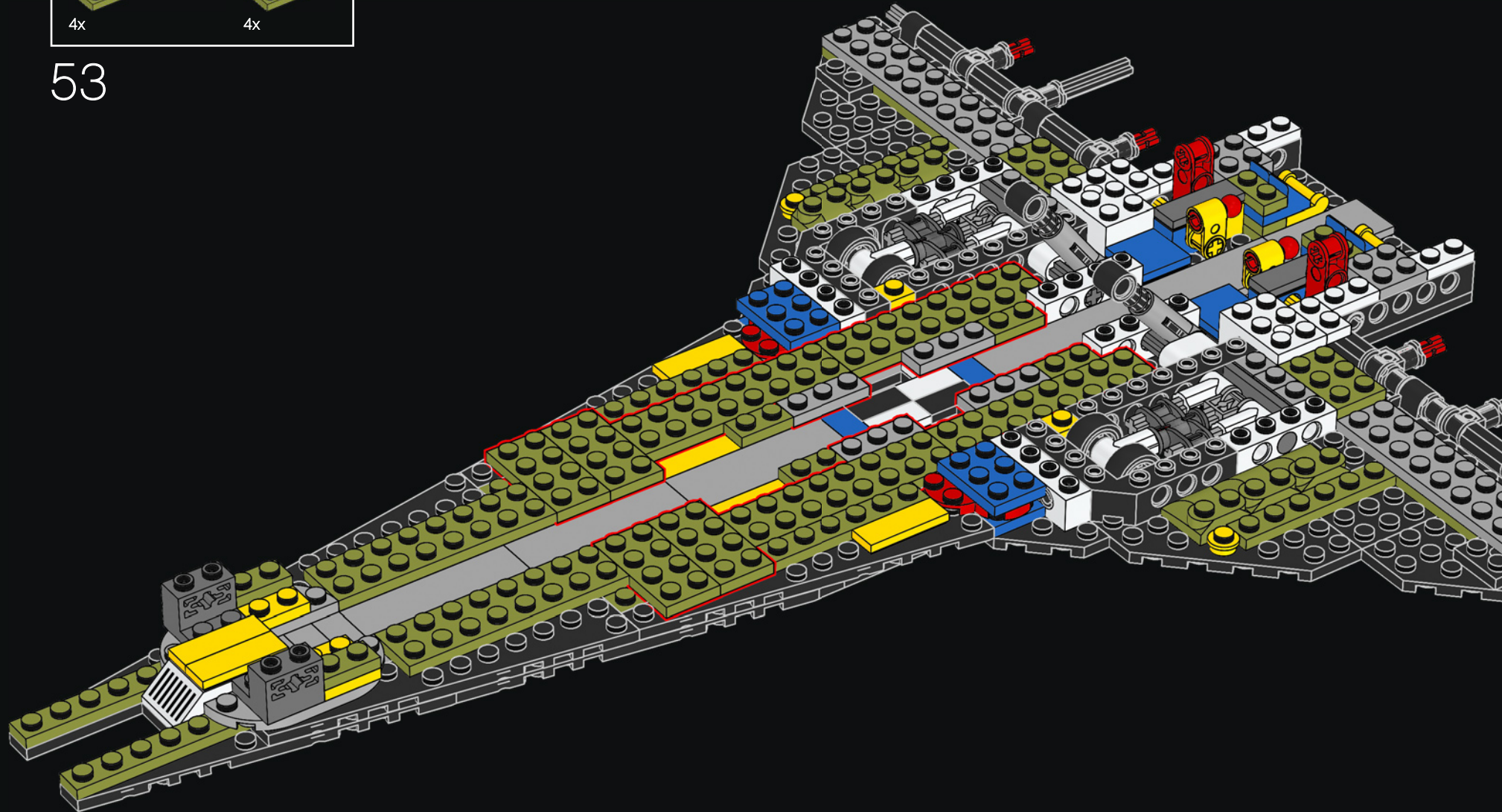


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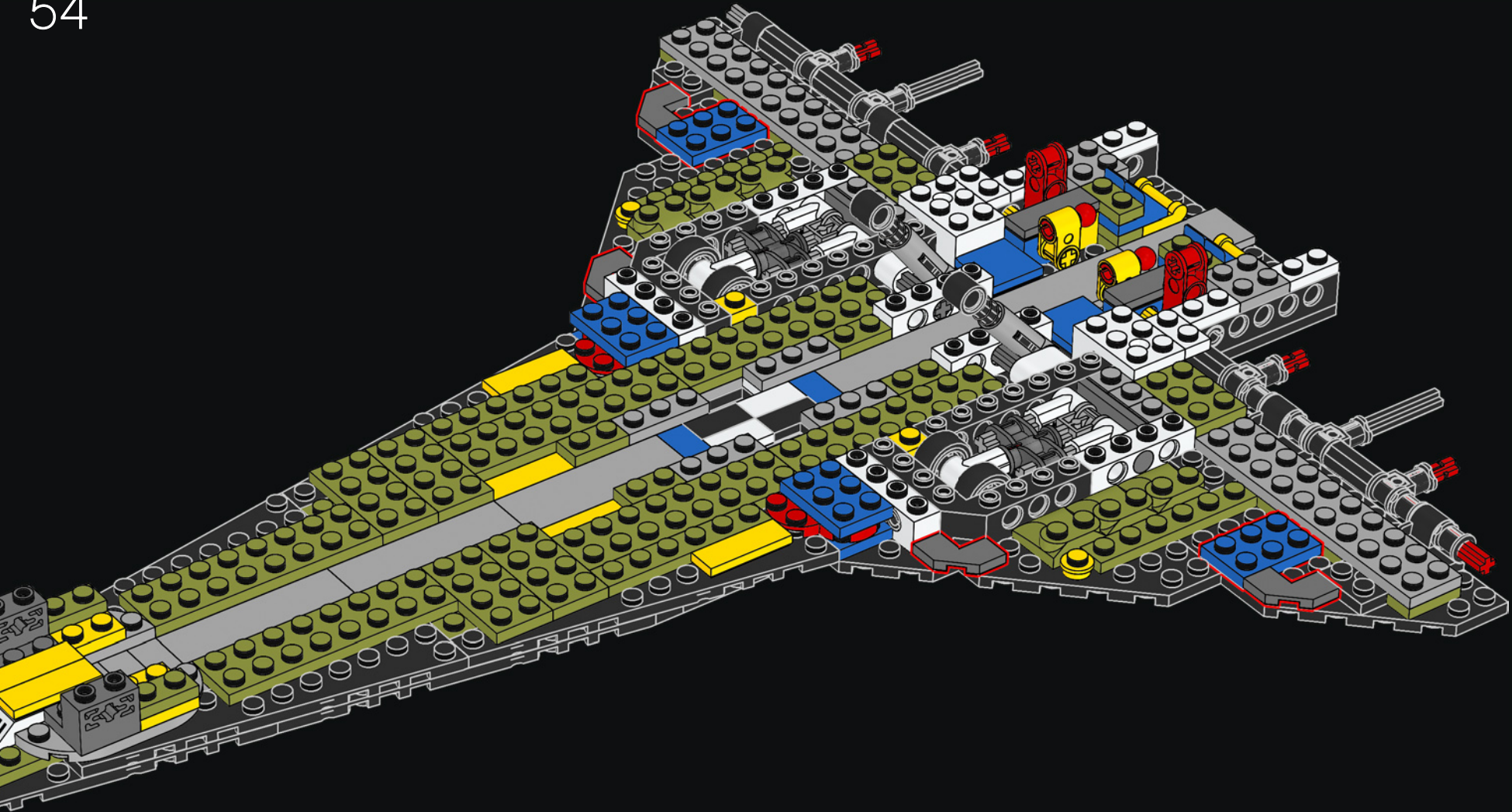


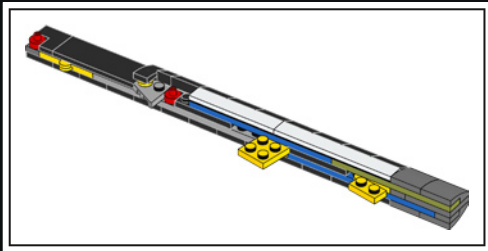
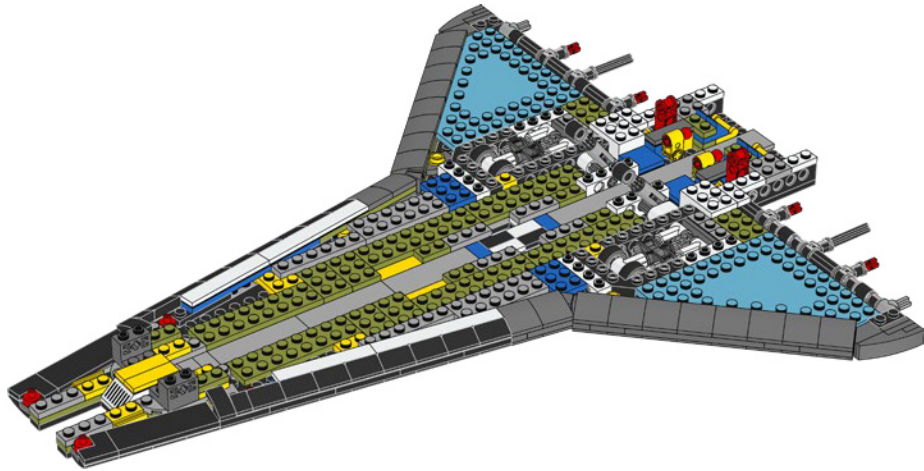
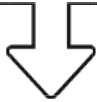
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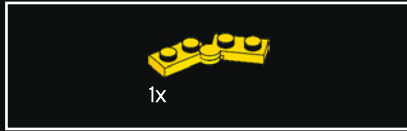
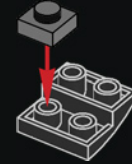


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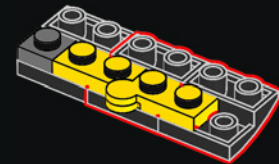
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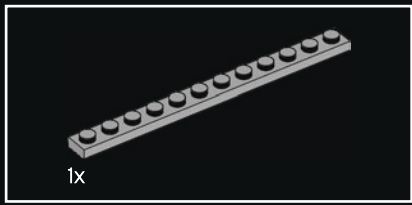


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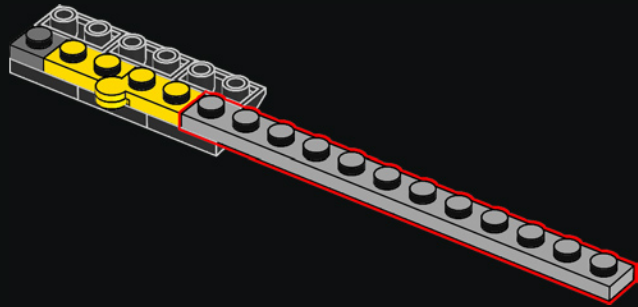


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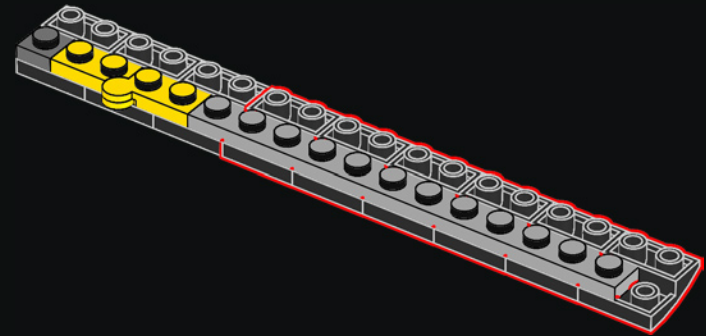


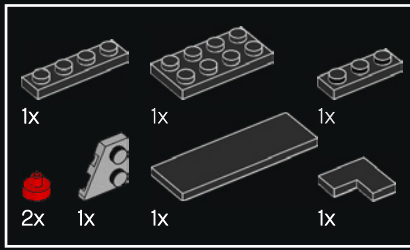


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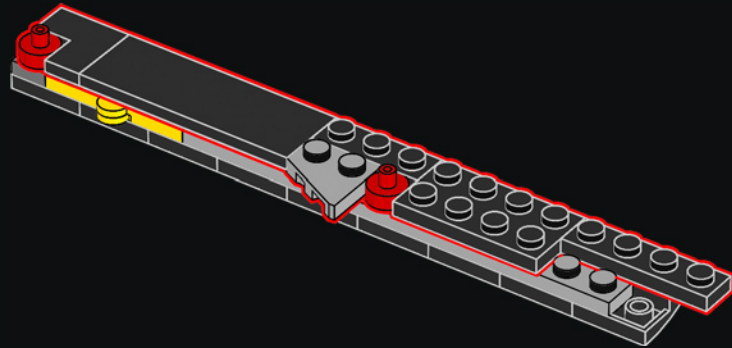


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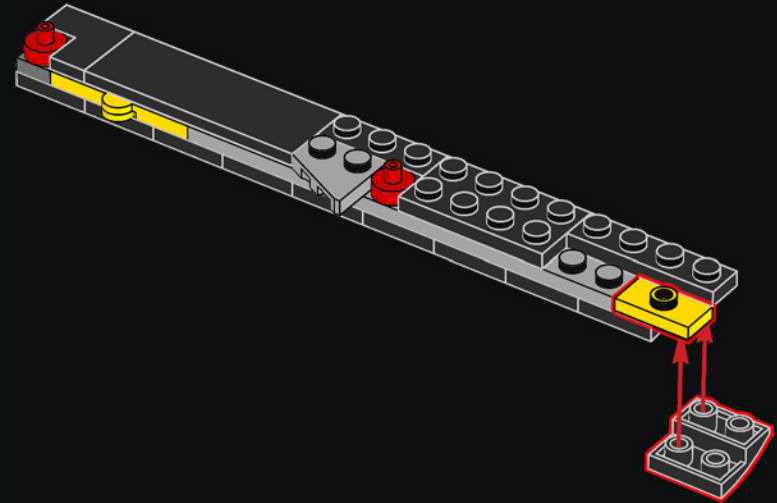


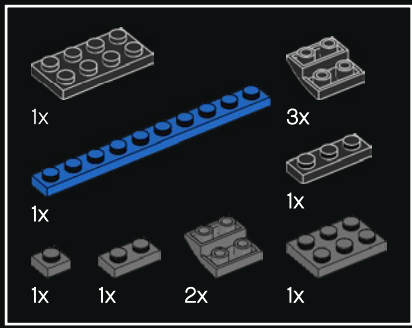


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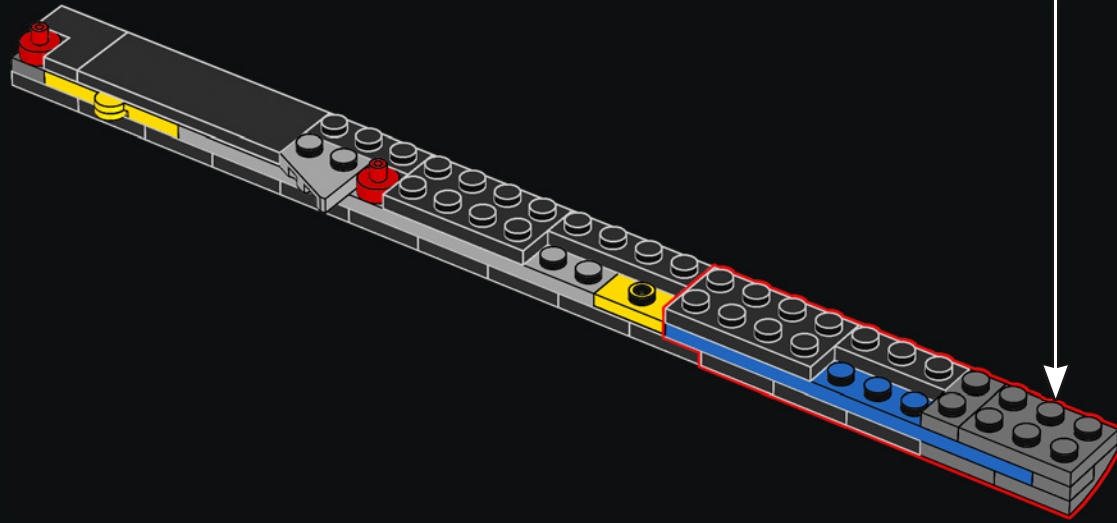
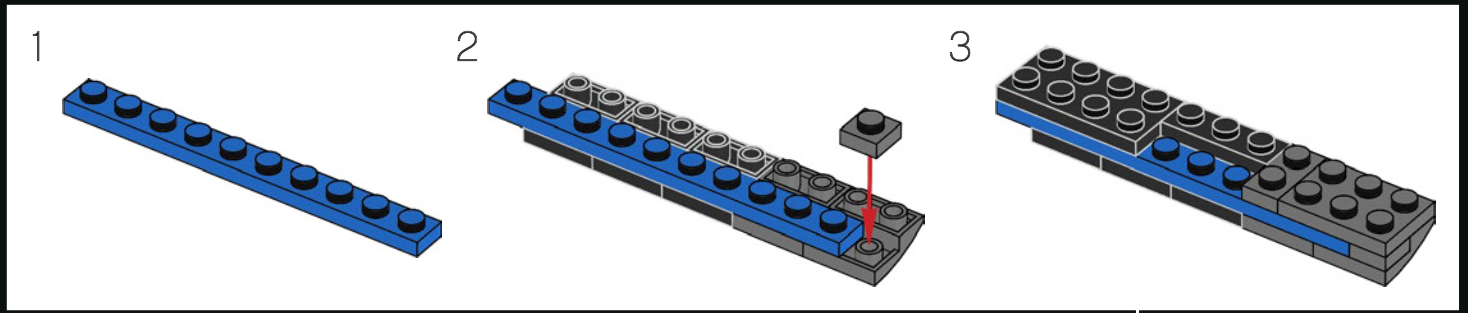


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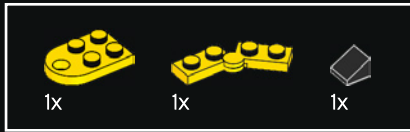
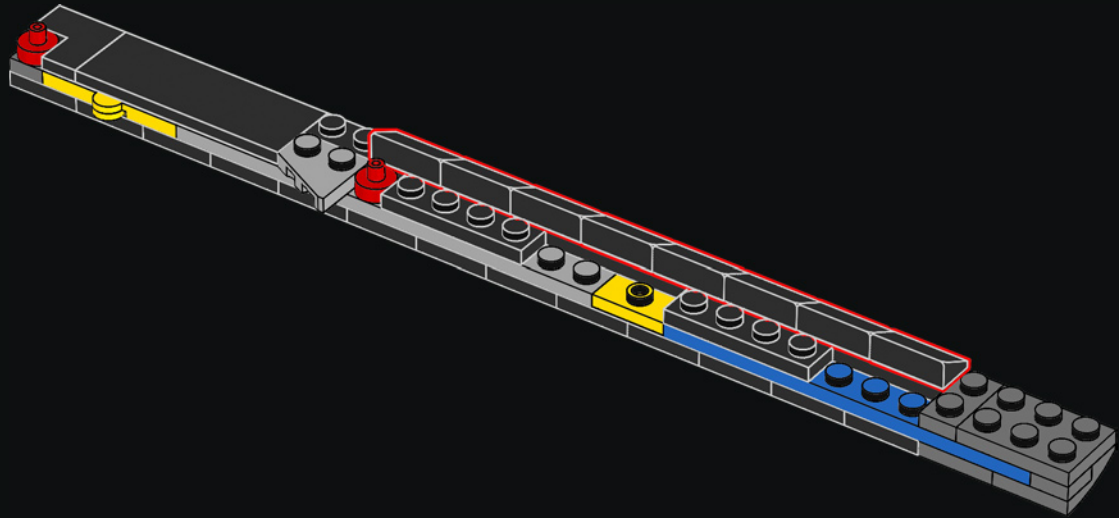


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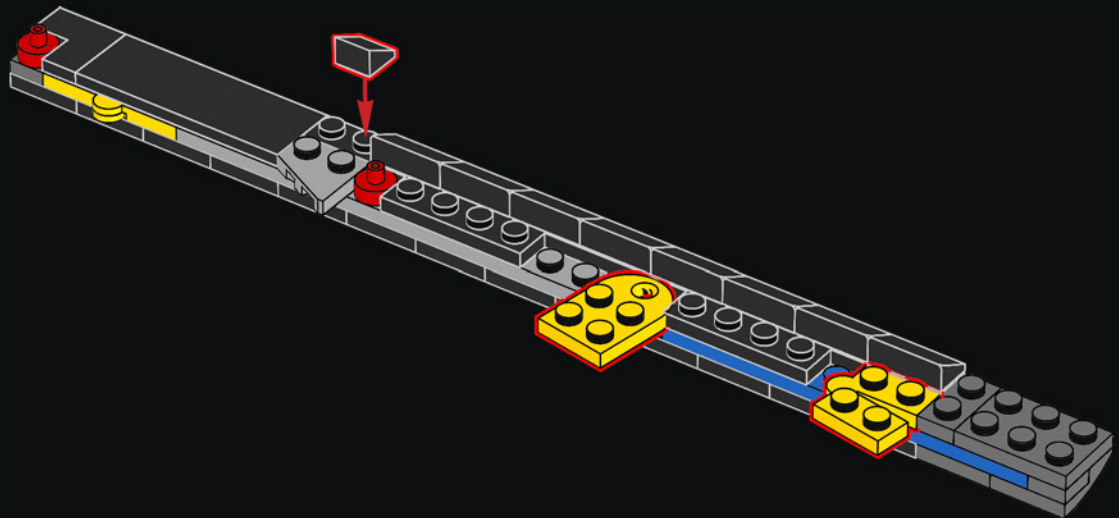


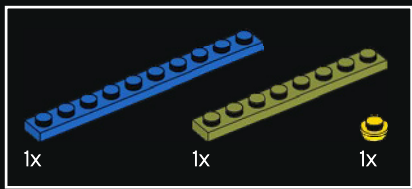


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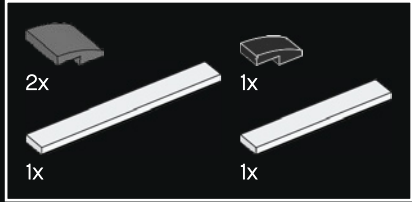
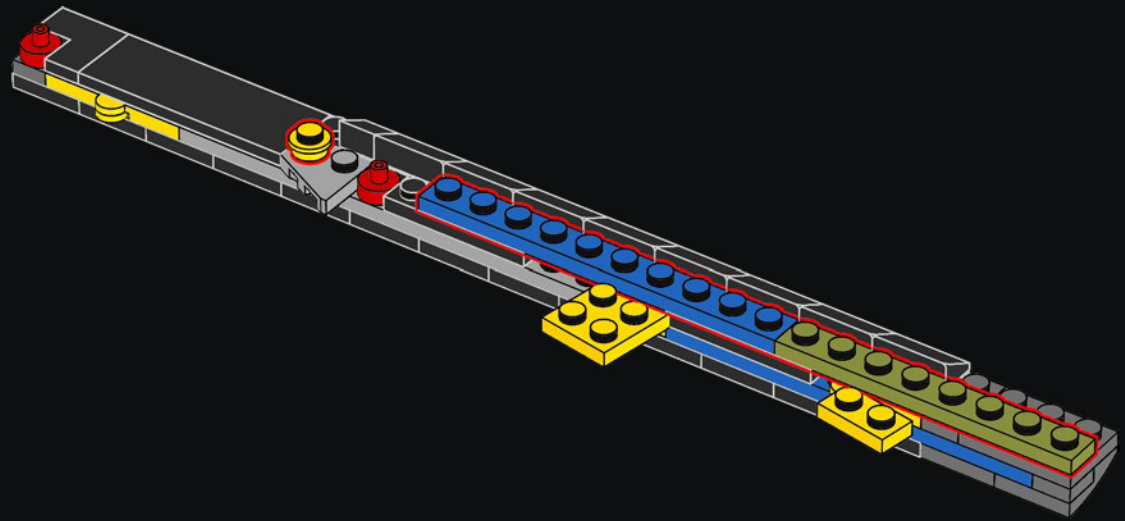


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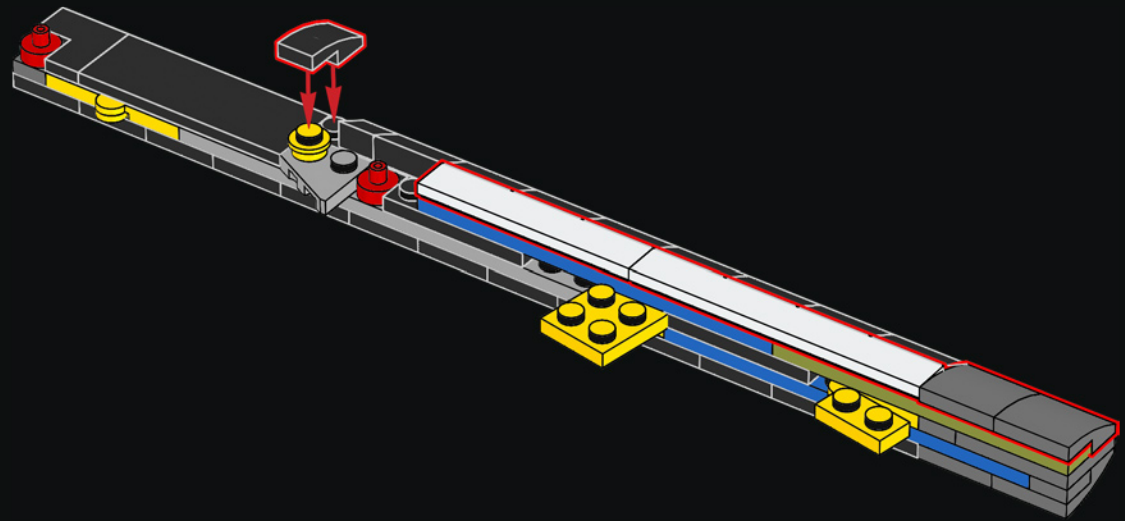




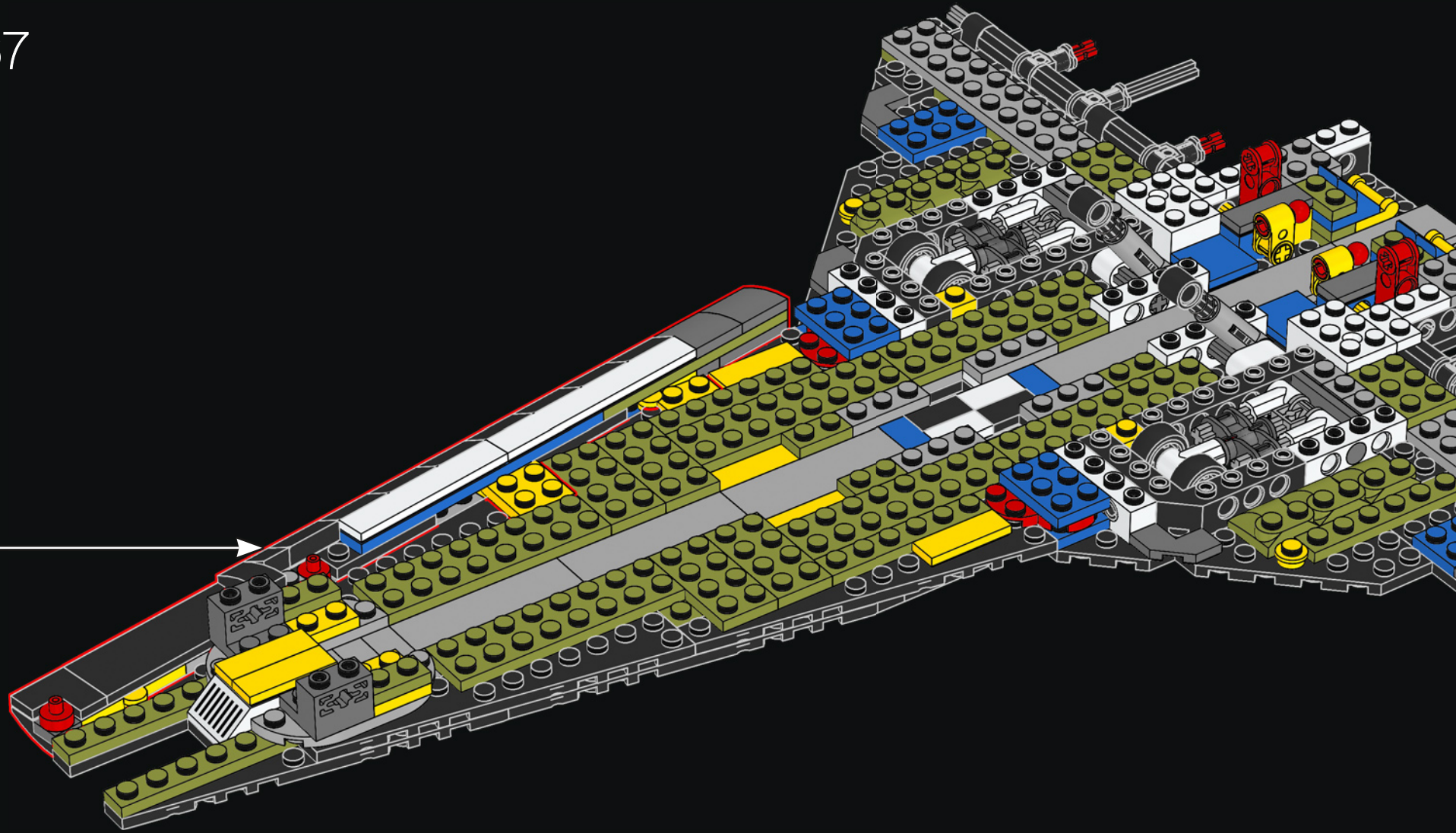
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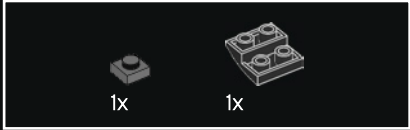
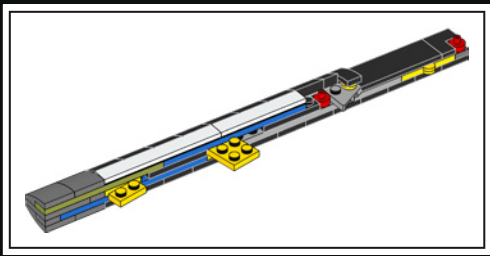


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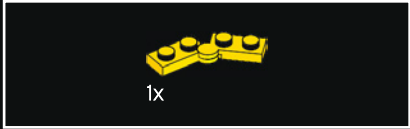
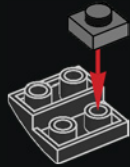


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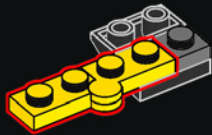




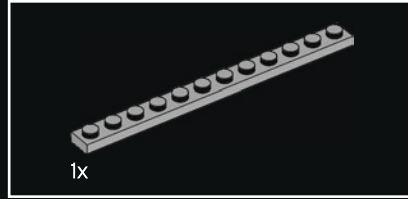
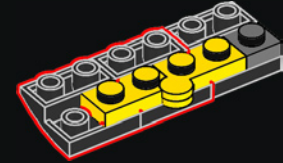
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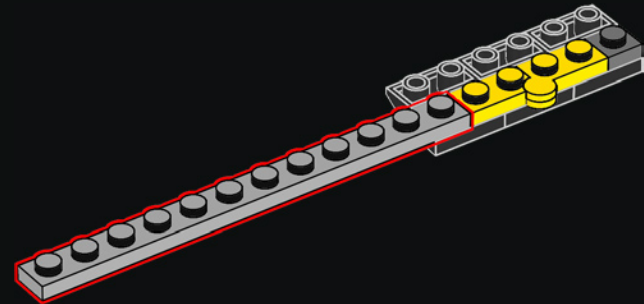
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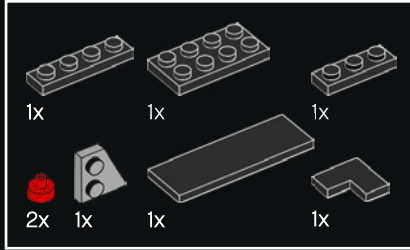
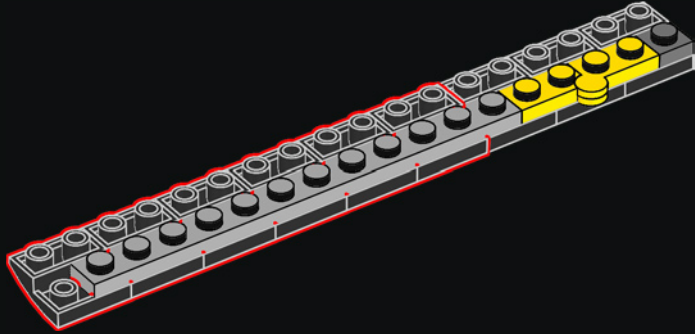


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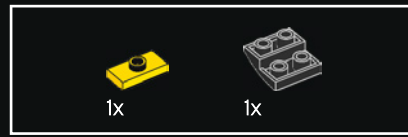
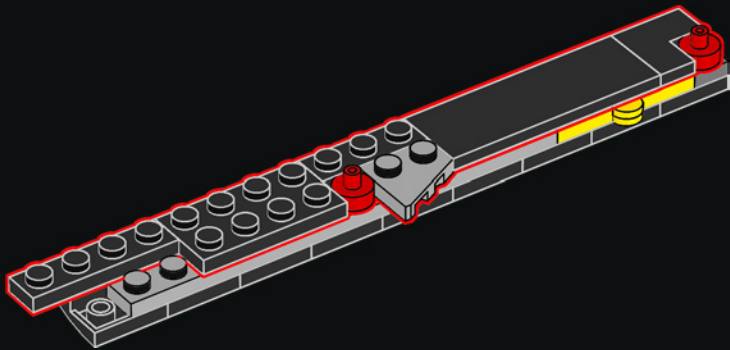




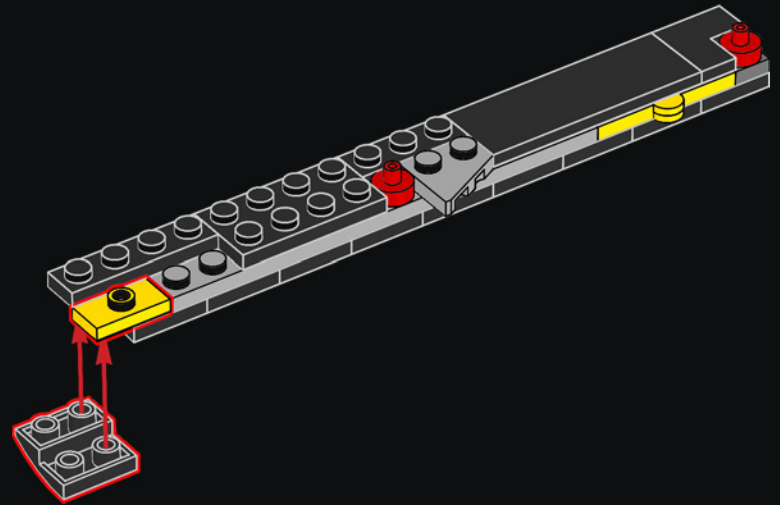
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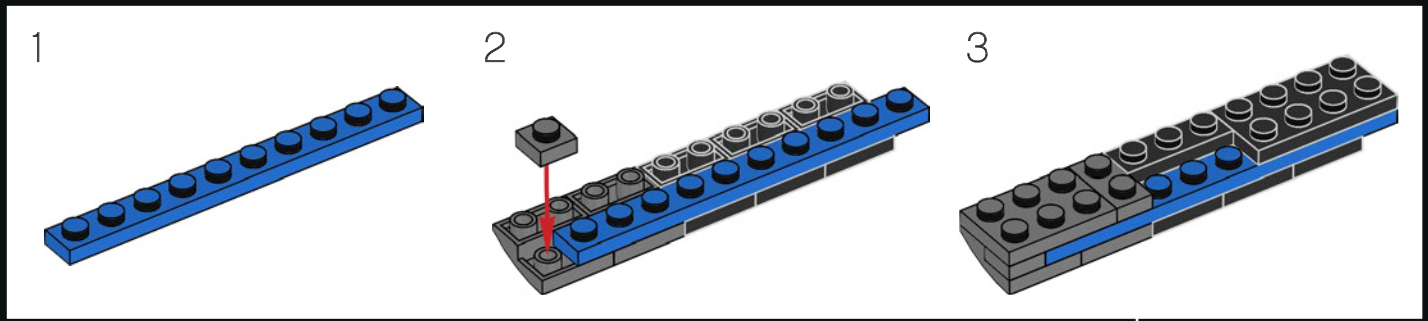
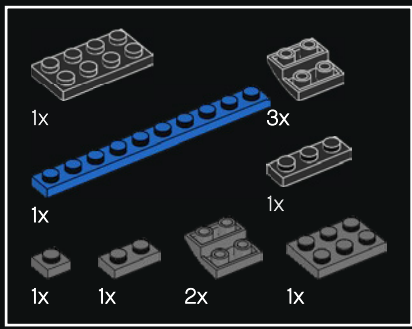


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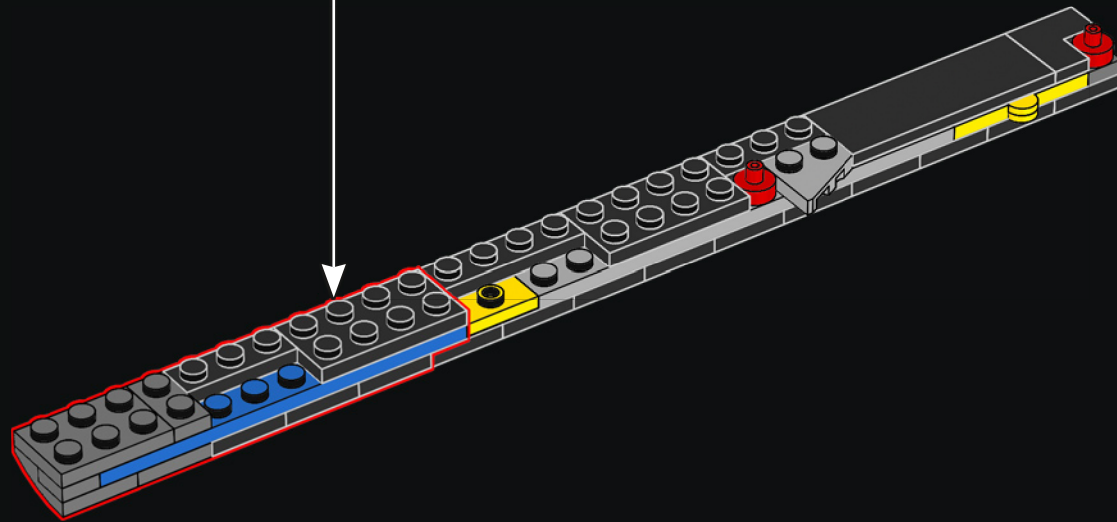


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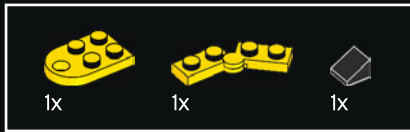
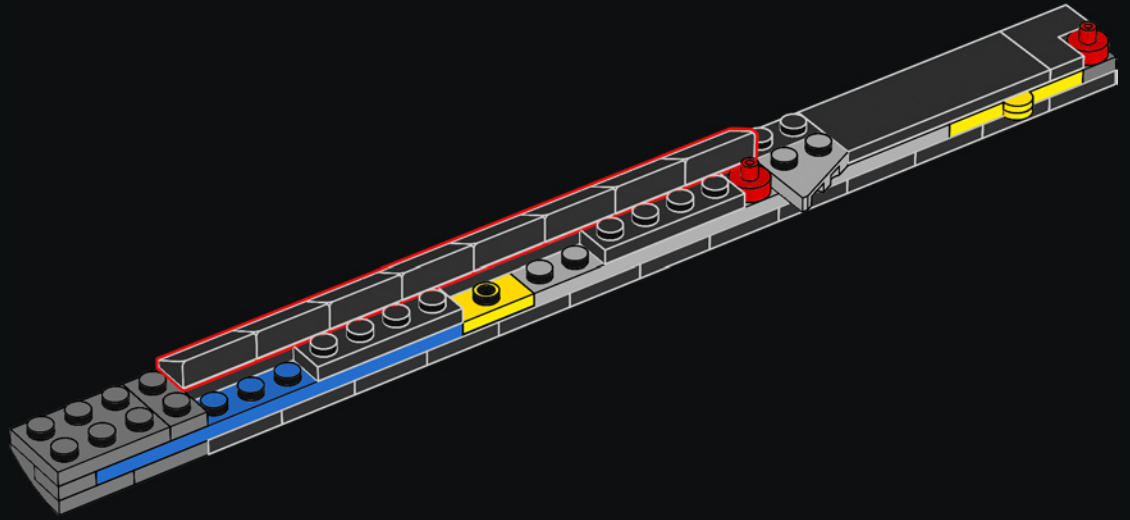


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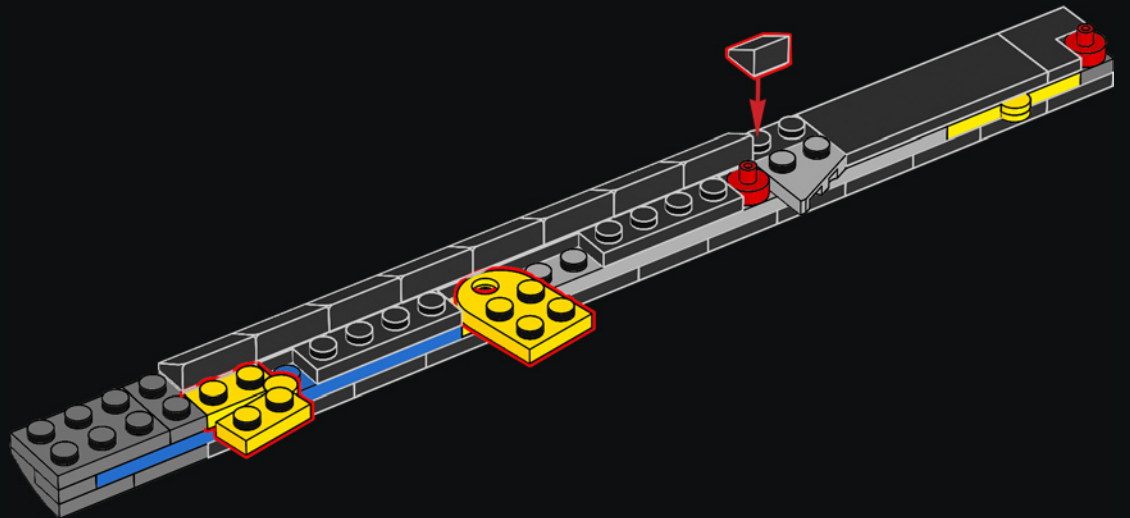


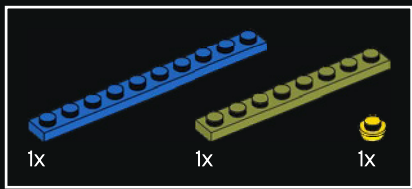


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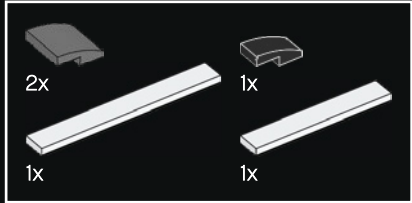
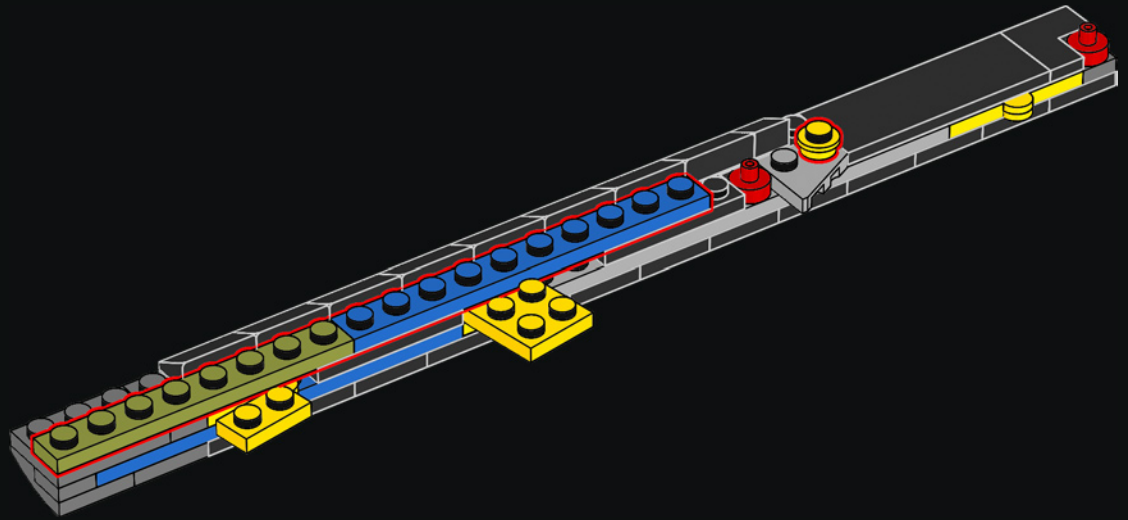


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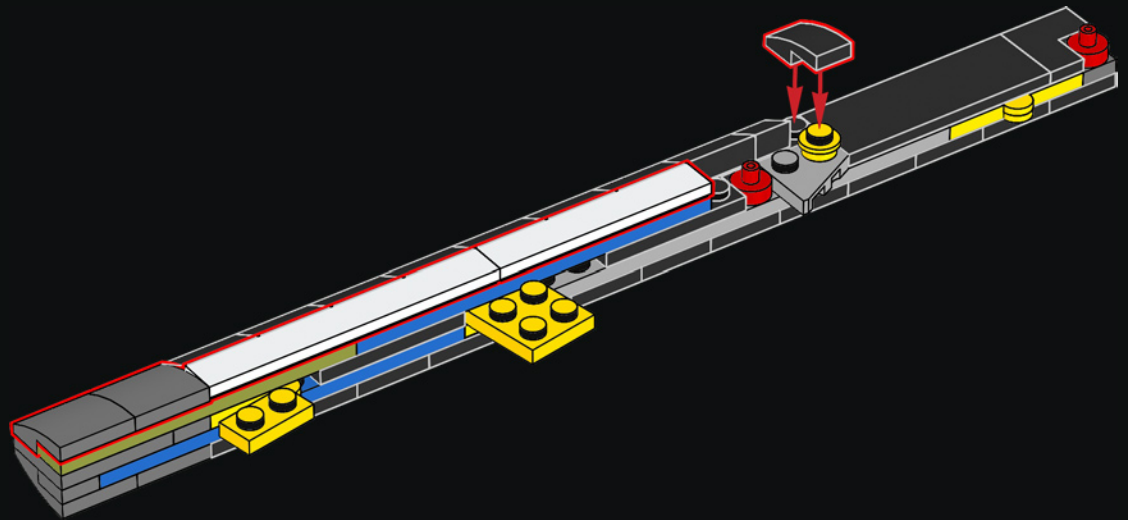




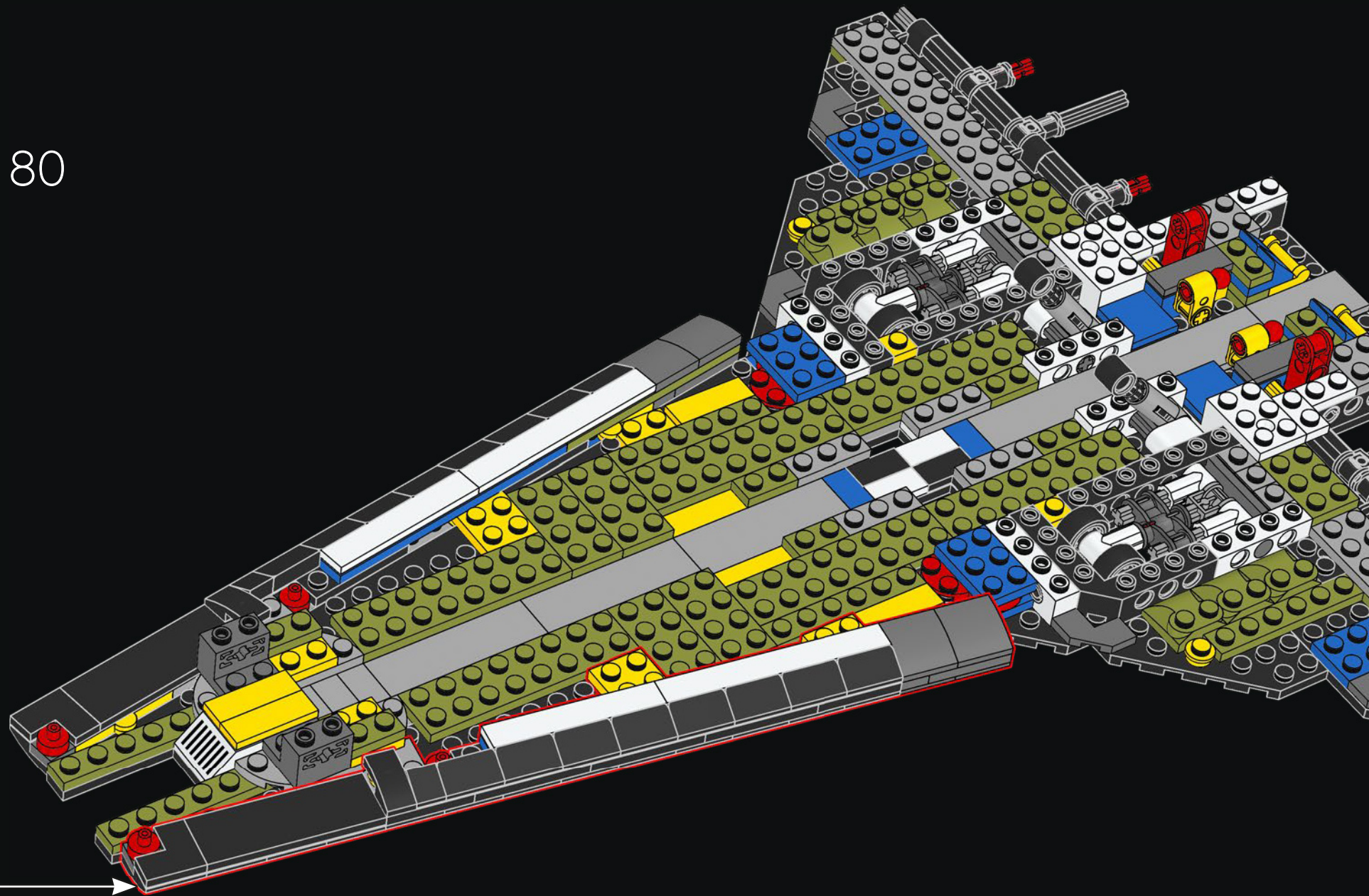
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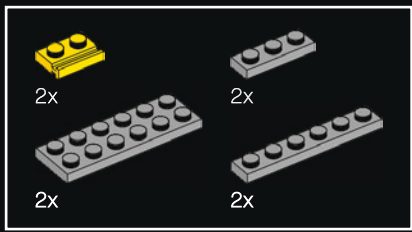


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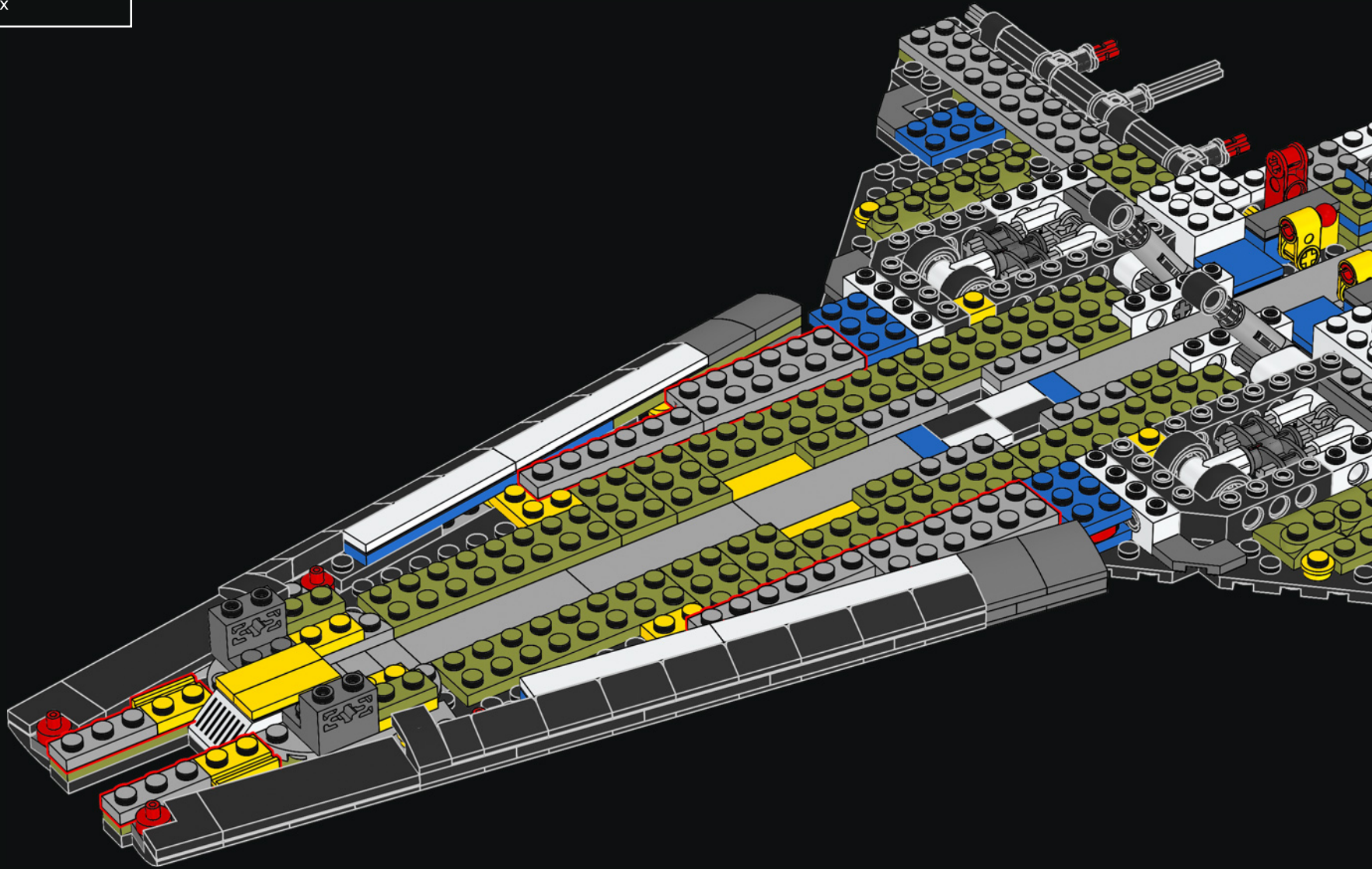


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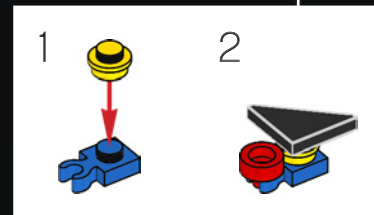
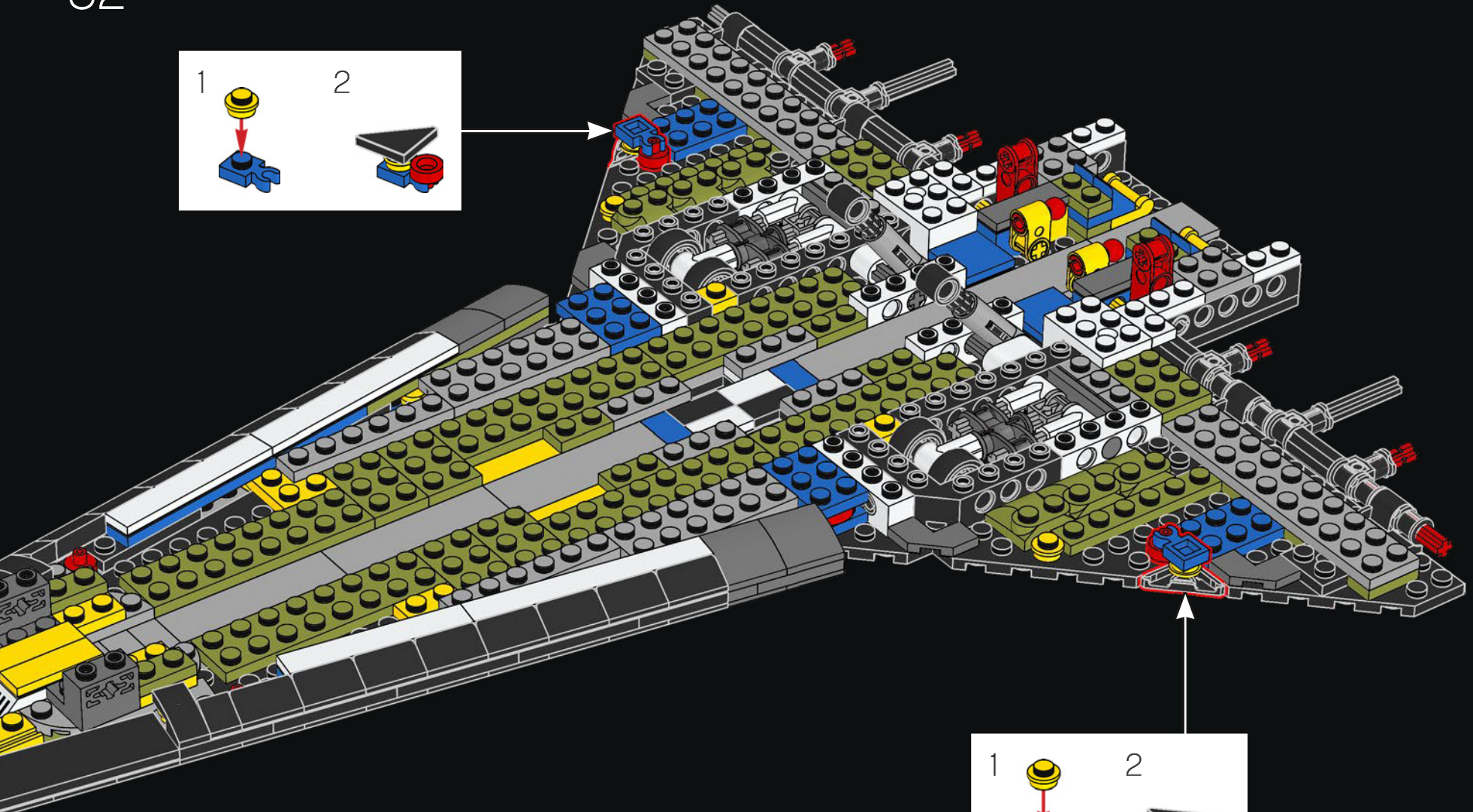
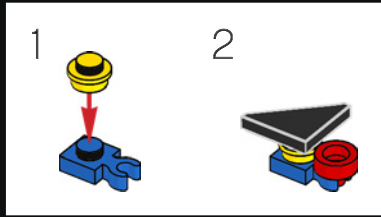


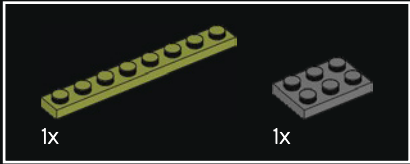
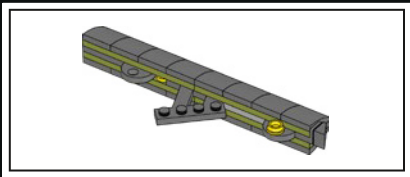
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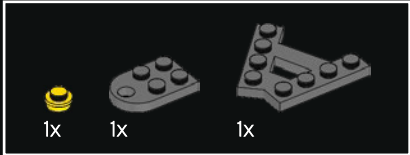
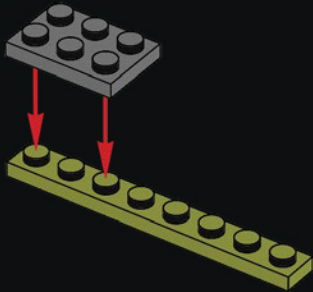
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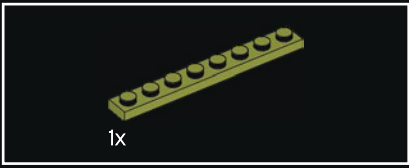
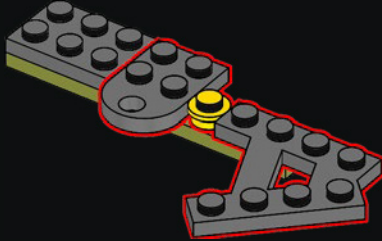




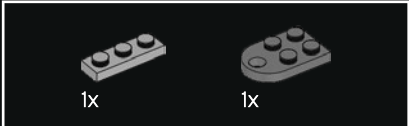
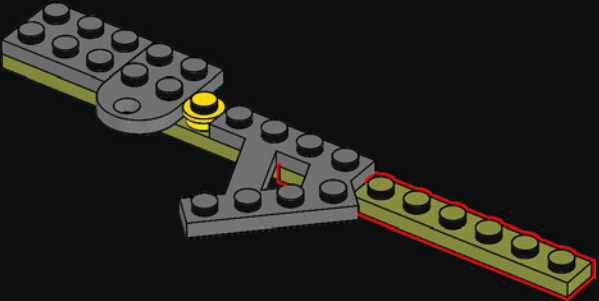
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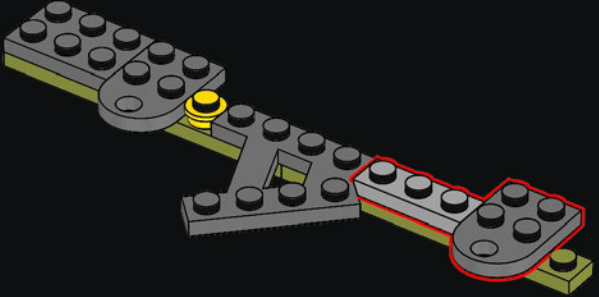
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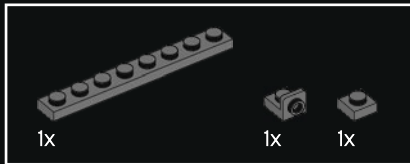
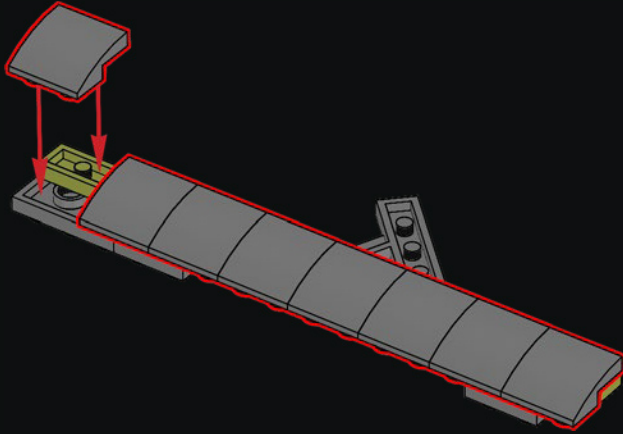


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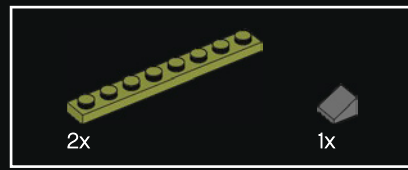
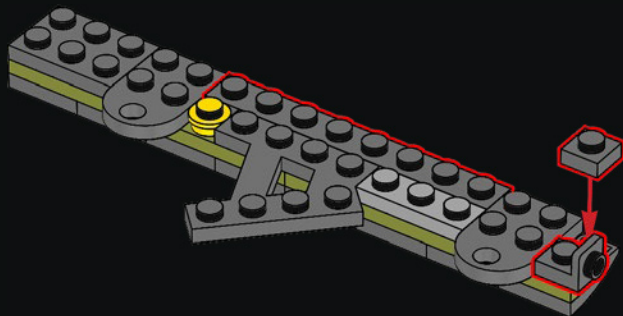




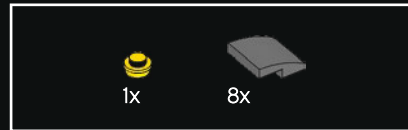
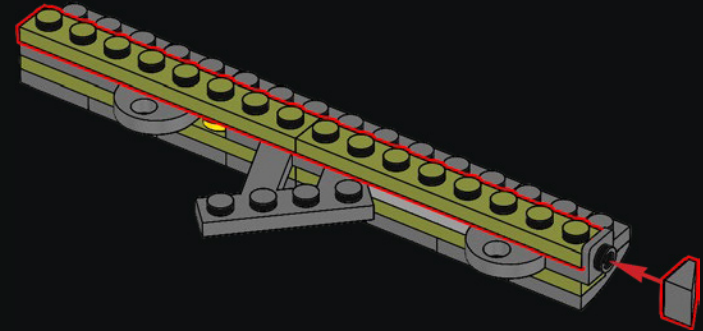
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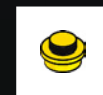
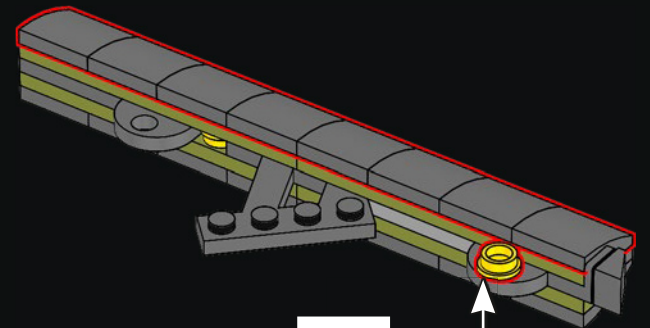
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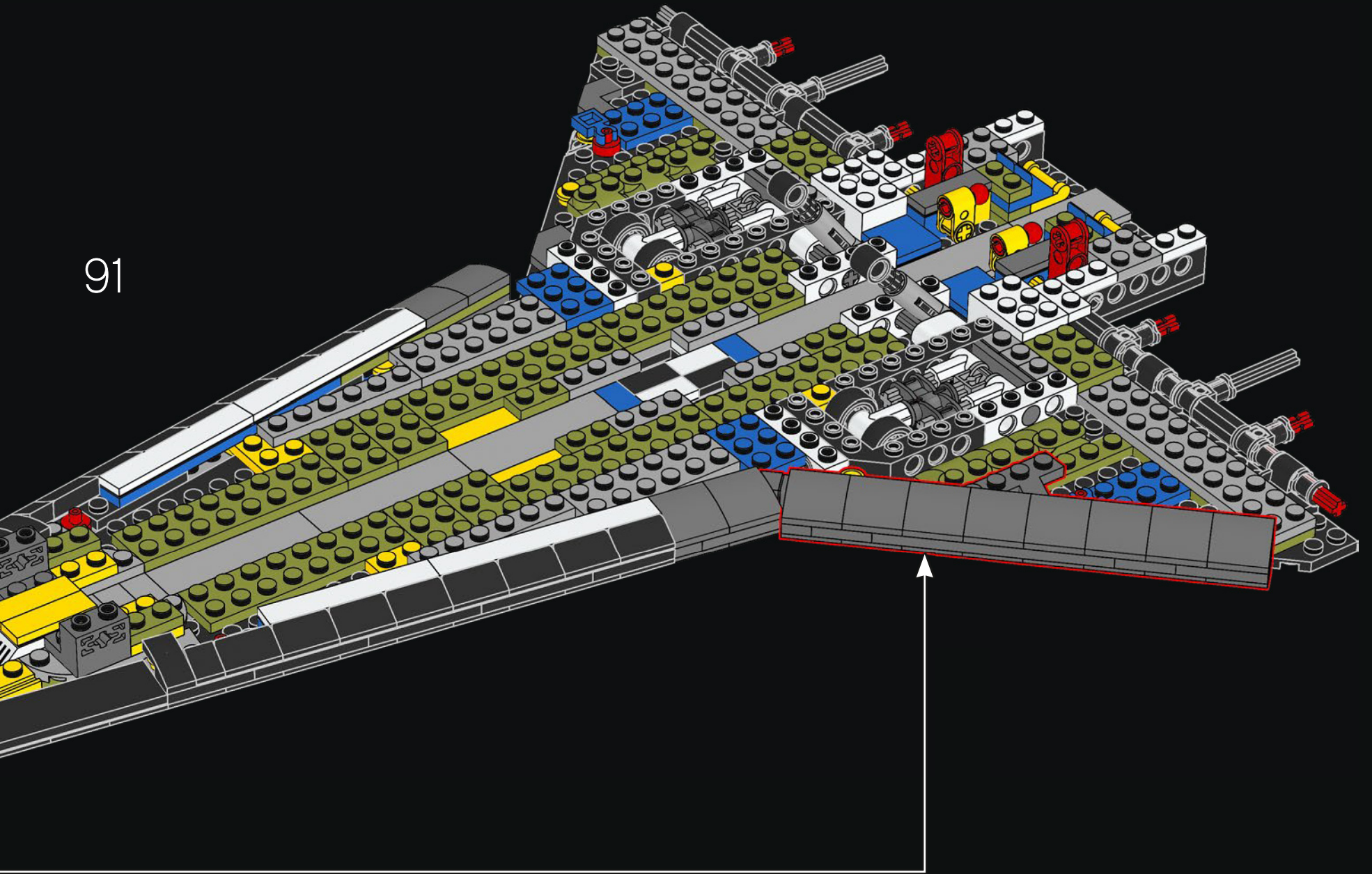
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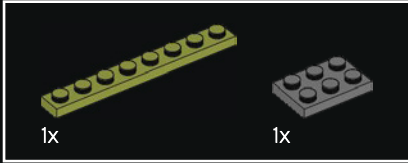
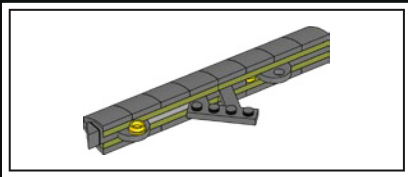


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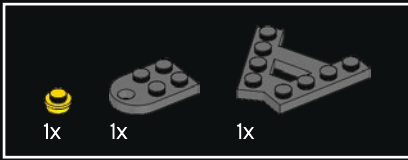
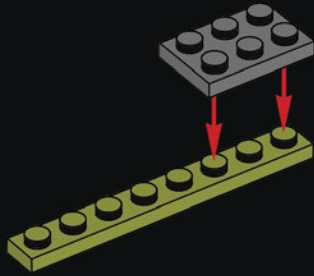


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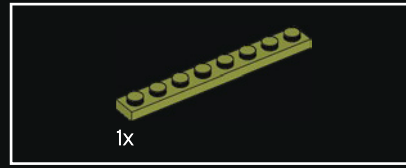
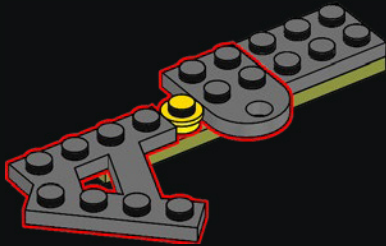




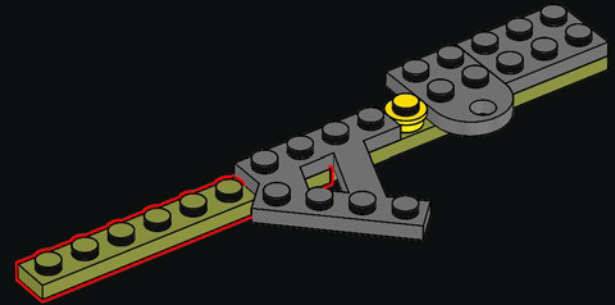
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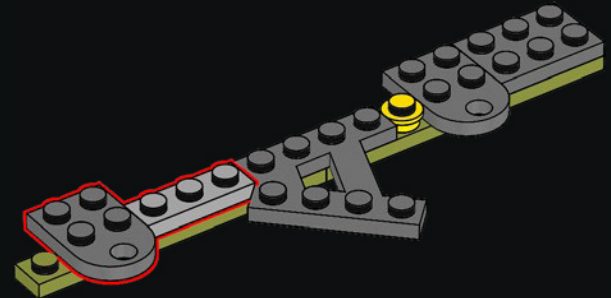
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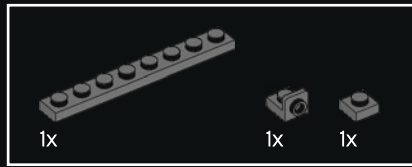
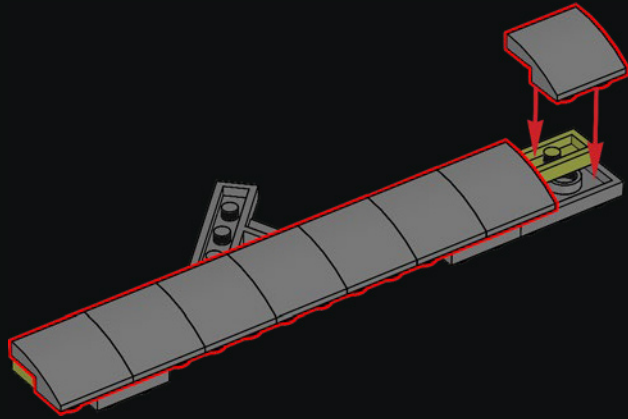


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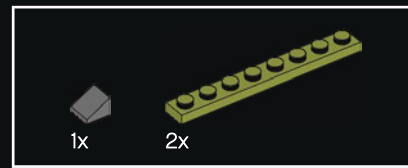
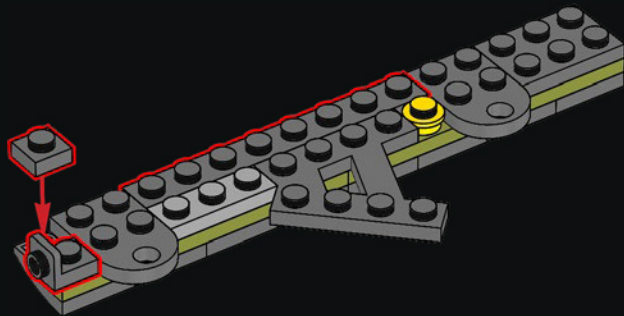




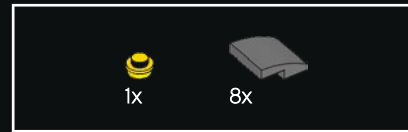
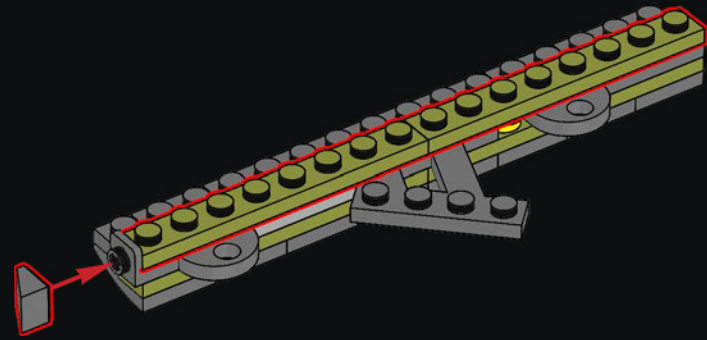
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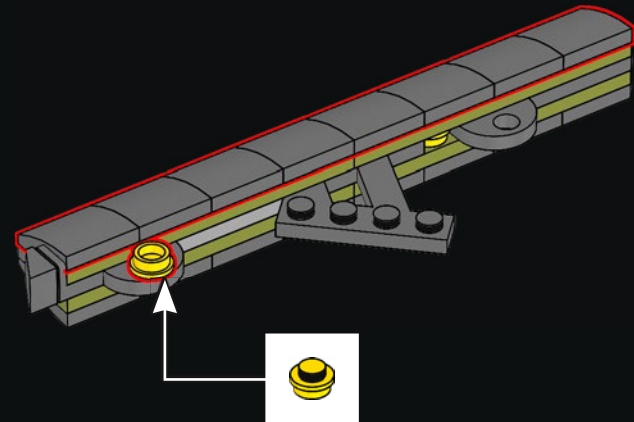
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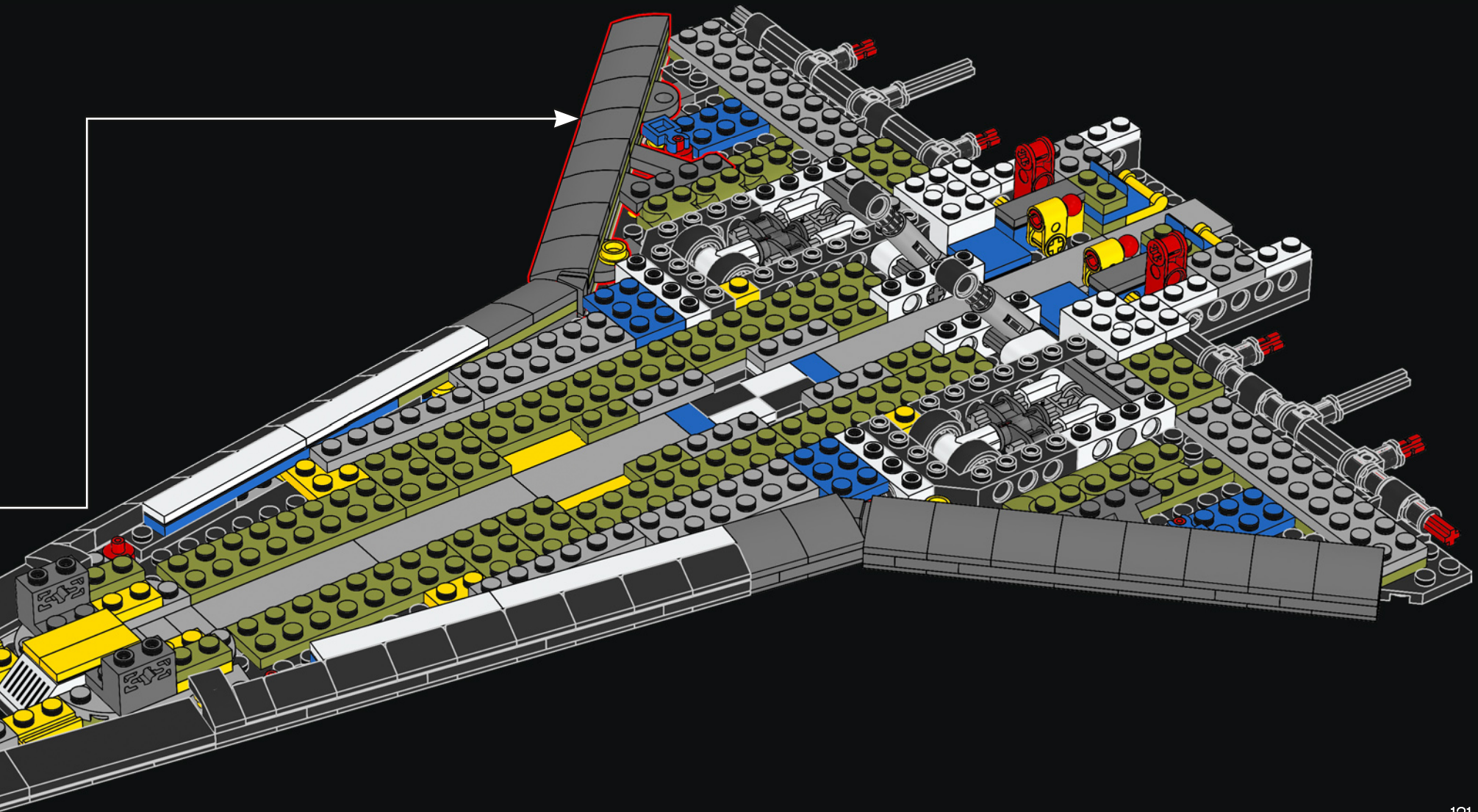
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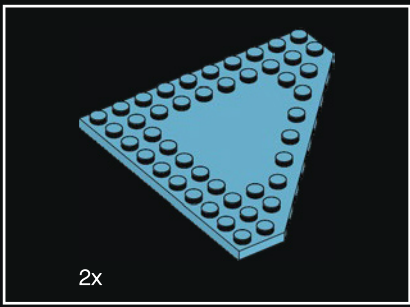


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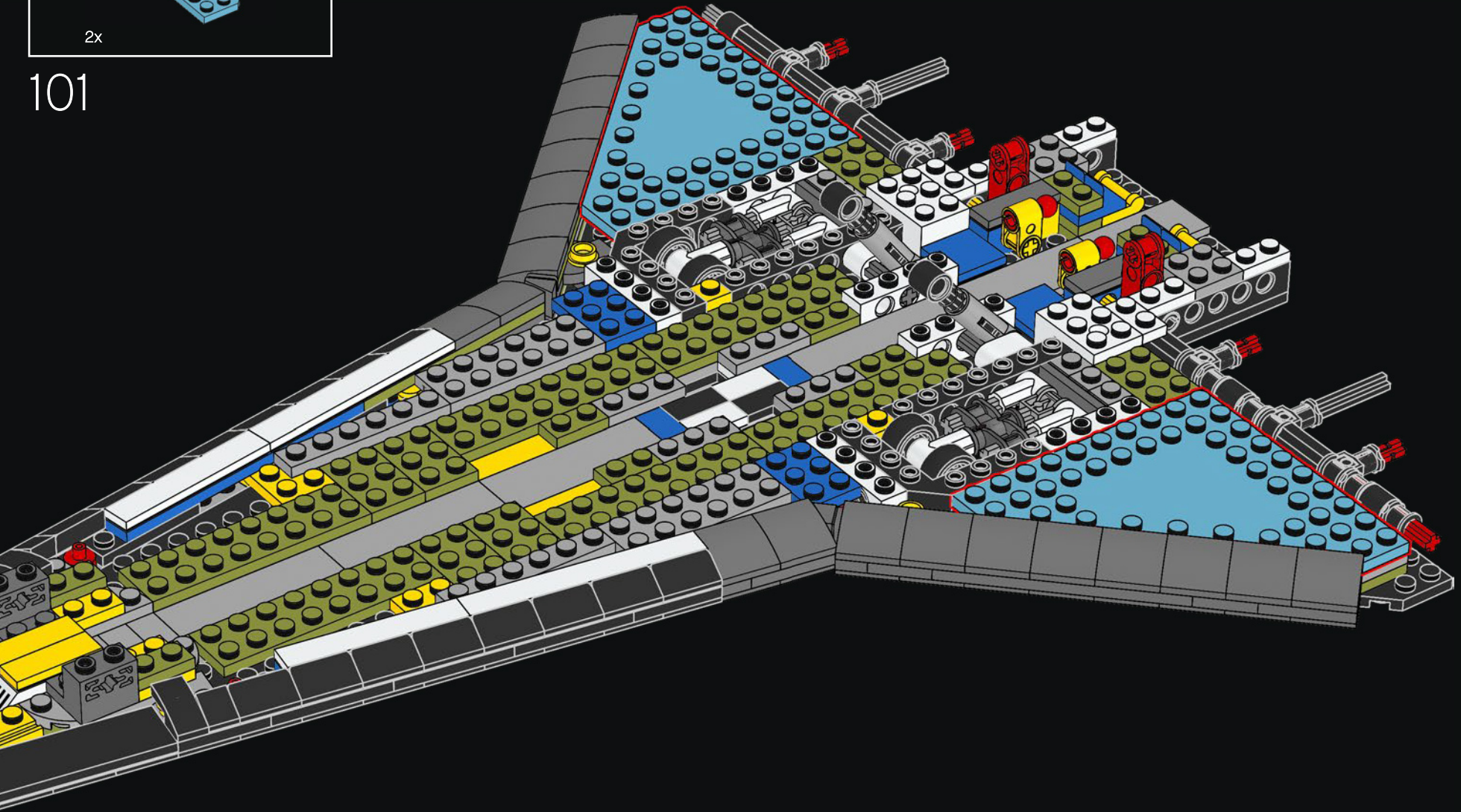


