

# K'NEX®

## SPIRIT OF AMERICA™

### LAND SPEED RACERS

12529



Special CRAIG BREEDLOVE Poster!



**PULL-OUT POSTER**  
Inside

**WARNING:**  
CHOKING HAZARD – Small Parts.  
Not for children under 3 years.

**AVERTISSEMENT:**  
DANGER D'ÉTOUFFEMENT – Pièces de petite taille.  
Ne pas donner aux enfants de moins de 3 ans.

COLOR CODED BUILDING SYSTEM

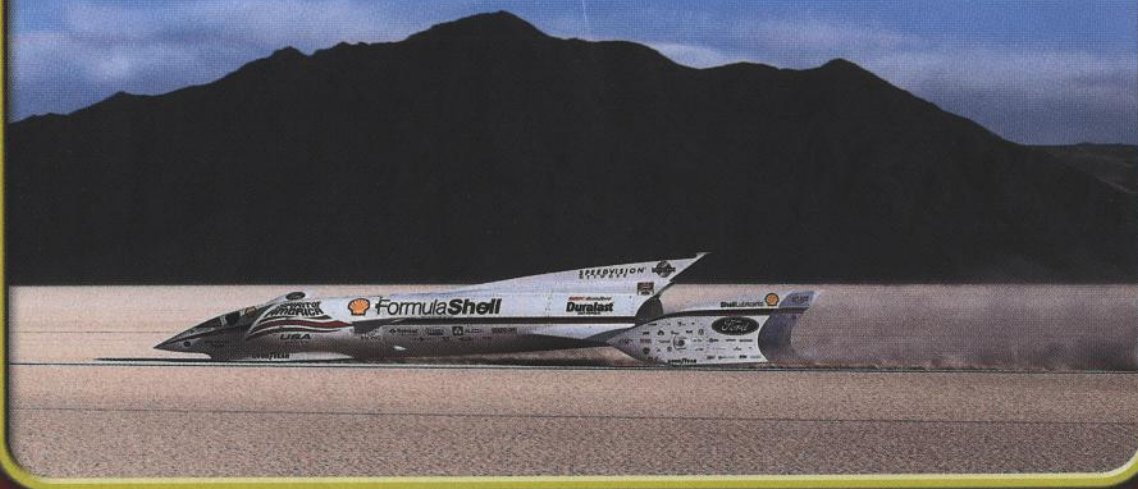


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**W**elcome to the world of Land Speed Racing... a world where the race course is a blur and where a mile is covered every 5 seconds! Land Speed Racing is an elite sport where a select few teams race their jet-powered vehicles at speeds of 700 mph and above in order to attain the World Land Speed Record!

Later in this booklet, you'll learn about Craig Breedlove and his quest to return the Land Speed Record to the United States. With this set, you can build 3 sleek replicas of Craig's awesome **SPIRIT OF AMERICA** jet-powered cars. Each model features a simulated engine and flame that spin as you push it!



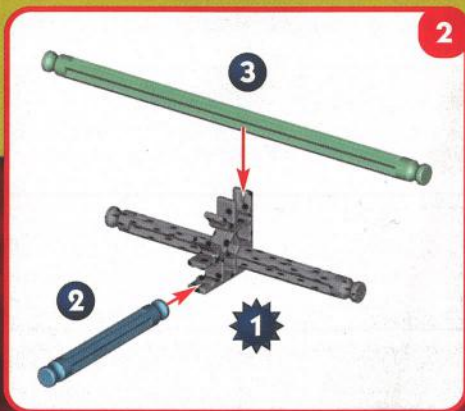


### Building with K'NEX

Hi! I'm your K'NEX mechanic. When you see me in the instructions, you'll want to pay close attention to the details being pointed out.

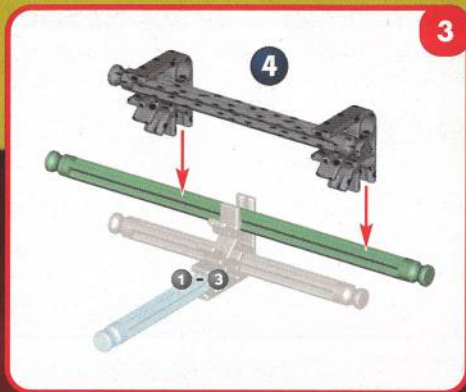
### Ready, Set, Build

To begin your model, find the **1** and follow the numbers. Each piece has its own shape and color. Just look at the picture, find the pieces in your set that match what you see, and snap them together. Try to hold your model in the same direction as in the picture so you'll attach your pieces to the right place.



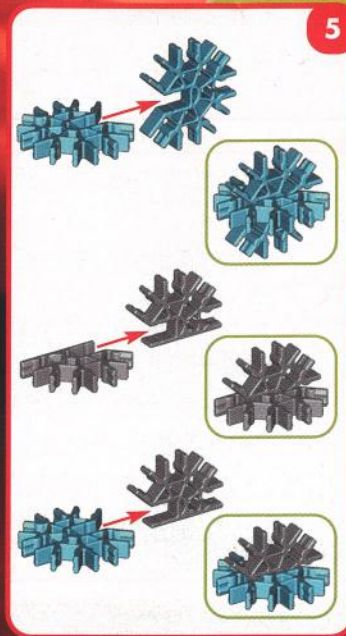
### Movin' On

The faded colors tell you this section is already built. You'll want to connect the new section to the place where the arrows are pointing. This piece will be in full color.



### Spacers

There are places in your model where you need to add blue and silver Spacers. Be sure to use the right color and count them carefully.

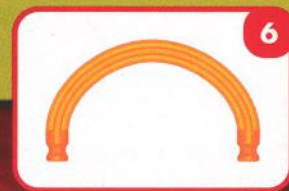


### Connectors

There are blue and silver Connectors with special long slots. They slide together as you see in the pictures. Push the parts together until you hear a "click".

### Flexi-Rods

A Flexi-Rod is an orange or purple Rod that you bend to make curves. It will be easier to attach to your model if you bend it back and forth first.



## LAND SPEED RACING

### What is it?

Land Speed Racing is a sport where drivers push their vehicles to extreme speeds in order to break the World Land Speed Record. Today's land speed vehicles are powered by jet engines usually found in military aircraft!

### History

The 1st land speed record was recorded in 1898 at a modest 39.2 mph. Since then, technology has allowed these land speed racers to reach astounding speeds. The current record stands at 763.0 mph - faster than the speed of sound! This record was set on October 15, 1997 by the British THRUST SSC team and is the record to beat.

### Where to Race?

Land speed racers can cover a mile in about 5 seconds, so they need wide-open spaces to drive on. The Black Rock Desert in Nevada has become a favorite location because of its hard, flat surface.

### Scoring

In order to set a new land speed record, a team must make 2 runs in opposite directions within one hour. The top speed of both runs is then averaged together to get the official speed. A team breaks the record if they surpass the existing record speed by 1%.



*Team members help Craig get strapped into the cockpit.*



*The SOA makes a 1997 run in the Black Rock Desert.*

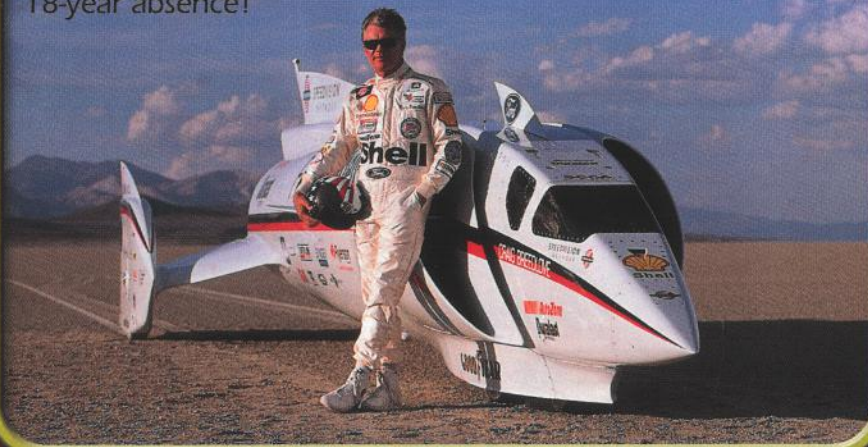
## CRAIG BREEDLOVE

Craig Breedlove, five-time holder of the World Land Speed Record, is a true American hero. He was born in Southern California on March 23, 1937, and has been heavily involved in American motor sports for the past 50 years!

In 1963, Craig completed work on his first "Spirit of America" jet-powered car. In 1963 and 1964, Craig ran this car to 3 separate land speed records (407 mph, 469 mph, and 526 mph)!

In 1965, Craig finished an even more powerful jet-powered car that was called "Spirit of America Sonic 1". He achieved 2 more land speed records with this car during November of 1965 (555 mph and 601 mph)!

Craig is currently modifying his 3rd generation "Spirit of America". His goal is to run in 2001 and beat the British Thrust SSC team's record of 763.0 mph. The major motivation is to bring the World Land Speed Record back to the United States after an 18-year absence!



## SPIRIT OF AMERICA



*The SOA in the glow of the setting sun.*

The 3rd generation "Spirit of America" is truly a land speed record vehicle! This newest car uses a powerful J-79 turbo jet engine - the same engine found in the Navy's F-4 Phantom fighter! With over 48,000 horsepower on tap, a weight of only 9,000 pounds, and cutting-edge aerodynamics, the SOA is easily an 800 mph

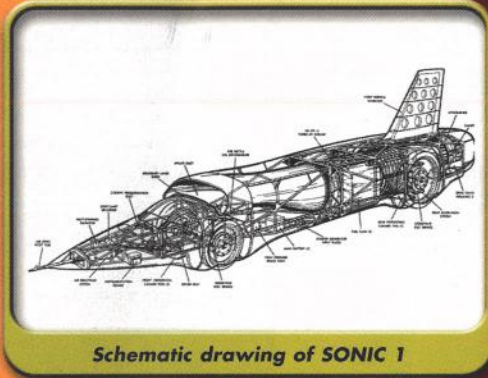
car! To beat the record, Craig and the newest SOA will have to travel an average speed of at least 771.0 mph (1% faster than the current British record)! New modifications will help to achieve this: a wider stance for increased stability, a rear horizontal stabilizer fin to help keep the car on the ground, and new wheels to help reduce vibration at extreme speeds!

### GOOD LUCK!

Best wishes to Craig and the entire Team in your pursuit of the World Land Speed Record. You truly embody the Spirit of America!

### MORE INFO

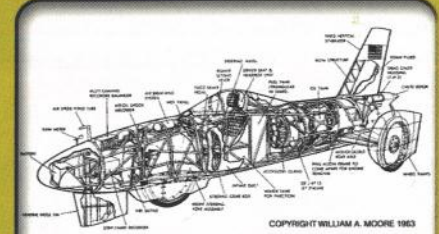
Check out the awesome "Spirit of America" Web site for more photos, facts, information, updates, and lots of cool merchandise! Visit them at: [www.spiritofamerica.com](http://www.spiritofamerica.com)  
Special thanks to photographer Peter Brock for the use of these great pictures.



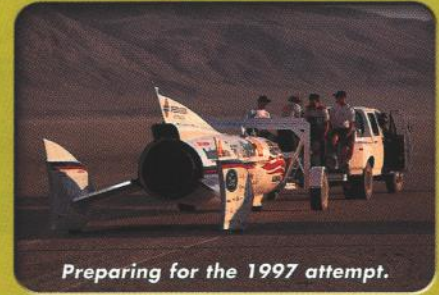
*Schematic drawing of SONIC 1*

## COOL FACTS

- **LEAD FOOT** – In official land speed racing, Craig was the first person to travel through the 400, 500, and 600 mph marks!
- **WILD RIDE** – In 1964, the chutes on the first car failed to open. Craig and the SOA sliced through a row of telephone poles at 400 mph and then plunged into a salt pond at over 200 mph. The car was destroyed, but Craig was fine!
- **DUST BOWL** – In 1996, Craig was cruising at over 650 mph in his newest car when a huge wind gust tipped the SOA up on its side. Once the dust cleared everyone was relieved to see Craig still in one piece!
- **FILL 'ER UP** – The Spirit of America's jet engine has been modified to run on premium Formula Shell gasoline...the same kind you buy at the pump!
- **IT'S A PLANE** – The Spirit of America can travel faster than most planes. Because it goes so fast, the SOA has the same aerodynamic design of a jet fighter!
- **TOUGH WORK** – Before Craig makes a run in the "Spirit of America", the crew must walk the entire 13-mile course and pick up stones and any other debris that might get sucked into the engine and cause serious damage!
- **A SPEEDING BULLET** – In order to break the current record, the "Spirit of America" will travel faster than a speeding bullet and actually punch through the sound barrier!

