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LEGO TECHNICAL

McLaren



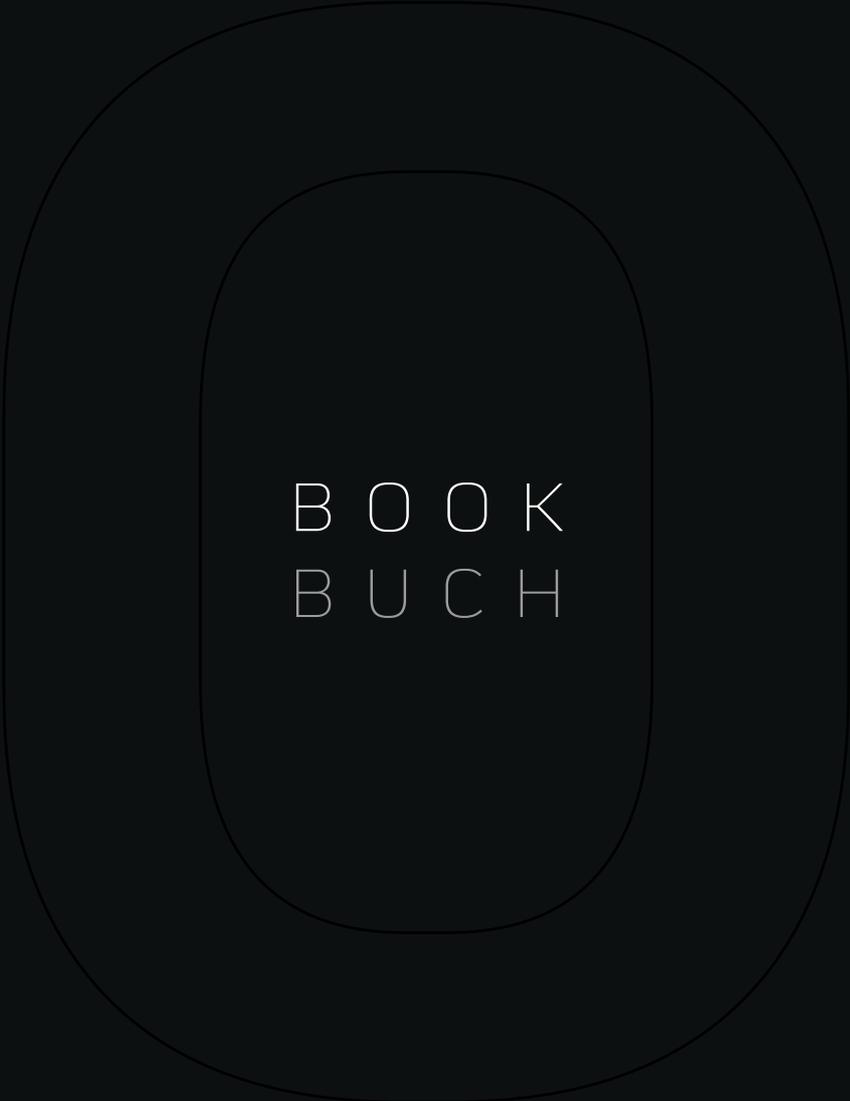
42172 McLAREN P1™

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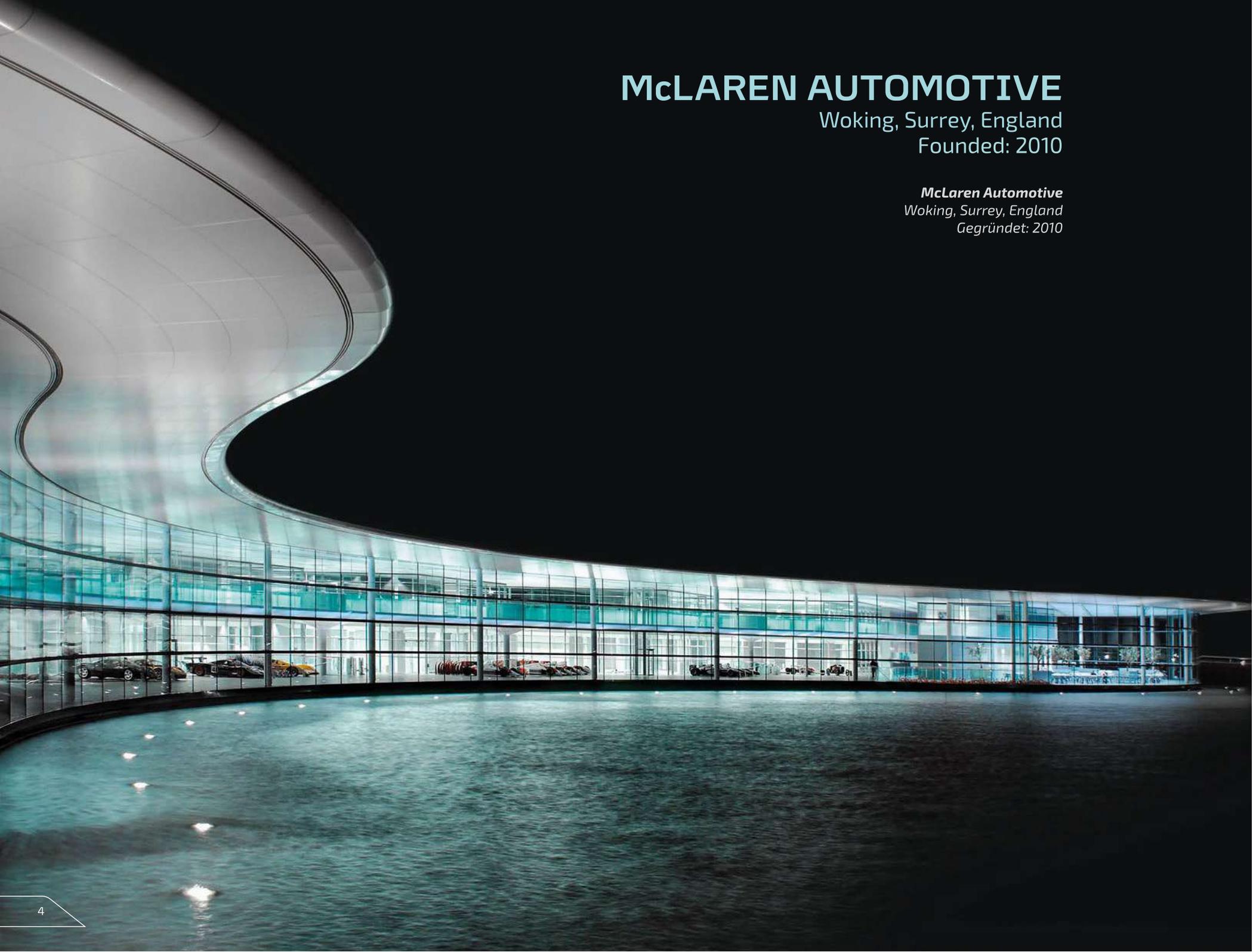
Photography: Kåre Hangaard. Büro Jantzen. McLaren Automotive