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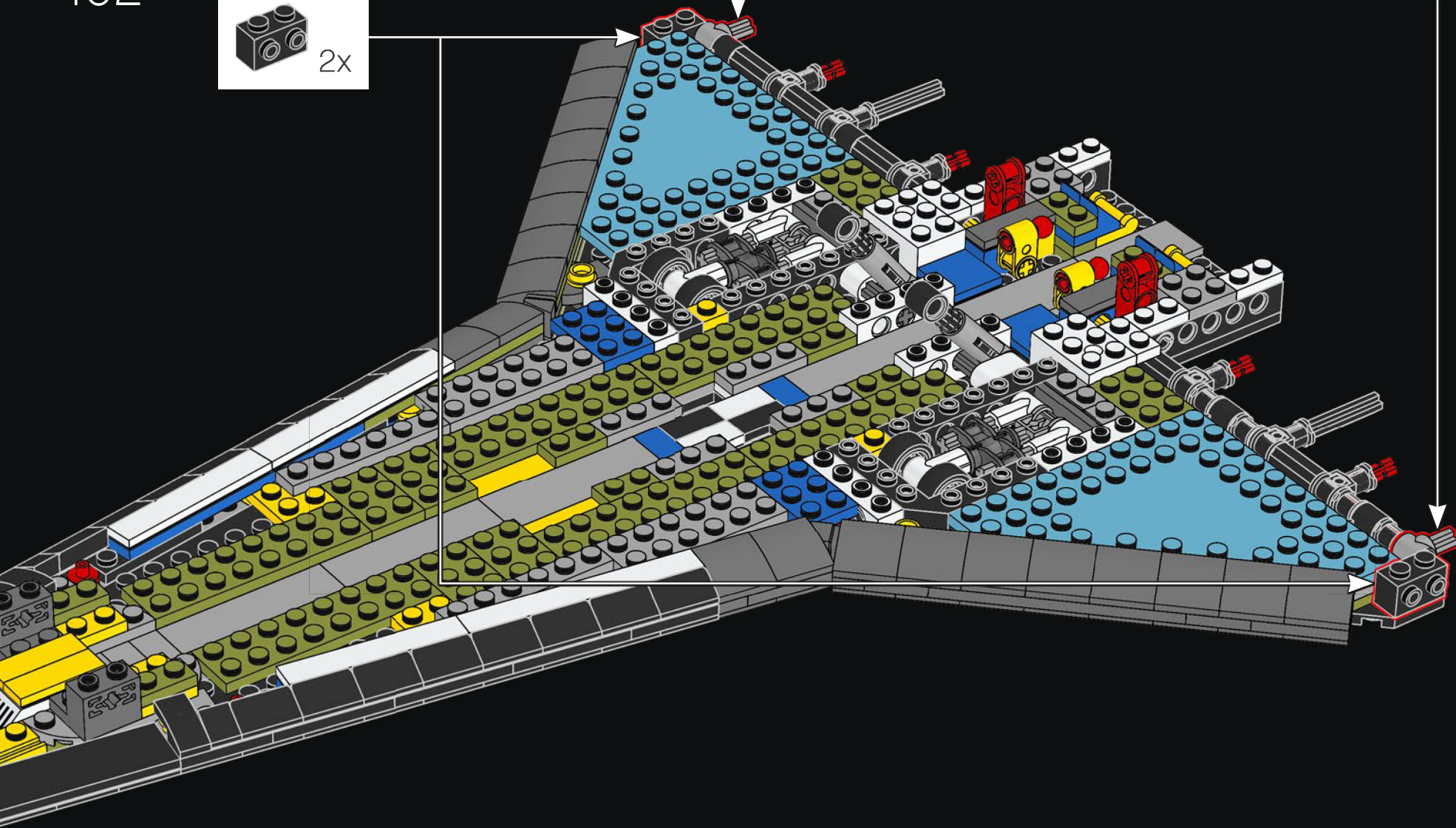
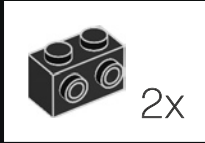


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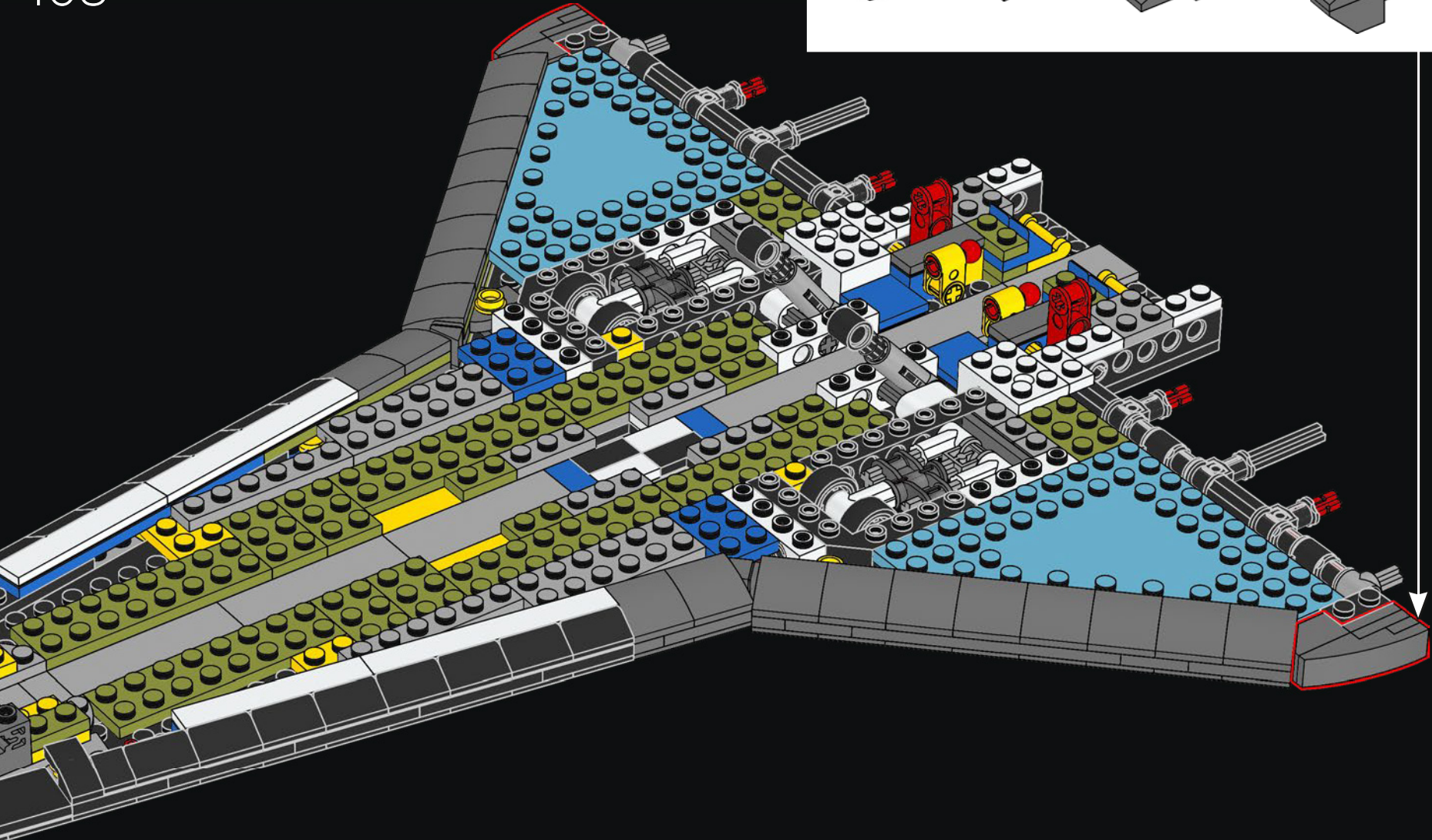
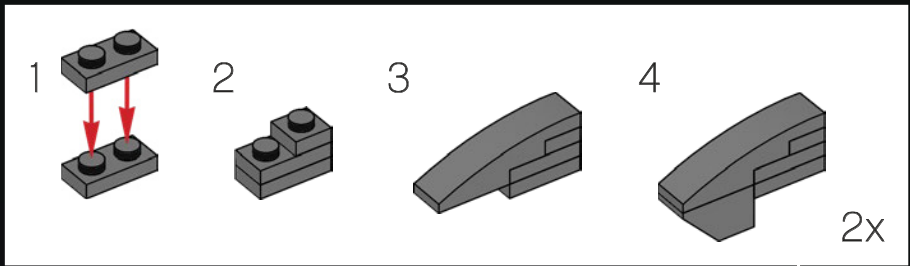


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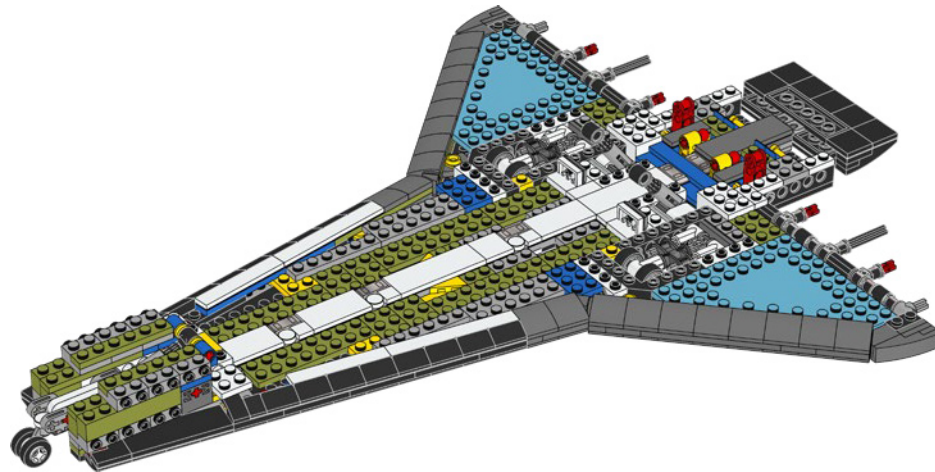
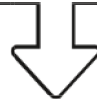


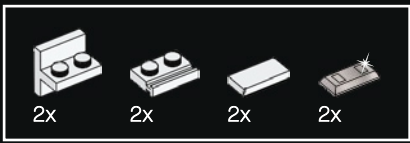
103



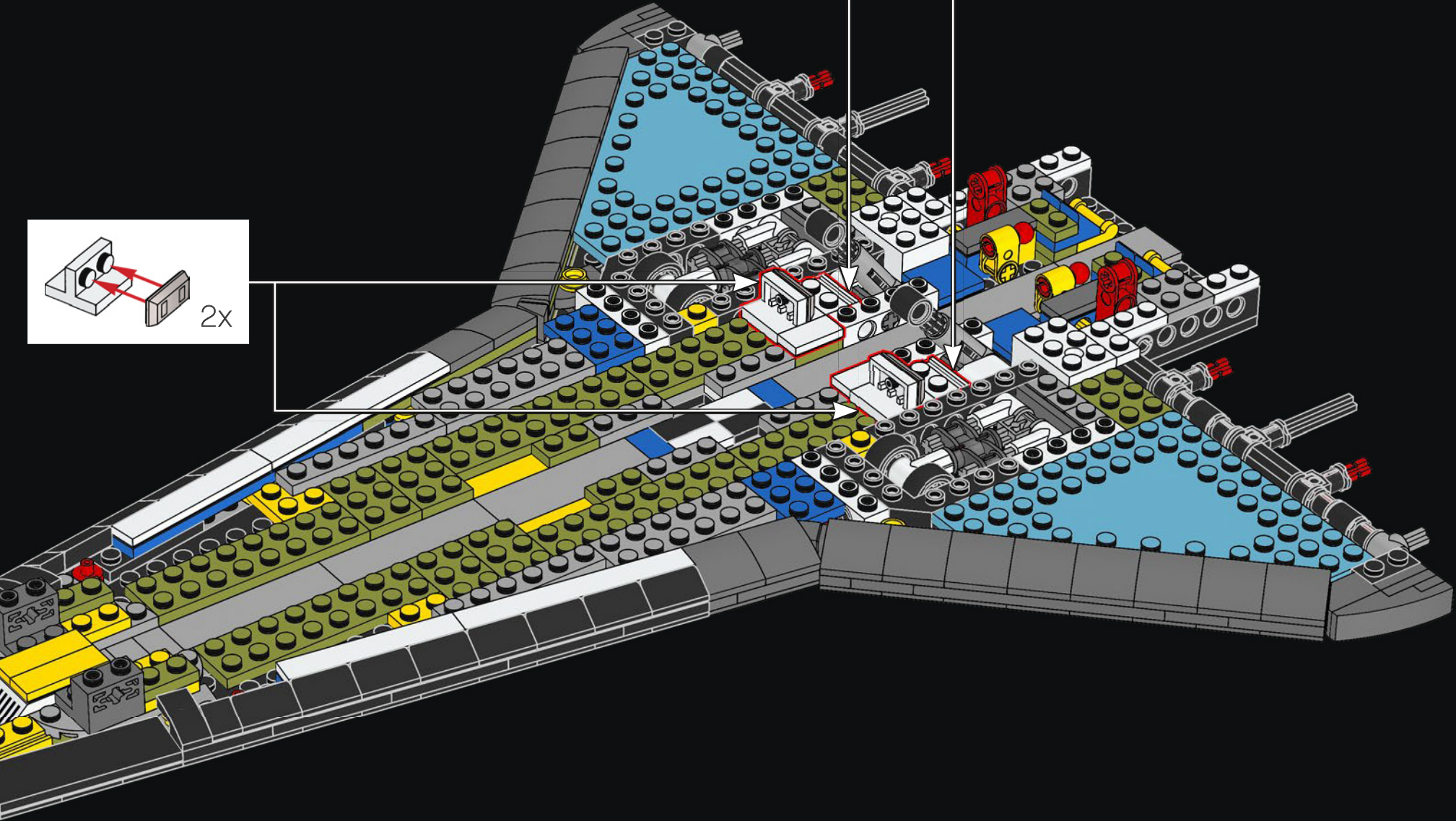
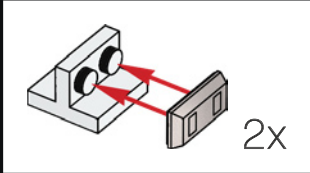
LE SAVIEZ-VOUS ?

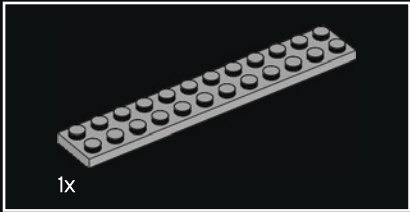
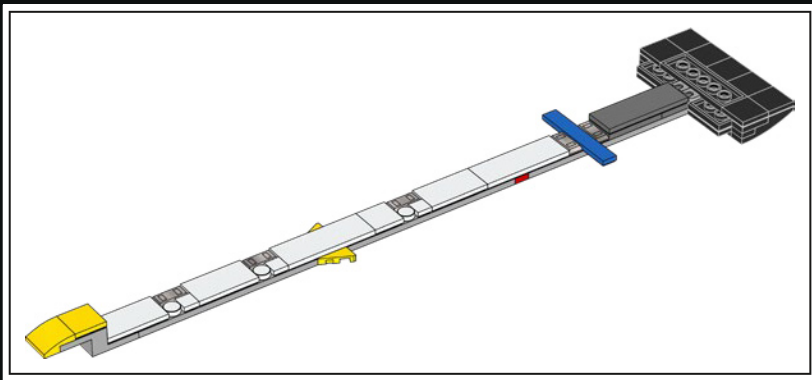
Le nez et les bords d'attaque des ailes supportent la plus grande partie de la chaleur produite lors de la rentrée dans l'atmosphère : jusqu'à 1 600 °C !





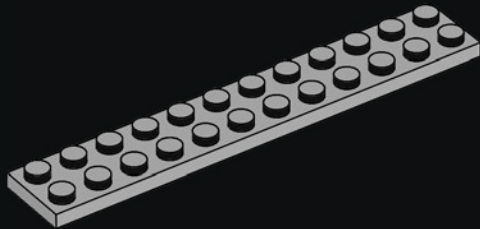
104





1x

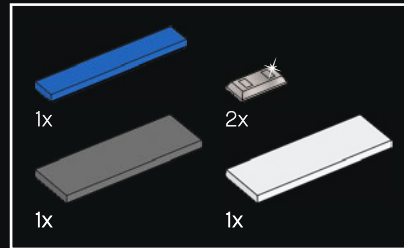
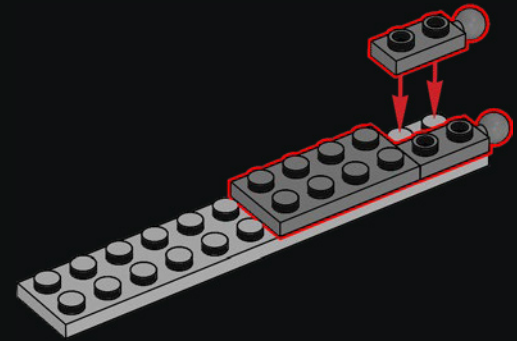
105



1x

2x

106



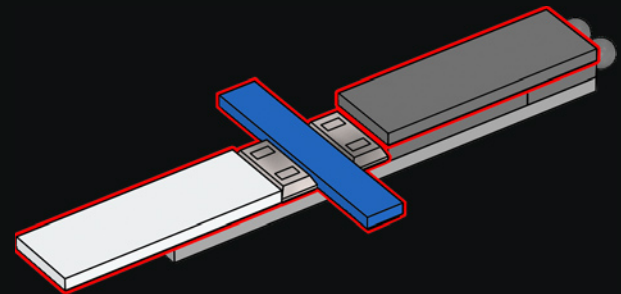
1x

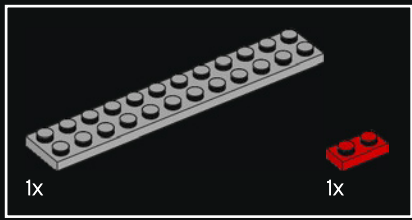
2x

1x

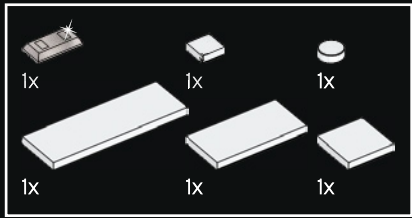
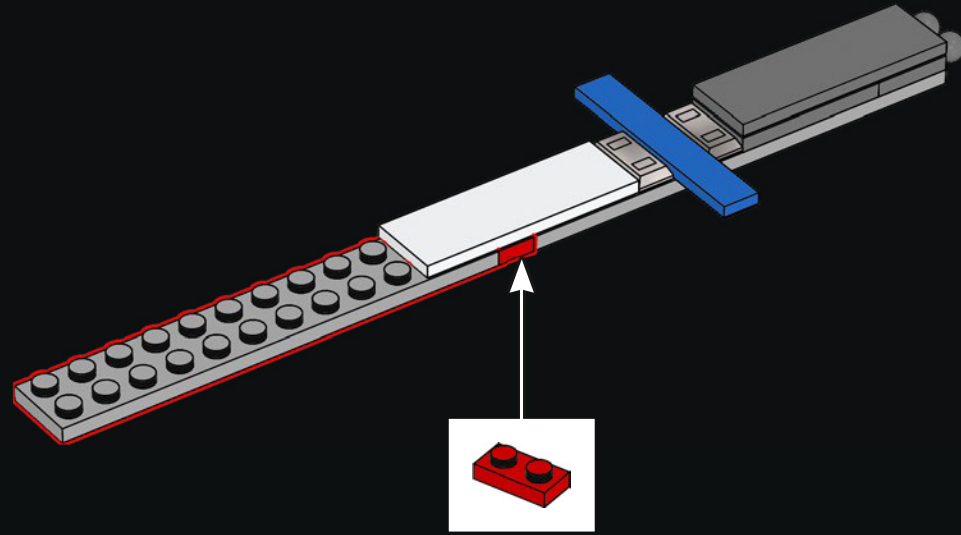
1x

107

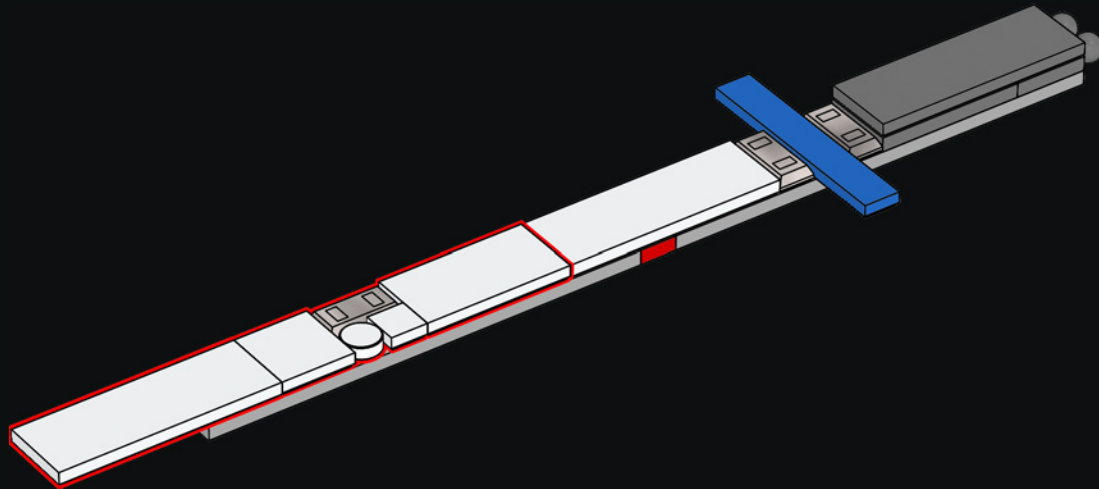


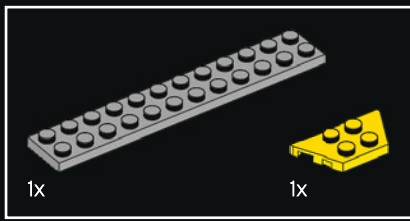


108

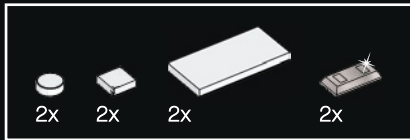
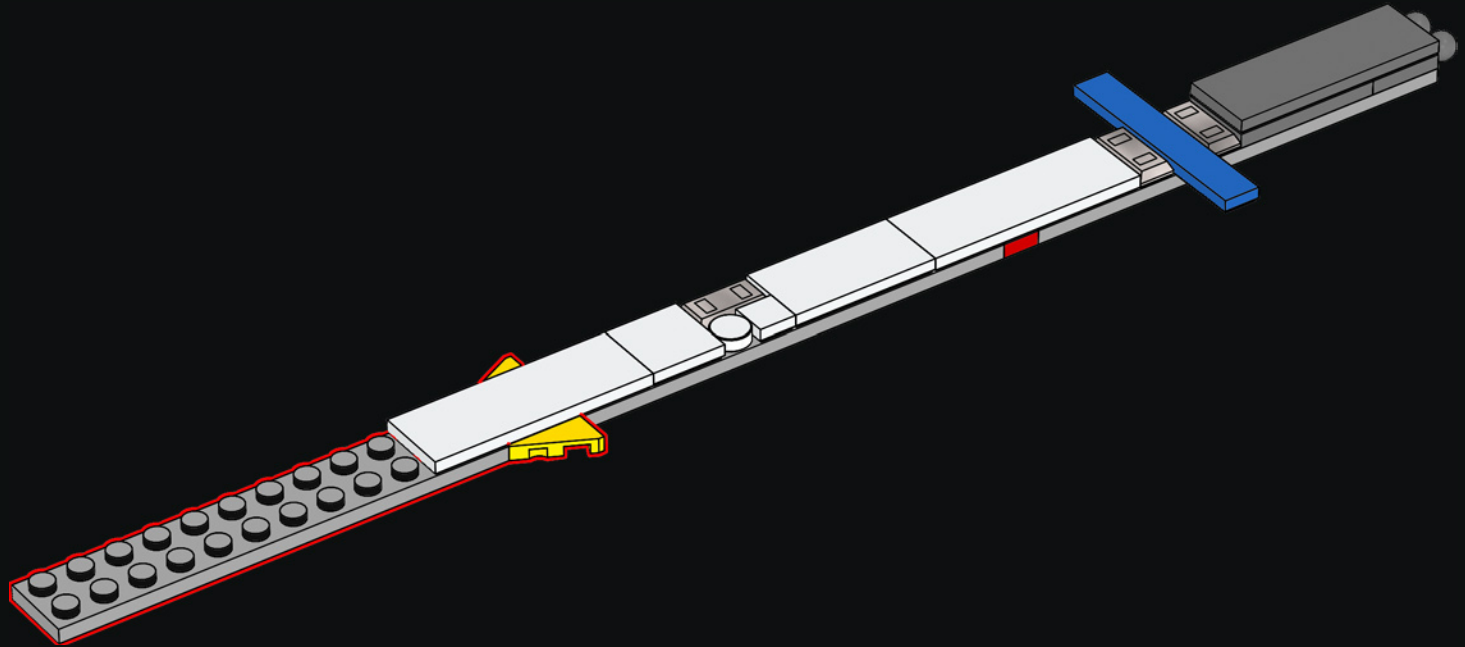


109

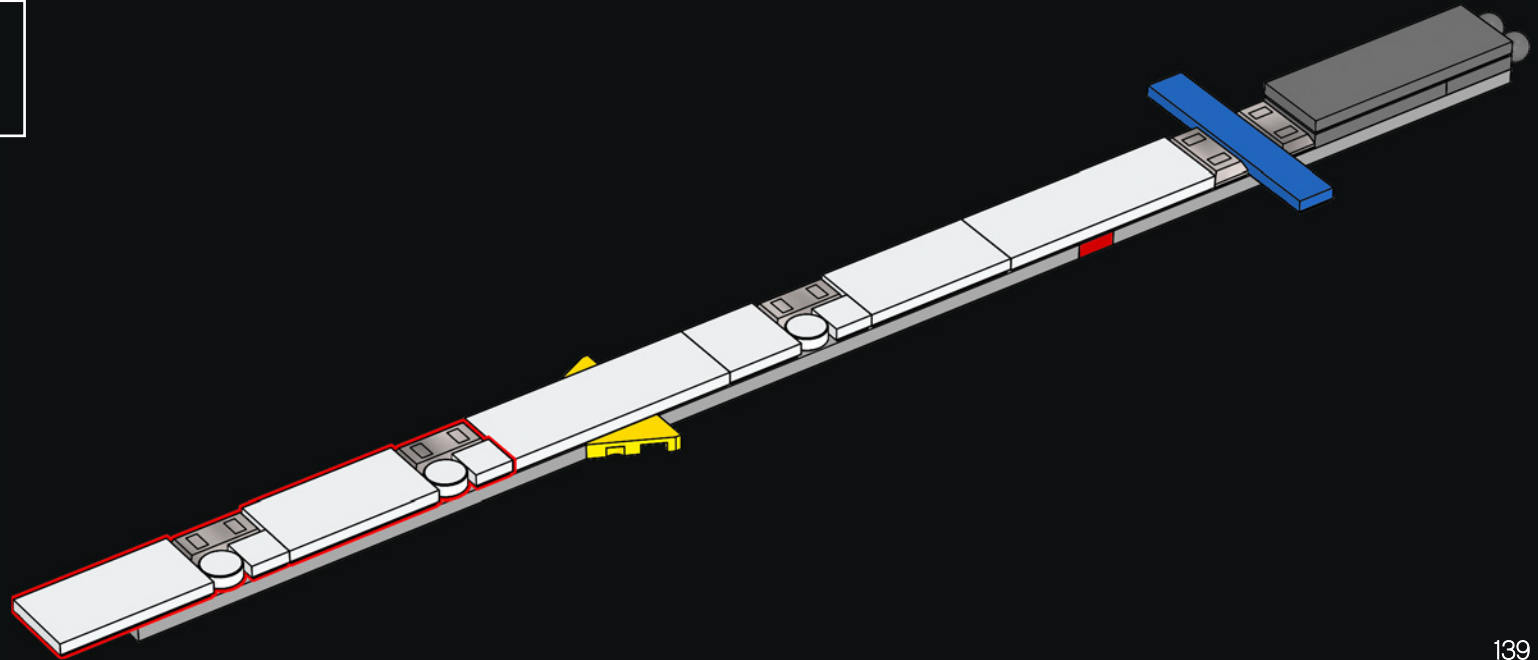


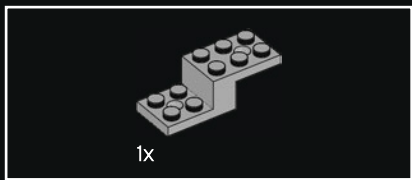


110

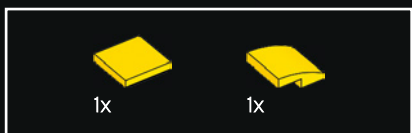
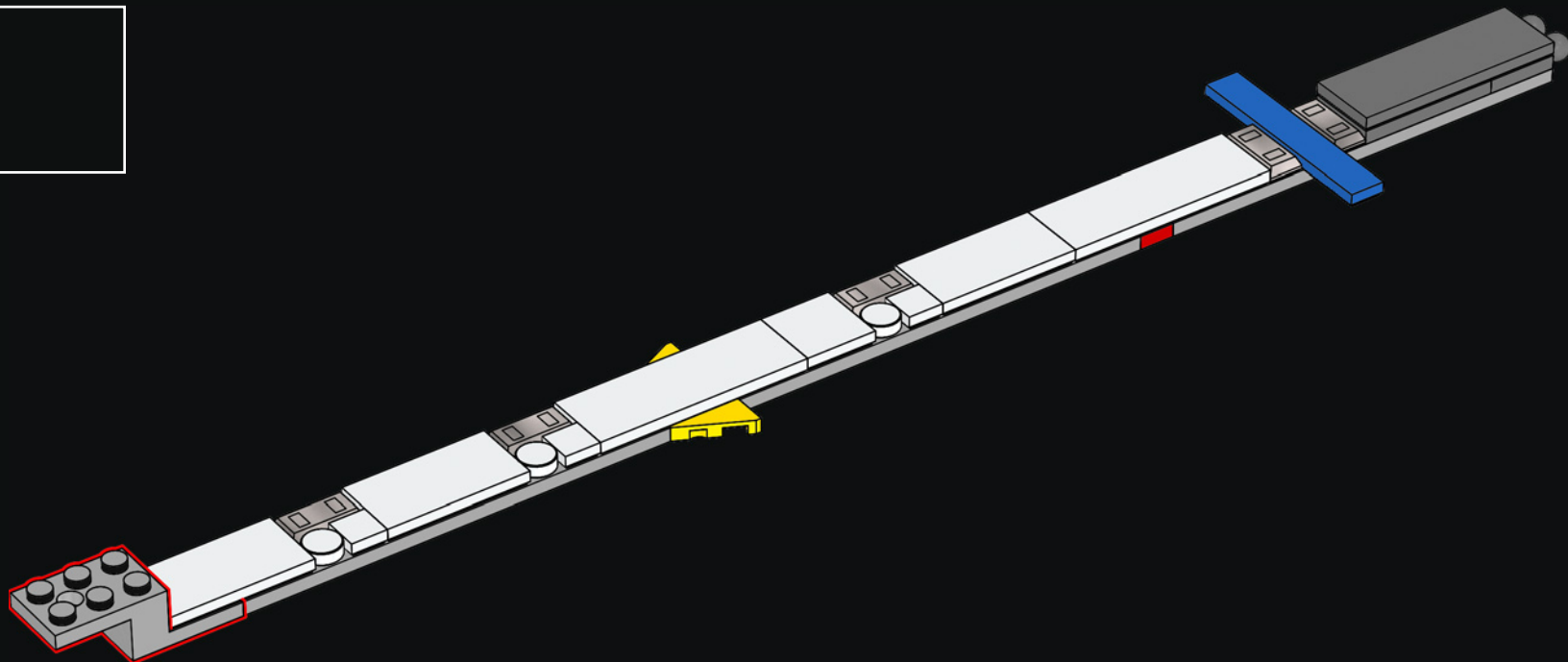


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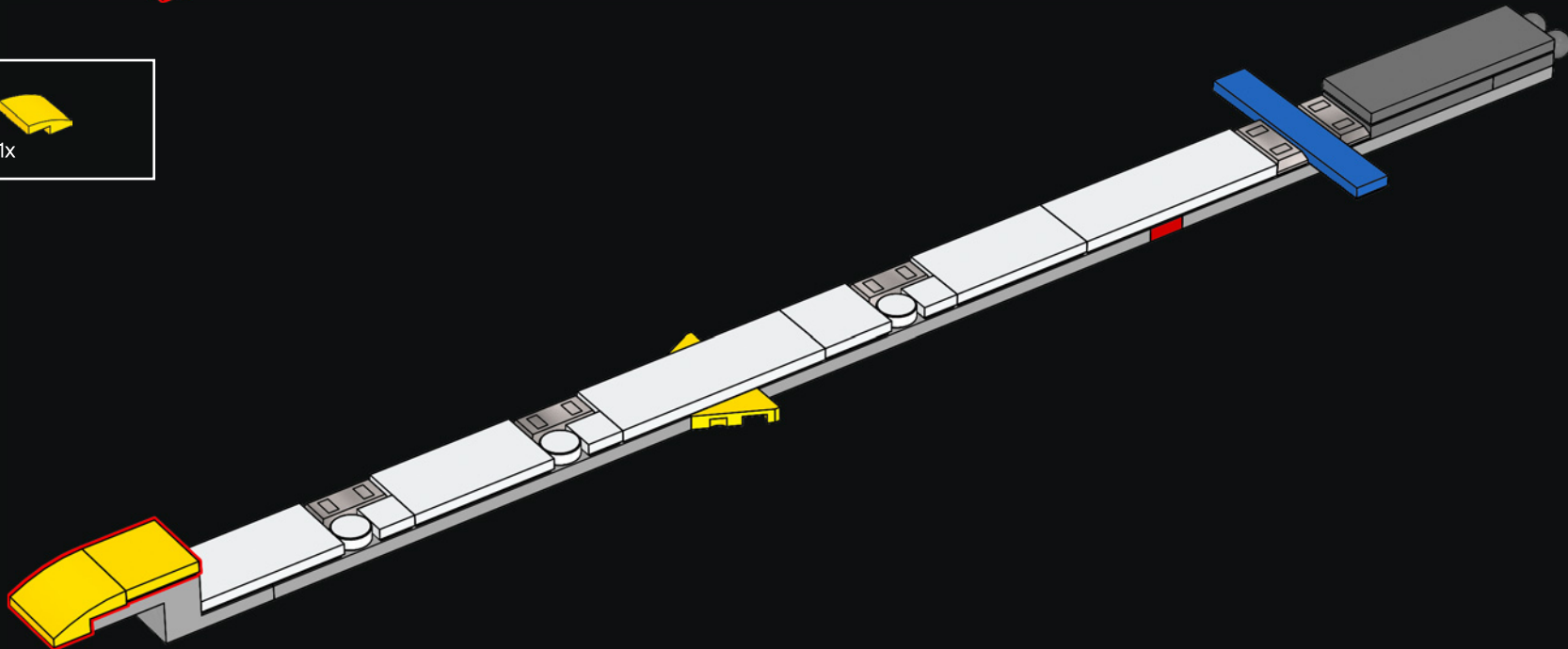


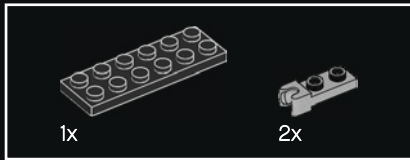
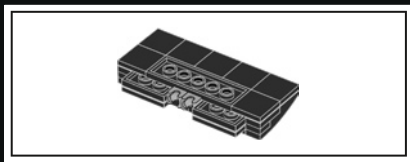


112



113

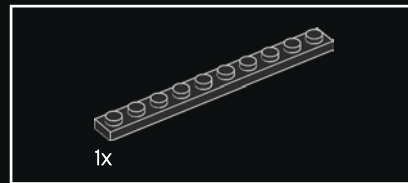
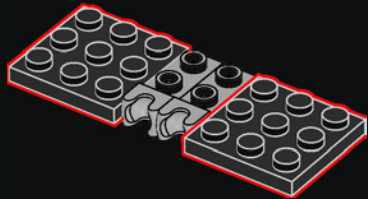




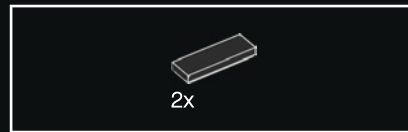
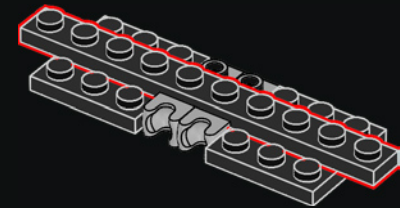
114



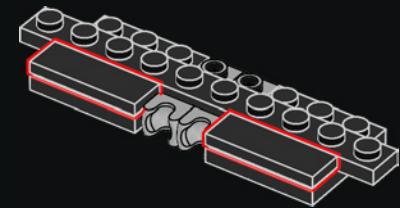
115

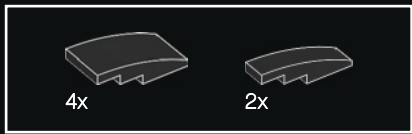


116

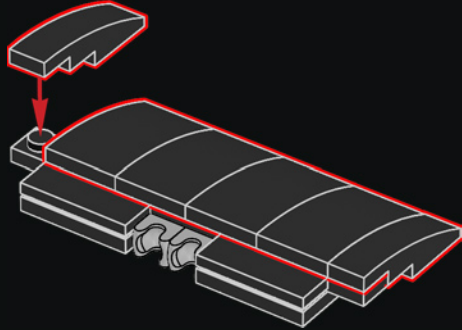


117

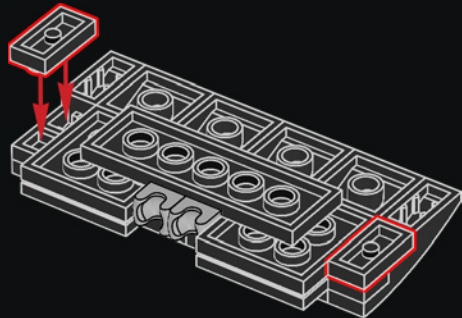




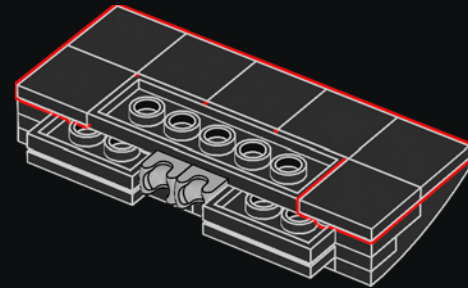
118



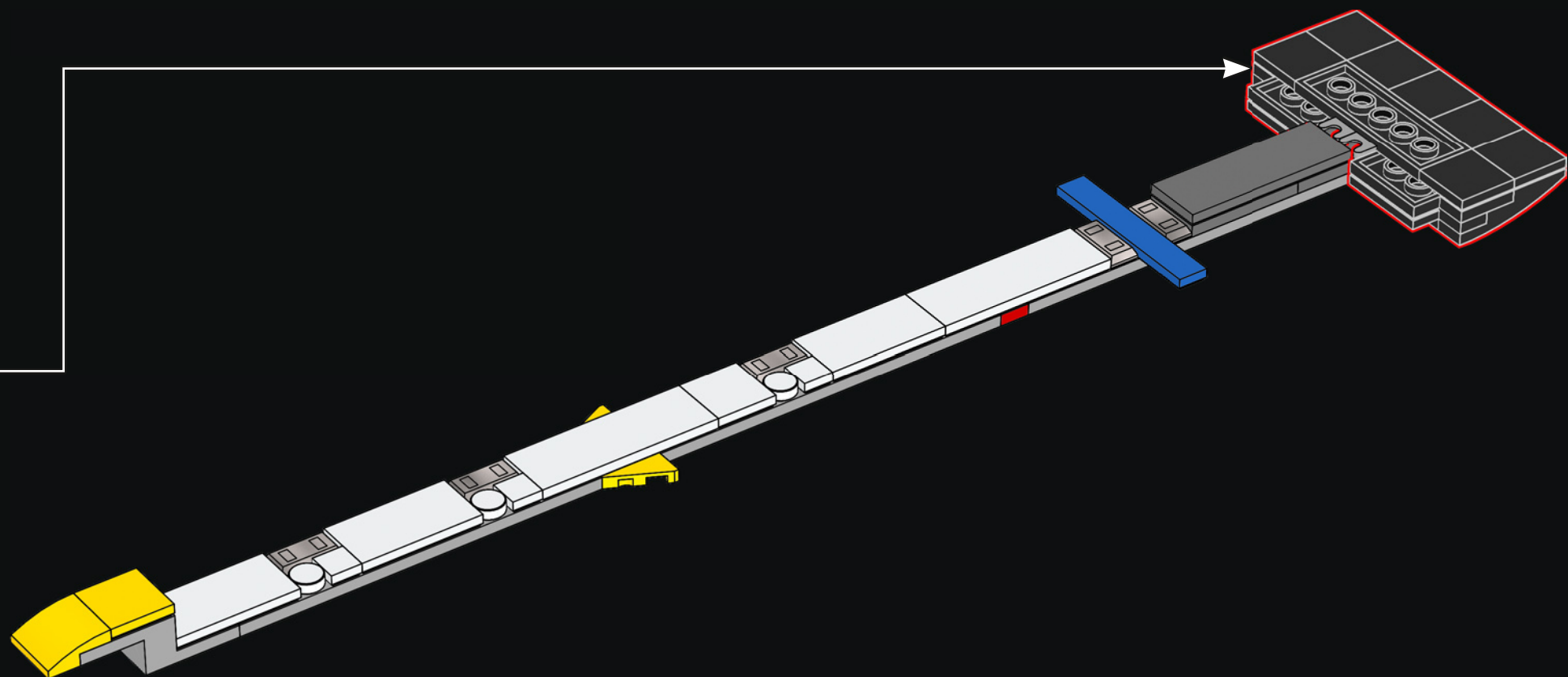
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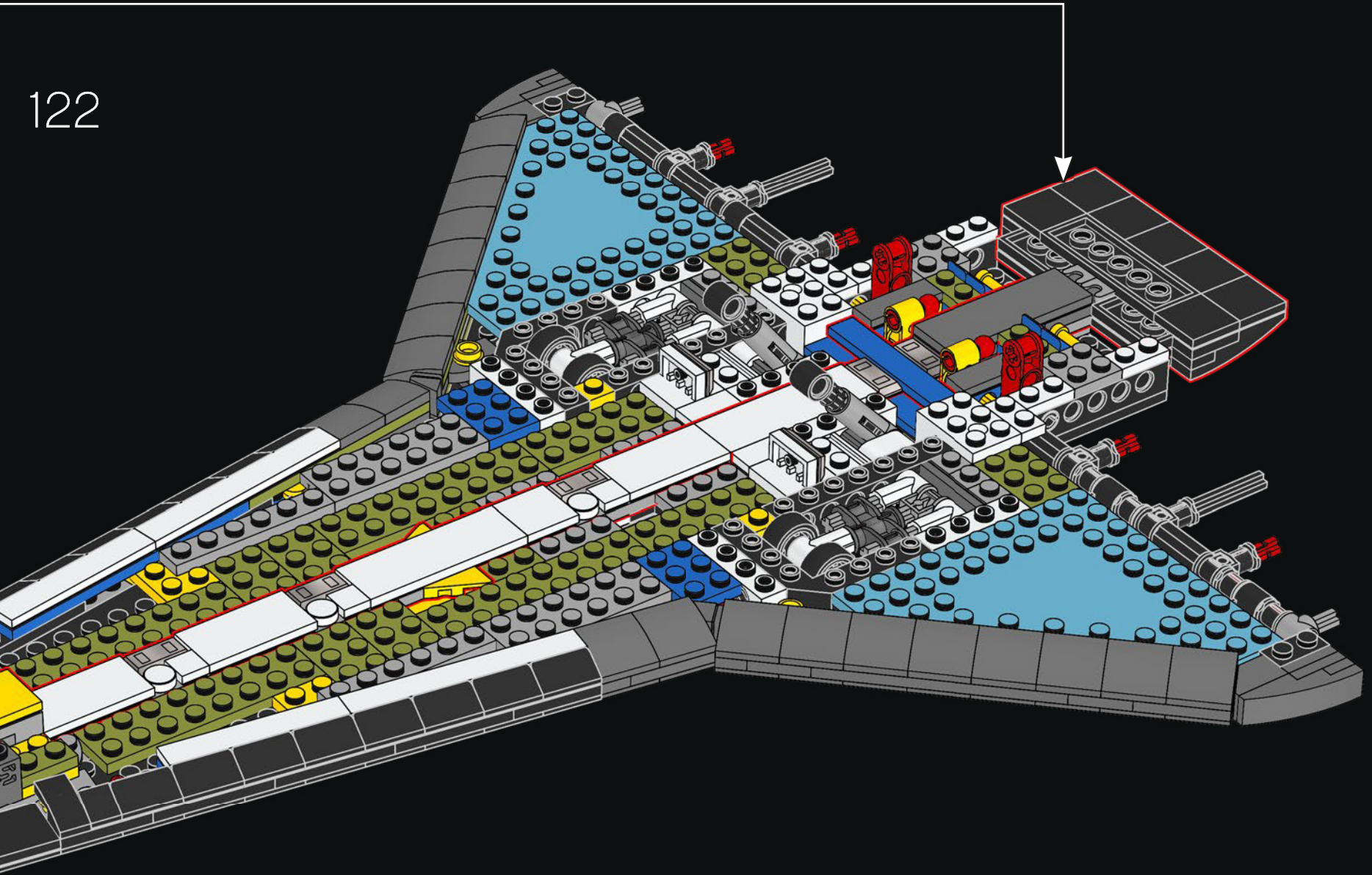
120



121

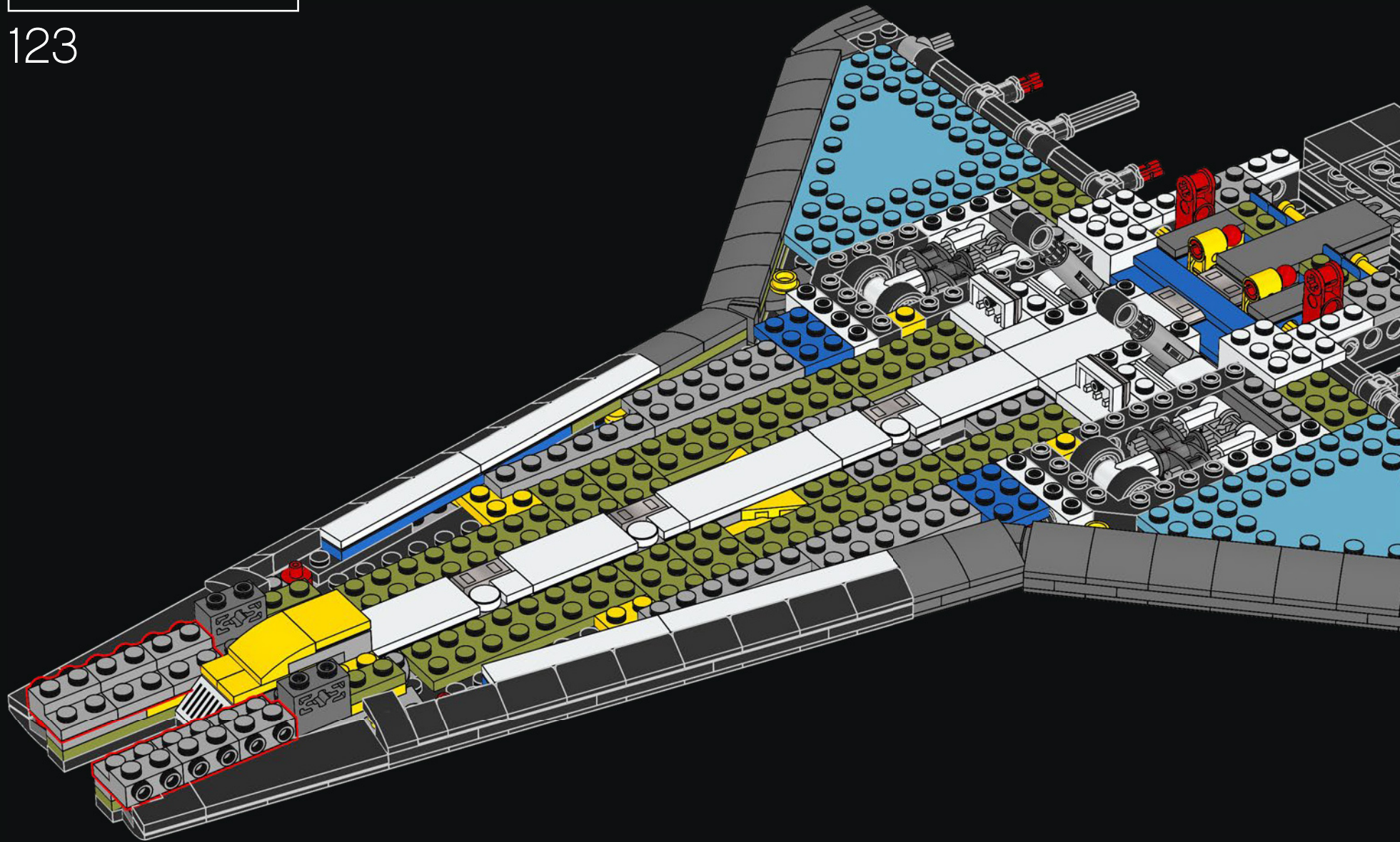


122





123

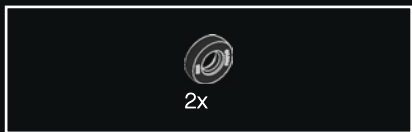




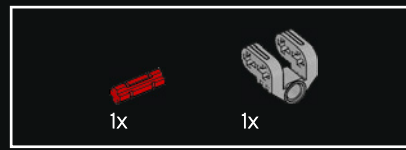
124



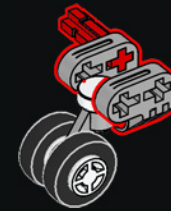
125



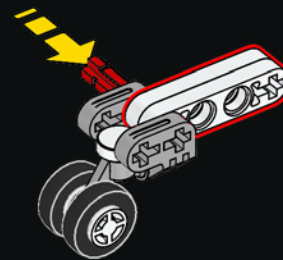
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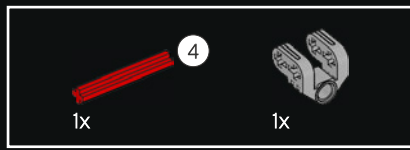


127

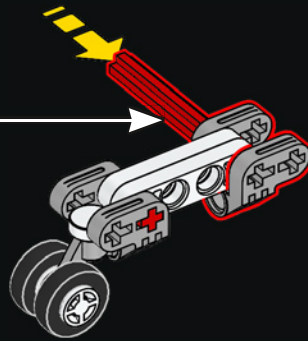
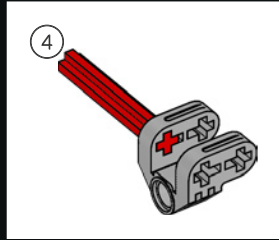


128

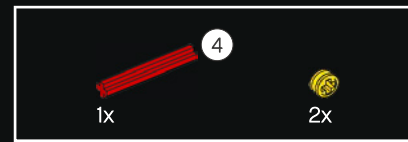
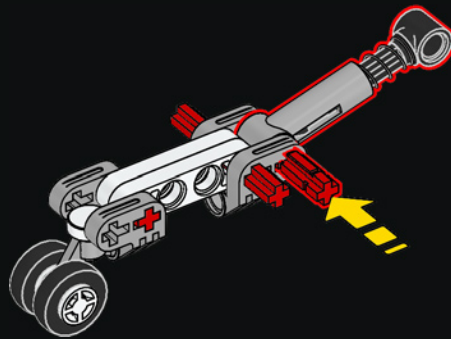




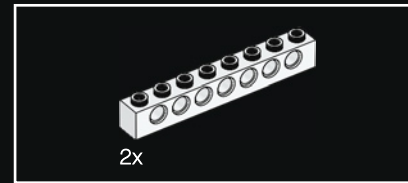
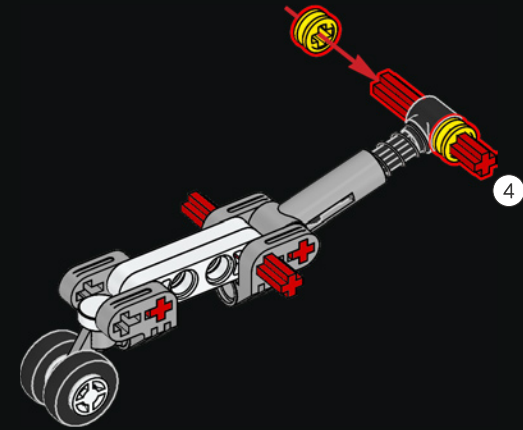
129



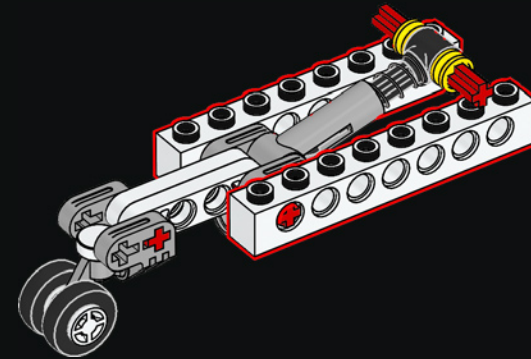
130



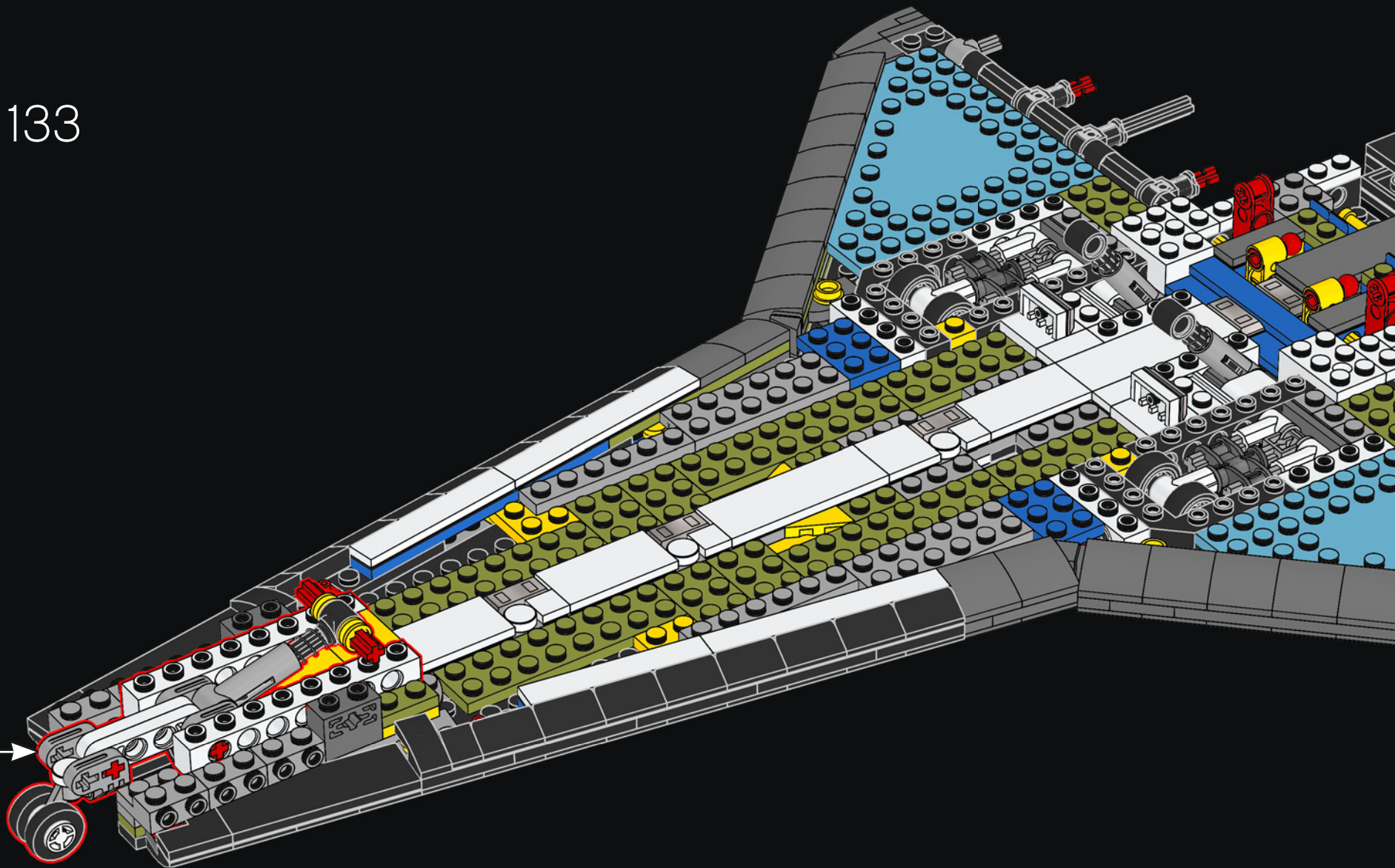
131



132

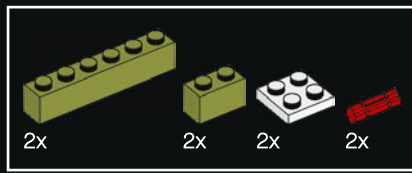


133

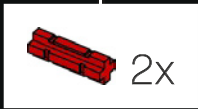
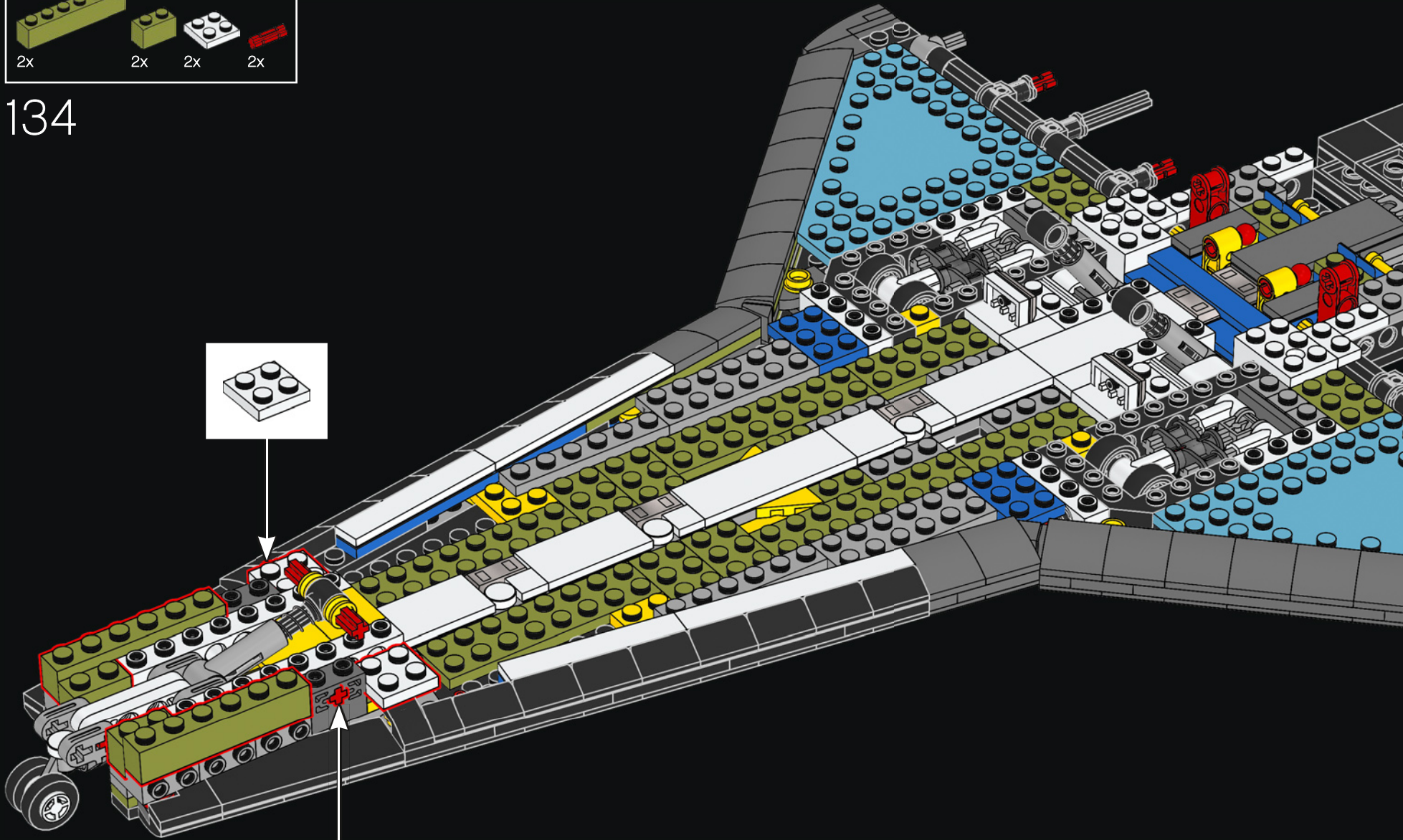


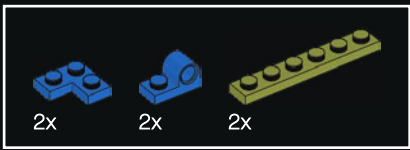
LE SAVIEZ-VOUS ?

La navette étant un planeur, elle ne pouvait atterrir qu'une seule fois. Une fois le train d'atterrissage déployé, il n'était plus possible de le rentrer.

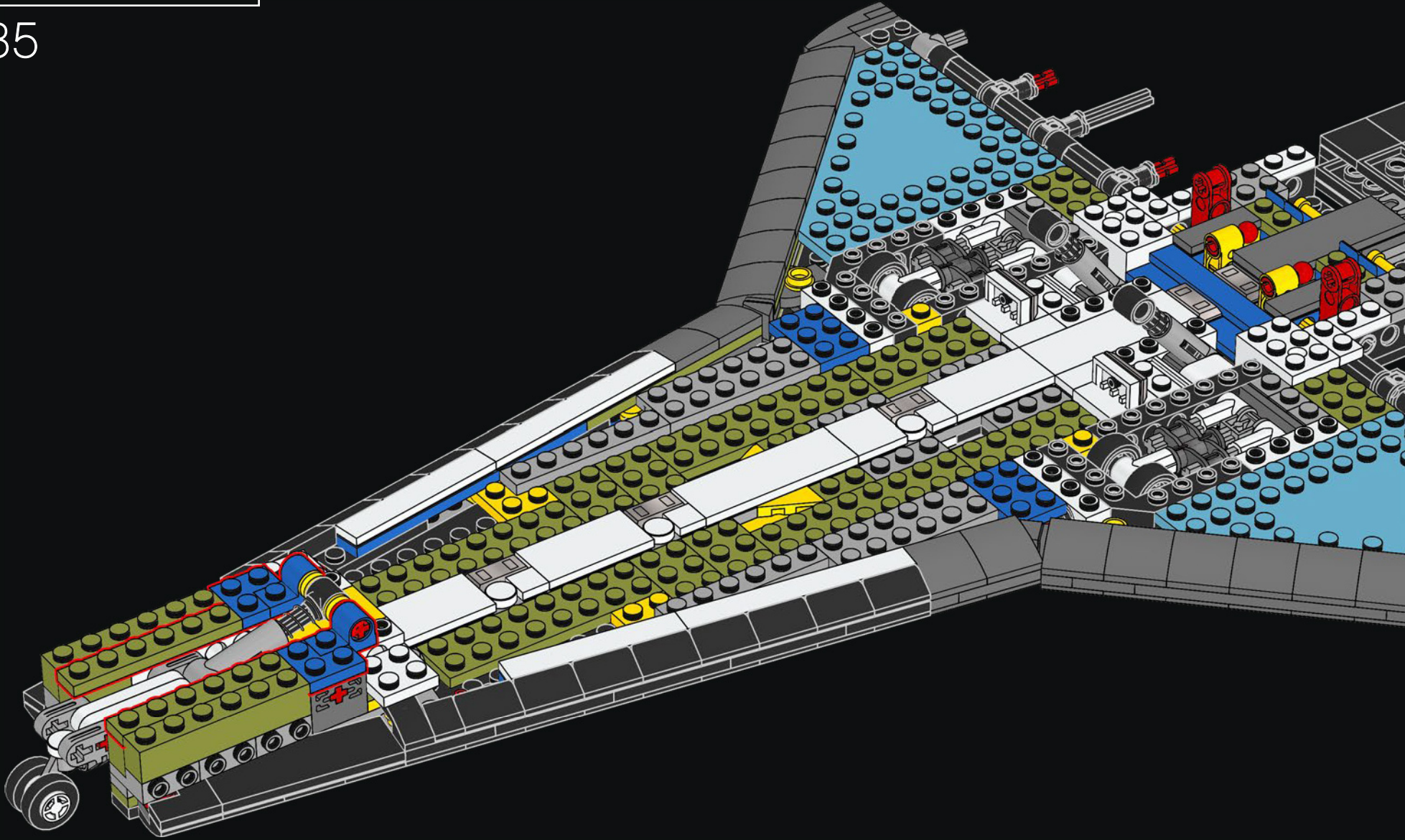


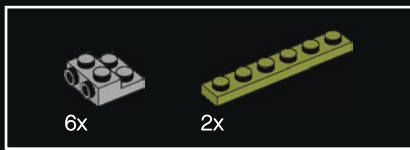
134



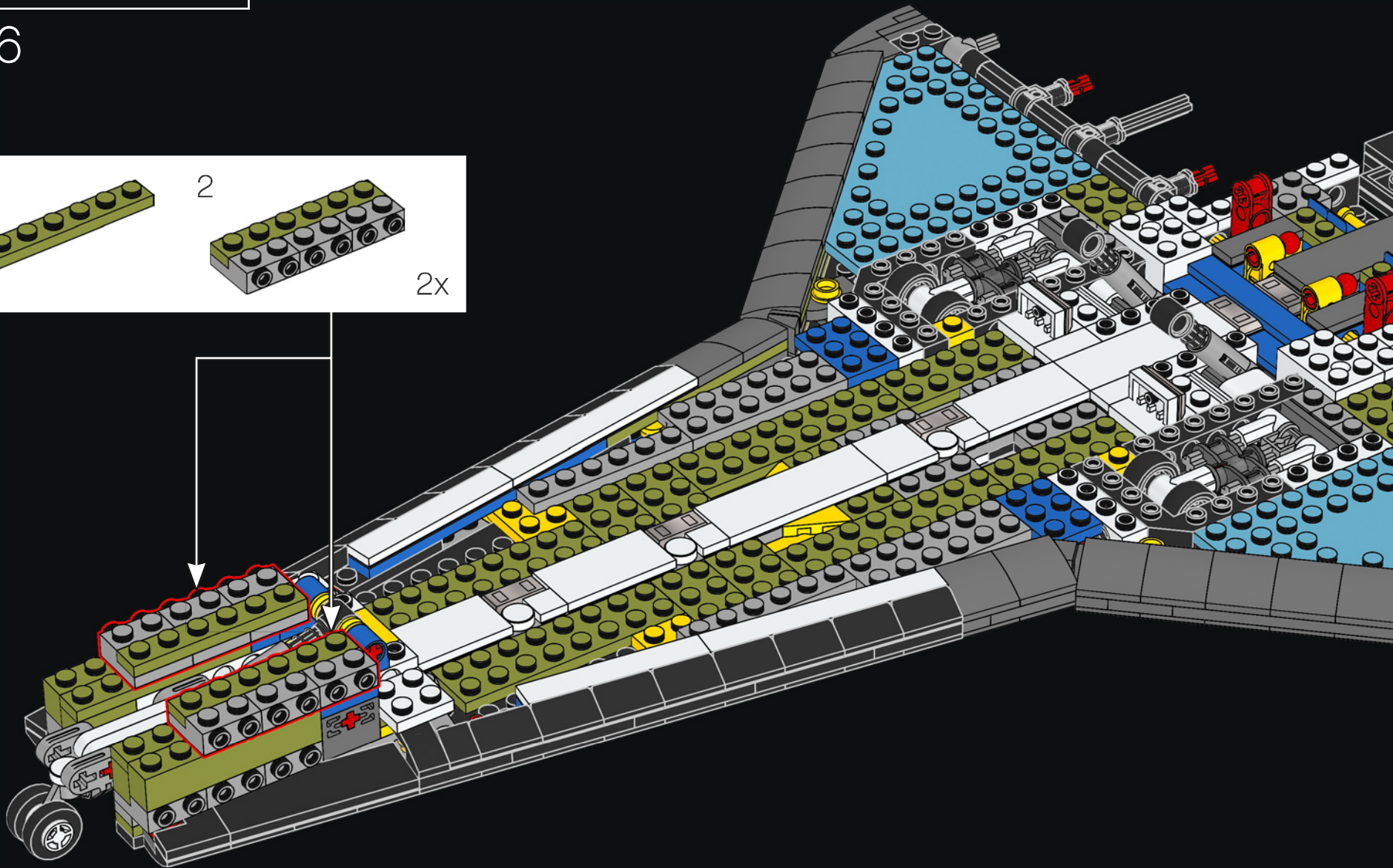
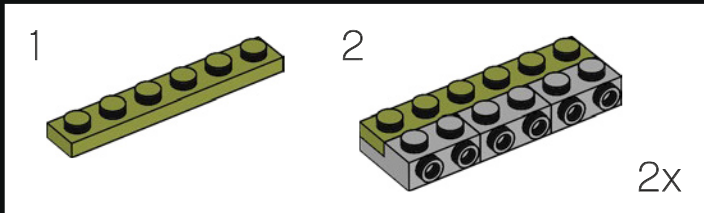


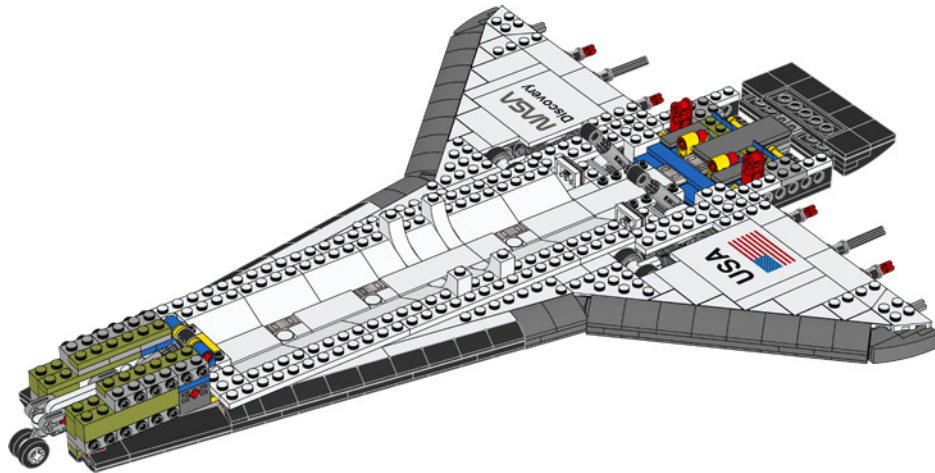
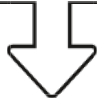
135

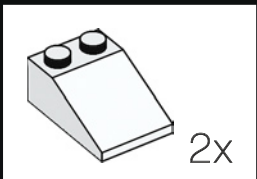
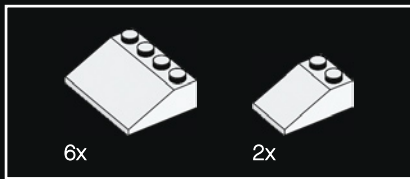




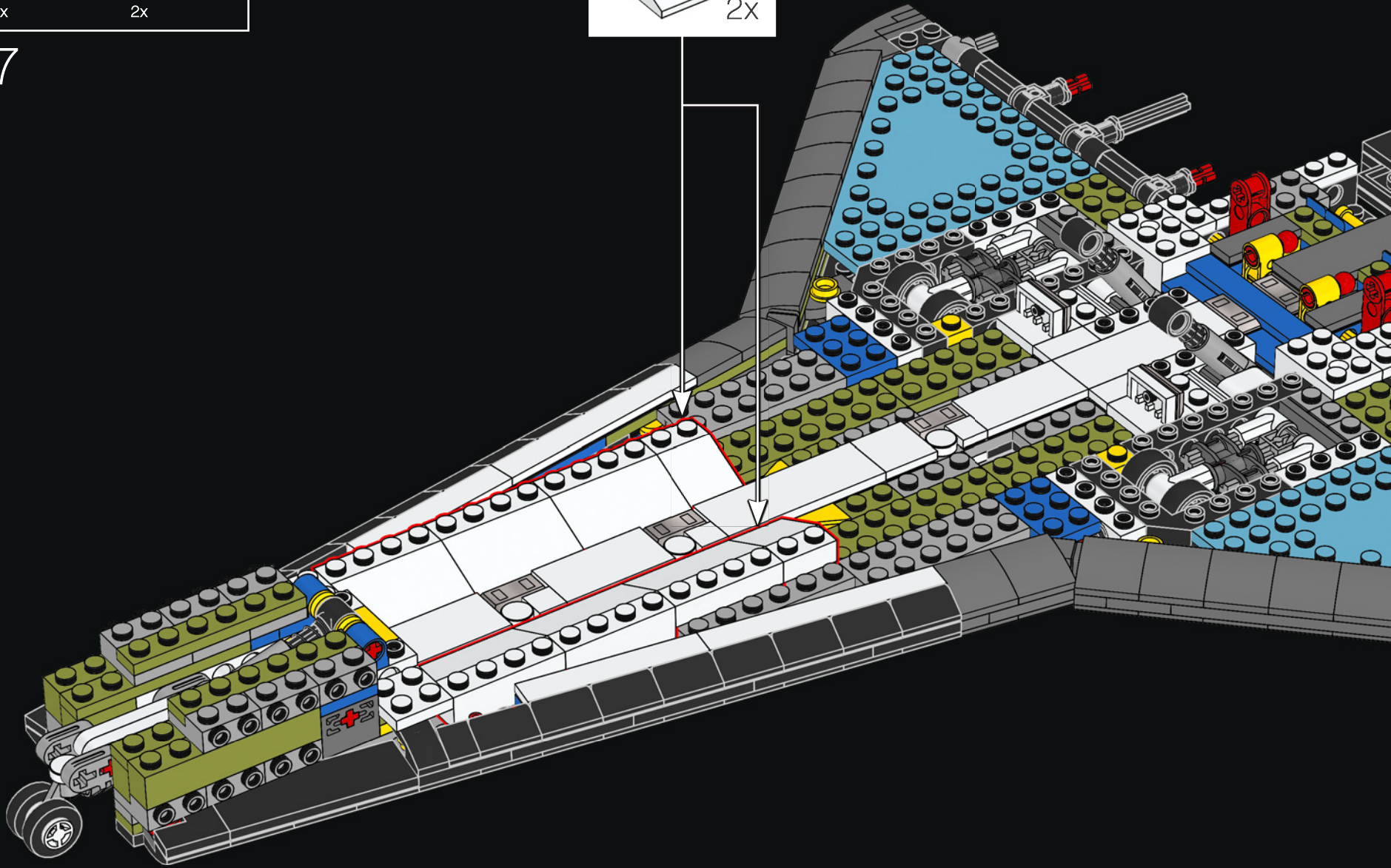
136

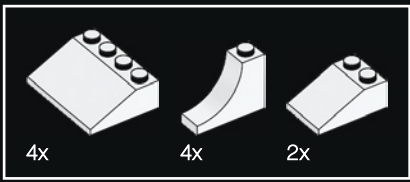




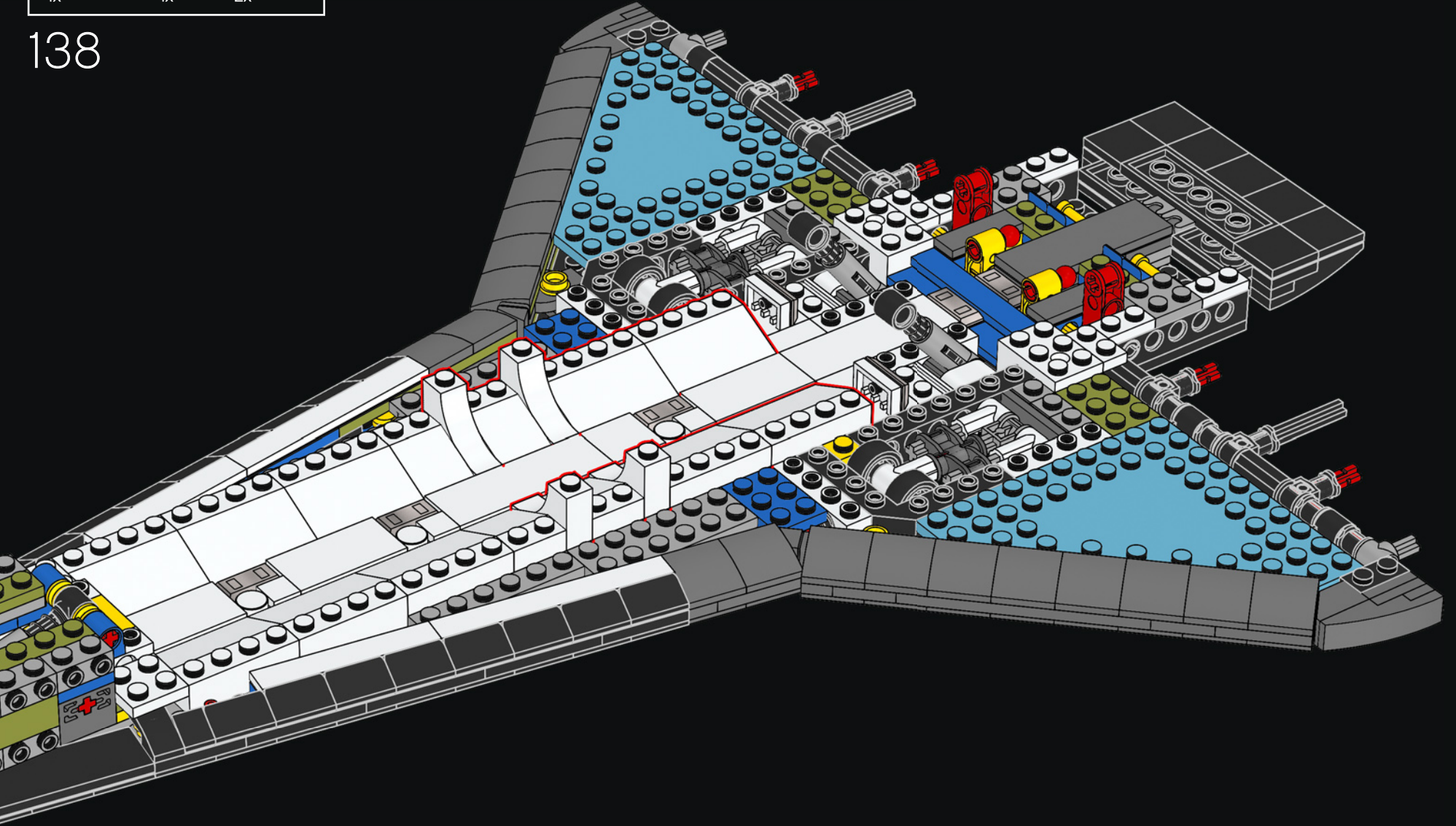


137



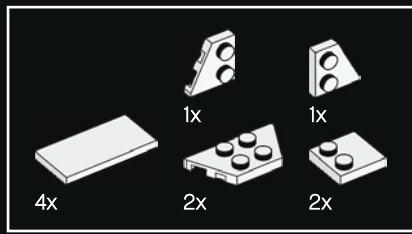


138

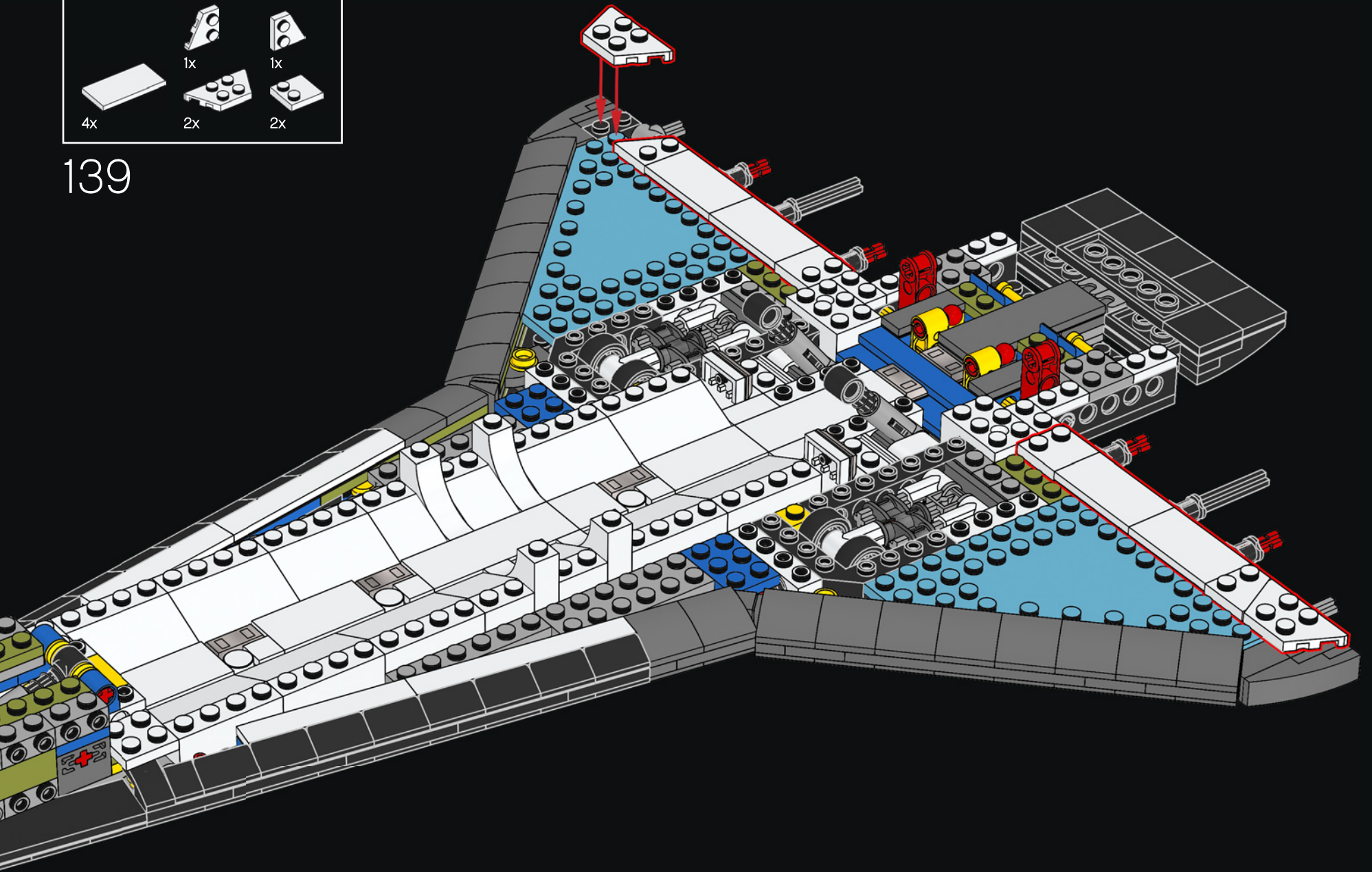


LE SAVIEZ-VOUS ?

Lorsque l'orbiteur entre dans l'atmosphère à Mach 25 (environ 28 000 km/h), sa vitesse est si élevée qu'il surchauffe l'air environnant et revient sur Terre dans la lueur du plasma.