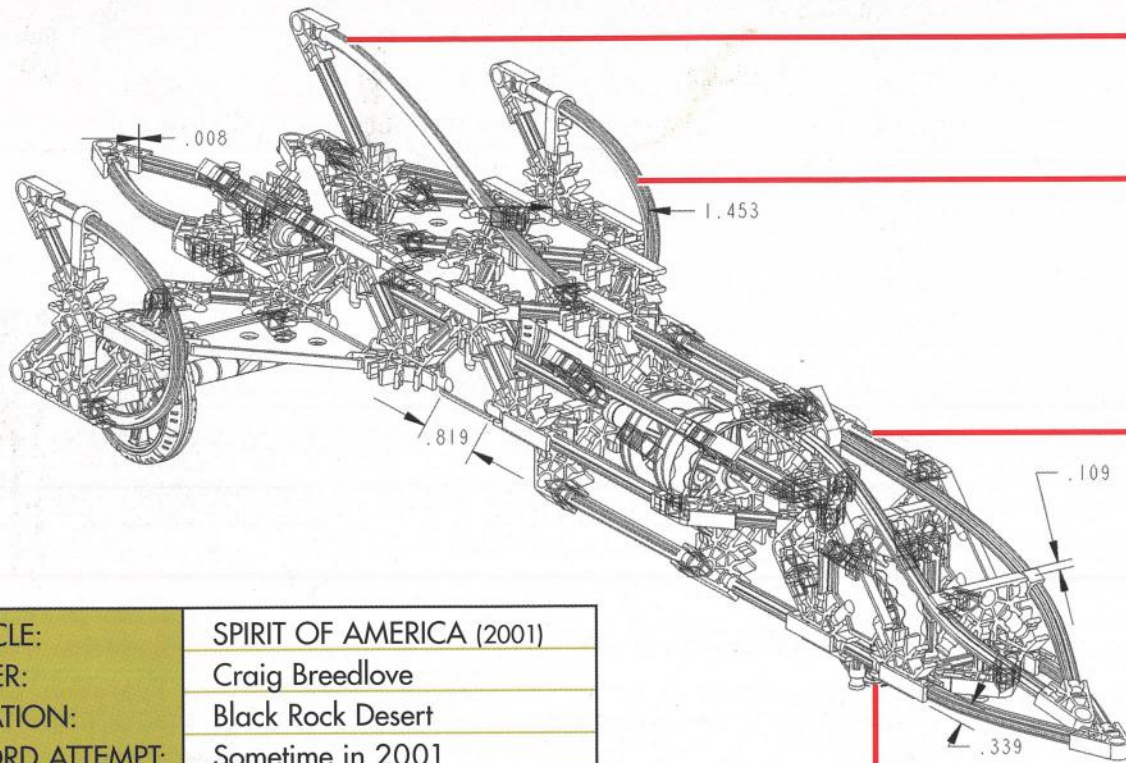


*Schematic drawing of the 1964 SOA*



*Preparing for the 1997 attempt.*

# Spirit of America (2001) Schematic Drawing



FIXED  
VERTICAL  
STABILIZER

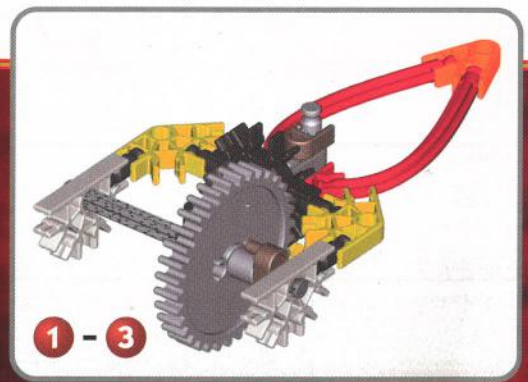
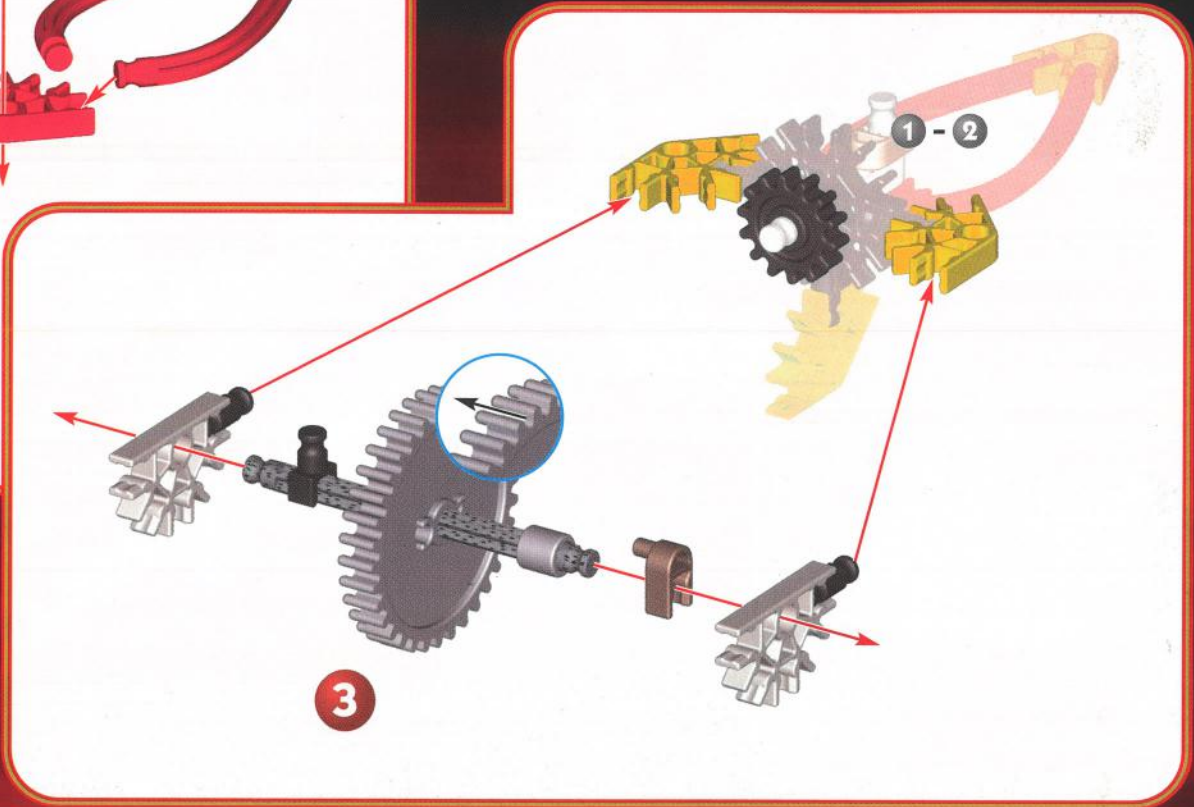
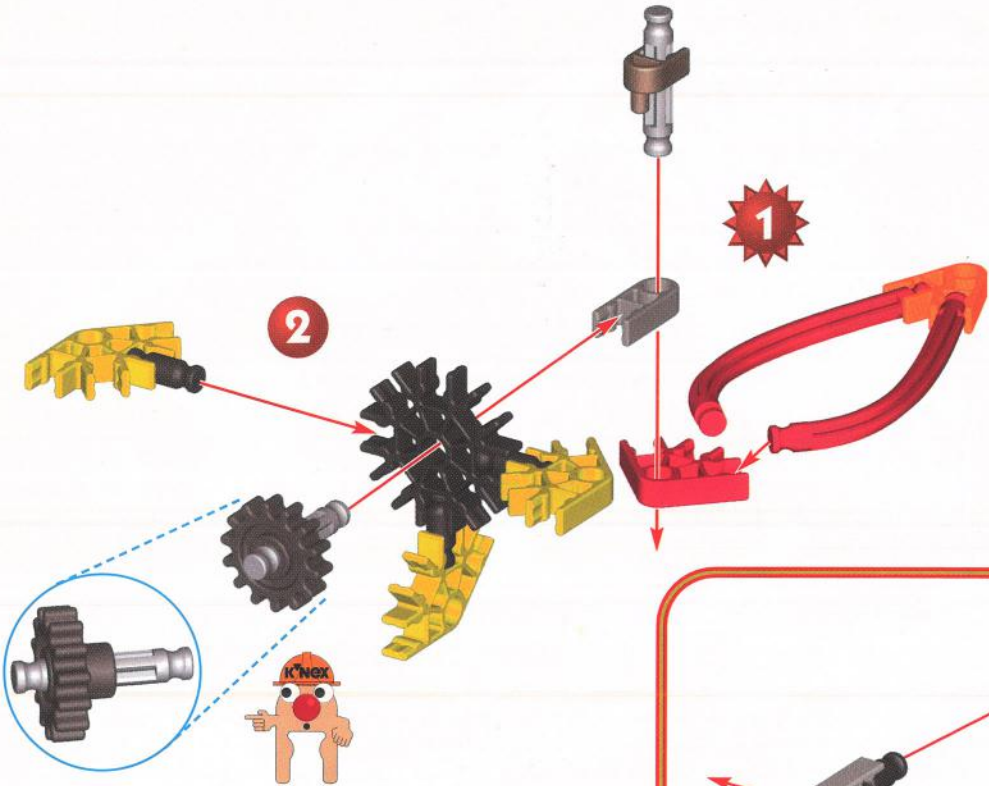
WHEEL  
PANTS

INTAKE  
DUCT

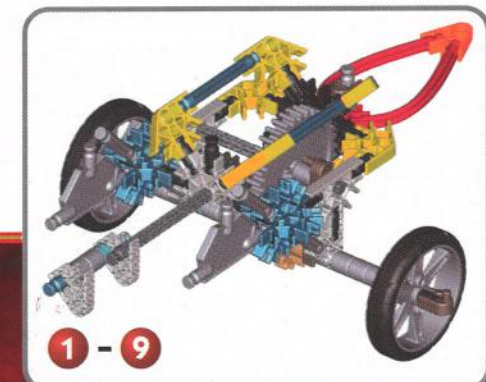
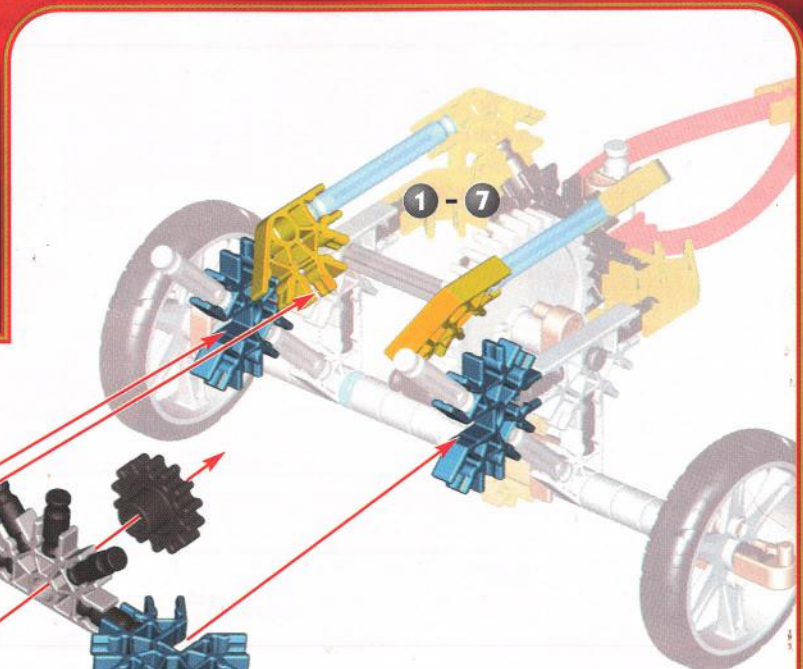
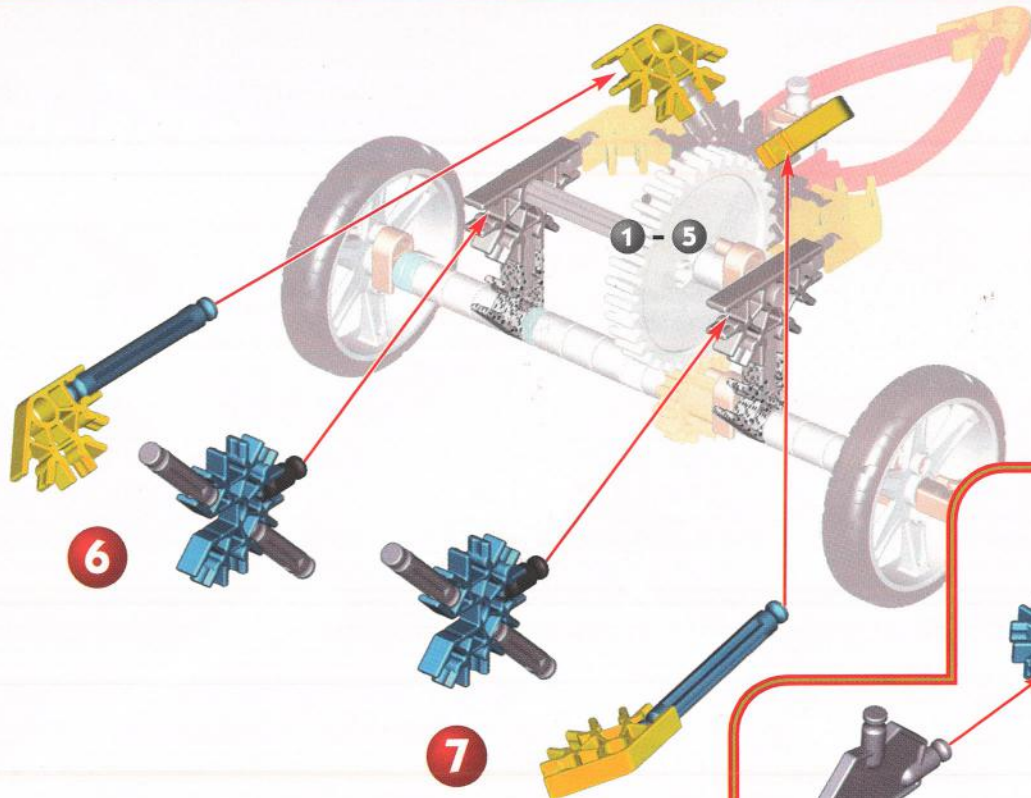
FRONT  
STEERING  
ASSEMBLY

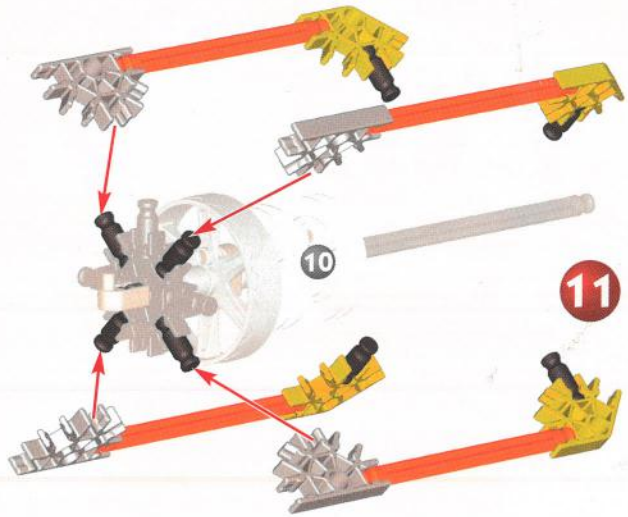
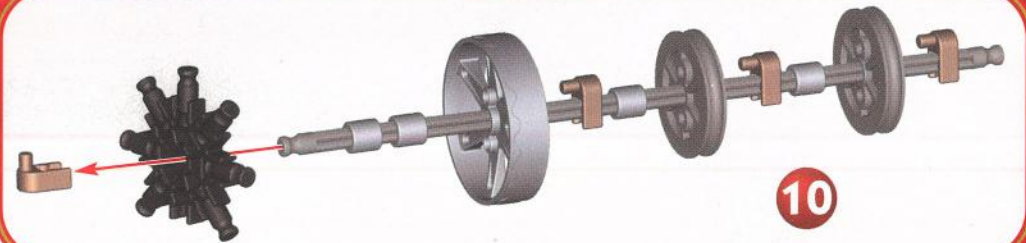
VEHICLE:	SPIRIT OF AMERICA (2001)
DRIVER:	Craig Breedlove
LOCATION:	Black Rock Desert
RECORD ATTEMPT:	Sometime in 2001
RECORD TO BEAT:	771.0 mph
EST. TOP SPEED:	800+ mph