BOOK
BUCH

Booklet available in English
Heft in deutscher Sprache erhältlich
Livret disponible en français
Libretto disponibile in italiano
Folleto disponible en español
如需中文版手册
[LEGO.com/service/buildinginstructions](https://www.lego.com/service/buildinginstructions)

Podcasts only available in English
Podcasts nur in englischer Sprache verfügbar
[LEGO.com/technic](https://www.lego.com/technic)

A photograph of the McLaren Automotive building at night. The building is a long, curved structure with a large glass facade that is illuminated from within, showing several cars on display. The building is situated on a large, dark, circular platform that appears to be a pool or a large paved area. The sky is dark, and the overall scene is lit with a cool, blueish-white light.

McLAREN AUTOMOTIVE

Woking, Surrey, England

Founded: 2010

McLaren Automotive

Woking, Surrey, England

Gegründet: 2010

THE LEGO GROUP

Billund, Denmark

Founded: 1932

Design teams from McLaren Automotive and the LEGO Group met for the ultimate playdate to explore our shared passions: design excellence, innovative technology and groundbreaking engineering that inspires the drivers – and builders – of tomorrow.

We kept playing. Ready to join?

Designteams von McLaren Automotive und der LEGO Gruppe sind zum ultimativen Spieltreffen zusammengekommen, um festzustellen, was diese beiden Unternehmen eint: exzellentes Design, innovative Technologie und bahnbrechende Technik, die die Rennfahrer – und Baumeister – von morgen inspirieren.

Wir haben einfach immer weiter gespielt. Möchtest du auch mitmachen?

Die LEGO Gruppe

Billund, Dänemark

Gegründet: 1932







“

SINCE 2010, McLAREN HAS BEEN A LEADER IN AUTOMOTIVE ENGINEERING, BUILDING ON ITS RACING DNA TO PRODUCE TRULY ASTONISHING SUPERCARS AND HYPERCARS. THE McLAREN P1™ EXEMPLIFIES OUR ABILITY TO BLEND CUTTING-EDGE TECHNOLOGY, AERODYNAMICS AND SLEEK DESIGN AND IT'S INCREDIBLE TO SEE THESE ELEMENTS BROUGHT TO LIFE SO PRECISELY IN THE LEGO® TECHNIC McLAREN P1™.

SEIT 2010 ERWEIST SICH MCLAREN ALS WEGWEISENDES UNTERNEHMEN IM AUTOMOBILBAU, DESSEN MOTORSPORT-DNA DAS FUNDAMENT BILDET, UM WIRKLICH ERSTAUNLICHE SUPERSPORTWAGEN HERVORZUBRINGEN. DER MCLAREN P1™ IST EIN GUTES BEISPIEL FÜR UNSERE FÄHIGKEIT, MODERNSTE TECHNOLOGIE, AERODYNAMIK UND ELEGANTES DESIGN UNTER EINEN HUT ZU BRINGEN. UND ES IST UNFASSBAR, WIE AKRIBISCH DIESE ASPEKTE AUCH IM LEGO® TECHNIC MCLAREN P1™ MIT LEBEN ERFÜLLT WERDEN.

Michael Leiters / Chief Executive Officer / McLaren Automotive

THE RACING DNA

DIE MOTORSPORT-DNA

What does it take to become – and remain – the best in your industry? No two businesses or industries are alike, and there is no 'one size fits all' answer to that question. But we discovered while making this model that McLaren Automotive and LEGO® Technic designers share a playful curiosity that drives us to constantly test boundaries. We test how technological advances in other fields may inspire innovation in ours. And, most importantly, we do it not just for ourselves, but to give others a world-class experience that inspires a global community to live out their passions and dreams. We put the drivers and builders of tomorrow at the wheel.

McLaren is a pioneer that continuously pushes the boundaries. In 1981, it introduced lightweight and strong carbon-fibre chassis to Formula 1 with the McLaren MP4/1. Then, in 1993, it designed and built the McLaren F1 road car – and the company has not built a car without a carbon-fibre chassis since. They have continually raised the bar and set new standards. And one of the most legendary examples of this is the McLaren P1™.



1995 McLaren F1 GTR

Was ist erforderlich, um der Beste in der eigenen Branche zu werden – und zu bleiben? Keine zwei Unternehmen oder Branchen sind identisch. Deshalb gibt es auch keine allgemeingültige Antwort auf diese Frage. Allerdings haben wir bei der Arbeit an diesem Modell festgestellt, dass sowohl McLaren Automotive als auch die LEGO® Technic Designer von einer spielerischen Neugier angetrieben werden, die uns immer wieder Grenzen verschieben lässt. Wir testen, wie technische Fortschritte in anderen Feldern uns zu eigenen Innovationen inspirieren können. Doch vor allem ist dies für uns nicht nur reiner Selbstzweck. Vielmehr möchten wir auch anderen ein Weltklasse-Erlebnis bieten, das eine globale Community dazu bewegt, eigene Interessen und Träume auszuleben. Wir setzen die Rennfahrer und Baumeister von morgen ans Steuer.

McLaren ist ein Wegbereiter, der die Grenzen des Machbaren ständig verschiebt. Im Jahr 1981 hat das Unternehmen mit dem McLaren MP4/1 ein ebenso leichtes wie robustes Carbonchassis in der Formel 1 eingeführt. 1993 wurde dann das McLaren F1 Straßenfahrzeug entwickelt und konstruiert. Seither hat McLaren kein Auto ohne Carbonchassis mehr herausgebracht. Kontinuierlich legt dieser Autohersteller die Messlatte immer höher und setzt ständig neue Maßstäbe. Eines der legendärsten Beispiele für diese Spitzenleistungen ist der McLaren P1™.