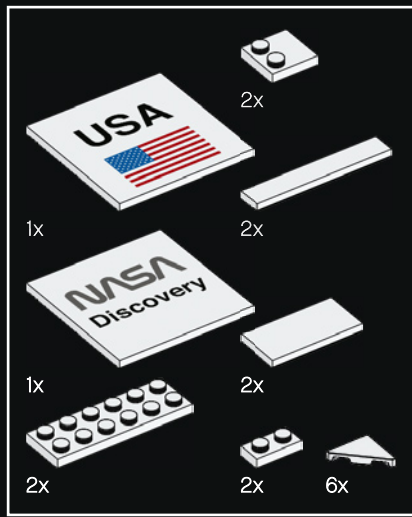


139

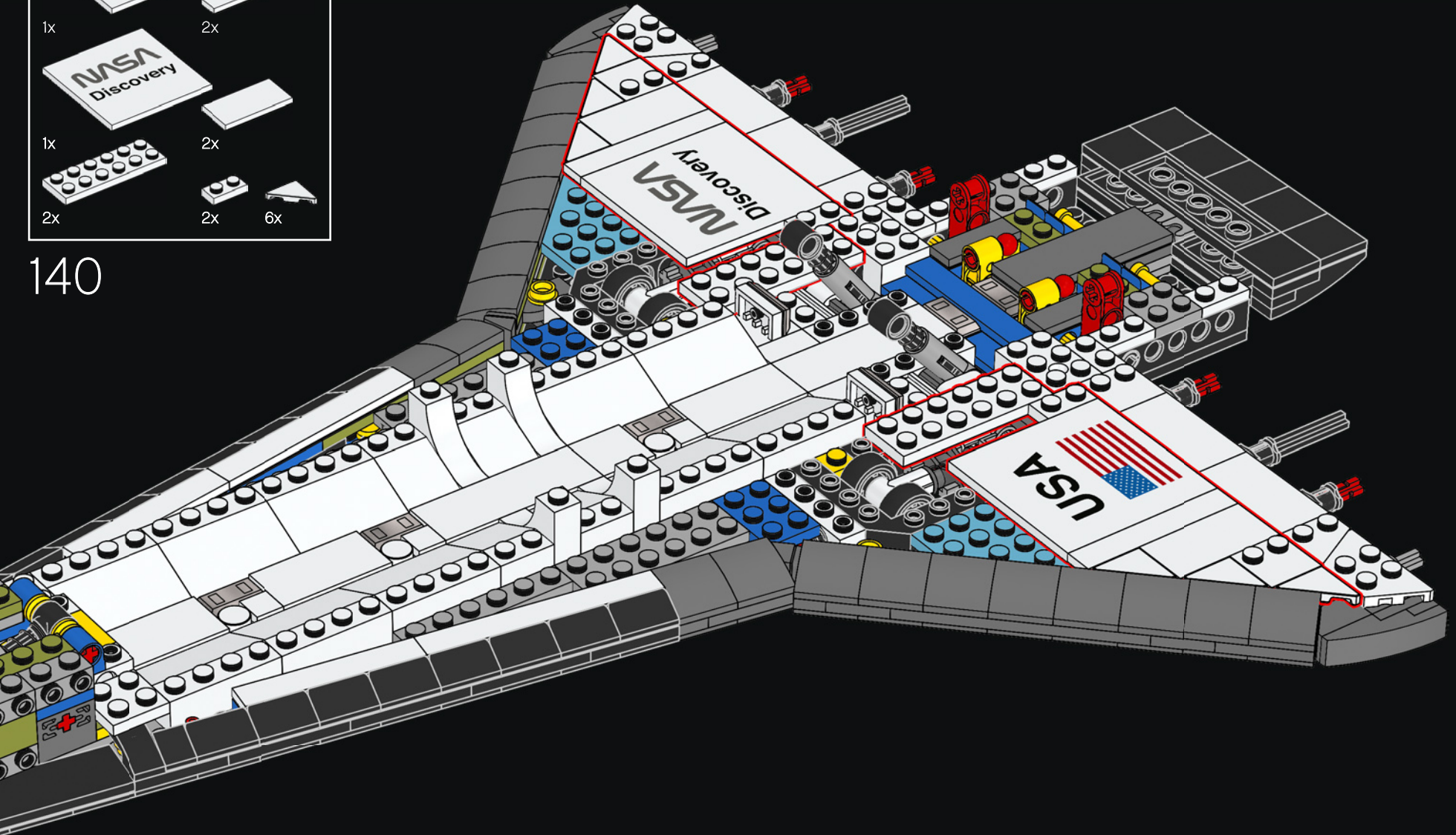


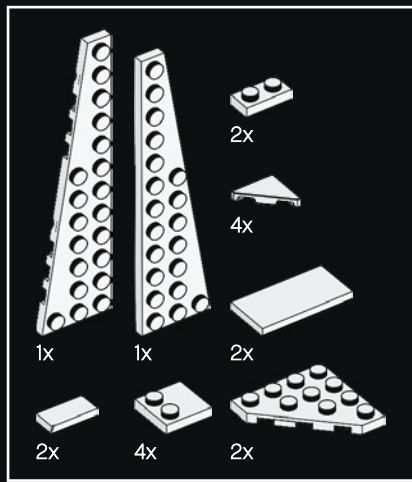
LE SAVIEZ-VOUS ?

La navette spatiale Discovery est recouverte d'environ 23 000 tuiles isolantes en céramique, afin de protéger le véhicule de la chaleur intense produite par la rentrée dans l'atmosphère terrestre.

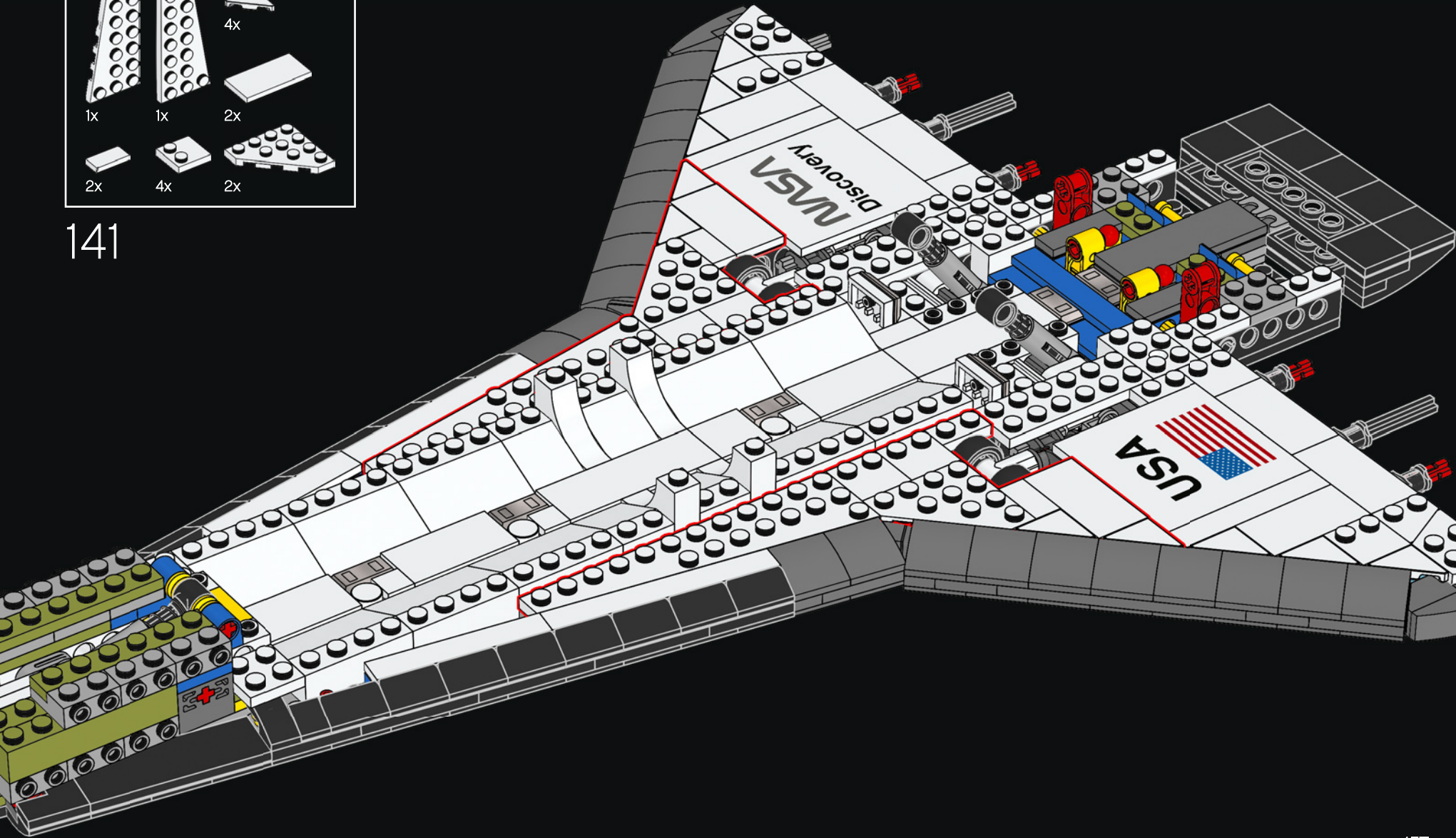


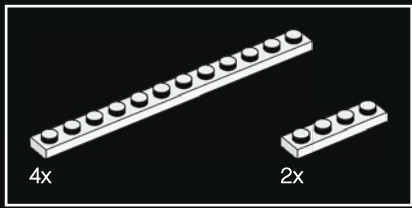
140



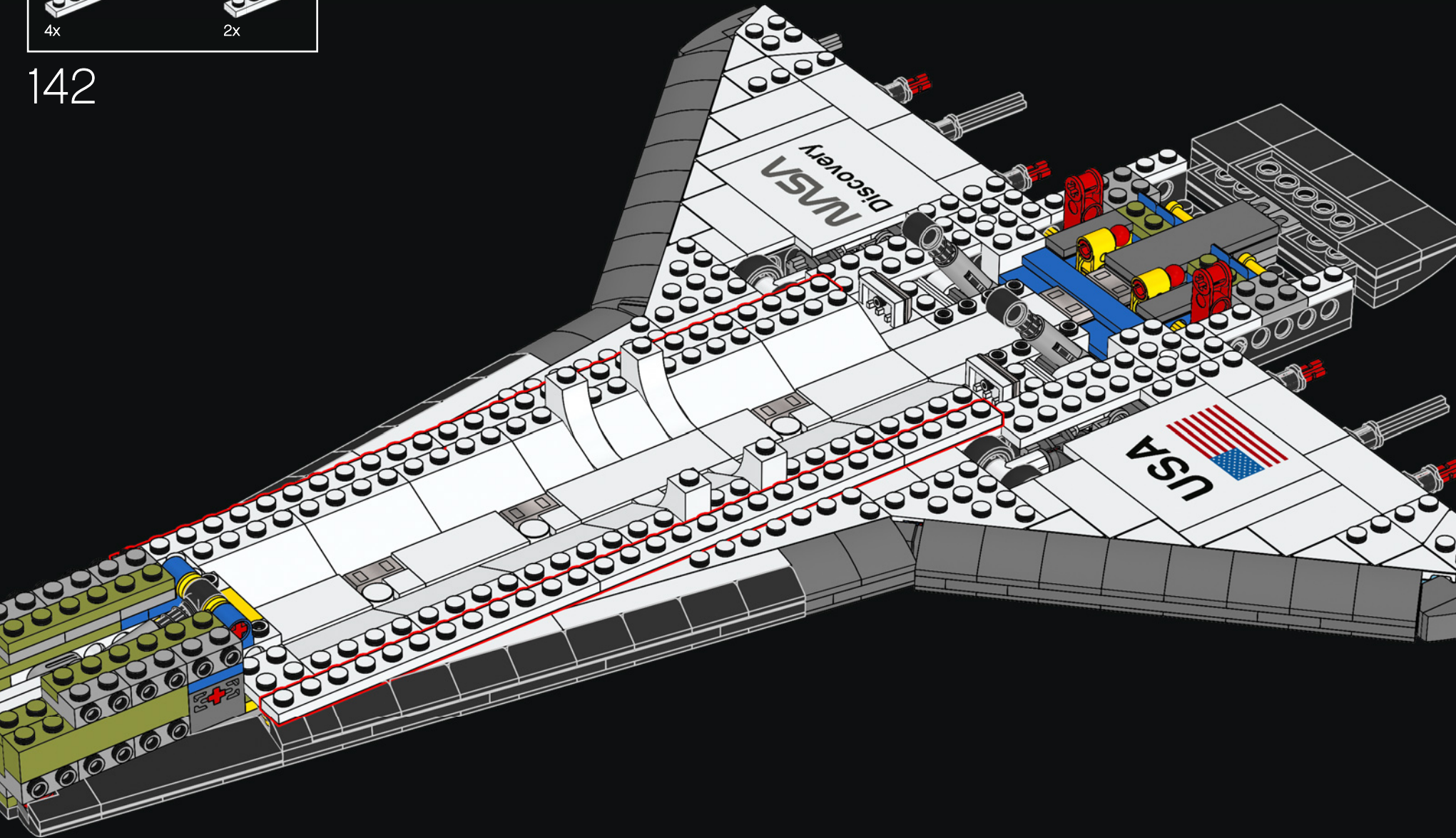


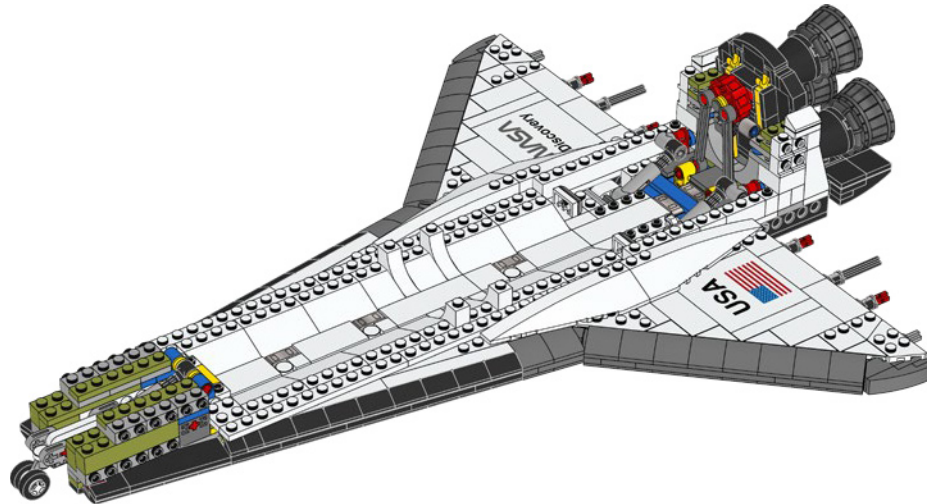
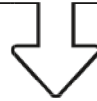
141





142

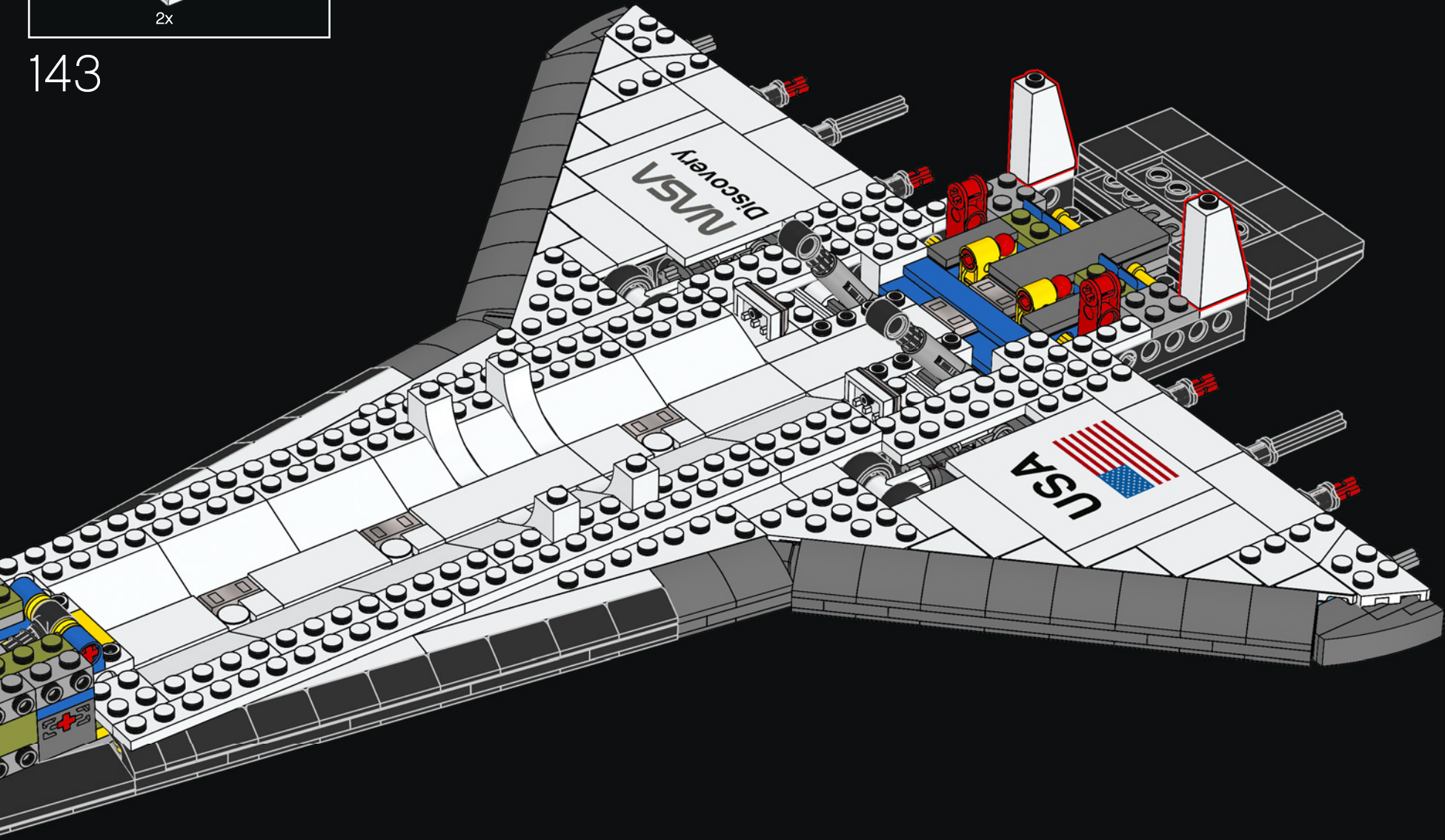






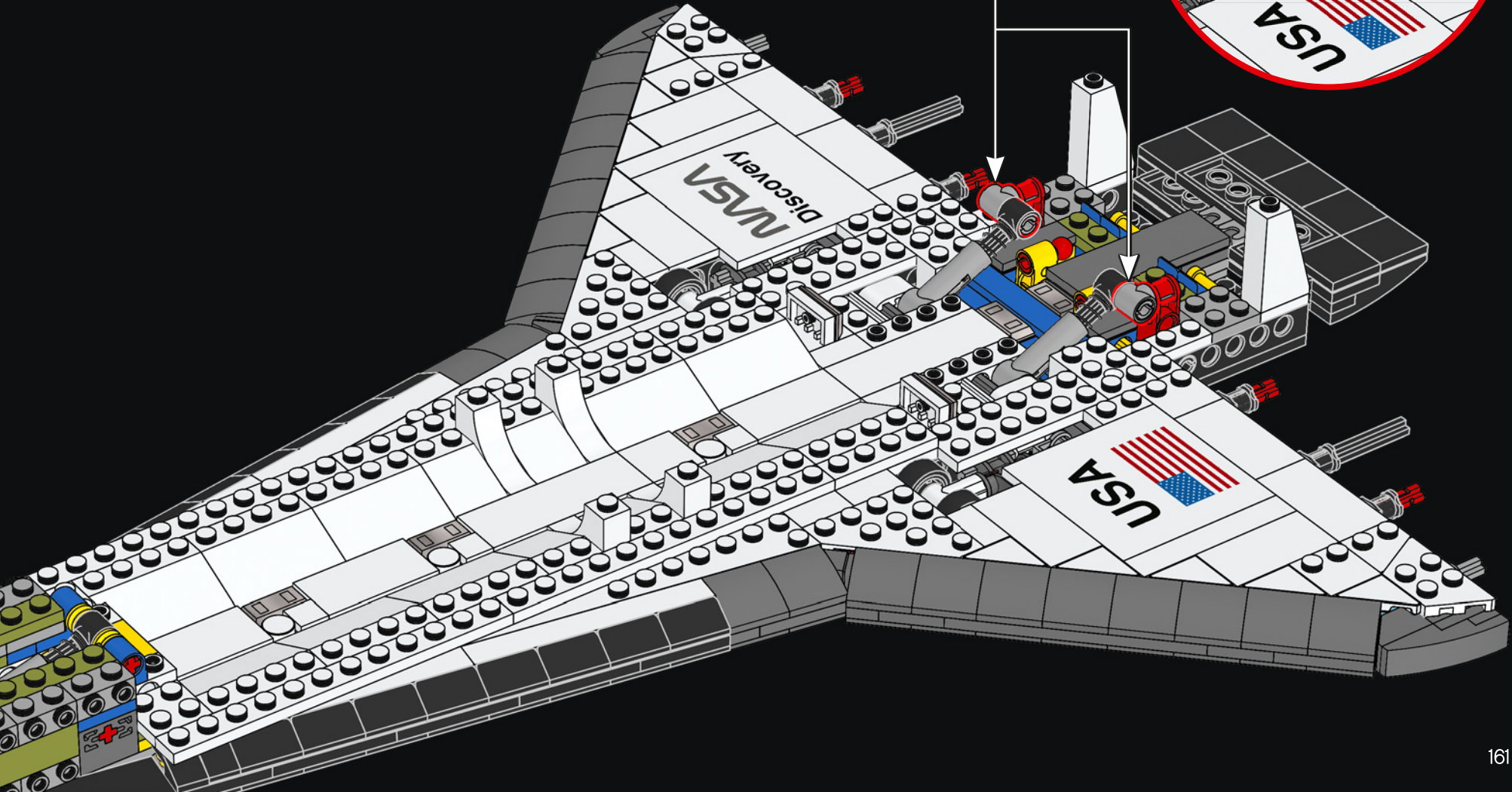
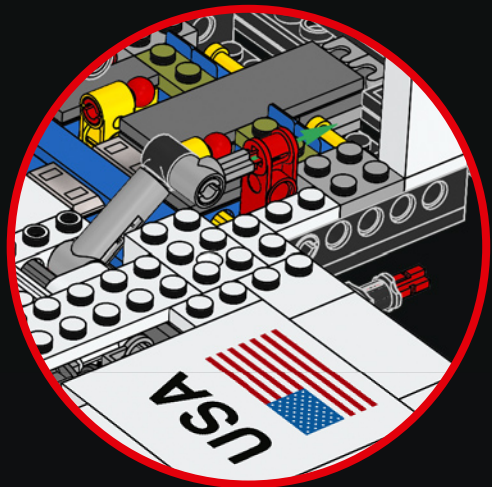
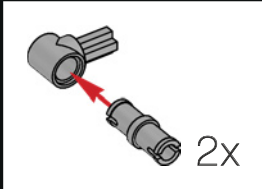
2x

143



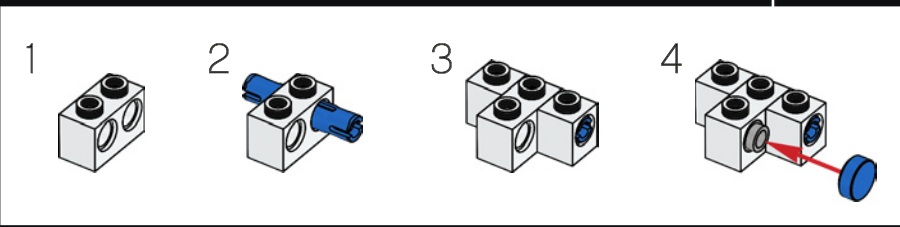
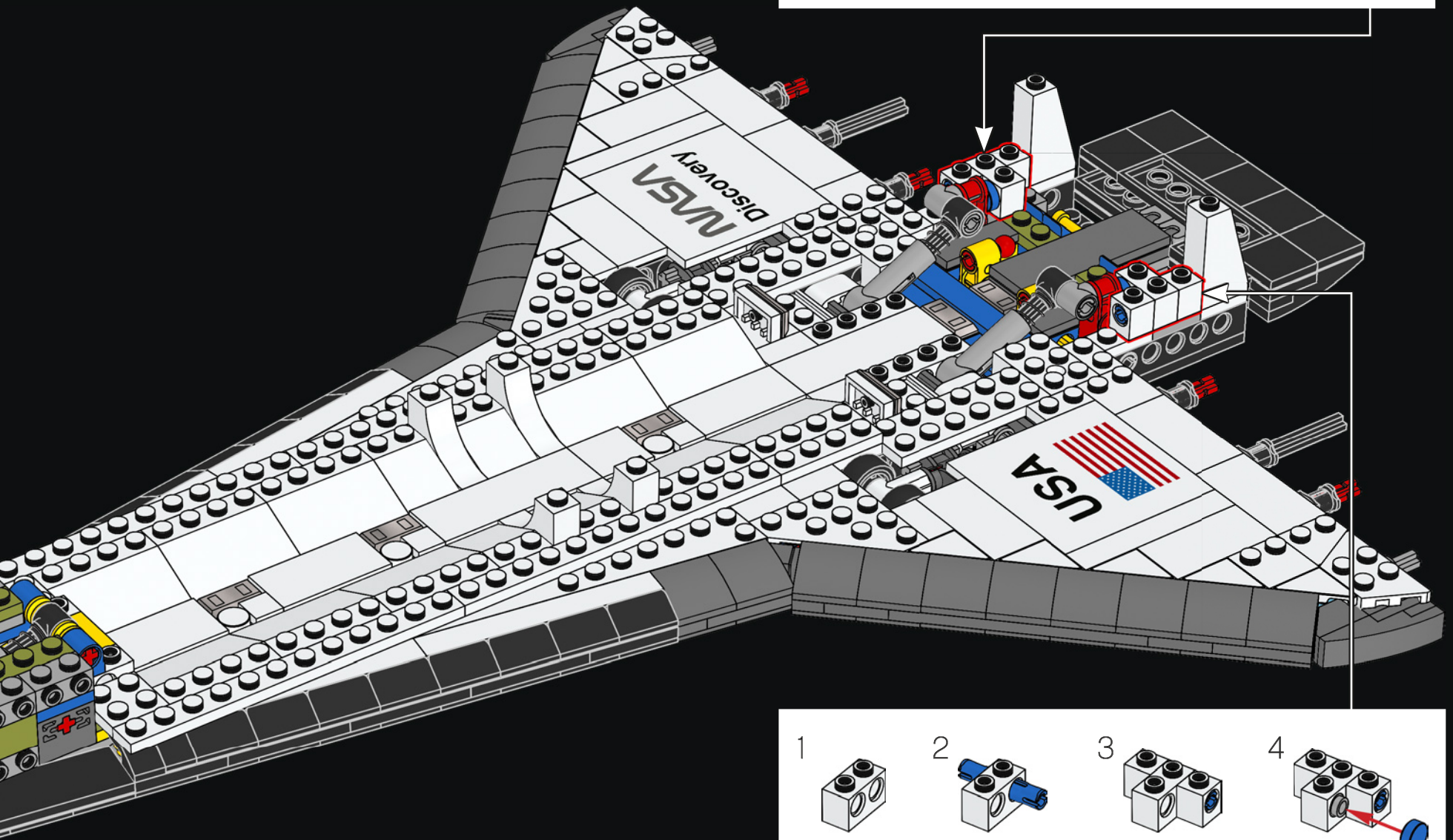
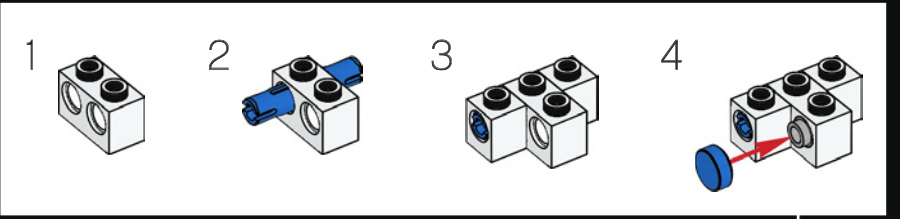


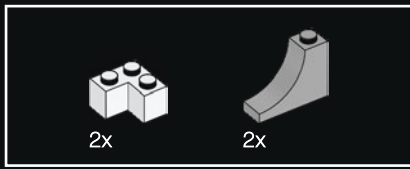
144



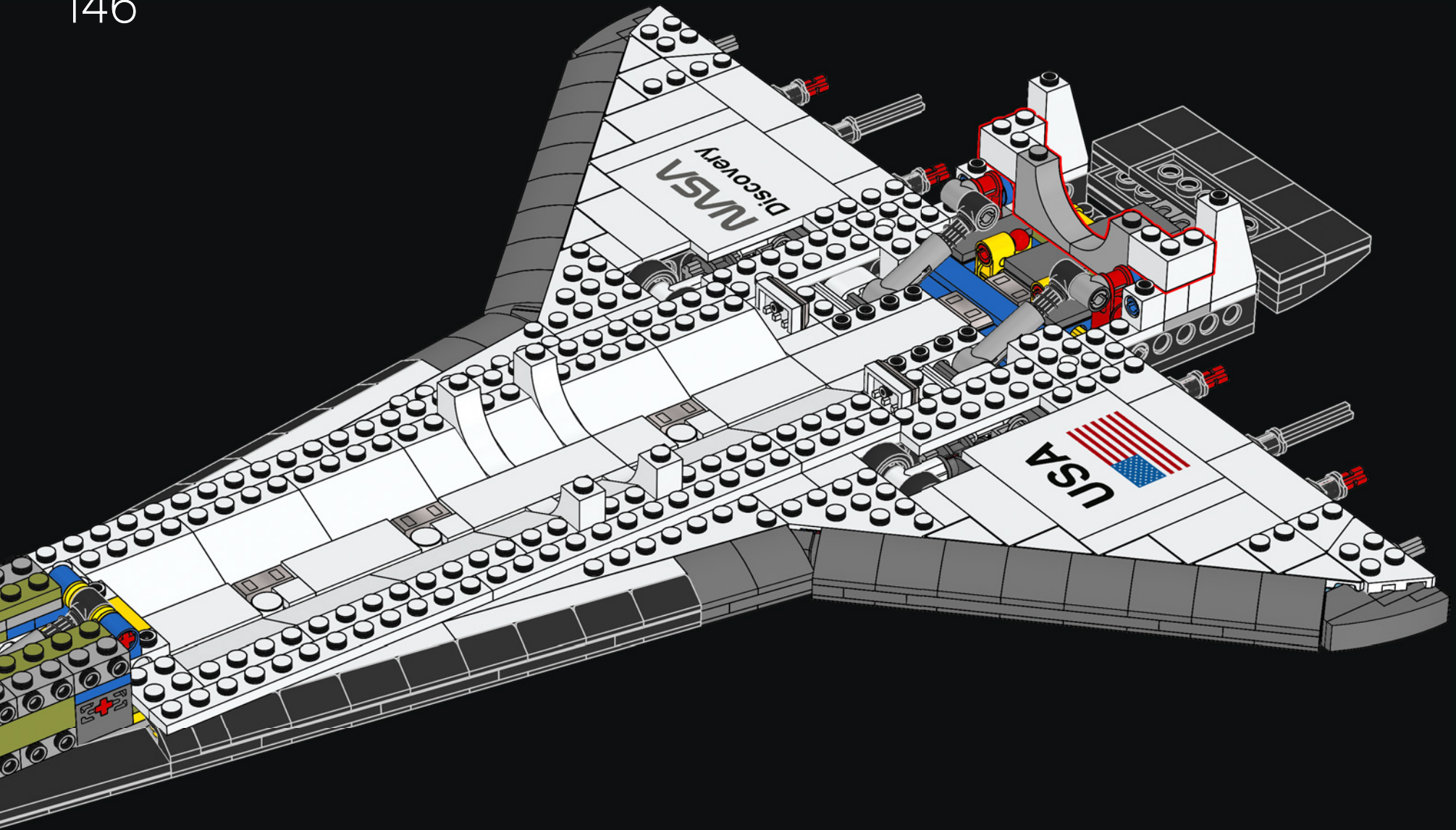


145



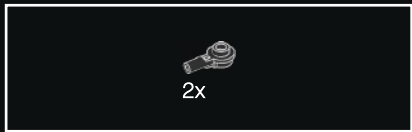
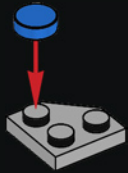


146





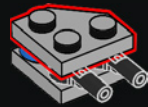
147



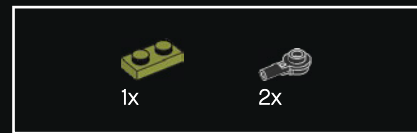
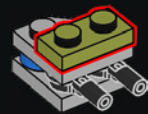
148



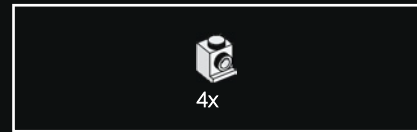
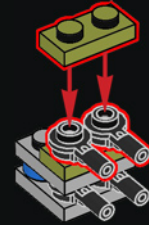
149



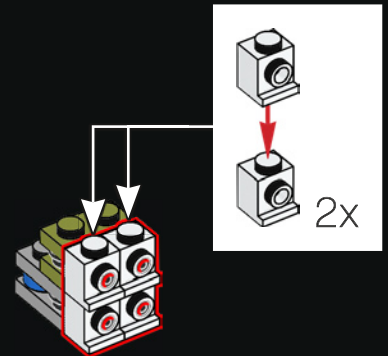
150

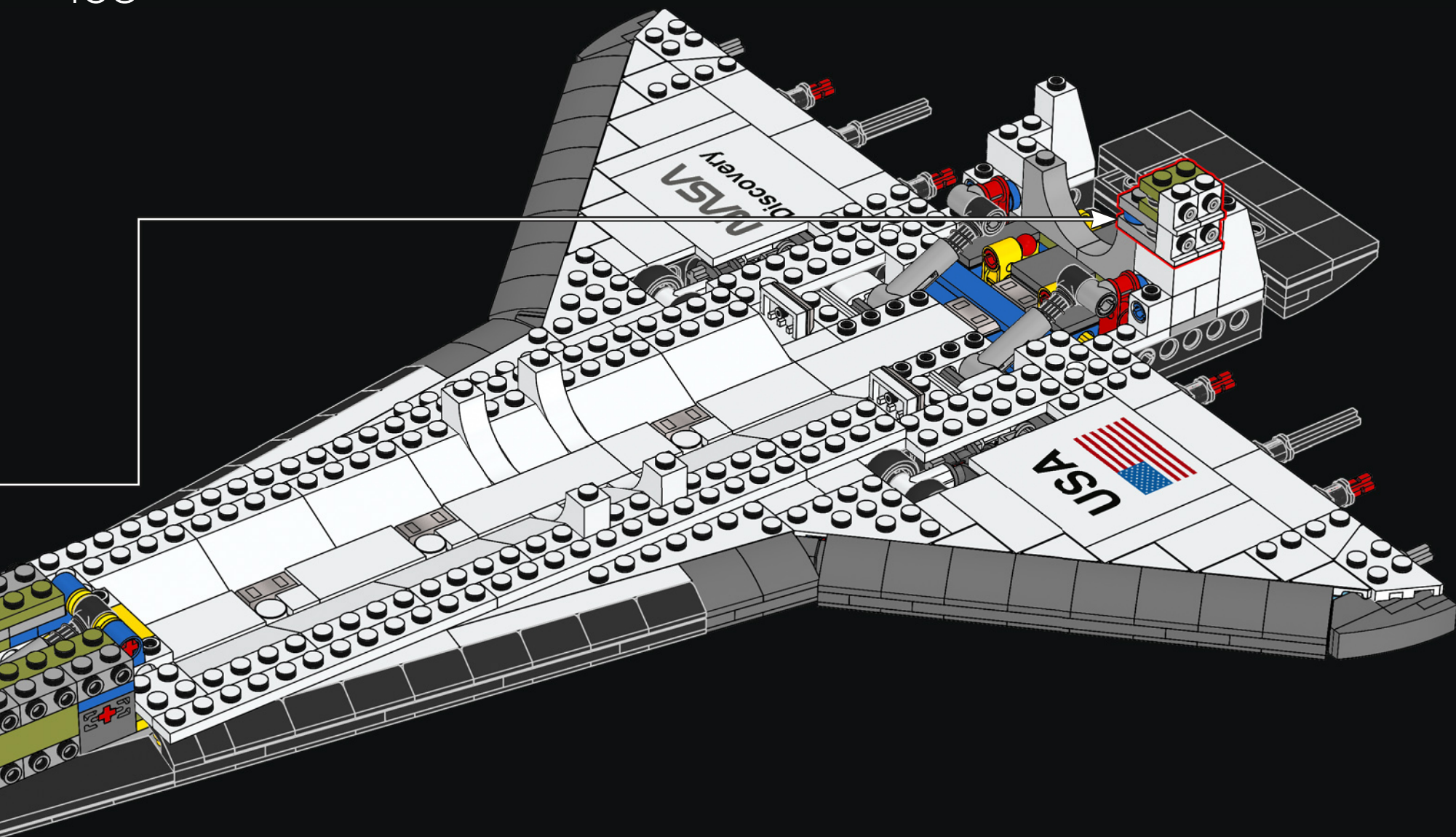


151



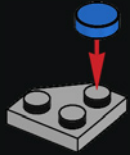
152







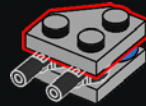
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155



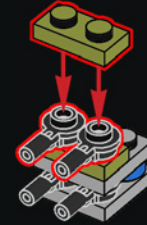
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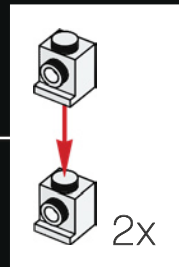
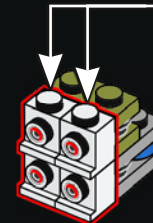
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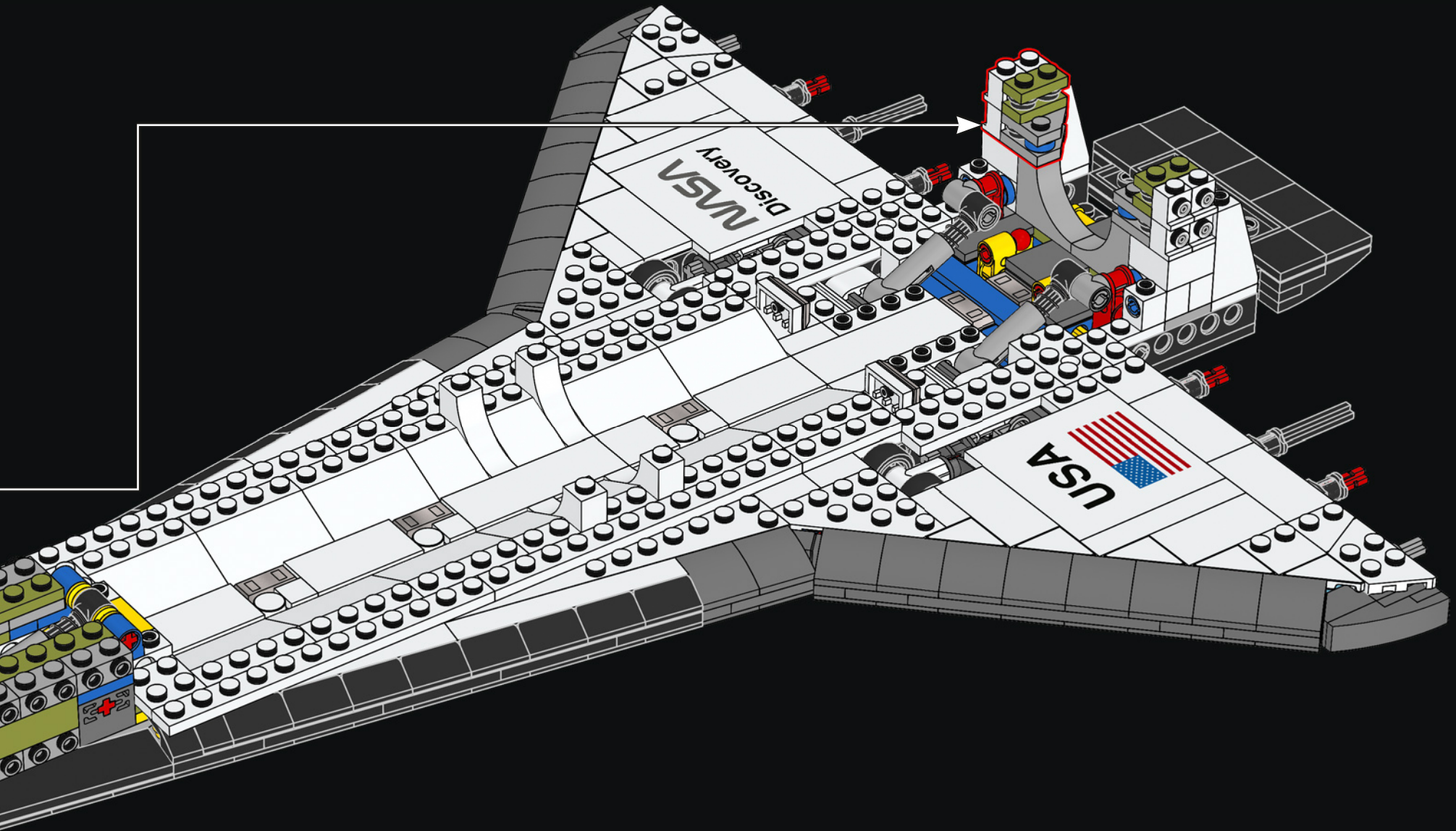


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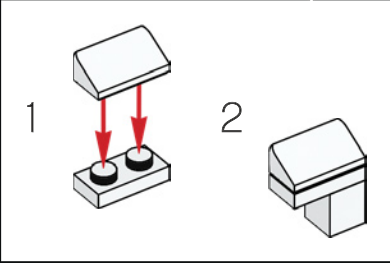
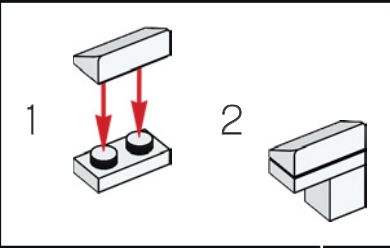
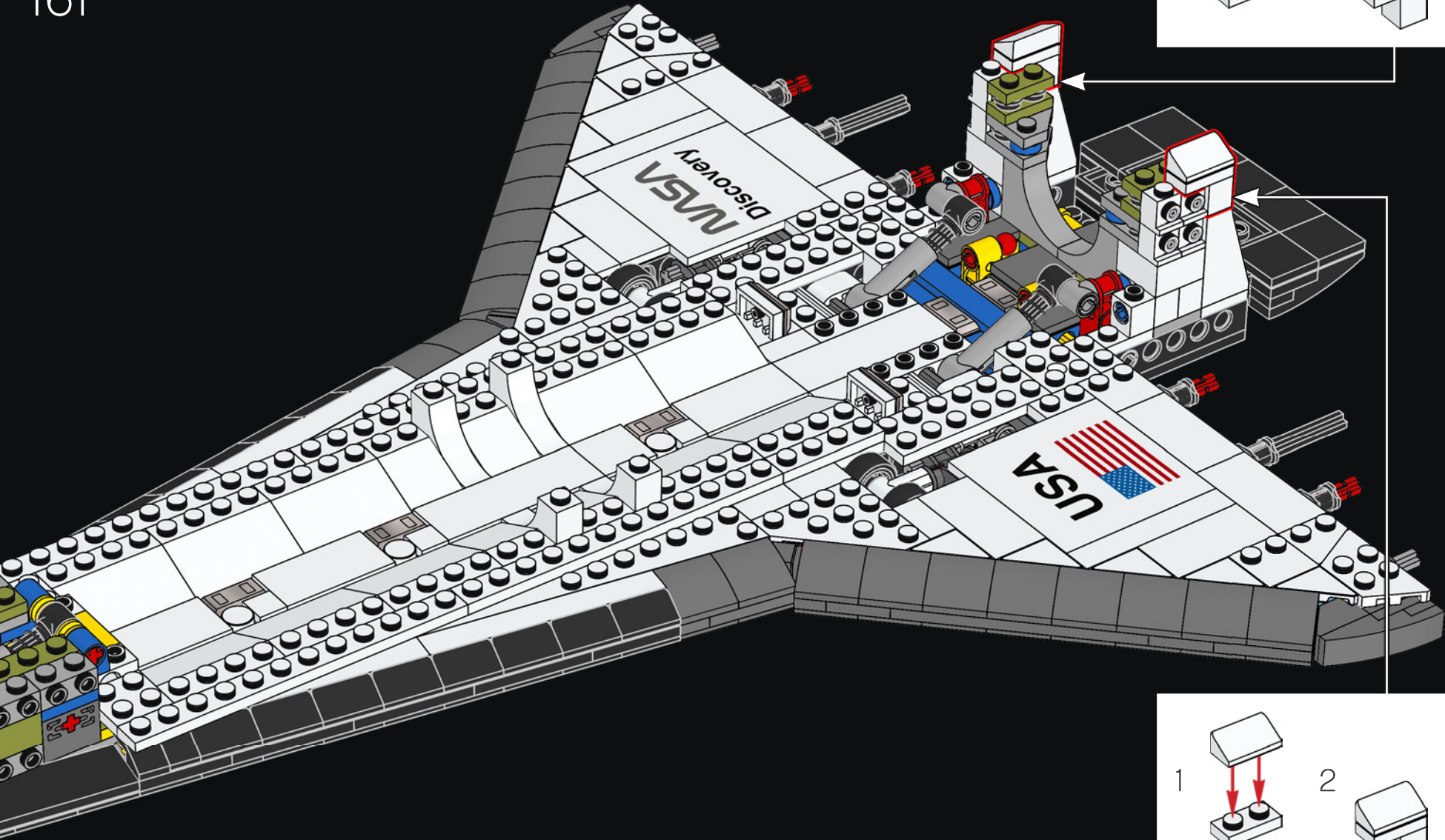
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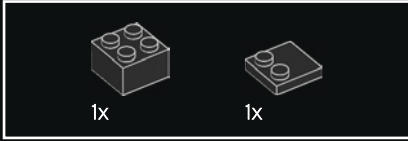
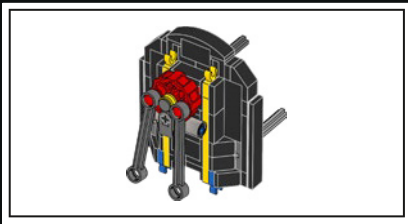




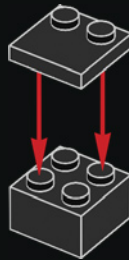


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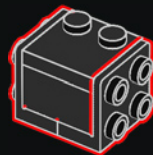




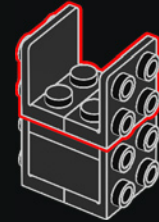
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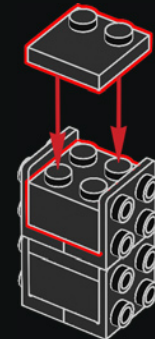
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164

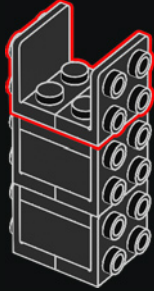


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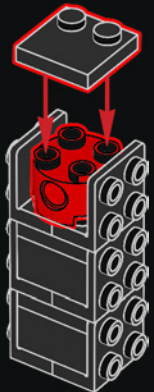




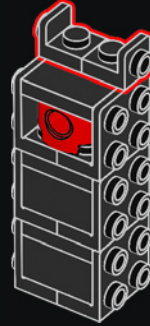
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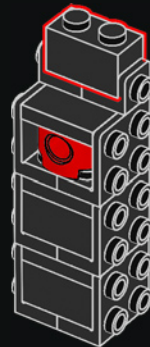
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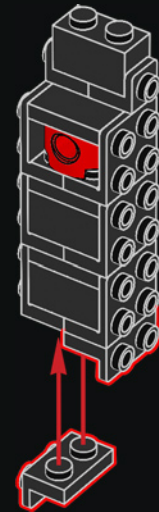
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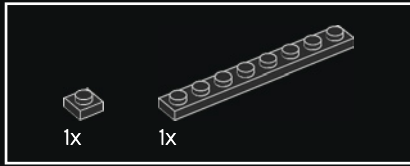
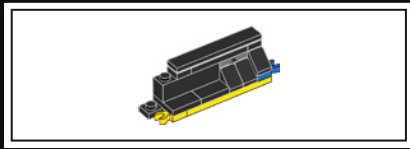


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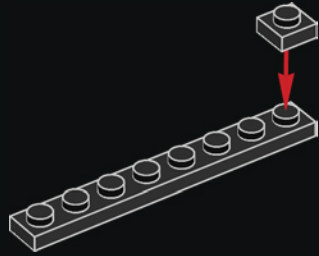


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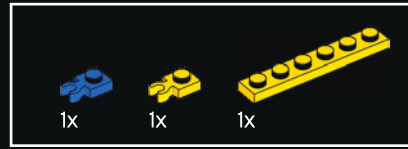
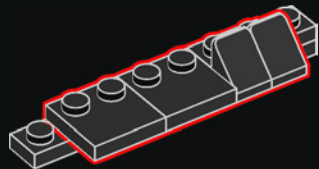




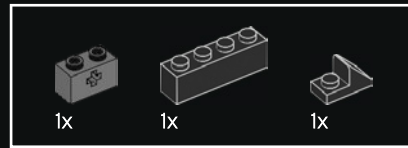
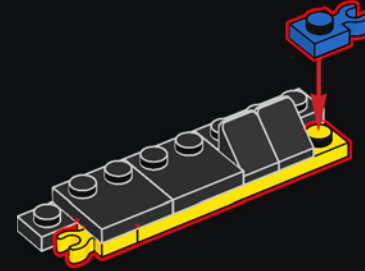
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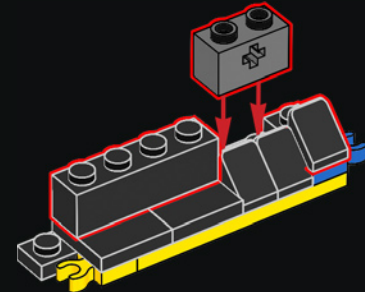
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173

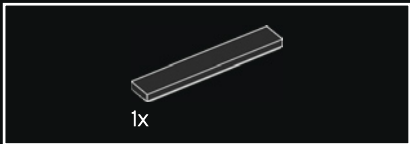
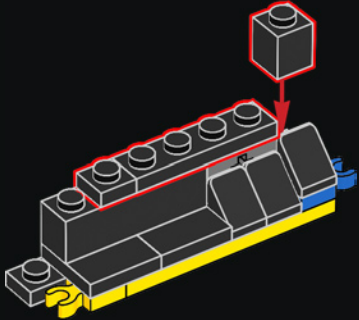


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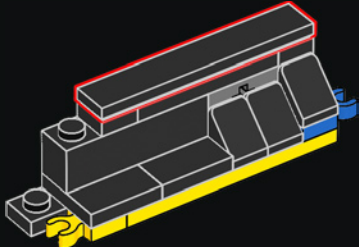




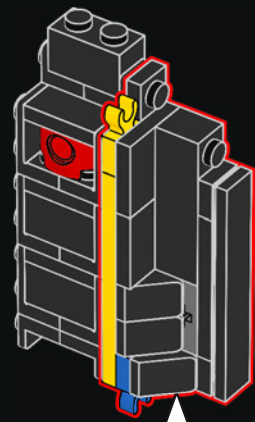
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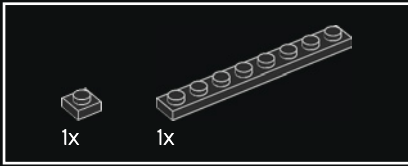
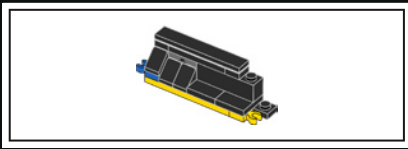


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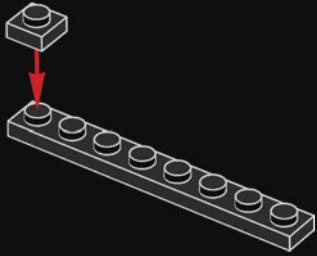


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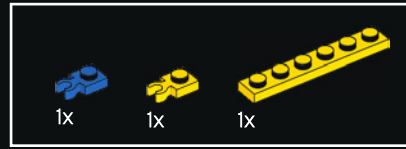
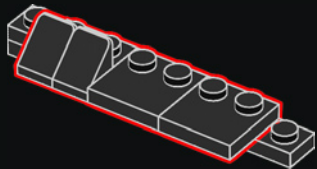




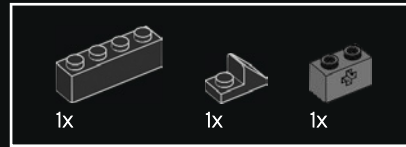
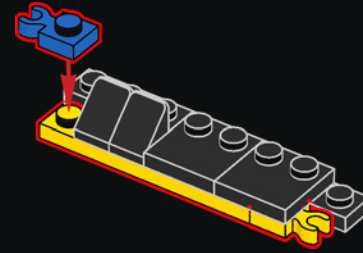
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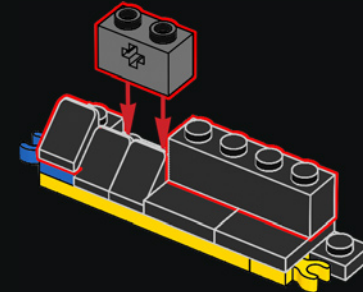
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180

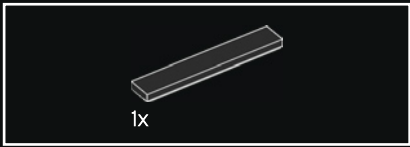
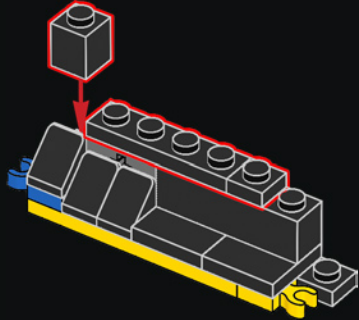


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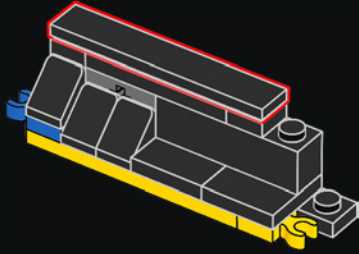




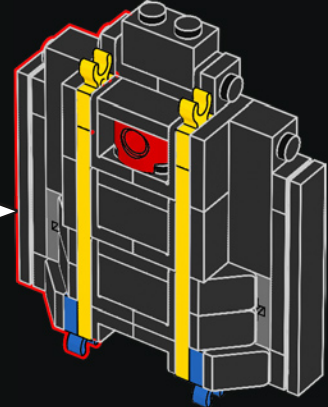
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183

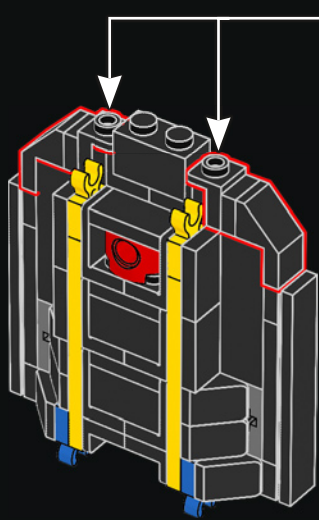
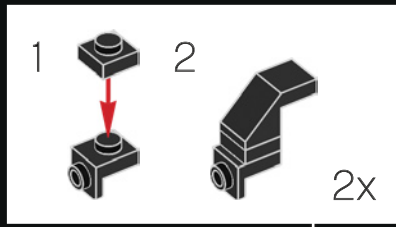


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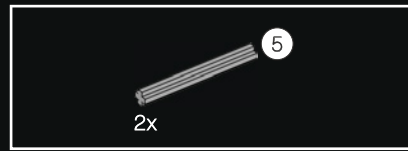
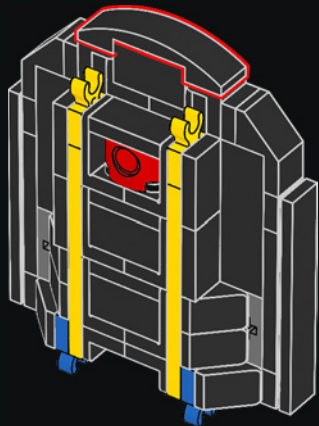




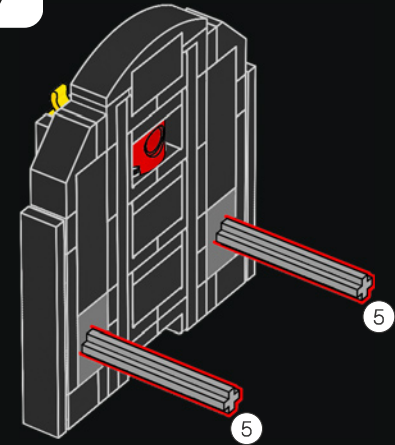
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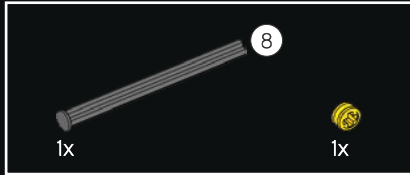
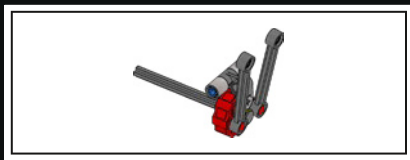


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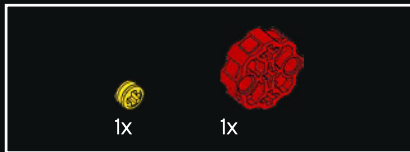
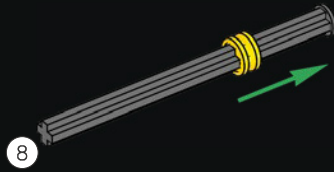


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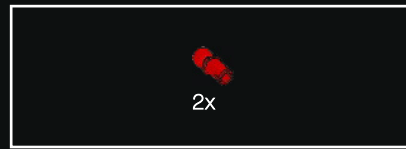
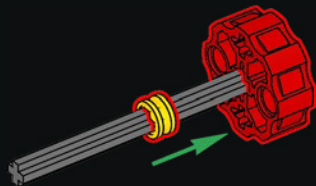




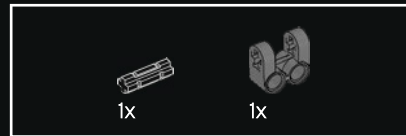
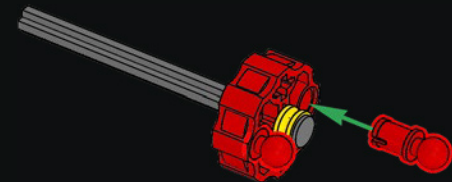
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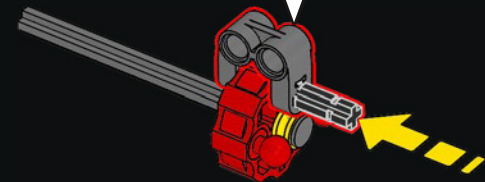
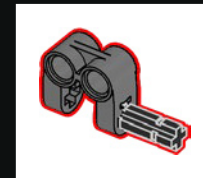
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190

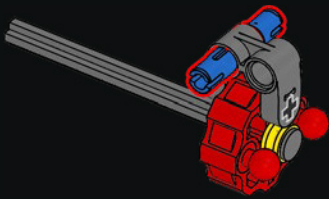


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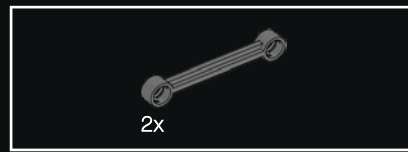
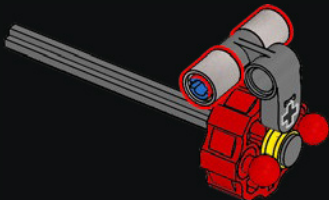




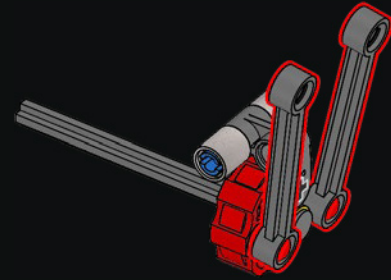
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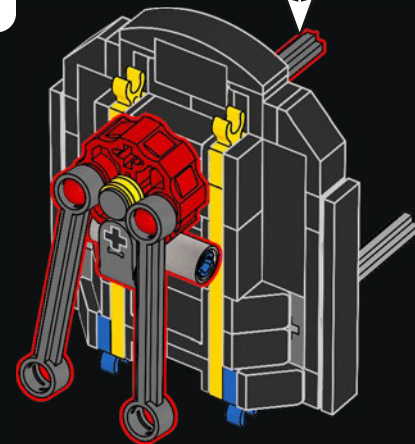
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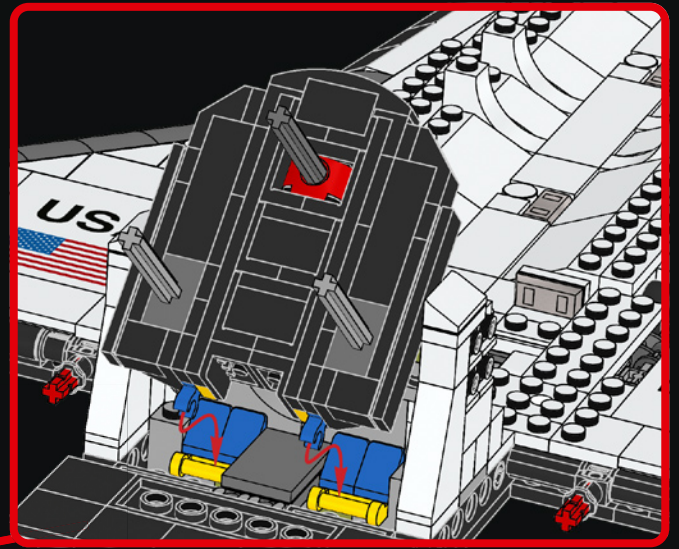
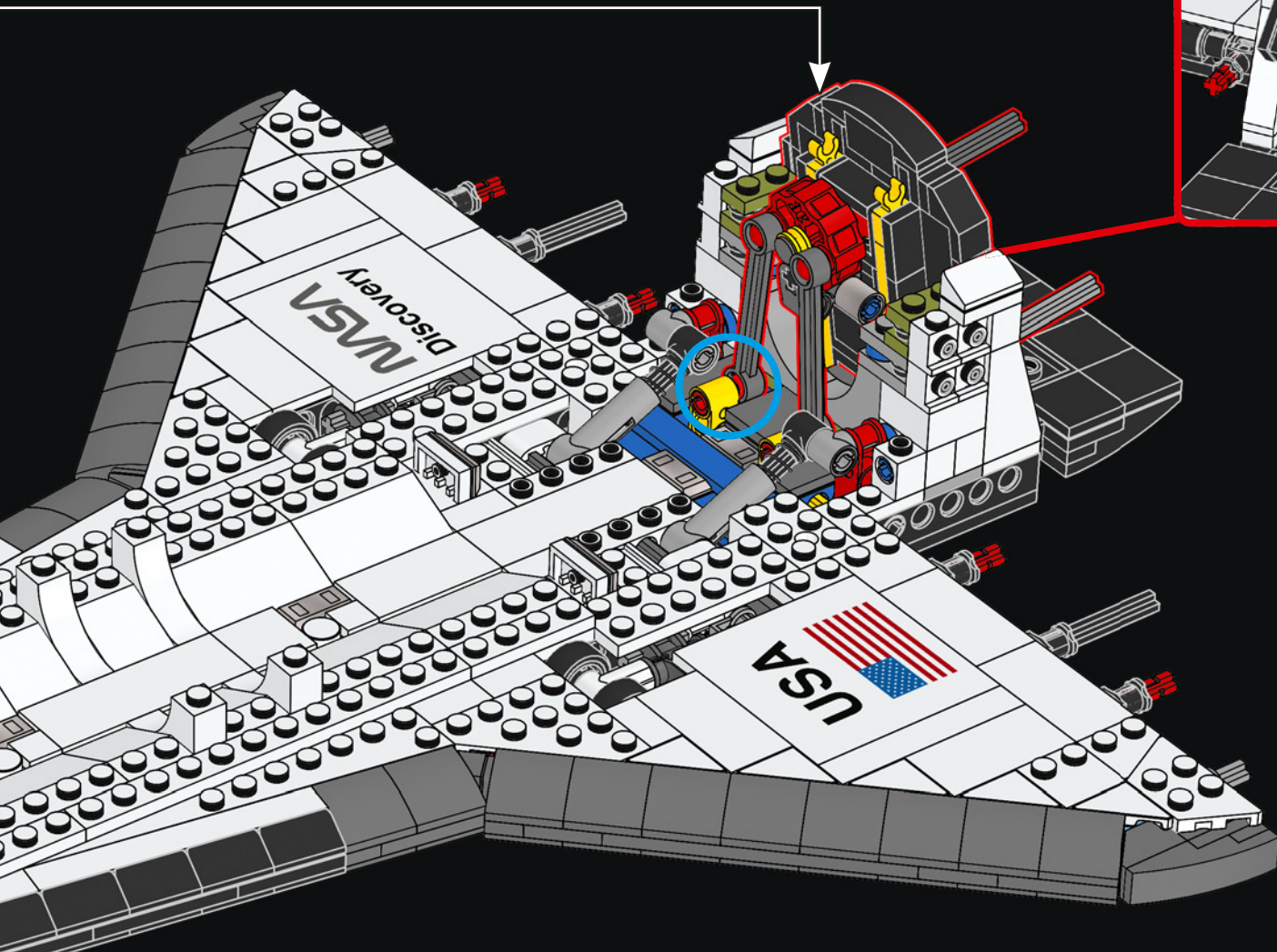


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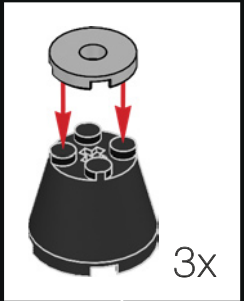
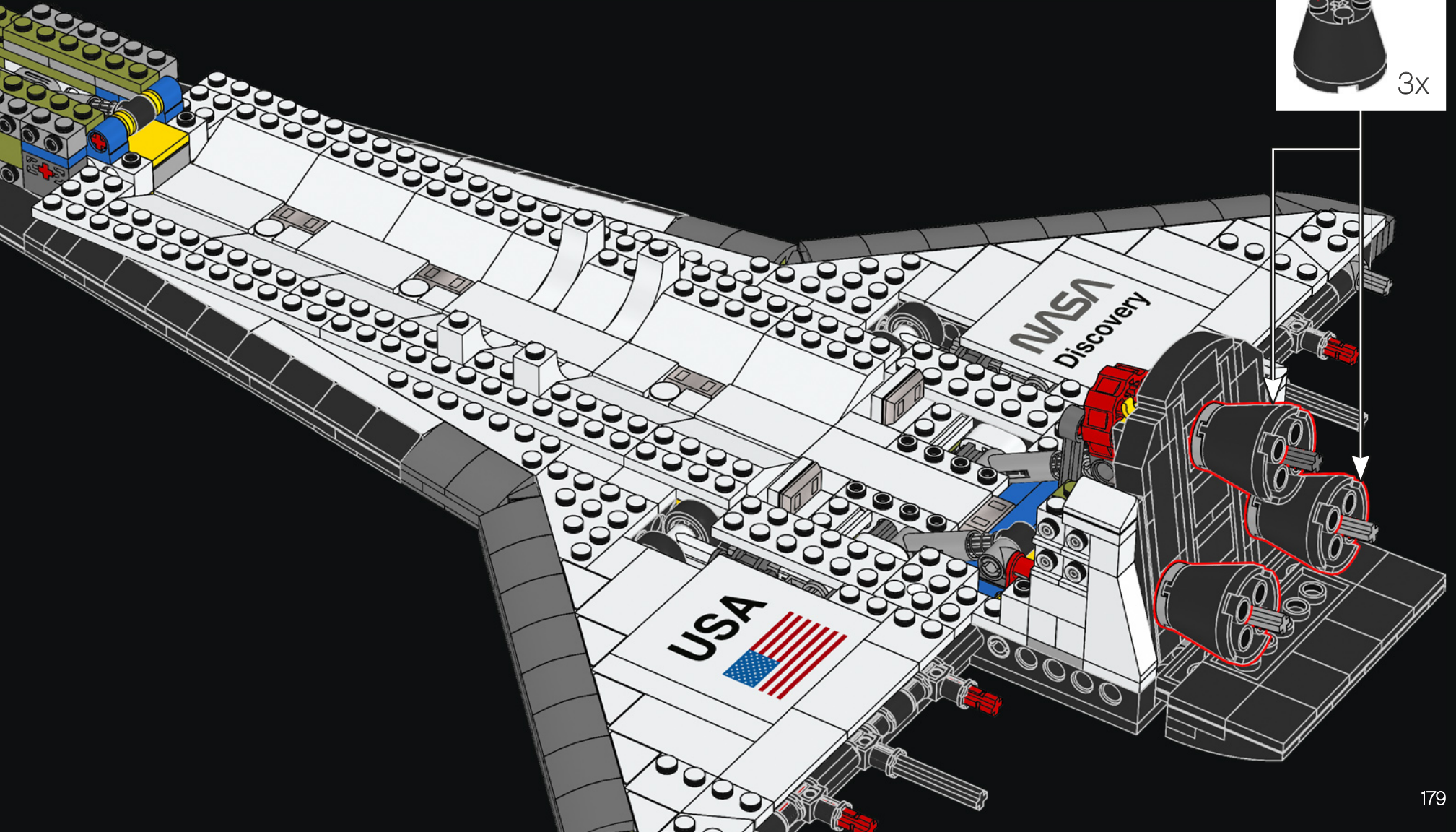
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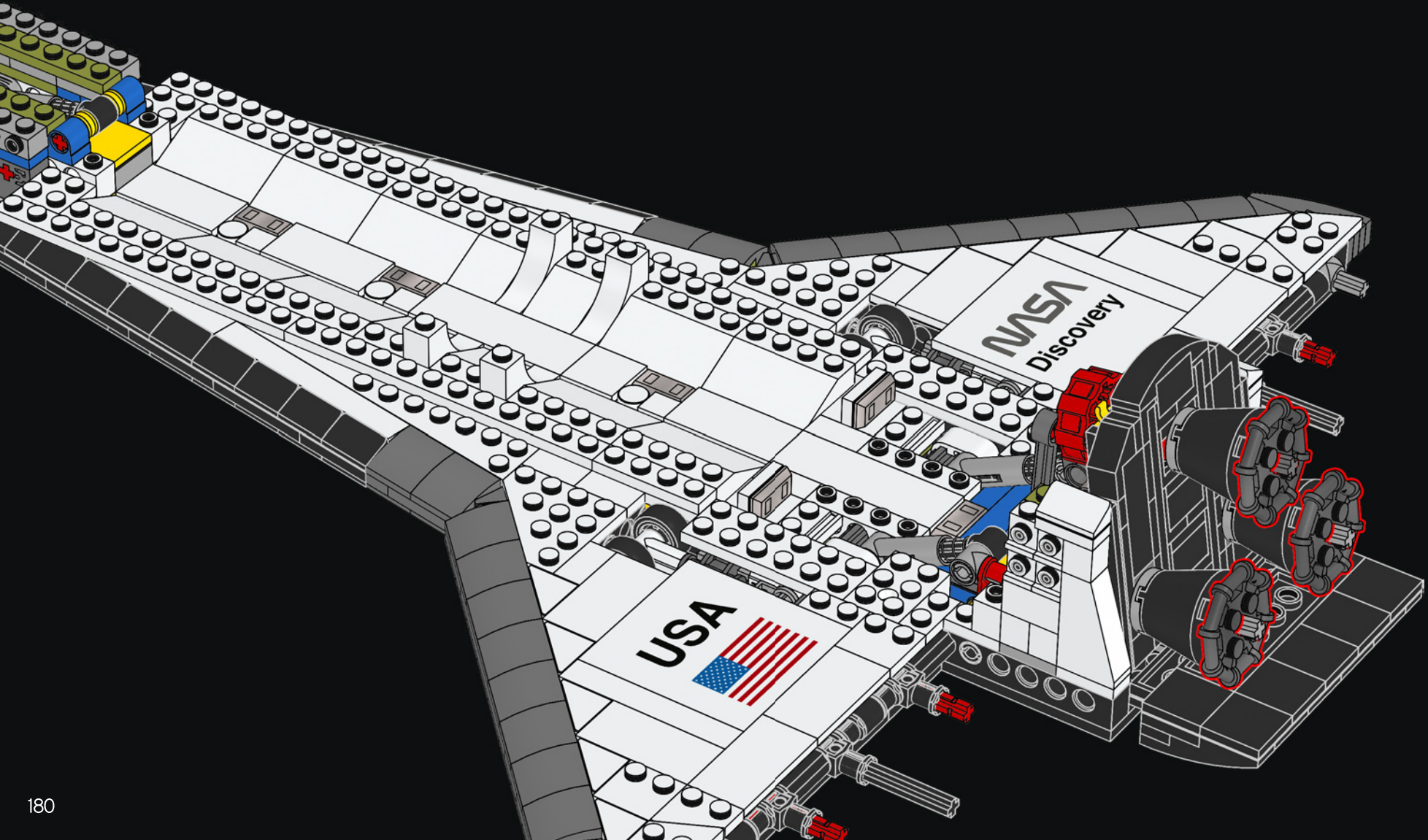


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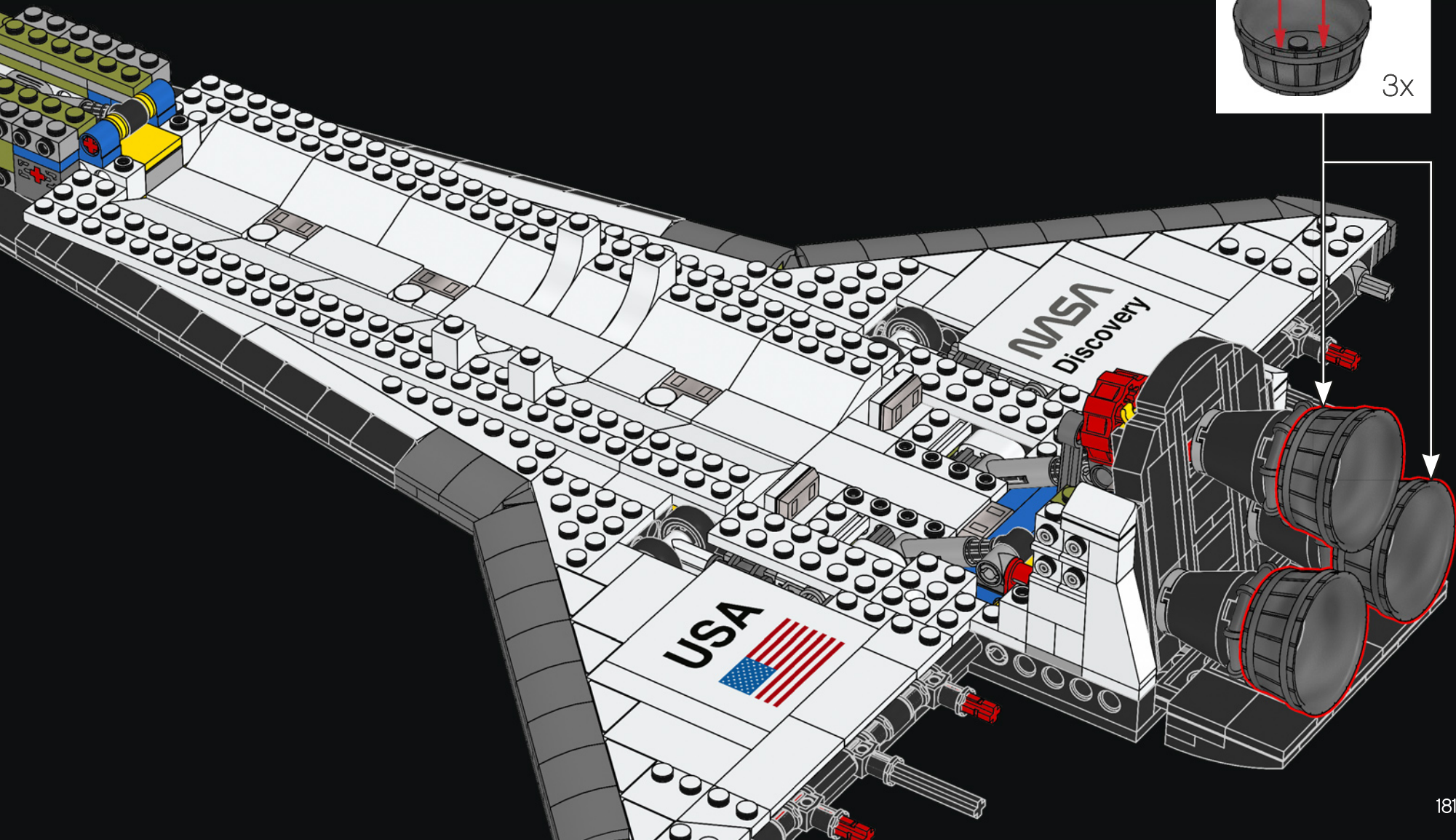


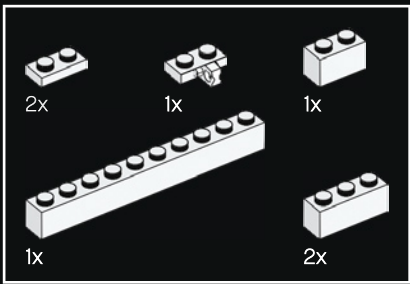


LE SAVIEZ-VOUS ?

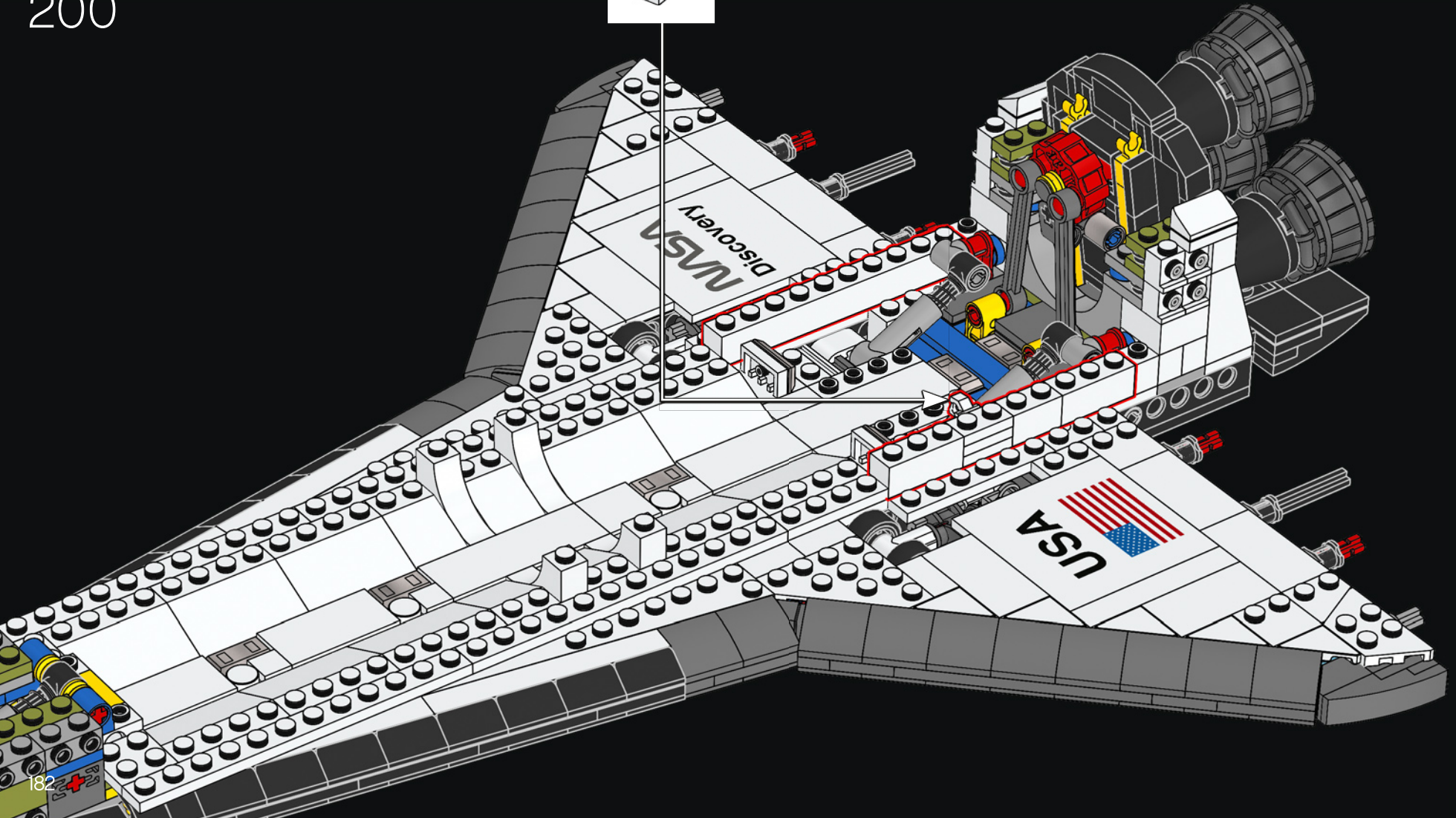
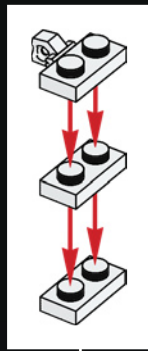
Pour maintenir le moteur à une température fraîche de 10 °C, il faut pomper de l'hydrogène liquide ultra-froid à travers 1 080 tuyaux situés dans la paroi de la tuyère jusqu'à la chambre de combustion principale.