# SOA (2001) Instructions

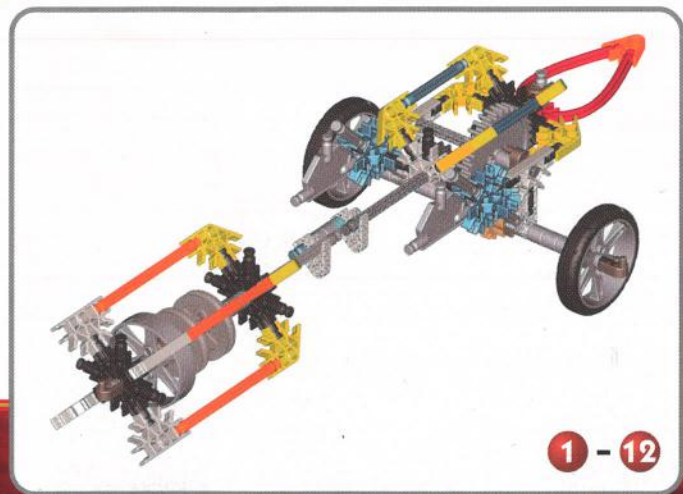


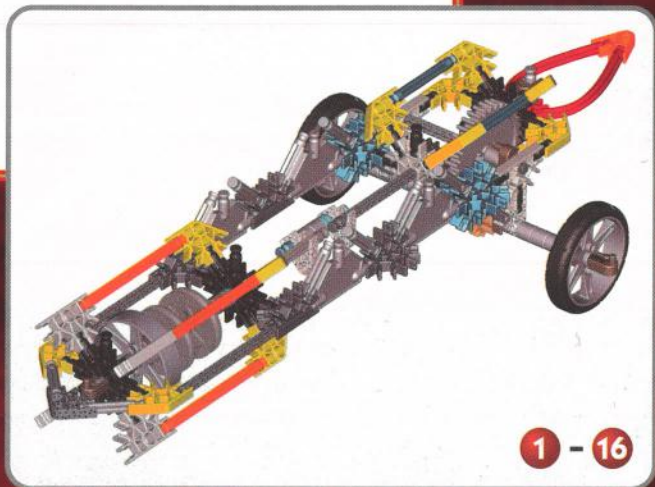
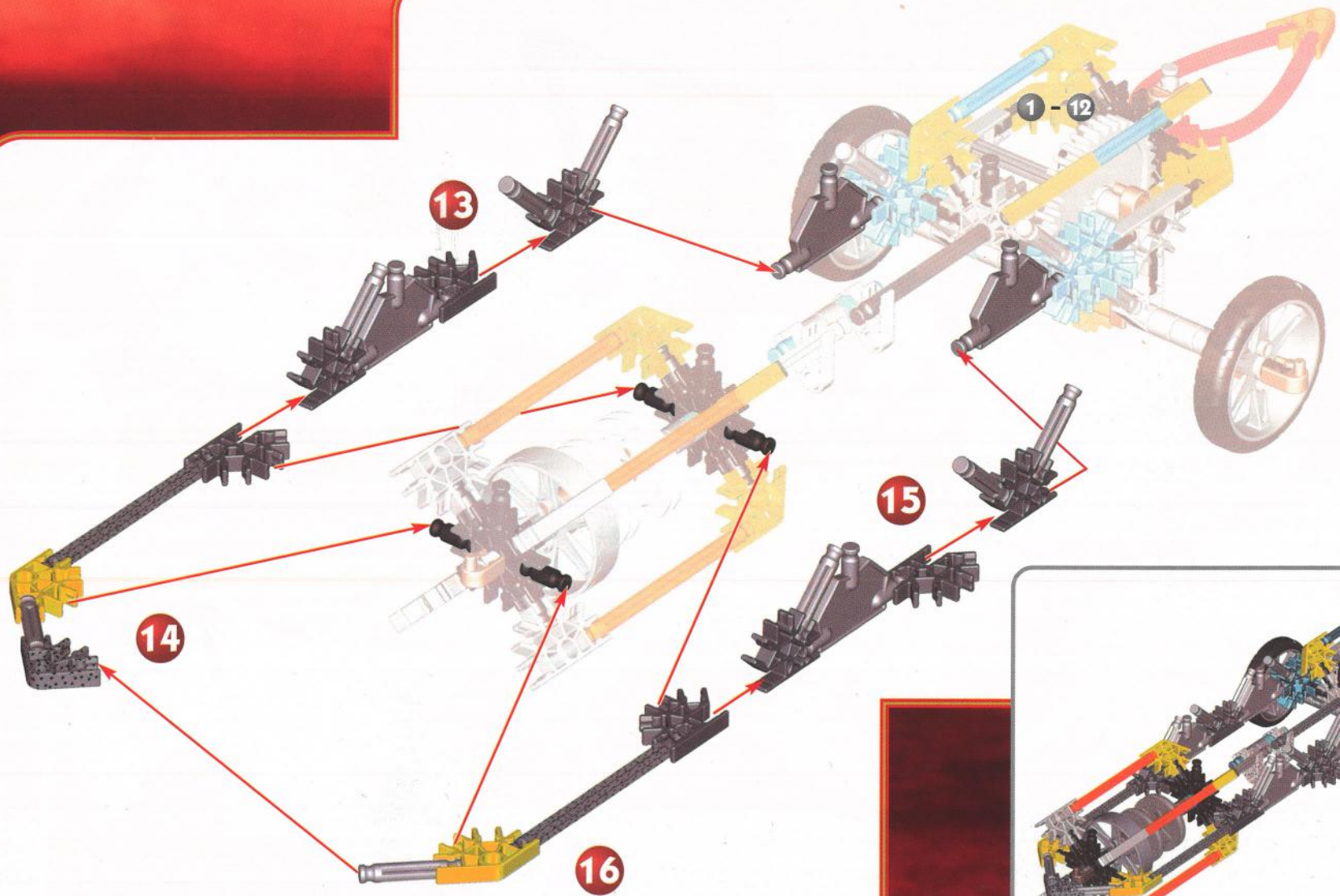




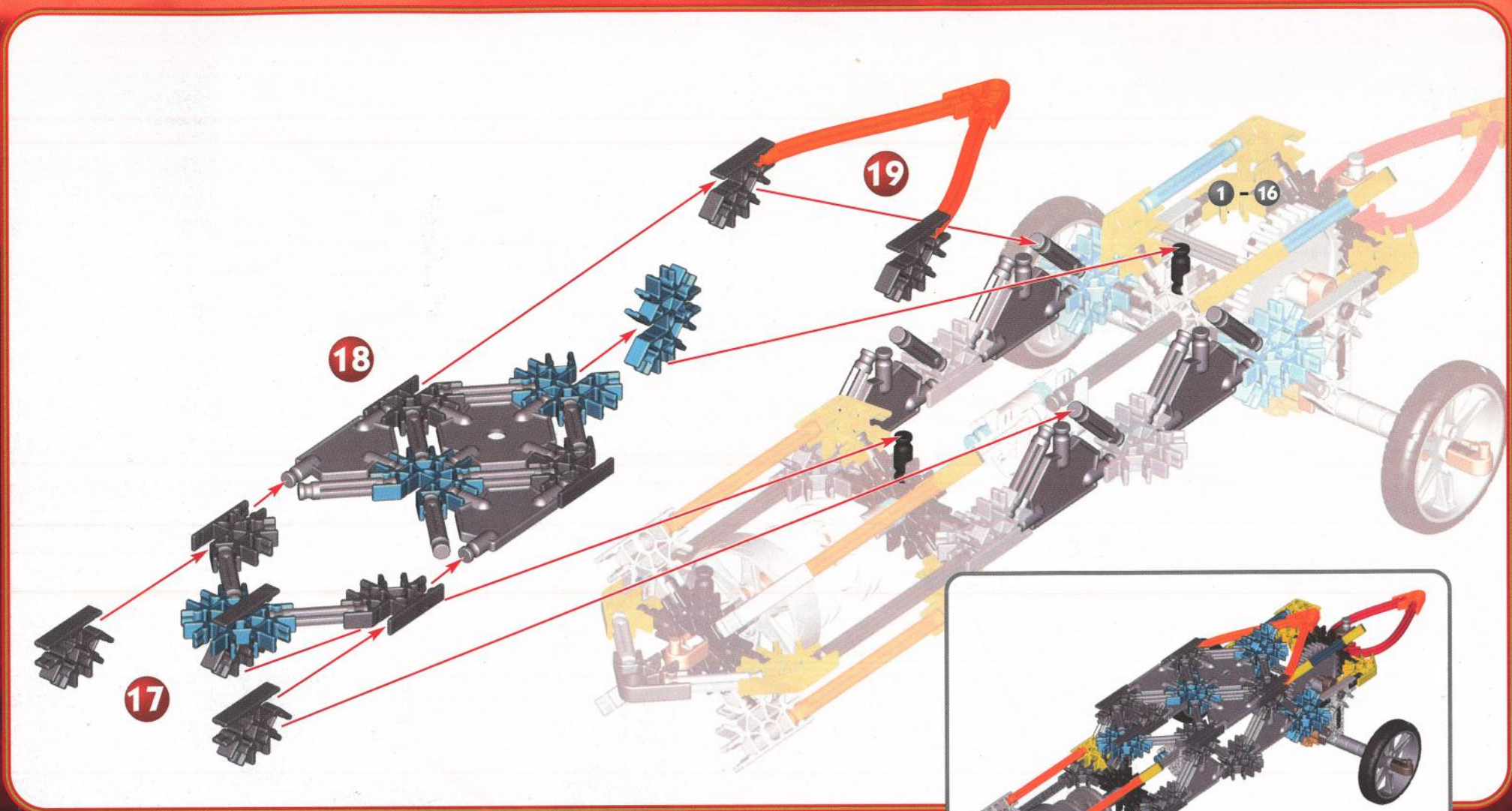


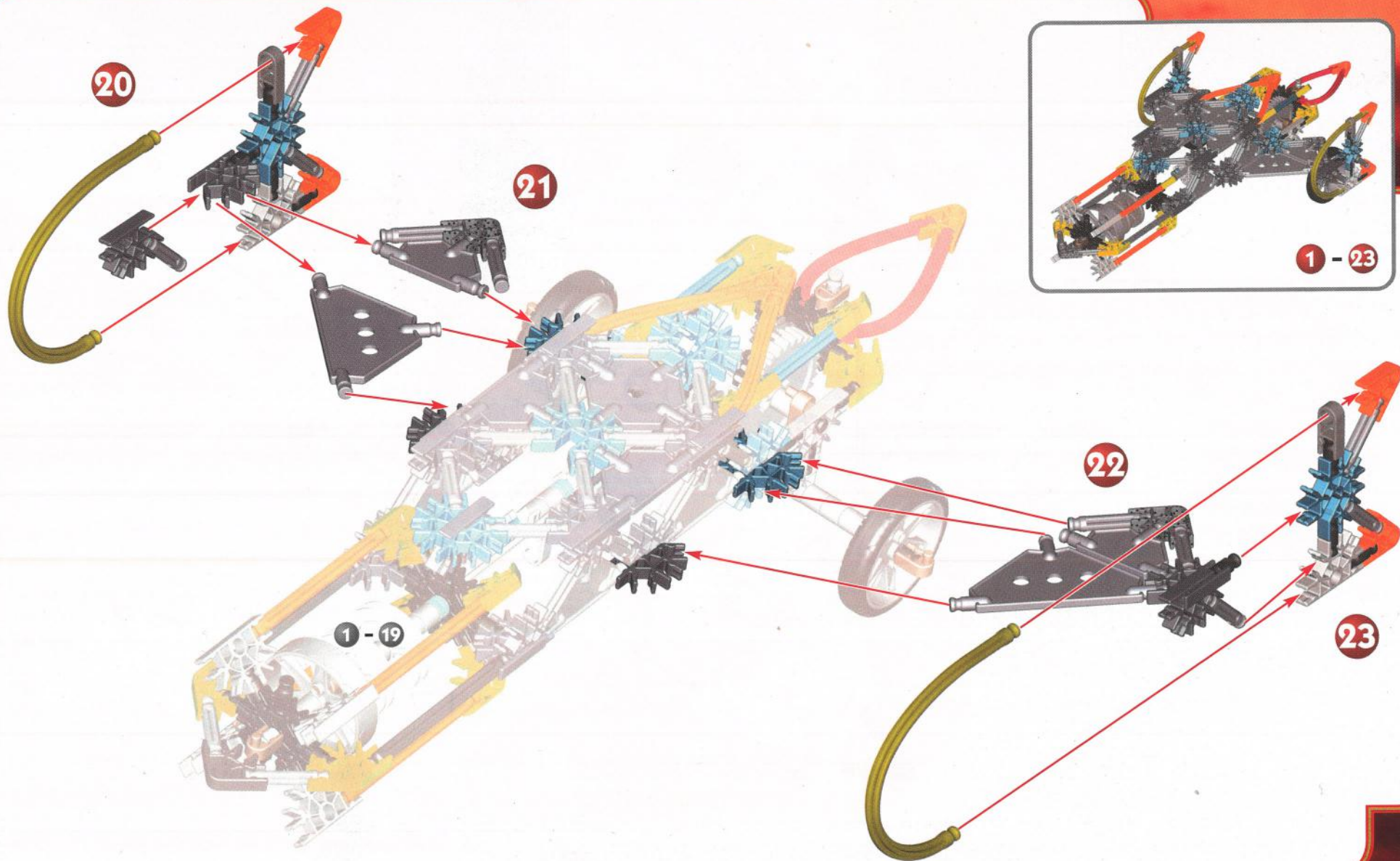
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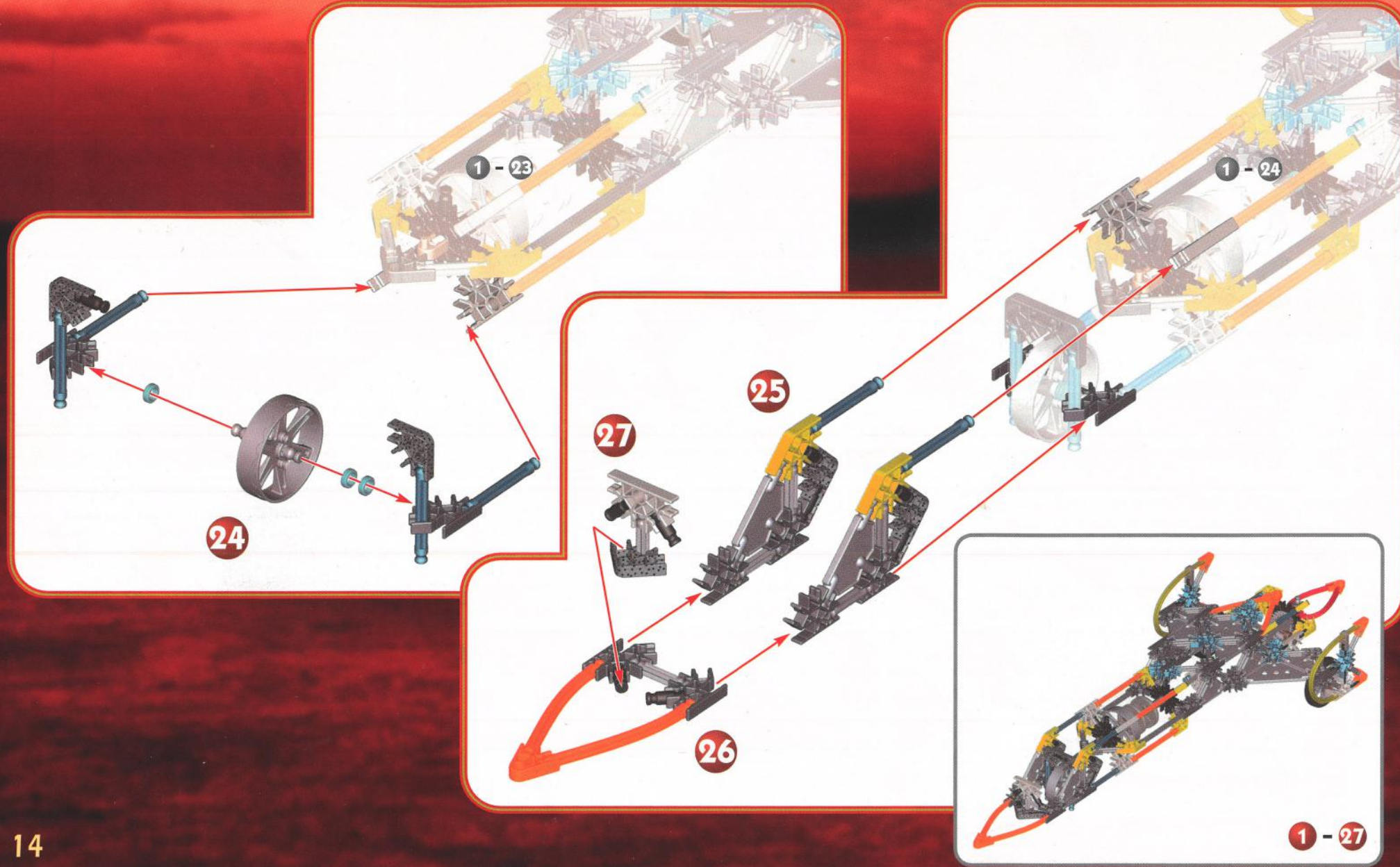