“

THE PURPOSE OF THE McLaren P1™ WAS TO SHOW THE INDUSTRY WHAT THE FUTURE OF PERFORMANCE COULD LOOK LIKE.

MIT DEM McLaren P1™ SOLLTE DER BRANCHE GEZEIGT WERDEN, WIE DIE ZUKUNFT DER PERFORMANCE AUSSEHEN KÖNNTE.

Simon Lacey / Head of Advanced Engineering / McLaren Automotive



2015 McLaren P1™ GTR



PEAK PERFORMANCE AT THE 'RING

SPITZENLEISTUNGEN AUF DER NORDSCHLEIFE

The Nürburgring-Nordschleife (the 'Ring) in Germany is legendary for its beautiful yet strenuous track. For nearly a century, it has been one of the most important tracks for racing car drivers to test the latest innovations in racing car performance. During the development of the McLaren P1™, test driver Chris Goodwin and the development team spent hours testing the car here.

In 2013, the car signed off its final development challenge, completing the 20.83-kilometre (12.94-mile) lap with 154 hair-raising bends in less than seven minutes, at an average speed of more than 179km/h (111 mph).

Der Nürburgring mit seiner berühmten Nordschleife ist für seine ebenso schöne wie fordernde Streckenführung bekannt. Seit fast einem Jahrhundert zählt der „Ring“ zu den wichtigsten Rennstrecken, auf denen Rennfahrer die neuesten Innovationen testen, die auf eine bessere Performance abzielen. Während der Entwicklung des McLaren P1™ haben der Testfahrer Chris Goodwin und das Entwicklungsteam viele Stunden an und auf dieser Strecke verbracht.

Im Jahr 2013 hat das Auto dann die letzte Herausforderung in seiner Entwicklung gemeistert und die 20,83 Kilometer lange Nordschleife mit ihren haarsträubenden Kurven in unter sieben Minuten bewältigt. Die Durchschnittsgeschwindigkeit lag bei 179 km/h.



“

THE 'RING WAS A HELLUVA DRIVE! BUT EVEN THE MOST LEGENDARY TRACKS ONLY PROVIDE ABOUT A QUARTER OF THE LEVEL OF EXCITEMENT YOU GET FROM DRIVING A 900+ HORSEPOWER CAR ON ROAD TYRES.

DAS WAR EIN HÖLLISCHER RITT AUF DEM „RING“! DOCH SELBST DIE LEGENDÄRSTEN RENNSTRECKEN MACHEN NUR ETWA EIN VIERTEL DES NERVENKITZELS AUS, DEN EIN AUTO AUF STRASSENREIFEN BIETET, DAS MEHR ALS 900 PS UNTER DER HAUBE HAT.

Chris Goodwin / McLaren P1™ Chief Test Driver

THE MCLAREN ULTIMATE SERIES HERITAGE

DAS ERBE DER MCLAREN ULTIMATE SERIES

Inspired by the classic McLaren F1 – the most technologically advanced and fastest supercar of its time – the McLaren P1™ was launched in 2013 as the company's 'Ultimate car' offering. Groundbreaking on every level, the P1™ still ranks high on collectors' and supercar fans' lists of dream cars.

Der McLaren F1 – der technisch fortschrittlichste und schnellste Supersportwagen seiner Zeit – stand dem McLaren P1™ Pate, der im Jahr 2013 als „ultimatives Auto“ der Marke angeboten wurde. Der P1™ war in jeder Hinsicht bahnbrechend und steht auf den Wunschzetteln von Sammlern und Supersportwagenfans immer noch ganz weit oben.

1993
MCLAREN
F1



Broke numerous world records during the 1990s and remains the fastest naturally aspirated road car to date.
Brach in den 1990er-Jahren mehrere Weltrekorde und bleibt bis heute das schnellste Serienfahrzeug mit Saugmotor.

2018
MCLAREN
SENNA



The third in McLaren's Ultimate series, inspired by one of McLaren's greatest racing drivers, Ayrton Senna.

Ayrton Senna, einer der größten McLaren Rennfahrer aller Zeiten, inspirierte McLaren zur Ultimate Series.

2018
MCLAREN
SENNA GTR



A track-only version, one of the fastest in the world.

Das ausschließlich für die Rennstrecke konzipierte Modell zählt zu den schnellsten der Welt.

2013

McLAREN
P1™



Groundbreaking in design and technology, it launched as the first hybrid supercar in the world.

Kam als erster Hybrid-Supersportwagen der Welt auf den Markt und war wegweisend in puncto Design und Technologie.

2015

McLAREN
P1™ GTR



The track-only model paid homage to the legendary McLaren F1 GTR.

Dieses Modell war als Hommage an den McLaren F1 GTR ausschließlich für die Rennstrecke vorgesehen.

2018

McLAREN
SPEEDTAIL



McLaren's first ever Hyper-GT, most aerodynamically efficient and the fastest McLaren to date.

McLarens allererster Hyper-GT ist der bis dato aerodynamischste und schnellste McLaren.

2019

McLAREN
ELVA



A limited-production mid-engine supercar and the fifth addition to the McLaren Ultimate series.

Supersportwagen mit Mittelmotor in begrenzter Produktionszahl und fünftes Modell aus der McLaren Ultimate Series.



THE ULTIMATE DRIVER'S CAR

DAS ULTIMATIVE FAHRERAUTO

2023 marked the 10th anniversary of the release of the McLaren P1™. In automotive years, that's the equivalent of several generations.

The fact that current automotive design and technology are still catching up with the innovative design and features pioneered in the P1™ not only speaks volumes about the relevance the car still has today. It also still serves as inspiration for new generations of car designers. With help from the amazing team of McLaren designers, we set out to recreate and implement as many authentic details as possible in this LEGO® Technic version.

The E-mode and hybrid engine system was high on the list, of course. But the deeper we dived into the mechanics, the more details we fell in love with. The influence of the artistic design language is seen in more cars now, but the overall aesthetic of the P1™ is still completely unique for its class.

Im Jahr 2023 wurde das 10-jährige Jubiläum des McLaren P1™ gefeiert. Bei Autos entspricht ein Jahrzehnt mehreren Modellgenerationen.