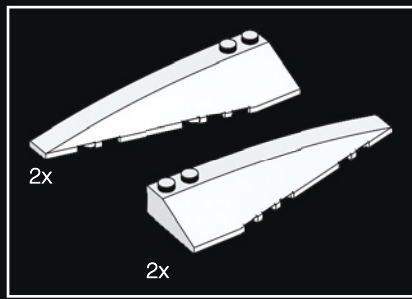
199



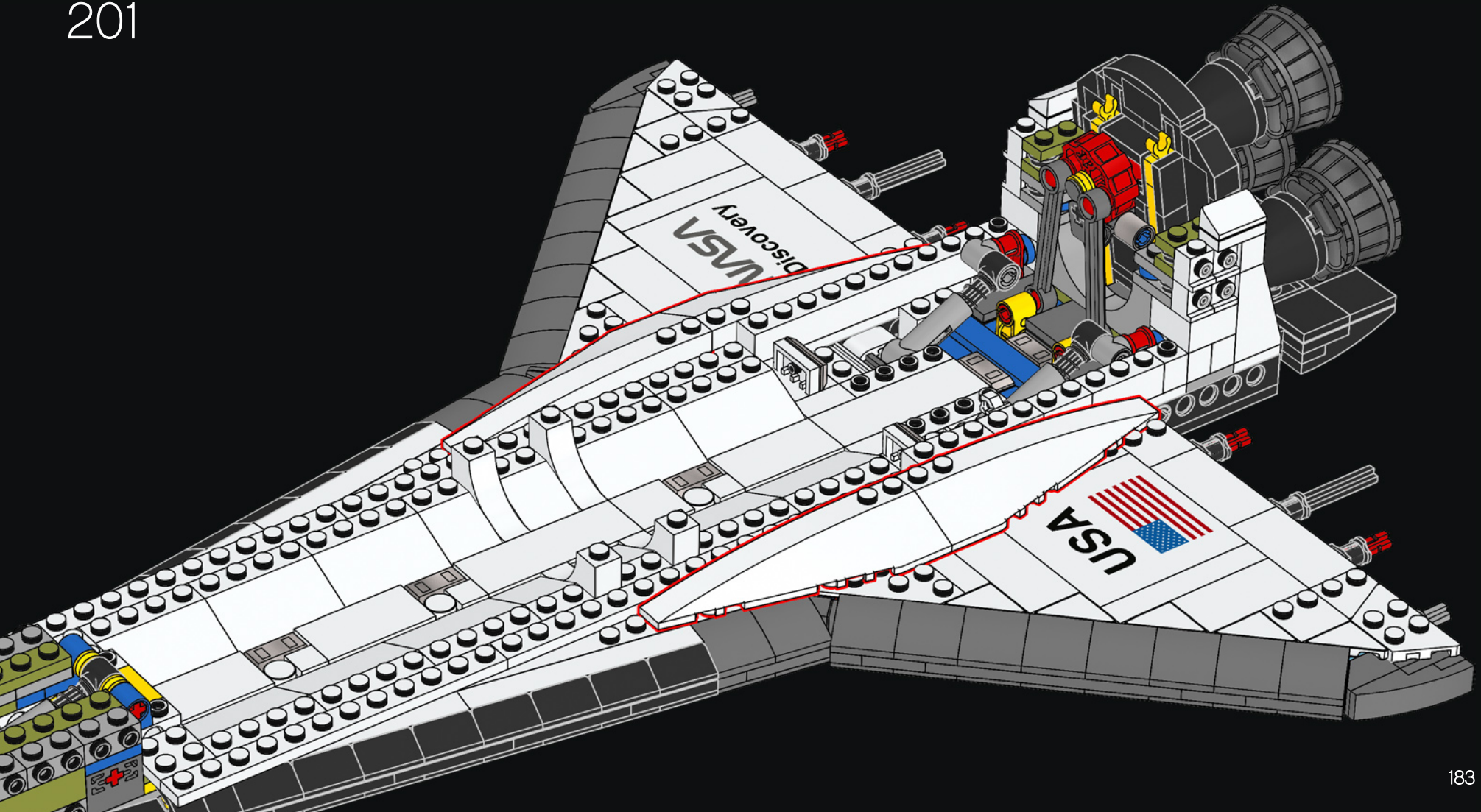


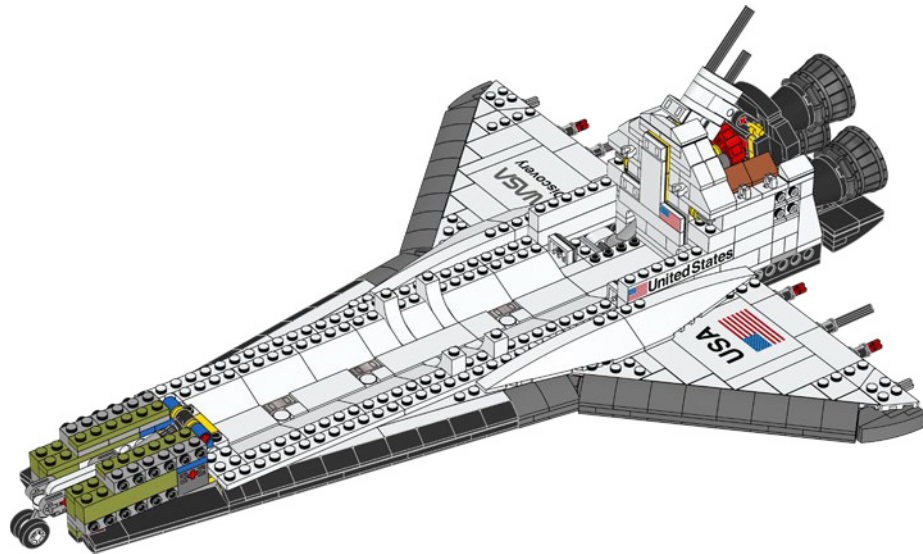
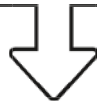
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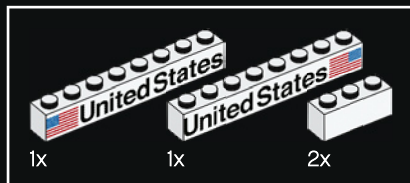




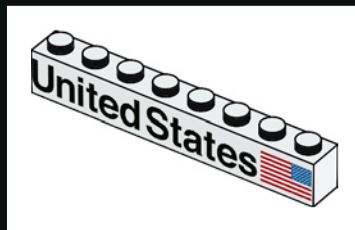
201





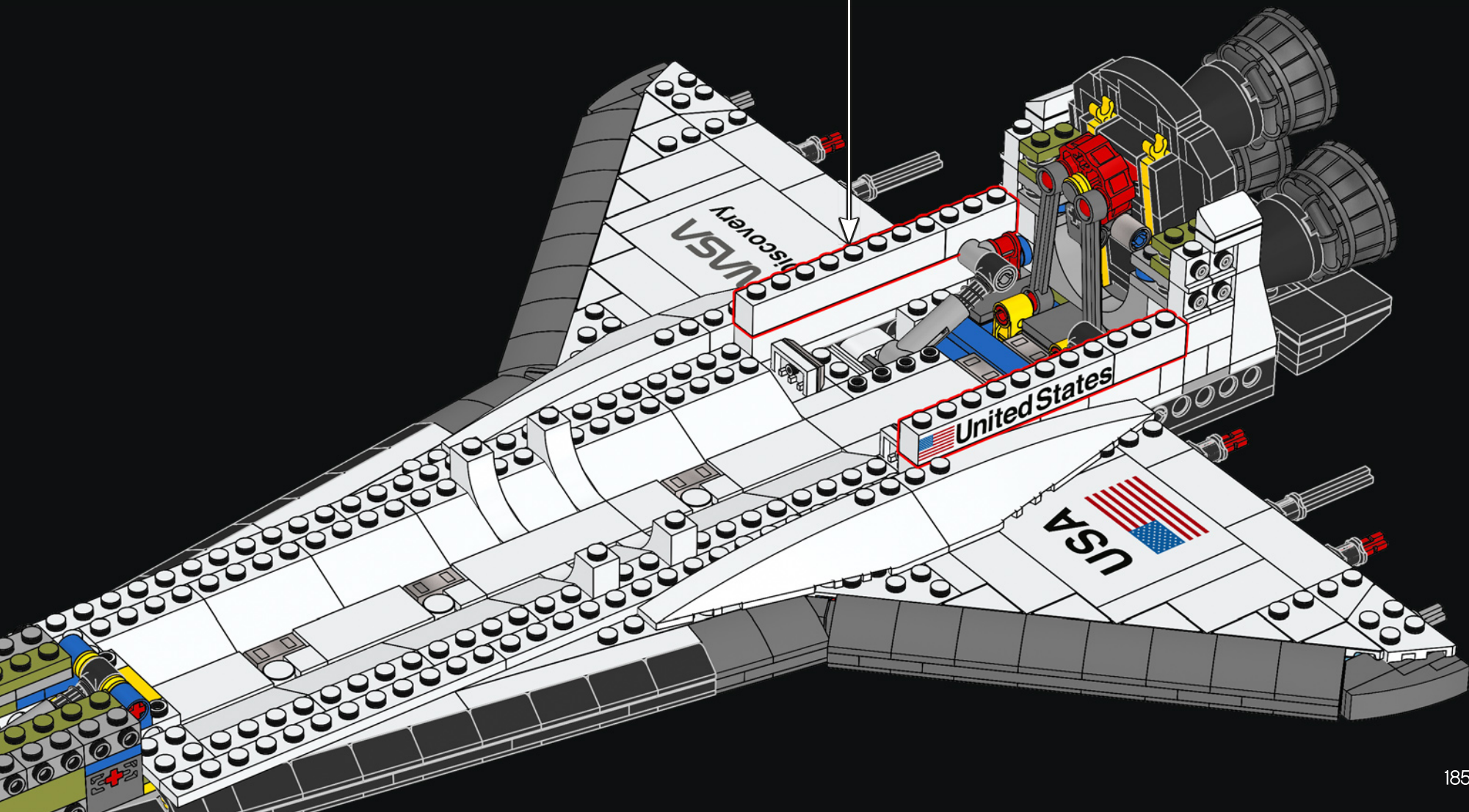


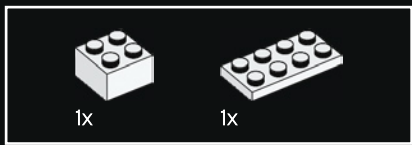
202



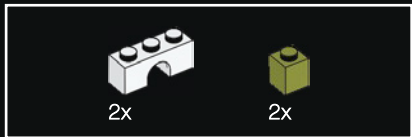
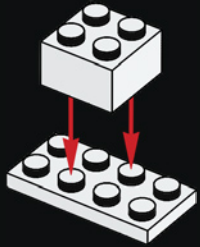
LE SAVIEZ-VOUS ?

La réglementation exigeant que les étoiles soient toujours orientées vers l'avant, comme si le drapeau flottait dans le vent, le drapeau américain à tribord du fuselage de Discovery vole vers l'arrière.

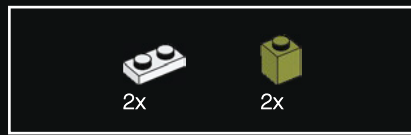
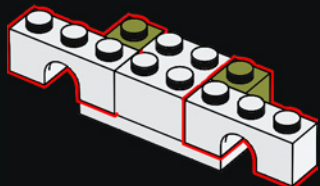




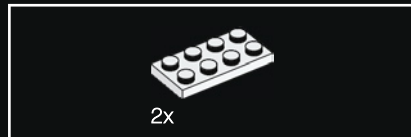
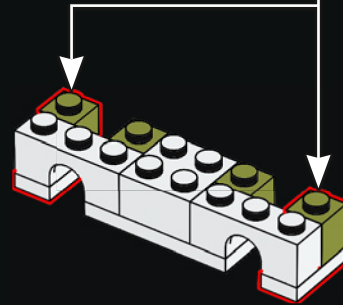
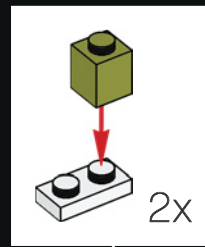
203



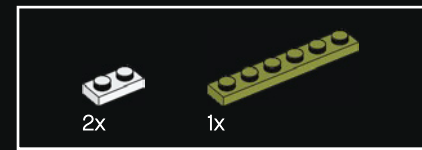
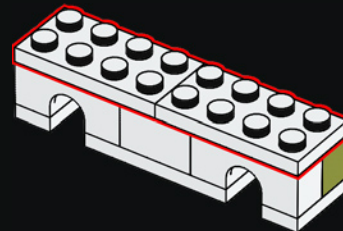
204



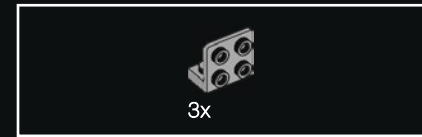
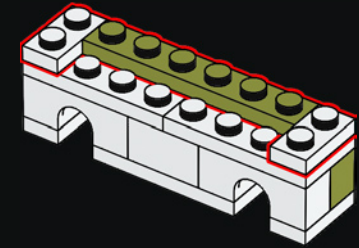
205



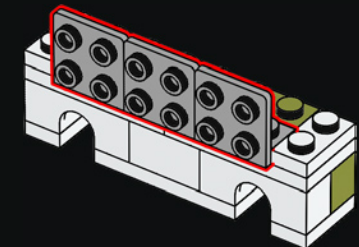
206



207

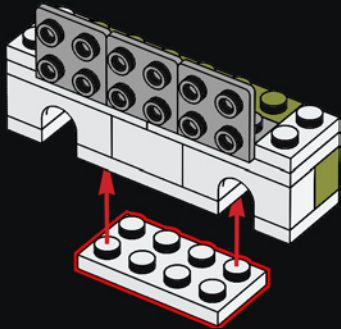


208

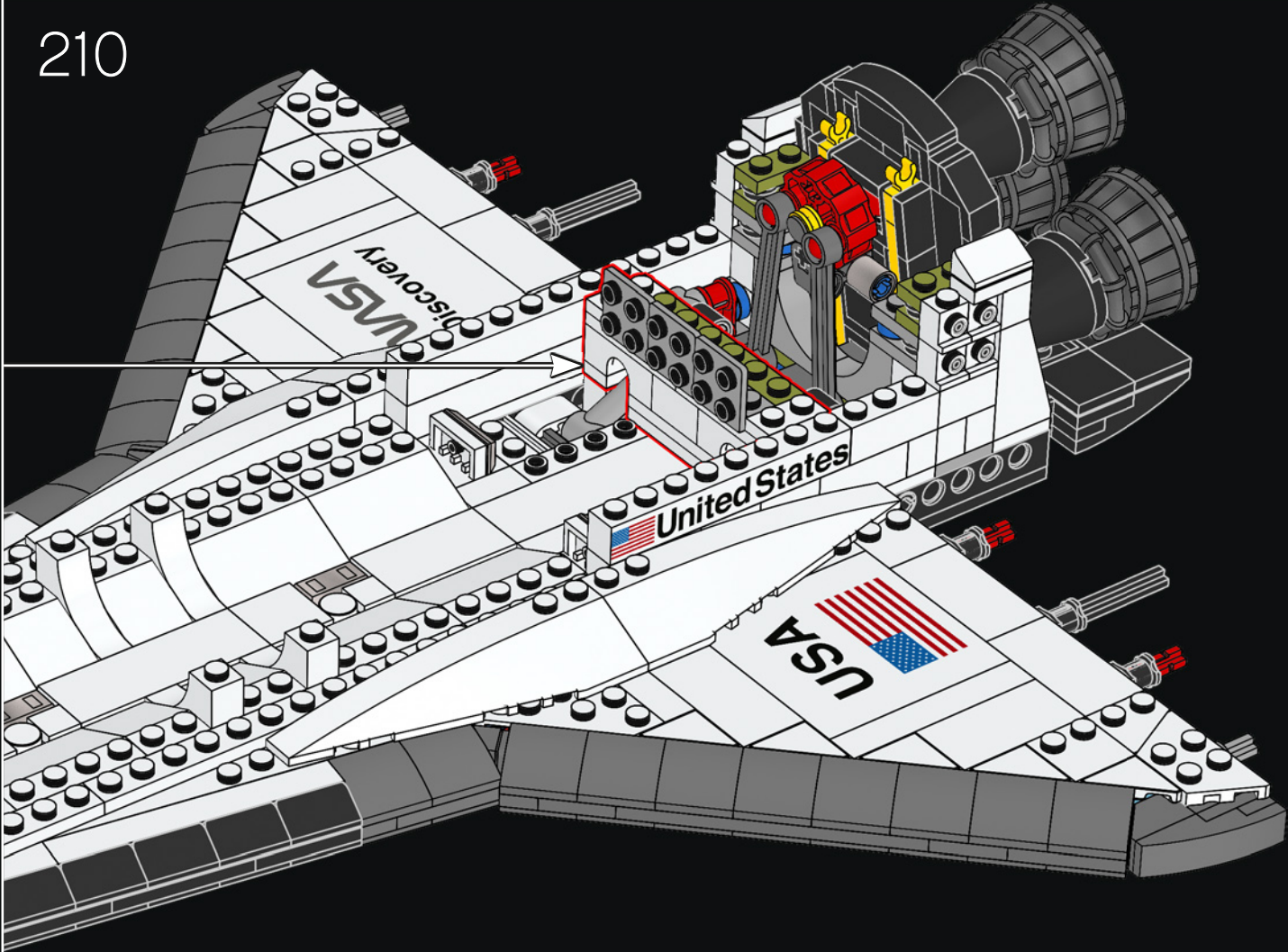


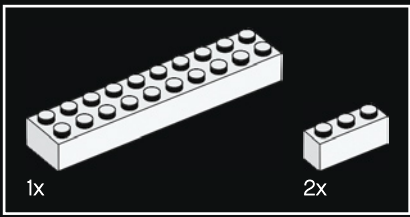


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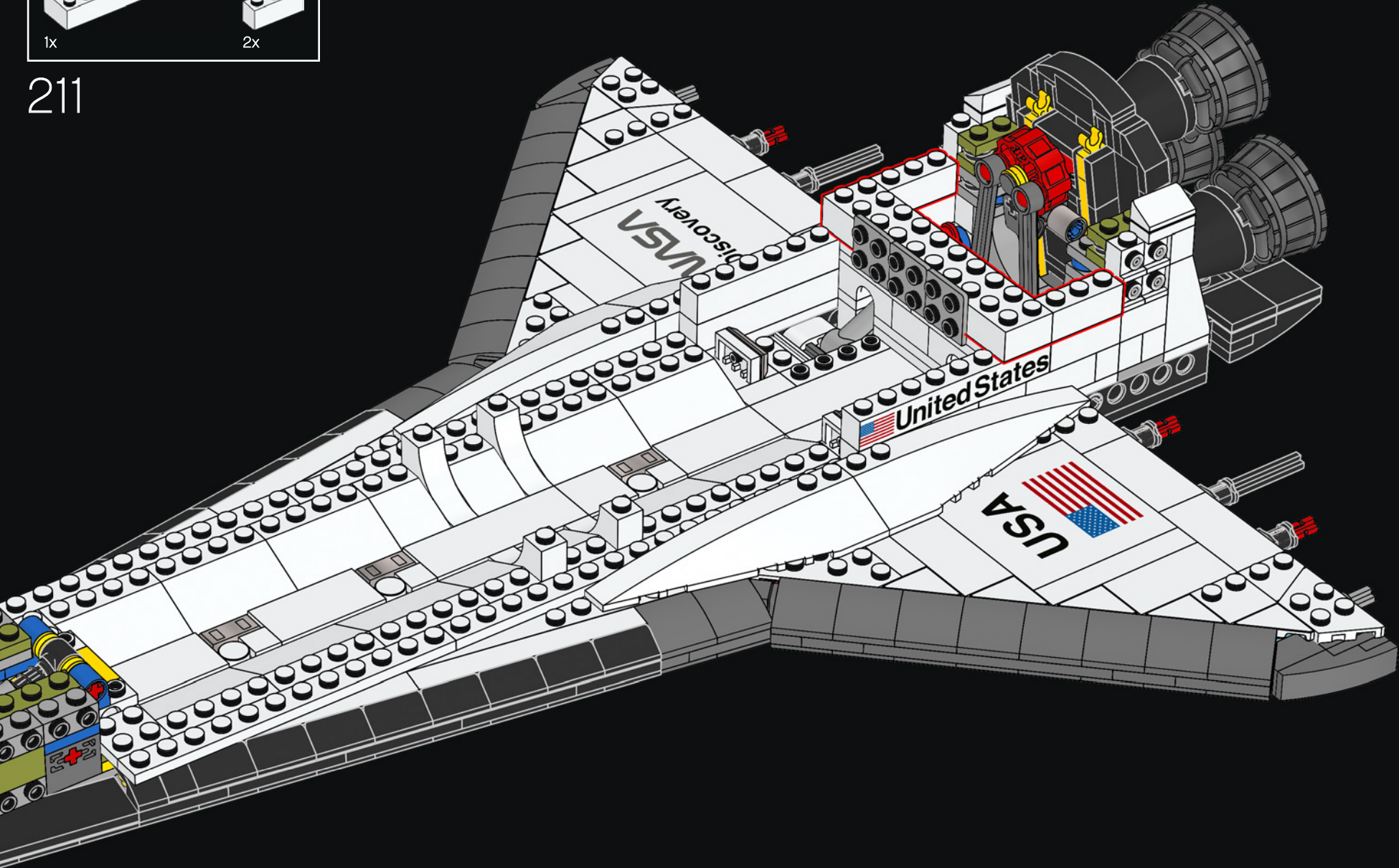


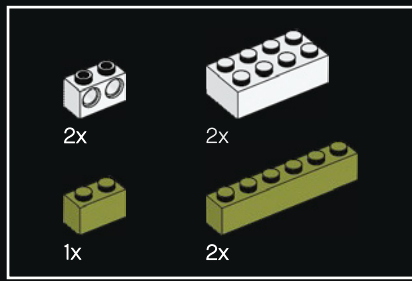
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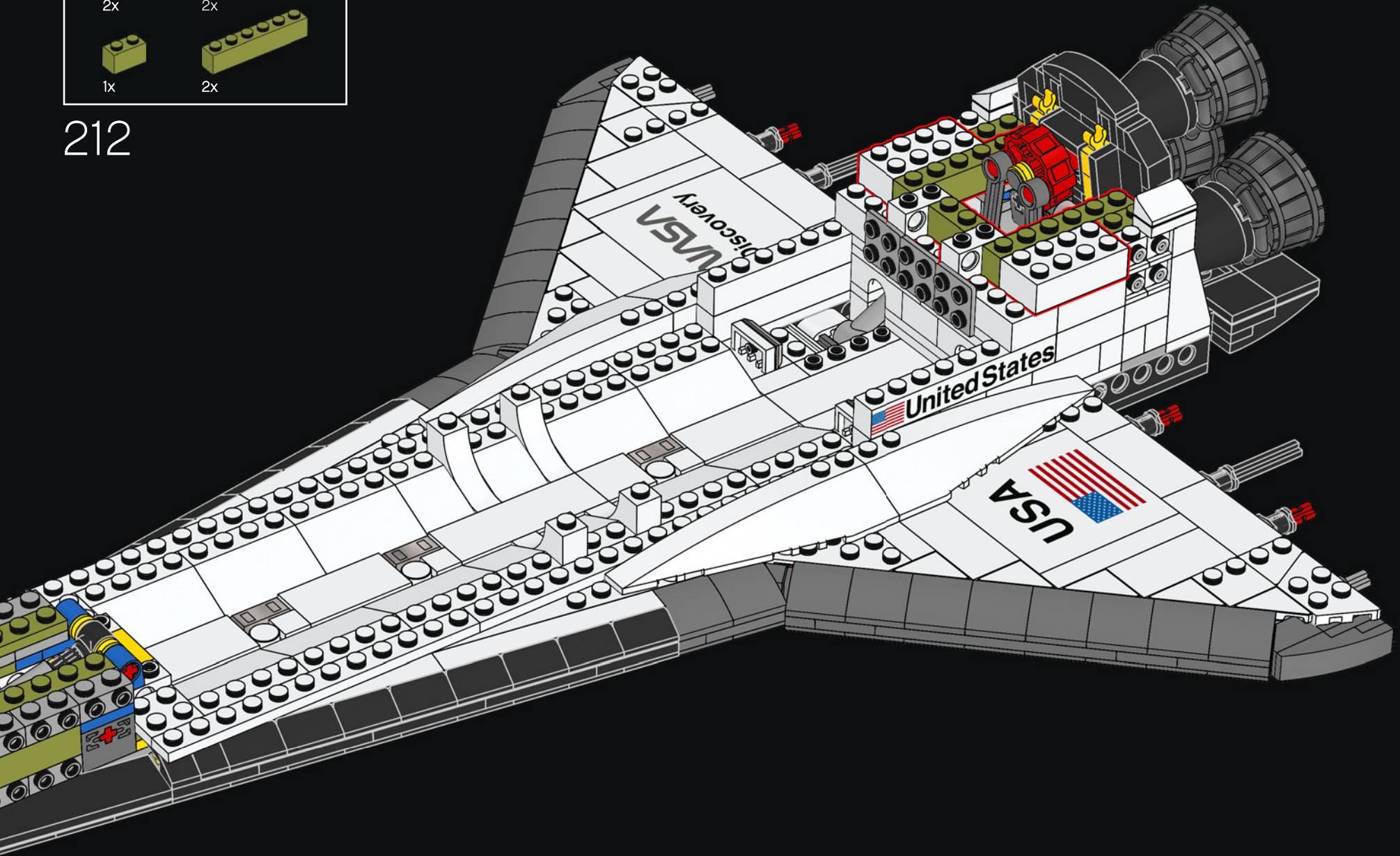


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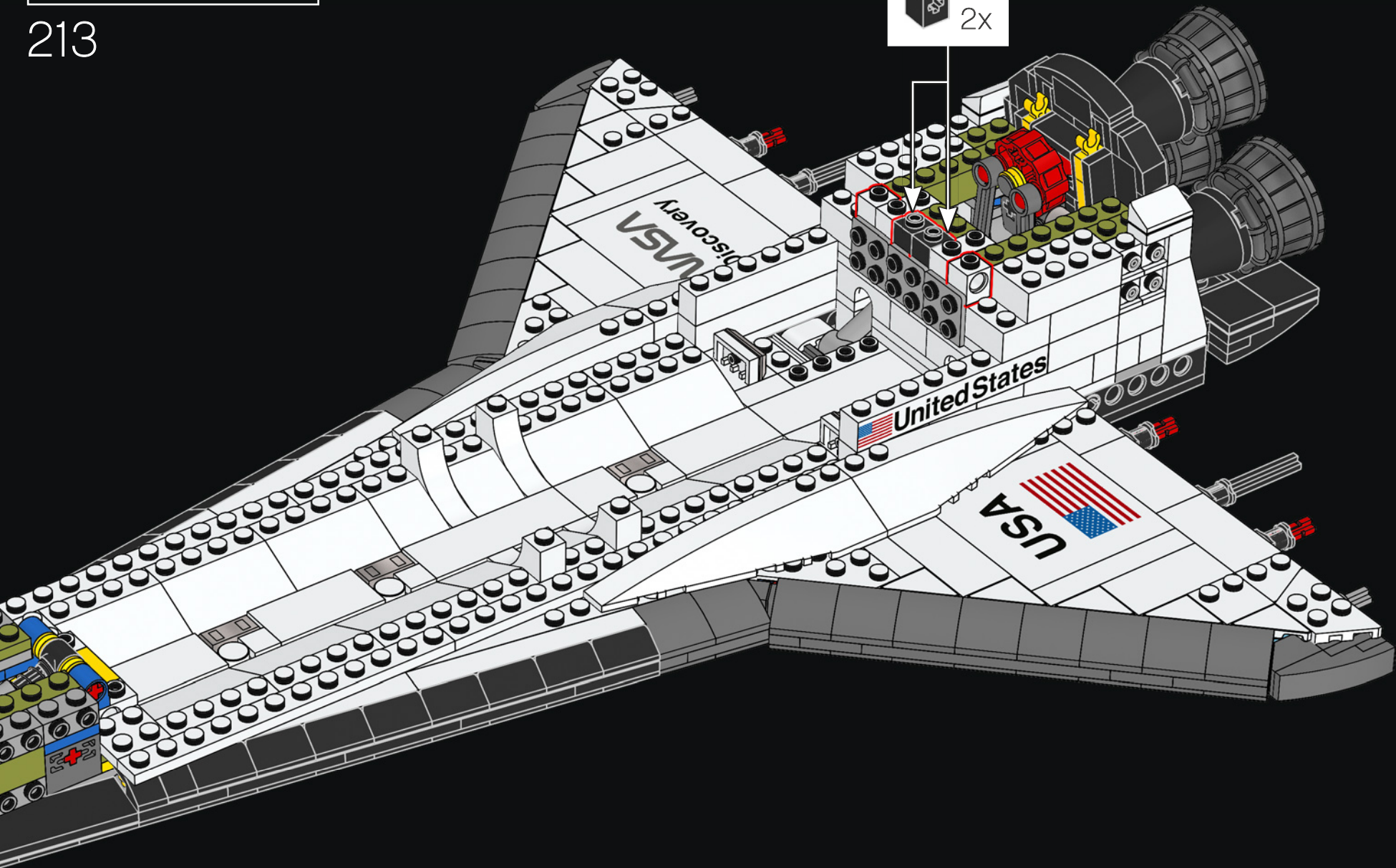
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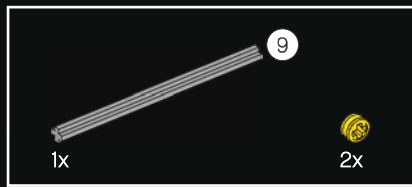


2x 2x

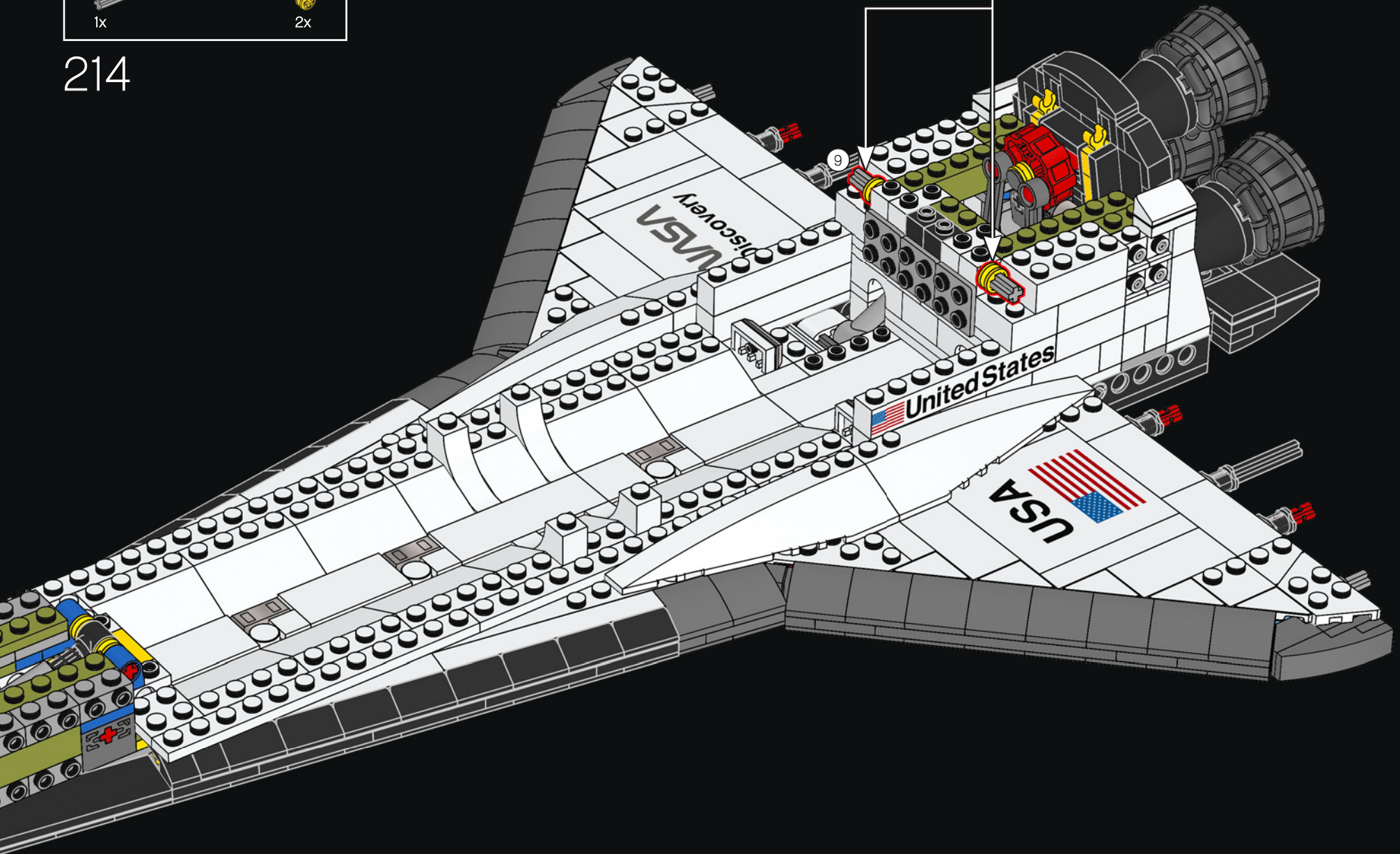
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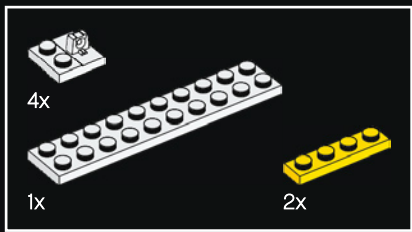
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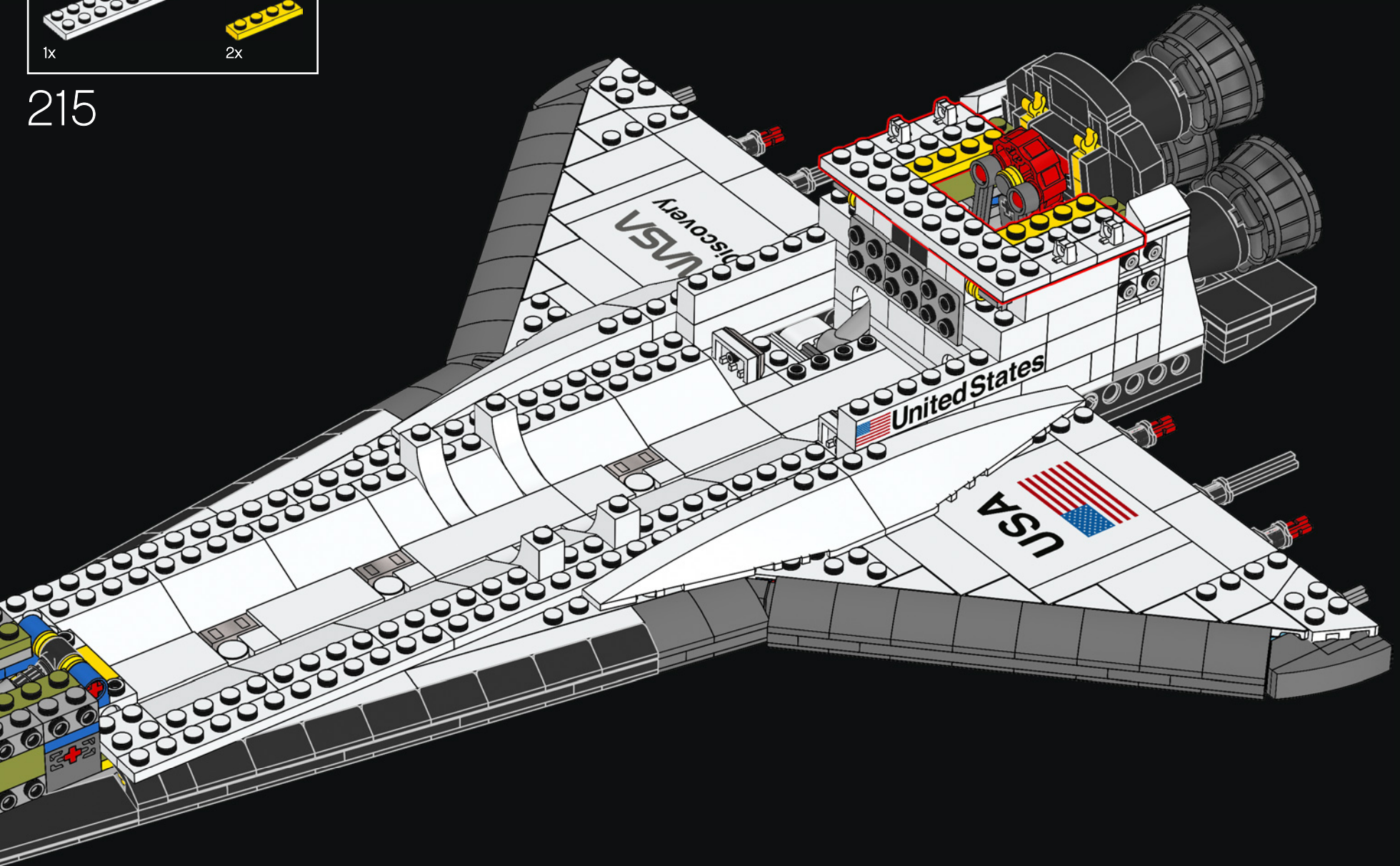


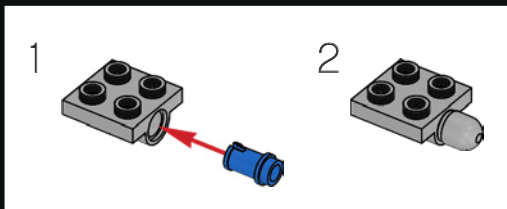
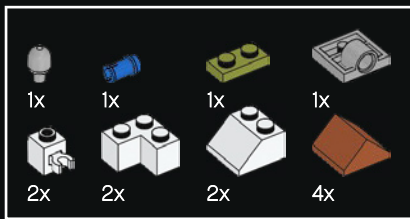
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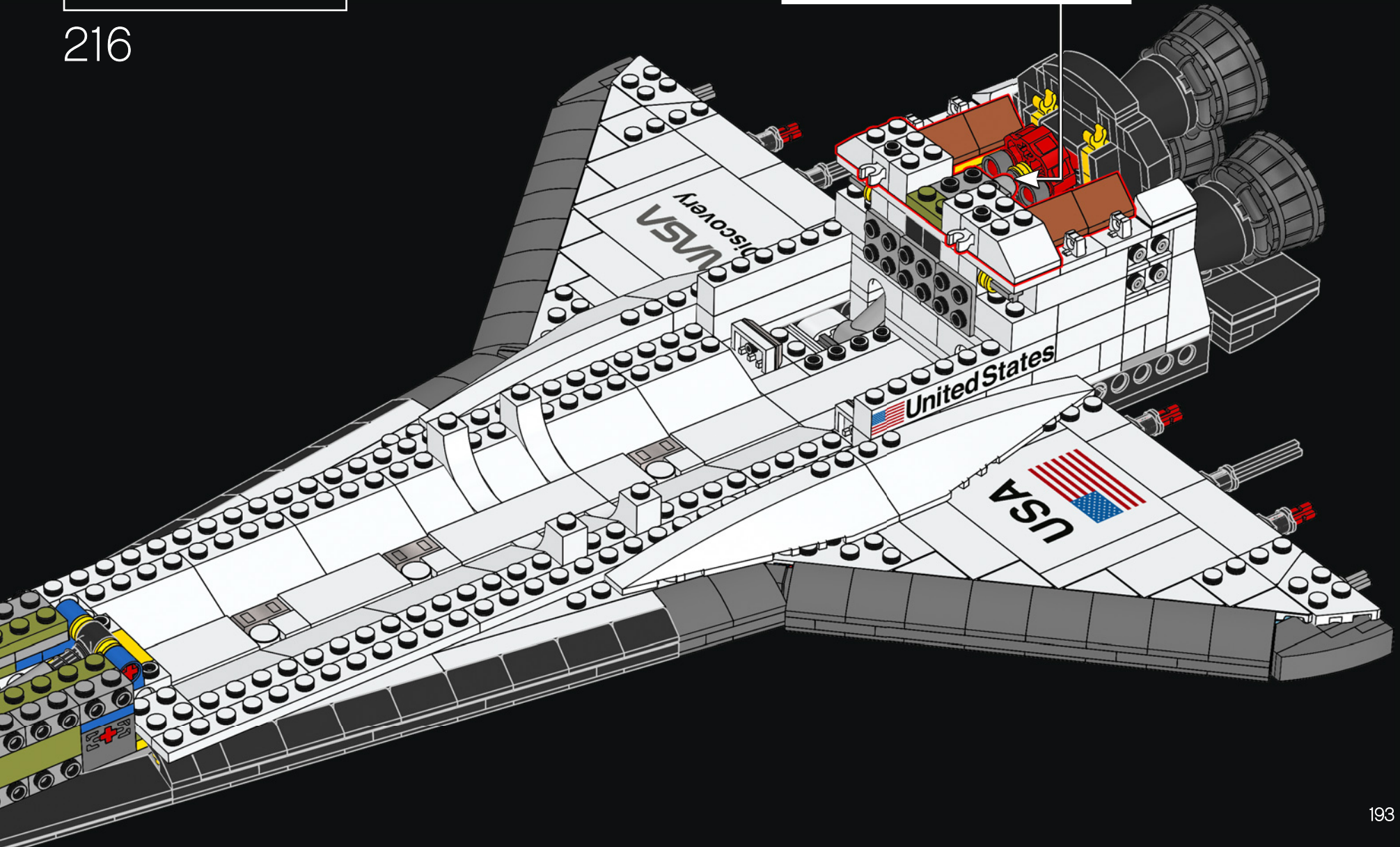


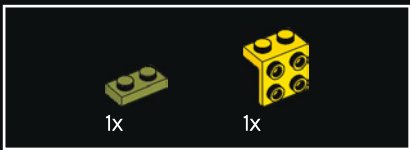
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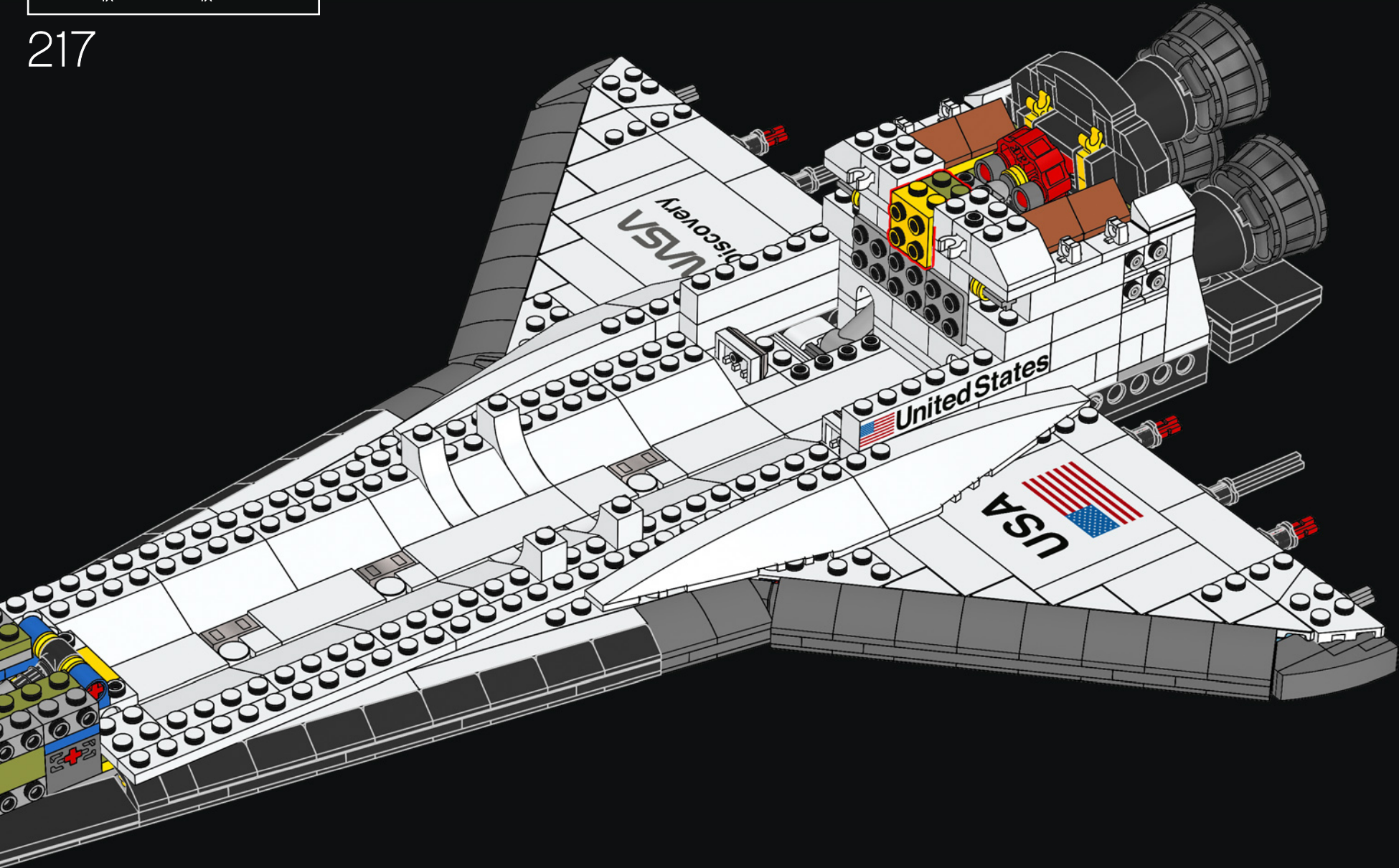


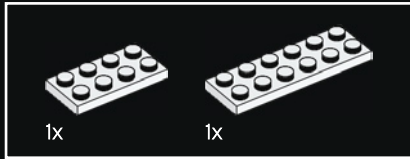
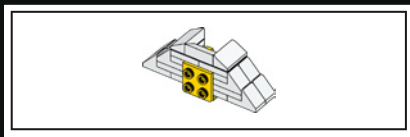
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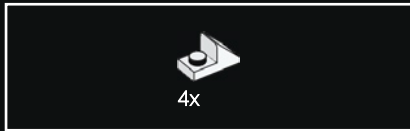
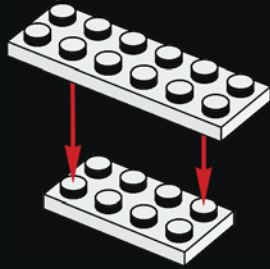


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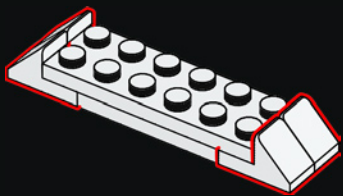




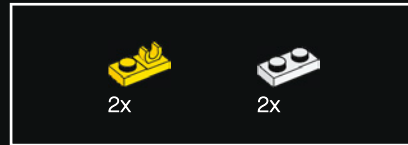
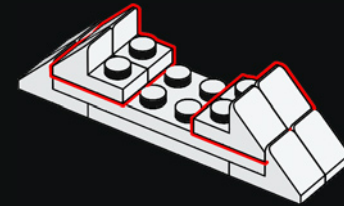
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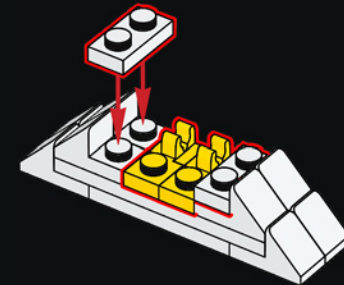
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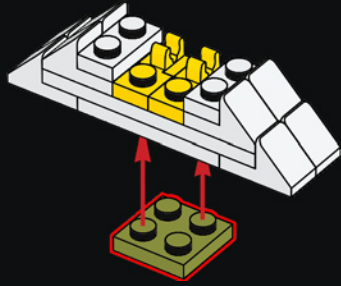


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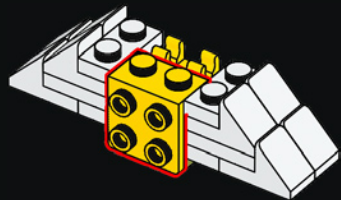




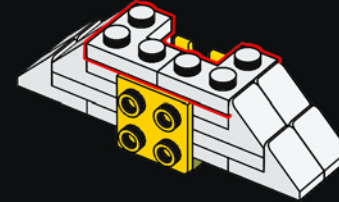
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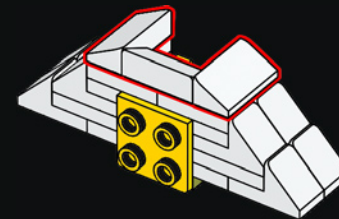
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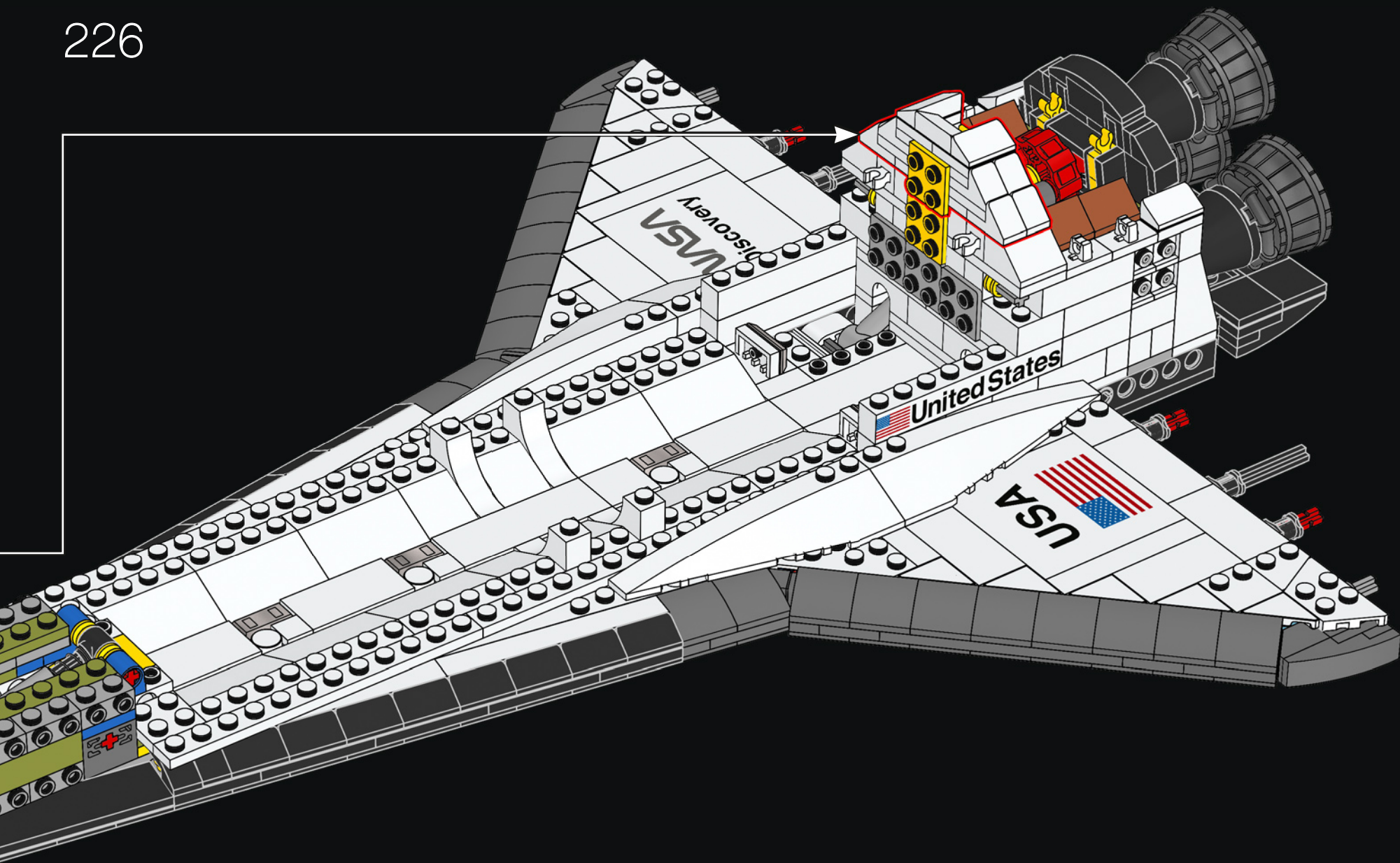
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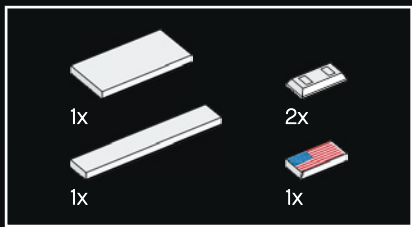


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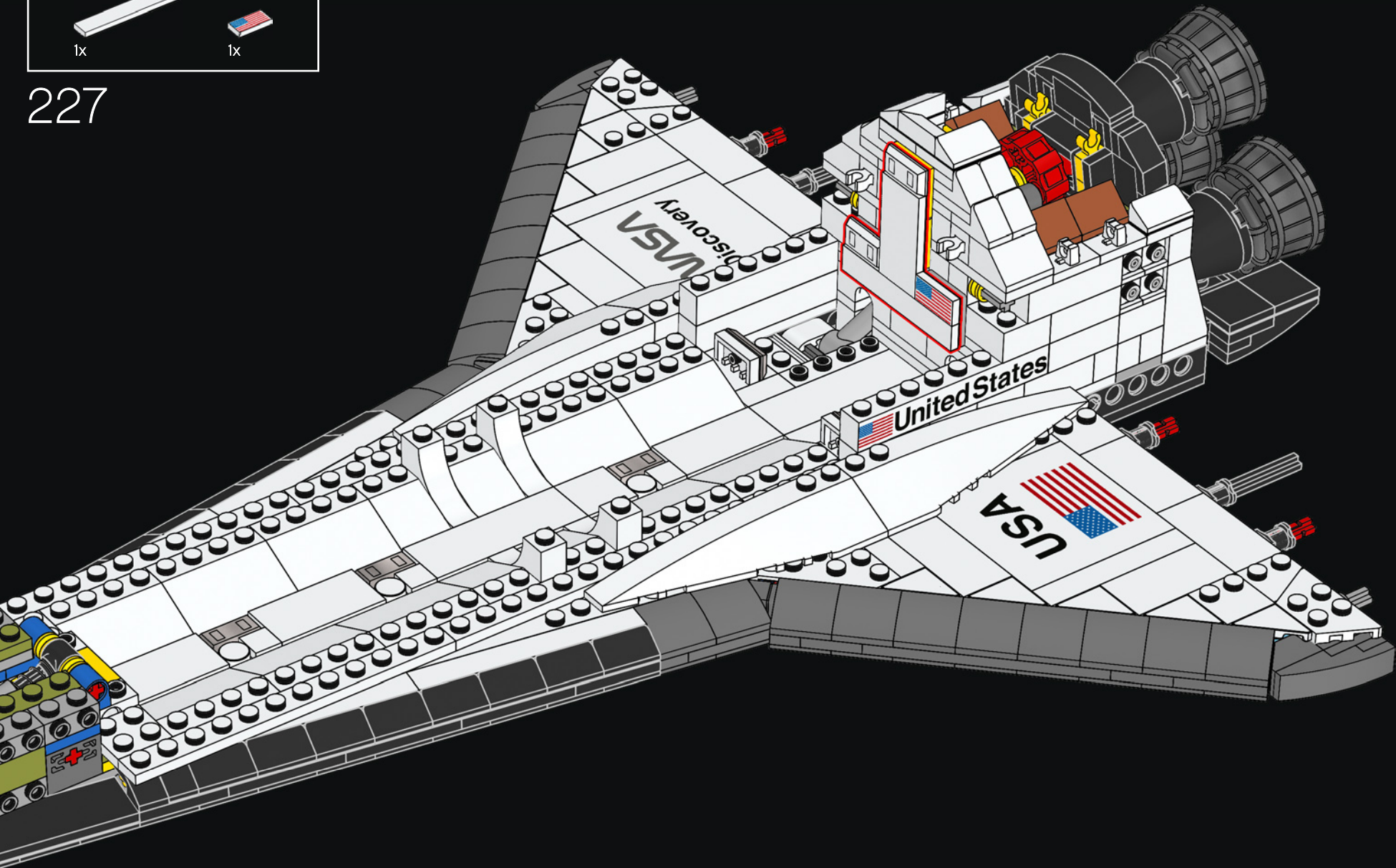


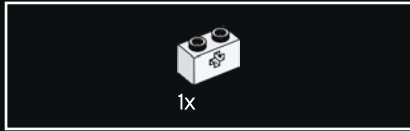
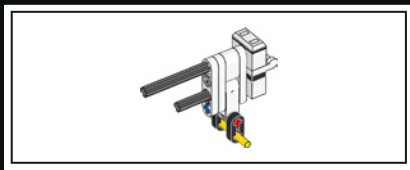
226





227





1x

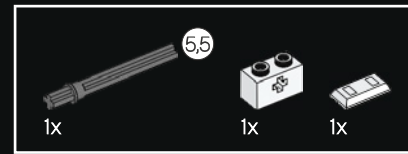
228



1x

1x

229

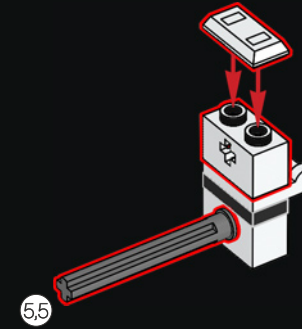


1x

1x

1x

230



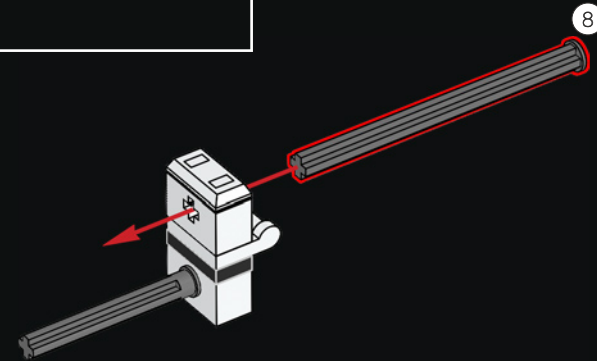
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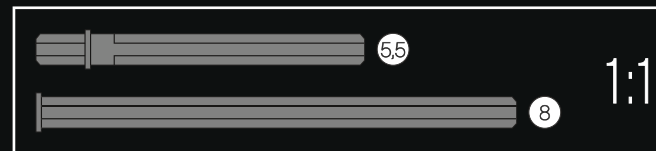
1x

8

231



8



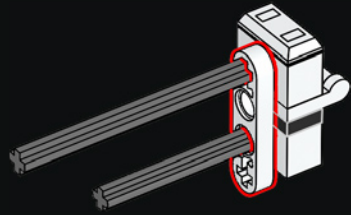
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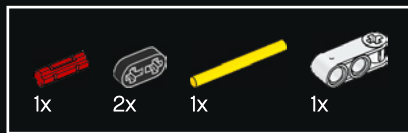
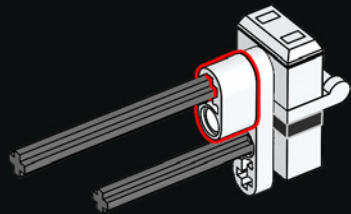
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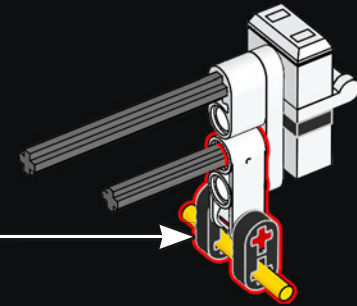
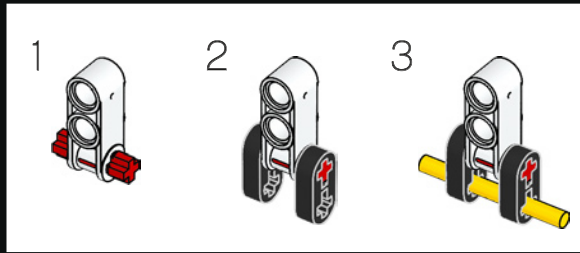
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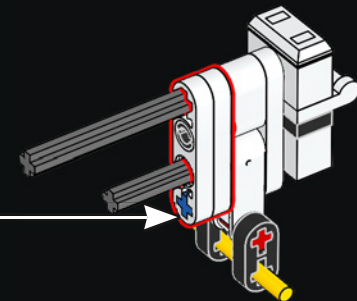
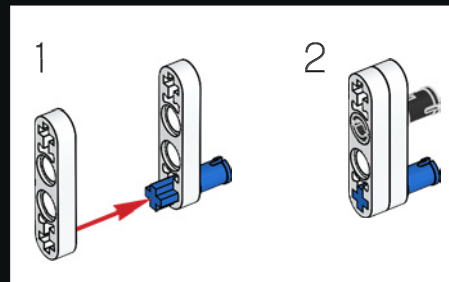
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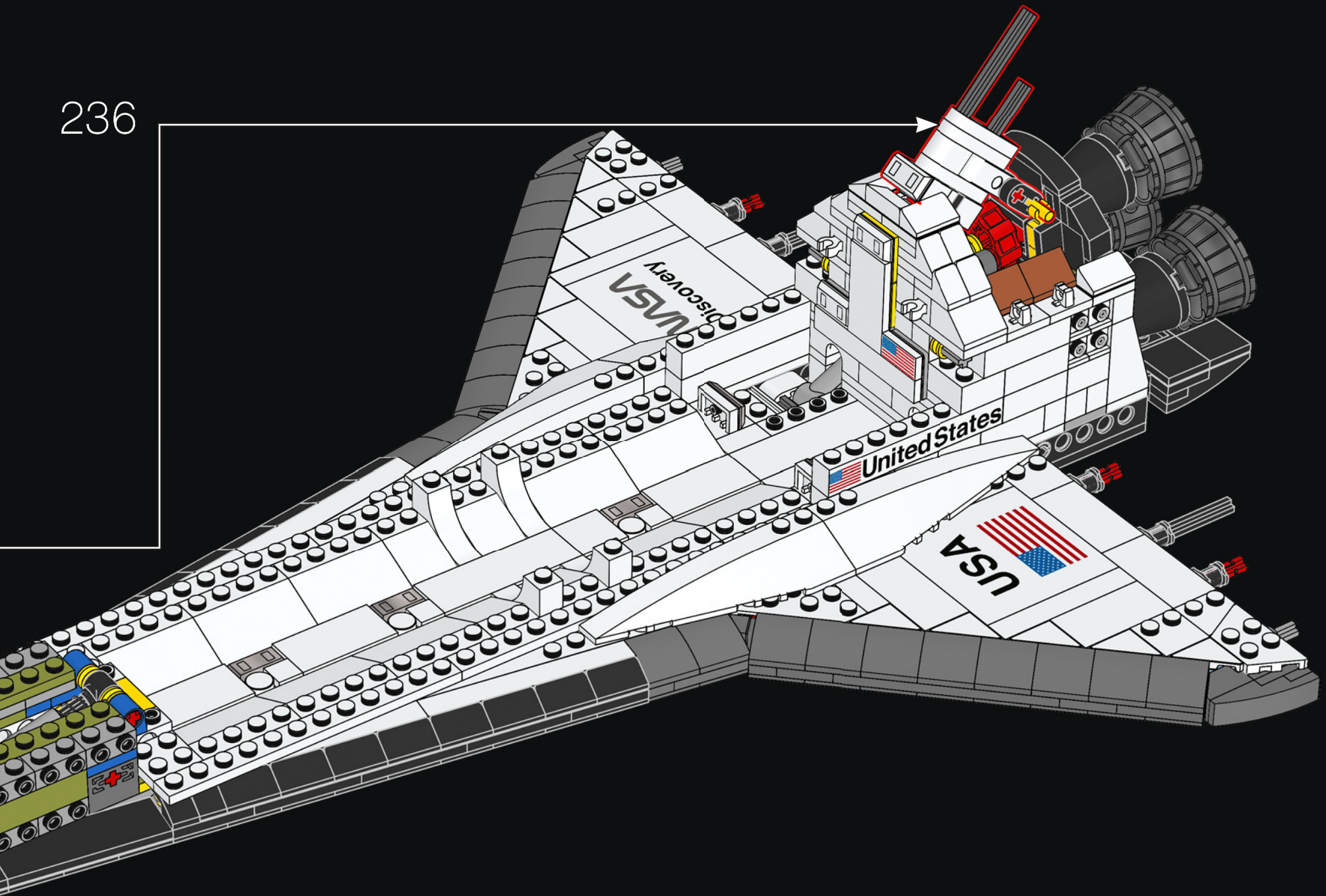
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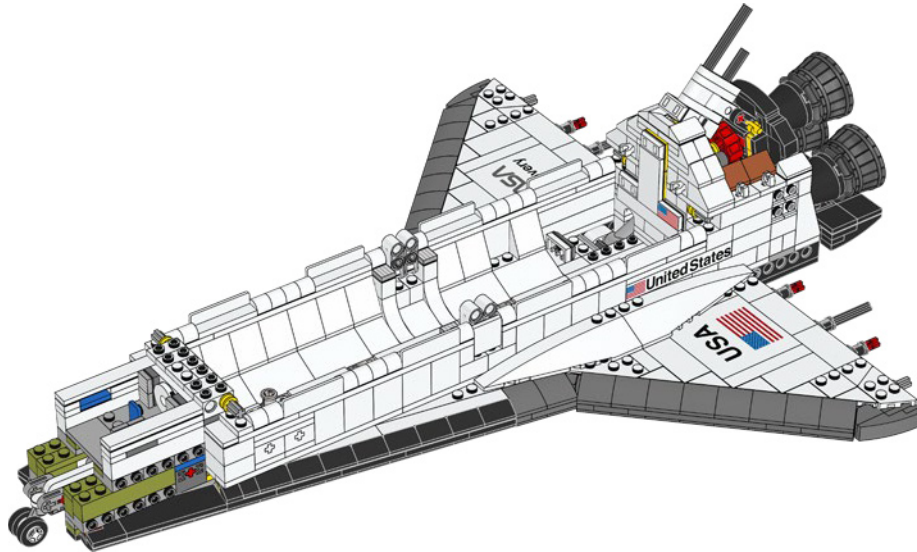
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236

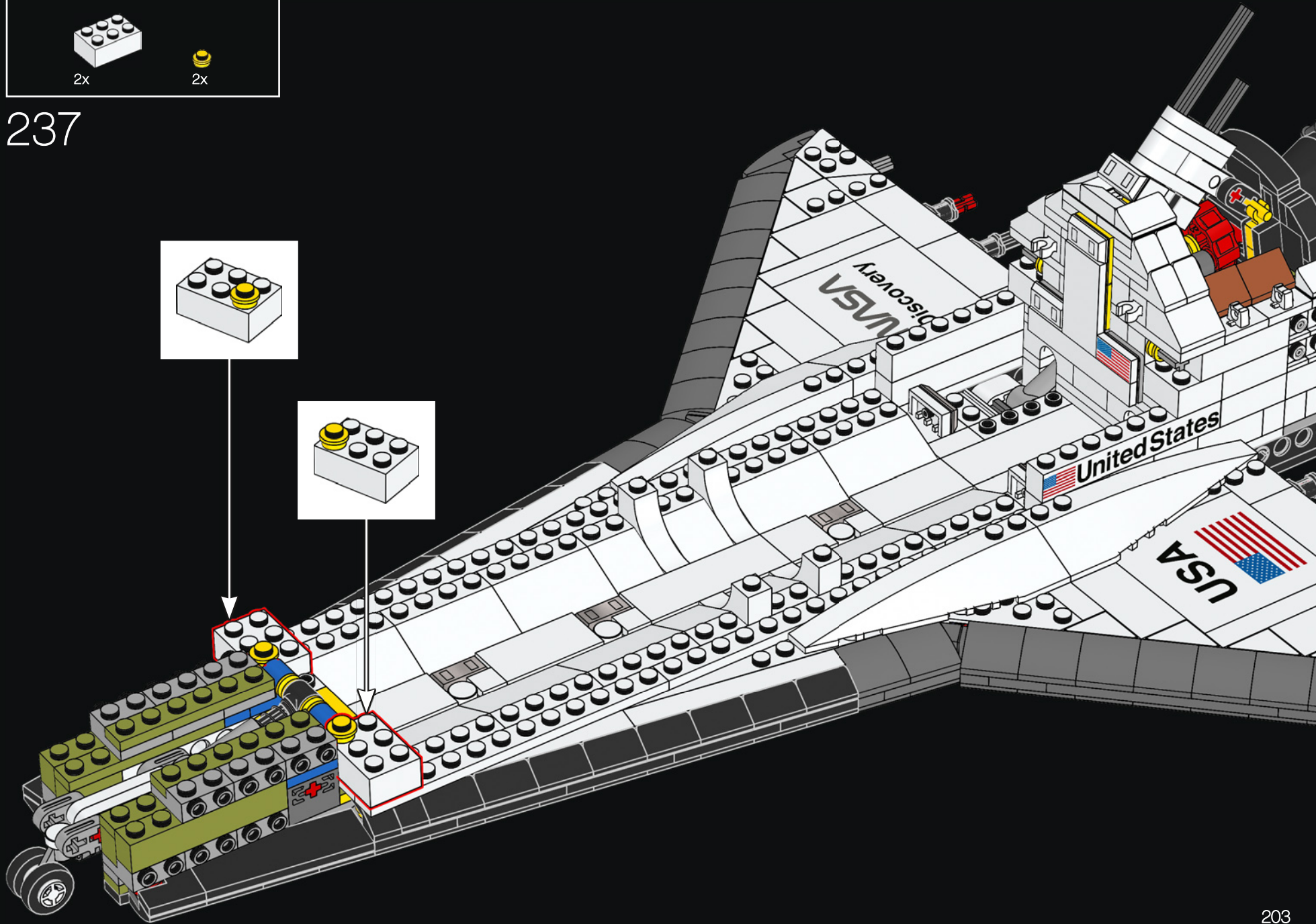
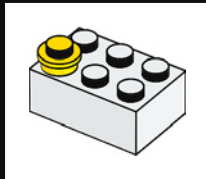
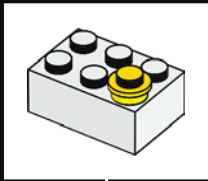


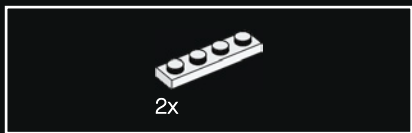
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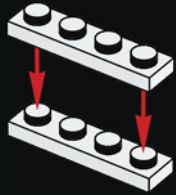


237

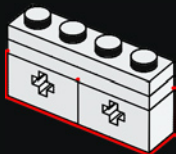




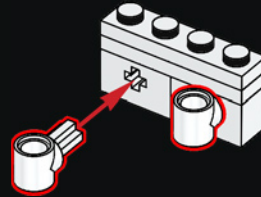
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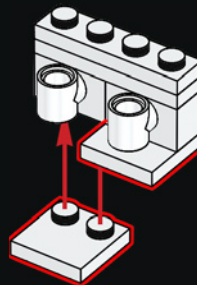
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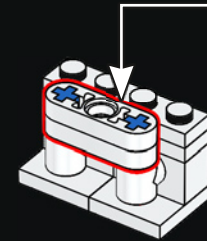
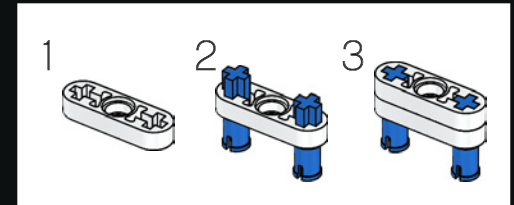
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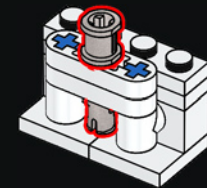
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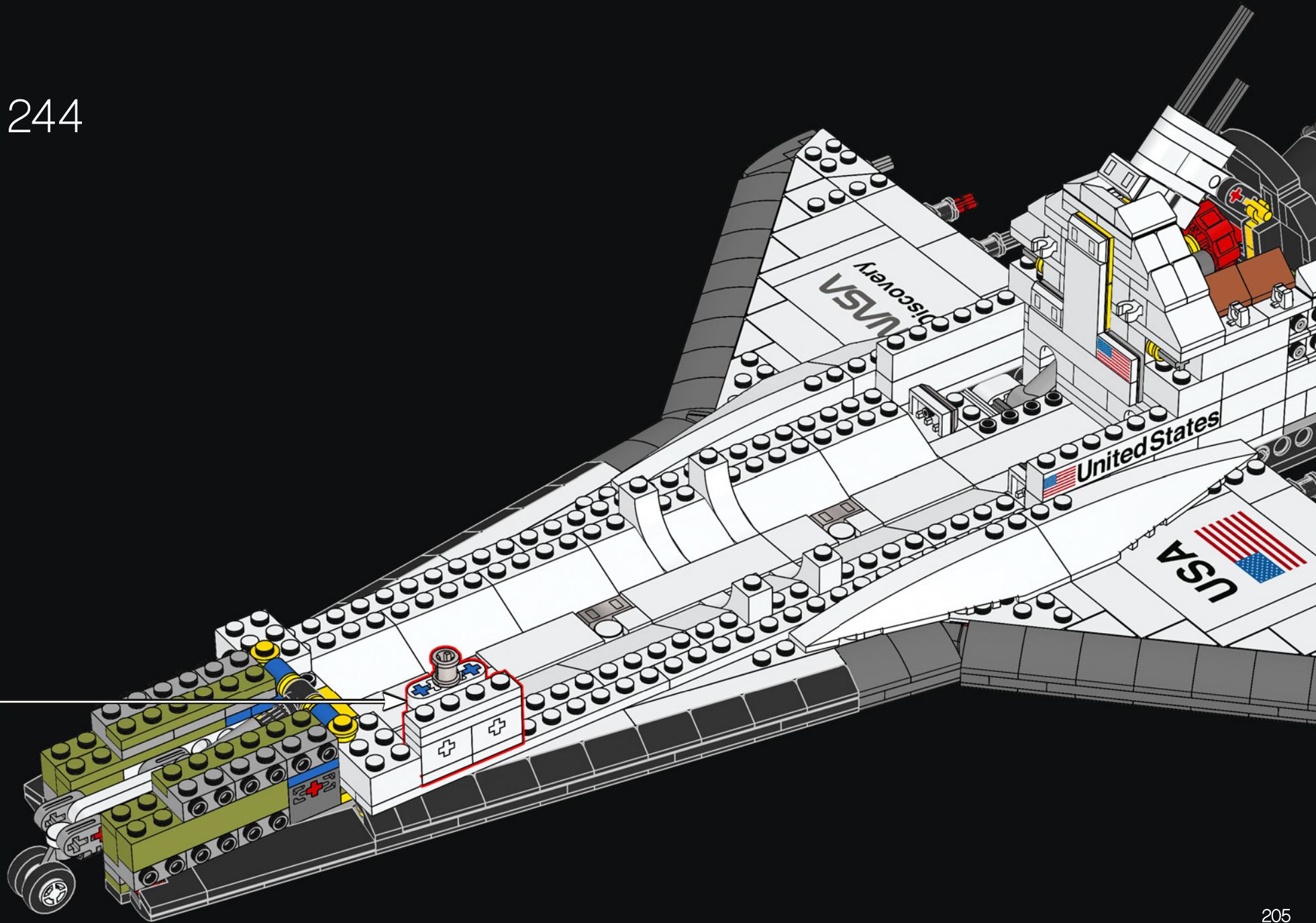


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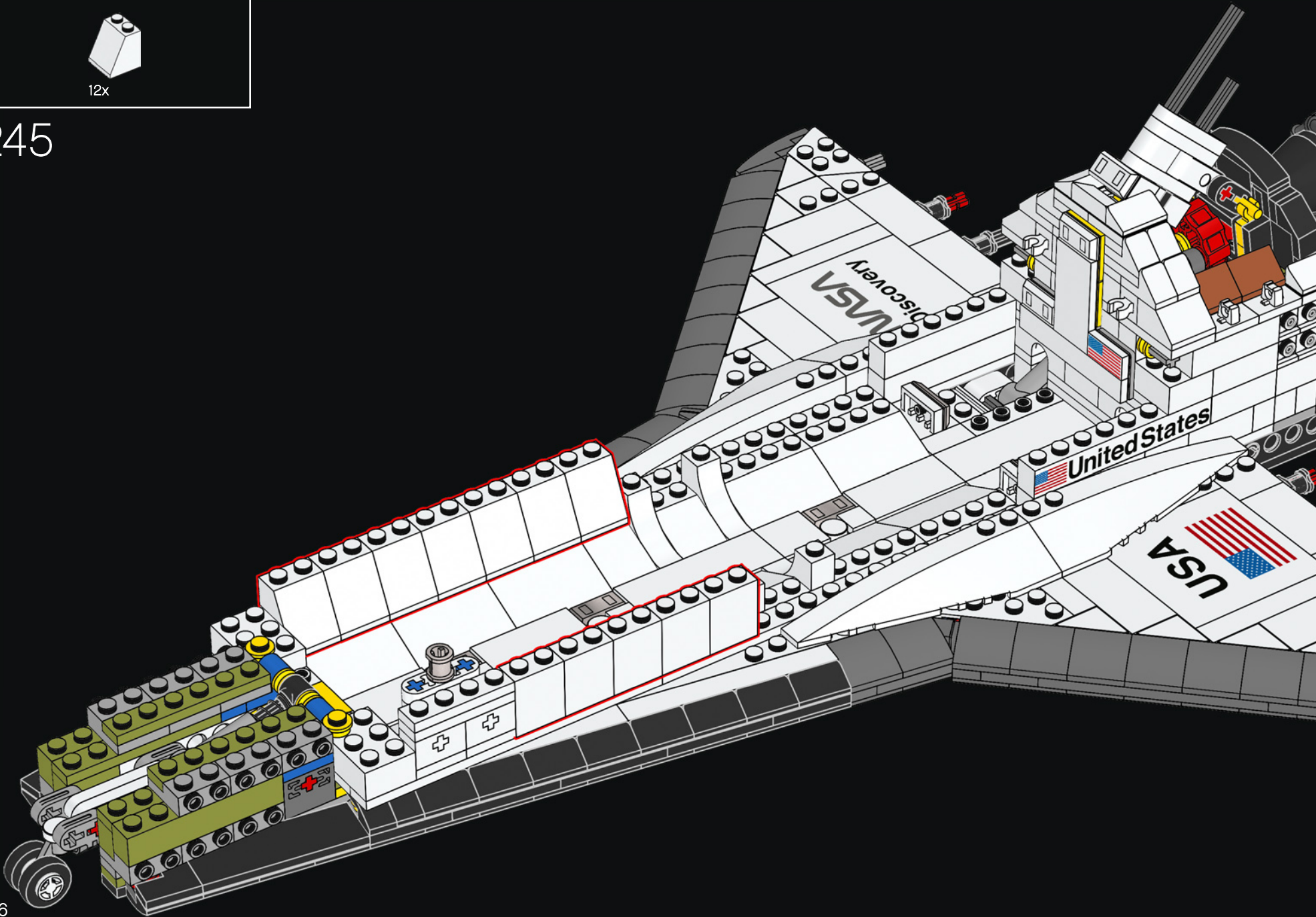
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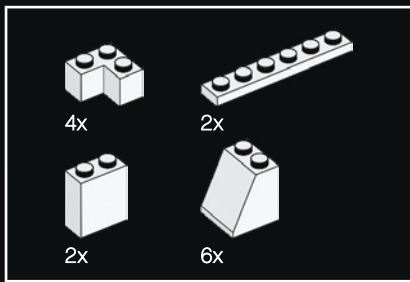




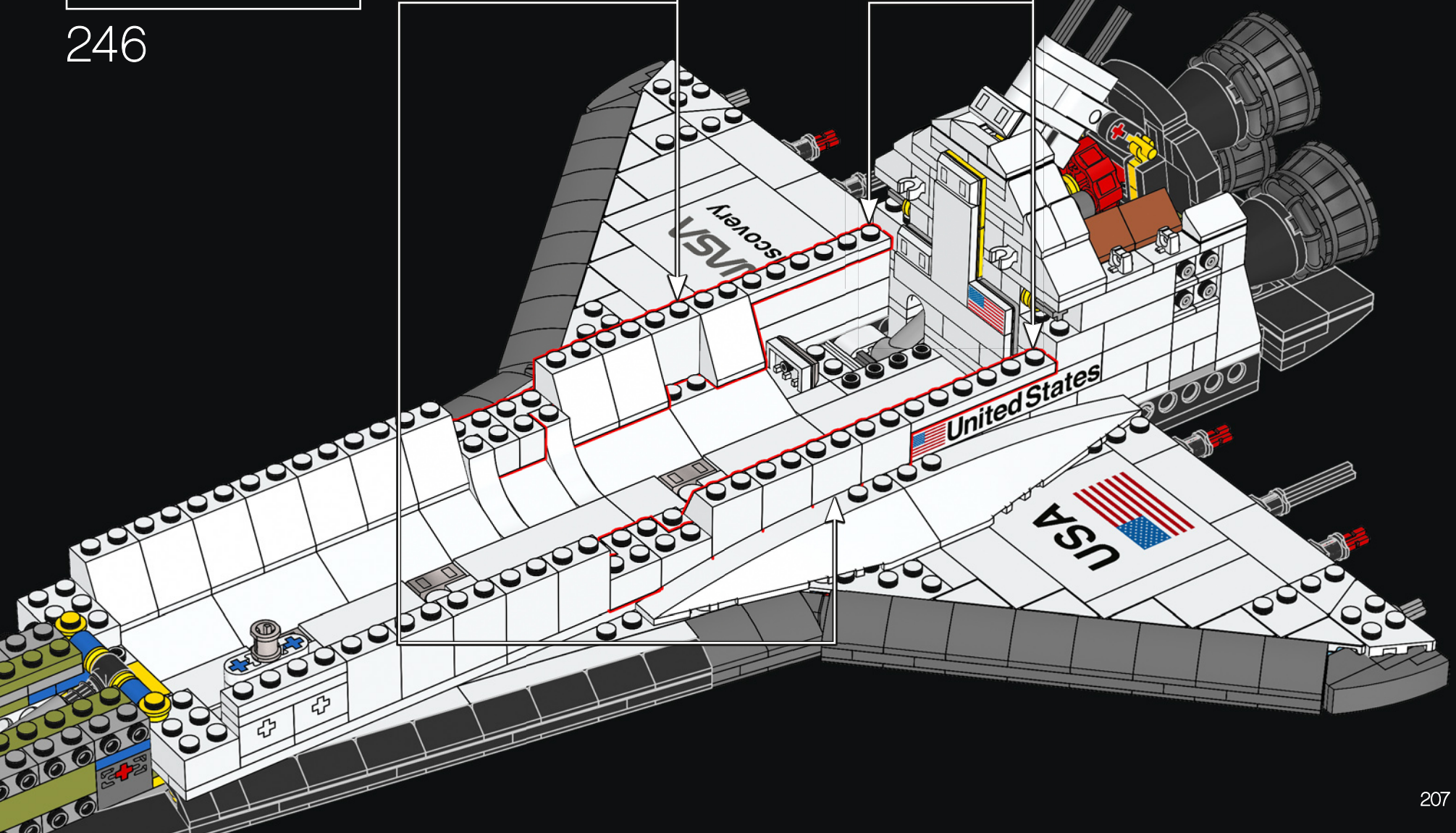
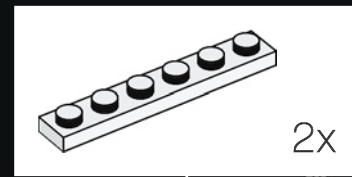
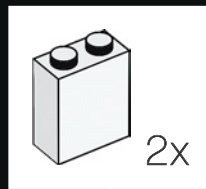


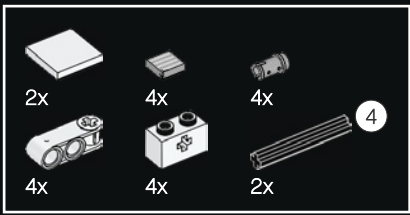
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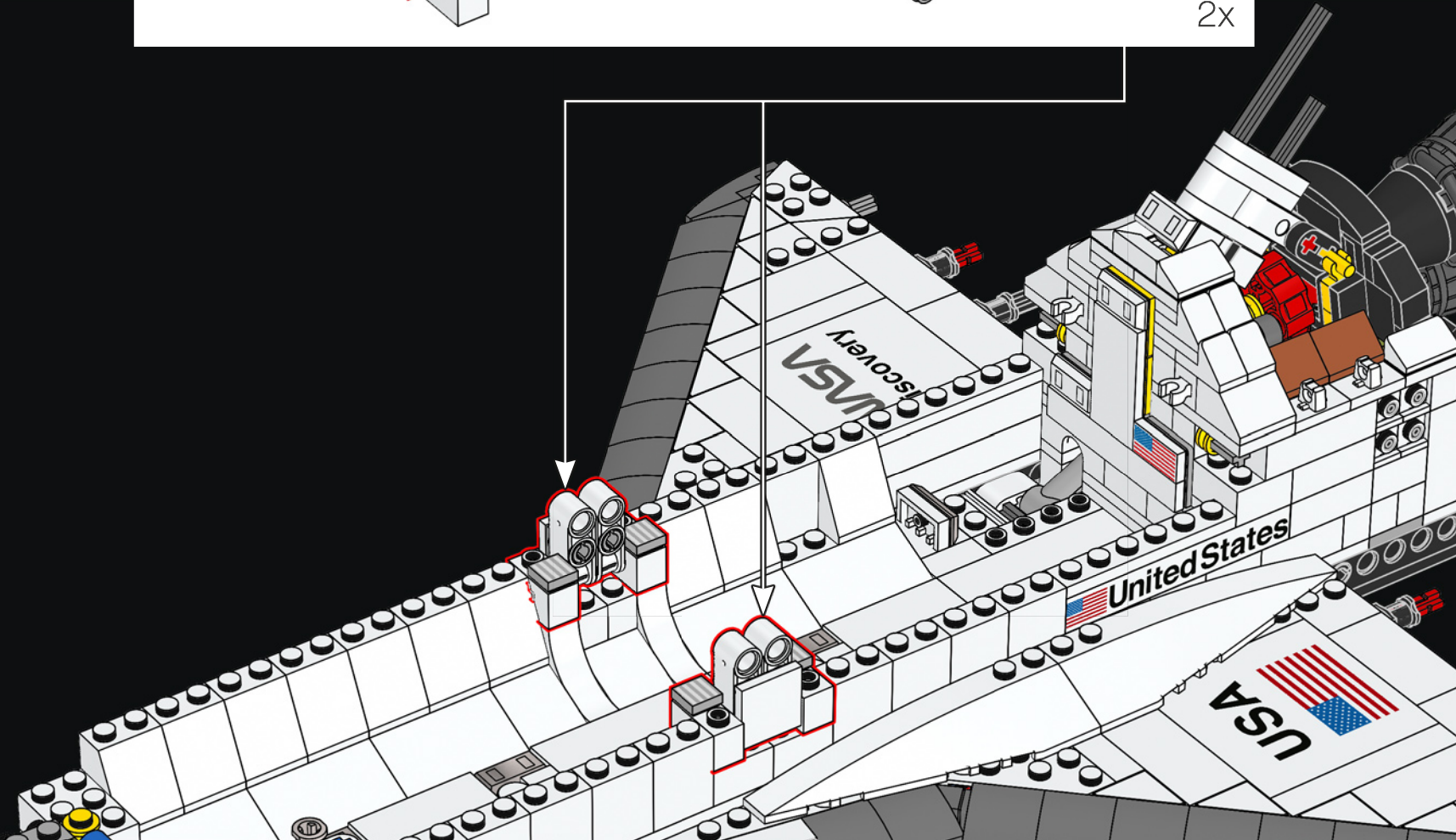
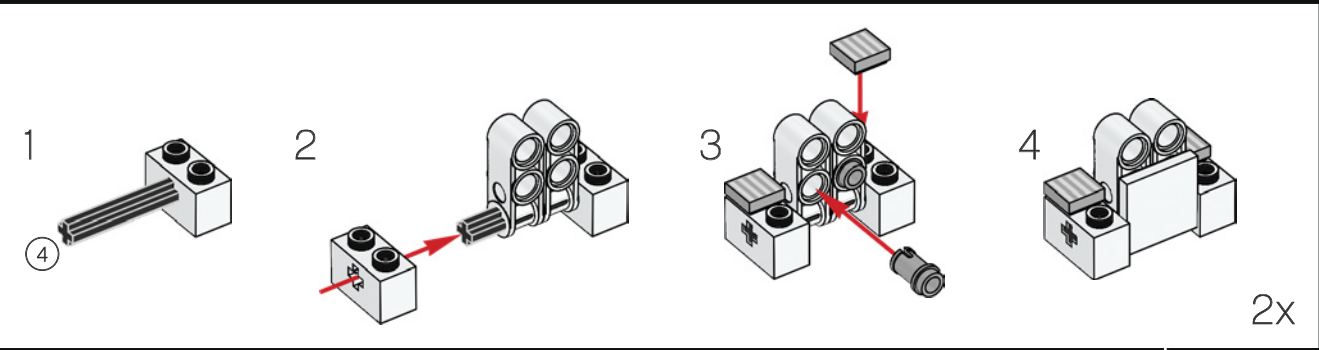


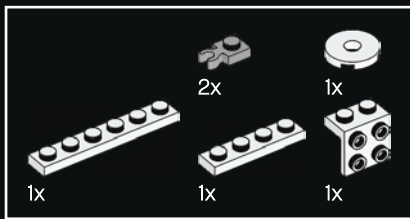
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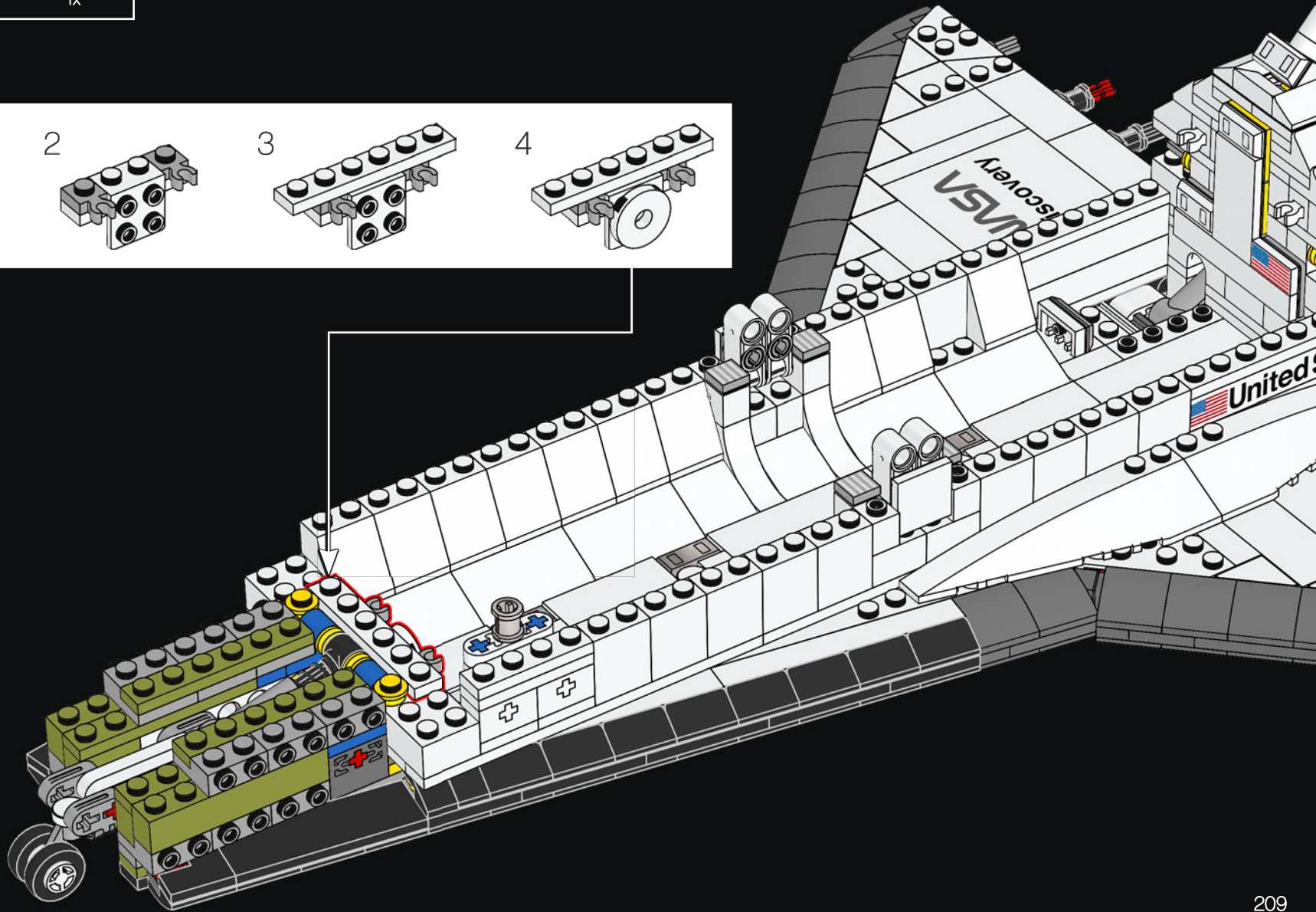
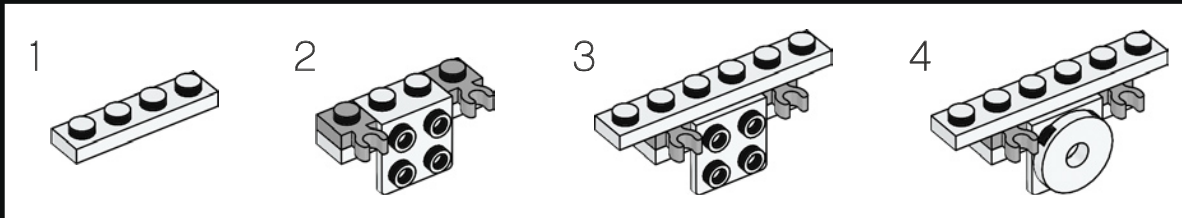


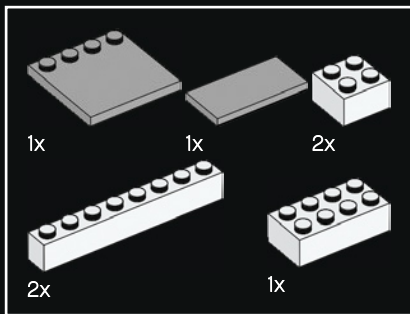
247





248

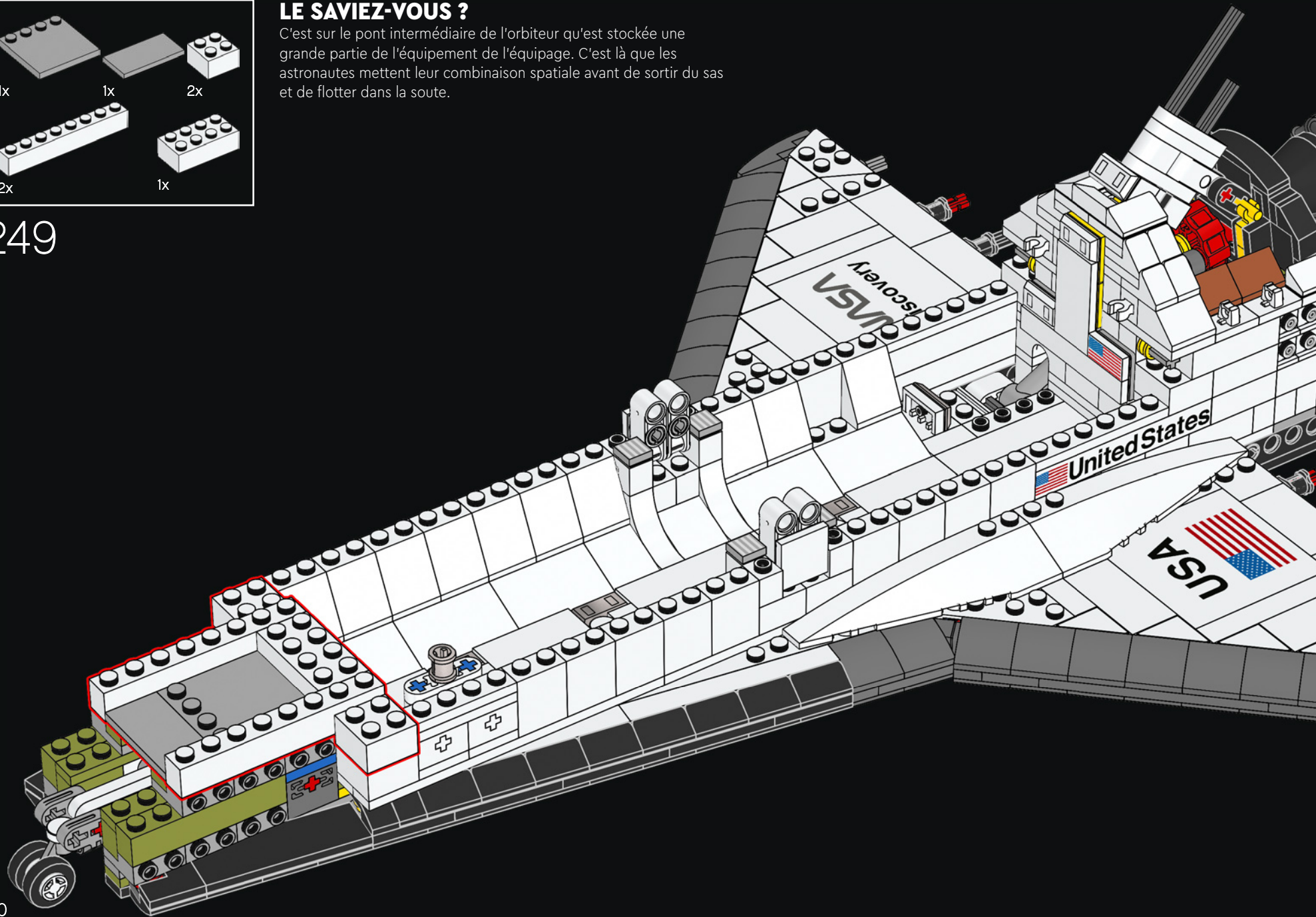


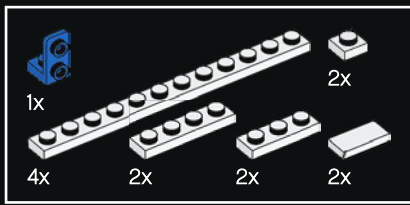


LE SAVIEZ-VOUS ?