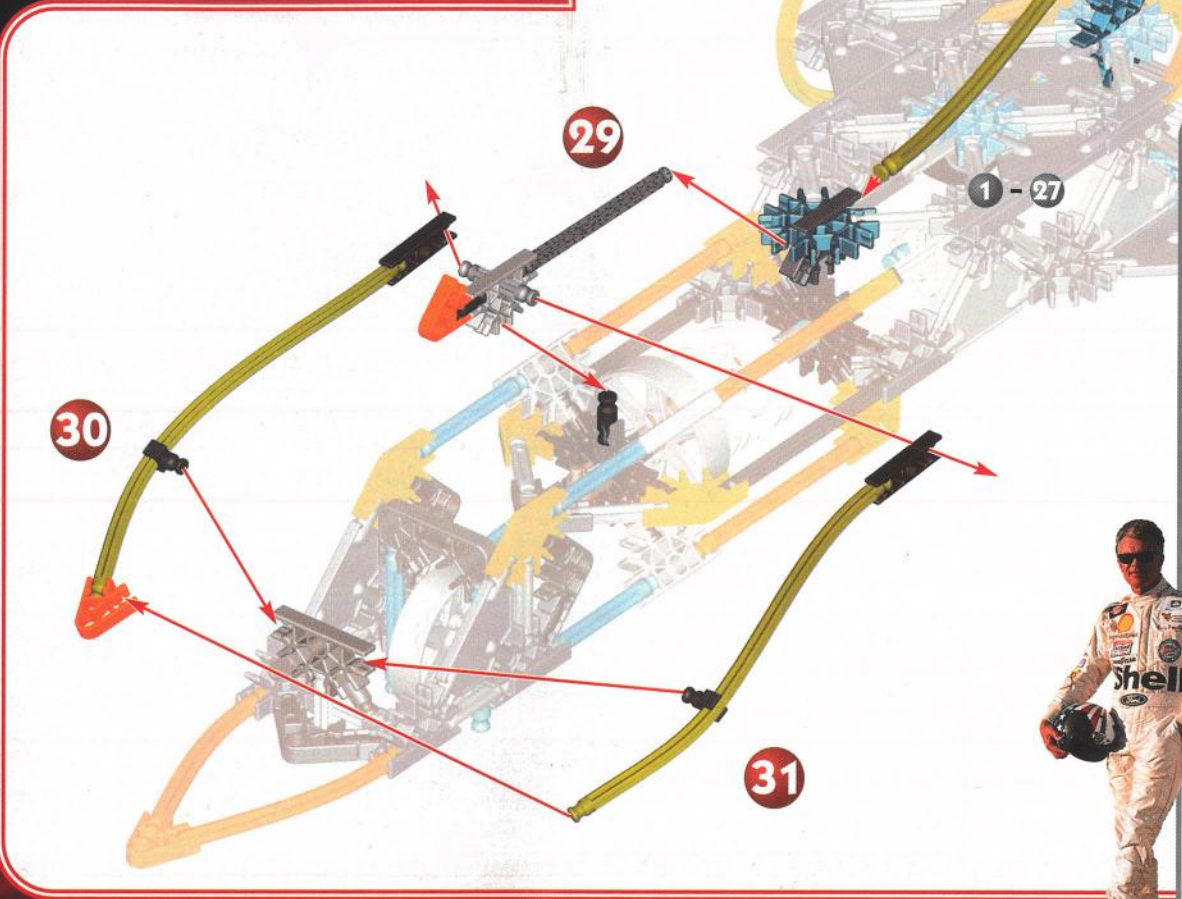


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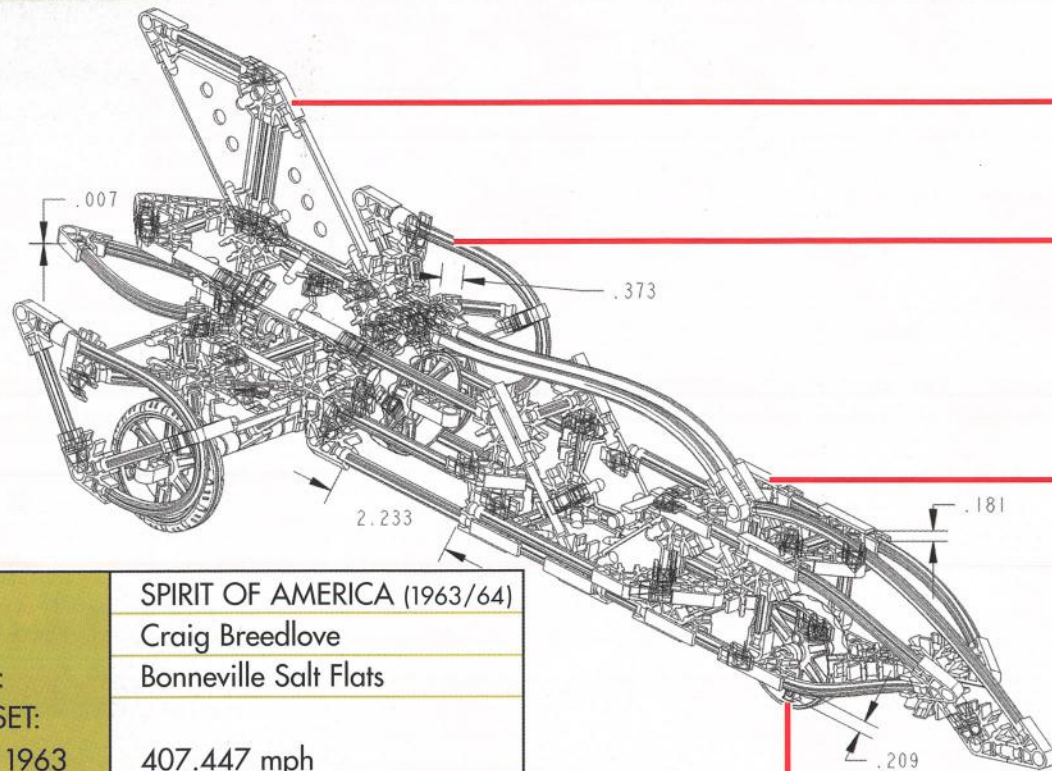




"Congratulations on building my latest jet-powered car! It's capable of speeds over 800 mph, and in 2001 I'm going to fire her up and attempt to bring the World Land Speed Record back to the United States!"

1 - 31

# Spirit of America (1963/64) Schematic Drawing



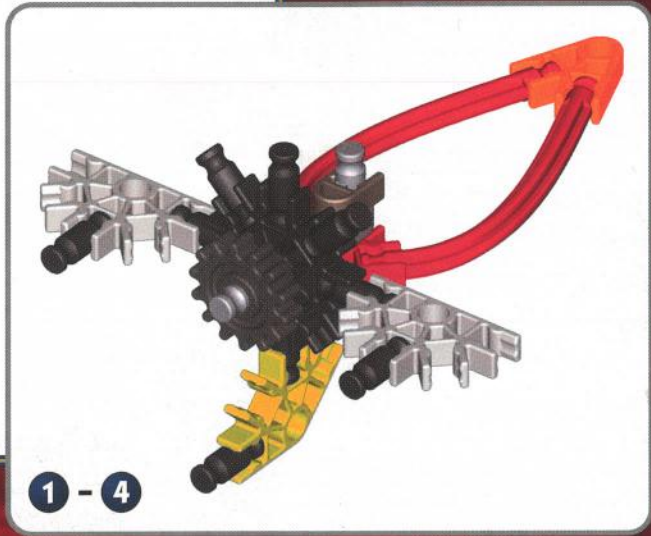
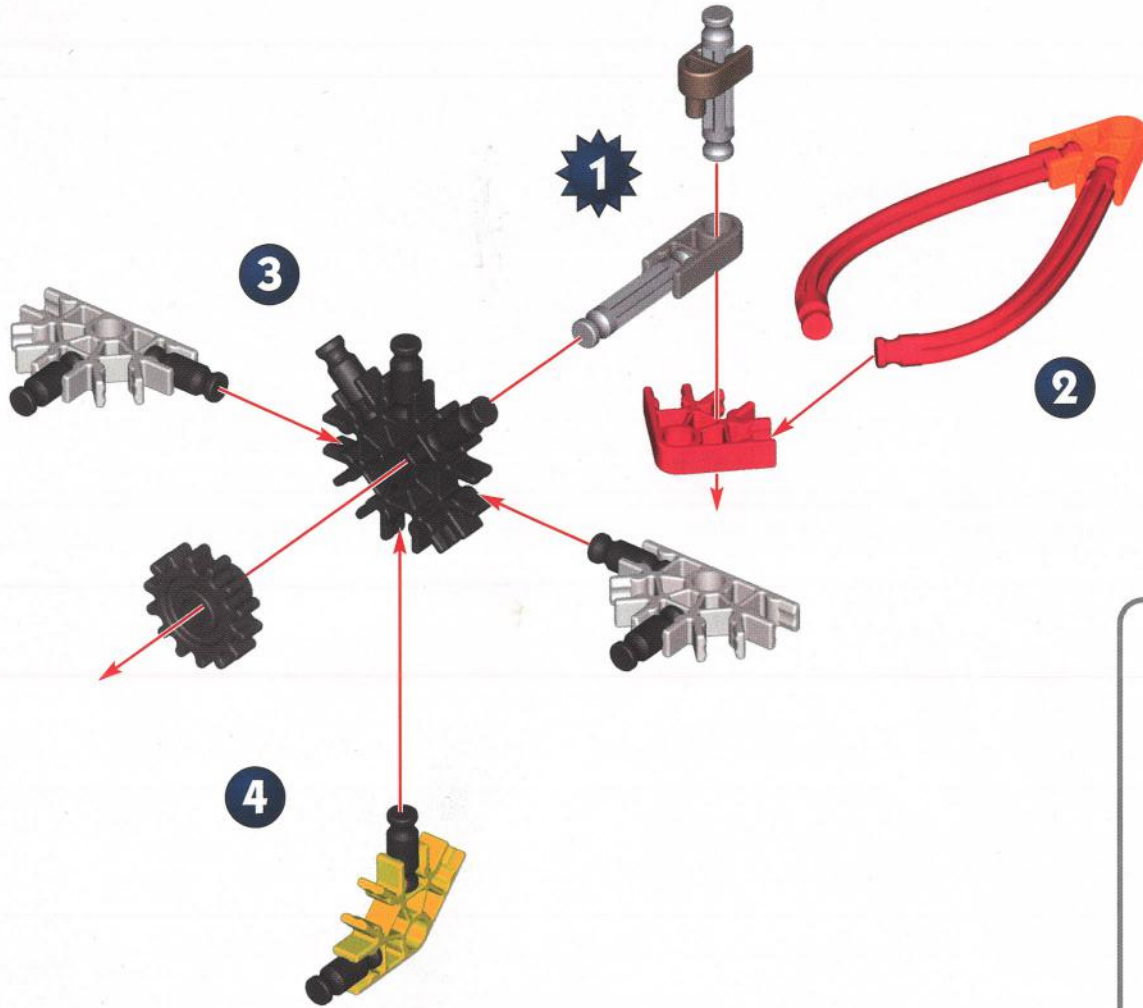
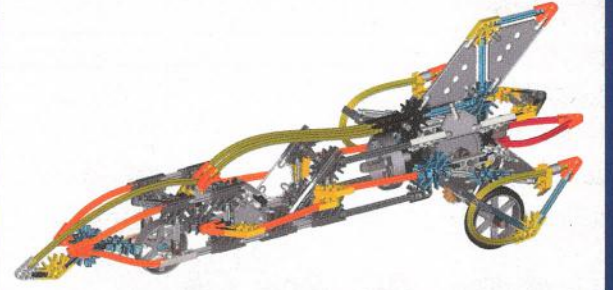
**FIXED  
VERTICAL  
STABILIZER**

**WHEEL  
PANTS**

**INTAKE  
DUCT**

**FRONT  
STEERING  
ASSEMBLY**

VEHICLE:	SPIRIT OF AMERICA (1963/64)
DRIVER:	Craig Breedlove
LOCATION:	Bonneville Salt Flats
RECORDS SET:	
Aug. 5th, 1963	407.447 mph
Oct. 13th, 1964	468.719 mph
Oct. 15th, 1964	526.277 mph





*Craig Breedlove*



Land speed racers can cover a mile in about 5 seconds, so they need wide-open spaces to drive on like the Black Rock Desert in Nevada.





Width: 10 feet, 4 inches

Length: 46 feet, 7 inches

Height: 7 feet

Weight: 9,000 lbs

Engine: J-79 GE Jet Engine

Thrust: 48,000 Horsepower

Top Speed: 800+ mph

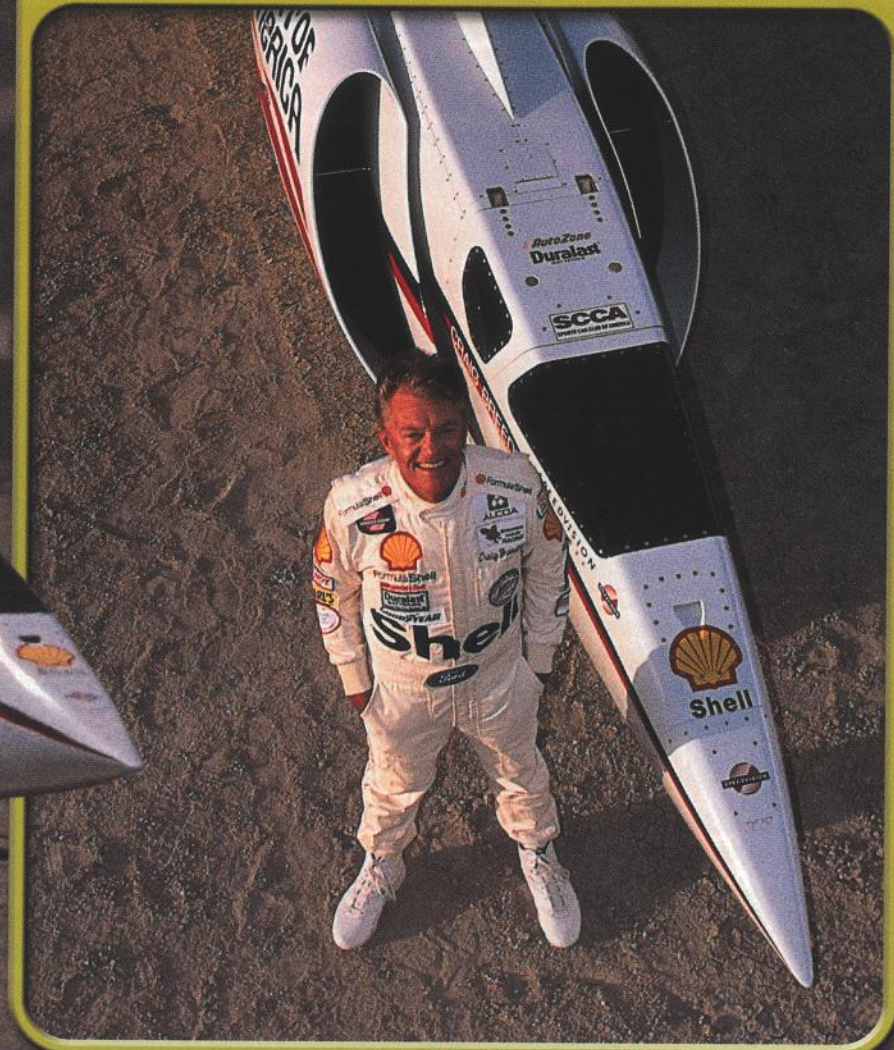
Fuel Mileage: 9 gallons/mile





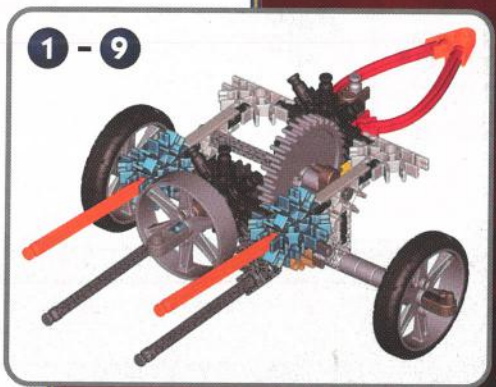
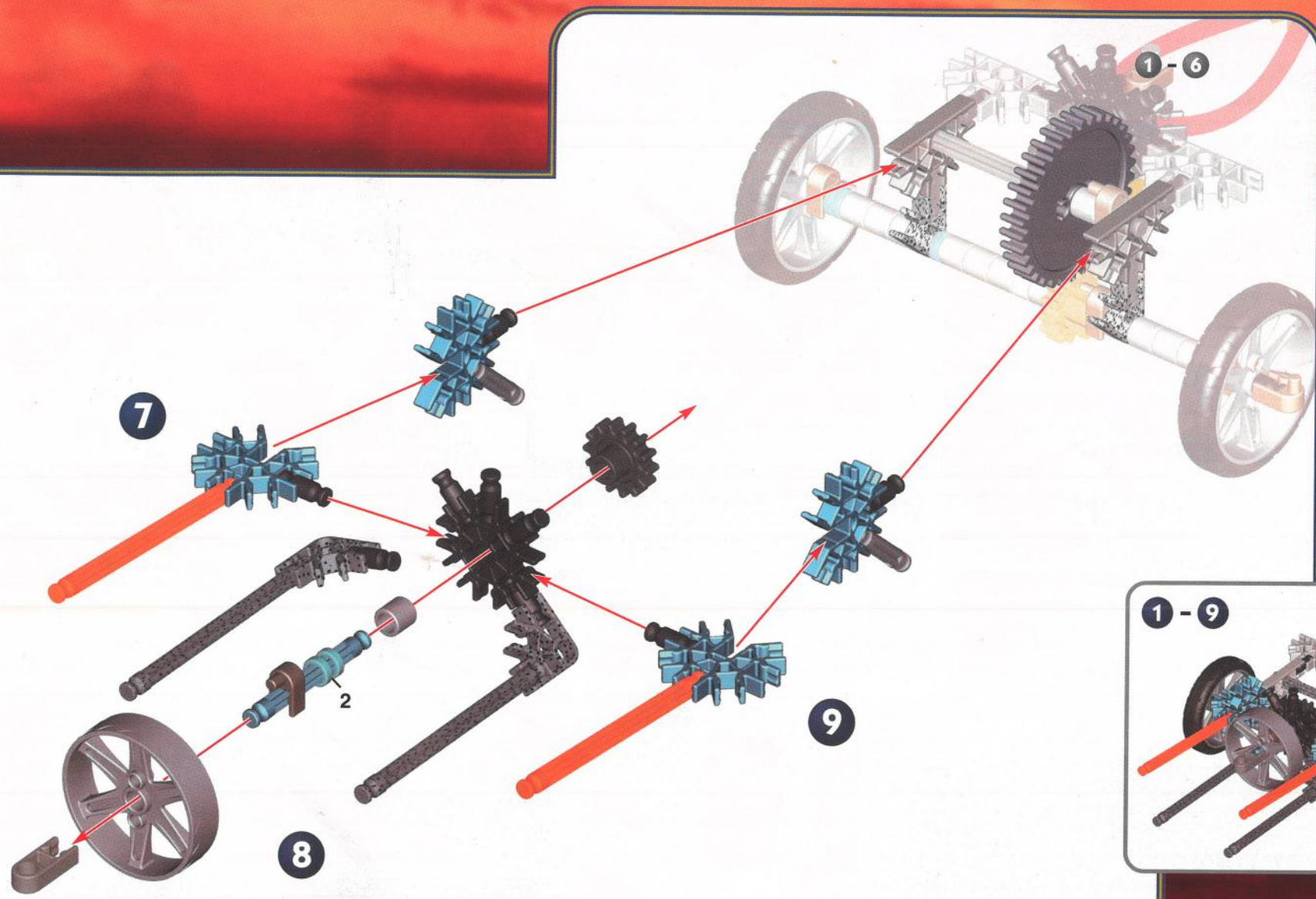
"The sensation of speed on the ground is considerably greater than in the air... the rush is incredible!"