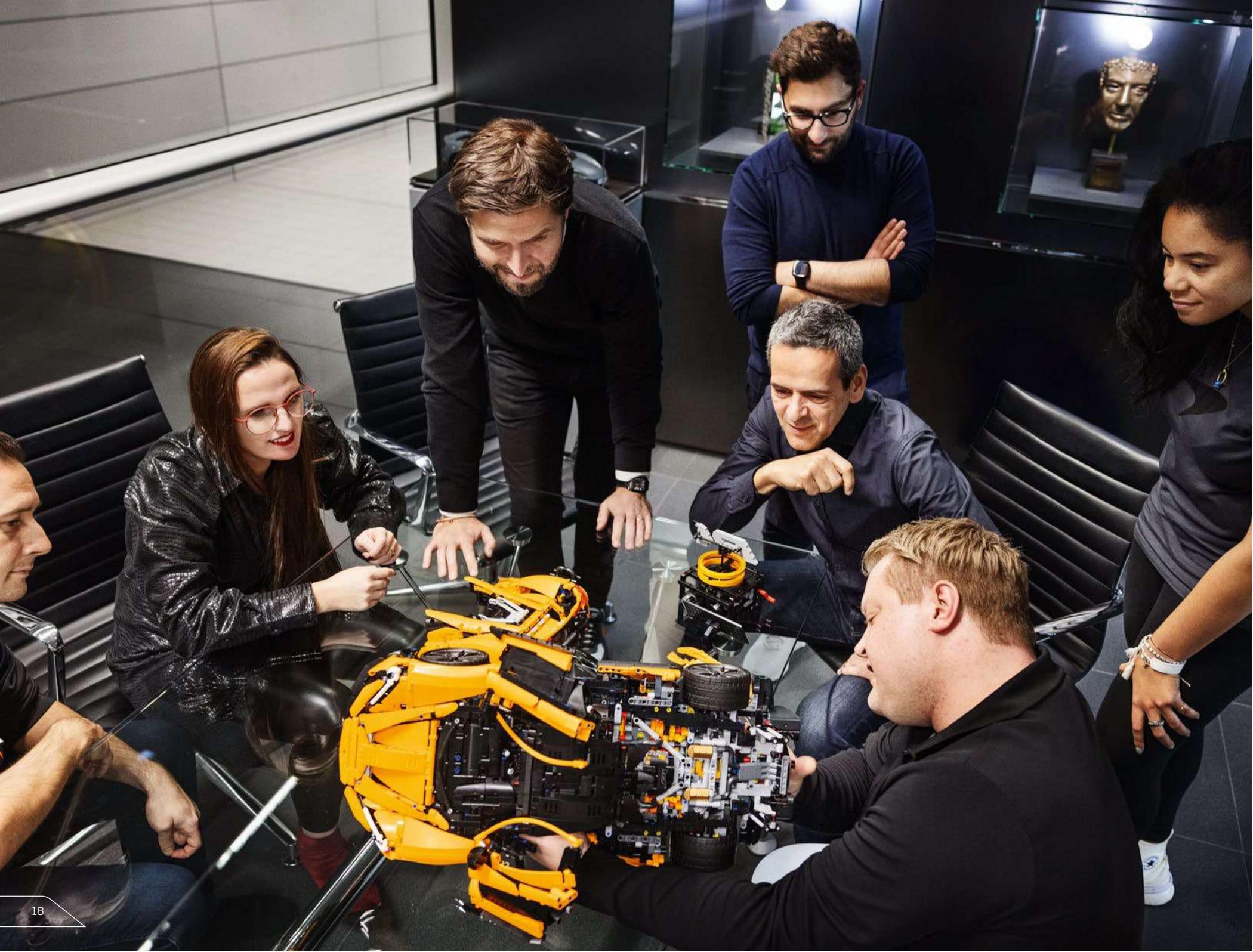
Die Tatsache, dass die heutigen Autos in puncto Design und Technologie immer noch dem innovativen Design und den Ausstattungsmerkmalen hinterherhecheln, die erstmals im P1™ zum Tragen kamen, ist der beste Beleg dafür, welche Bedeutung dieser Supersportwagen auch heute noch hat. Und noch immer inspiriert er neue Generationen von Autodesignern. Mit der Hilfe des fantastischen McLaren Designerteams haben wir uns darangemacht, möglichst viele authentische Details in dieser LEGO® Technic Version nachzubilden.

Das E-Mode- und Hybrid-Motorsystem stand dabei natürlich ganz oben auf der Liste. Doch je näher wir uns mit der Mechanik befassten, desto mehr Details gefielen uns. Der Einfluss der kunstvollen Designsprache ist heute auch an weiteren Autos zu erkennen, doch die Gesamtästhetik des P1™ ist in seiner Klasse immer noch absolut einzigartig.









BREAKING BOUNDARIES

GRENZEN VERSCHIEBEN



Tobias Sühlmann

Chief Design Officer
McLaren Automotive

As McLaren Automotive Chief Design Officer, Tobias Sühlmann thrives in an environment that enables him and his team to break boundaries and push the limits of maximum track and road performance.

“When you recognise how every detail, shape and material in the P1™ serves a specific purpose, how compact it is, and how seamlessly its exterior and interior integrate, you understand the McLaren DNA and how unique the P1™ is. Its influence on McLaren car design is still seen today and will be in future models, in how we experiment with materials and racing technology to enhance performance, sustainability and safety. I've been passionate about automotive design since I was a child, and LEGO® building played a big part – it starts with an idea, and from that, you create something new. Now, working with the LEGO Technic design team, we can see a clear link between how our team and the LEGO design team work. When this project began, the team prioritised the overall look, dimensions, proportions and volumes – and that result in itself is absolutely breathtaking. But when we realised it was also going to have a working gearbox and E-mode function – we were not expecting that. I thought 'these guys are clearly as crazy as we are!' It's amazing how LEGO building can encourage both kids and adults to be creative.”

Als McLaren Automotive Chief Design Officer profitiert Tobias Sühlmann von einem Umfeld, das ihn und sein Team die Grenzen des technisch Machbaren verschieben lässt, damit das Auto die bestmögliche Performance auf Rennstrecke und Straße zeigt.