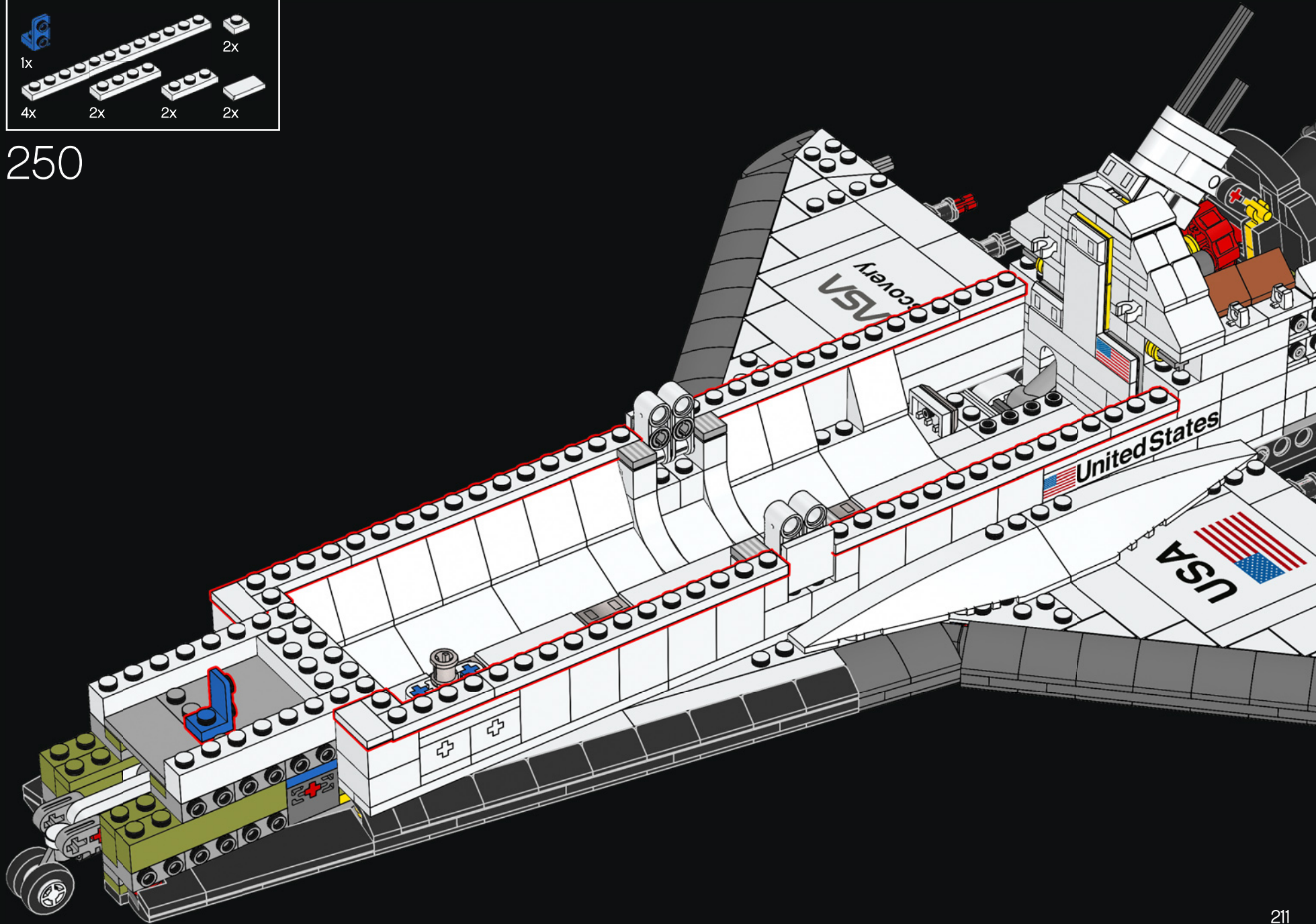
C'est sur le pont intermédiaire de l'orbiteur qu'est stockée une grande partie de l'équipement de l'équipage. C'est là que les astronautes mettent leur combinaison spatiale avant de sortir du sas et de flotter dans la soute.

249



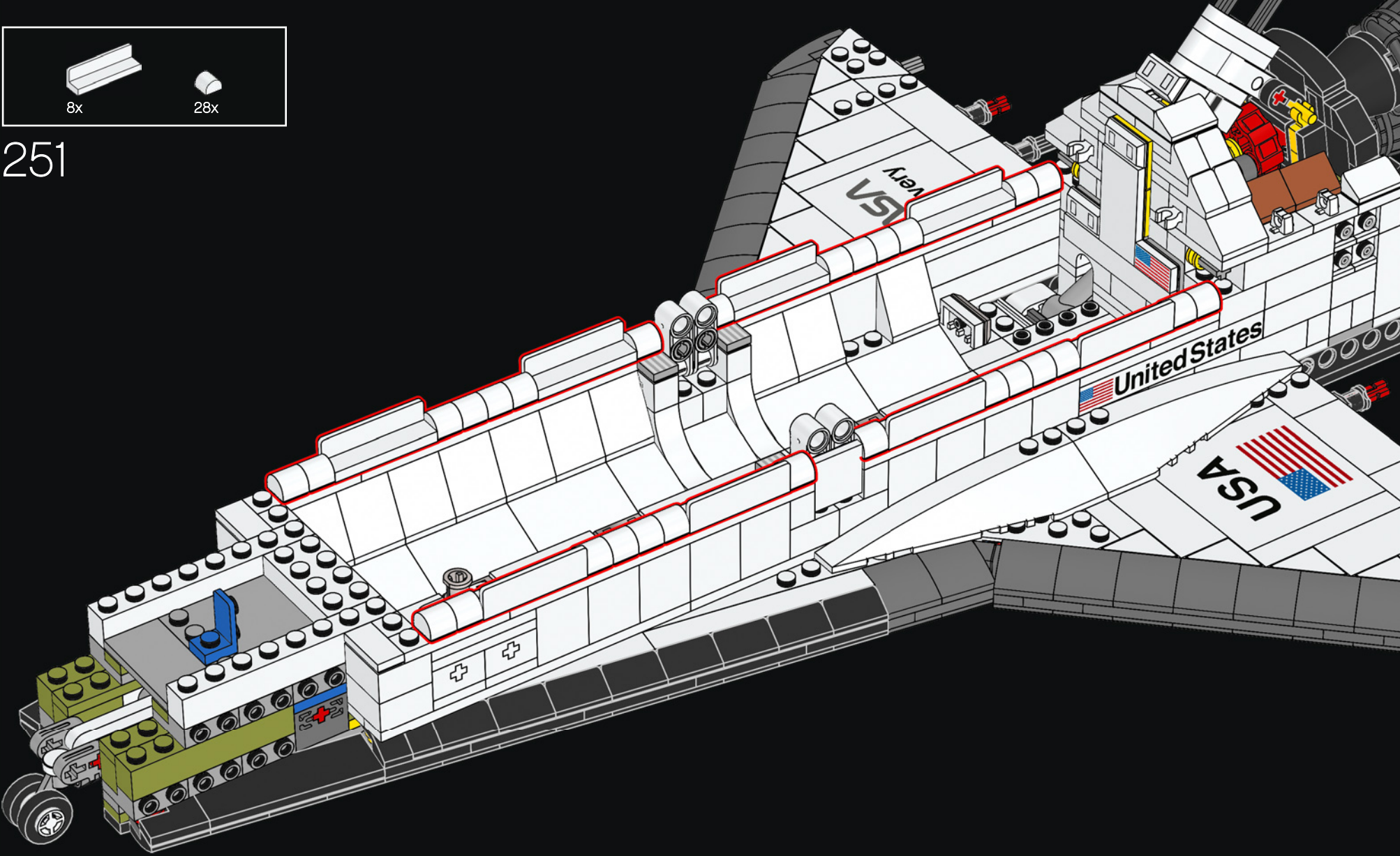


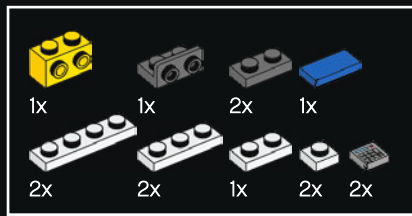
250



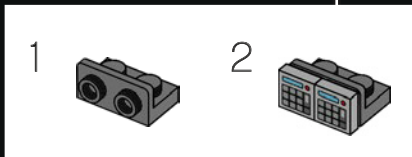
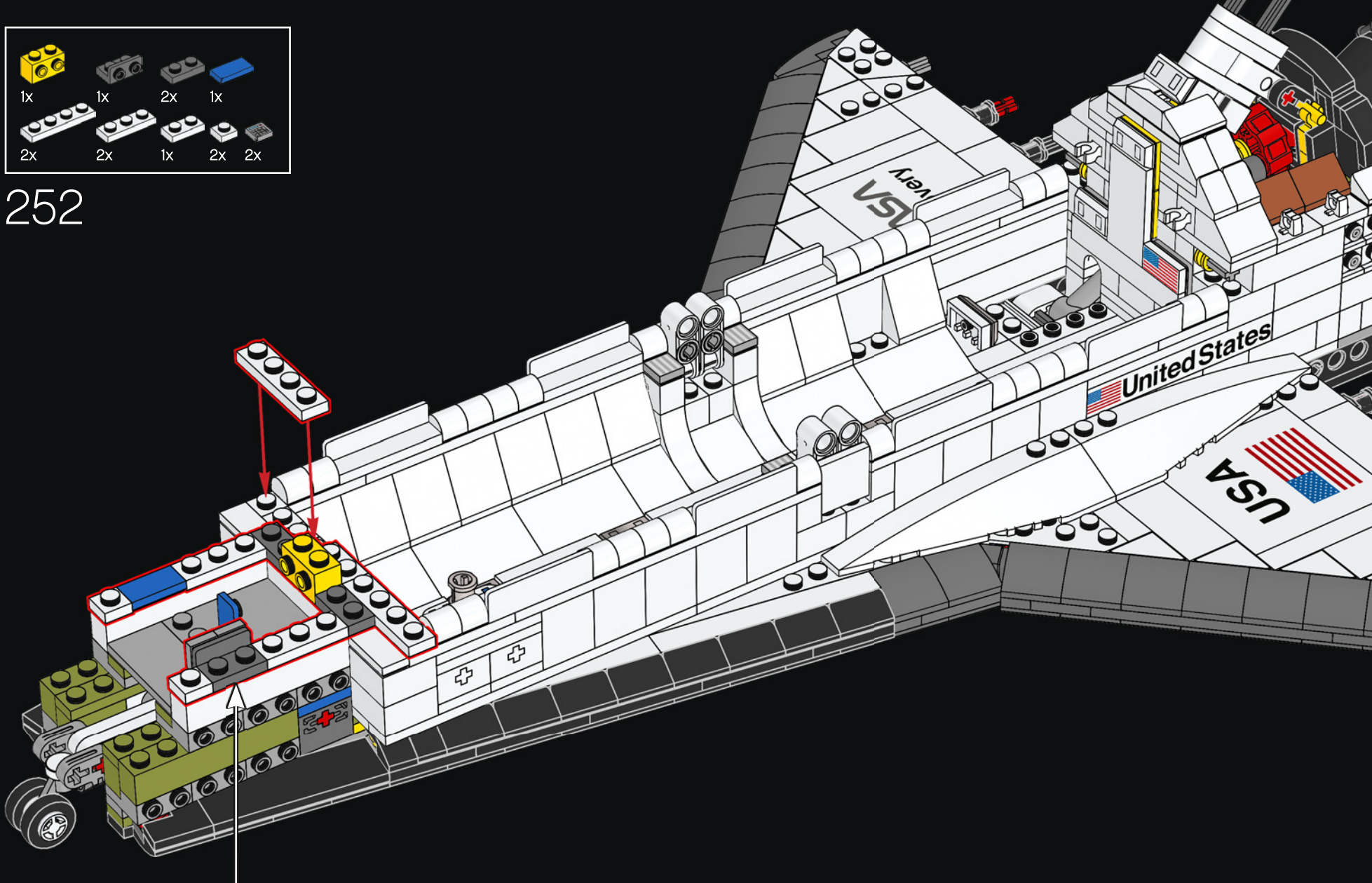


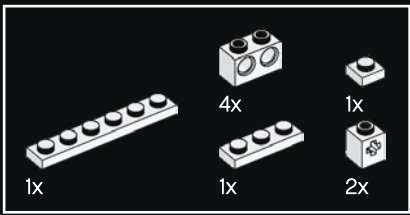
251



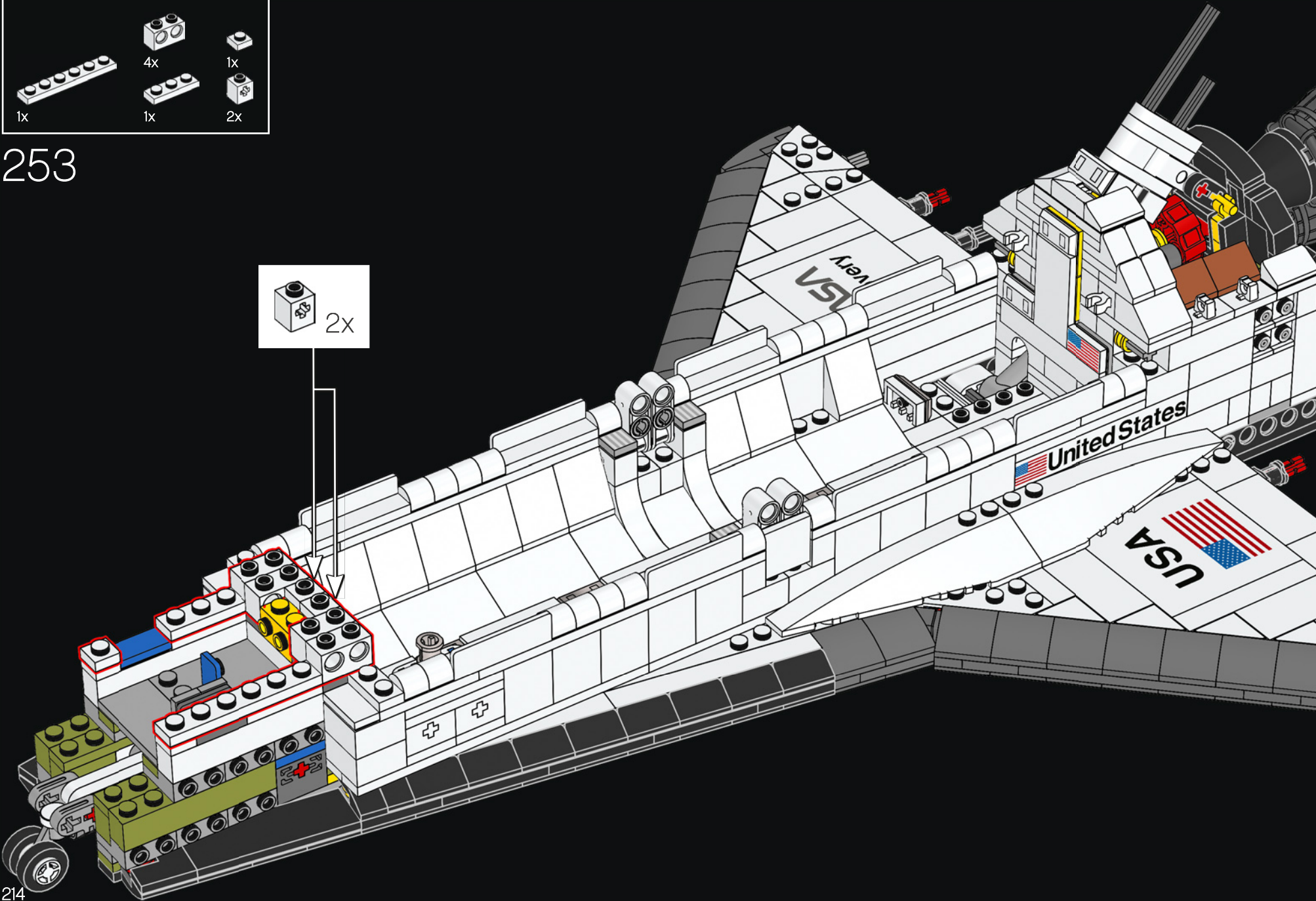
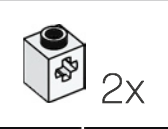


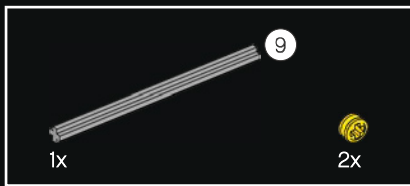
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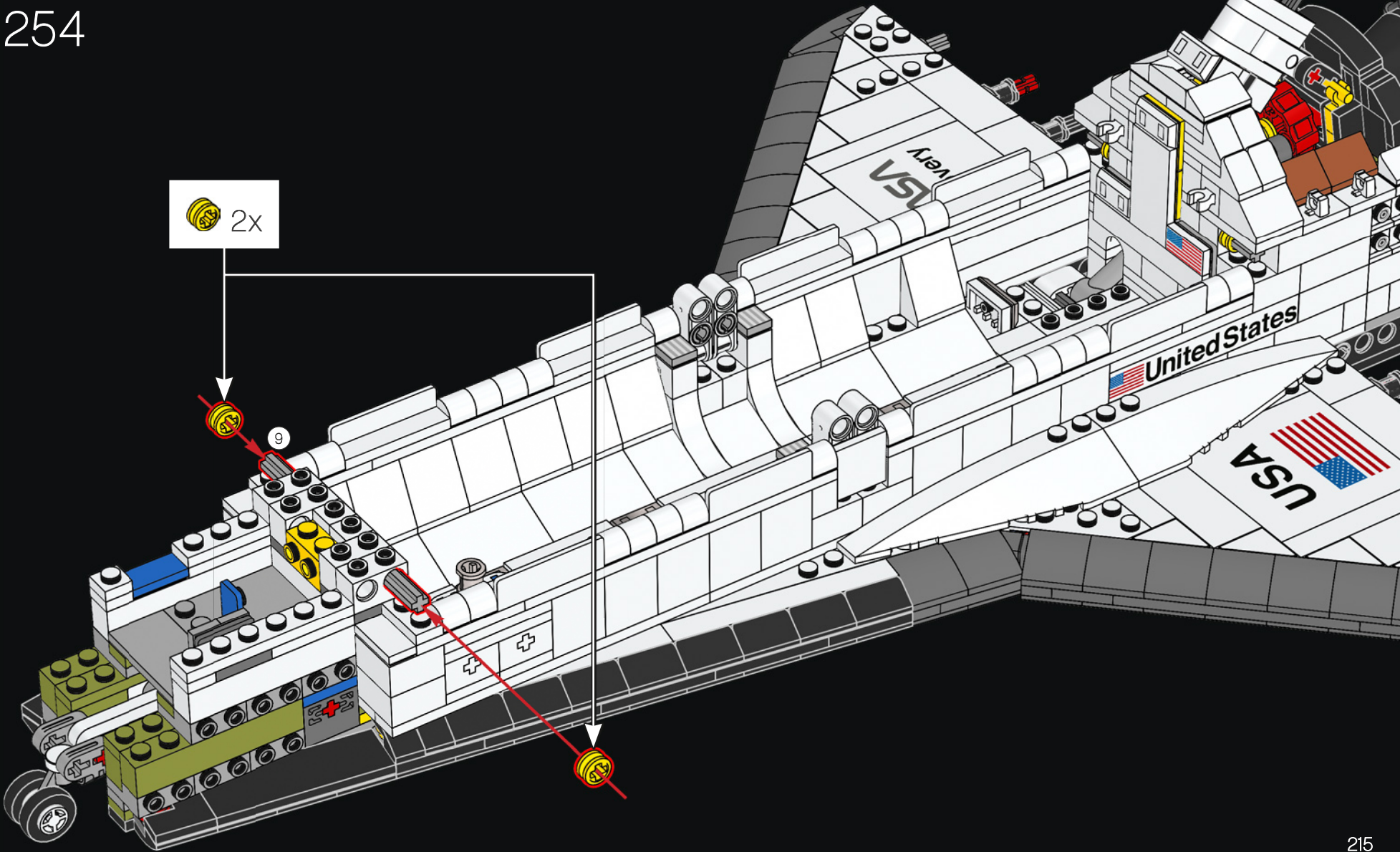
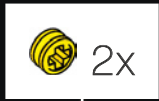


253



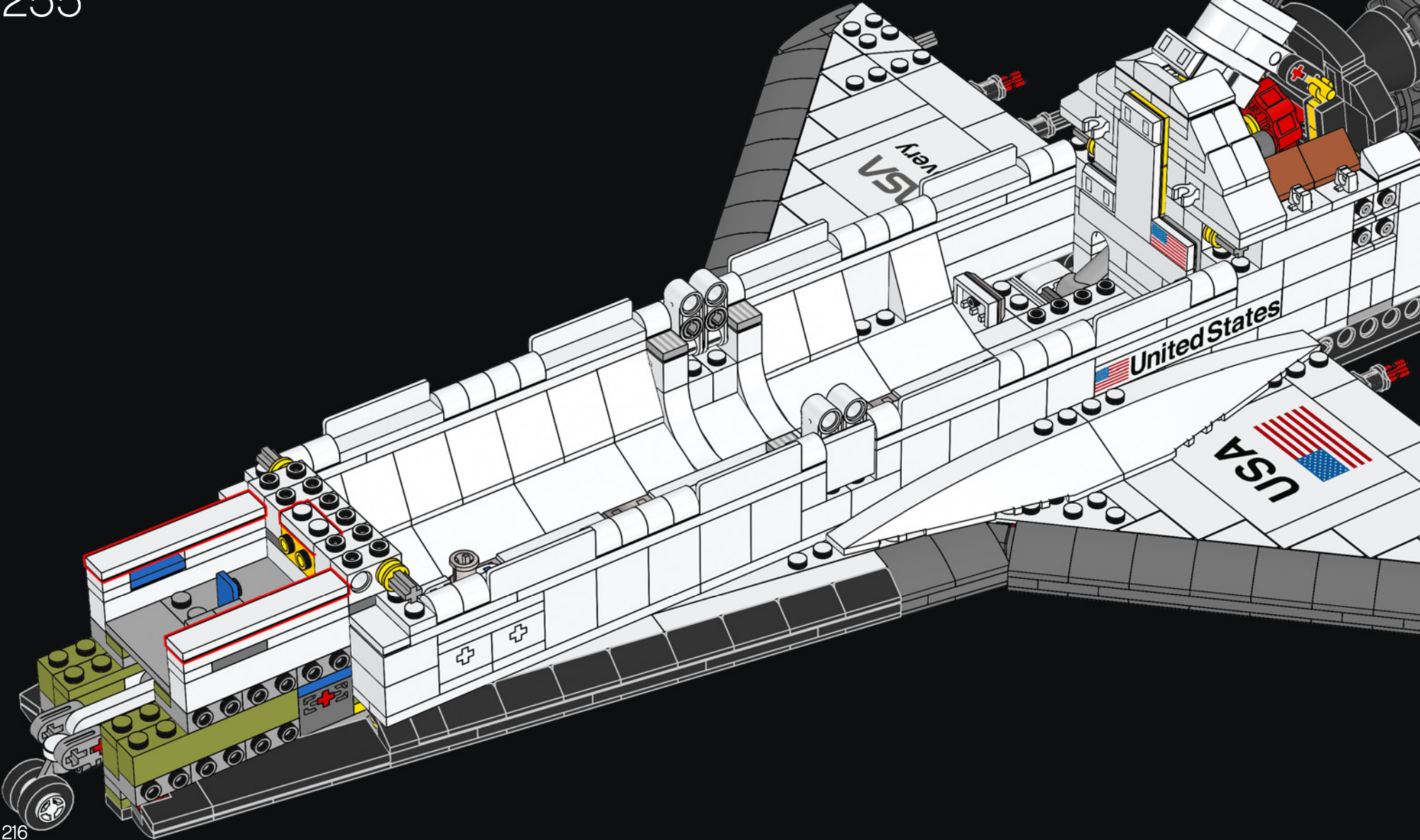


254



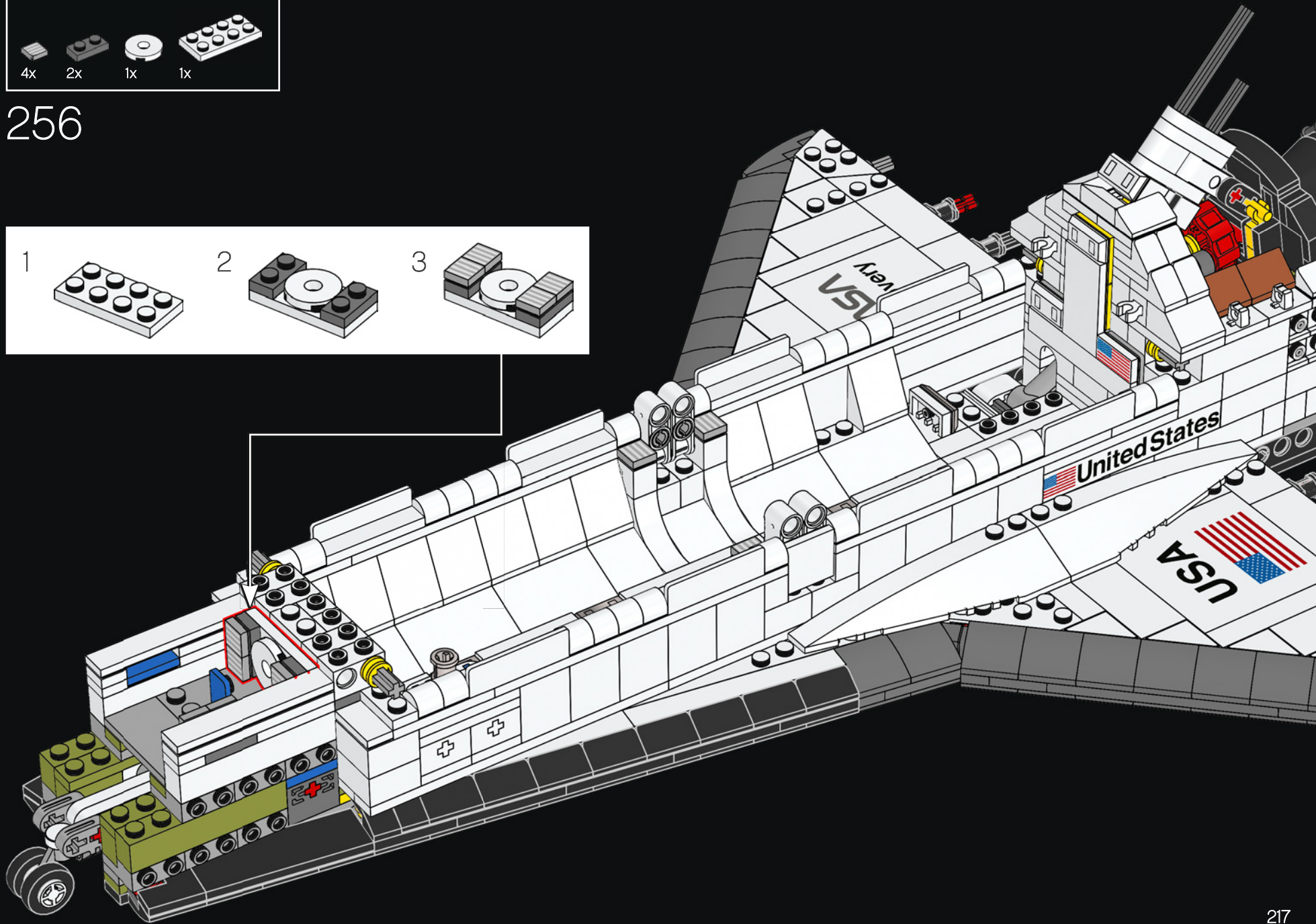
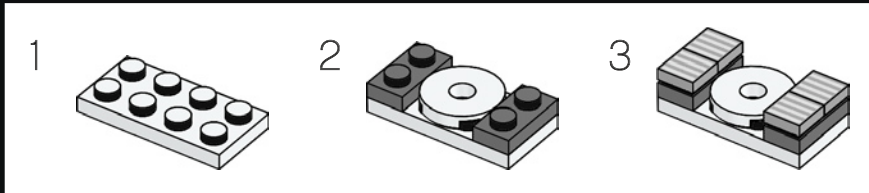


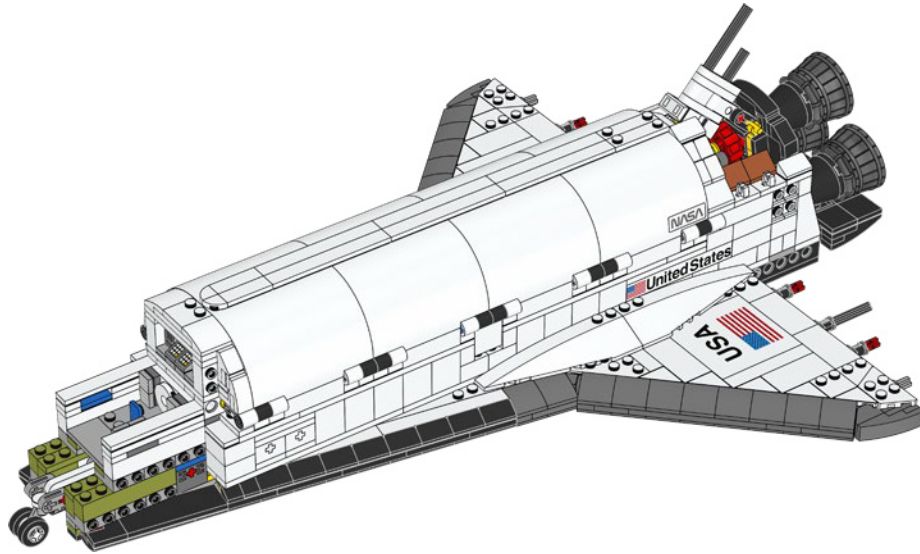
255



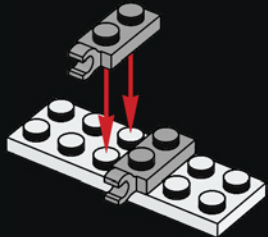


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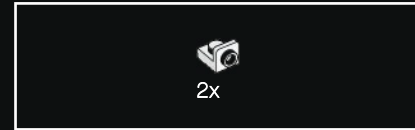
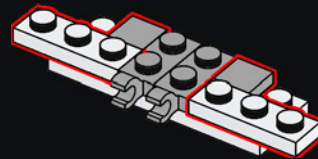




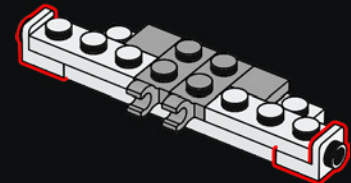
257



258

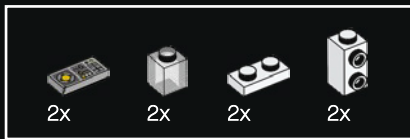
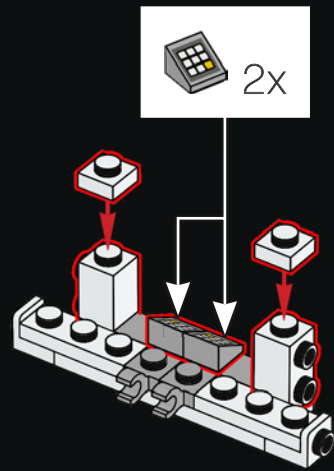


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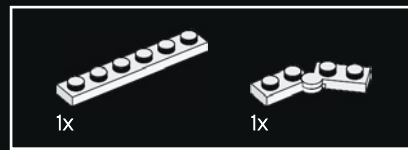
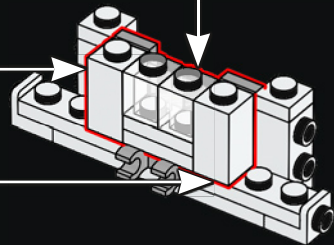
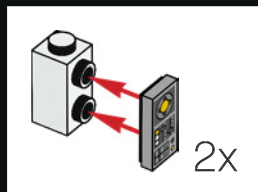
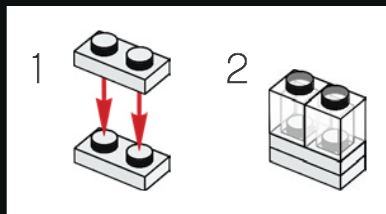




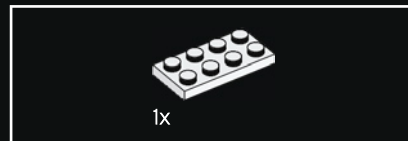
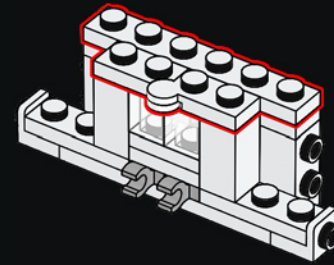
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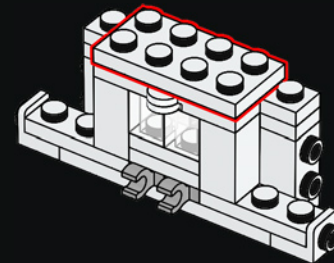
261



262

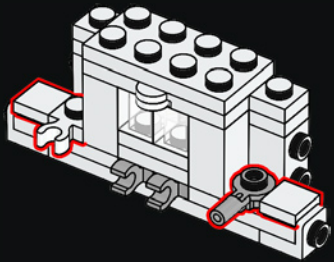


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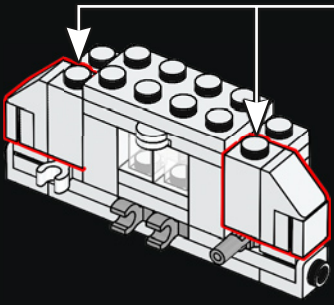
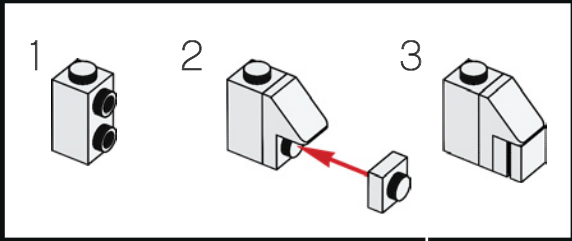




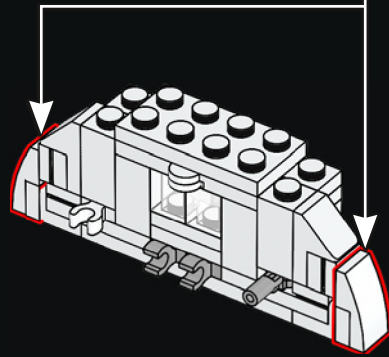
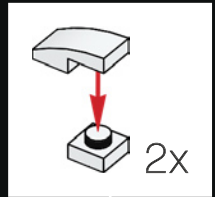
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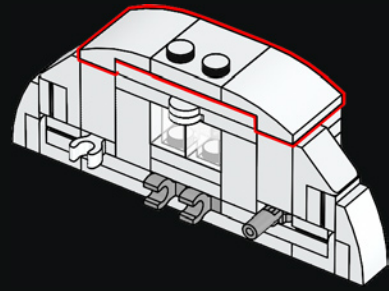
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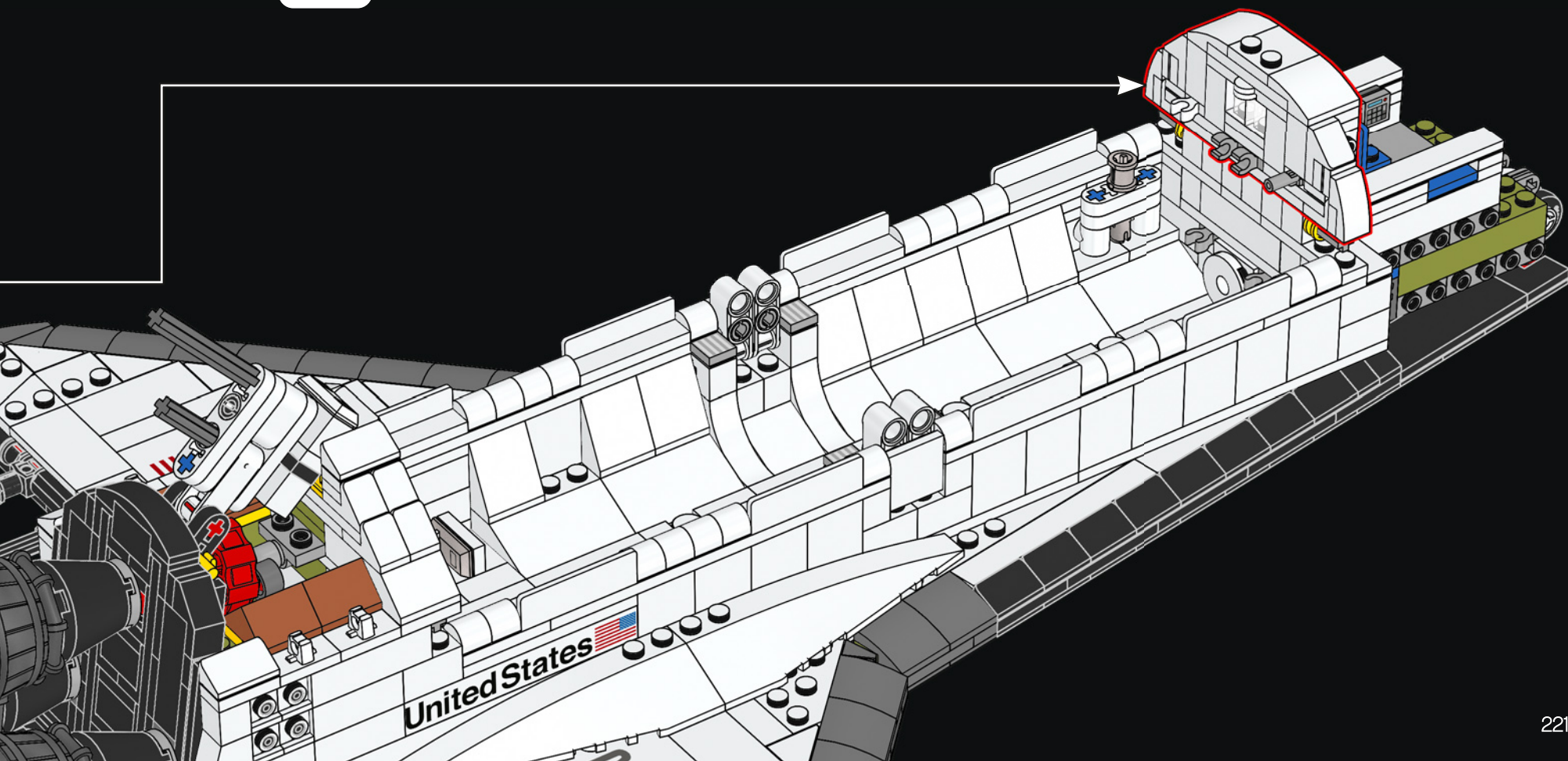


266



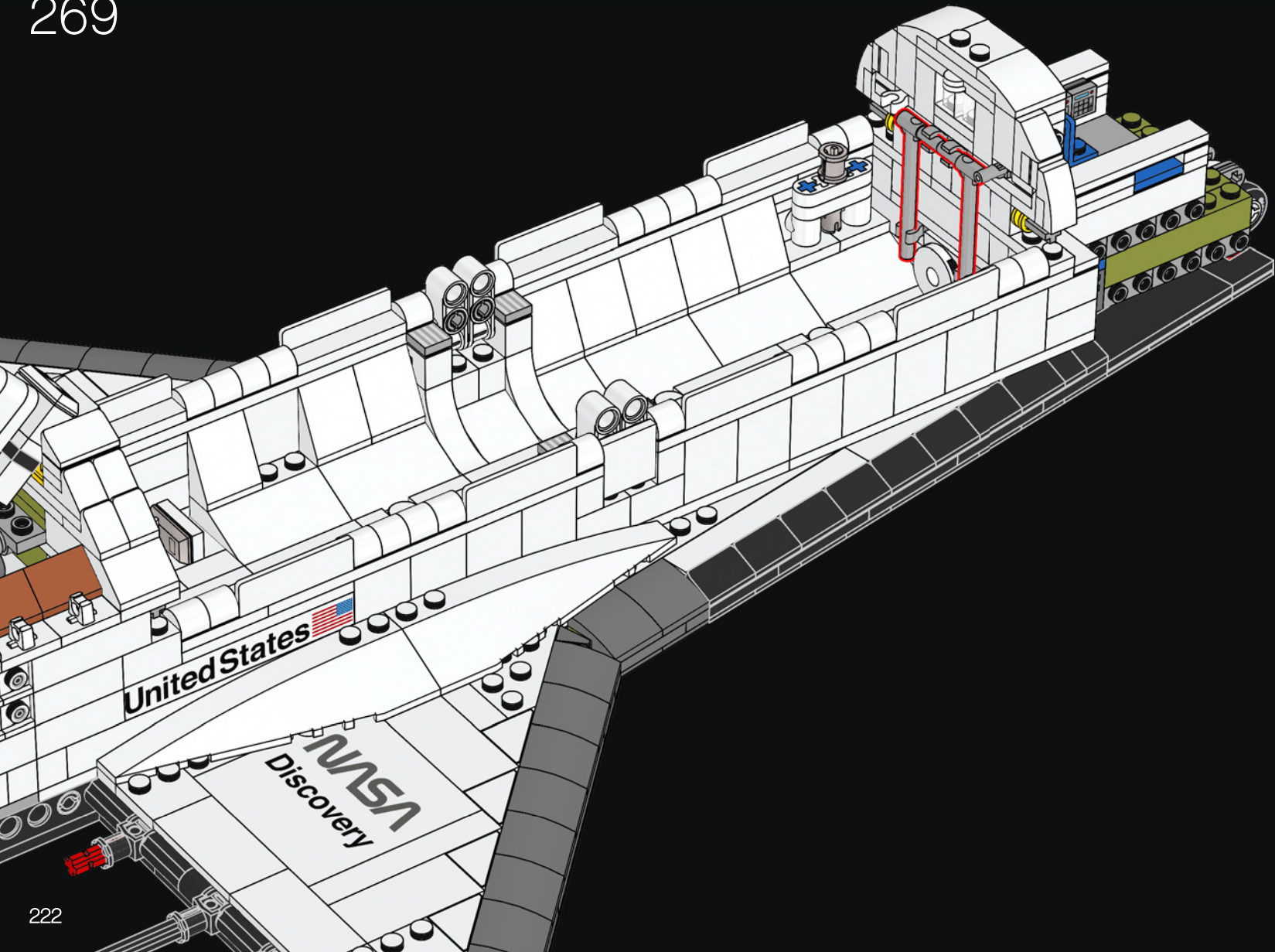
267







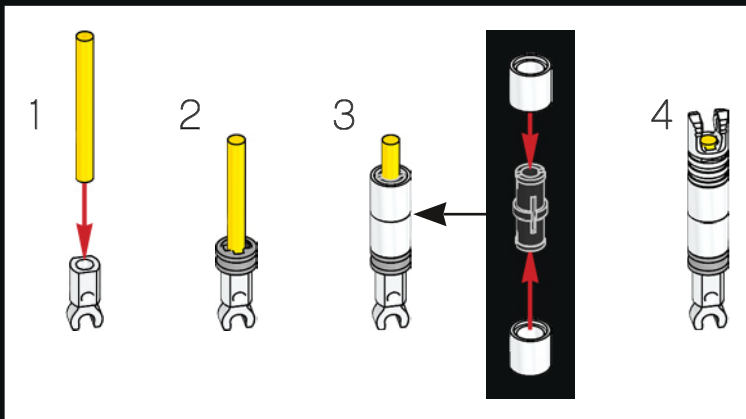
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222

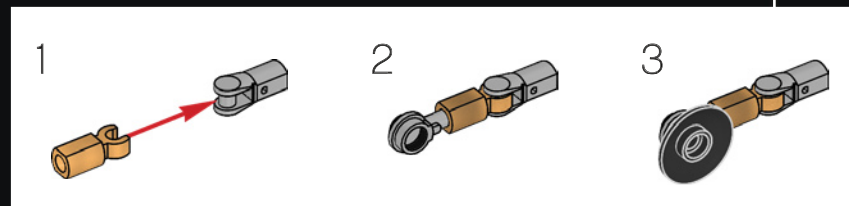
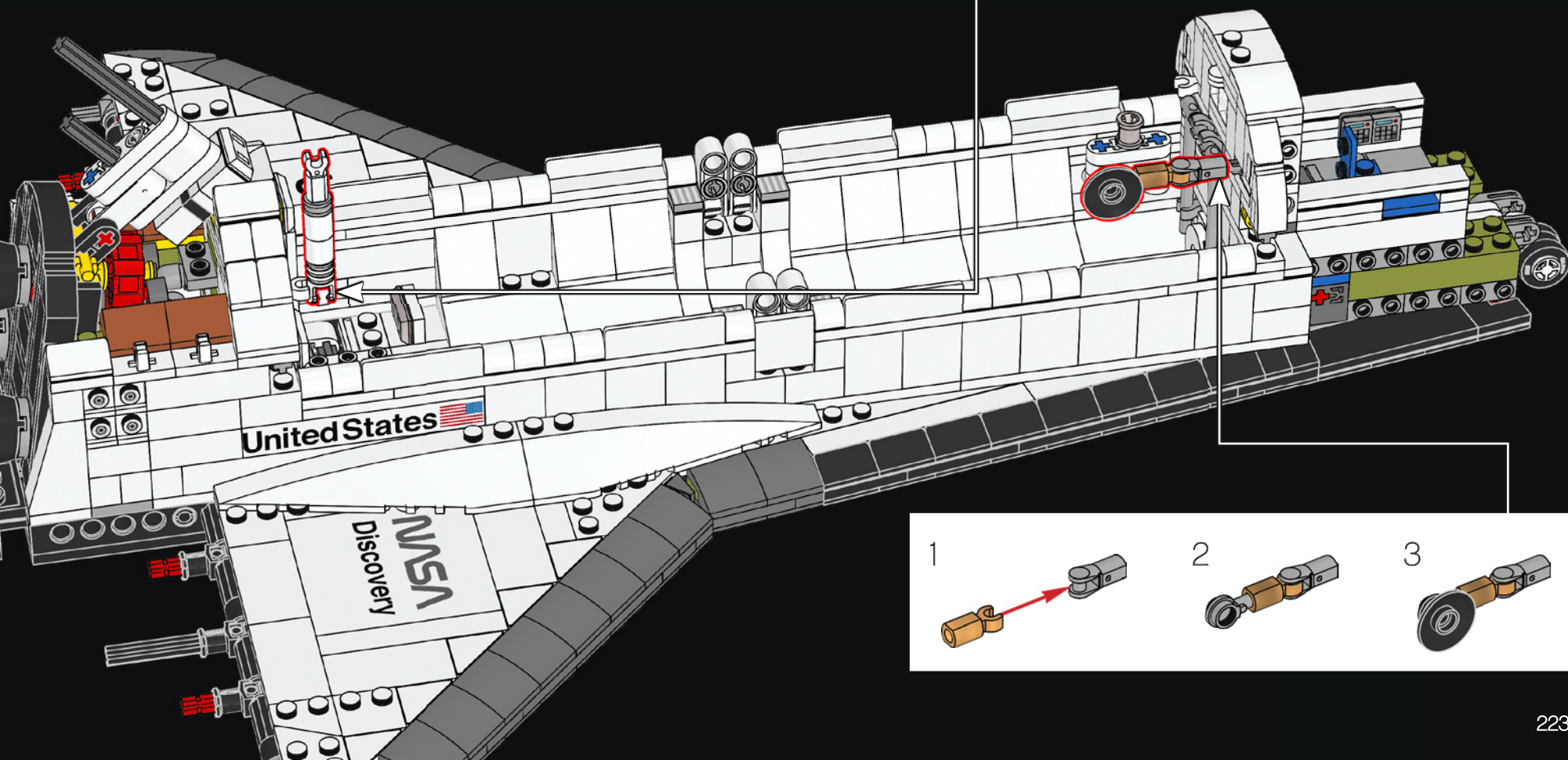


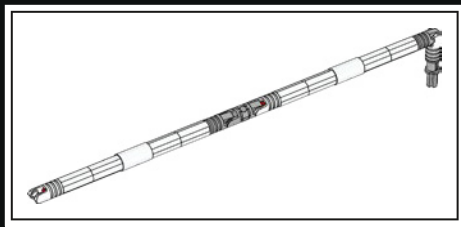
270



LE SAVIEZ-VOUS ?

L'antenne en bande Ku déployée en orbite permet à l'équipage de la navette d'envoyer des communications à la Terre et d'en recevoir.

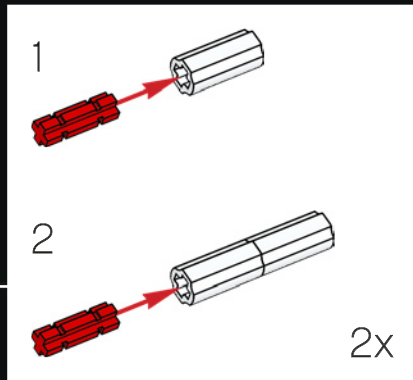
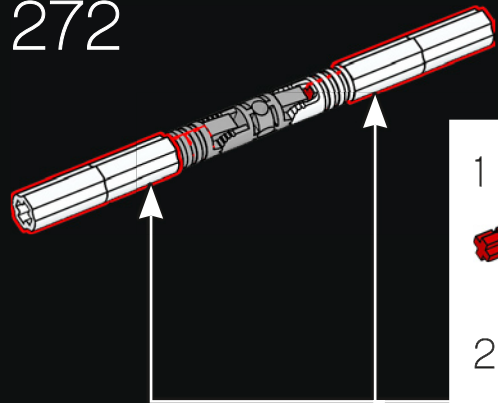




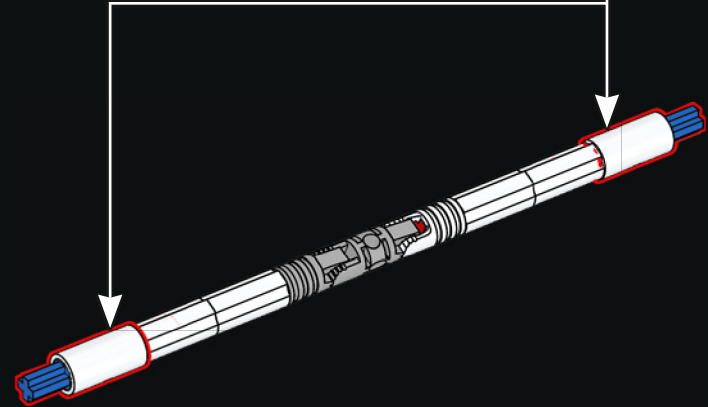
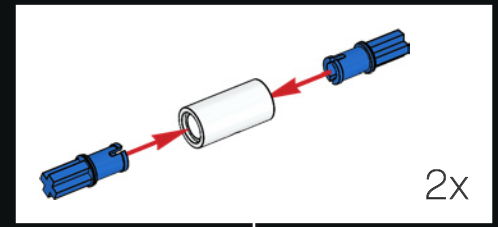
271



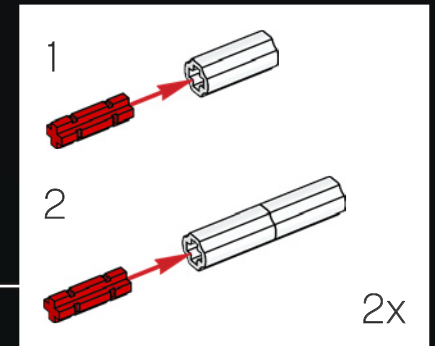
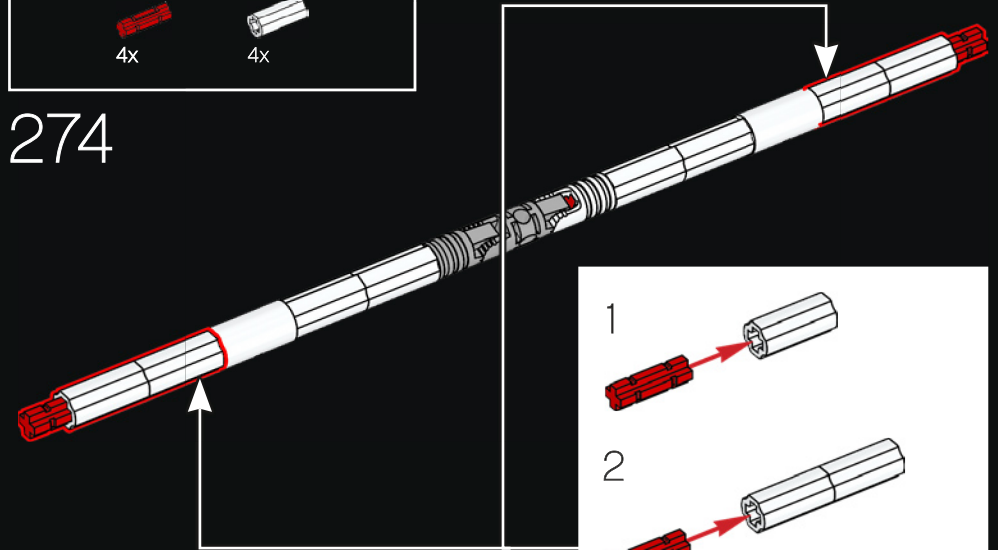
272



273

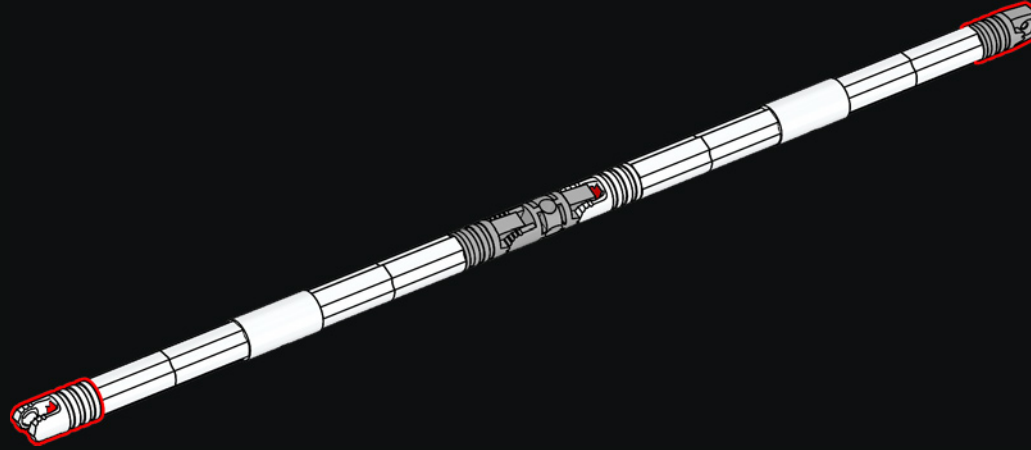


274

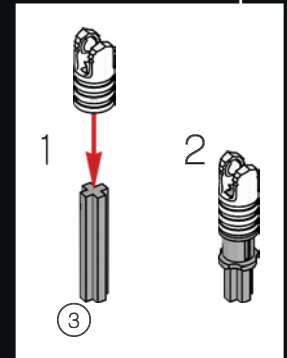
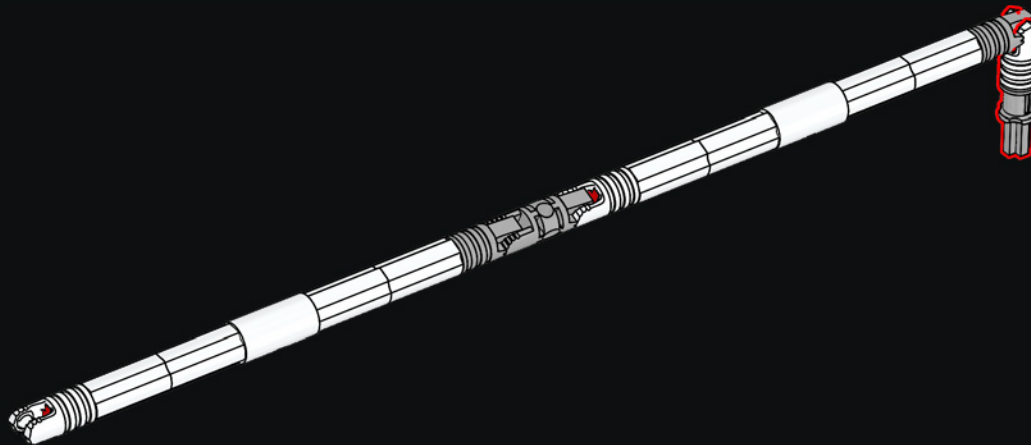




275



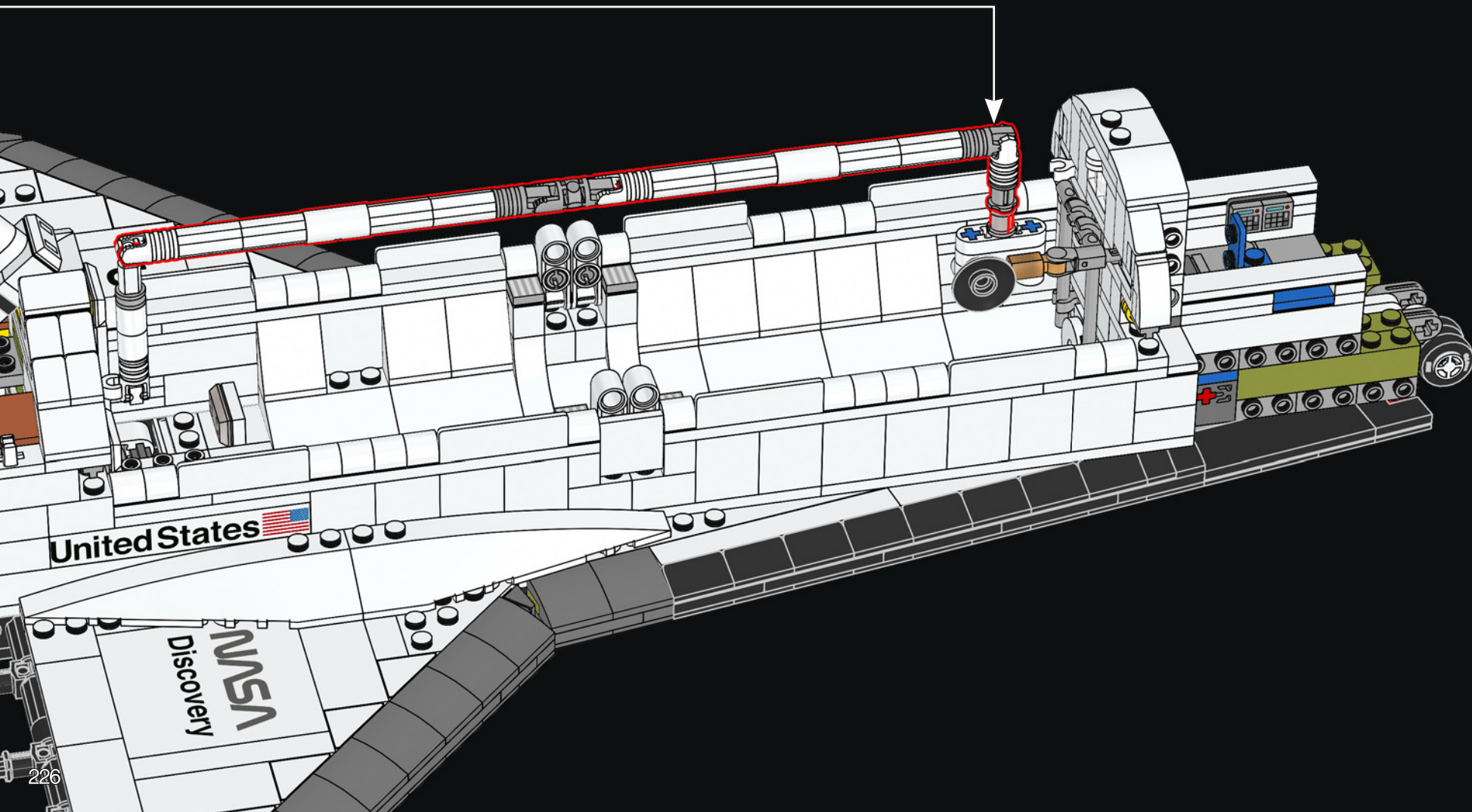
276



LE SAVIEZ-VOUS ?

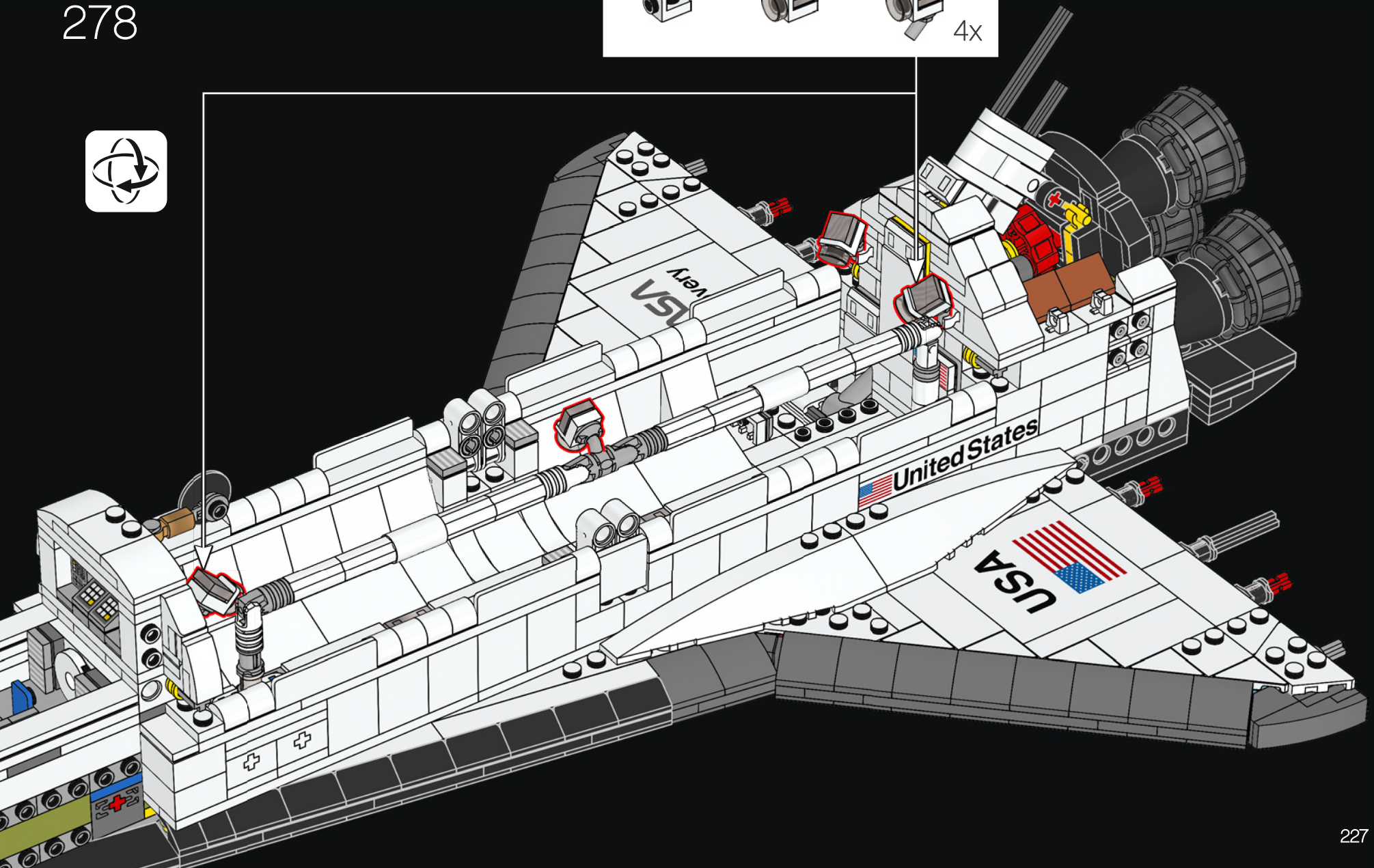
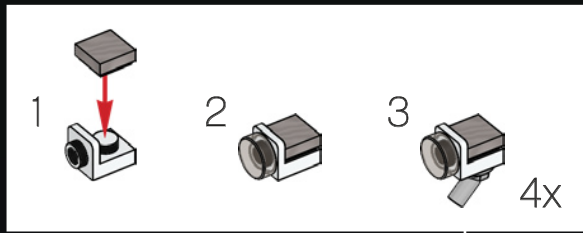
Le système RMS (Remove Manipulatrice System) de la navette a été utilisé par les astronautes situés à l'intérieur pour déployer et manœuvrer la cargaison de la soute et les astronautes pendant les sorties extravéhiculaires.