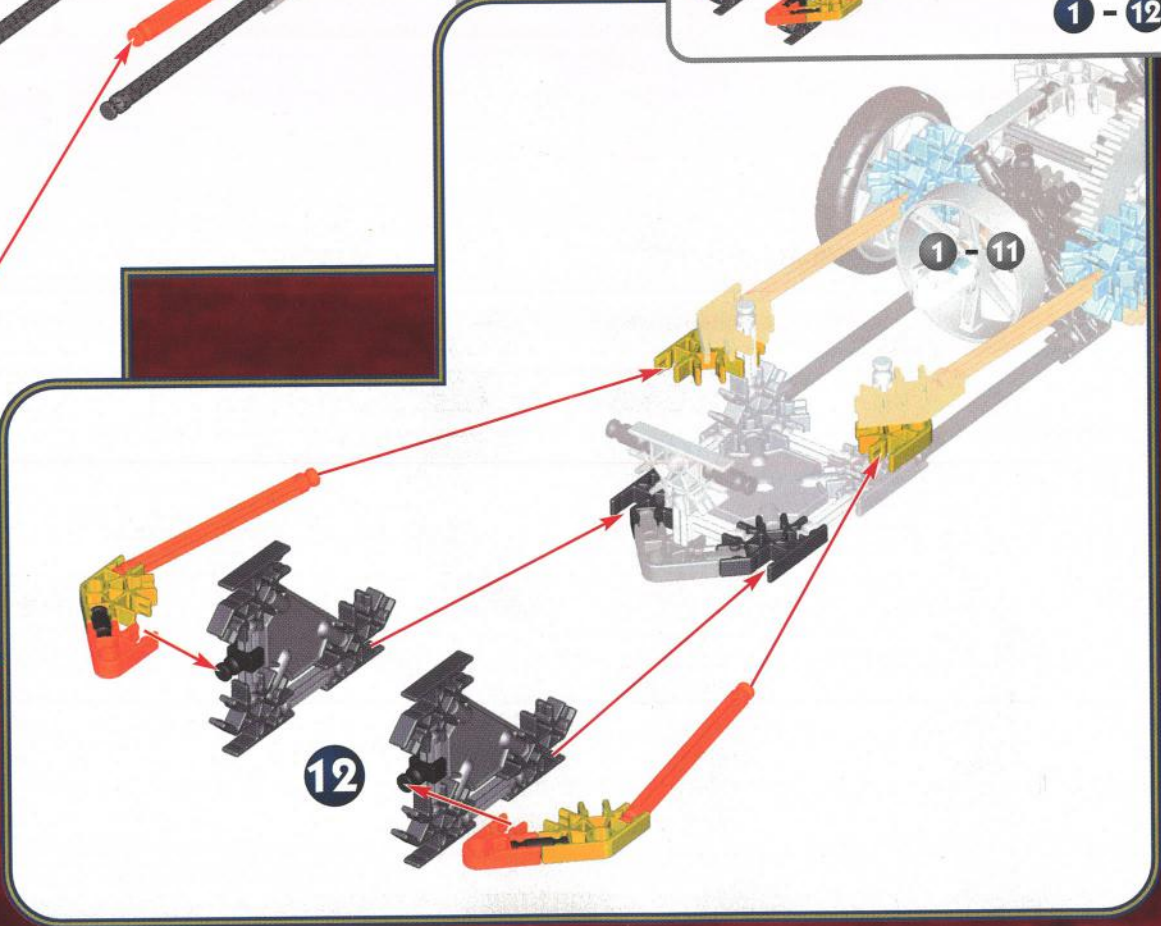
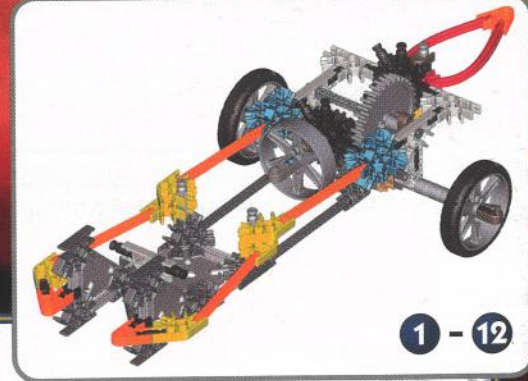
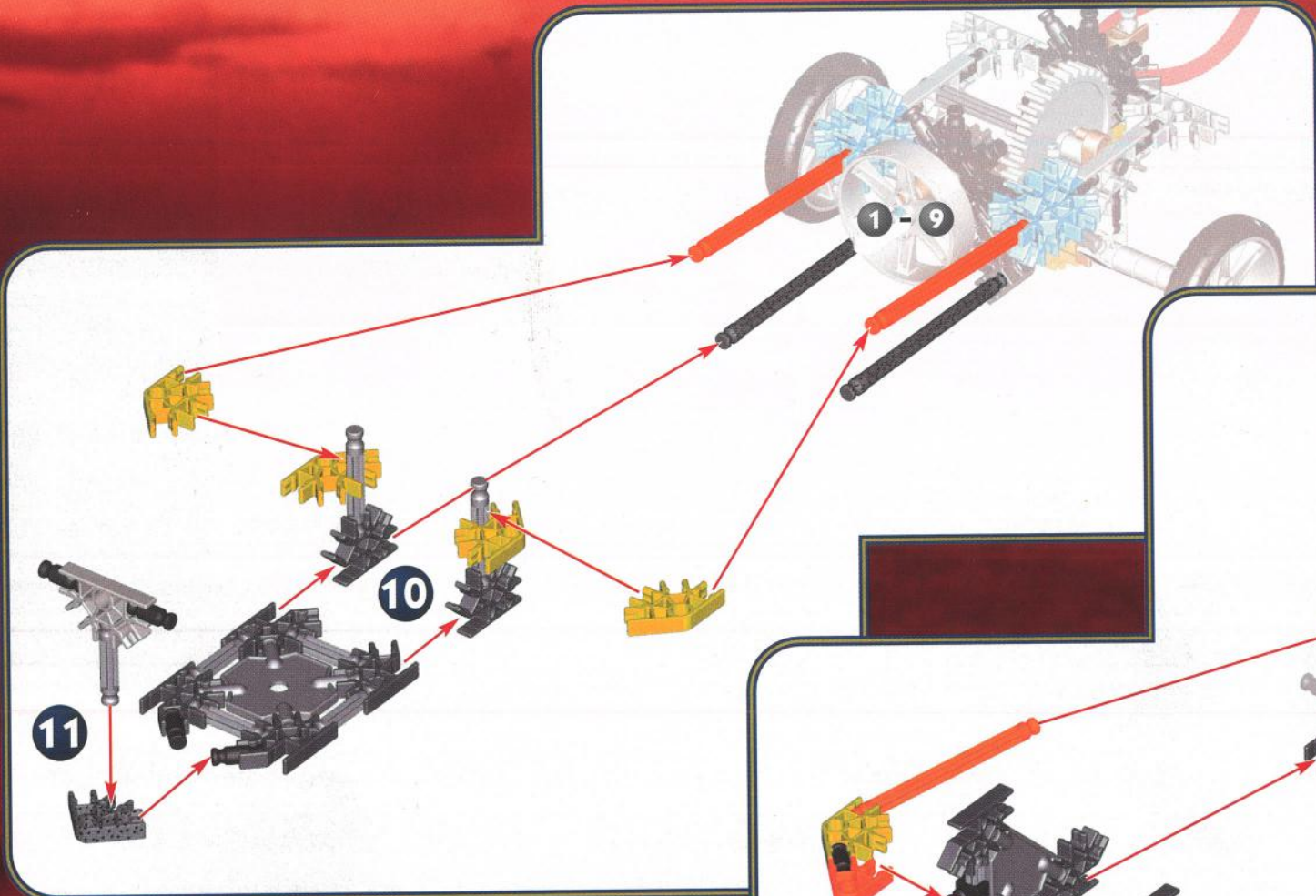
- Craig Breedlove

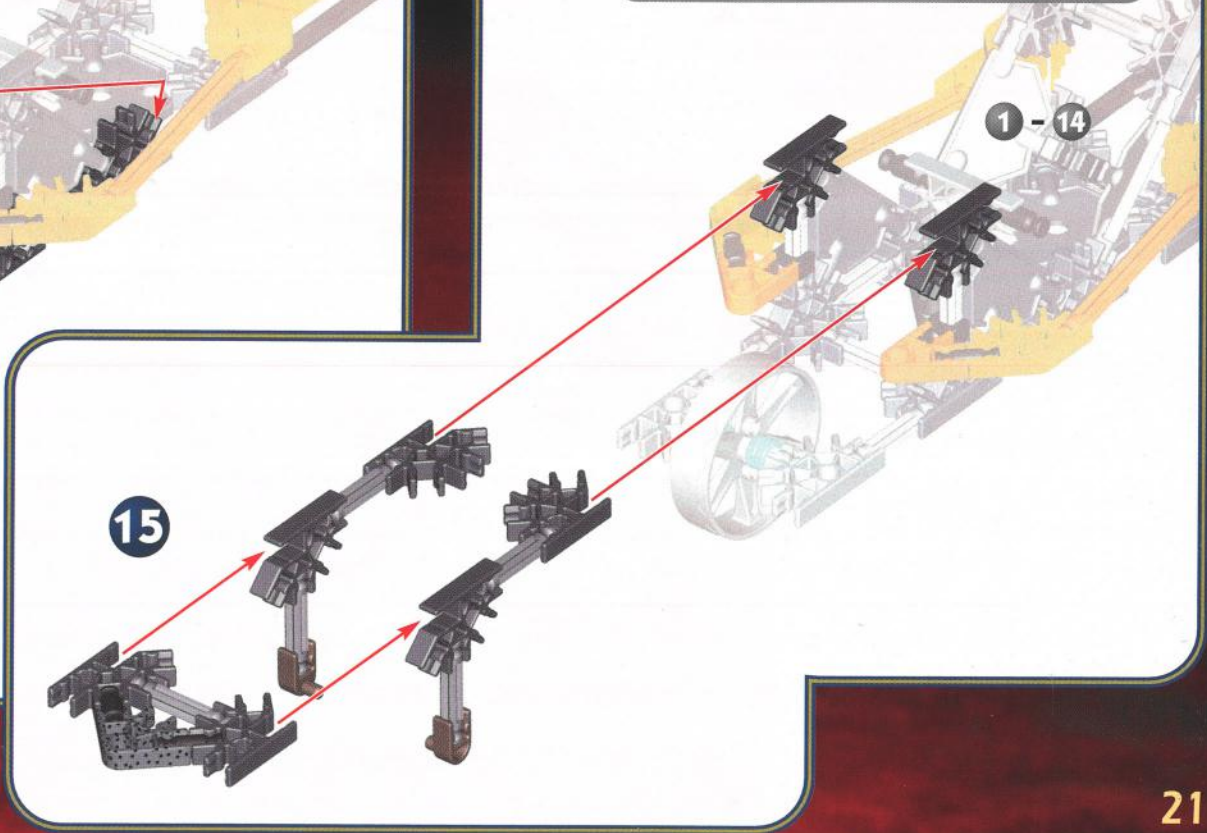
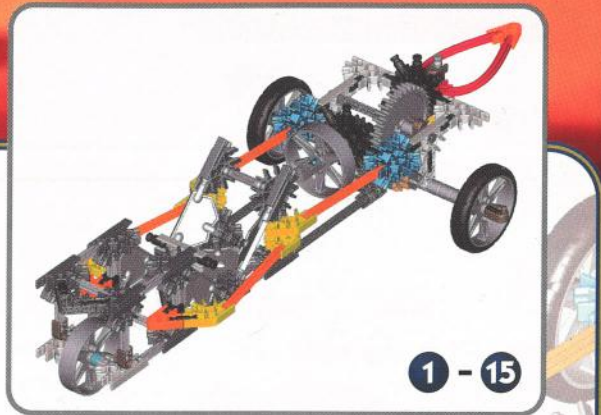
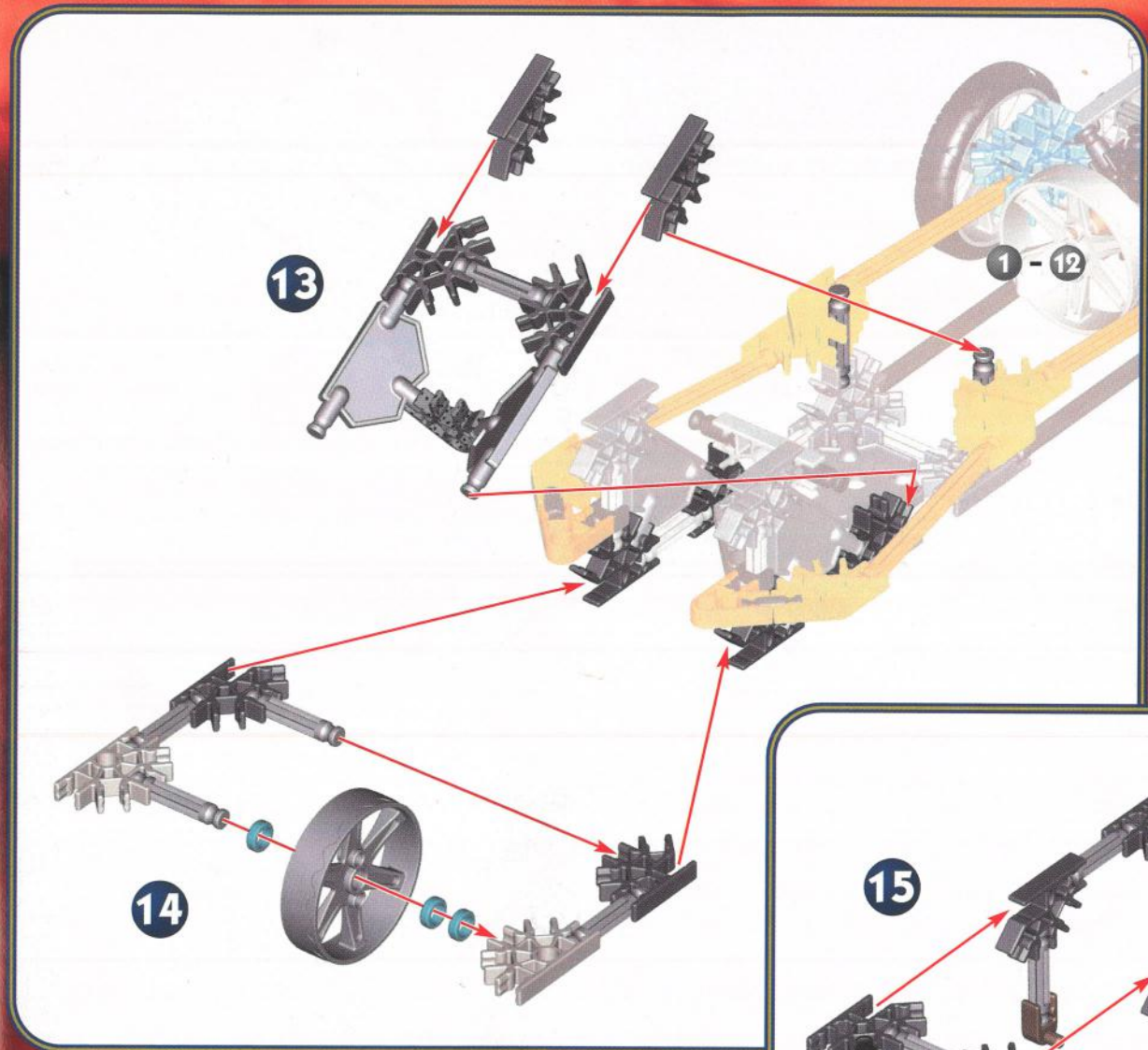