„Wenn man erkennt, wie jedes Detail, jede Form und jedes Material im P1™ einem bestimmten Zweck dient, wie kompakt er ist, und wie nahtlos sich sein Äußeres und sein Interieur ineinanderfügen, versteht man die McLaren DNA – und man begreift, wie einzigartig der P1™ ist. Sein Einfluss auf das McLaren Autodesign lässt sich auch heute noch – und sogar in der Zukunft – daran ablesen, wie wir mit Materialien und Rennsporttechnologie experimentieren, um die Performance, Nachhaltigkeit und Sicherheit zu verbessern. Schon seit Kindesbeinen begeistere ich mich für Autodesign, und auch das Bauen mit LEGO® Steinen hat für mich eine große Rolle gespielt. Alles beginnt mit einer Idee – aus der man dann etwas völlig Neues erschafft. Bei der Zusammenarbeit mit dem LEGO Technic Designteam ist uns bewusst geworden, wie ähnlich unser Team und die LEGO Designer ticken. Zu Beginn des Projekts hat das Team den Schwerpunkt auf den Gesamtlook, die Abmessungen, die Proportionen und die Rauminhalte gelegt – und schon das Ergebnis dieser Entwicklungsphase ist absolut atemberaubend. Als wir jedoch erkannten, dass das Modell auch ein funktionierendes Getriebe und die E-Mode-Funktion erhalten sollte, waren wir völlig baff. Ich dachte mir nur: „Diese Leute sind definitiv genauso verrückt wie wir!“ Es ist erstaunlich, wie das Bauen mit LEGO Steinen sowohl Kinder als auch Erwachsene kreativ werden lässt.“





A man with short grey hair, wearing a dark suit jacket over a light-colored button-down shirt, stands with his hands resting on the front of a bright yellow McLaren P1 sports car. The car is in the foreground, and the background is a blurred garage or showroom with other cars.

Jamie Corstorphine

Director Product Strategy
McLaren Automotive

AN EXCITING ENGINEERING CHALLENGE

In 2011, as the newly-appointed Product Manager for McLaren Automotive, Jamie Corstorphine's first project was bringing the P1™ to market.

"I vividly remember building my first LEGO® Technic model, the Chassis 8860, and I'm so excited to be able to build this model! It's a bit of a full-circle moment. The development of the real-life P1™ was challenging and it felt exciting and groundbreaking at the time. We demonstrated how much hybrid can add to the driving experience, in absolute performance terms as well as in driving engagement. Some of the technology to achieve that, especially motor technology, wasn't available, so we developed new solutions to fit our vision. But I don't think we realised quite how big an impact it would have on people's perception of hybrid powertrains. It was an important turning point that significantly raised the bar for McLaren Automotive."

THE REACTIONS

"Seeing the reactions of the customers and seasoned experts as they drove the car for the first time was like seeing kids in a candy store. We couldn't have asked for a better response. The P1™ is a perfect example of the benefits that can come from being a small team. We work very closely and make decisions together. We had long conversations about giving the P1™ the capability to run on pure electric mode. But customers loved it, so we transferred our newfound hybrid powertrain experience to our new series of production cars."

EINE FASZINIERENDE TECHNISCHE HERAUSFORDERUNG

Jamie Corstorphine hatte 2011 gerade erst seine Stelle als Product Manager bei McLaren Automotive angetreten. Gleich sein erstes Projekt bestand darin, den P1™ auf den Markt zu bringen.

„Ich kann mich noch lebhaft an mein erstes LEGO® Technic Modell erinnern, das Chassis 8860. Und ich bin völlig aus dem Häuschen, dass ich jetzt dieses Modell bauen kann! Für mich schließt sich hier ein Kreis. Die Entwicklung des echten P1™ war äußerst anspruchsvoll und faszinierend. Es fühlte sich so an, als wären wir echte Wegbereiter. Wir zeigten, wie viel ein Hybridantrieb zum Fahrerlebnis beitragen konnte, und zwar sowohl in puncto reiner Performance als auch hinsichtlich der Fahreingriffe. Ein Teil der Technologie, vor allem die Motortechnik, für unsere Vision war noch nicht verfügbar. Deshalb haben wir passende neue Lösungen entwickelt. Aber uns war nicht wirklich bewusst, wie sehr (das Auto) die Meinung zu Hybridantrieben beeinflussen würde. Das war ein wichtiger Wendepunkt, der die Messlatte für McLaren Automotive deutlich höher legte.“

DIE REAKTIONEN

„Die Reaktionen von Kunden und erfahrenen Experten bei ihrer ersten Fahrt in dem Auto erinnerten mich an Kinder im Süßigkeitenladen. Eine bessere Resonanz hätten wir uns nicht wünschen können. Der P1™ ist ein perfektes Beispiel dafür, welche Vorteile ein kleines Team bieten kann. Wir arbeiten eng zusammen und treffen gemeinsam Entscheidungen. Wir haben lange diskutiert, dem P1™ die Fähigkeit zu verleihen, rein elektrisch zu fahren. Die Kunden waren davon jedoch so begeistert, dass wir unseren neuentwickelten Hybridantrieb in unsere neuen Serienfahrzeuge übernommen haben.“



SHOWING WHAT WOULD COME

ZEIGEN, WAS KOMMEN WÜRDEN



Simon Lacey

Head of Advanced Engineering
McLaren Automotive

With a background in engineering, and as the former Head of Aerodynamics for the McLaren Formula One team, Simon Lacey helped conceive the aerodynamics and multiple technical attributes of the McLaren P1™.

"It was a really lovely surprise to learn of the LEGO Group's desire to build a Technic McLaren P1™. I had one of the first LEGO® Technic models that came out in the seventies: a car chassis! The P1™ was the first road car I worked on and it has a special place in my heart. Its purpose was to show the industry what was coming. It brought F1 methodology into road cars, from steering and suspension to design and crash testing. We wanted to optimise downforce, limit drag, provide sufficient cooling to the engine and give the tyres optimal grip on the tarmac. And we wanted to do it while making a beautiful sculpture – not just a racing car."

AIR MOVES IN SMOOTH CURVES

"Air likes to move in smooth, sinuous, organic curves, and, inspired by biomimicry and aqua- and aerodynamics, we studied images of hammerhead sharks and falcons in flight. The car had to 'breathe', so all openings on the car had to work in harmony as inlets or outlets for the cooling flow. We used computer simulations to refine and incorporate those principles into the iconic curves seen throughout the car. We pushed the absolute limits of what was possible then. The excitement from passionate car fans still overwhelms me and the styling and technology still feel as fresh today as they did a decade ago. Many of the signature styling cues and technical details we developed for the P1™ are integrated into new supercars and road cars even today. I think we hit our target."

Der Ingenieur Simon Lacey war als Head of Aerodynamics beim McLaren Formel-1-Team federführend beim Konzipieren der Aerodynamik sowie weiterer technischer Attribute des McLaren P1™.