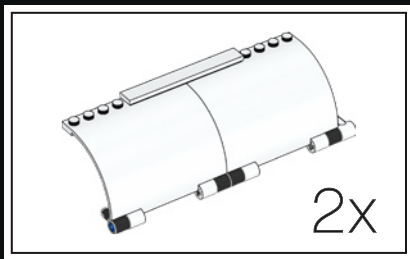
277



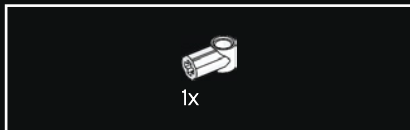
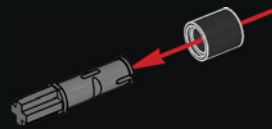


278

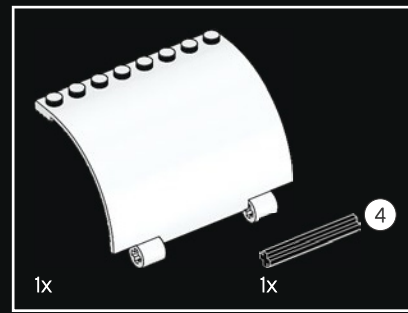




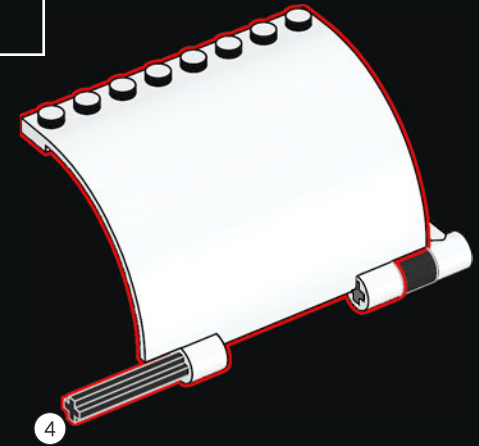
279



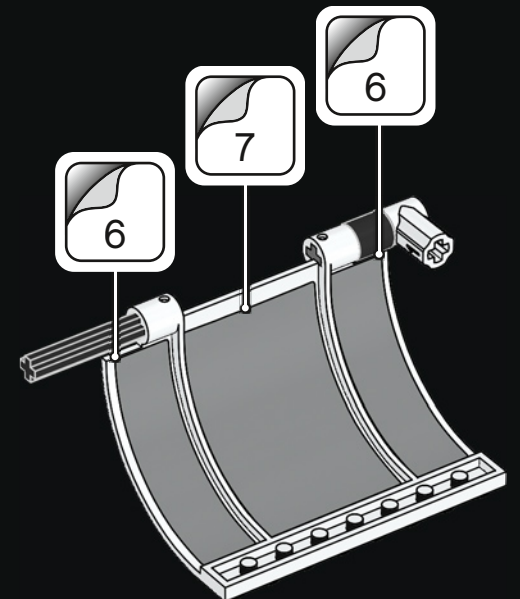
280



281

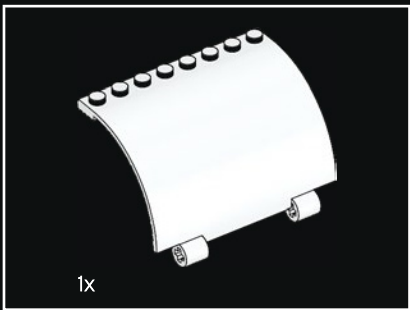
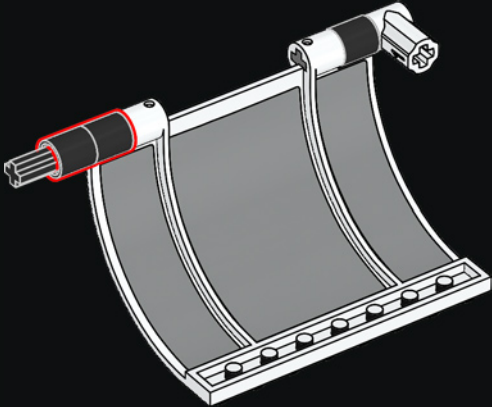


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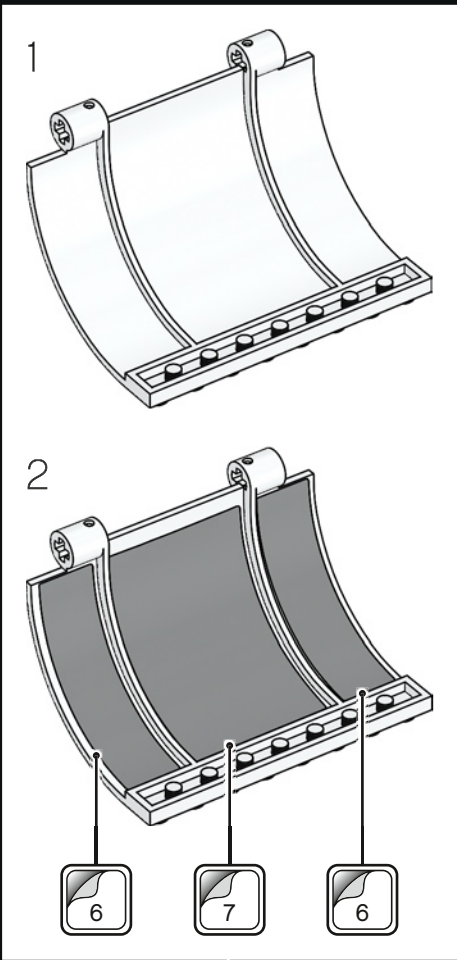
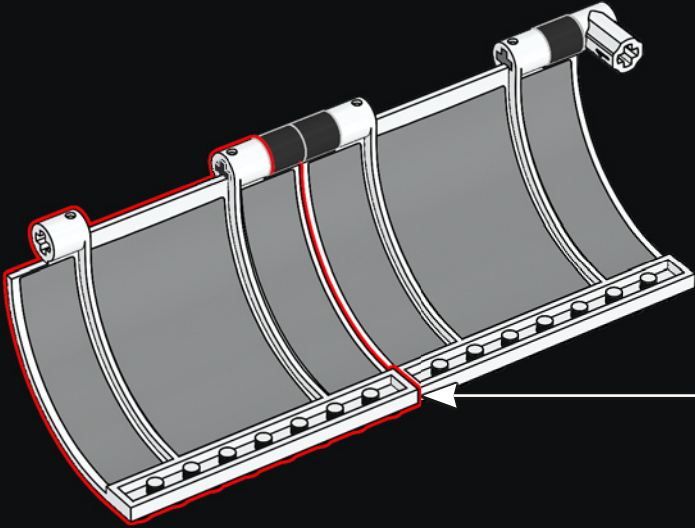




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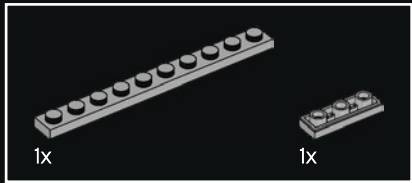
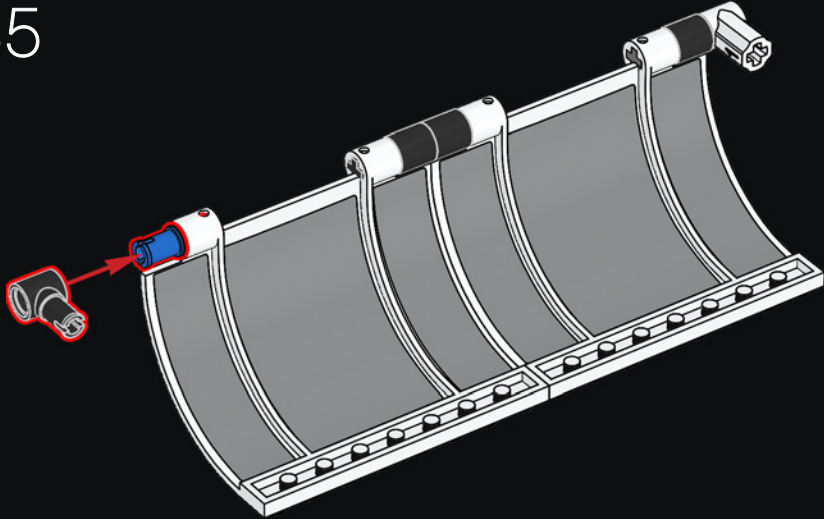


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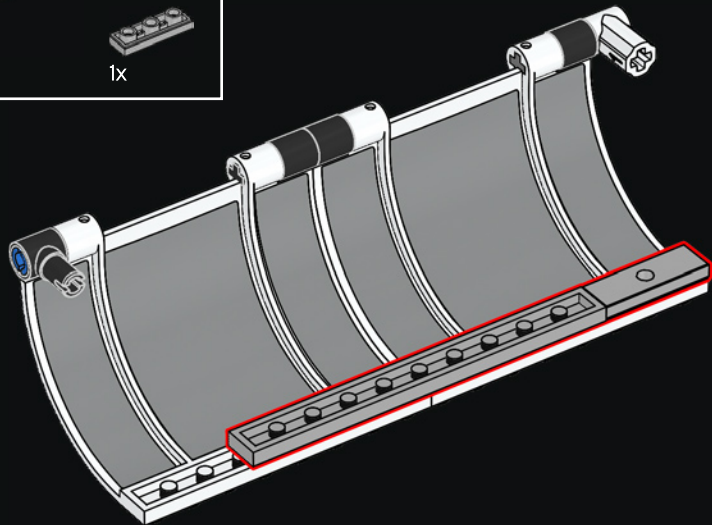




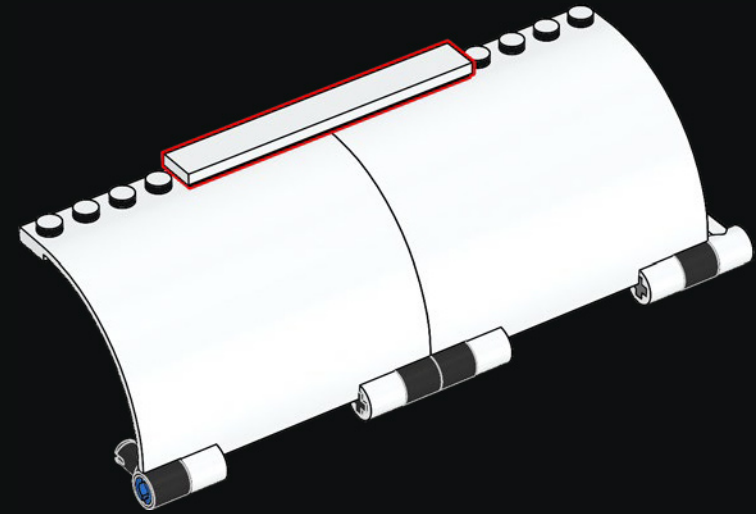
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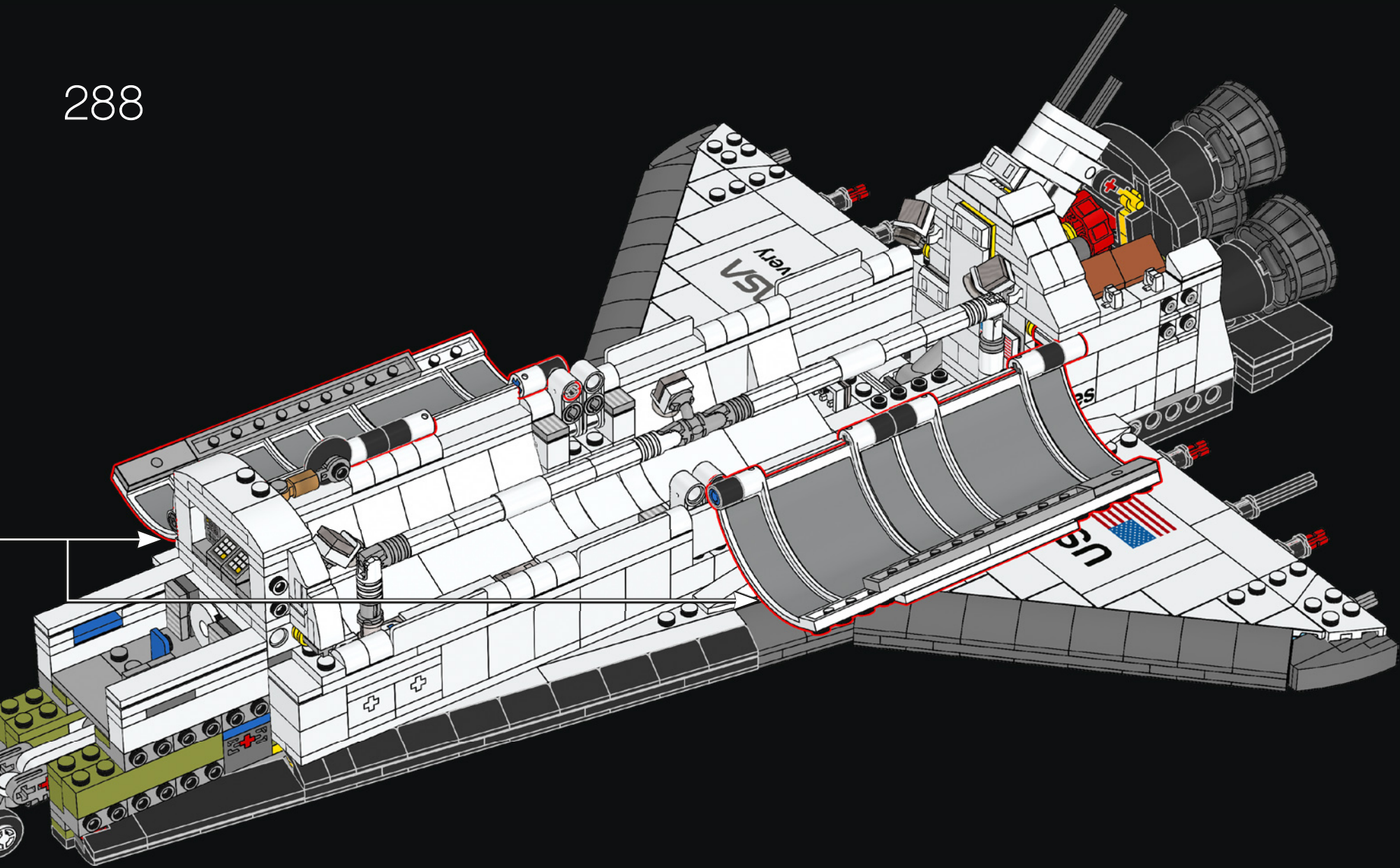
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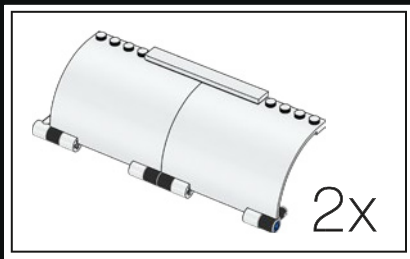


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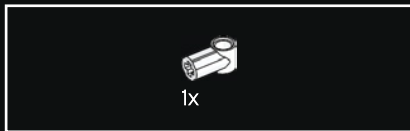


2x

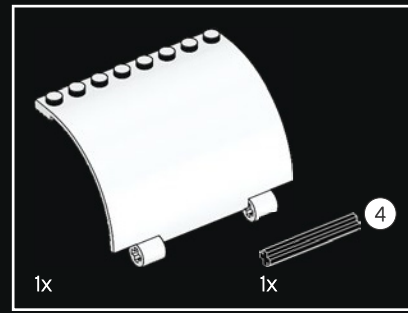
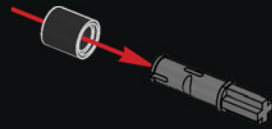




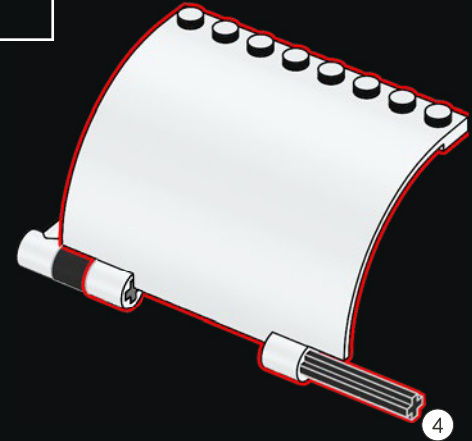
289



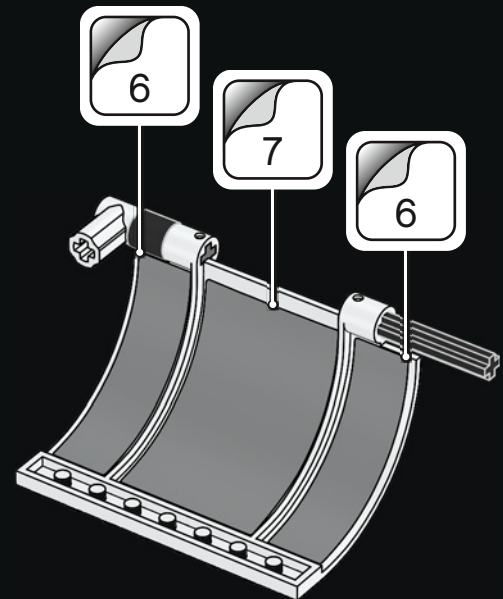
290



291

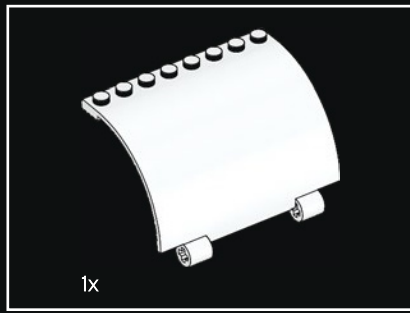


292

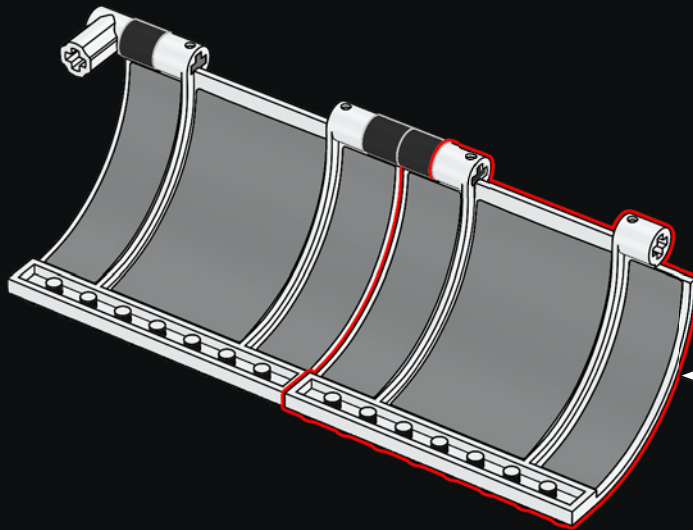
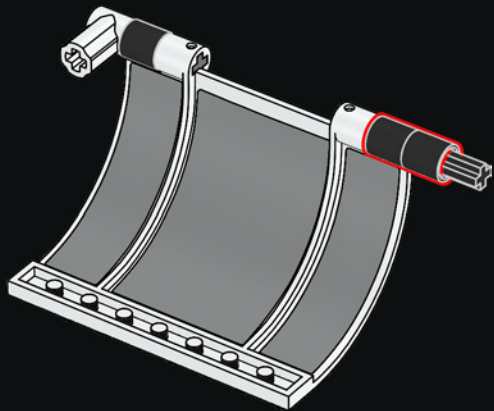
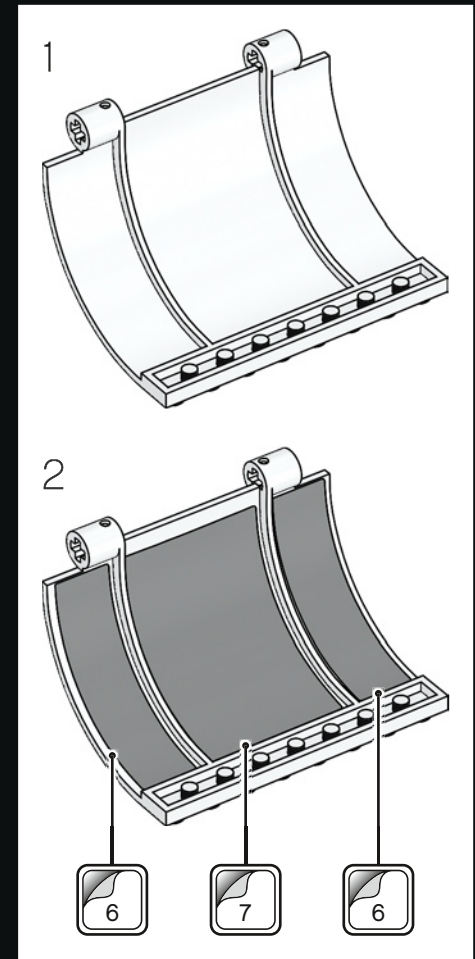




293

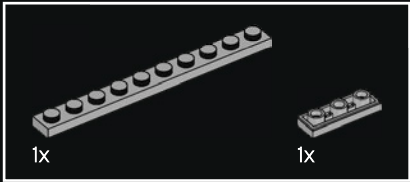
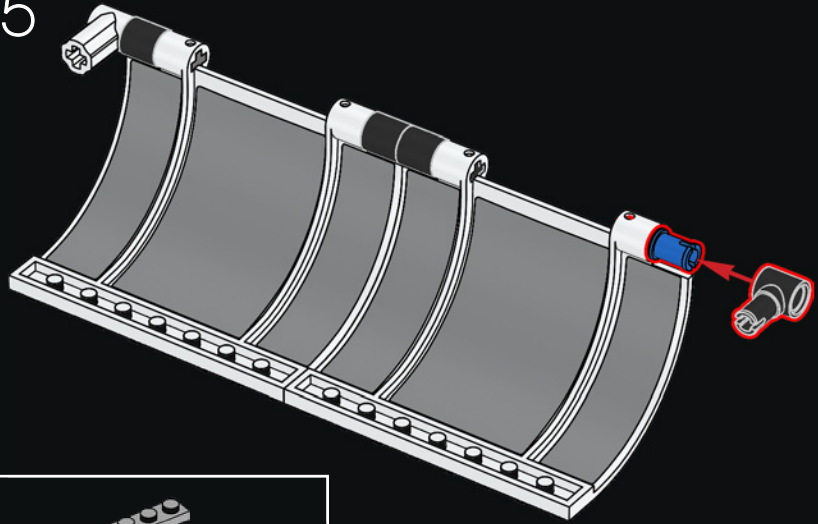


294

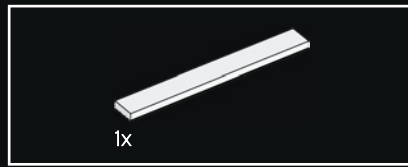
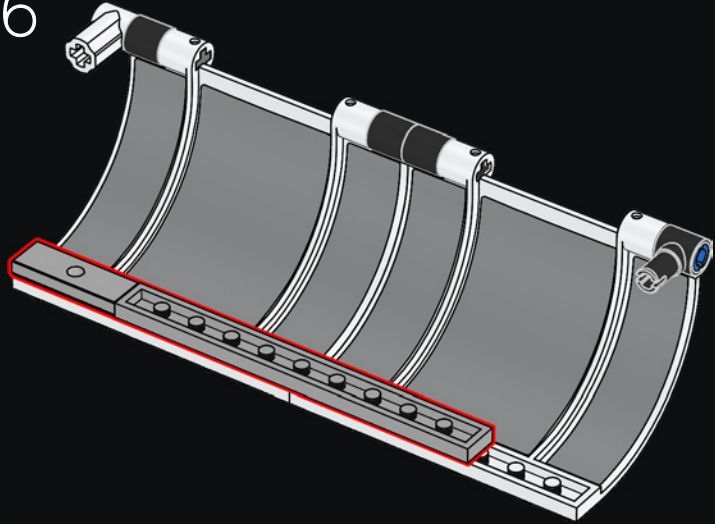




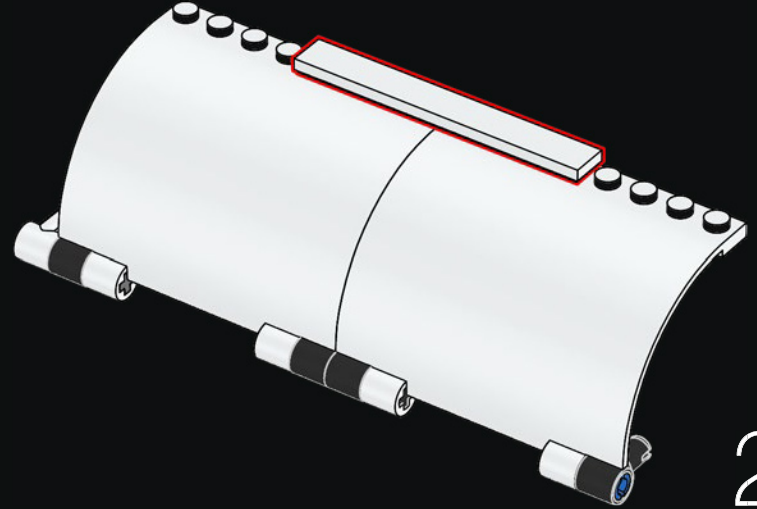
295



296



297

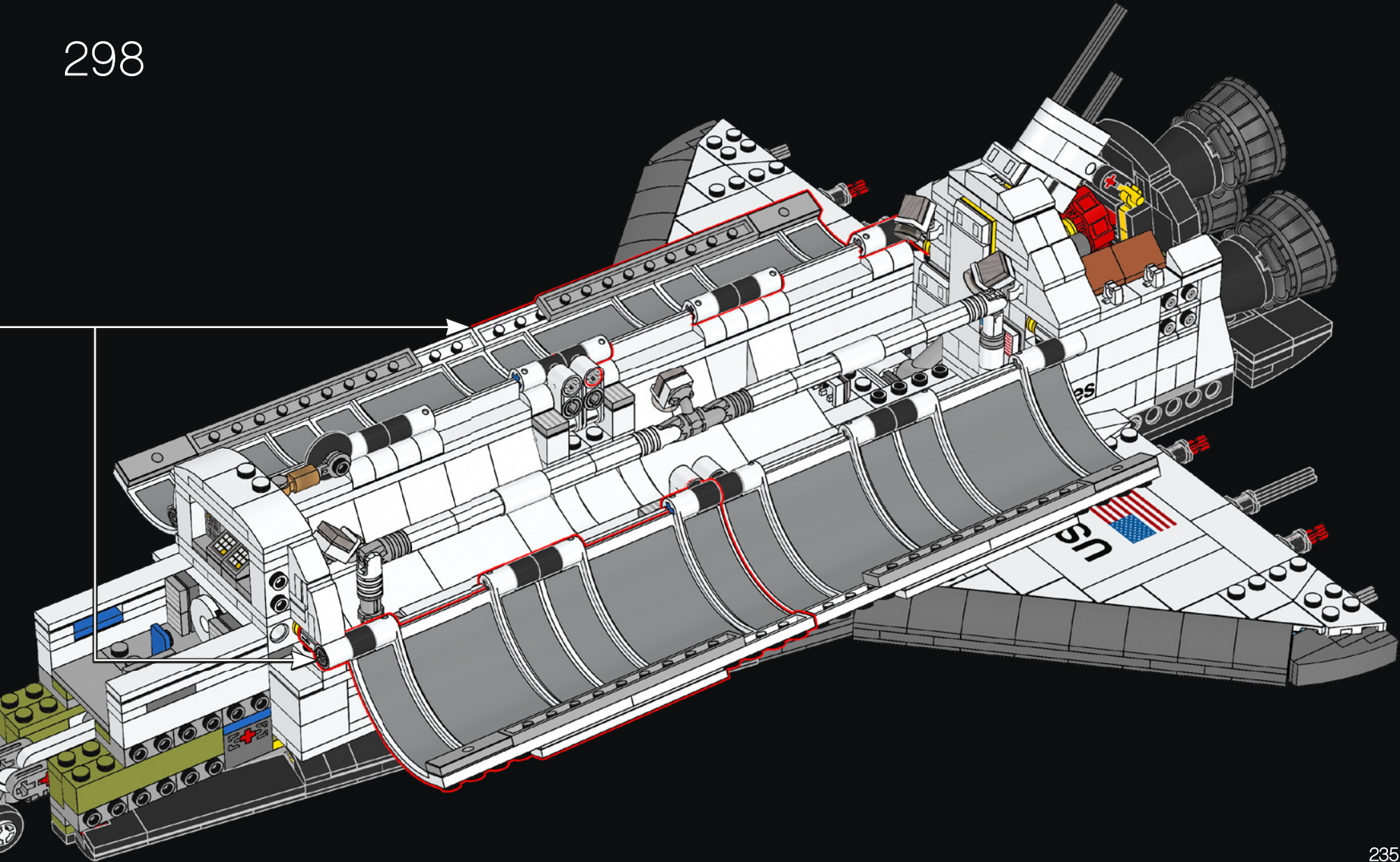


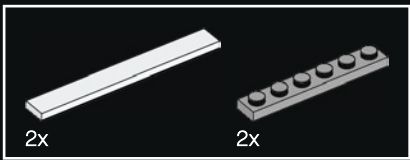
2x

LE SAVIEZ-VOUS ?

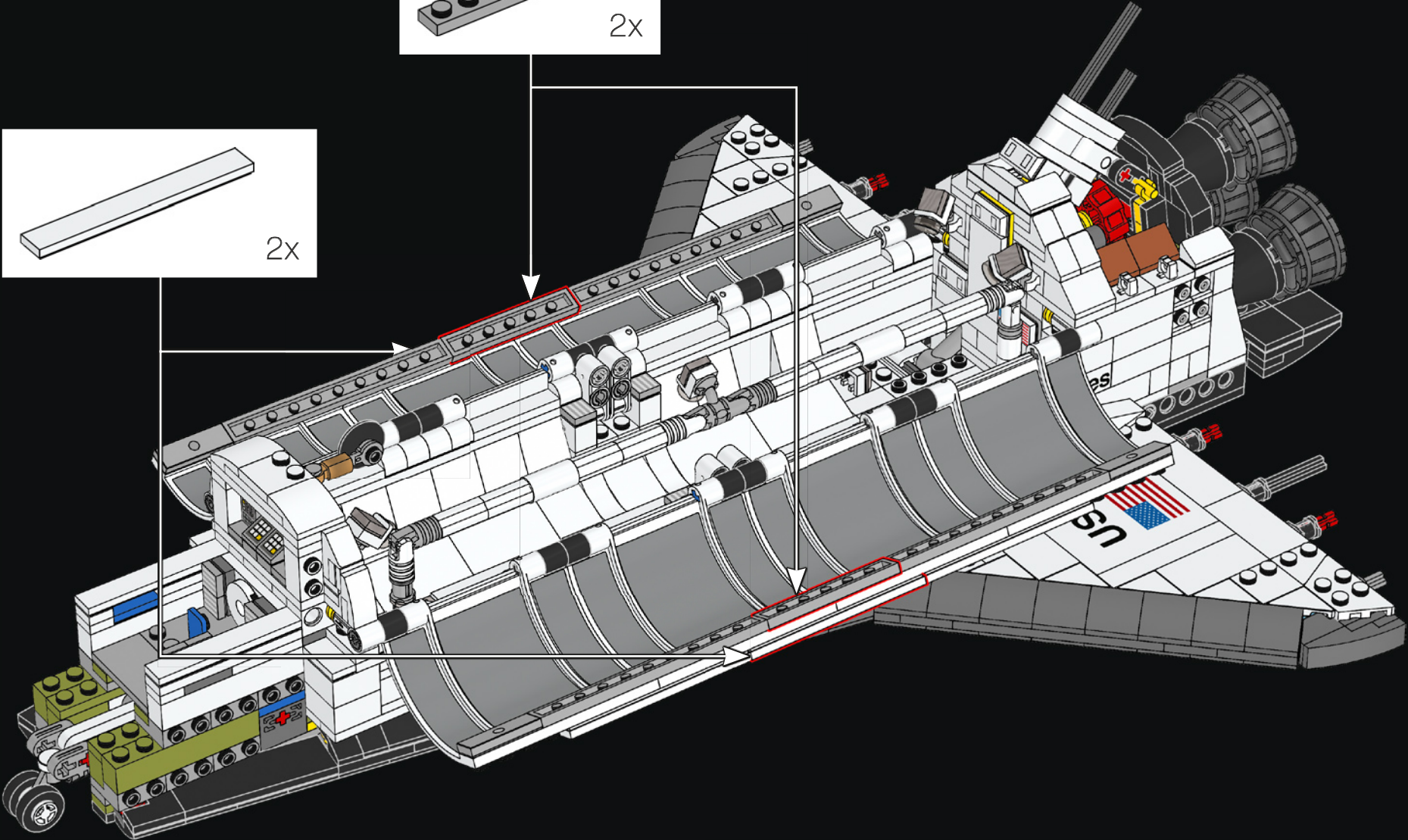
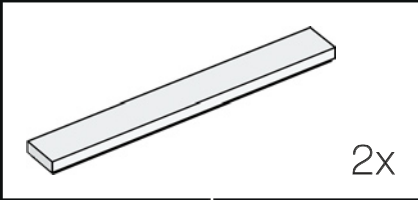
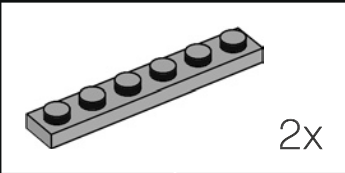
Les portes de la soute de 18,2 m de long sont toujours ouvertes pour activer les radiateurs et refroidir la navette lorsqu'elle atteint l'orbite.

298



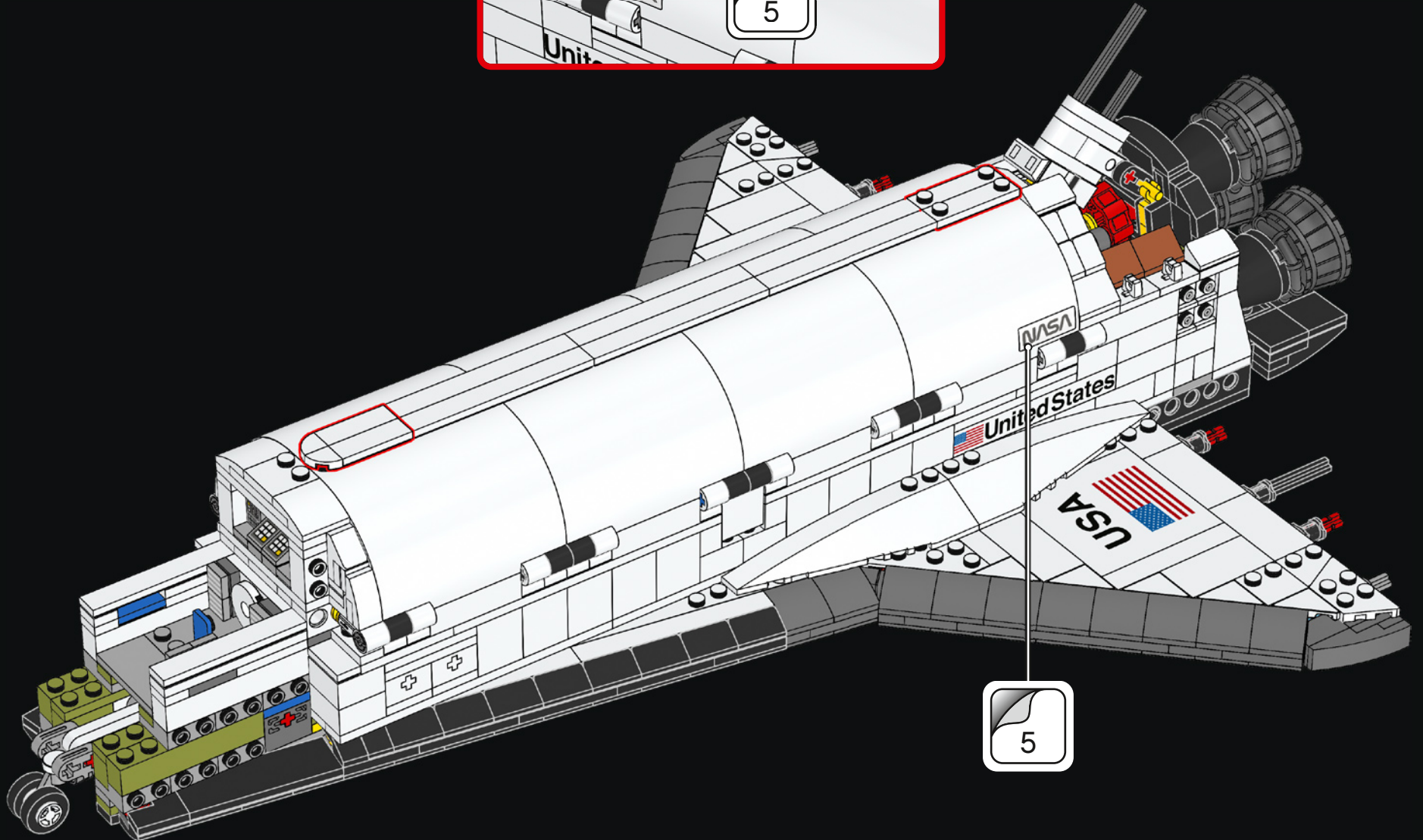
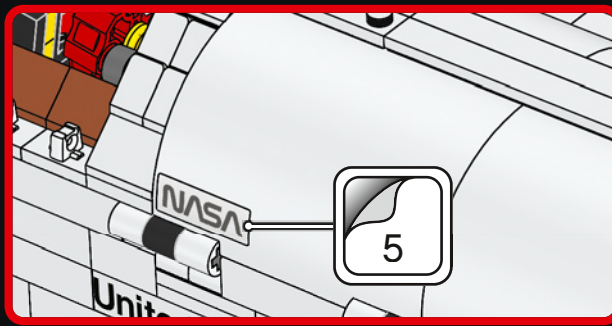


299

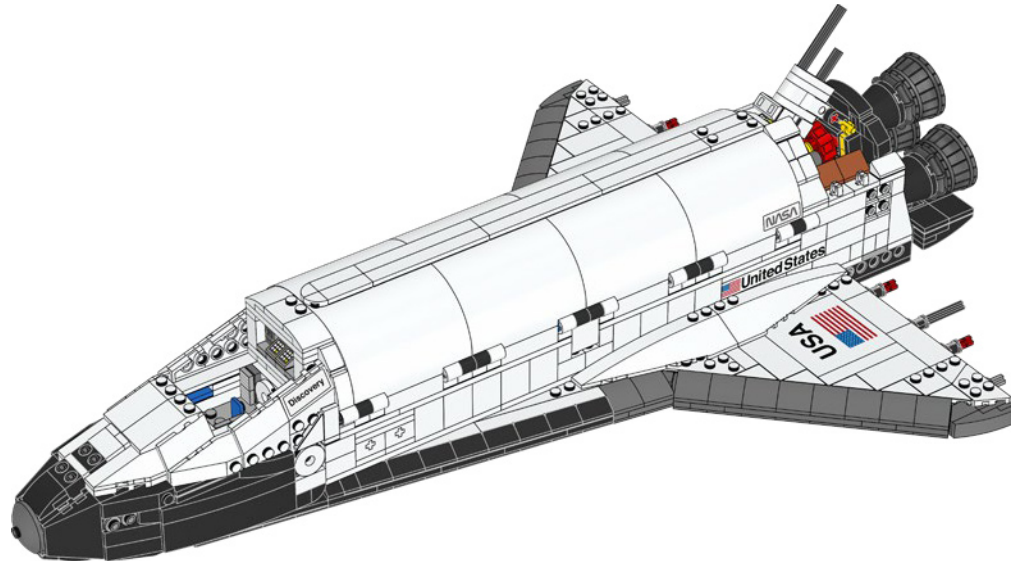


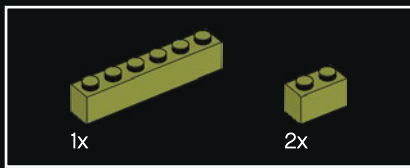


300

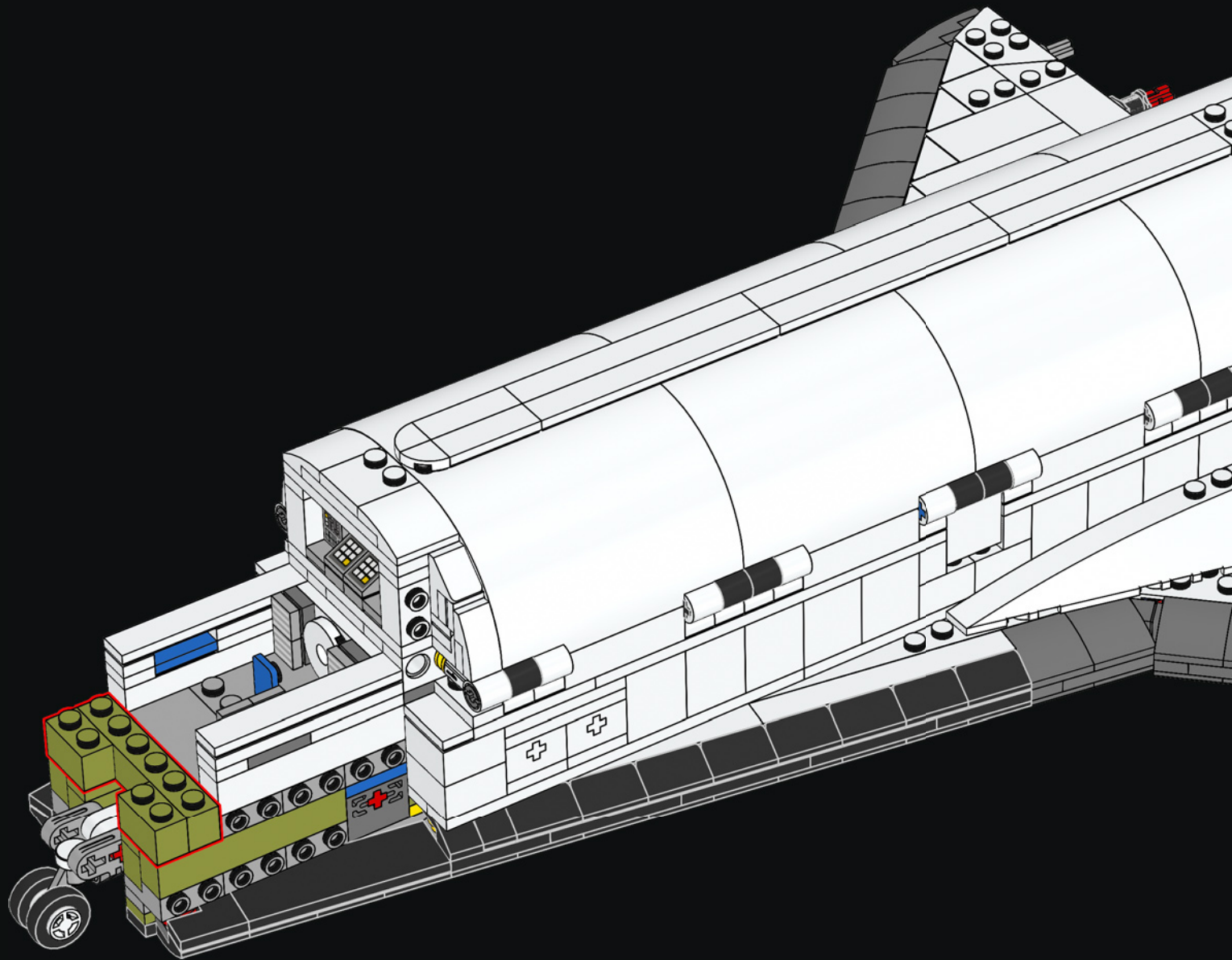


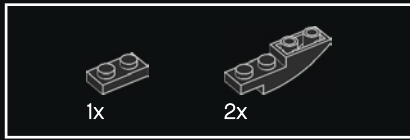
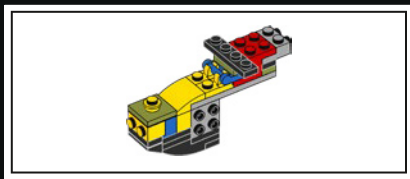
14



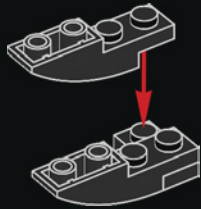


301

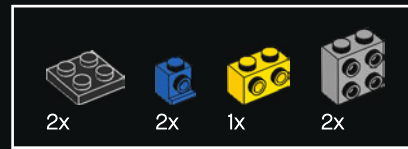
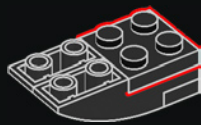




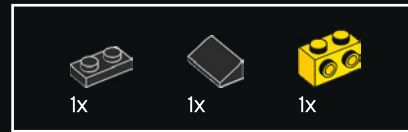
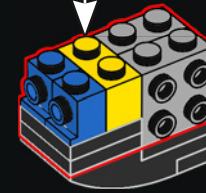
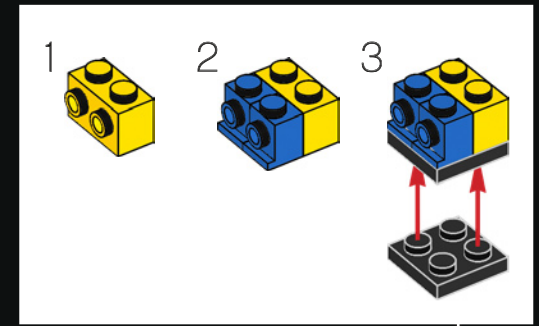
302



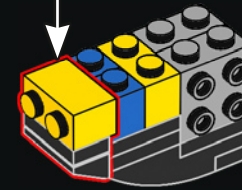
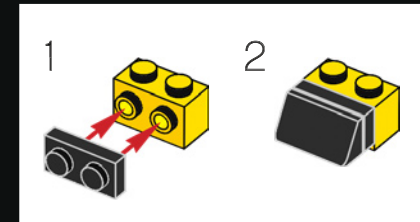
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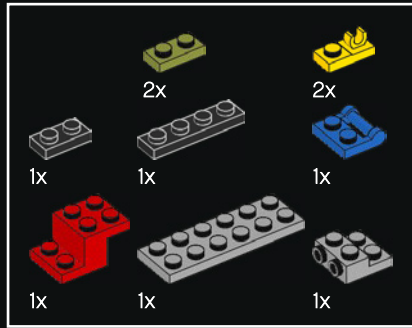


304

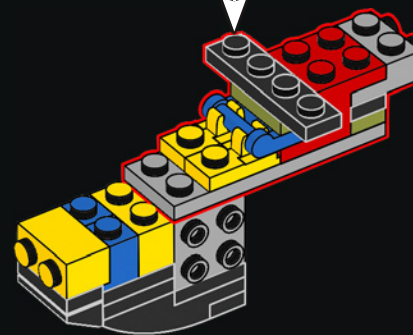
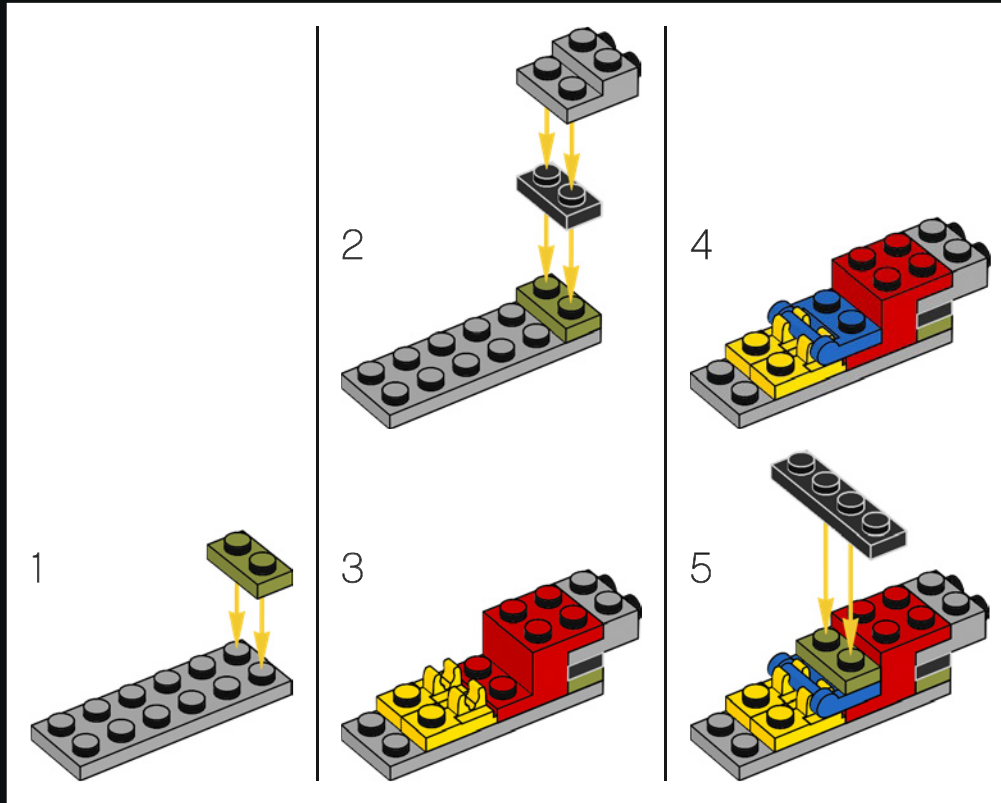


305



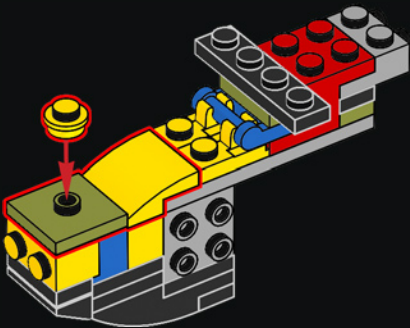


306

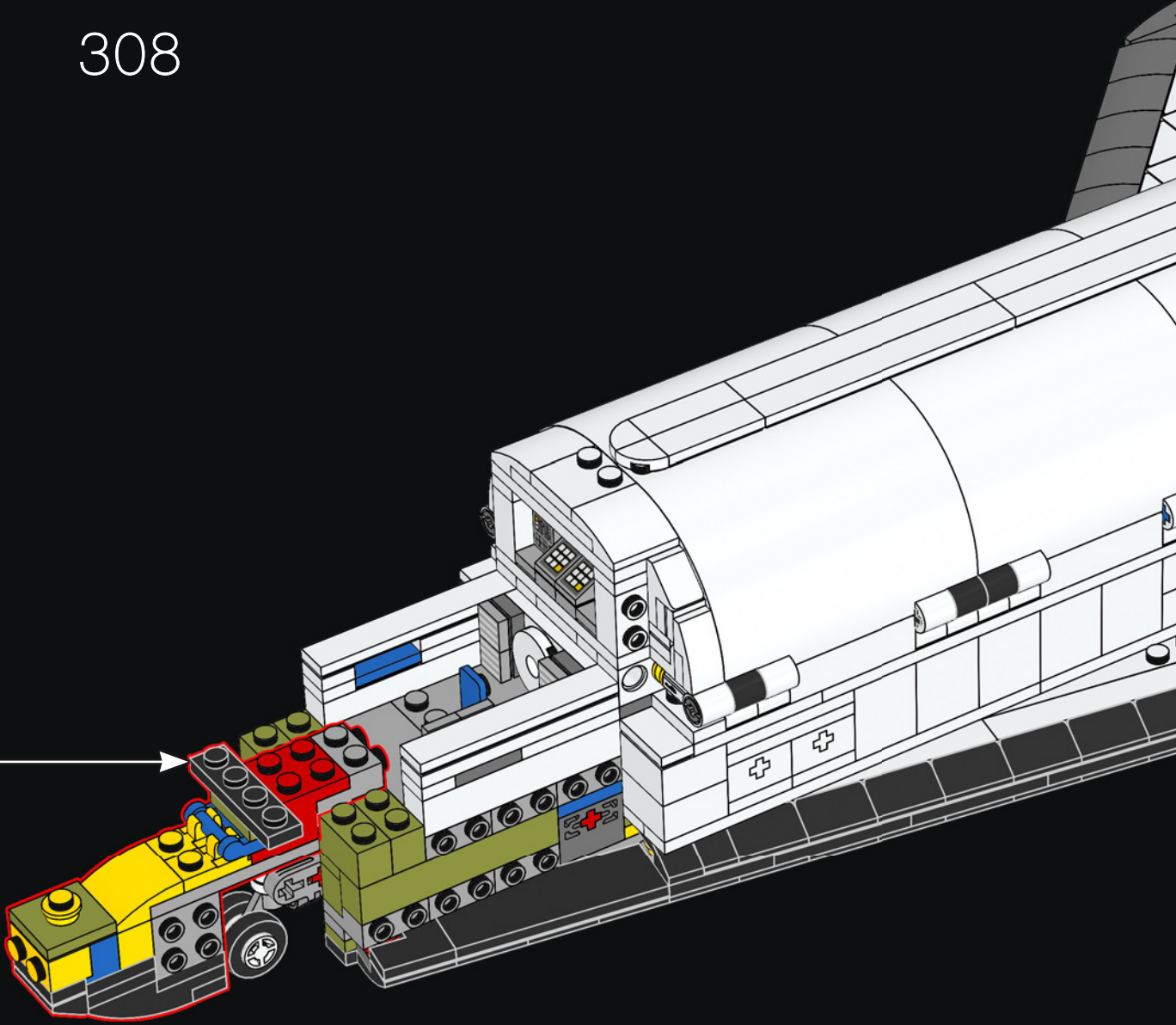


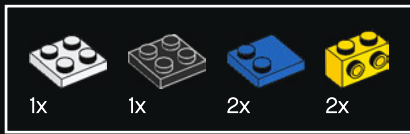


307

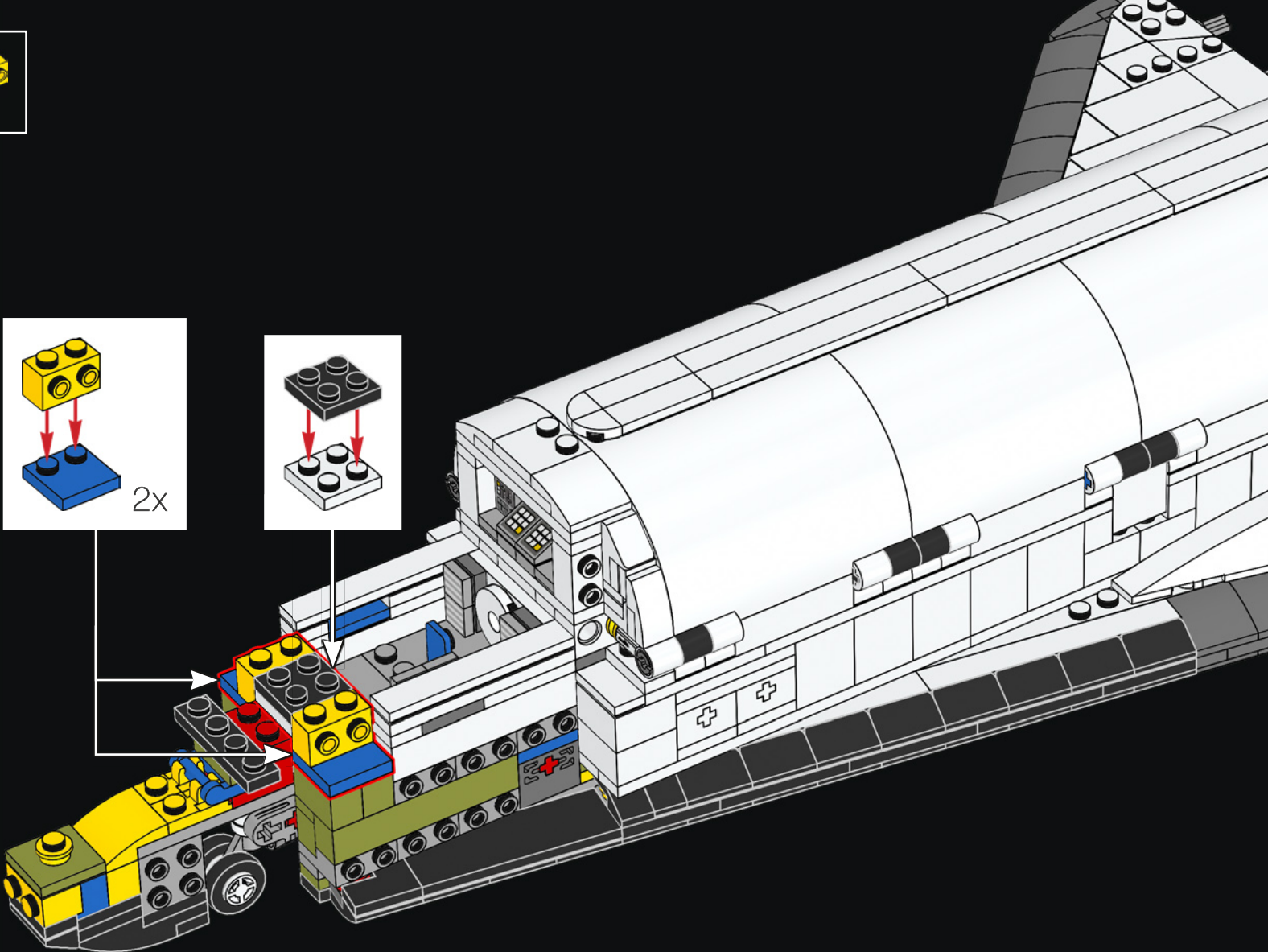
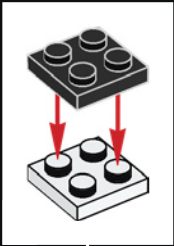
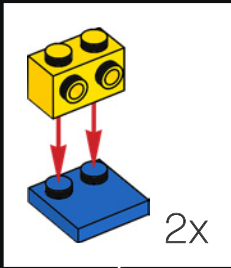


308



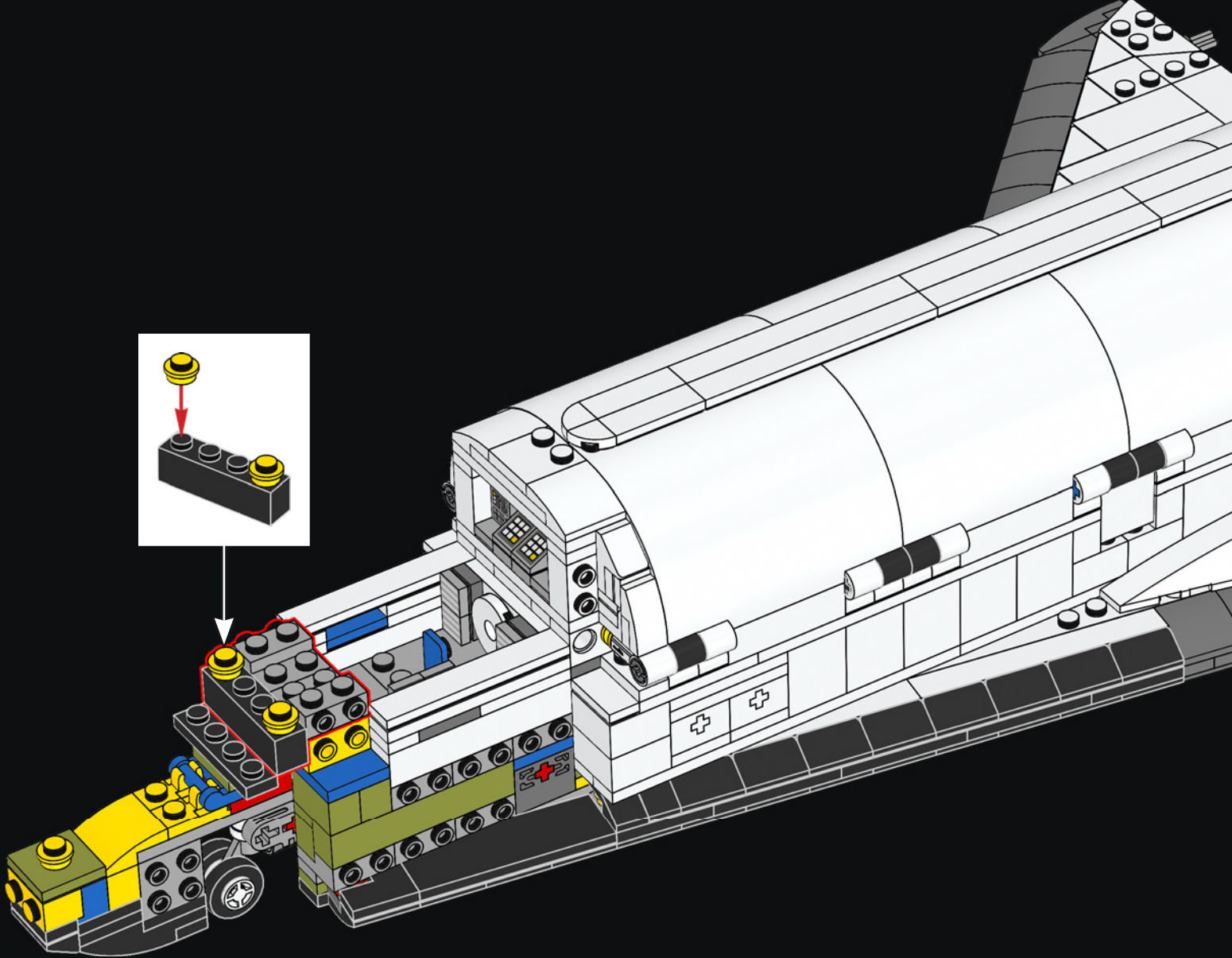
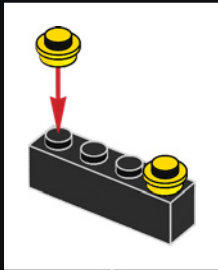


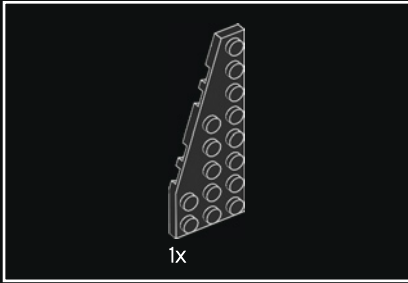
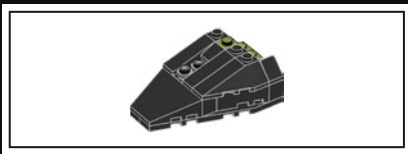
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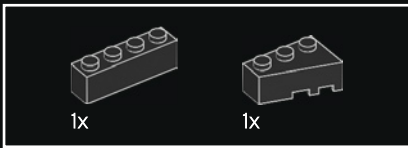
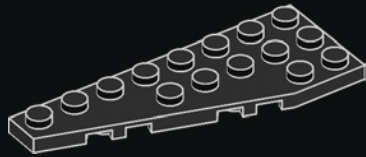


310

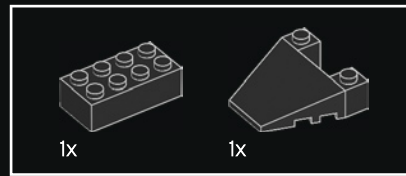
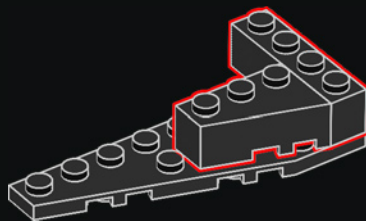




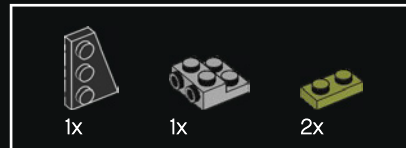
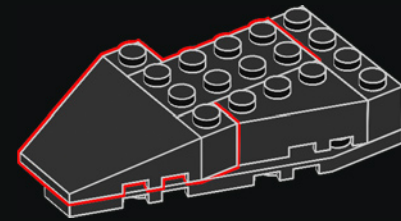
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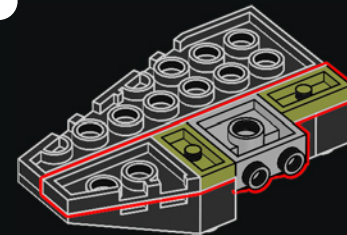
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313

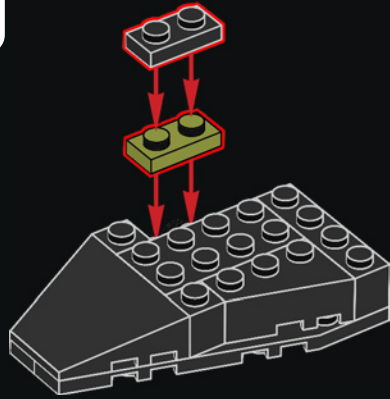


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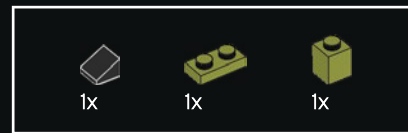
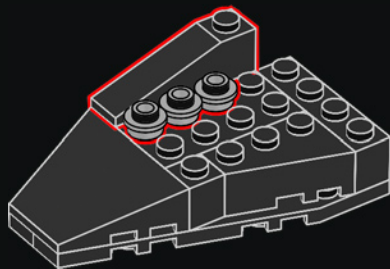




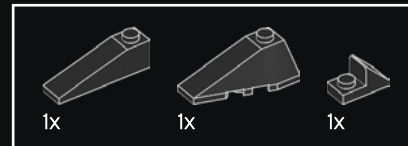
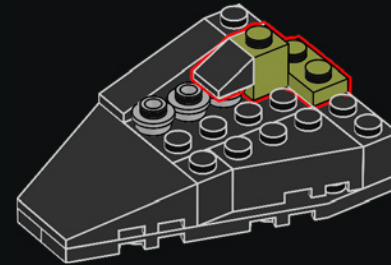
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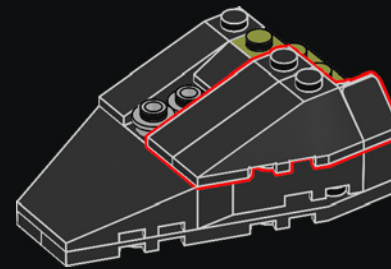
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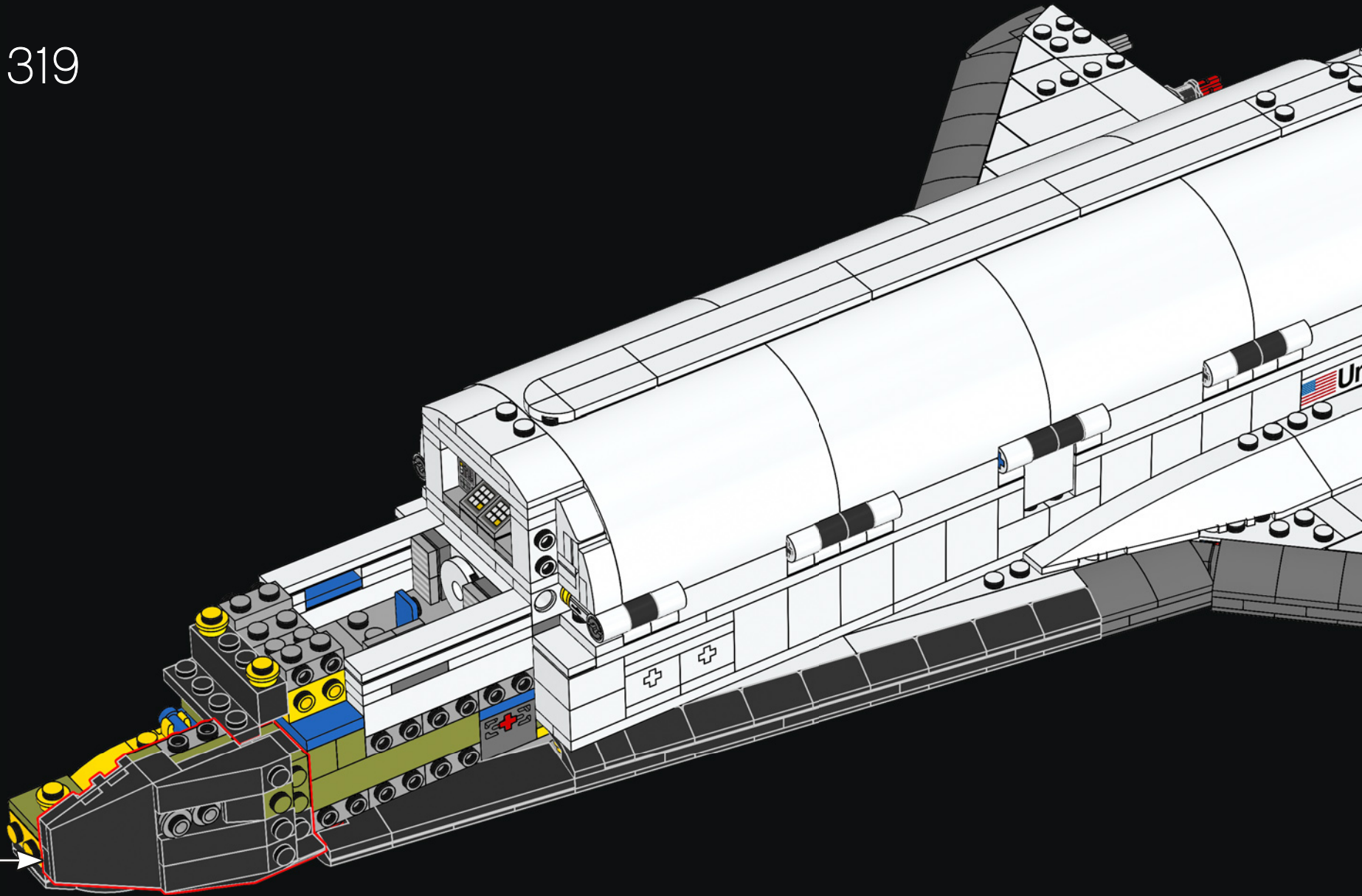
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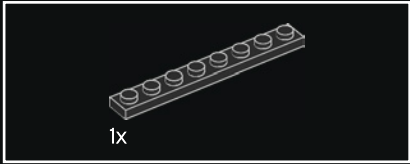
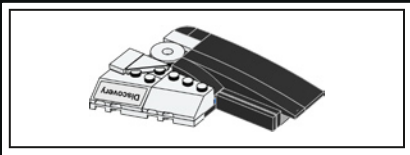


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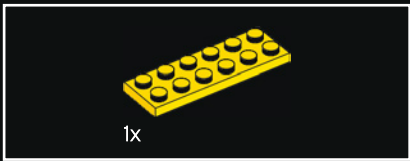
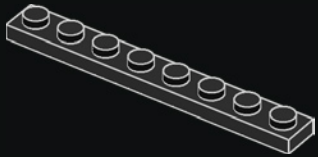


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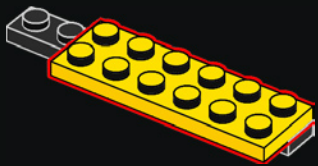




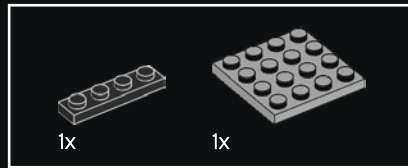
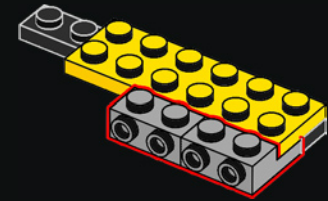
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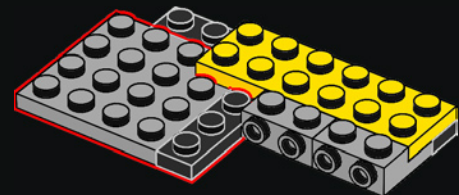
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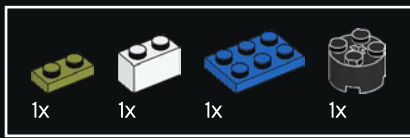


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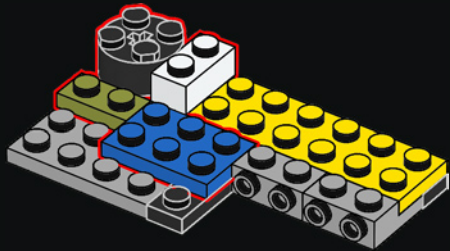


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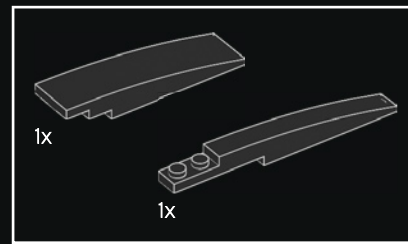
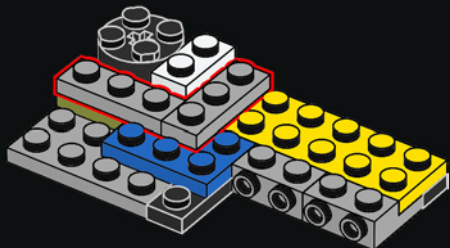




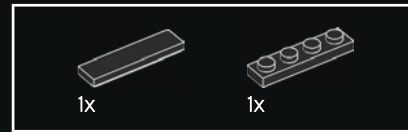
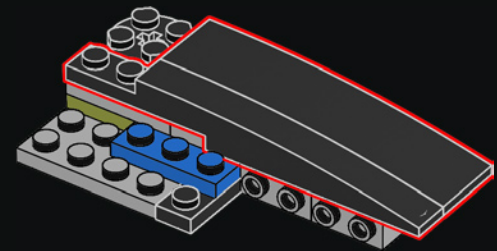
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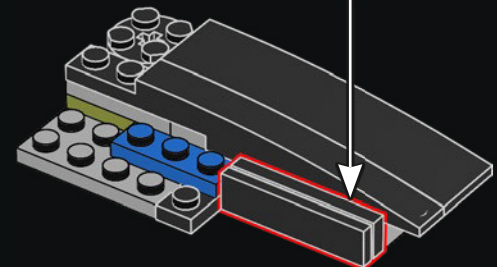
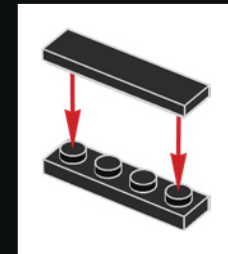
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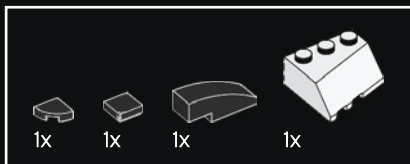
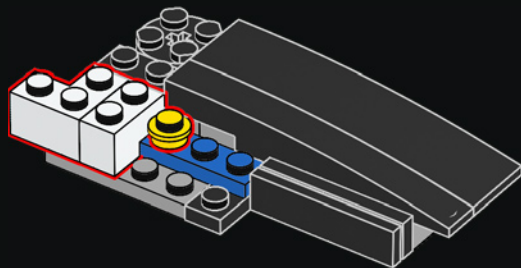


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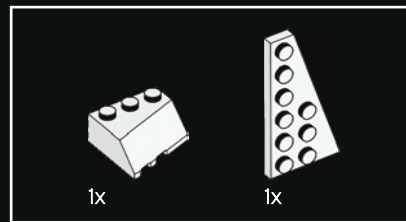
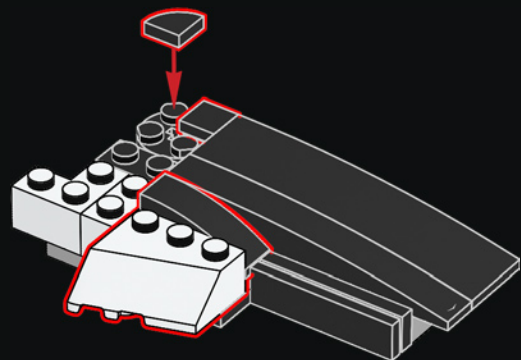




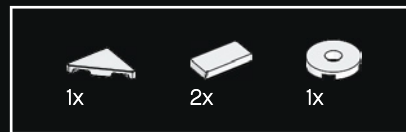
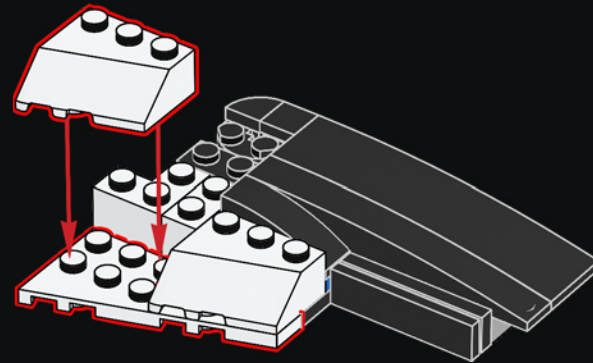
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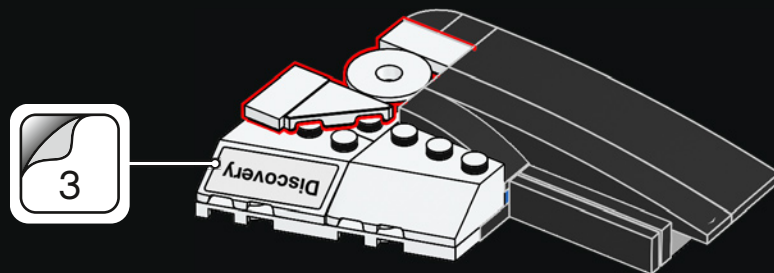
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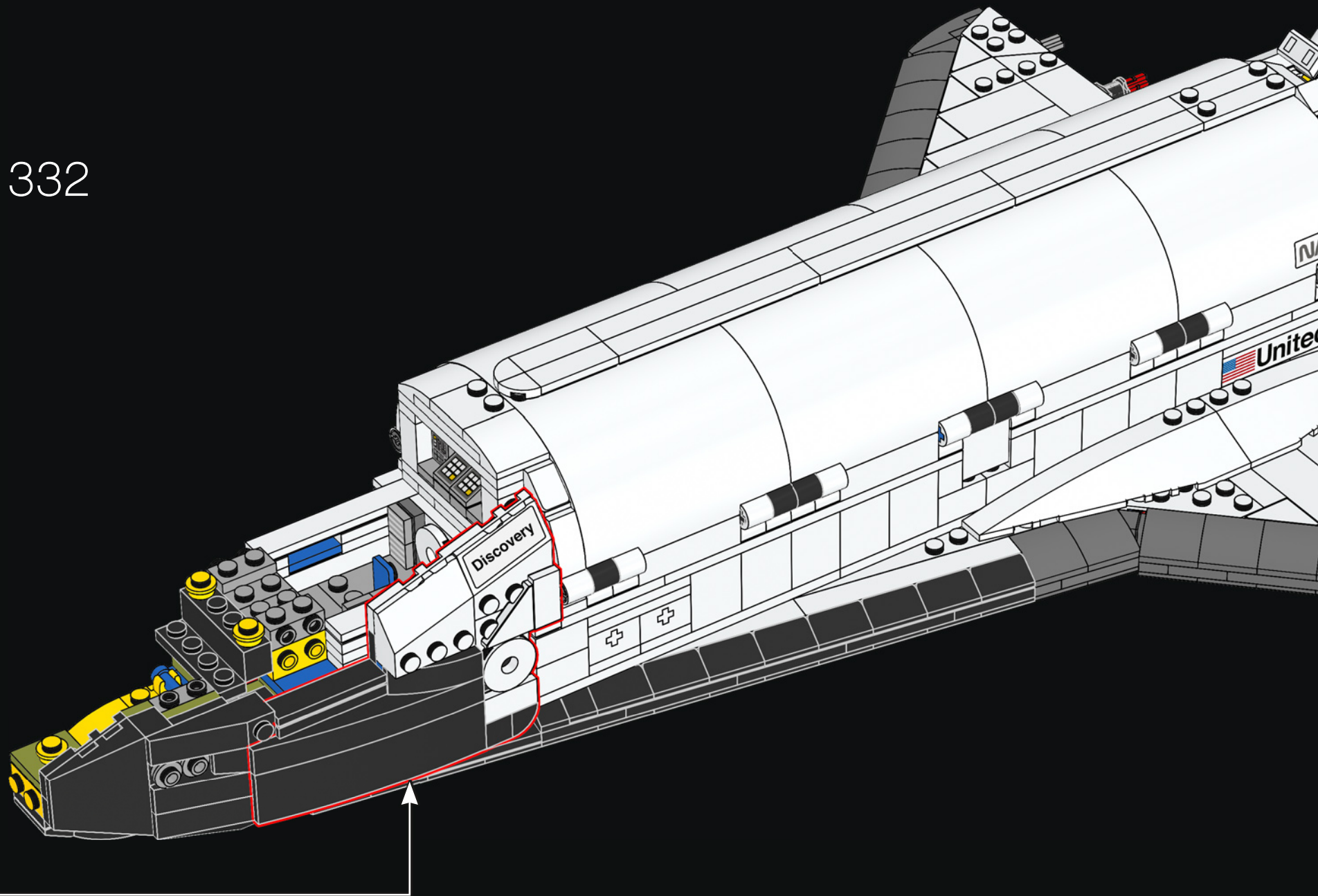
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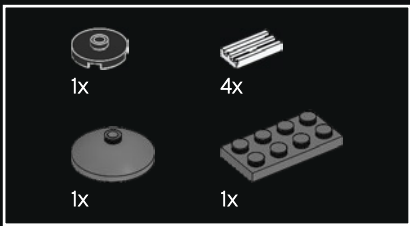


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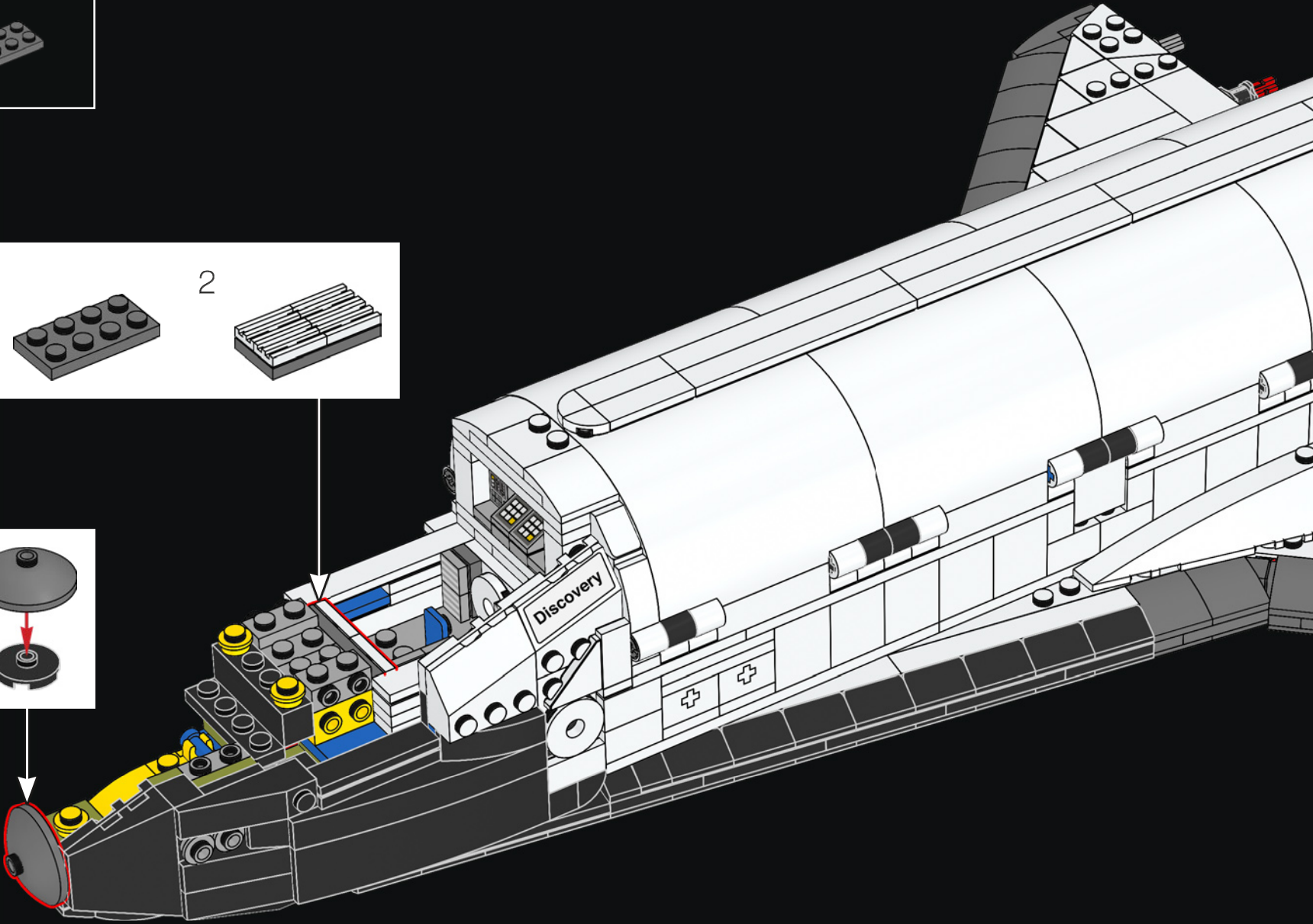
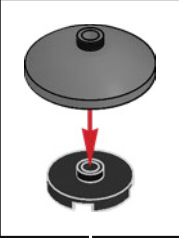
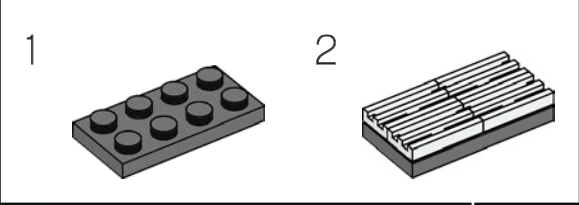


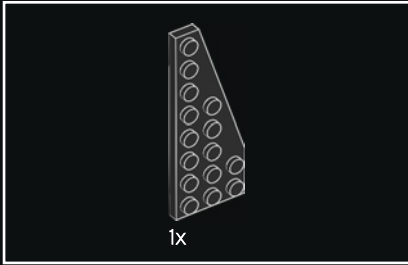
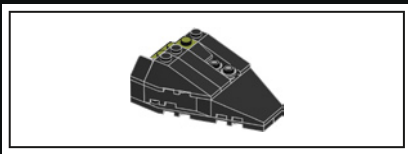
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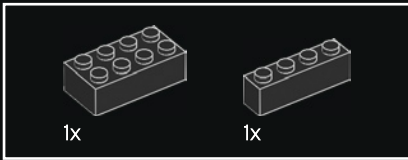
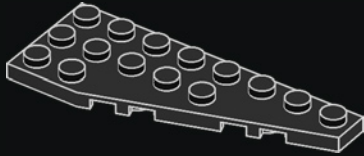


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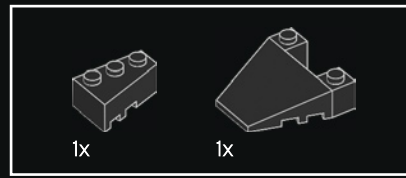
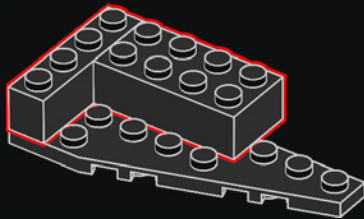




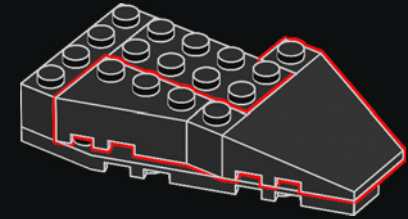
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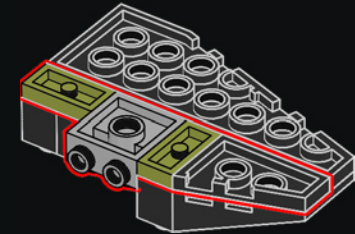
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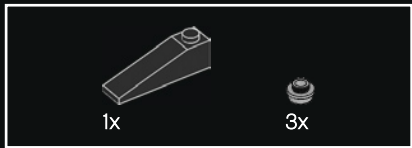
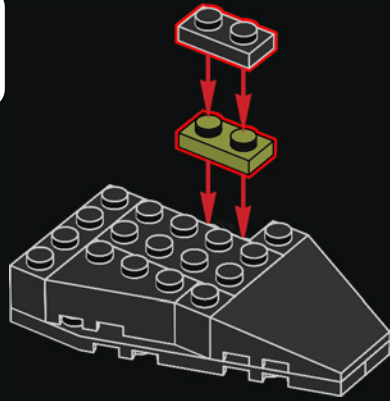


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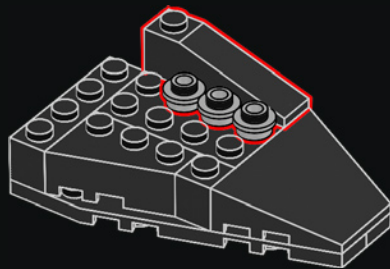




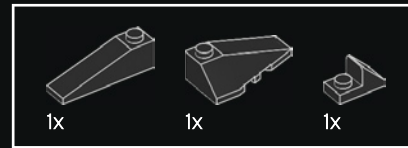
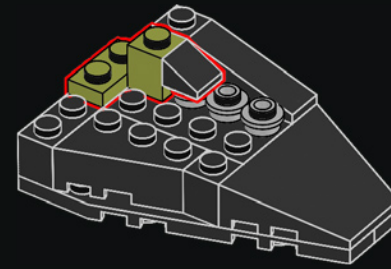
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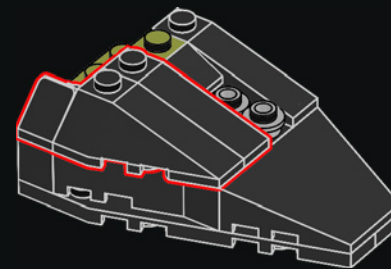
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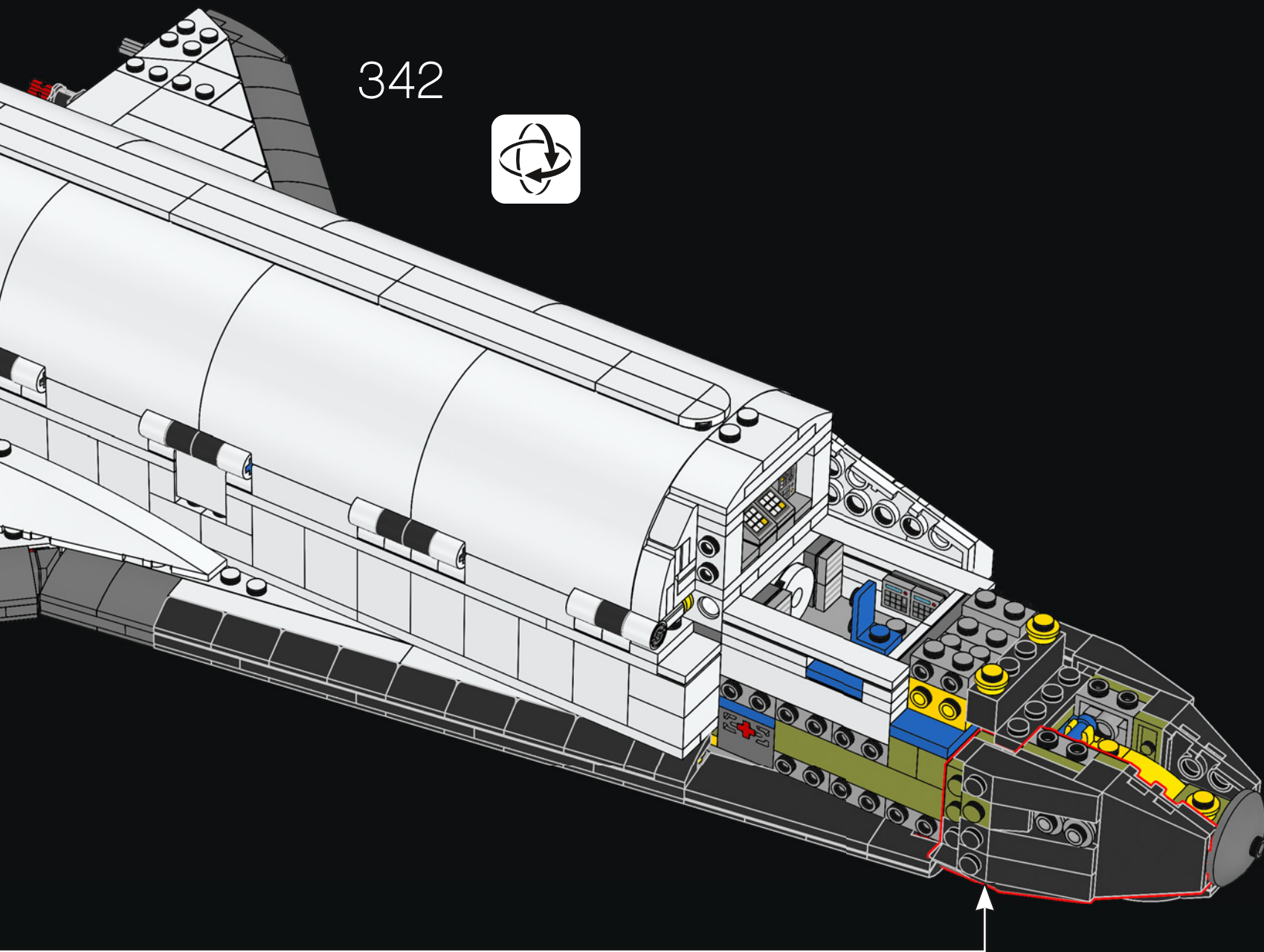
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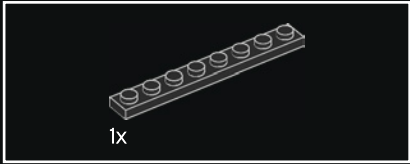
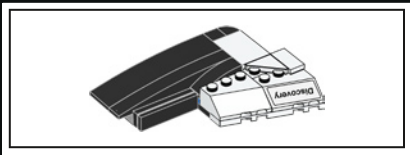


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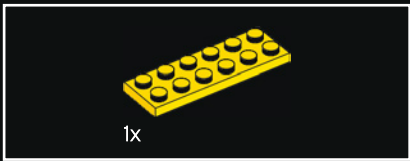
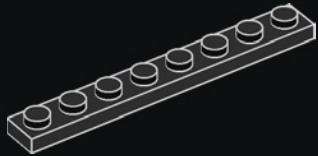


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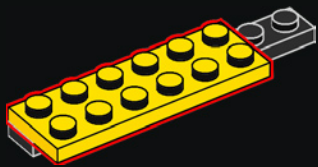




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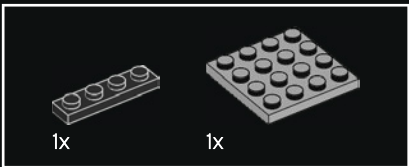
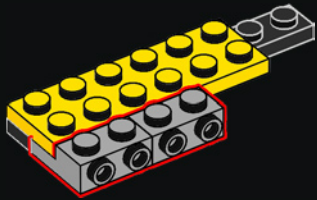


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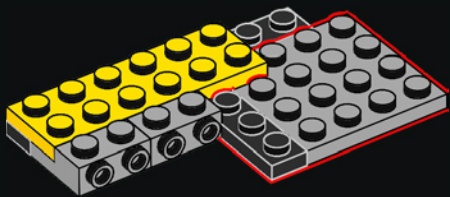
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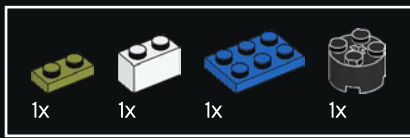


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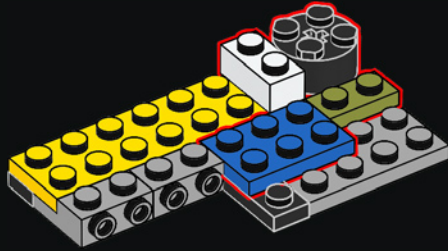
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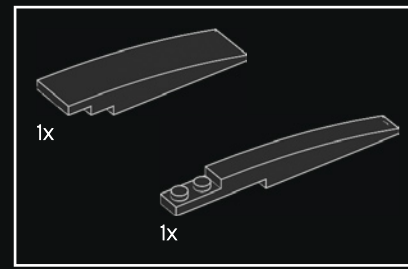
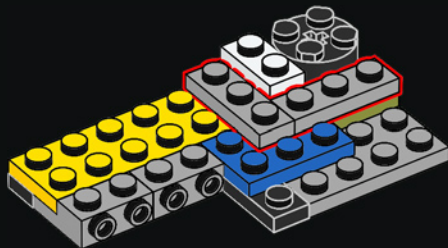