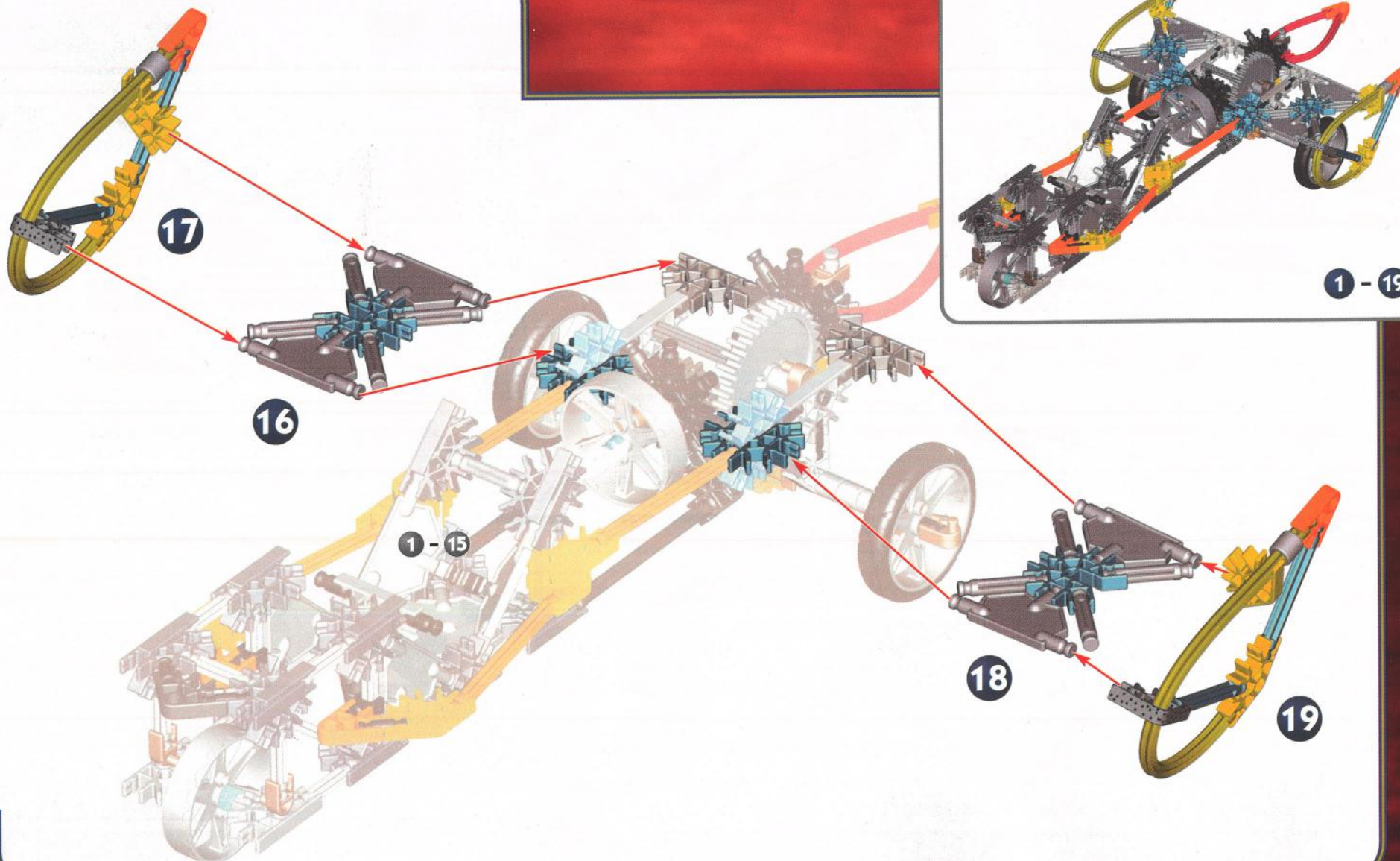


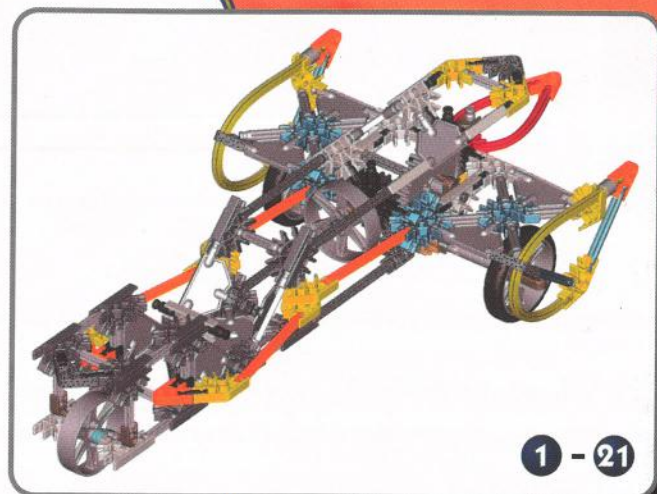
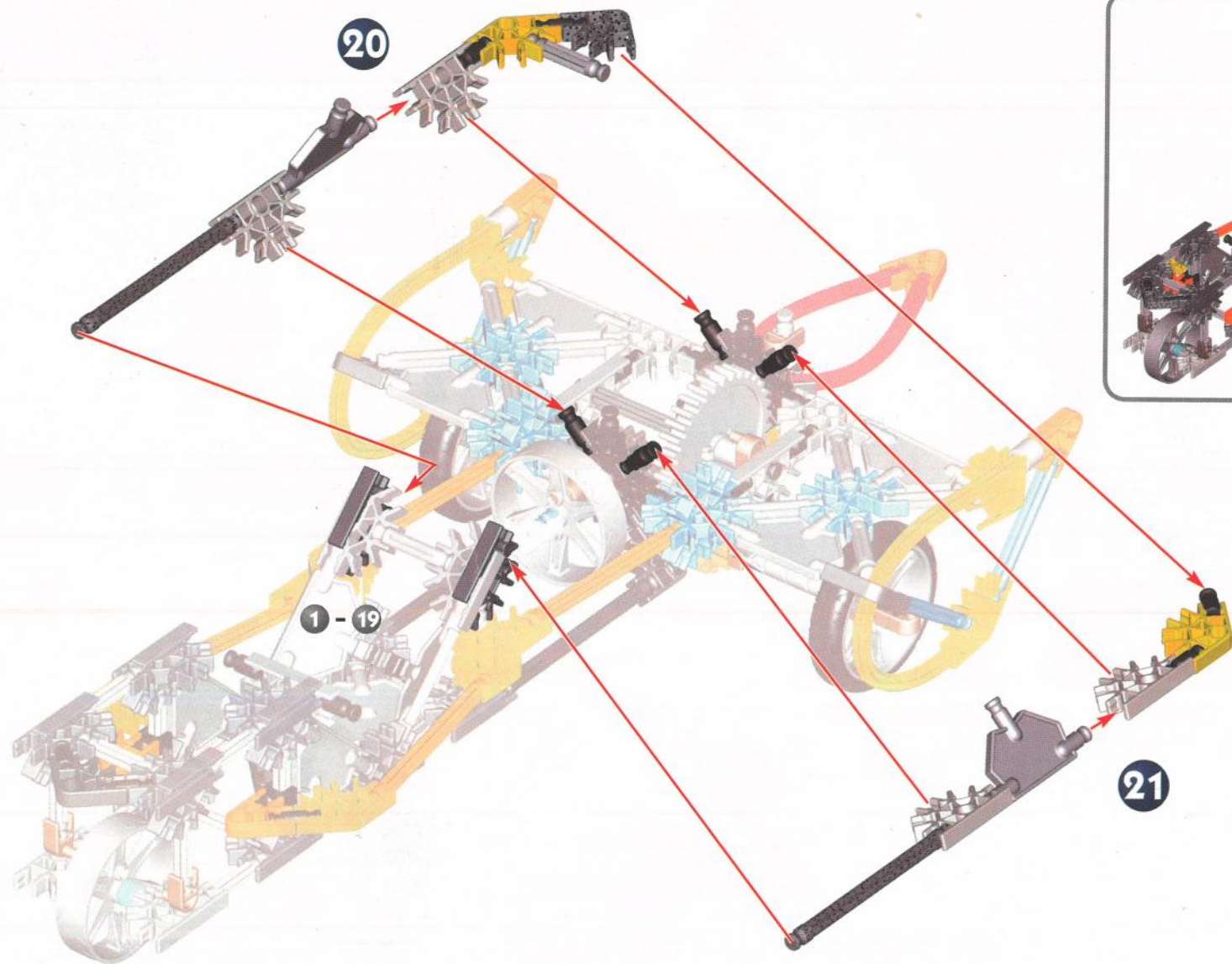
The Spirit of America uses a powerful J-79 turbo jet engine - the same engine found in the Navy's F-4 Phantom fighter! With over 48,000 horsepower on tap, a weight of only 9,000 pounds, and cutting-edge aerodynamics, the SOA is easily an 800 mph car!









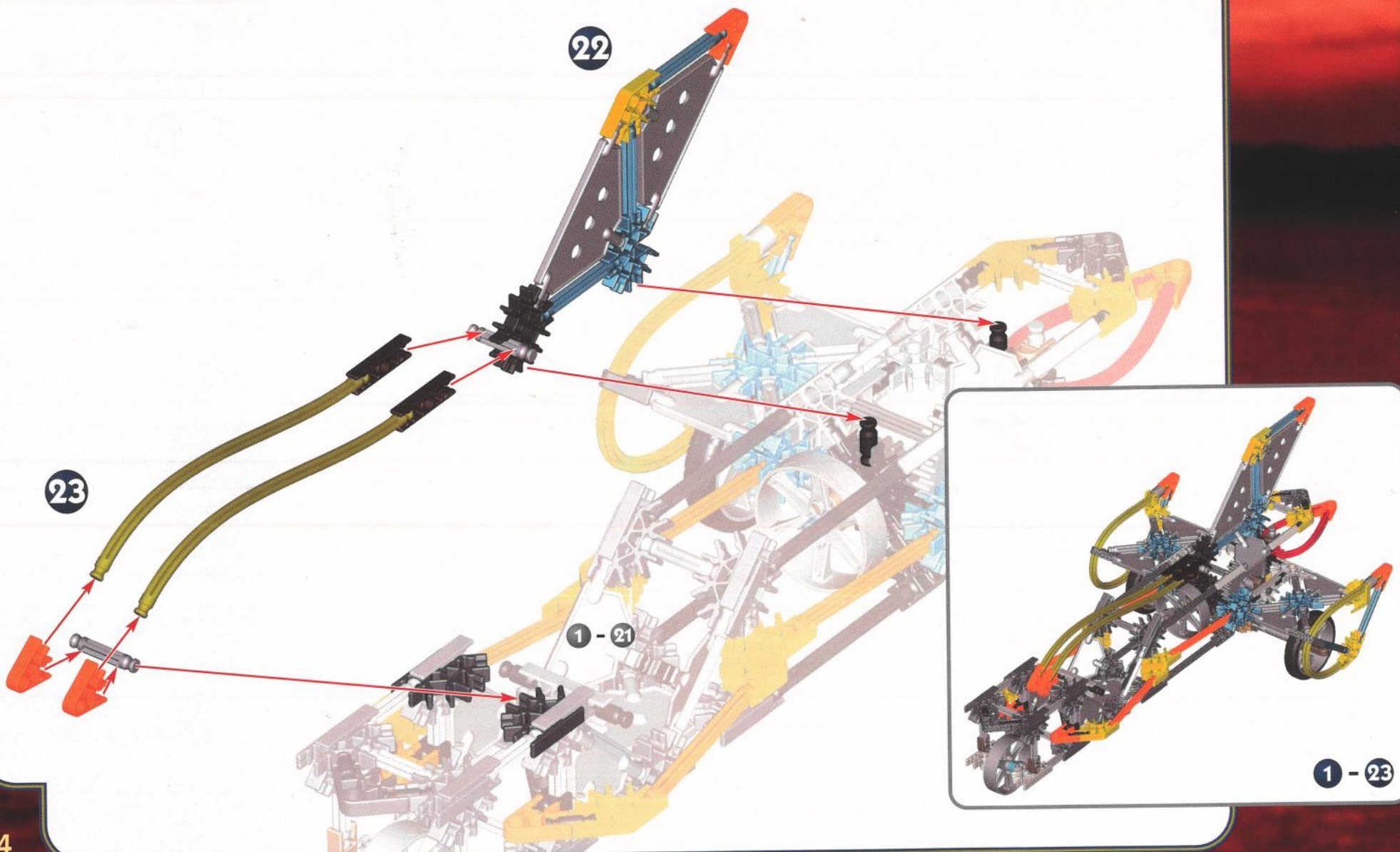


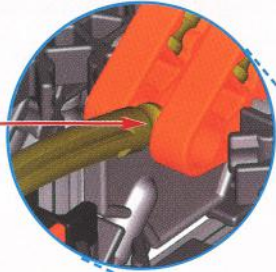
22

23

1 - 21

1 - 23





1 - 23

"Congratulations on building my first SPIRIT OF AMERICA car! On October 15th 1964, I drove it to a land speed record of 526 mph.

Give it a big push and watch the engine spin to life!"