„Es war eine schöne Überraschung, als ich erfuhr, dass die LEGO Gruppe einen Technic McLaren P1™ bauen wollte. Ich hatte eines der ersten LEGO® Technic Modelle, das in den Siebzigerjahren herauskam. Das war ein Autochassis! Der P1™ war das erste Straßenfahrzeug, an dem ich mitwirkte, und liegt mir deshalb besonders am Herzen. Mit diesem Auto wollten wir der Branche zeigen, was kommen würde. Die Formel-1-Methodik inklusive Lenkung, Radaufhängung, Design und Crashtests kam jetzt auch bei Straßenfahrzeugen zum Tragen. Wir wollten den Abtrieb optimieren, den Luftwiderstand begrenzen, für eine ausreichende Kühlung des Motors sorgen und den Reifen optimalen Grip auf dem Asphalt verleihen. Und das alles wollten wir an einer wunderschönen Skulptur – und nicht etwa nur an einem Rennwagen – verwirklichen.“

DIE LUFT STRÖMT IN SANFTEN KURVEN

„Luft bewegt sich gern in sanften sinusförmigen Kurven. Deshalb haben wir uns von Biomimikry, Aqua- und Aerodynamik inspirieren lassen und Bilder von Hammerhaien und fliegenden Falken studiert. Das Auto musste „atmen“, deshalb mussten alle Öffnungen harmonisch als Einlässe oder Auslässe für den kühlenden Luftstrom dienen. Wir haben mit Computersimulationen gearbeitet, um diese Prinzipien zu verfeinern und die legendären Kurven zu entwickeln, die am ganzen Auto zu sehen sind. Wir haben die Grenzen des damals technisch Machbaren wirklich verschoben. Die Begeisterung leidenschaftlicher Autofans überwältigt mich auch heute noch. Und das Styling und die Technologie wirken noch genauso neuartig wie vor einem Jahrzehnt. Viele der von uns entwickelten und für den P1™ typischen Stylingelemente und technischen Details sind auch heute noch in neue Supersportwagen und Straßenfahrzeuge integriert. Ich würde meinen, wir haben unser Ziel erreicht.“





Chris Goodwin

McLaren P1™
Chief Test Driver

PLAY WITH IT

SPIEL DAMIT

Racing and test driver Chris Goodwin clocked more than 4,000 hours of track time in various iterations of the McLaren P1™, from development mule cars to the finished model.

“It’s an amazingly reliable car. From the Arctic Circle to the desert, London to Miami, you can press the button and go for a drive. Its drama and almost aggressive performance are reminiscent of the most drivable, engaging racing cars I’ve ever driven. Those races where your hair stands on end and you feel so alive afterwards, it’s such a brilliant, exciting experience. That’s the feeling people will have when they drive the P1™.

“It’s the best of three worlds. One, the design – it will be a gorgeous car forever. Two, the outstanding performance delivered through technology – controlling the variable ride height with different suspension levels and damping, controlling high levels of downforce with active aerodynamics – the P1™ set that ball rolling. And three, the emotion you feel when you drive it: The P1™ simply has the biggest grin-factor; it looks, sounds and feels alive, and encourages people to play with it. Other supercars can feel like they’re driving you, but the P1™ is like an extension of you – you’re in control. You can hear what’s going on and that makes it very intuitive to drive. All these unique components came together in the right way. And that’s why, a decade on, it’s still a pioneering icon.”

Der Renn- und Testfahrer Chris Goodwin hat es in diversen Varianten des McLaren P1™ vom Erlkönig bis zum fertig entwickelten Auto auf mehr als 4.000 Stunden auf der Rennstrecke gebracht.

„Es ist ein erstaunlich zuverlässiges Auto. Egal, ob du am Polarkreis oder in der Wüste, in London oder Miami bist, du musst nur den Startknopf drücken und kannst sofort eine Runde drehen. Sein dramatischer Auftritt und seine fast schon aggressive Performance erinnern mich an die am besten zu fahrenden und faszinierendsten Rennwagen, die ich jemals gesteuert habe. An die Rennen, in denen dir die Haare zu Berge stehen und nach denen du dich unglaublich lebendig fühlst, weil es ein derart grandioses, aufregendes Erlebnis war. Genau dieses Gefühl haben die Menschen, wenn sie den P1™ fahren.“

„Das Auto vereint das Beste aus drei Welten: Erstens das Design, das diesen Wagen für alle Zeiten zu einem fantastischen Auto macht. Zweitens die herausragende Performance, die der Wagen der Technologie verdankt. Die Bodenfreiheit lässt sich mithilfe des fortschrittlichen Fahrwerksystems variabel steuern, und der hohe Abtrieb lässt sich durch aktive Aerodynamik bändigen. Diese Entwicklungen hat der P1™ ins Rollen gebracht. Und drittens die Emotionen, die man beim Fahren des Autos empfindet: Der P1™ zaubert dir einfach das breiteste Grinsen ins Gesicht, denn er sieht nicht nur lebendig aus, sondern er klingt auch so und fühlt sich so an. Er macht Lust darauf, mit ihm zu spielen. Andere Supersportwagen vermitteln manchmal das Gefühl, dass sie dich fahren. Aber der P1™ ist wie eine Verlängerung deiner Arme und Beine – du hast die volle Kontrolle. Du hörst, was los ist, und deshalb lässt er sich sehr intuitiv fahren. All diese einzigartigen Komponenten harmonieren perfekt. Und genau deshalb ist diese Ikone auch nach einem Jahrzehnt immer noch wegweisend.“



“

**WHEN WE DESIGN NEW LEGO®
TECHNIC MODELS, WE ASK
OURSELVES, WHAT CAN WE DO THAT
WE HAVE NEVER DONE BEFORE?**

BEI DER ENTWICKLUNG NEUER LEGO®
TECHNIC MODELLE FRAGEN WIR UNS IMMER,
WELCHE VÖLLIG NEUEN FUNKTIONEN WIR
INTEGRIEREN KÖNNEN.