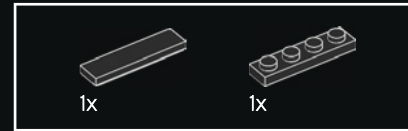
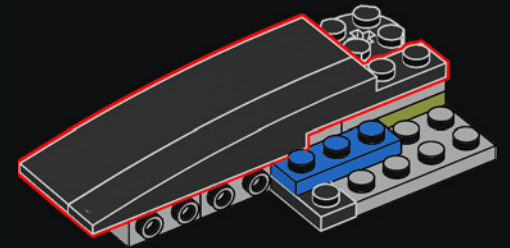
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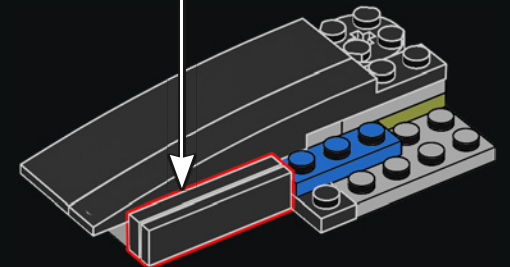
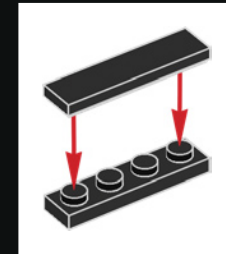
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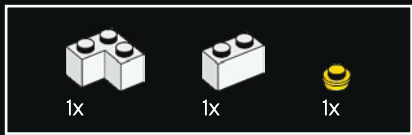


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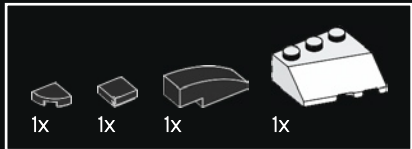
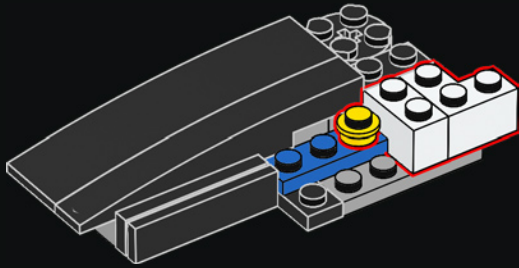


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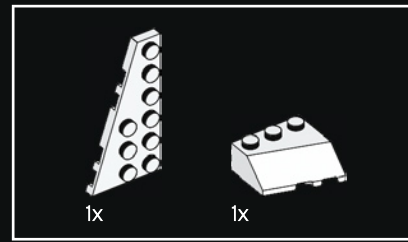
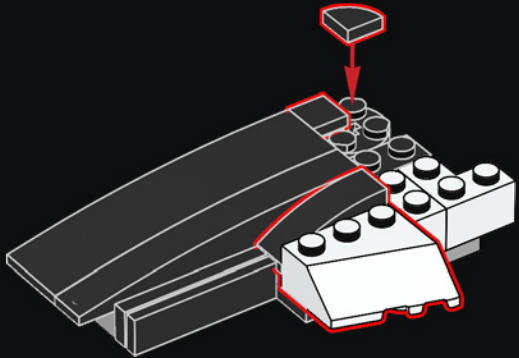




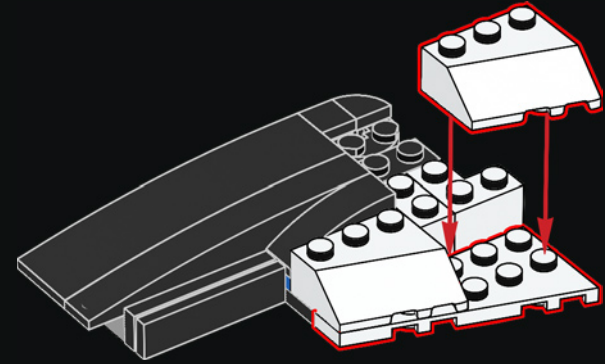
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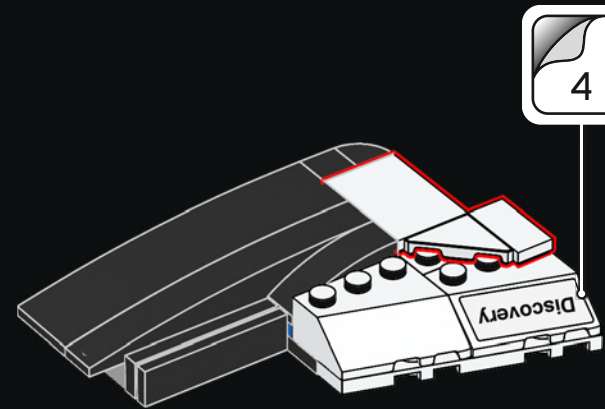
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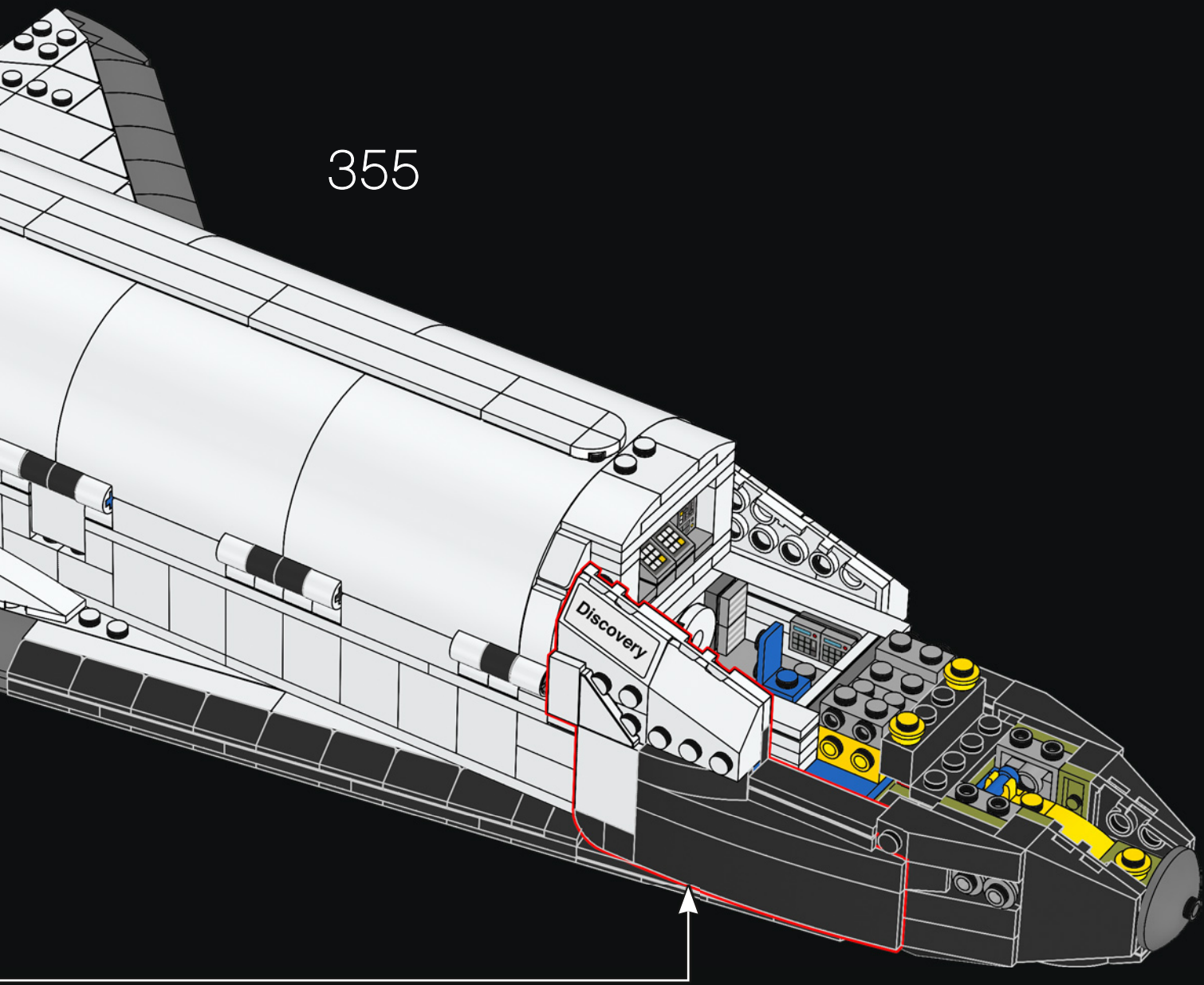


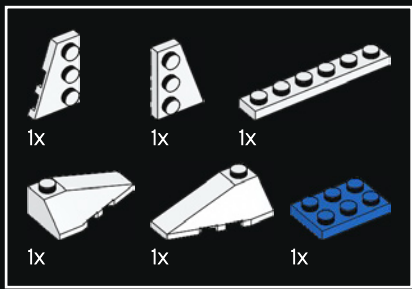
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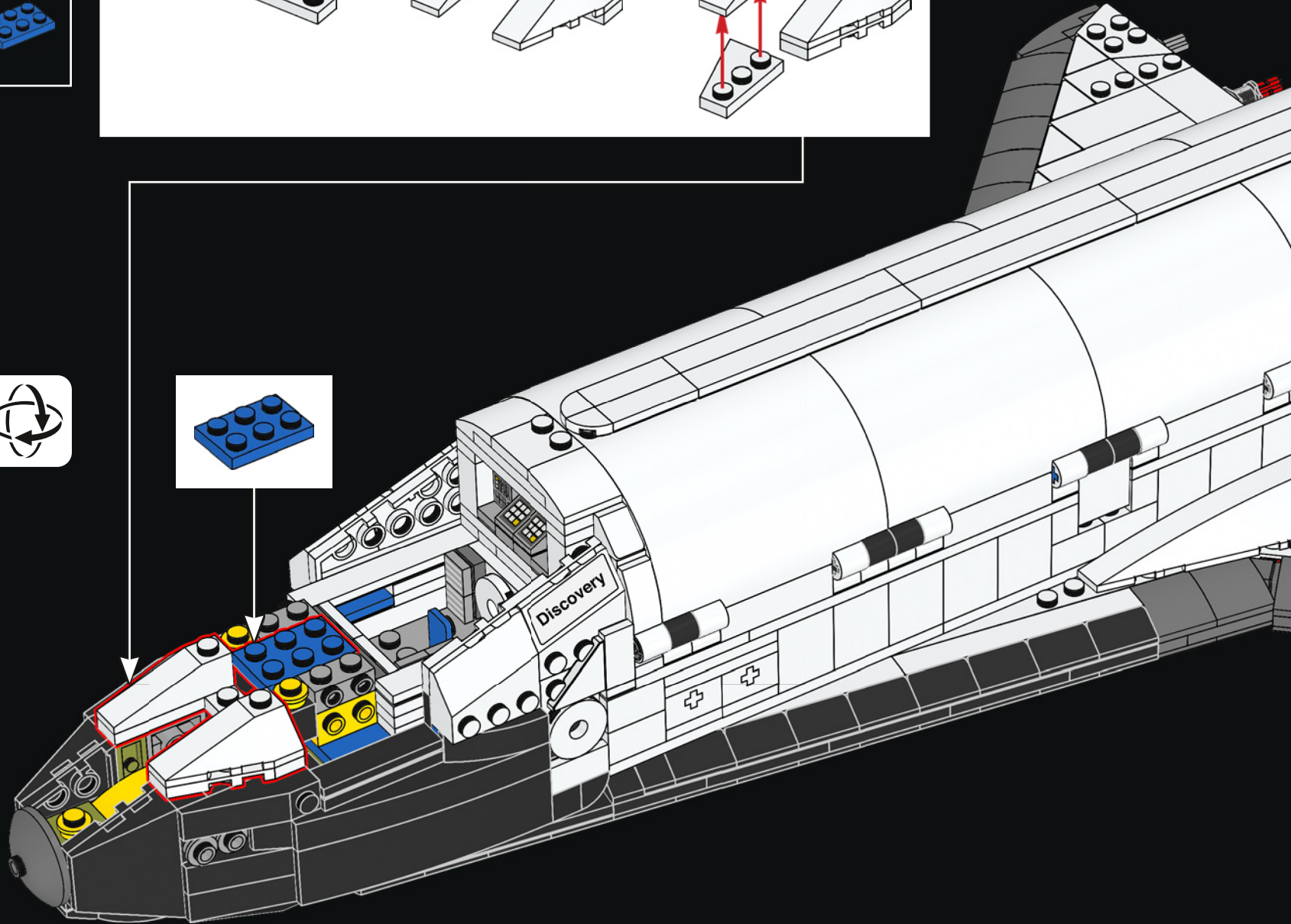
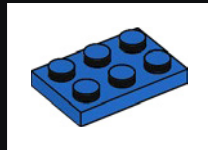
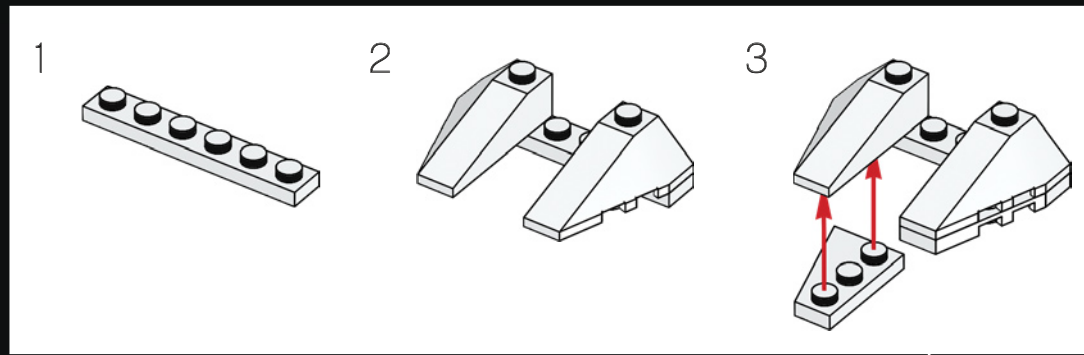
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355



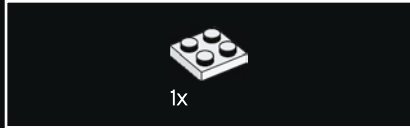
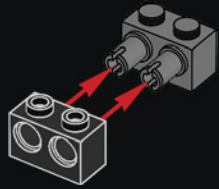


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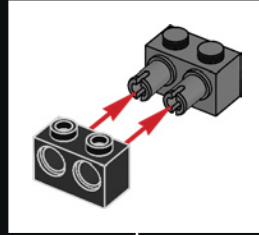
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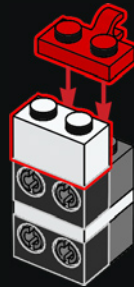
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359



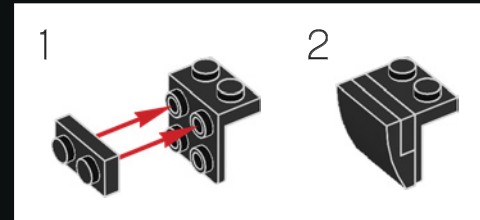
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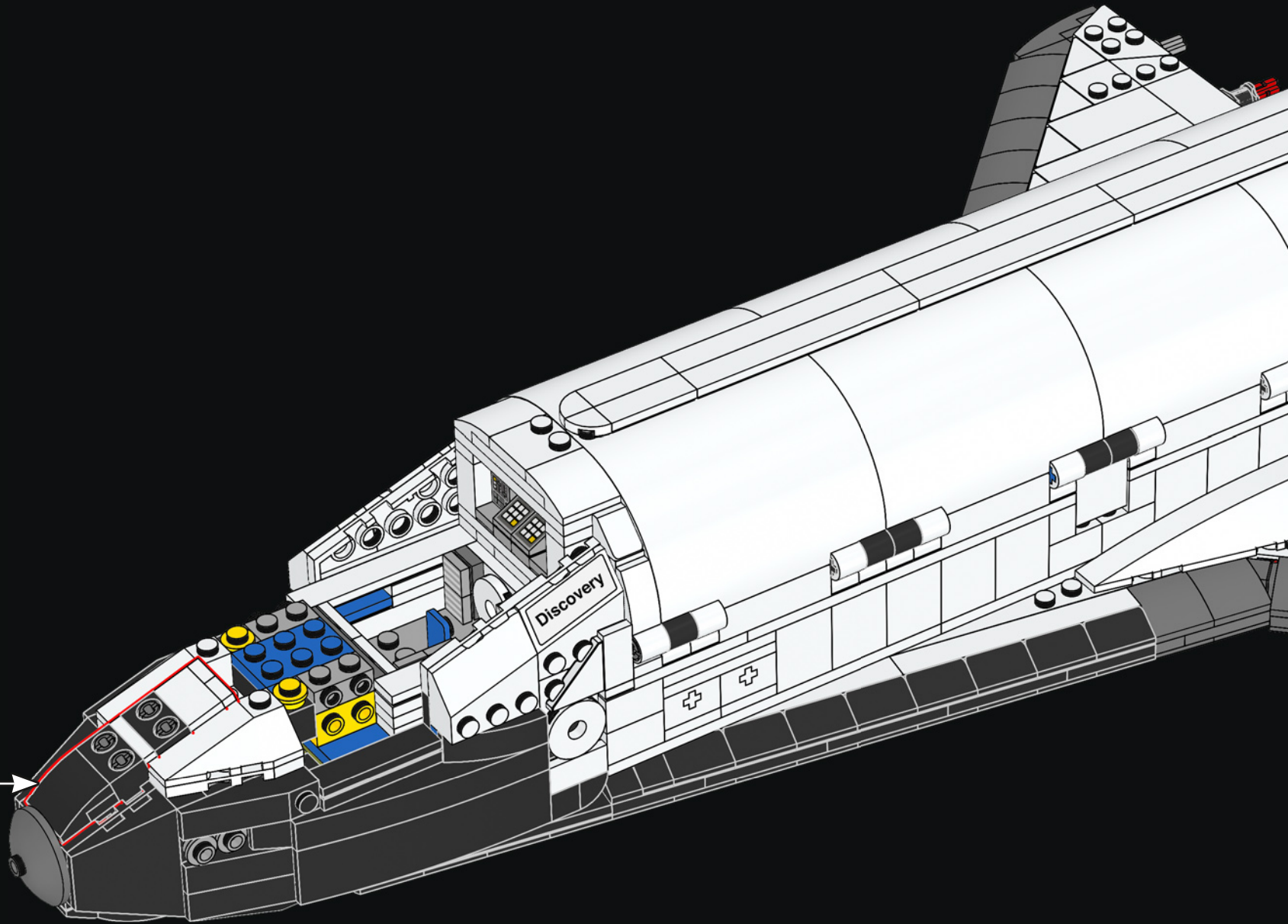
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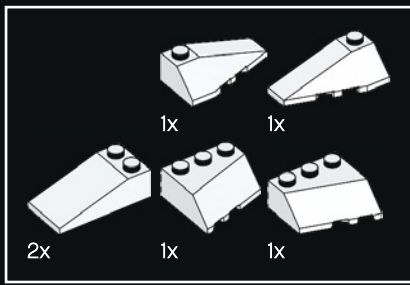


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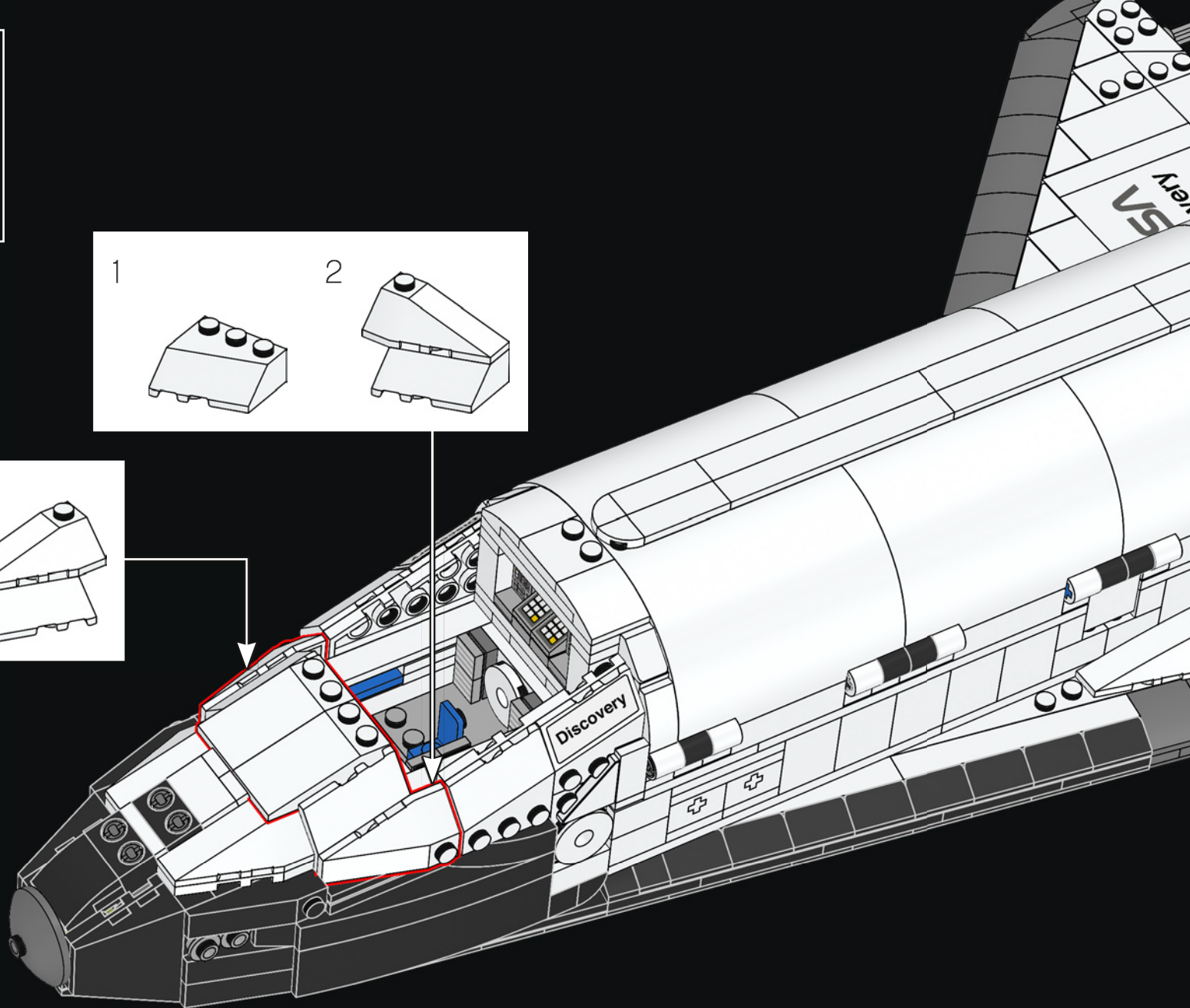
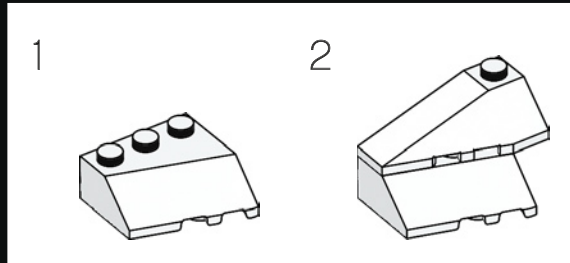
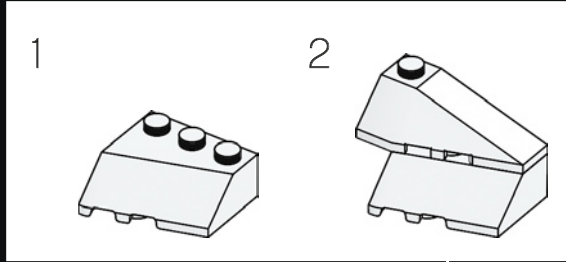


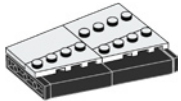
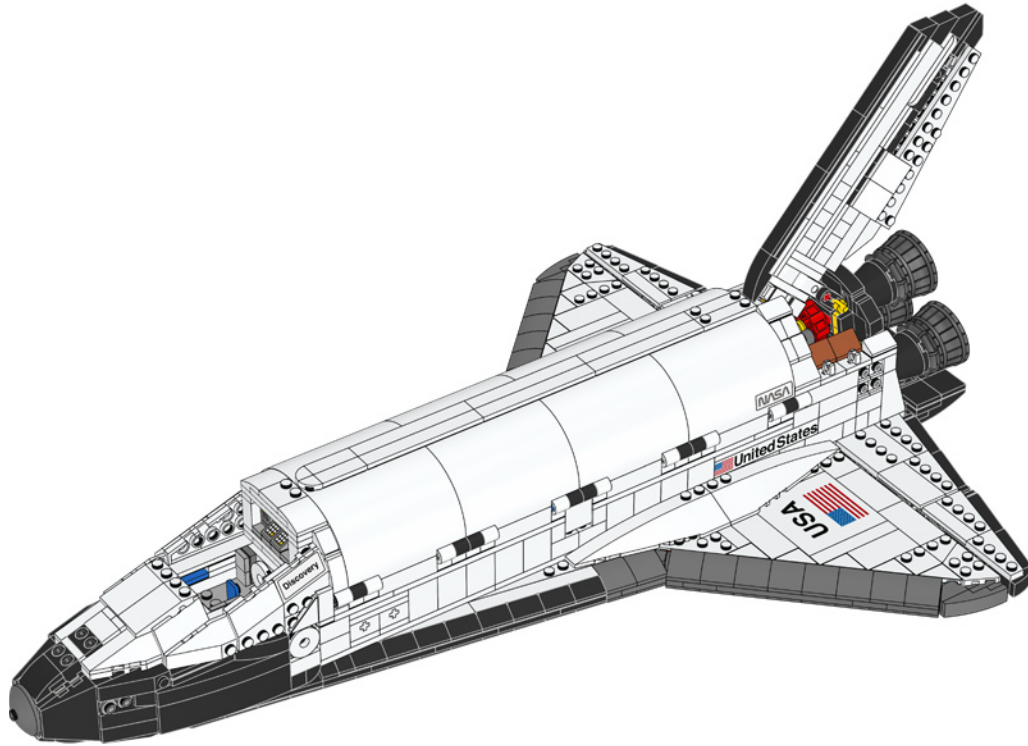
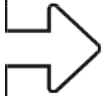
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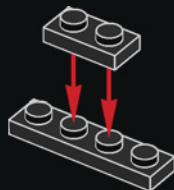


1x



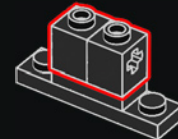
1x

365



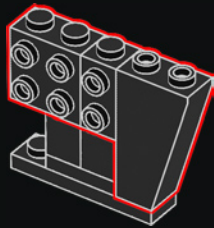
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366

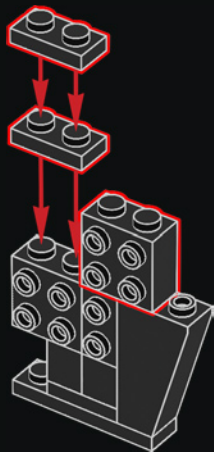




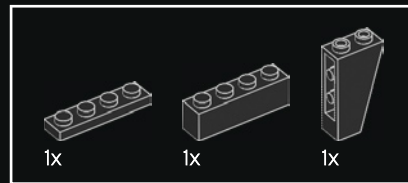
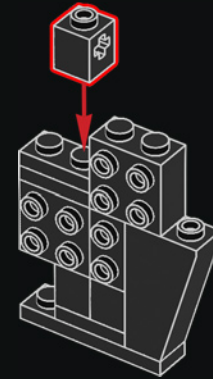
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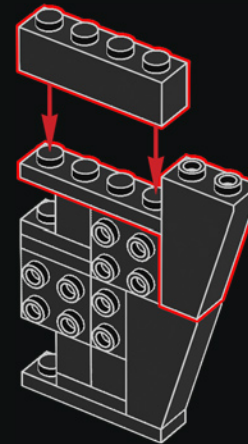
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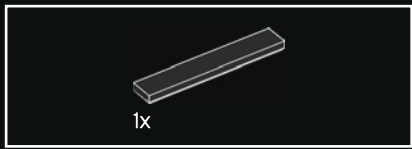


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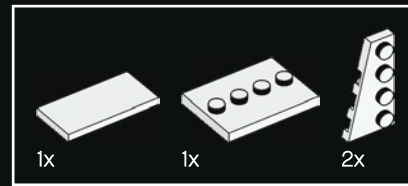
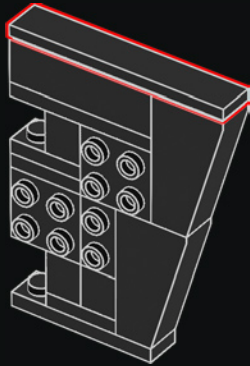


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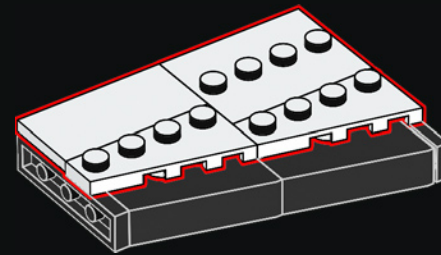




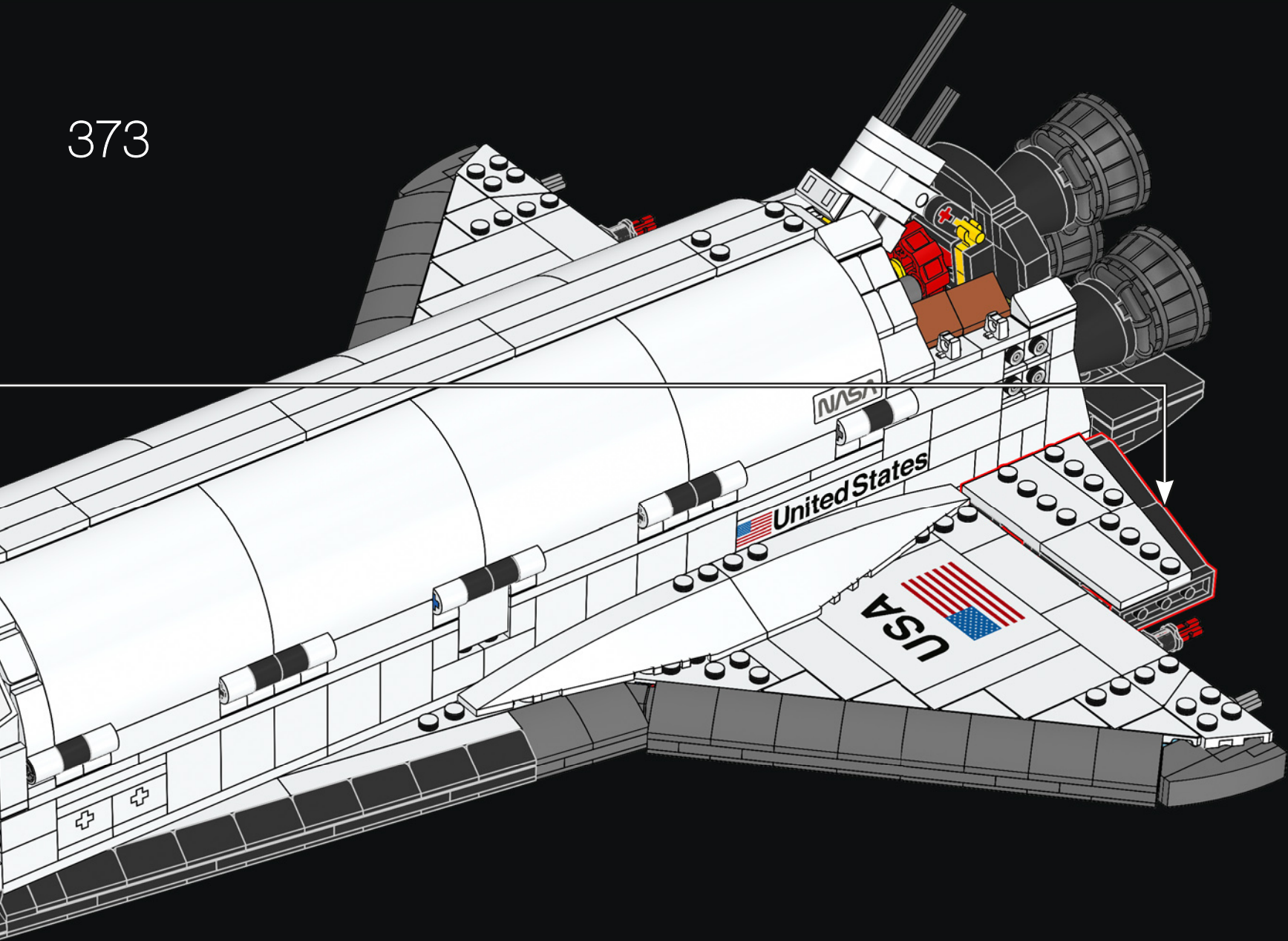
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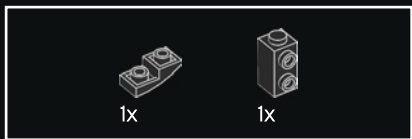


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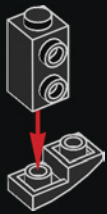


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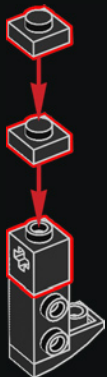




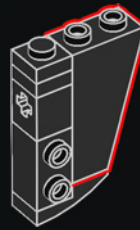
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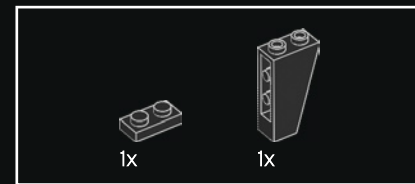
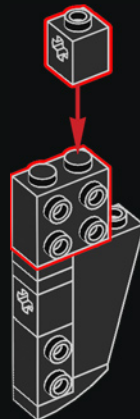
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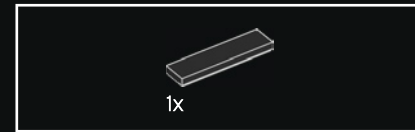
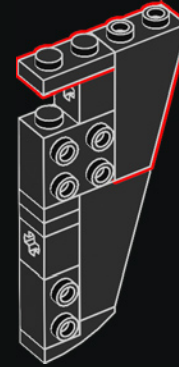
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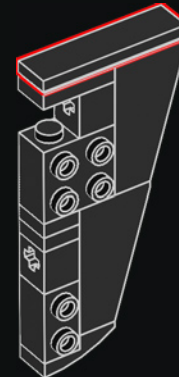
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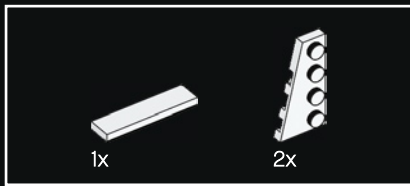


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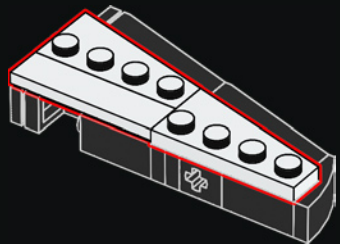


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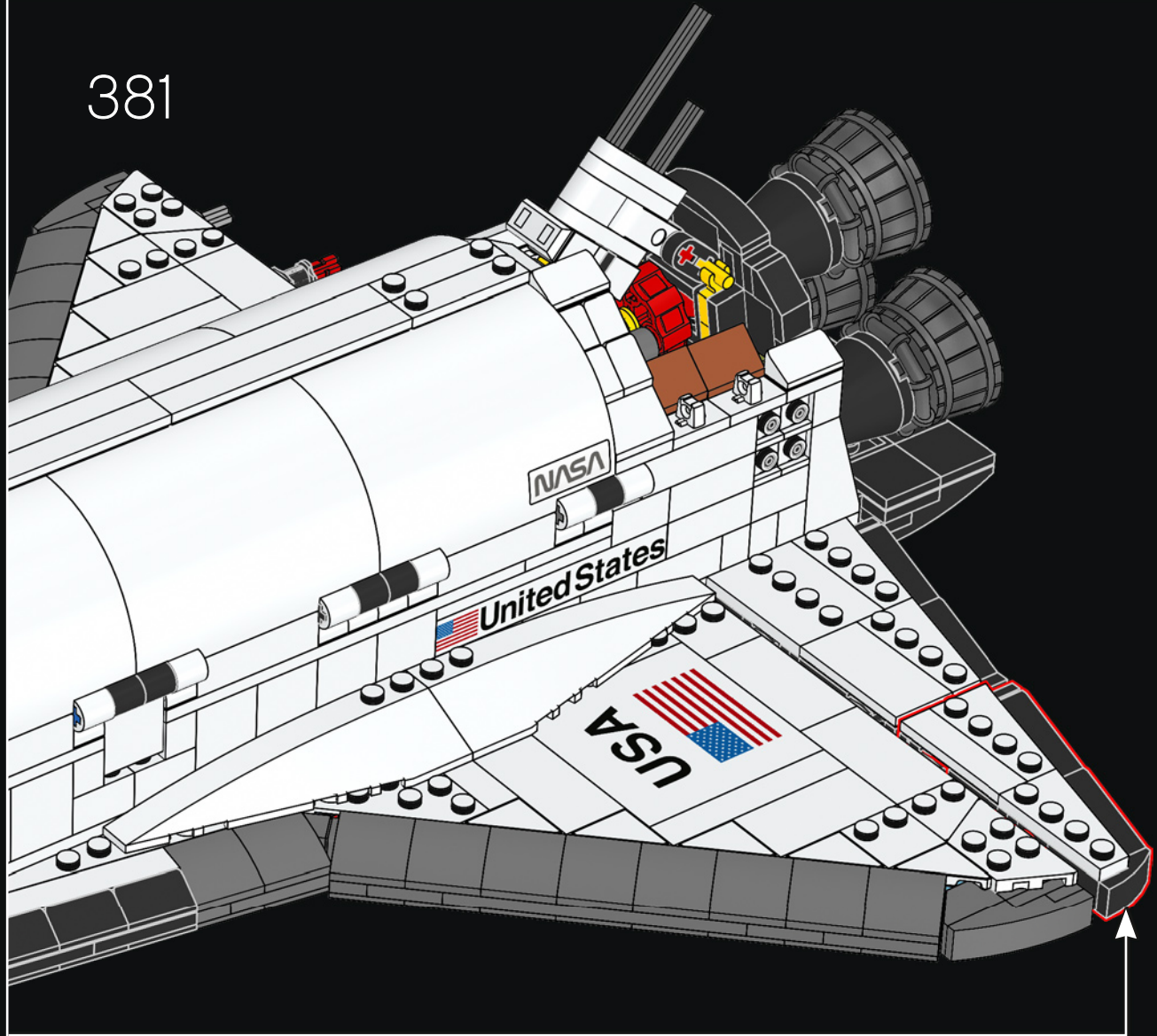


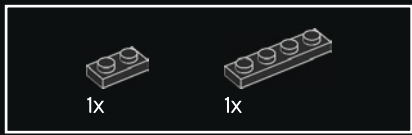


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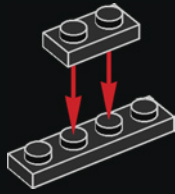


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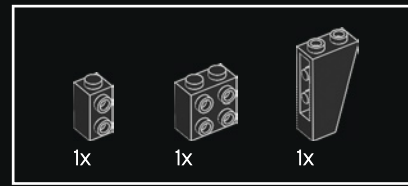
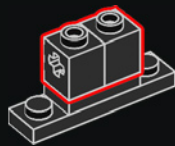




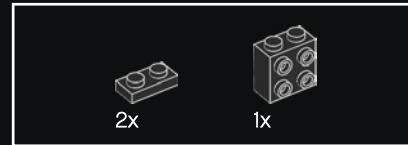
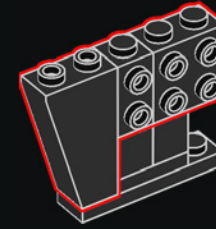
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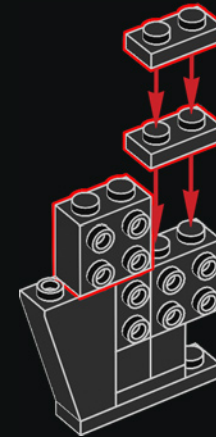
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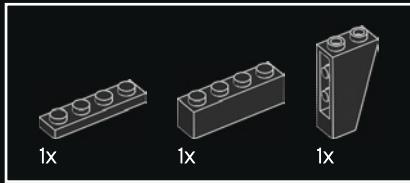
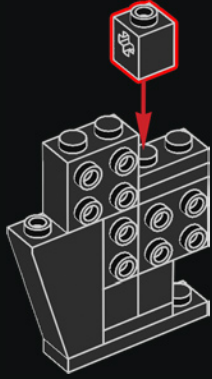


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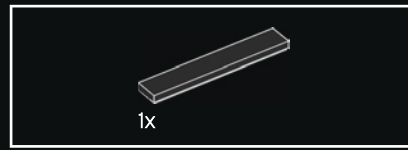
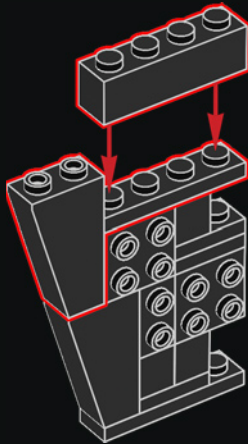




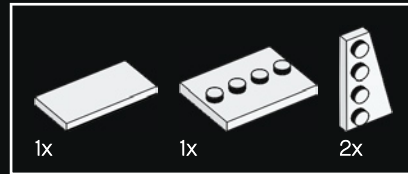
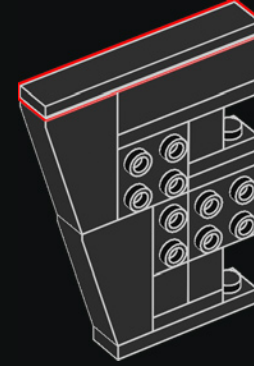
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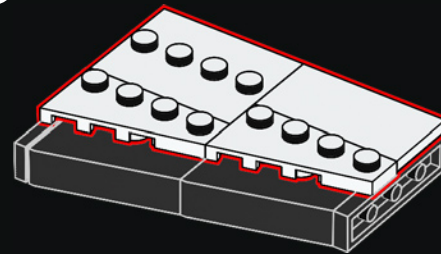
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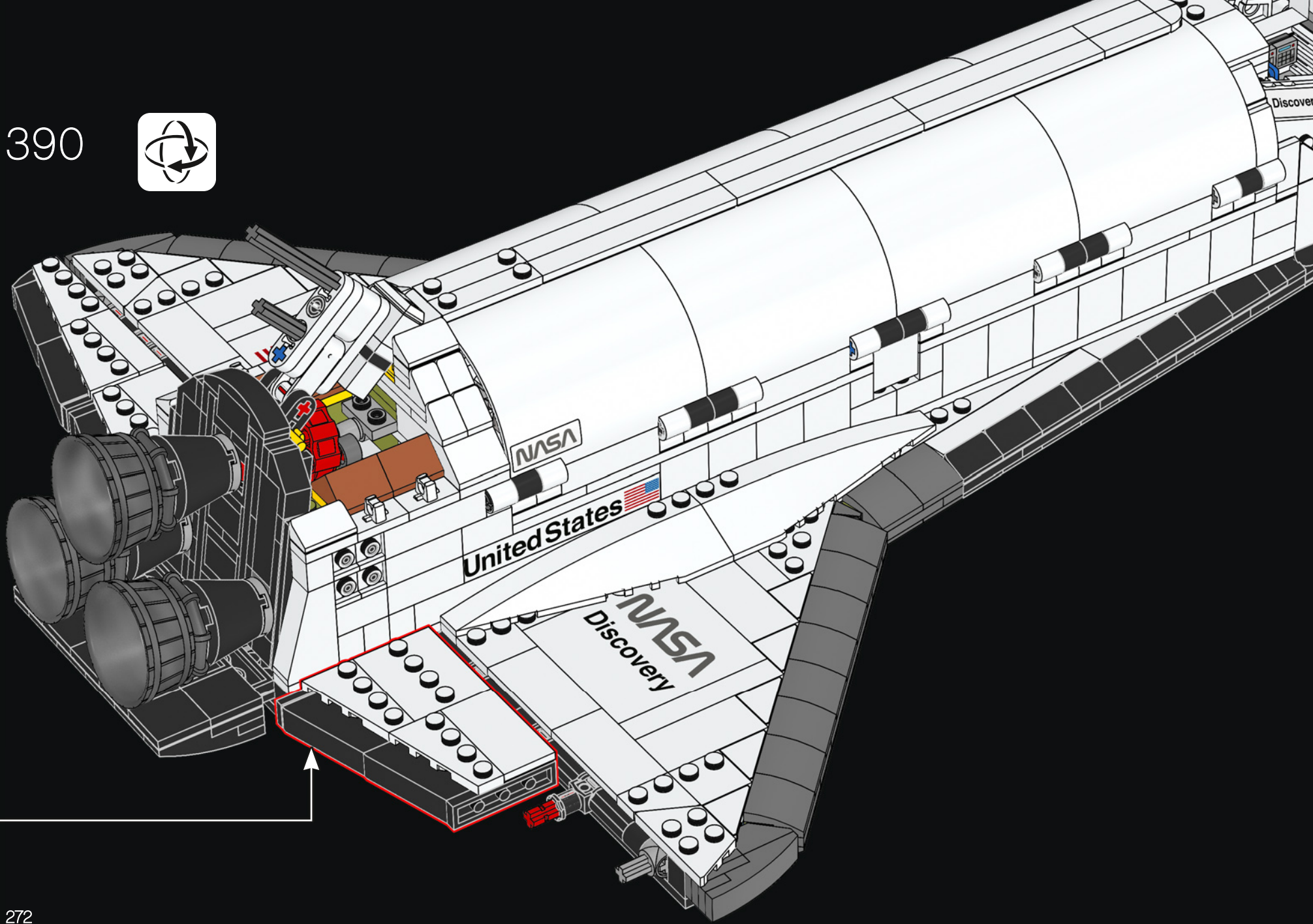
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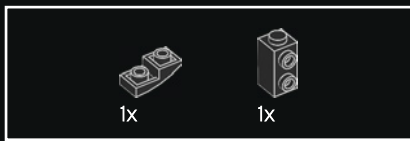


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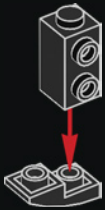


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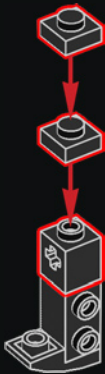




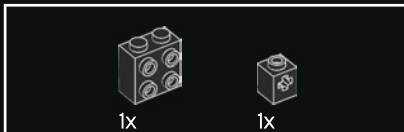
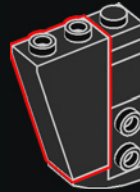
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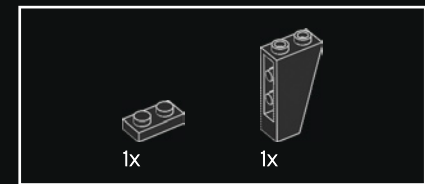
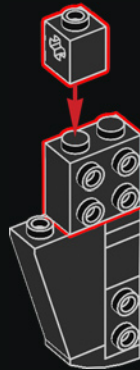
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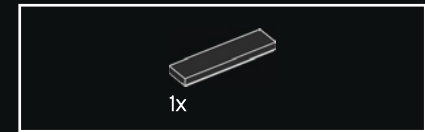
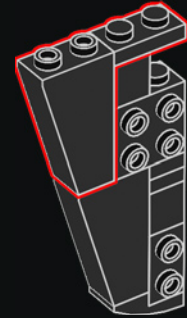
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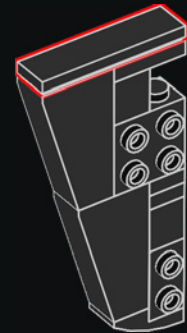
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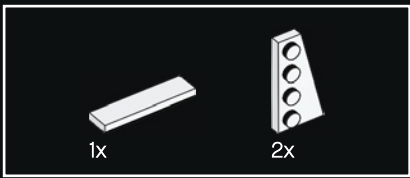


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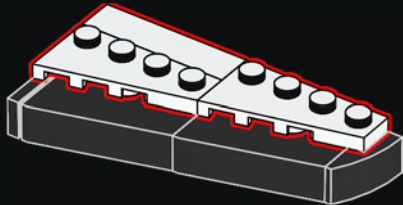


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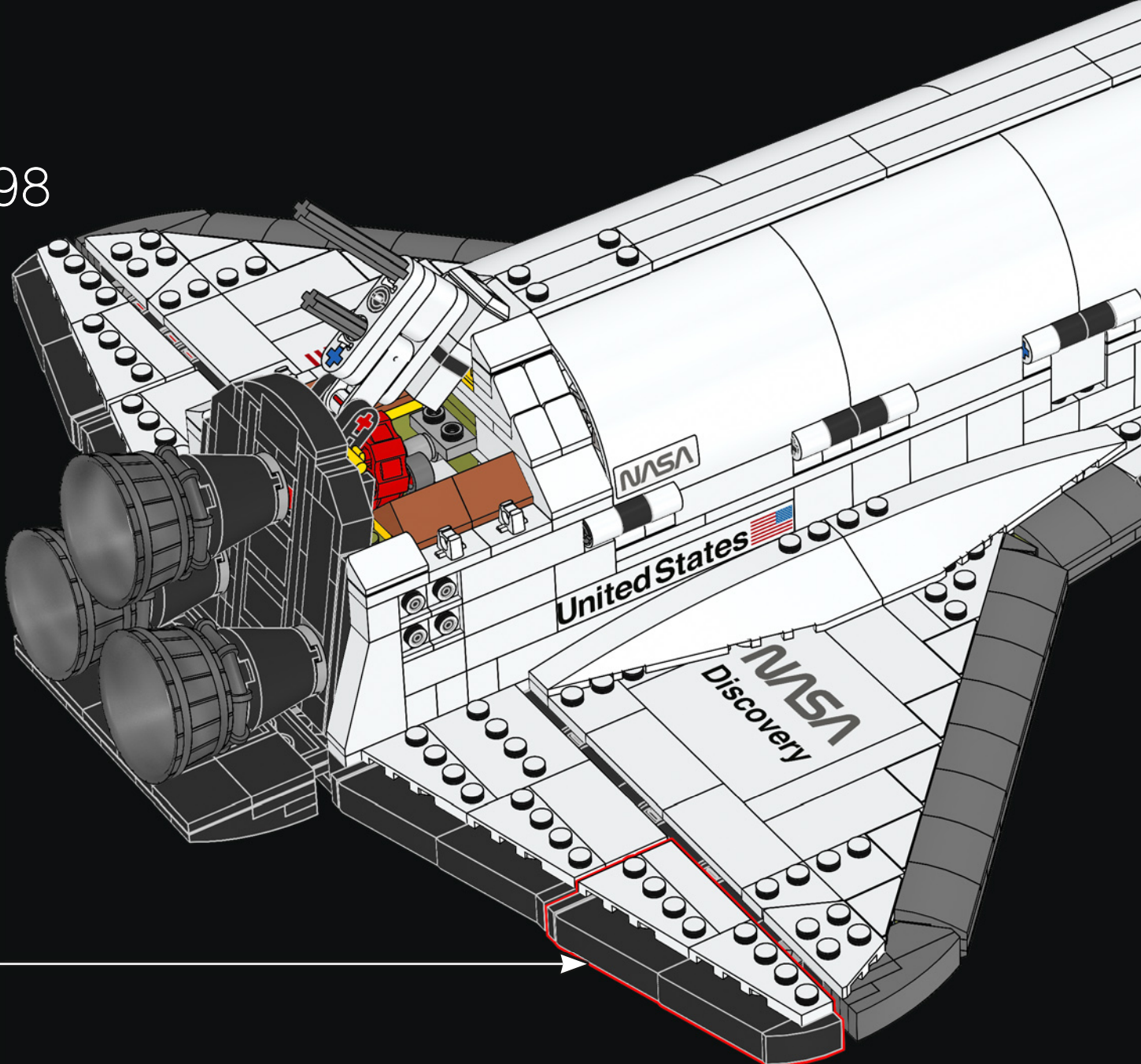


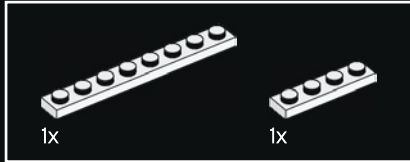
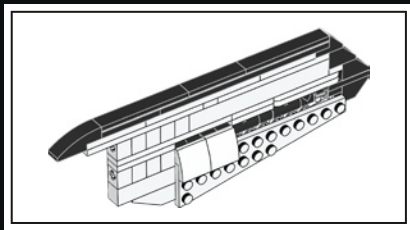


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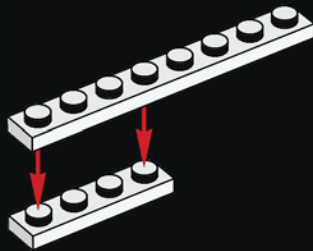


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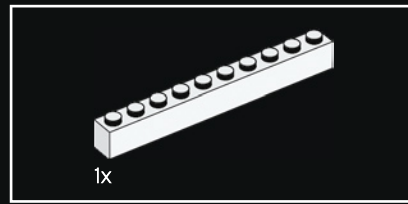
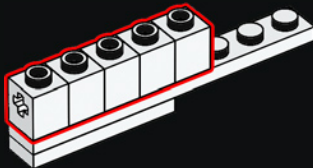




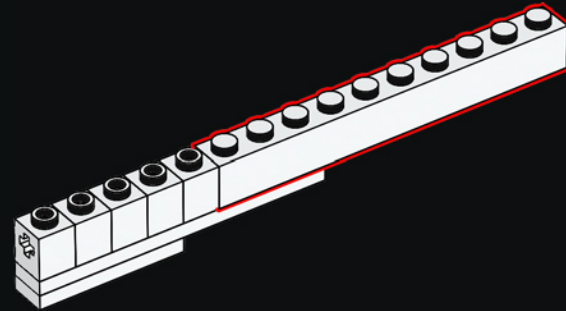
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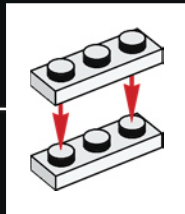
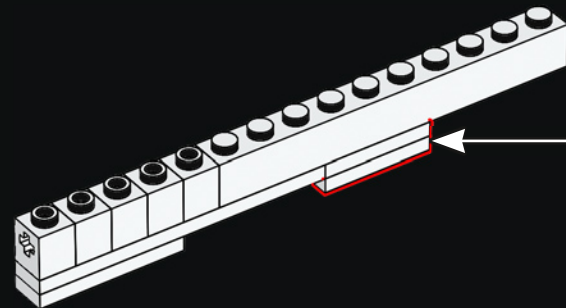
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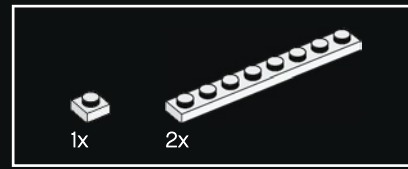
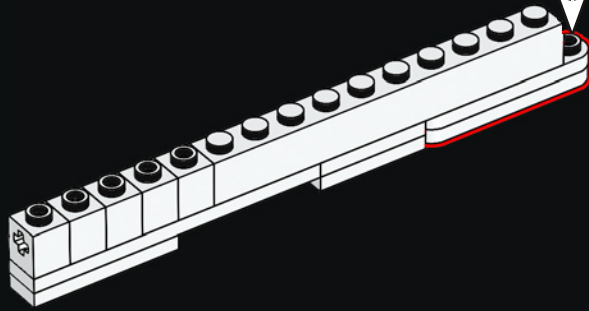
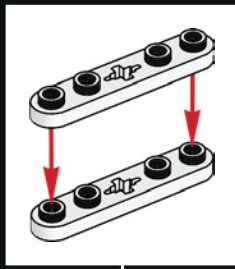


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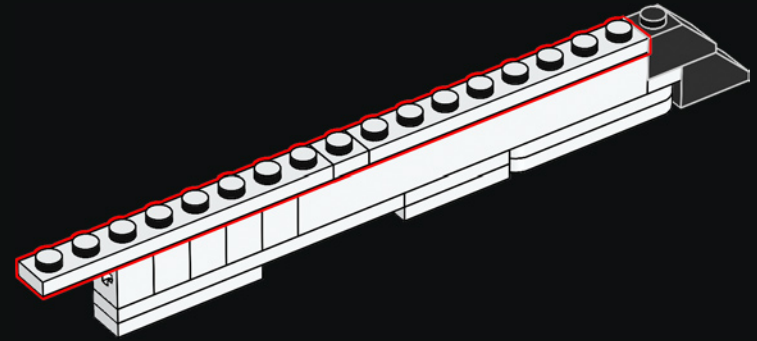




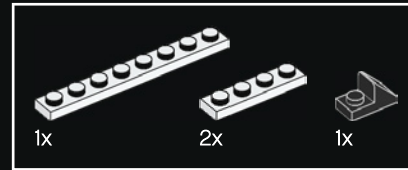
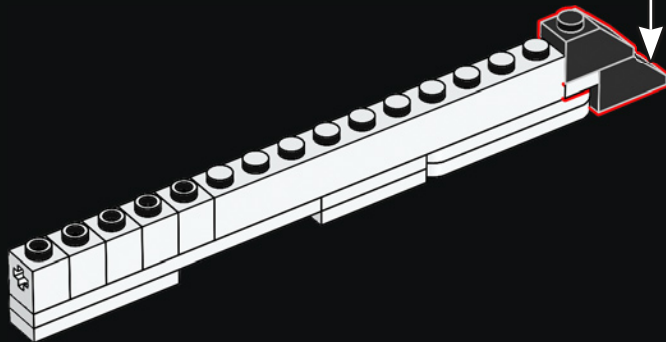
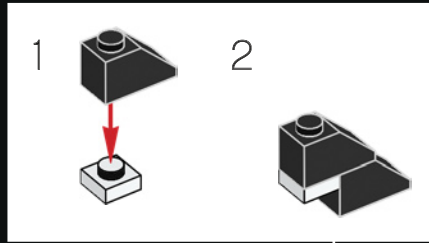
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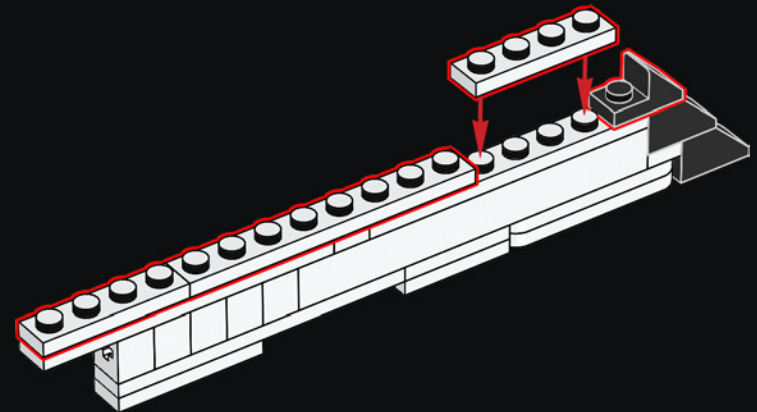
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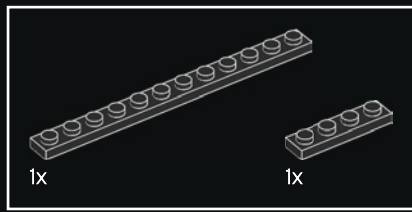


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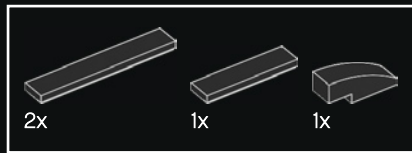
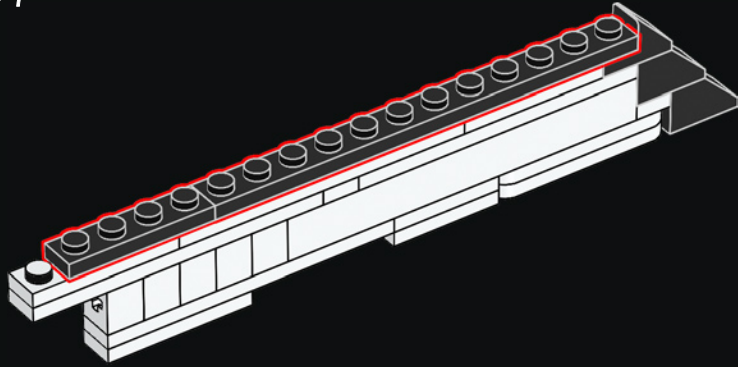


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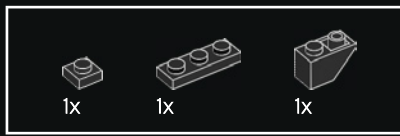
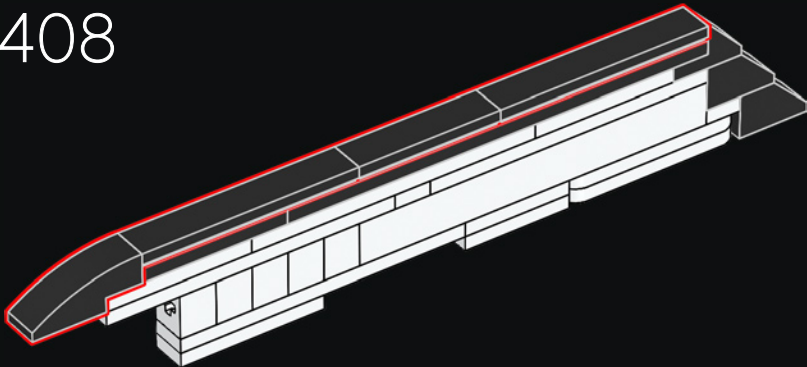




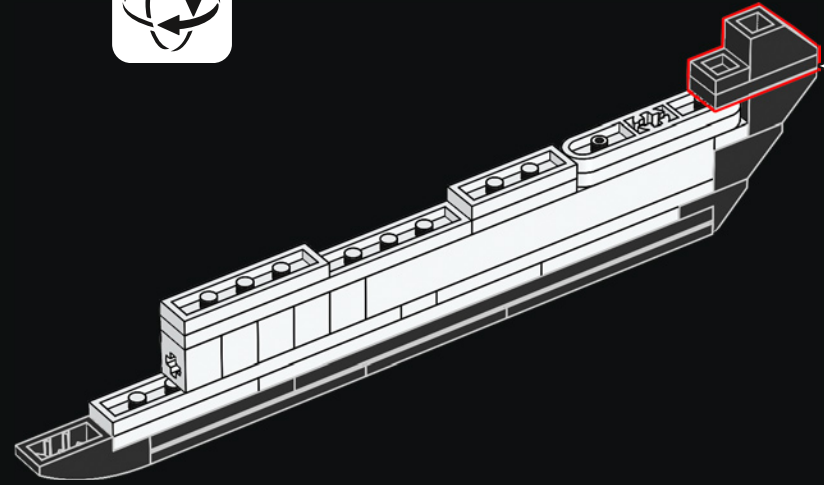
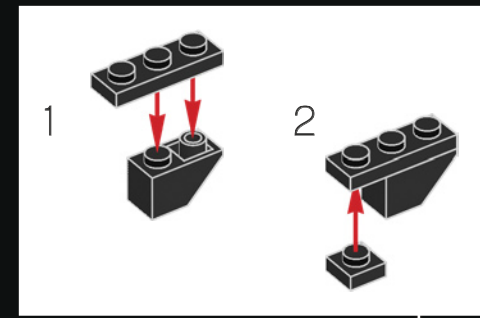
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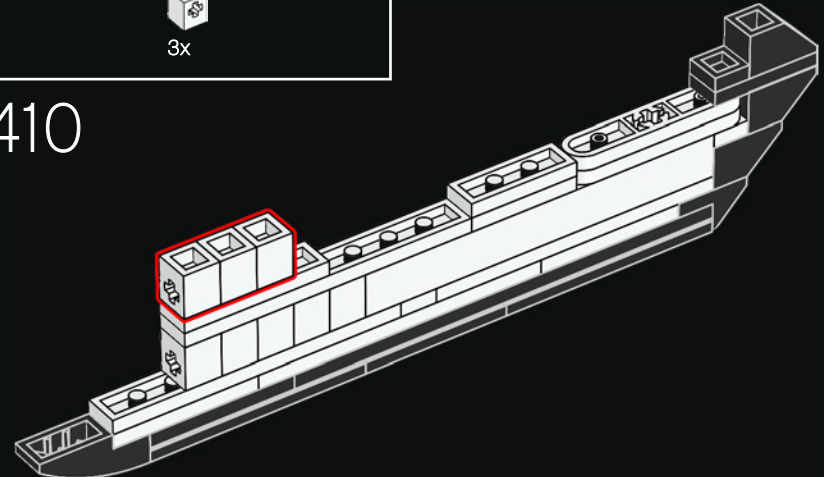
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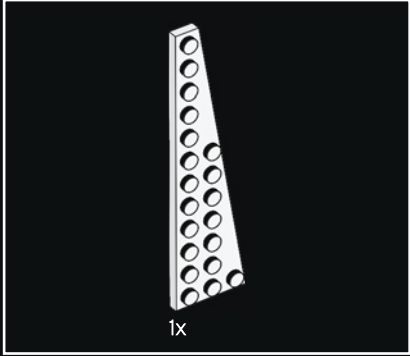
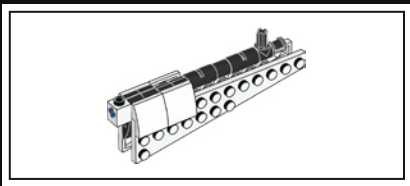


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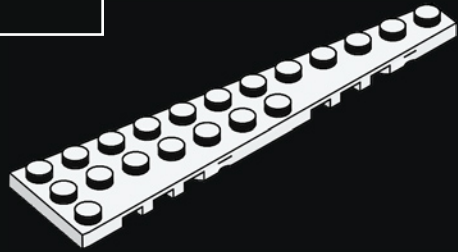


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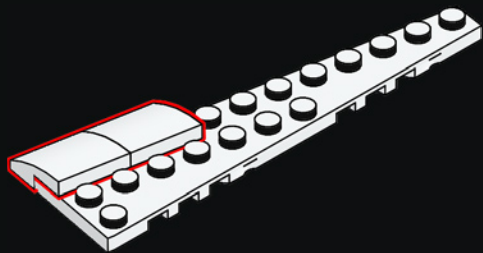




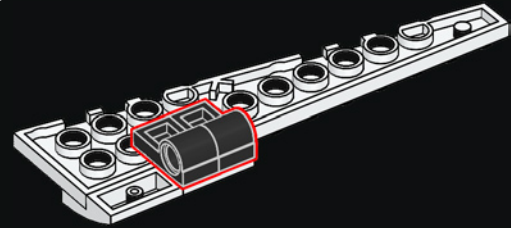
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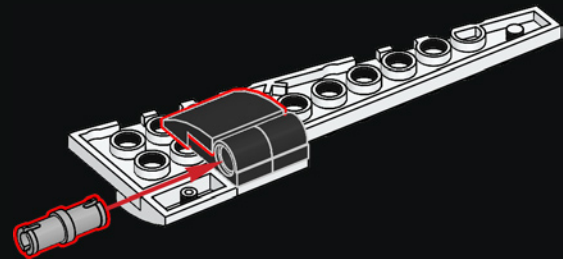
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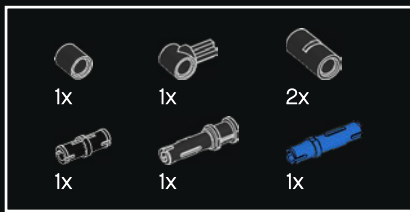


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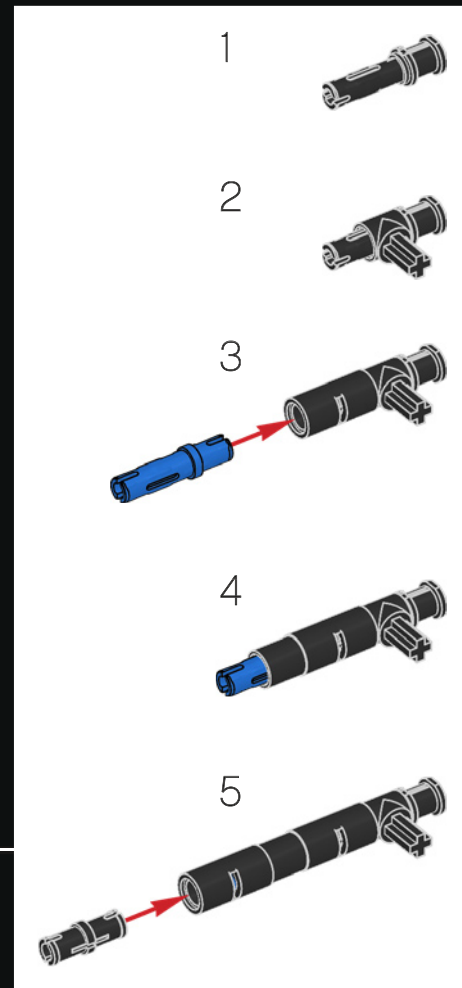
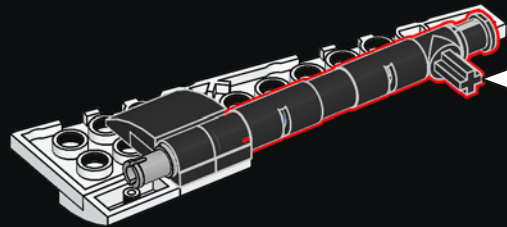


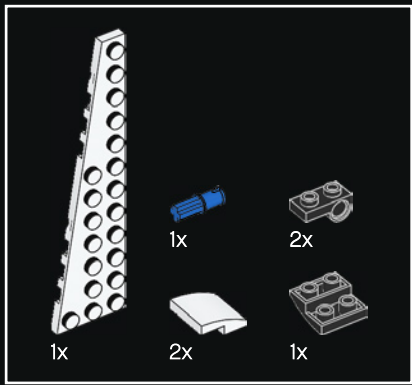
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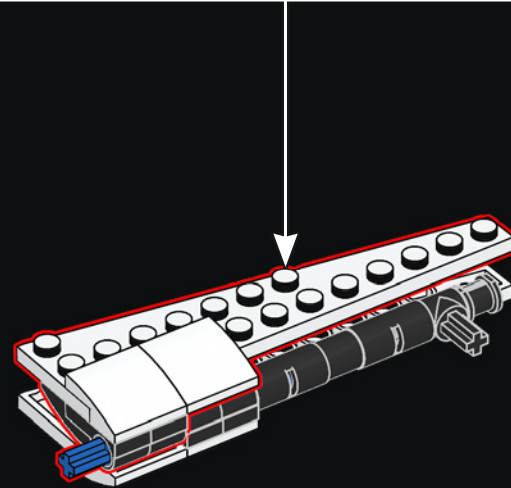
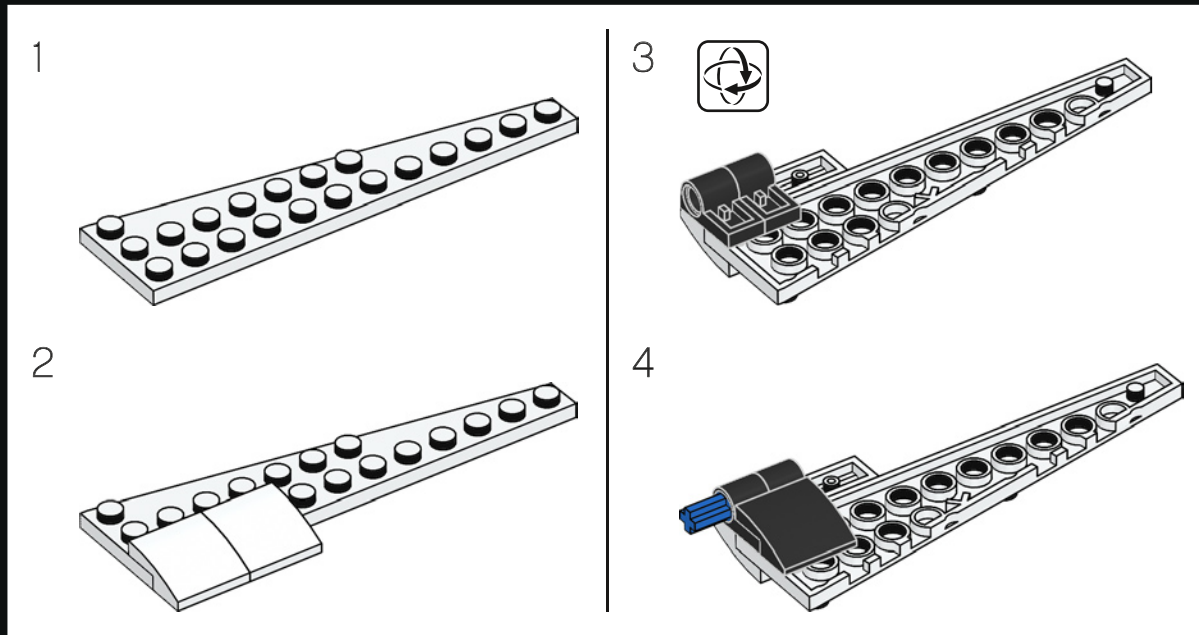


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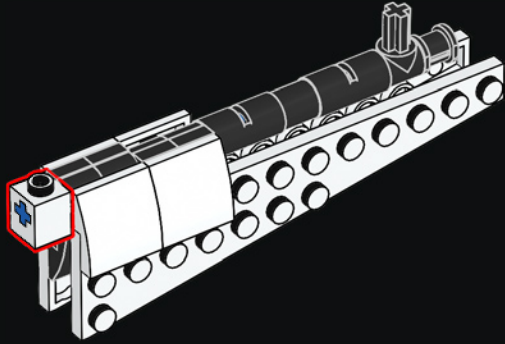


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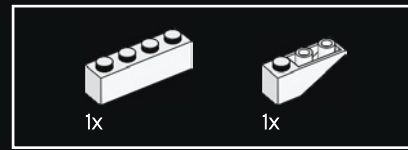
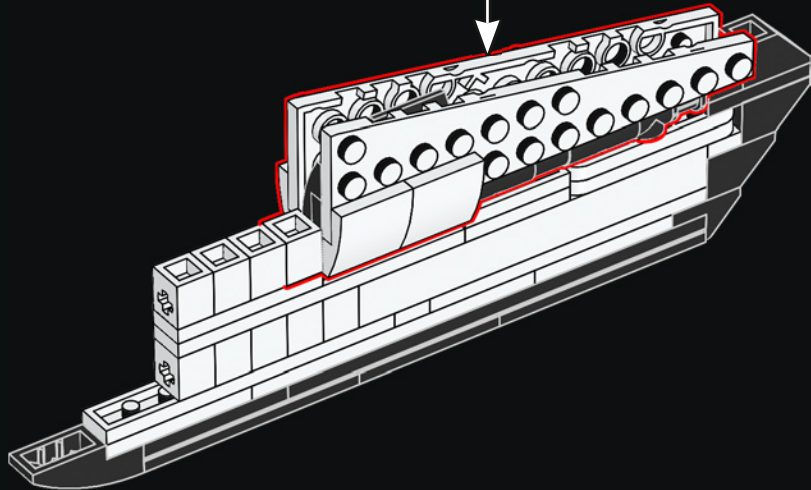




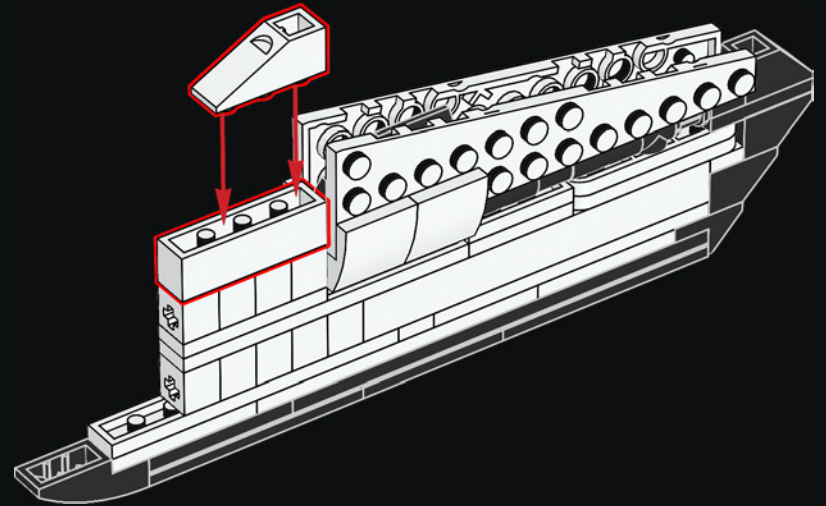
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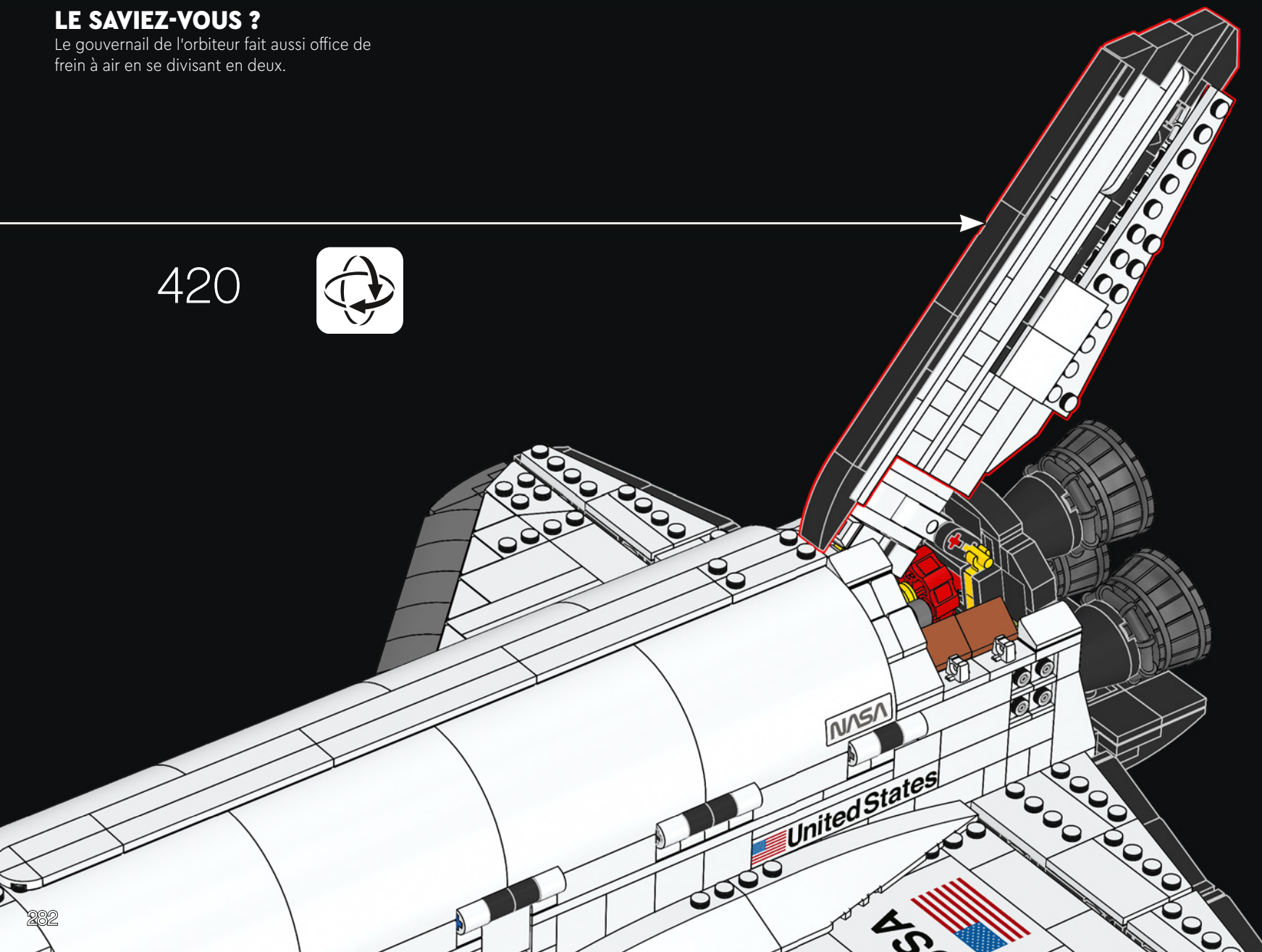
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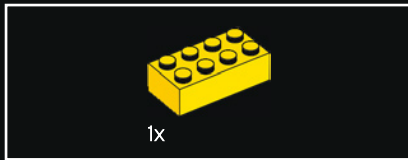
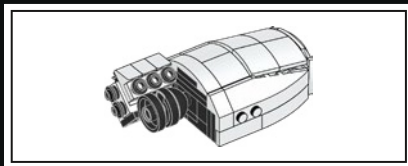
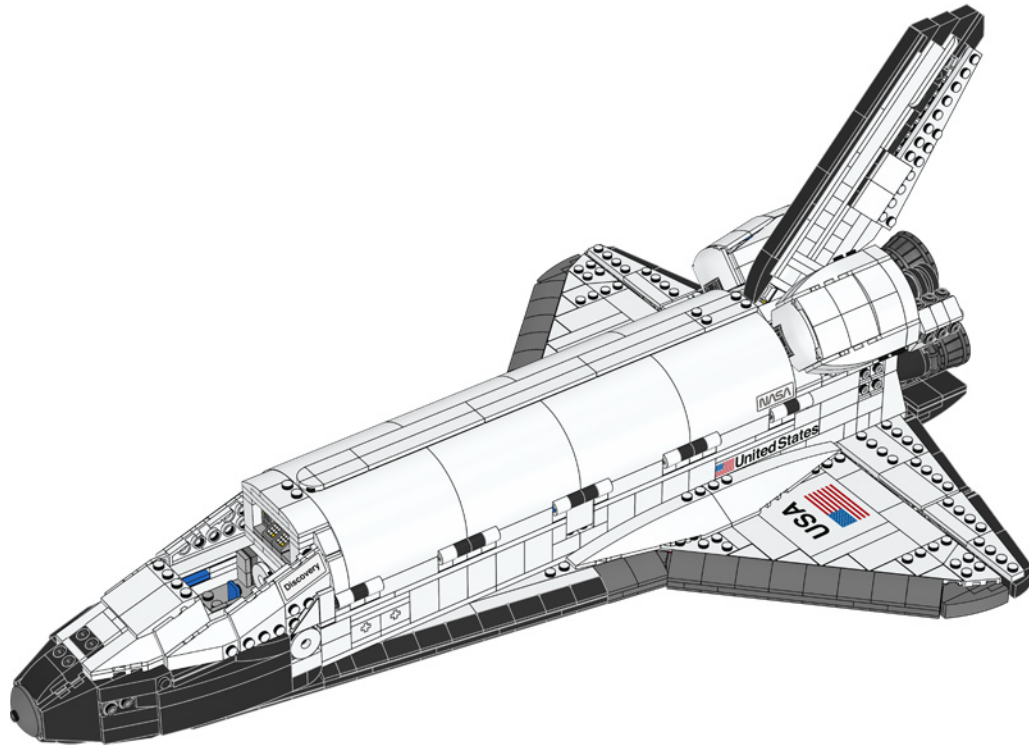
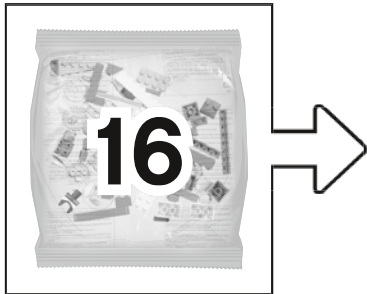


LE SAVIEZ-VOUS ?

Le gouvernail de l'orbiteur fait aussi office de frein à air en se divisant en deux.