27

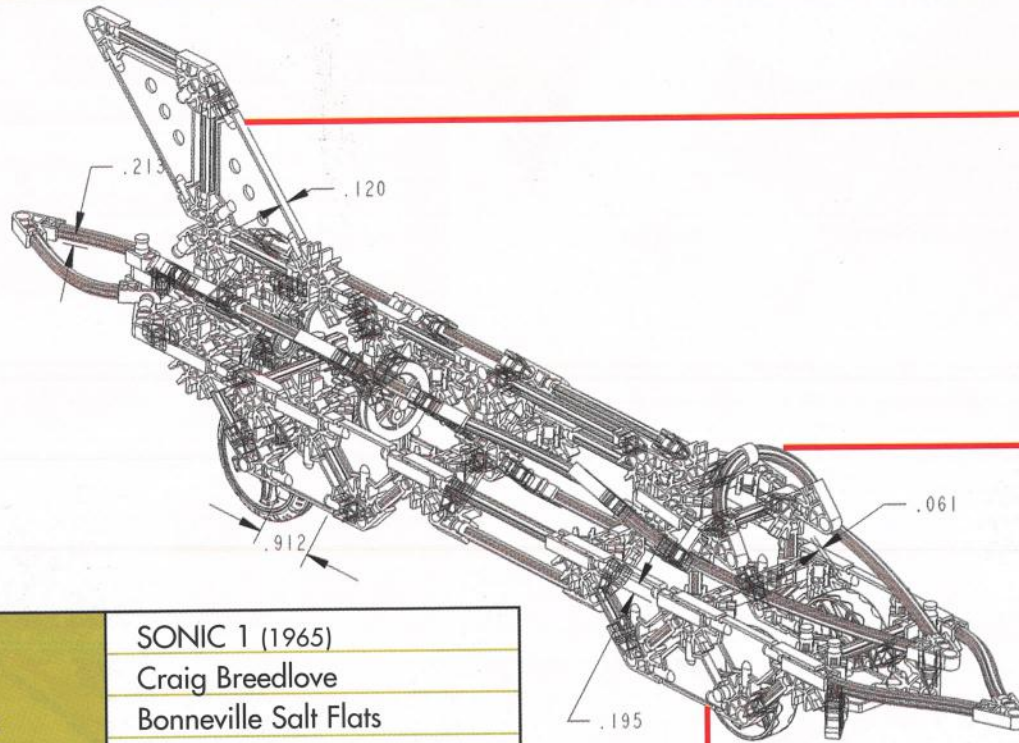
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1 - 27

# Sonic 1 (1965) Schematic Drawing



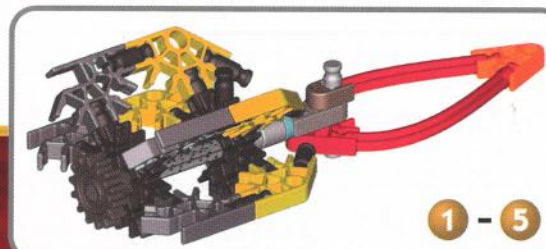
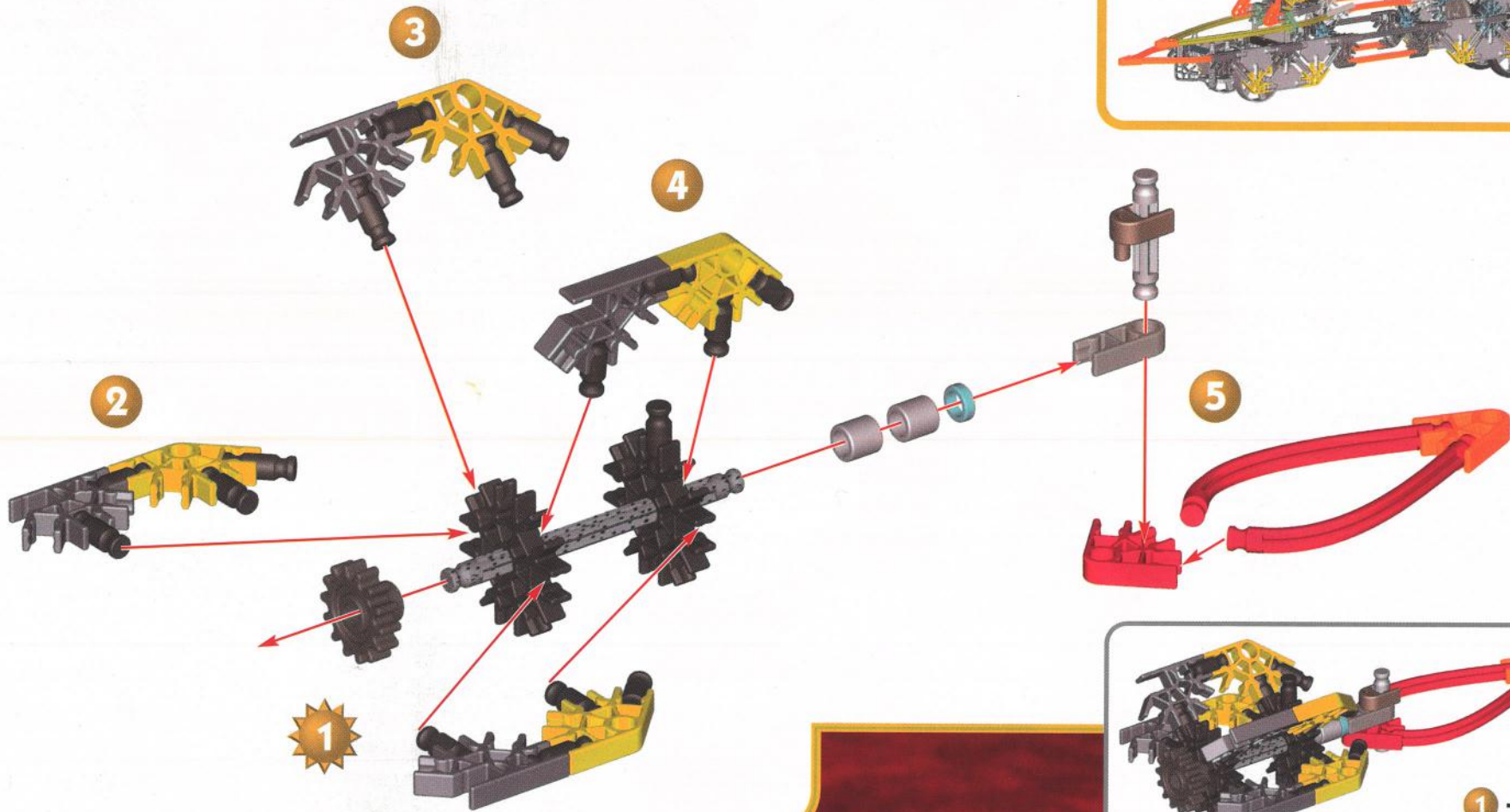
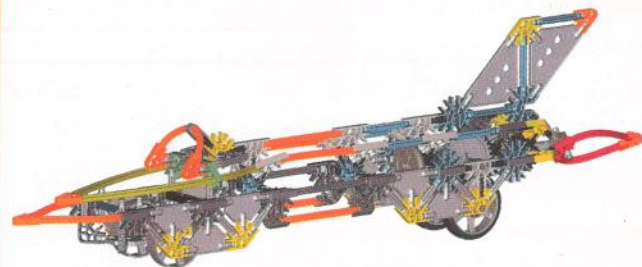
FIXED  
VERTICAL  
STABILIZER

INTAKE  
DUCT

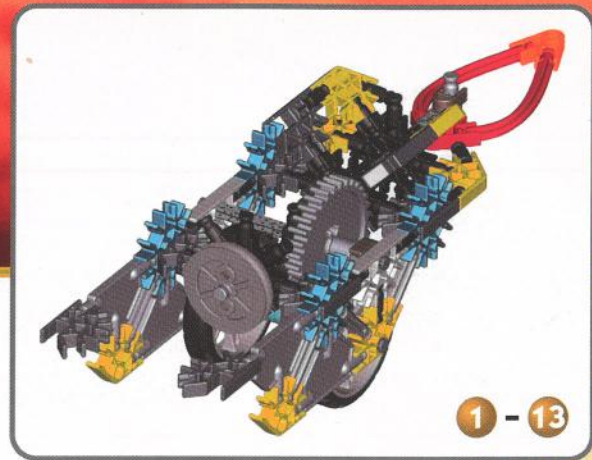
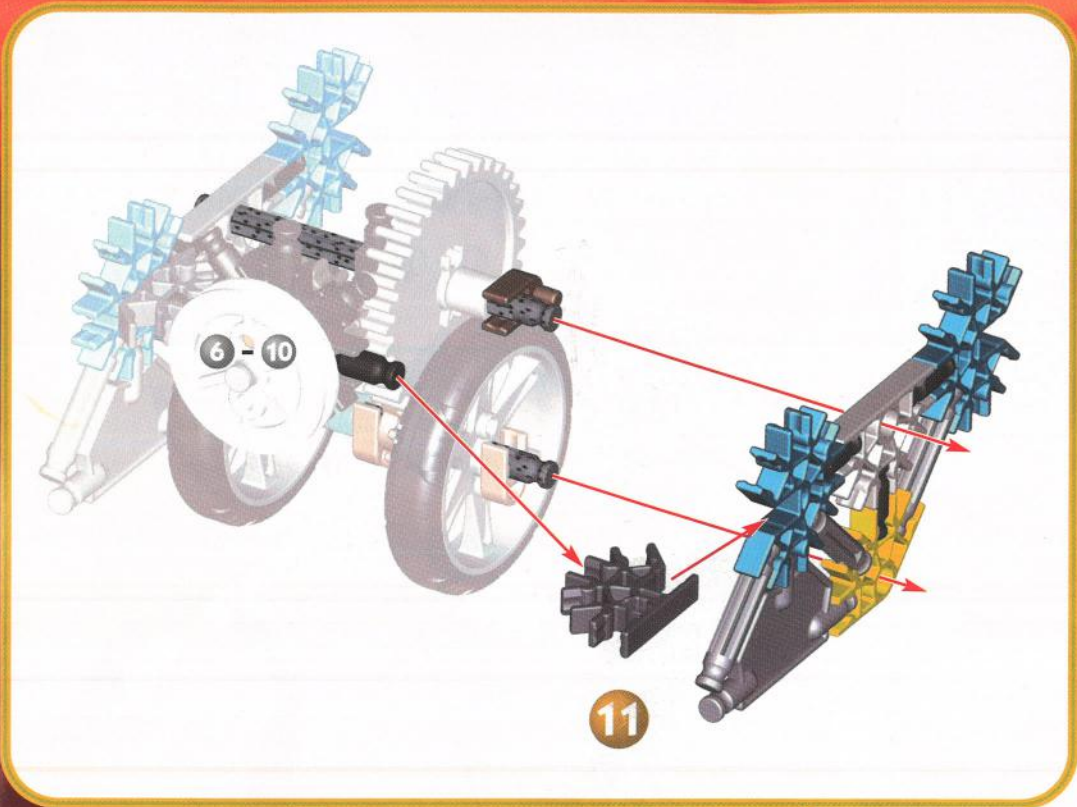
FRONT  
STEERING  
ASSEMBLY

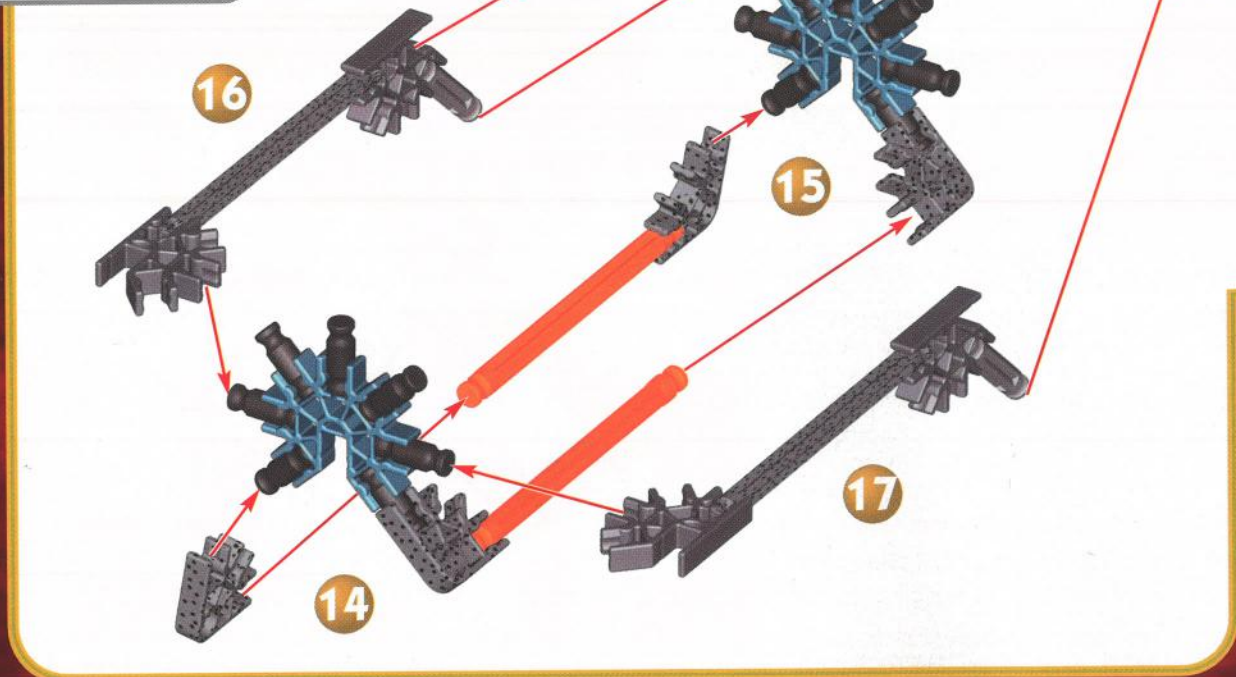
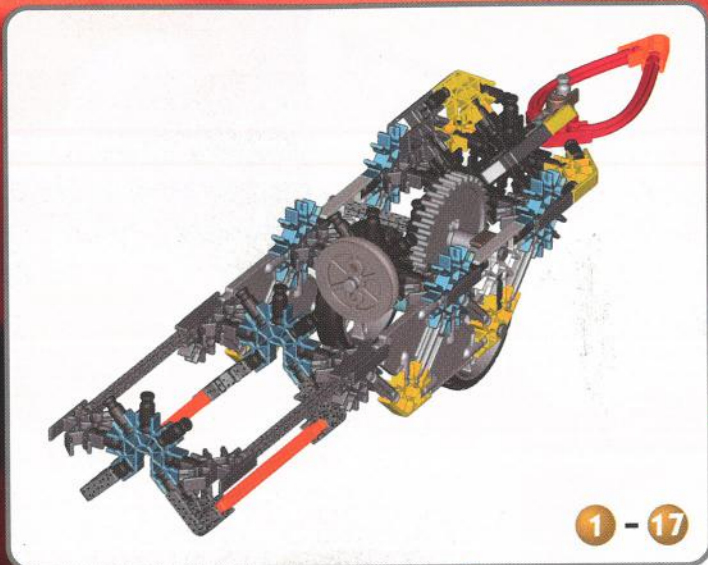
VEHICLE:	SONIC 1 (1965)
DRIVER:	Craig Breedlove
LOCATION:	Bonneville Salt Flats
RECORDS SET:	
Nov. 2nd, 1965	555.485 mph
Nov. 15th, 1965	600.601 mph