Kasper René Hansen / Model Designer / LEGO® Technic



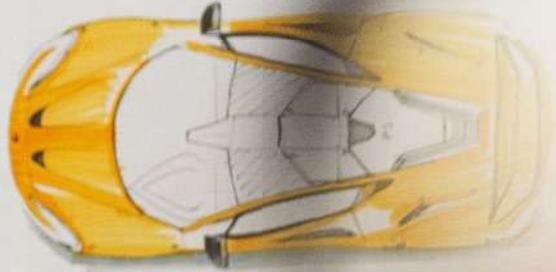
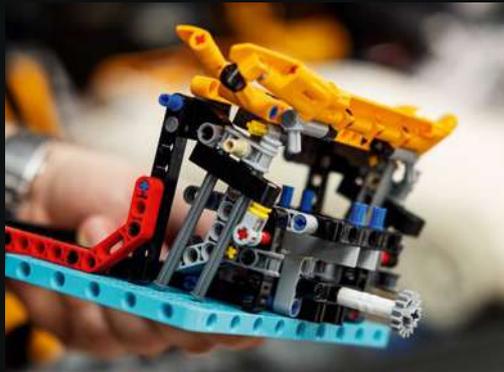


Diagram - DIAGRAM







THE ATTENTION TO DETAIL IN THE MCLAREN P1™ IS SIMPLY UNSURPASSED.

DIE LIEBE ZUM DETAIL IM MCLAREN P1™
IST SCHLICHTWEG UNÜBERTROFFEN.

Kasper René Hansen / Model Designer / LEGO® Technic

“As LEGO® Technic designers, we love creating intricate functions, immersive and challenging building experiences, and a finished result you'll be proud to display. The LEGO Technic McLaren P1™ is no exception. We had huge support from the McLaren design team throughout the process, and it was a thrill to work with them on details like the seven-speed gearbox, hybrid system and overall shaping of the car. In the real-life model, the electric motor is placed under the petrol engine but, because of the scale of our model, we moved it forwards to make it fit.

“The attention to detail is simply unsurpassed. We made sure we incorporated the signature McLaren 'drop' shapes throughout the car that give it that sophisticated, organic and dynamic silhouette. The drop shapes are not just visually striking, they are strategically included to optimise airflow and aerodynamics. In Race mode, the McLaren P1™ produces 600 kg (1,300 lb.) of downforce at 273 km/h (170 mph), so we replicated the air intake in the bonnet, doors and the active aero in the rear which, in the real-life car, prevents it from breaking its own suspension.”

„Als LEGO® Technic Designer macht es uns riesigen Spaß, aufwendig Funktionen und ebenso fesselnde wie anspruchsvolle Bauerlebnisse zu entwickeln, deren Endergebnis du voller Stolz ausstellen wirst. Der LEGO Technic McLaren P1™ ist da keine Ausnahme. Während des gesamten Entwicklungsprozesses wurden wir vom McLaren Designteam enorm unterstützt. Es war unheimlich spannend, mit diesen Profis an Details wie dem 7-Gang-Getriebe, dem Hybridsystem und der gesamten Gestaltung des Autos zu feilen. Am echten Auto sitzt der Elektromotor unter dem Benzinmotor, doch wegen des Maßstabs unseres Modells haben wir ihn nach vorne verlagert, damit er hineinpasst.“

„Die Liebe zum Detail ist schlichtweg unübertroffen. Wir haben besonders darauf geachtet, die für McLaren typischen „Tropfenformen“ im ganzen Auto nachzubilden, um ihm diese raffinierte organisch-dynamische Silhouette zu verleihen. Die Tropfenformen sind nicht nur markante Details, sondern auch strategisch angeordnet, um die Luftströmung und die Aerodynamik zu optimieren. Im Rennmodus erzeugt der McLaren P1™ bei 273 km/h einen Abtrieb von 600 kg. Deshalb haben wir den Lufteinlass in der Motorhaube, die Türen und die aktiven Aerodynamikkomponenten im Heck genau nachgebildet, die am echten Auto verhindern, dass der Abtrieb das Fahrwerkssystem zerstört.“



THIS IS A DREAM PROJECT FOR ANY PRODUCT DESIGNER. IT'S TRULY A HANDS-ON STUDY IN INNOVATIVE DESIGN

DAS IST EIN TRAUMPROJEKT FÜR JEDEN PRODUKTDESIGNER. ES IST WAHRHAFT EINE STUDIE INNOVATIVEN DESIGNS.

Kasper René Hansen / Model Designer / LEGO® Technic



"The real-life McLaren P1™ body is made from just five panels. It seems simple, but it's an incredibly advanced and deliberate design. The greenhouse was inspired by fighter jet canopies! Replicating smooth, organic curves and shapes with (mostly) angled LEGO® Technic elements is always a balancing act.

"We have to find solutions that work within the building system without straining the elements. For this model, we designed a few new elements to achieve some of the authentic McLaren P1™ functions, design and details.

"The advanced gearbox combined with E-mode and hybrid mode system are completely new to LEGO Technic models, so we developed a new shifter drum element and two new gear wheels, including a 45° bone gear, to make them work smoothly. The unique tyres and overall curvy features were recreated with the help of creative building techniques, new alloy wheels, wheel arches, panels and a new A-pillar."

„Die Karosserie des echten McLaren P1™ besteht nur aus fünf Verkleidungen. Das mag einfach erscheinen, ist jedoch ein unfassbar fortschrittliches, ganz bewusst gewähltes Design. Das Glashaus ist den Pilotenkanzeln von Düsenjägern nachempfunden! Das Nachbilden geschmeidiger organischer Kurven und Rundungen mit zumeist eckigen LEGO® Technic Elementen ist stets eine Gratwanderung.“

„Wir müssen Lösungen finden, die im Rahmen des LEGO Bausystems funktionieren, ohne die Elemente zu überlasten. Für dieses Modell mussten wir einige neue Elemente entwerfen, um die Funktionen, Designelemente und Details des McLaren P1™ authentisch nachzubilden.“

„Das hochmoderne Getriebe in Kombination mit dem E- und Hybrid-Modus-System war eine völlige Neuheit in LEGO Technic Modellen. Deshalb haben wir eine neue Schaltwalze und zwei neue Zahnräder (darunter auch ein 45-Grad-Zahnrad) entworfen, damit alles reibungslos funktioniert. Die besonderen Reifen und die kurvigen Designelemente wurden mithilfe kreativer Bautechniken, neuer Felgen, Radkästen, Verkleidungen und einer neuen A-Säule nachgebildet.“





THE LEGO® TECHNIC PODCAST

DER LEGO® TECHNIC PODCAST

Listen to more stories and interviews in our exclusive podcast, featuring the LEGO® Technic team, the original McLaren P1™ team and a P1™ test driver.

Hör dir noch weitere Storys und Interviews in unserem exklusiven Podcast an, in dem das LEGO® Technic Team, die ursprünglichen Designer des echten McLaren P1™ und ein Testfahrer des P1™ zu Wort kommen.