420

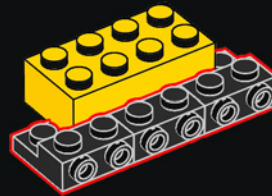




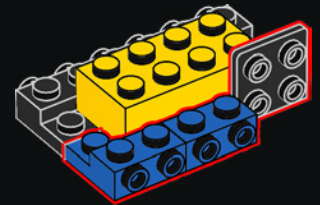
421

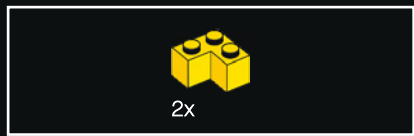


422

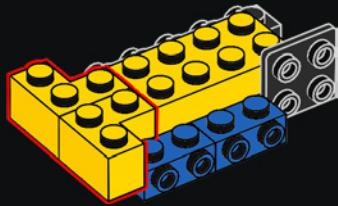


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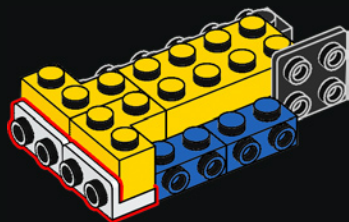




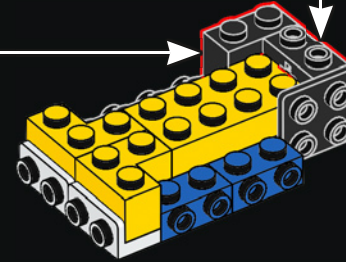
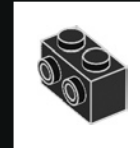
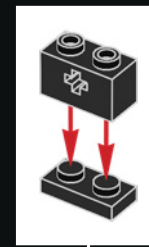
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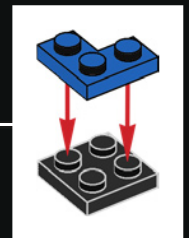
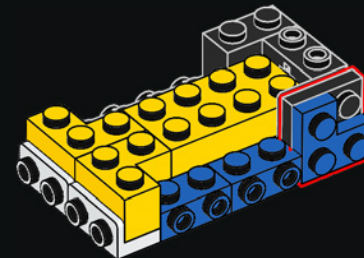
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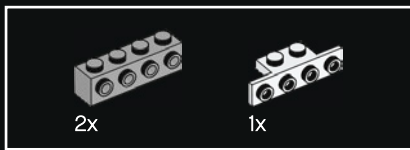


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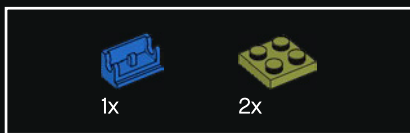
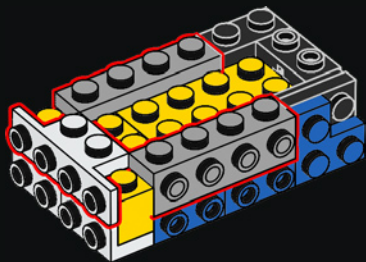


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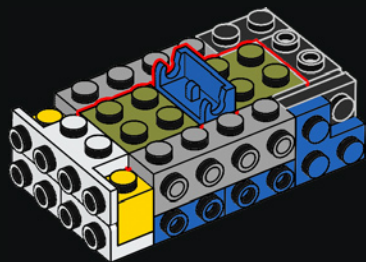




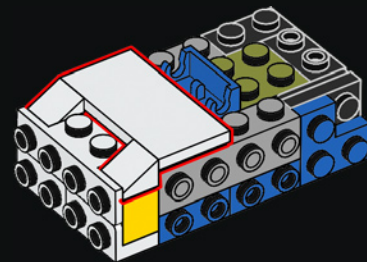
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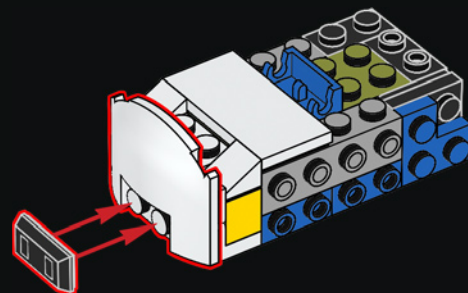
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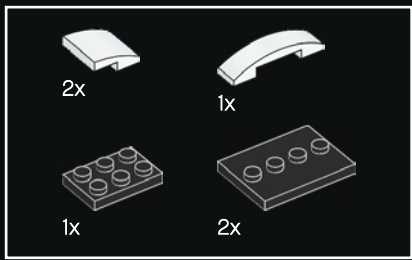


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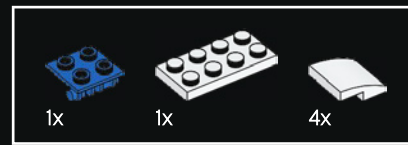
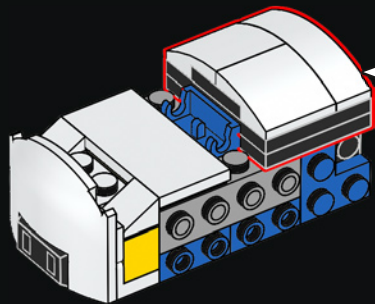
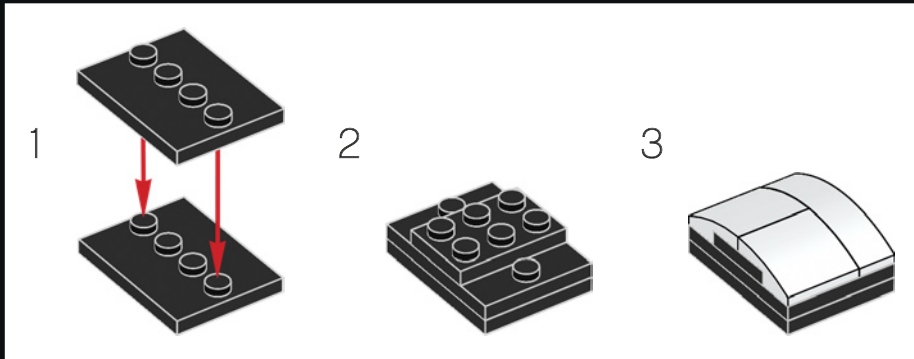


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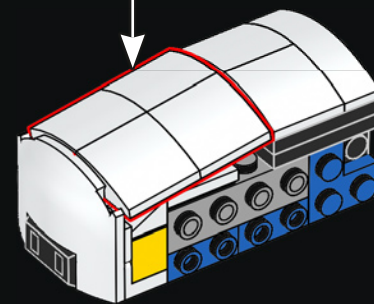
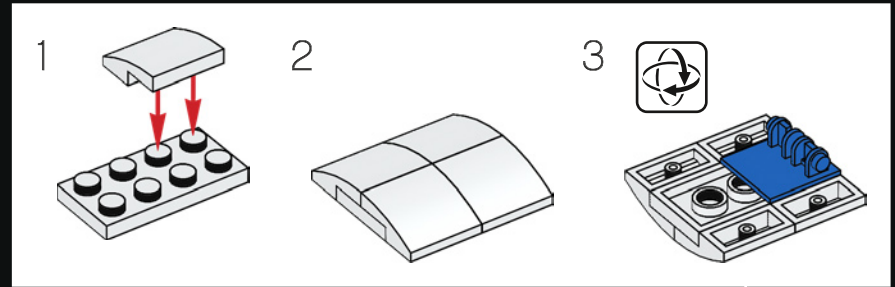


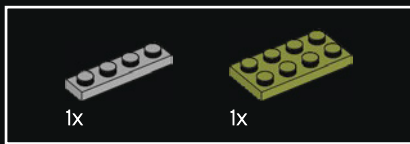


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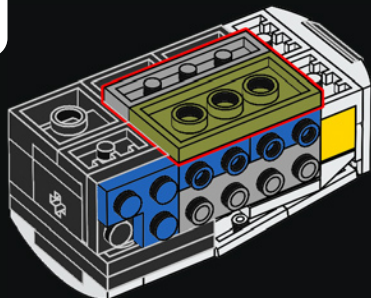


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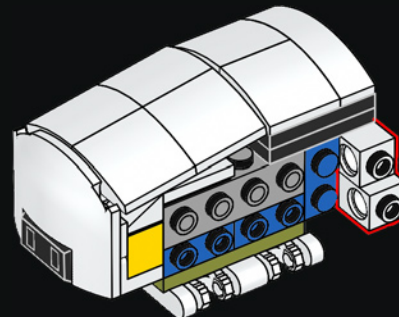




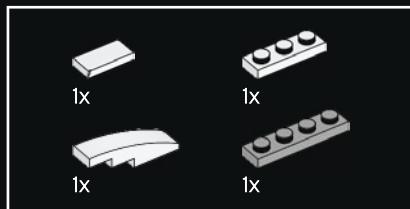
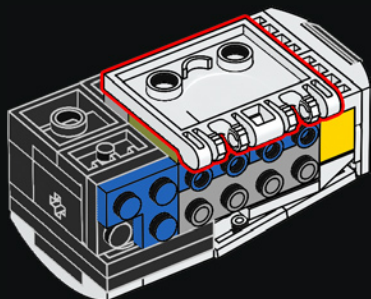
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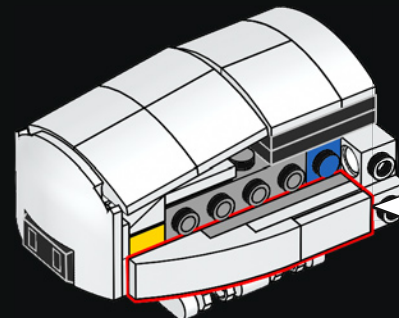
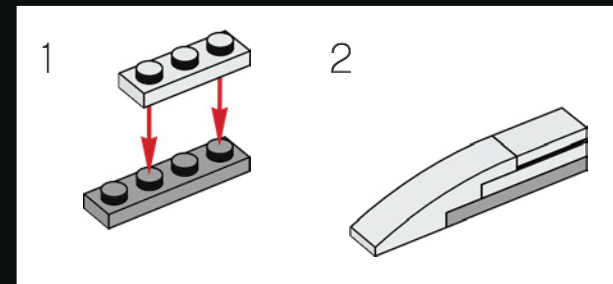
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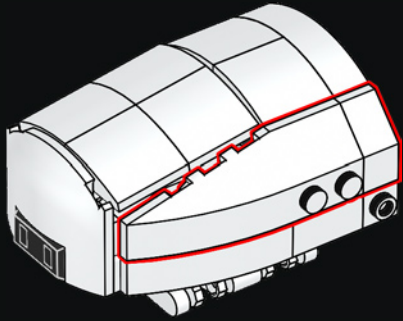


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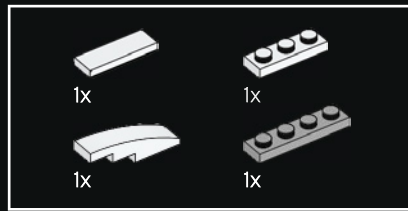
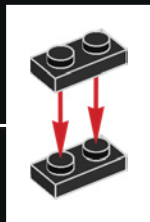
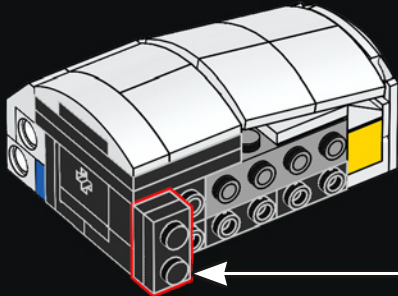




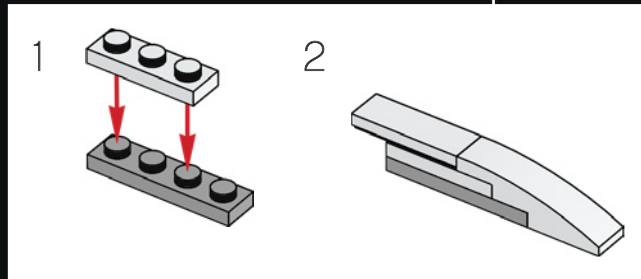
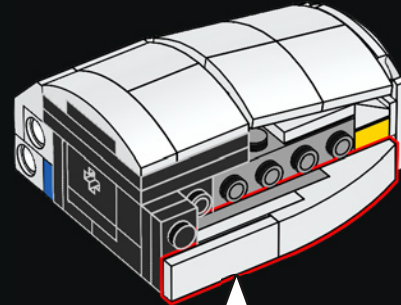
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439

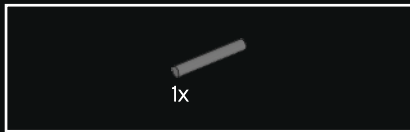
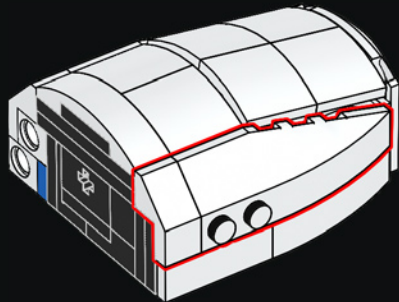


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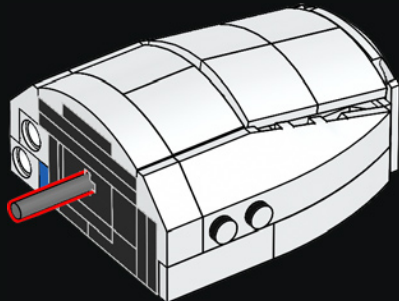




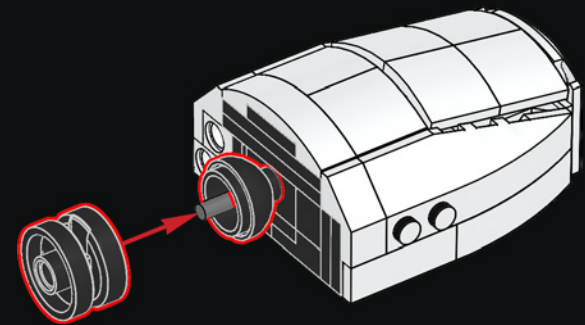
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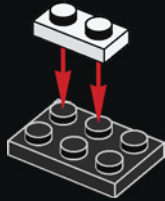


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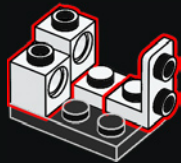




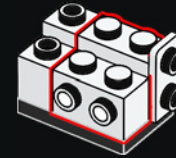
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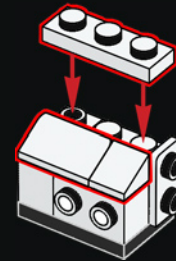
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446

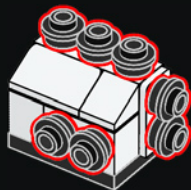


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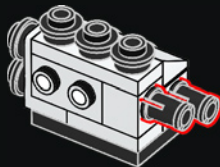




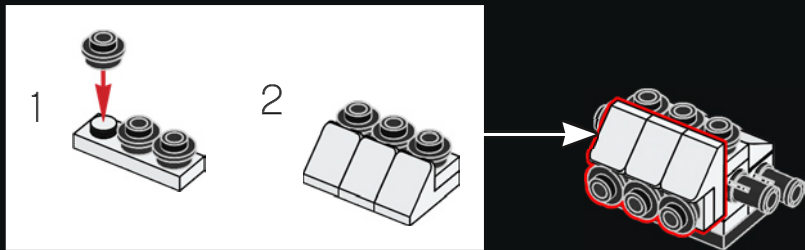
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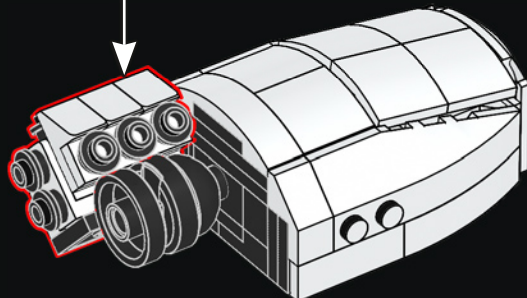
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450



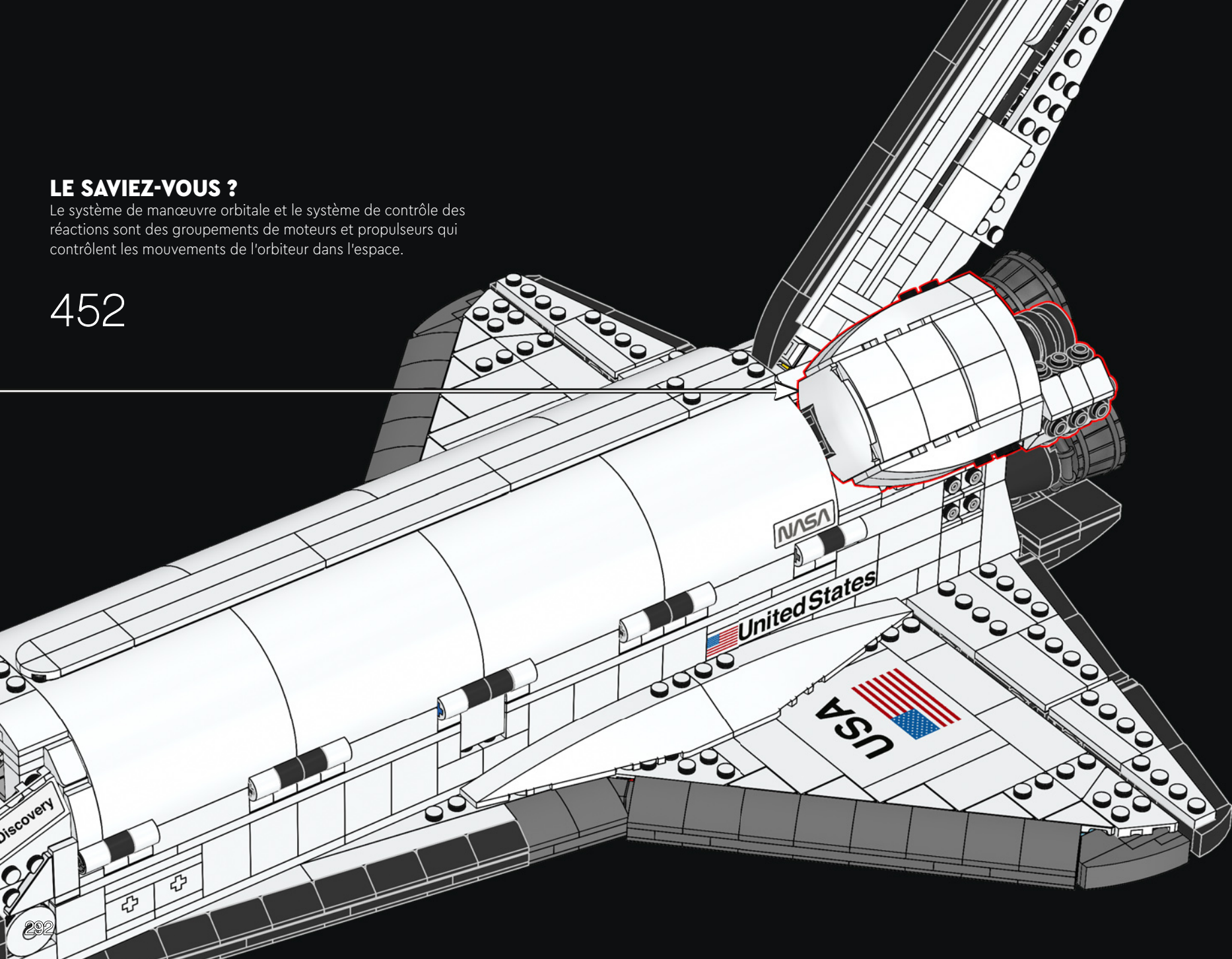
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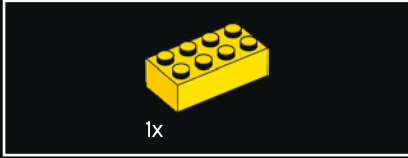
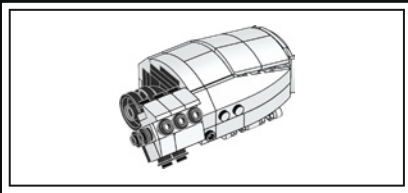
LE SAVIEZ-VOUS ?

Le système de manœuvre orbitale et le système de contrôle des réactions sont des groupements de moteurs et propulseurs qui contrôlent les mouvements de l'orbiteur dans l'espace.

452



Discovery



1x

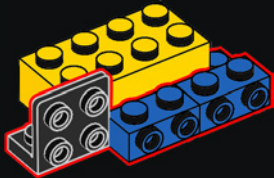
453



1x

2x

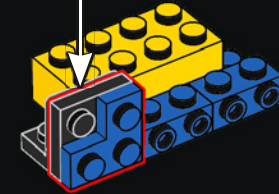
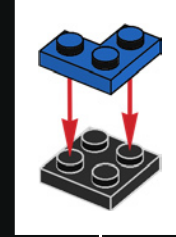
454



1x

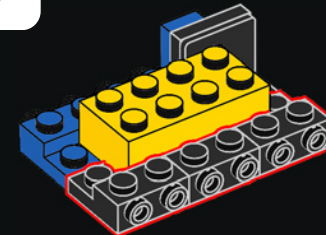
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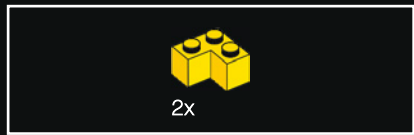
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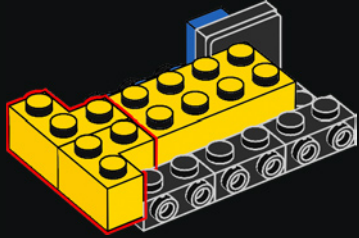
3x

456

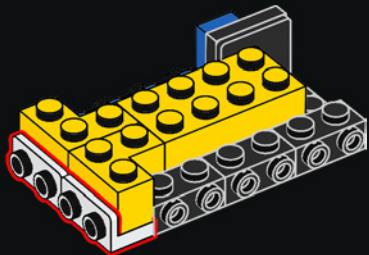




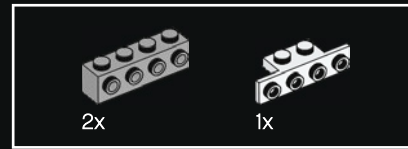
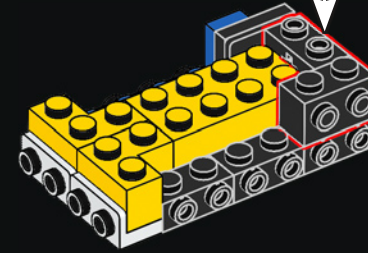
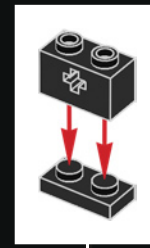
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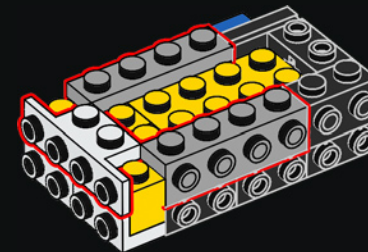
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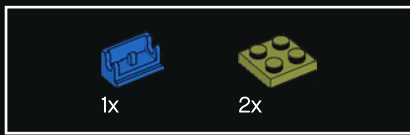


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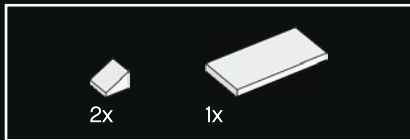
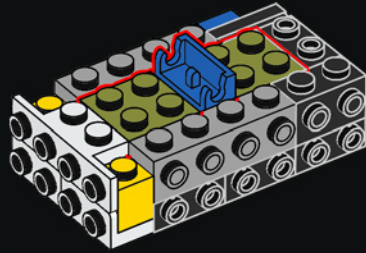


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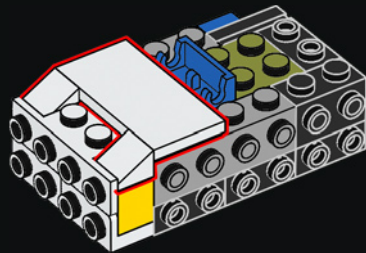




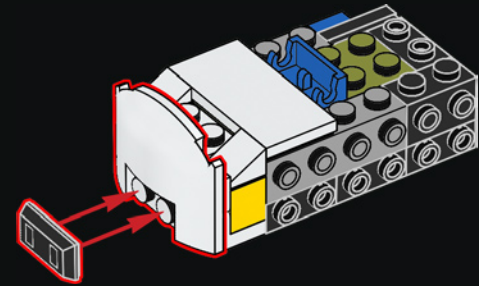
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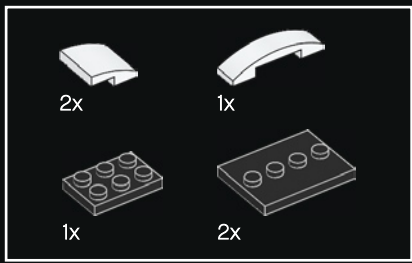


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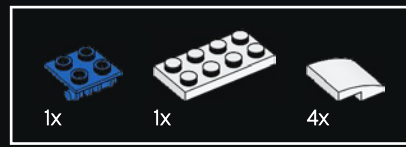
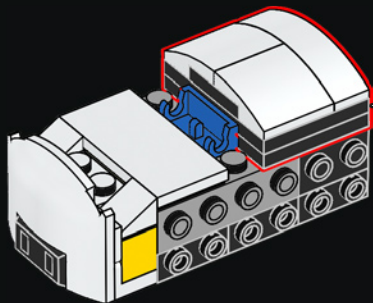
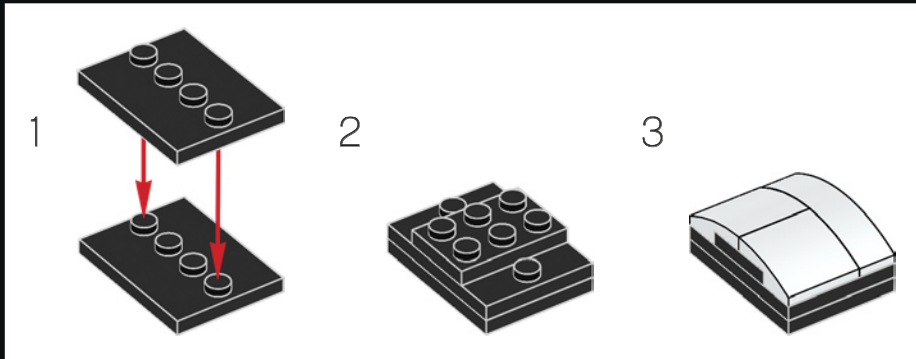


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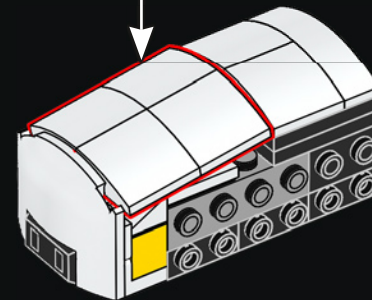
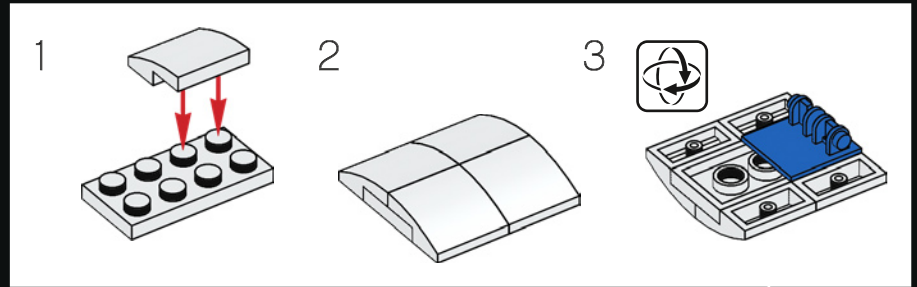




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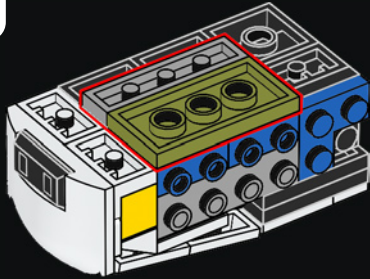


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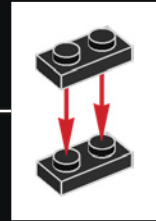
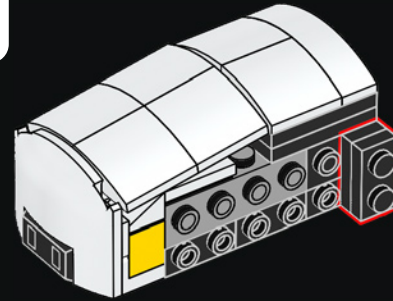




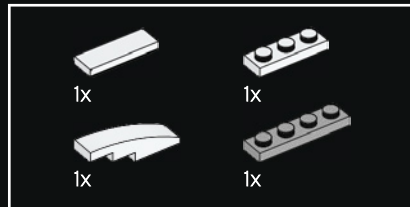
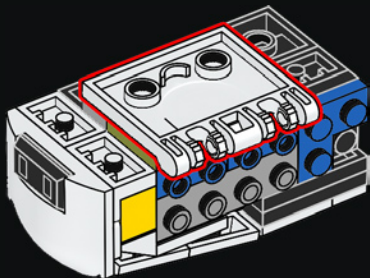
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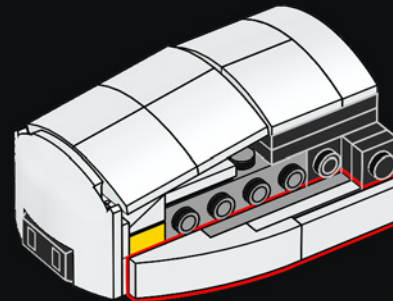
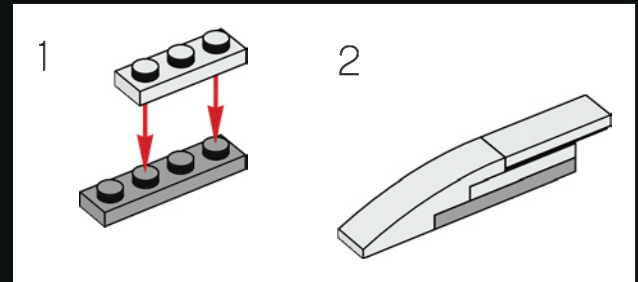
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467

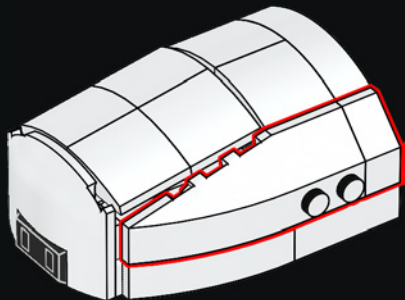


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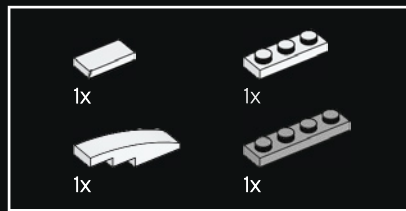
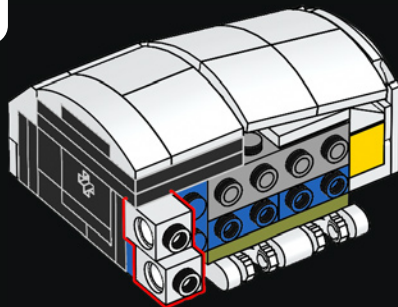




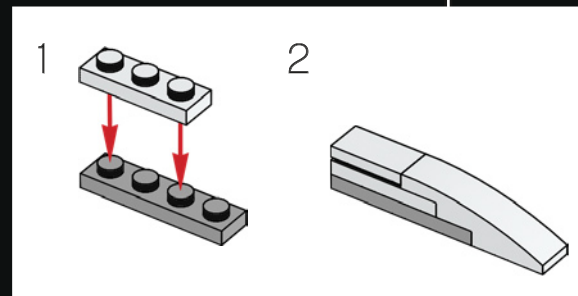
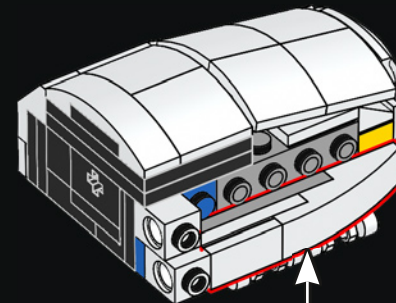
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471

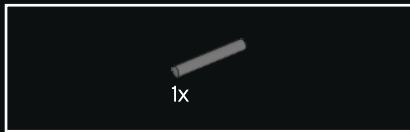
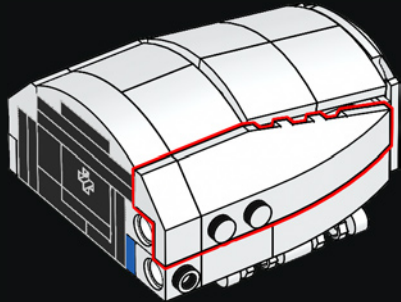


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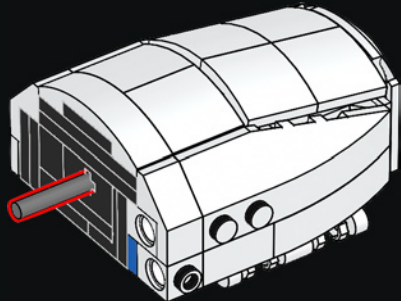




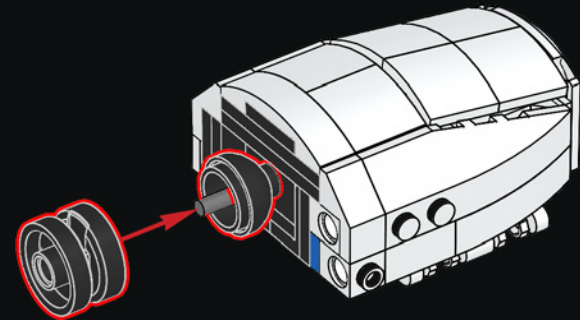
473



474

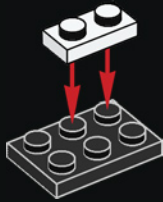


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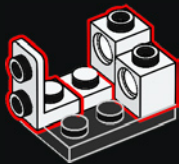




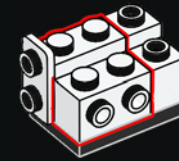
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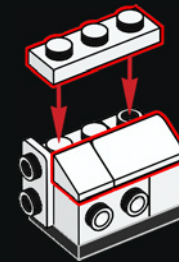
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478

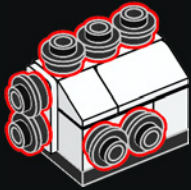


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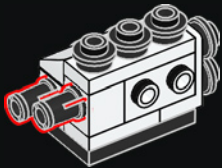




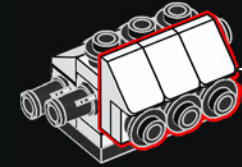
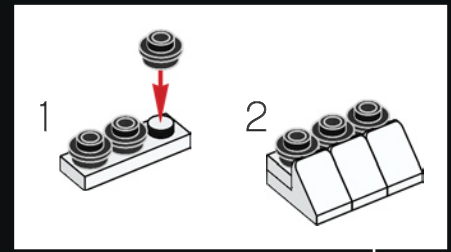
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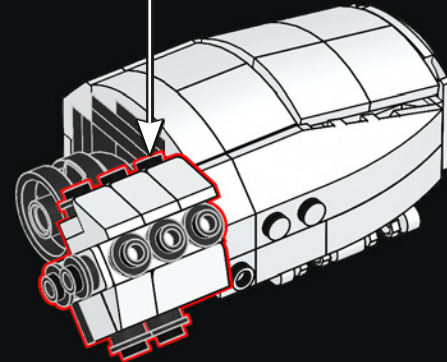
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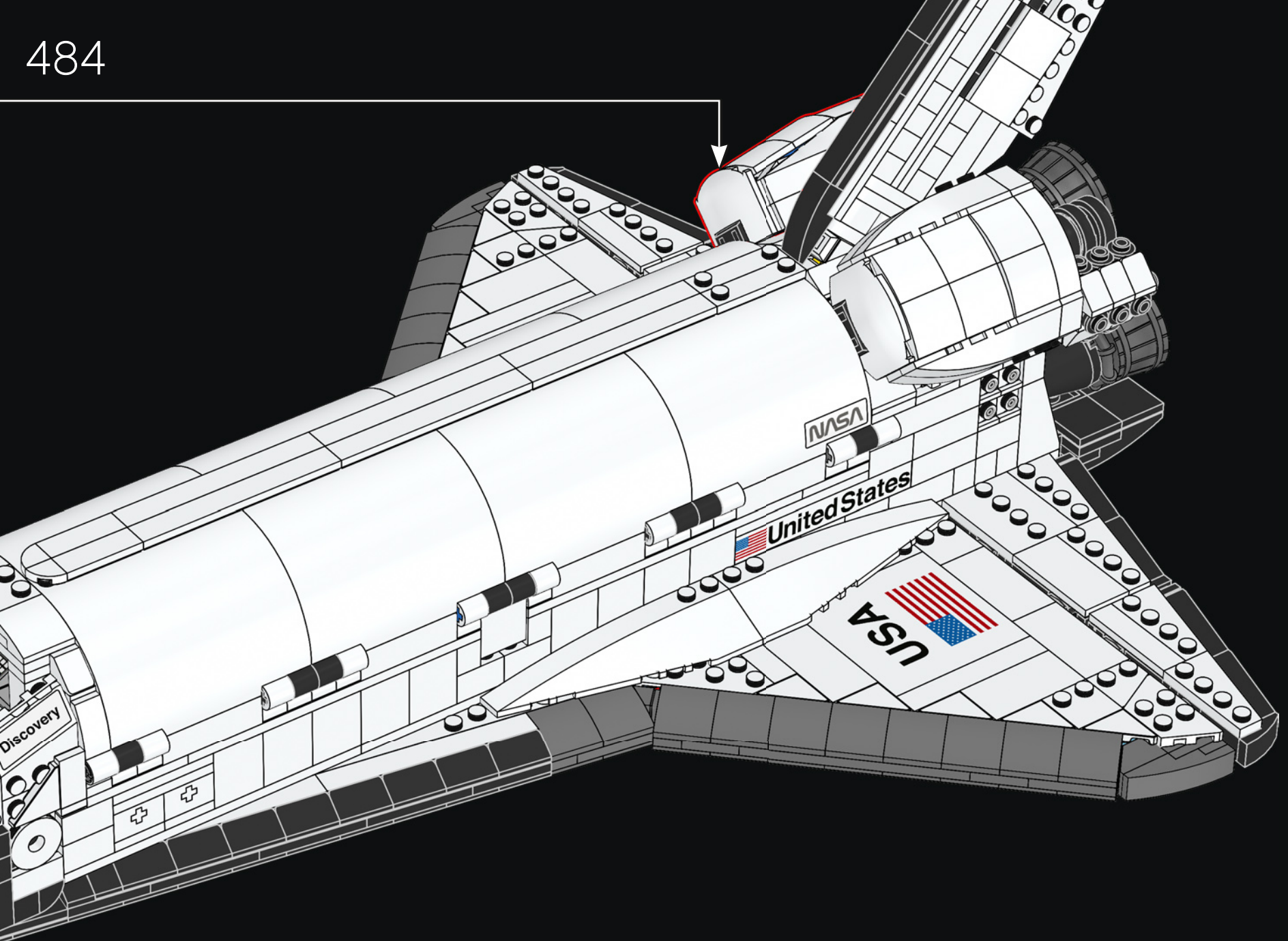


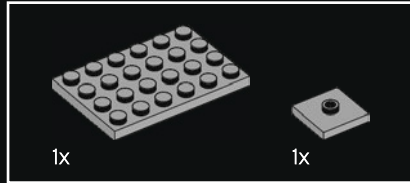
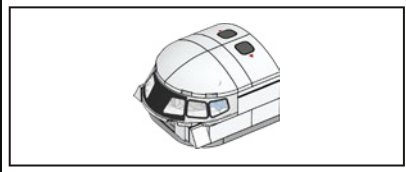
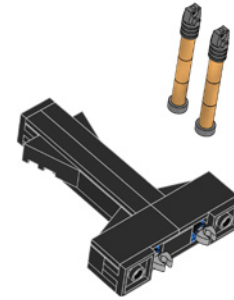
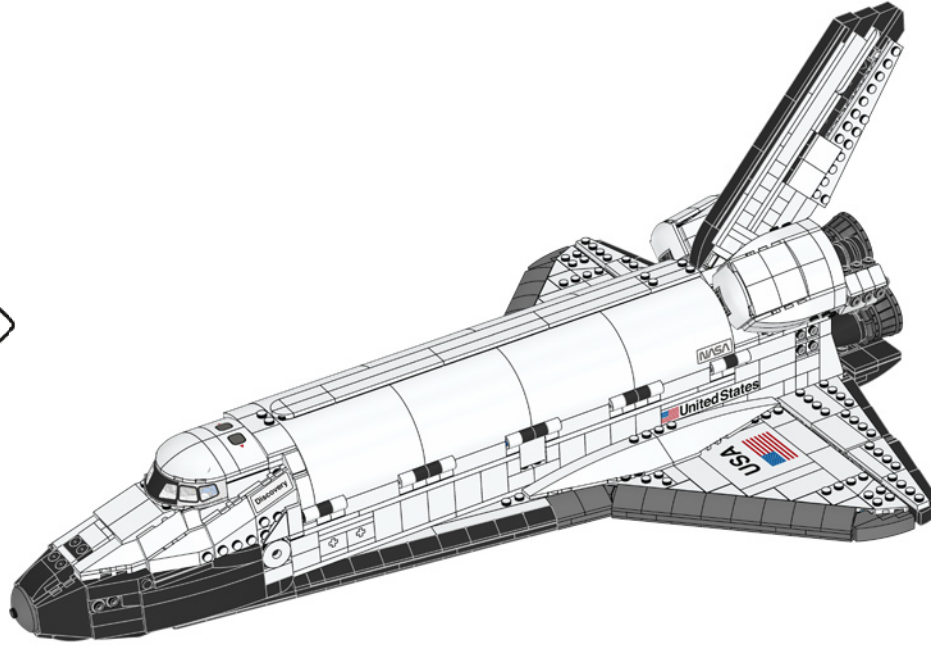
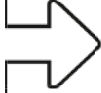
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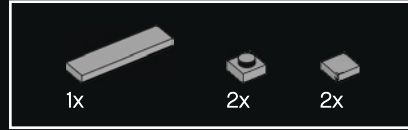
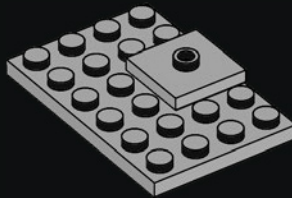
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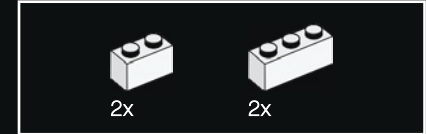
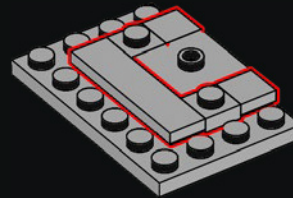




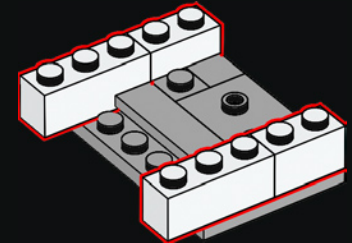
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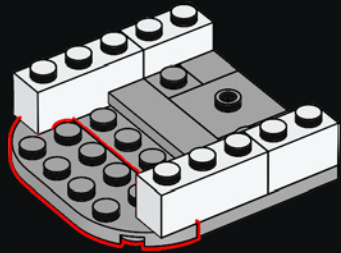


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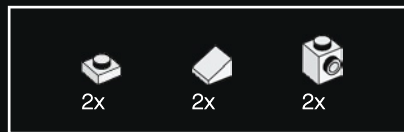
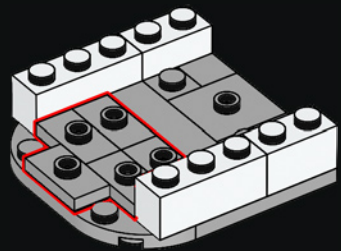




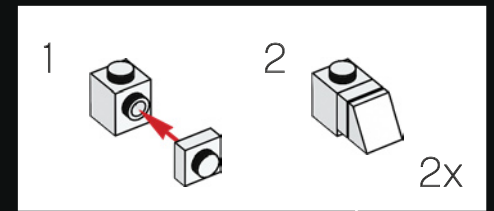
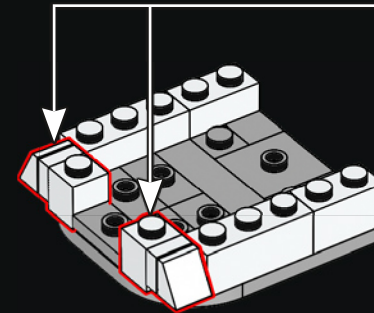
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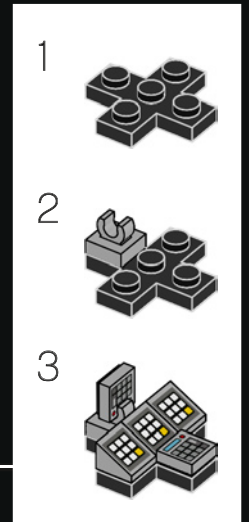
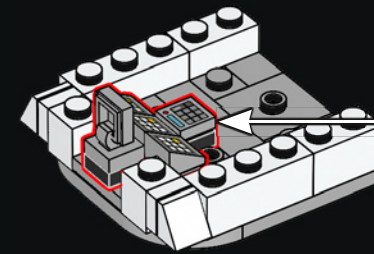
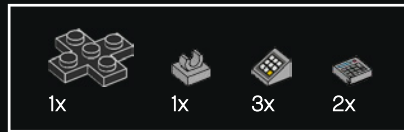
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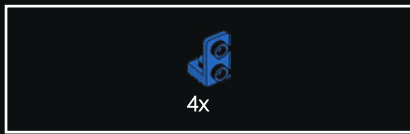


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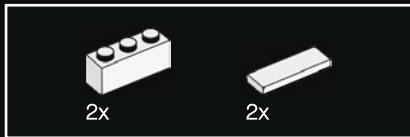
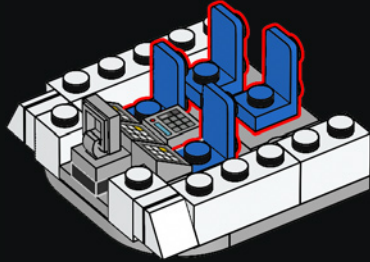


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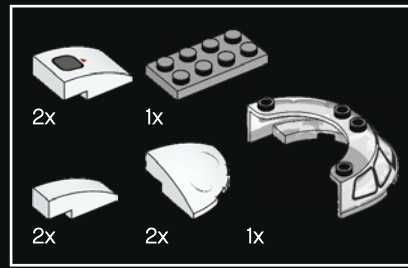
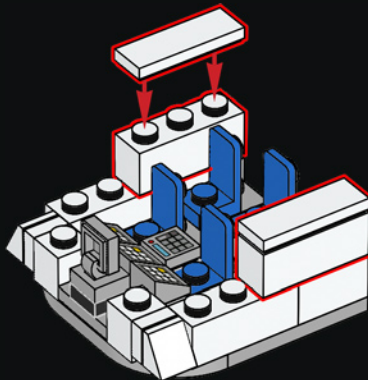




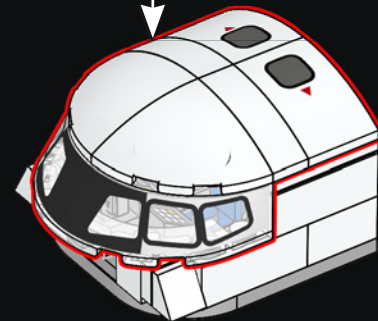
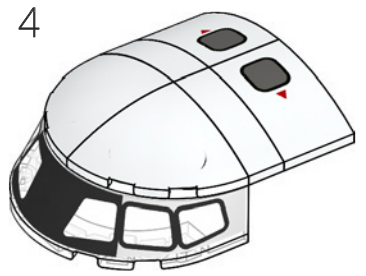
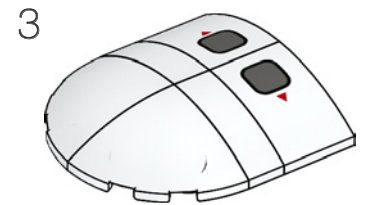
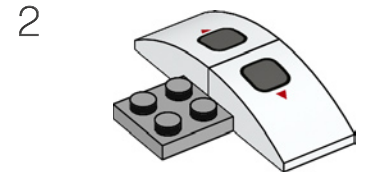
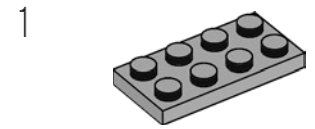
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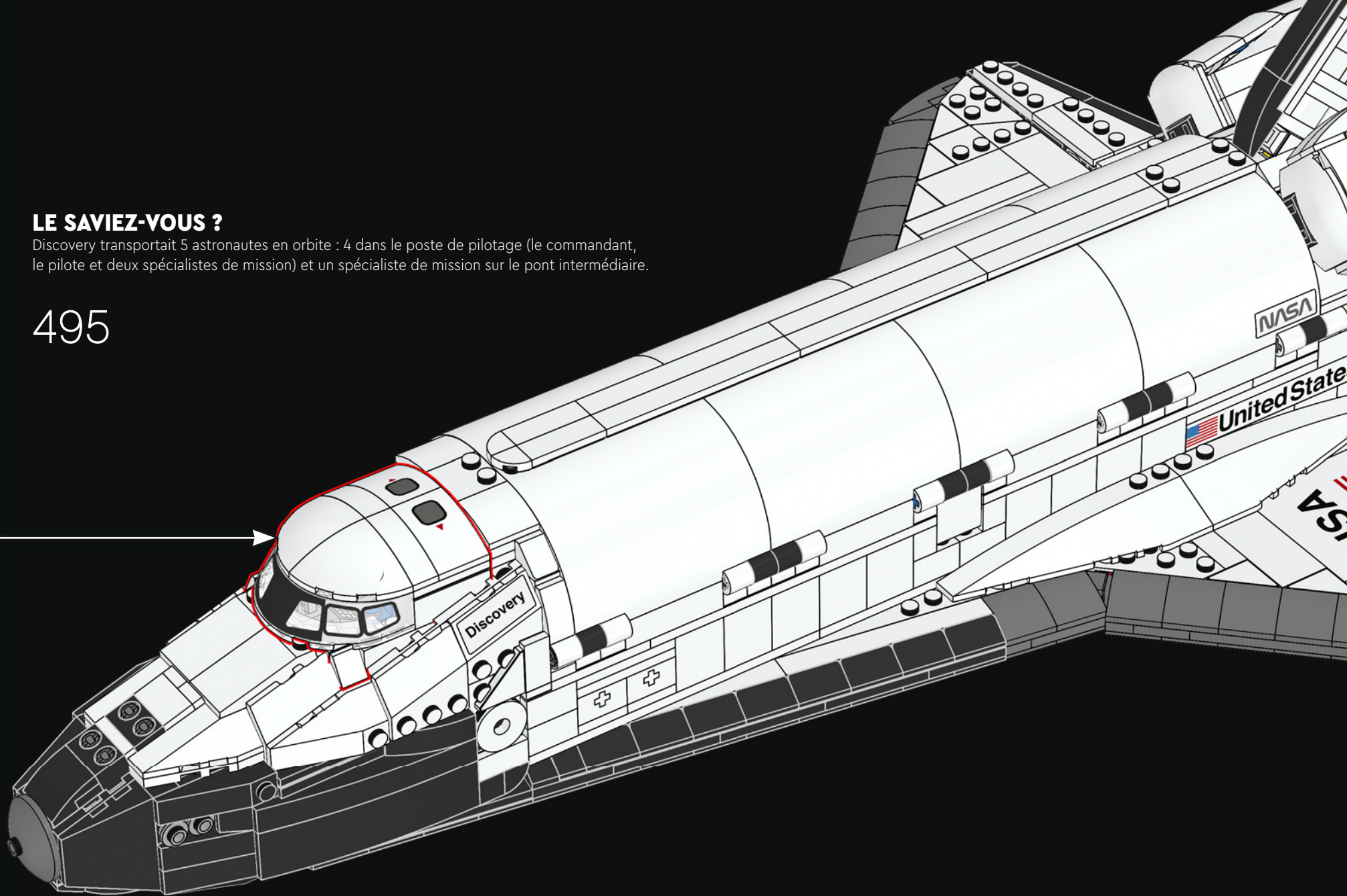
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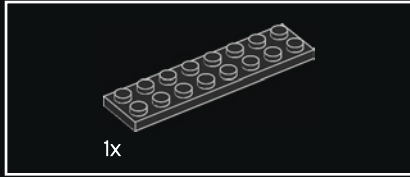
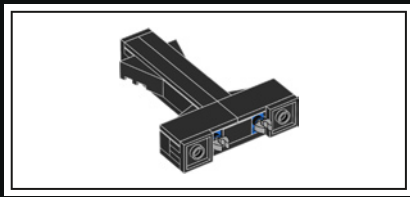


LE SAVIEZ-VOUS ?

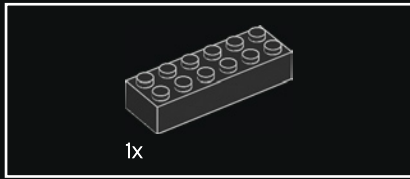
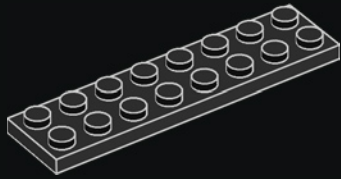
Discovery transportait 5 astronautes en orbite : 4 dans le poste de pilotage (le commandant, le pilote et deux spécialistes de mission) et un spécialiste de mission sur le pont intermédiaire.

495

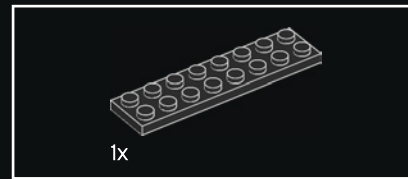
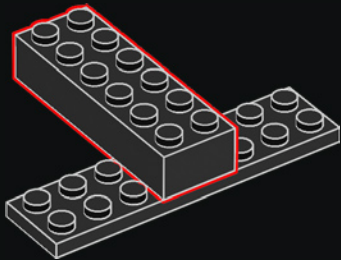




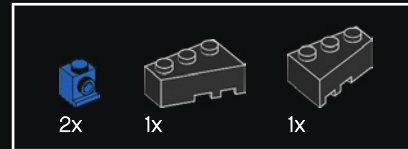
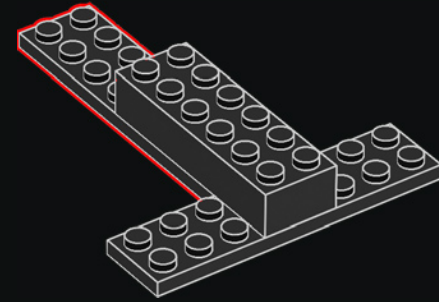
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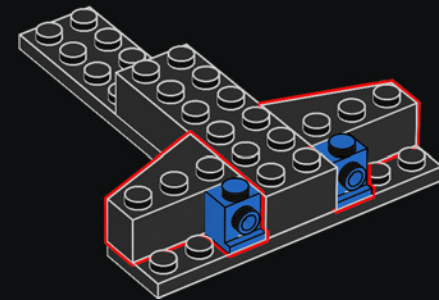
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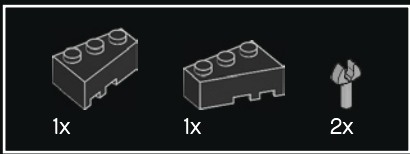


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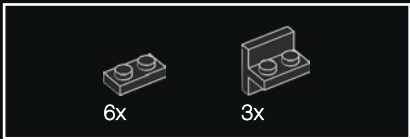
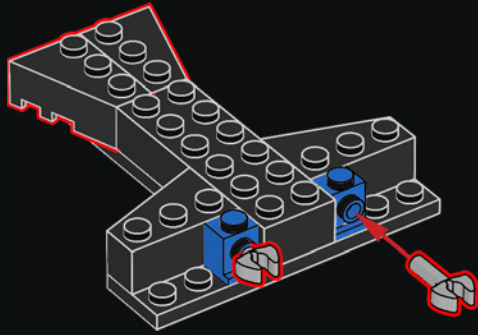


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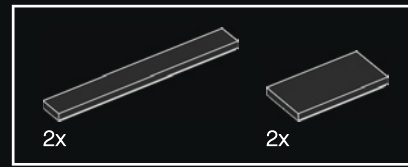
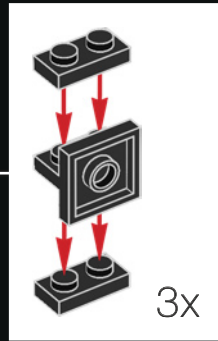
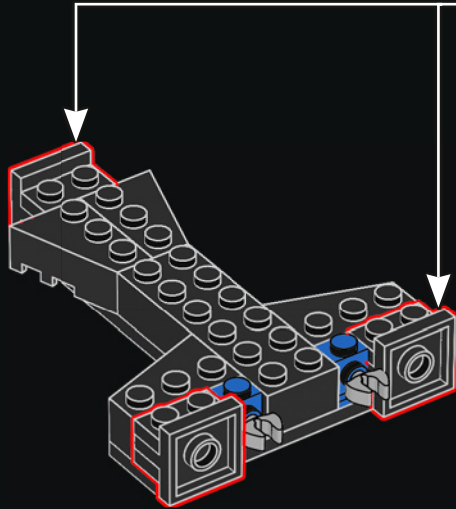




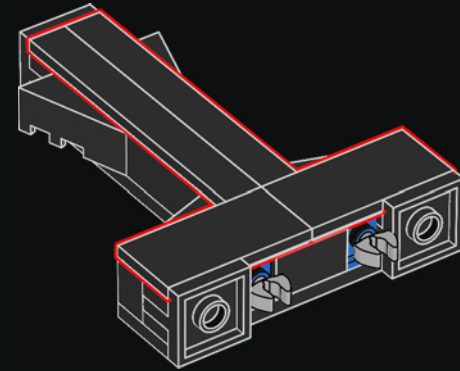
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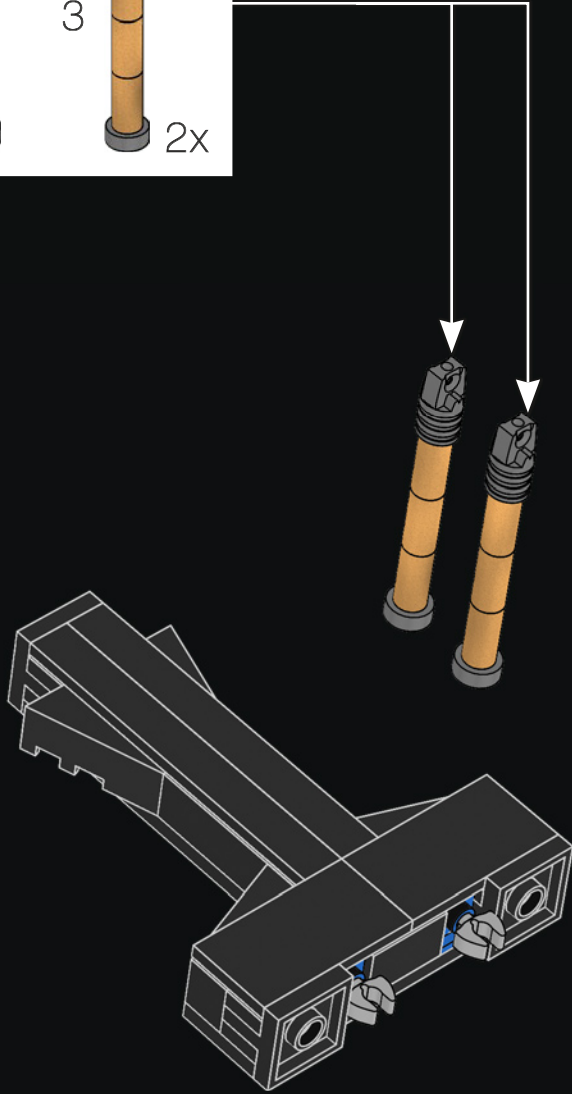
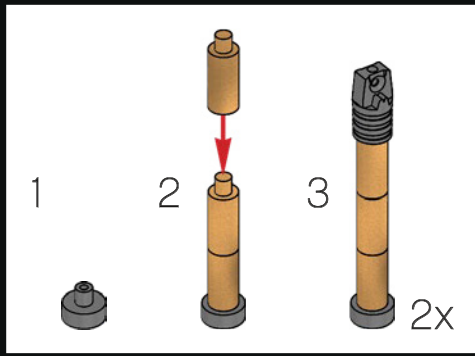


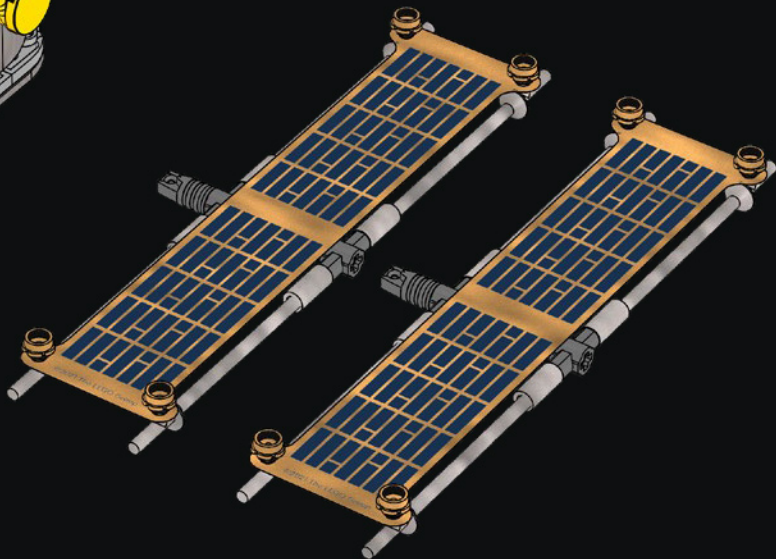
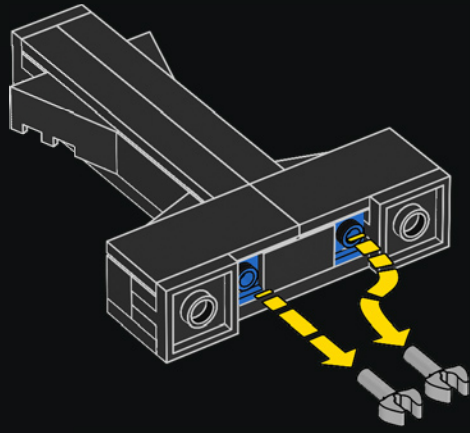
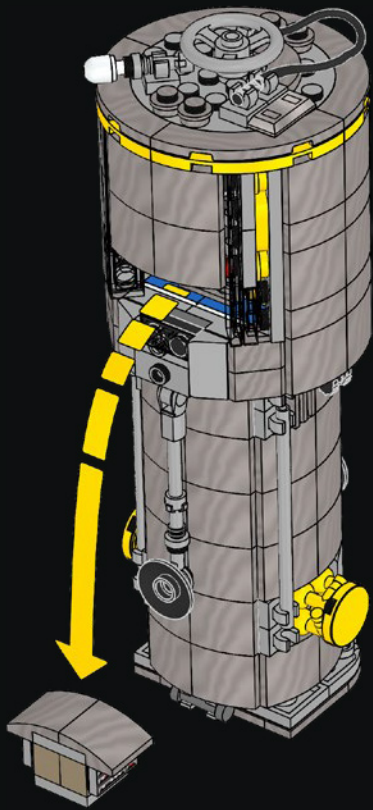
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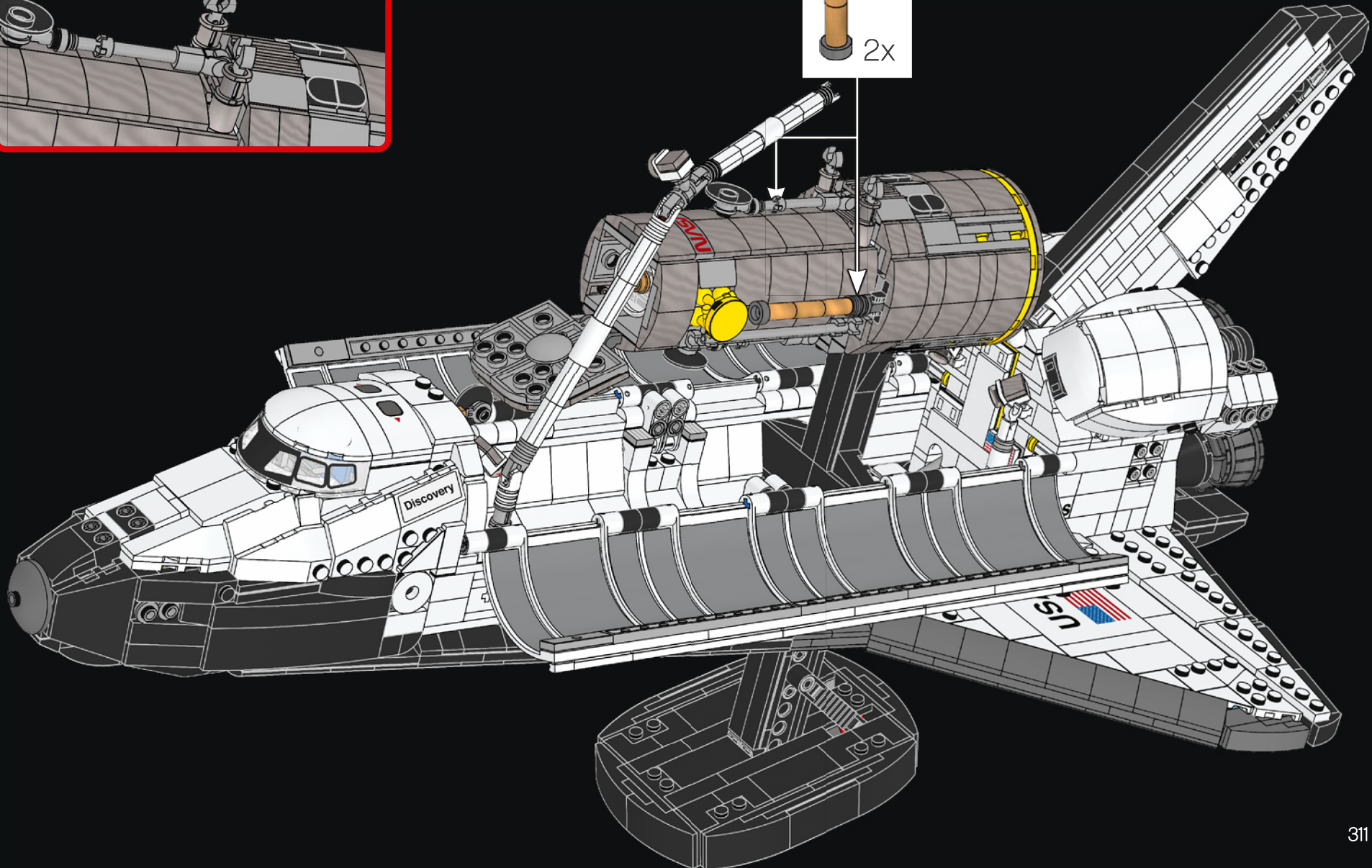
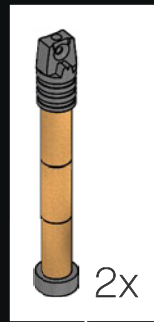
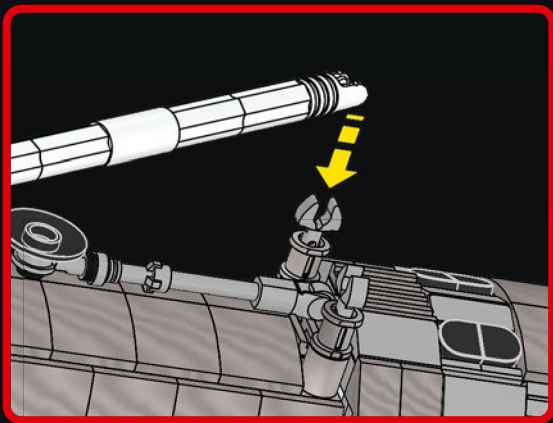


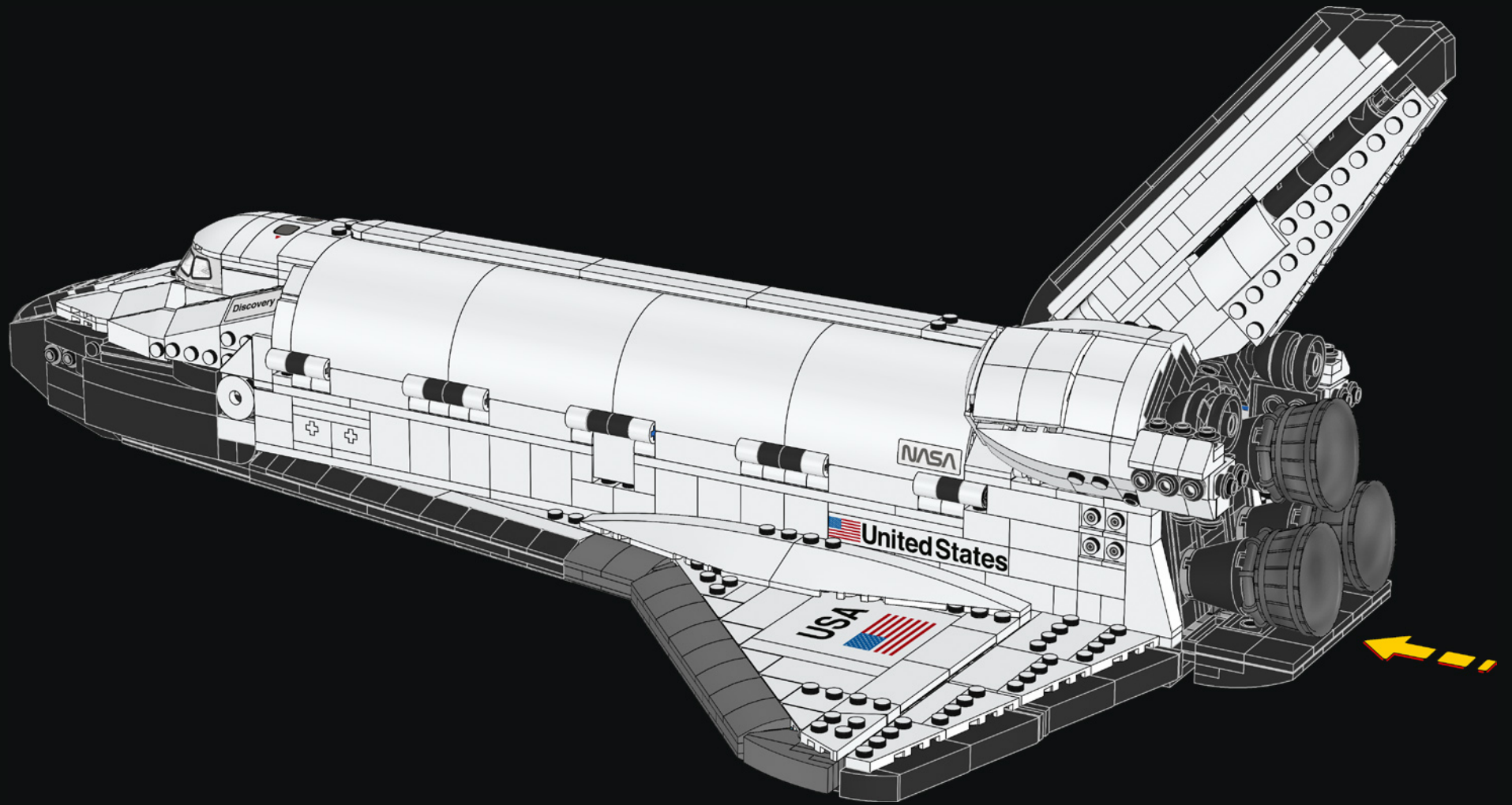


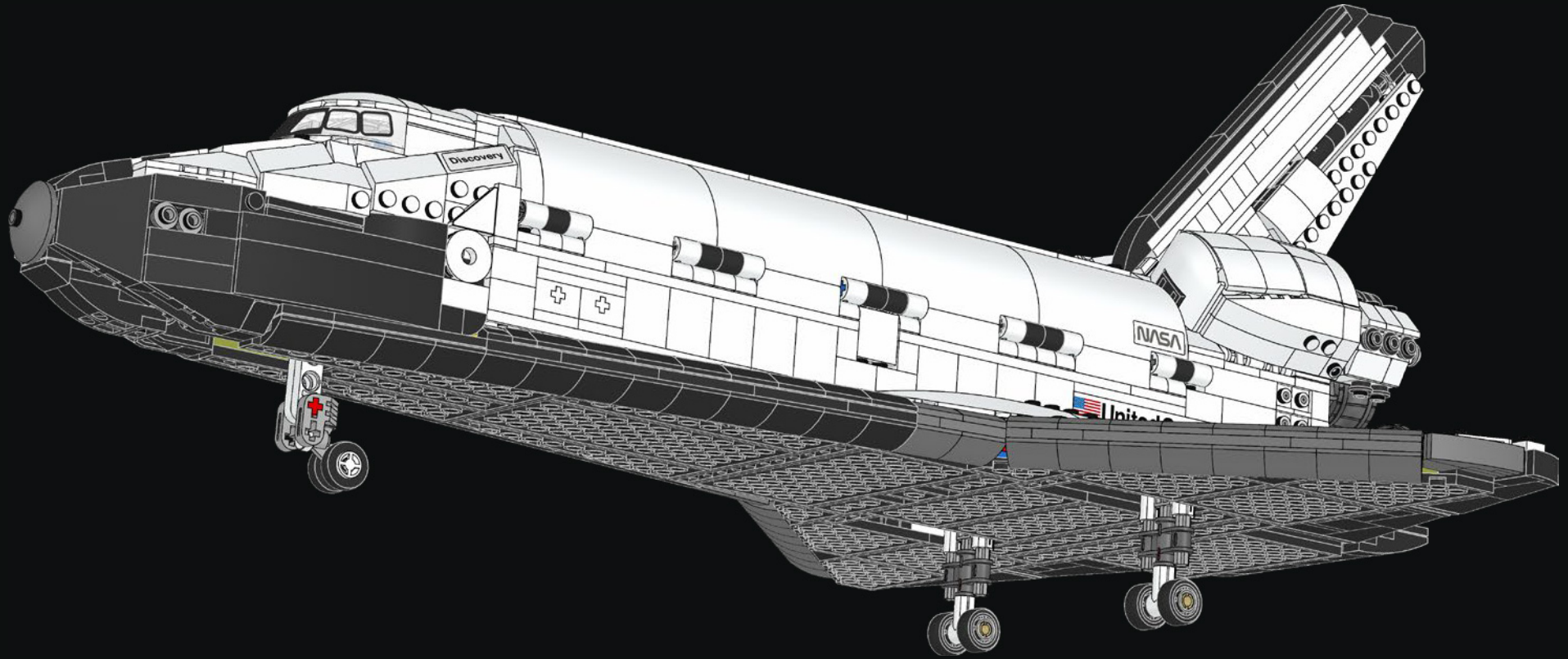
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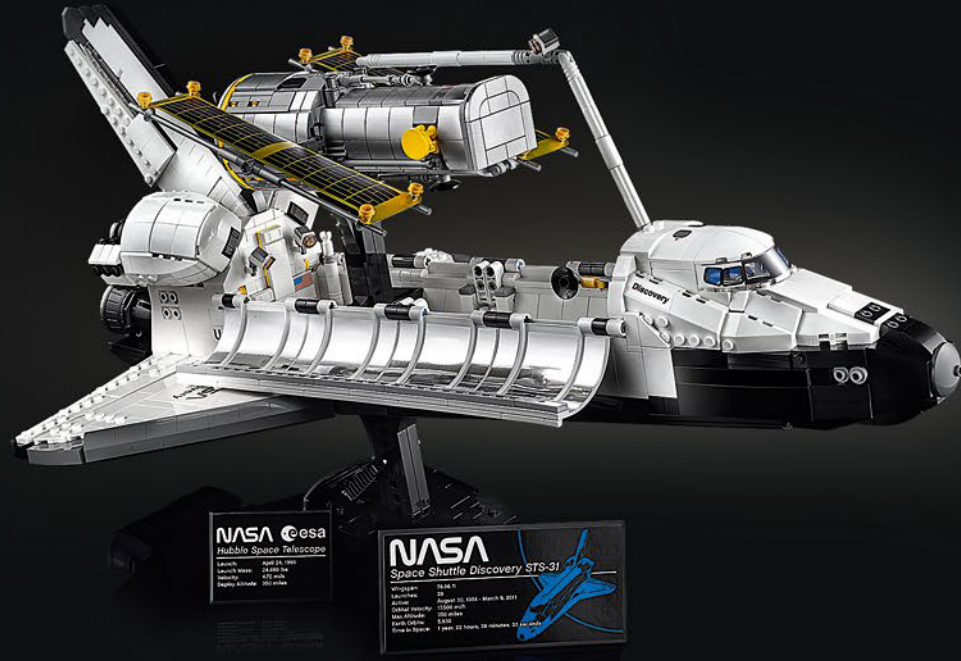
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Space Shuttle Discovery STS-31

Weight	16.4 t
Length	37.6 m
Height	27.2 m
Wingspan	24.4 m
Wings Area	22,000 m ²
Wings Loading	415 kg/m ²
Empty Airframe	20.5 m



NASA **esa**
Hubble Space Telescope

Weight	11,000 kg
Length	13.2 m
Height	7.3 m
Wingspan	24.4 m
Wings Area	22,000 m ²
Wings Loading	415 kg/m ²
Empty Airframe	20.5 m



NASA **esa**
Hubble Space Telescope

Weight	11,000 kg
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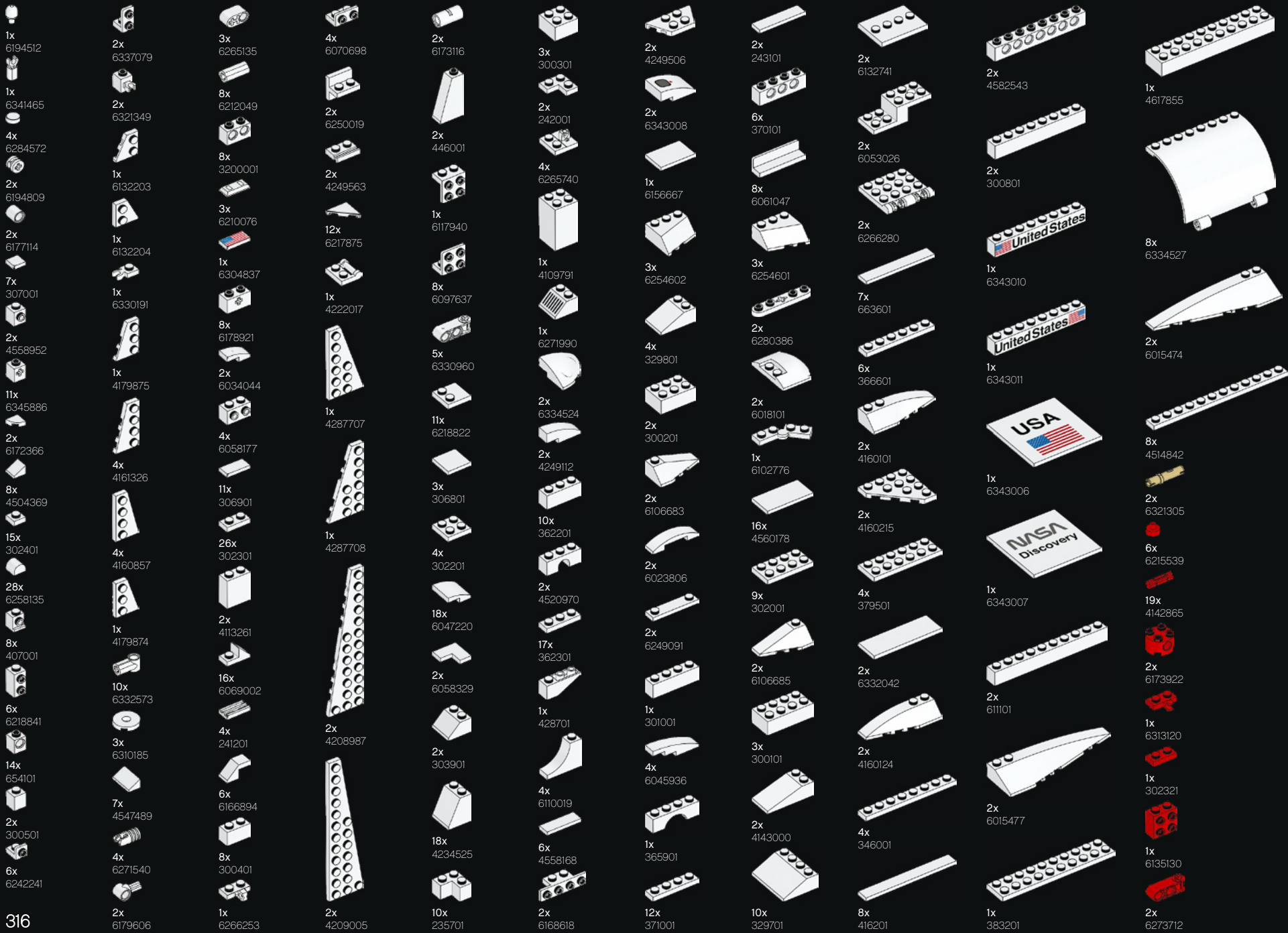
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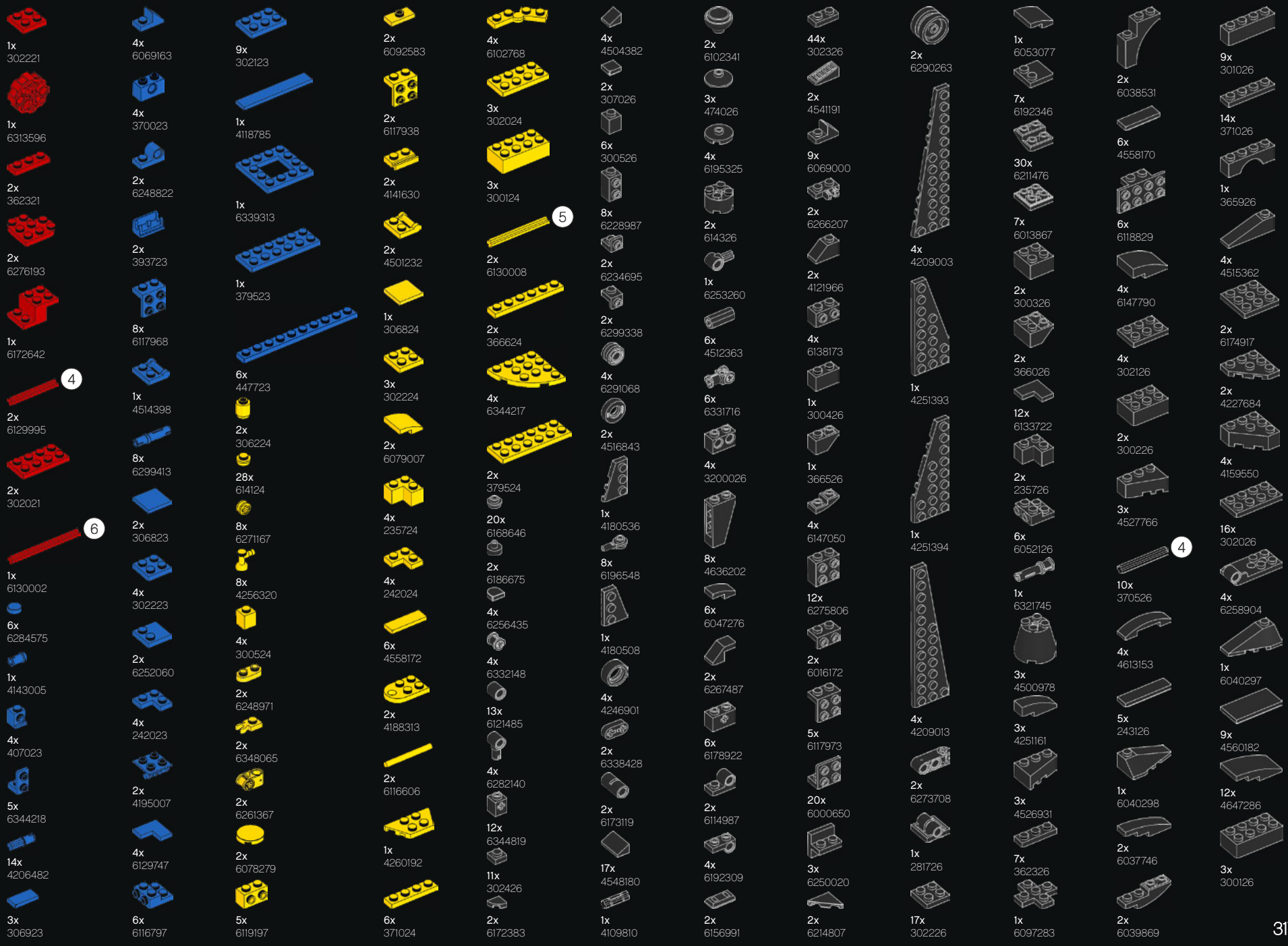
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