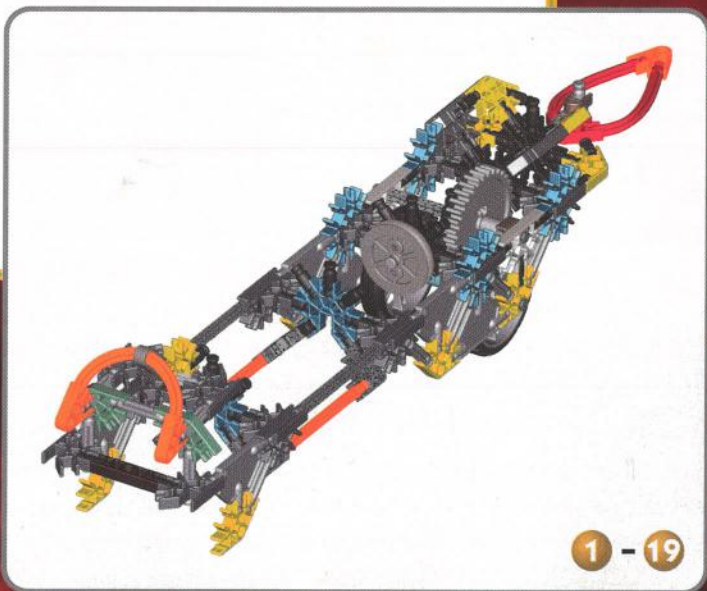
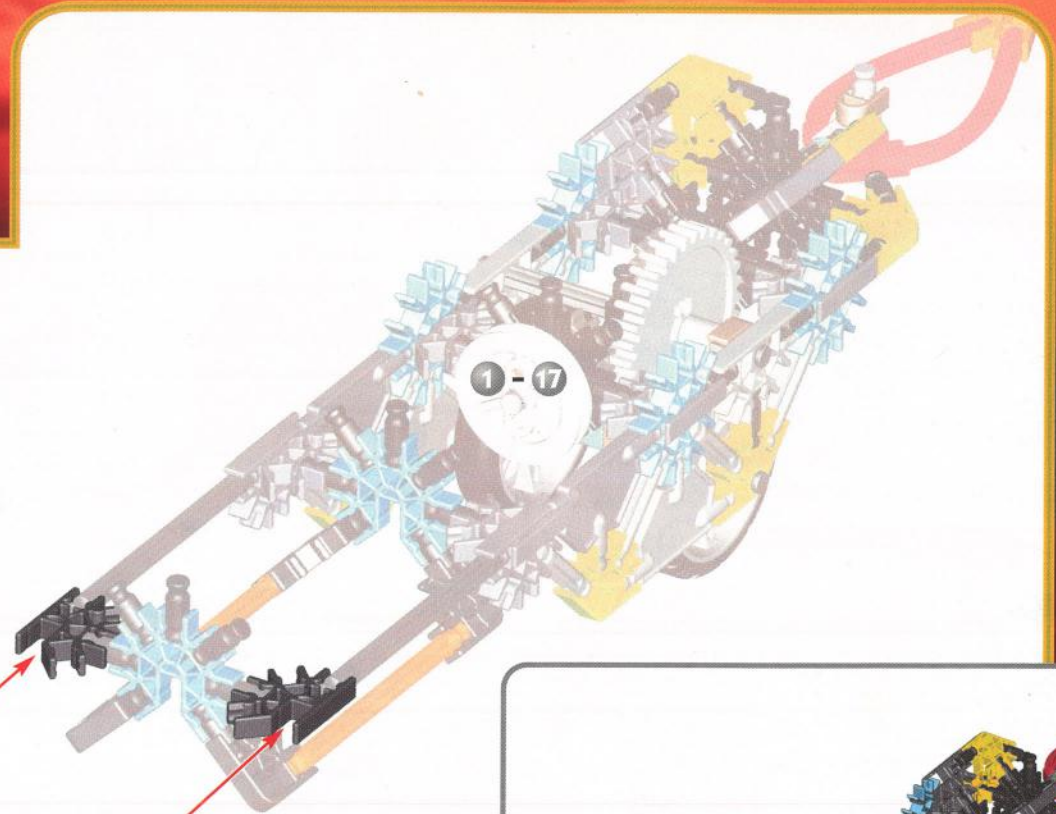
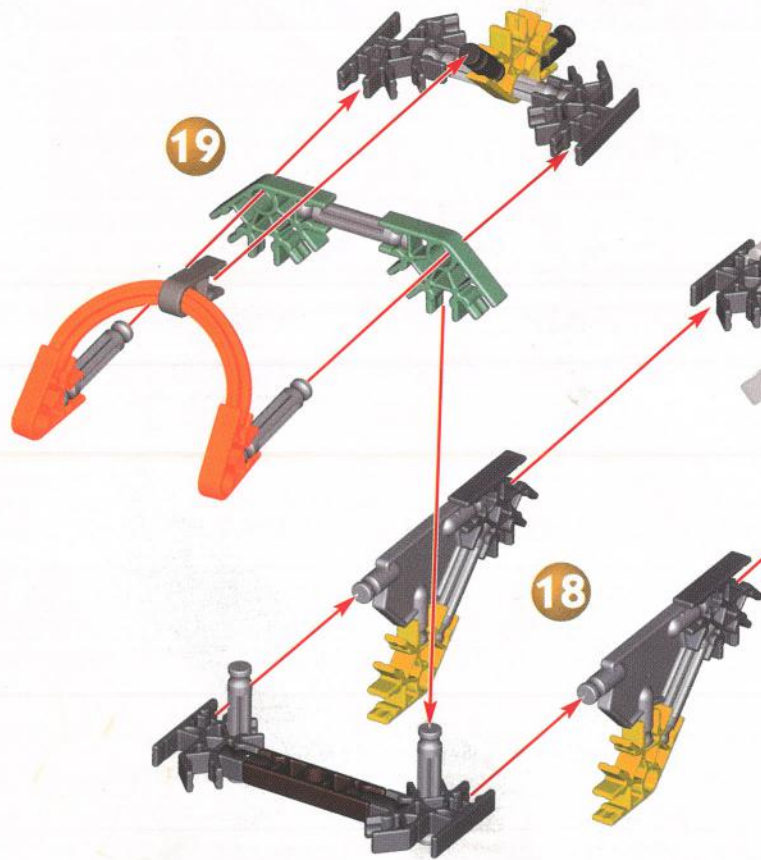
# Sonic 1 (1965) Instructions



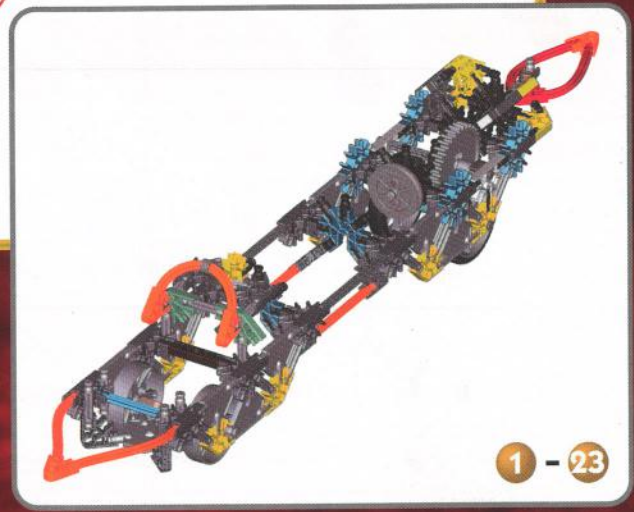
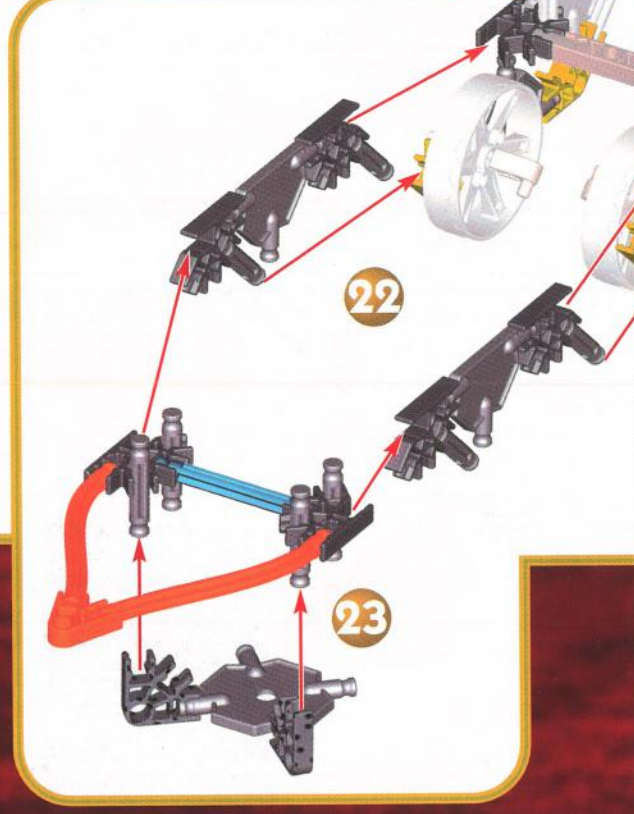
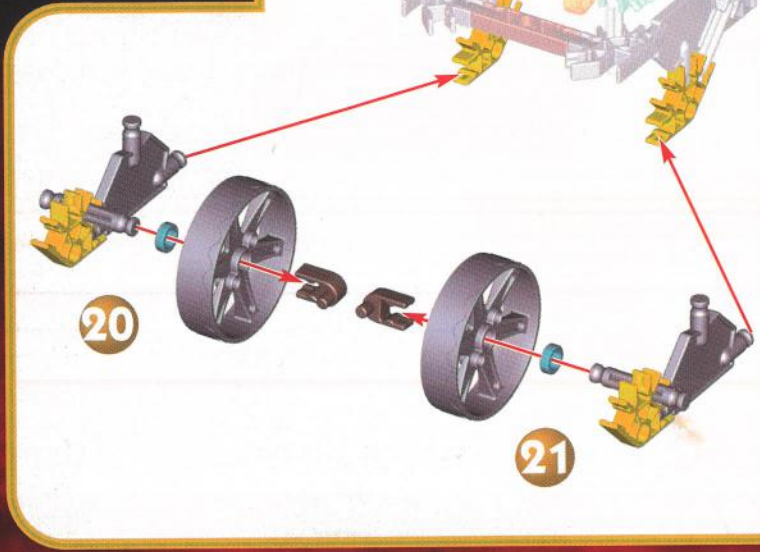
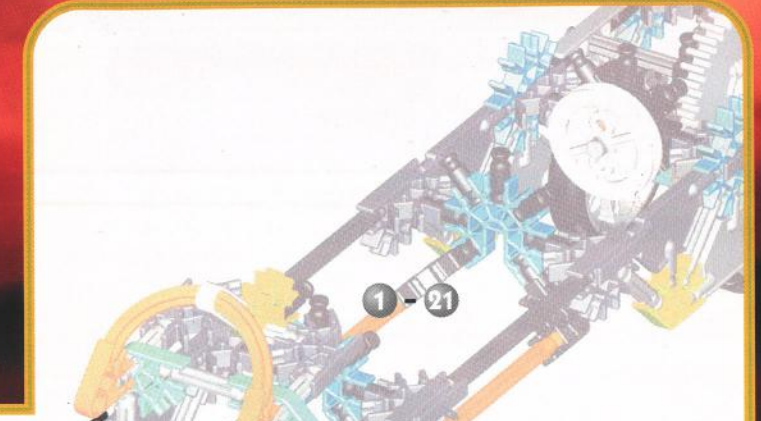






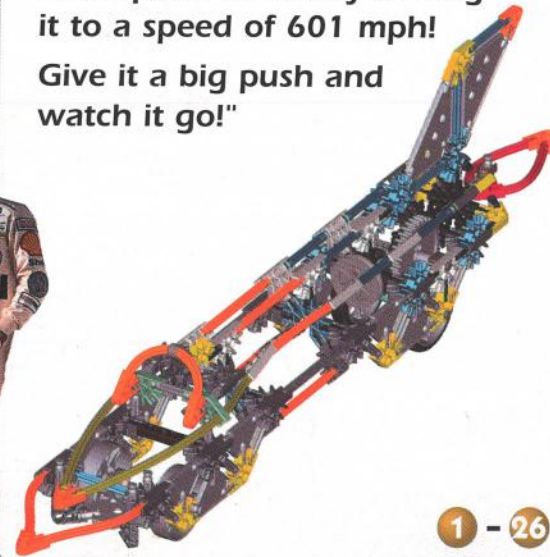


1 - 19





"Congratulations on building my SONIC 1 car. On November 15th 1965, I again broke the land speed record by driving it to a speed of 601 mph! Give it a big push and watch it go!"





## ÉPREUVE DE VITESSE SUR TERRE

### Qu'est-ce que c'est ?

L'épreuve de vitesse sur terre est un sport au cours duquel les conducteurs poussent leurs véhicules à des vitesses extrêmes pour battre le record mondial de vitesse sur terre. De nos jours, les véhicules de vitesse sur terre sont propulsés par des réacteurs que l'on retrouve en général dans des avions militaires !

### Antécédents

Le premier record mondial sur terre fut enregistré en 1898 à une vitesse modeste de 39,2 milles/hre (55 km/hre). Depuis lors, la technologie a permis aux coureurs de vitesse sur terre d'atteindre des vitesses incroyables. Le record actuel s'est établi à 764 milles/heure soit 1222,4 km/hre – plus vite que la vitesse du son ! Ce record a été établi le 15 octobre 1997 par l'équipe britannique THRUST SSC et c'est le record à battre.

### Où a lieu l'épreuve ?

Les coureurs de vitesse sur terre couvrent une distance d'un mille en 5 secondes environ et ainsi il leur faut de grands espaces ouverts pour courir. Le désert de Black Rock dans l'état du Nevada est devenu un lieu favori à cause de sa surface dure et plate.

### Enregistrement

Pour établir un nouveau record mondial de vitesse sur terre, une équipe doit réaliser 2 tentatives dans les deux sens dans l'espace d'une heure. Ensuite, la moyenne de la vitesse maximale des deux tentatives est calculée pour obtenir la vitesse officielle. Une équipe bat le record si elle dépasse la vitesse du record existant de 1%.

## CRAIG BREEDLOVE

Craig Breedlove, l'homme qui a détenu le record mondial de vitesse sur terre à cinq reprises, est un vrai héros américain. Né le 23 mars 1937 dans le Sud de la Californie, il est très actif dans les sports d'automobile américains depuis plus de 50 ans !

En 1963, Craig termina sa première voiture à réacteur qu'il appela "Spirit of America". En 1963 et en 1964, il établit trois records de vitesse sur terre avec ce véhicule (407 milles/hre, 469 milles/heure et 526 milles/heure).

En 1965, Craig construit une voiture à réacteur encore plus puissante qu'il appela "Spirit of America Sonic 1". Durant le mois de novembre de 1965, il établit 2 records sur terre de plus avec ce bolide (555 milles/hre et 601 milles/hre).

## SPIRIT OF AMERICA

La troisième génération de "Spirit of America" est vraiment un véhicule pour établir des records mondiaux sur terre ! Cette nouvelle voiture comporte un puissant turboréacteur J-79 – le même moteur que l'on retrouve sur un avion de chasse Phantom F-4 de la Marine Américaine. Ayant une puissance de 45.000 CV, un poids de 4000 kg à peine et une technologie aérodynamique très avancée, le SOA est un bolide capable d'atteindre sans difficulté les 800 milles/heure ! Pour battre le record, Craig et son dernier SOA devront circuler à une vitesse moyenne d'au moins 771 milles/heure (1% plus vite que le record britannique actuel) ! De nouvelles modifications structurelles aideront à atteindre cet objectif: un plus grand empattement pour offrir une plus grande stabilité, un stabilisateur horizontal arrière pour garder la voiture en contact avec le sol et de nouvelles roues pour réduire les vibrations produites aux vitesses extrêmes !

### BONNE CHANCE !

Nos meilleurs vœux à Craig et à toute son équipe dans sa poursuite du record mondial de vitesse sur terre. Vous représentez vraiment l'esprit américain.

### D'AUTRES INFORMATIONS

Visite l'incroyable Spirit of America sur le site web pour de plus amples informations, des mises à jour, et de la marchandise vraiment intéressante. Visite [www.spiritofamerica.com](http://www.spiritofamerica.com)

## QUELQUES FAITS INTÉRESSANTS

- **PIED DE PLOMB** – Pour l'épreuve officielle de vitesse sur terre, Craig était le premier à franchir la barrière des 440, 500 et 600 milles/heure.
- **TENTATIVE MOUVEMENTÉE** – En 1964, les parachutes de freinage de la première voiture ne s'ouvraient pas. Craig et le SOA coupaient une série de poteaux téléphoniques à une vitesse de 400 milles/heure avant de plonger dans un étang de sel à plus de 200 milles/heure. La voiture était détruite mais Craig s'en sortait sans blessures graves.
- **NUAGE DE POUSSIÈRE** – En 1996, Craig circulait à plus de 665 milles/hre dans sa dernière voiture lorsqu'une rafale soulevait le SOA et le tournait sur le côté. Une fois le nuage de poussières disparu, tout le monde était content de voir Craig toujours sain et sauf.
- **FAIRE LE PLEIN** – Le réacteur du Spirit of America a été modifié pour consommer de l'essence Shell super ... la même sorte que l'on achète à la pompe d'essence.
- **C'EST UN AVION** – Le Spirit of America peut se déplacer plus vite que la plupart des avions. En raison de ces grandes vitesses, la conception aérodynamique du SOA est identique à celle d'un avion de chasse.
- **TRAVAIL DIFFICILE** – Avant d'effectuer une tentative dans le Spirit of America, les membres de l'équipe doivent couvrir à pied toute la distance de 7 milles (13 km) pour ramasser les pierres et tout autre débris pouvant être aspirés dans le moteur, causant ainsi de sérieux dégâts.
- **UN BOLIDE** – Pour pouvoir battre le présent record, le Spirit of America se déplacera plus vite qu'une balle et en fait franchira le mur du son.

# K'NEX®

## SPIRIT OF AMERICA

### COOL MACHINES™



**SPIRIT OF AMERICA SONIC 1  
1965**

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**SPIRIT OF AMERICA  
1963 / 1964**



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