Simon Lacey

Head of Advanced Engineering
McLaren Automotive



Tobias Sühlmann

Chief Design Officer
McLaren Automotive



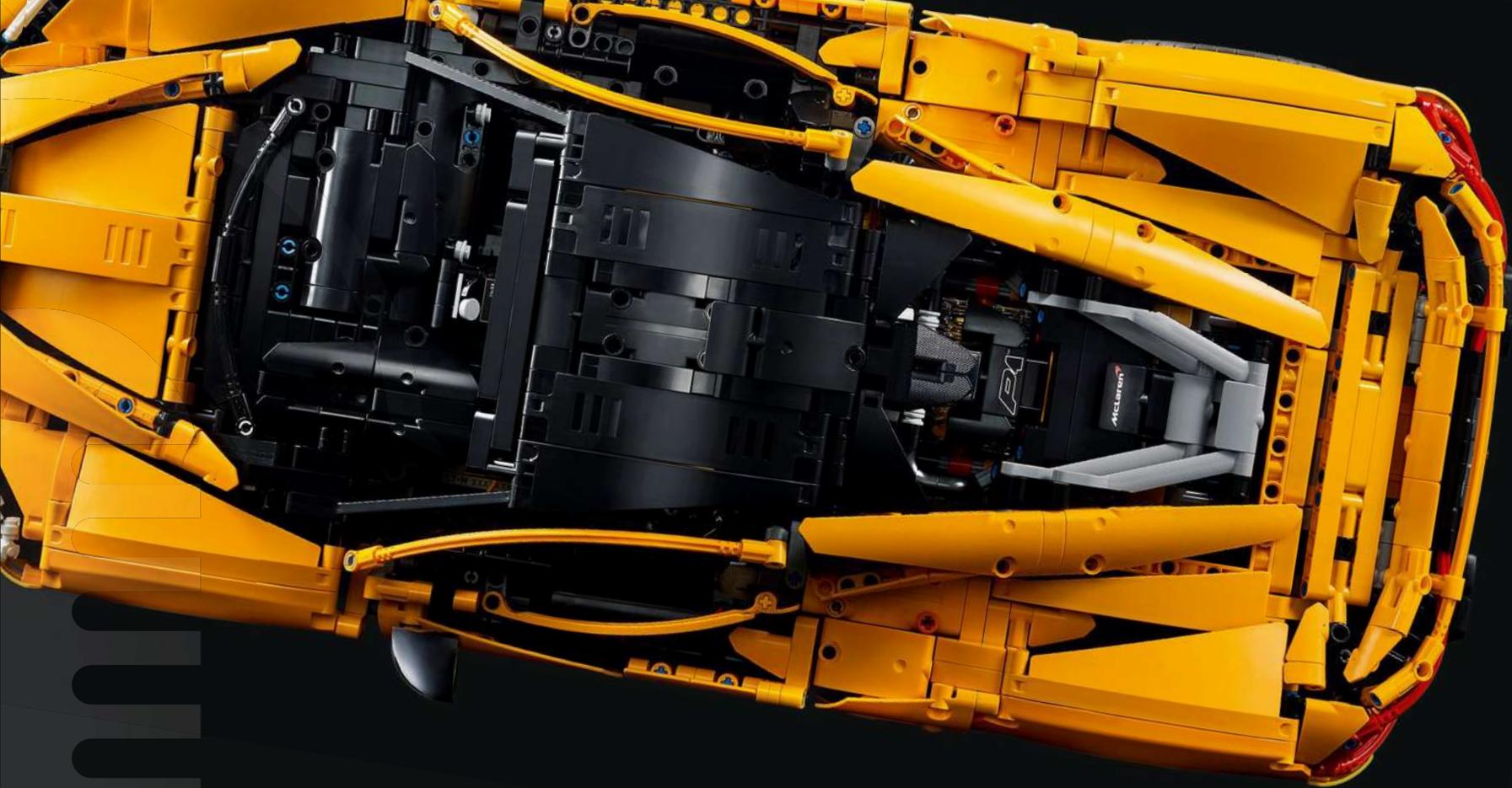
Jamie Corstorphine

Director Product Strategy
McLaren Automotive



Chris Goodwin

McLaren P1™
Chief Test Driver



Ramona Câmpeanu

Global Marketing Director
LEGO® Technic™



Jeppe Juul Jensen

Creative Lead
LEGO® Technic™



Kasper René Hansen

Model Designer
LEGO® Technic™



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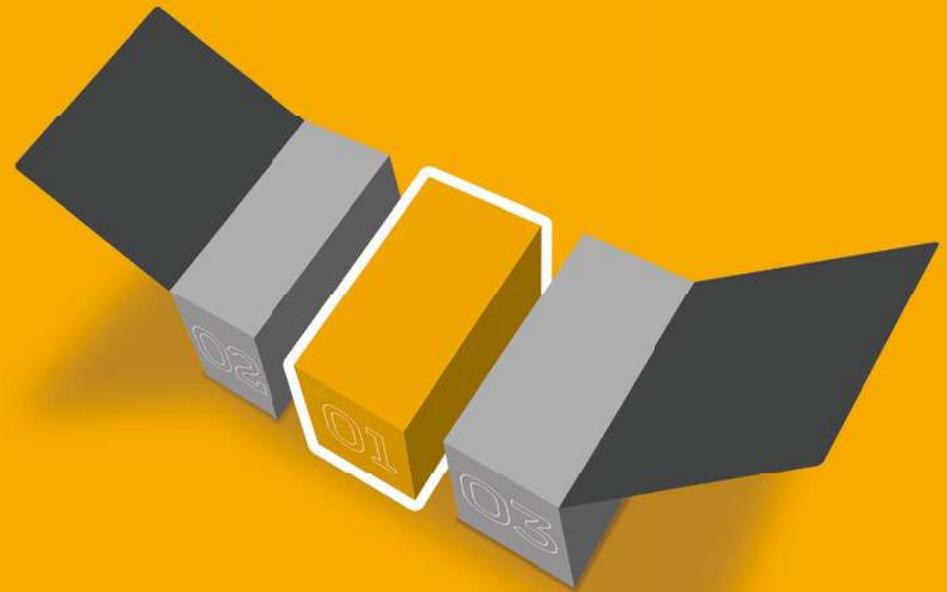
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O1

BOX

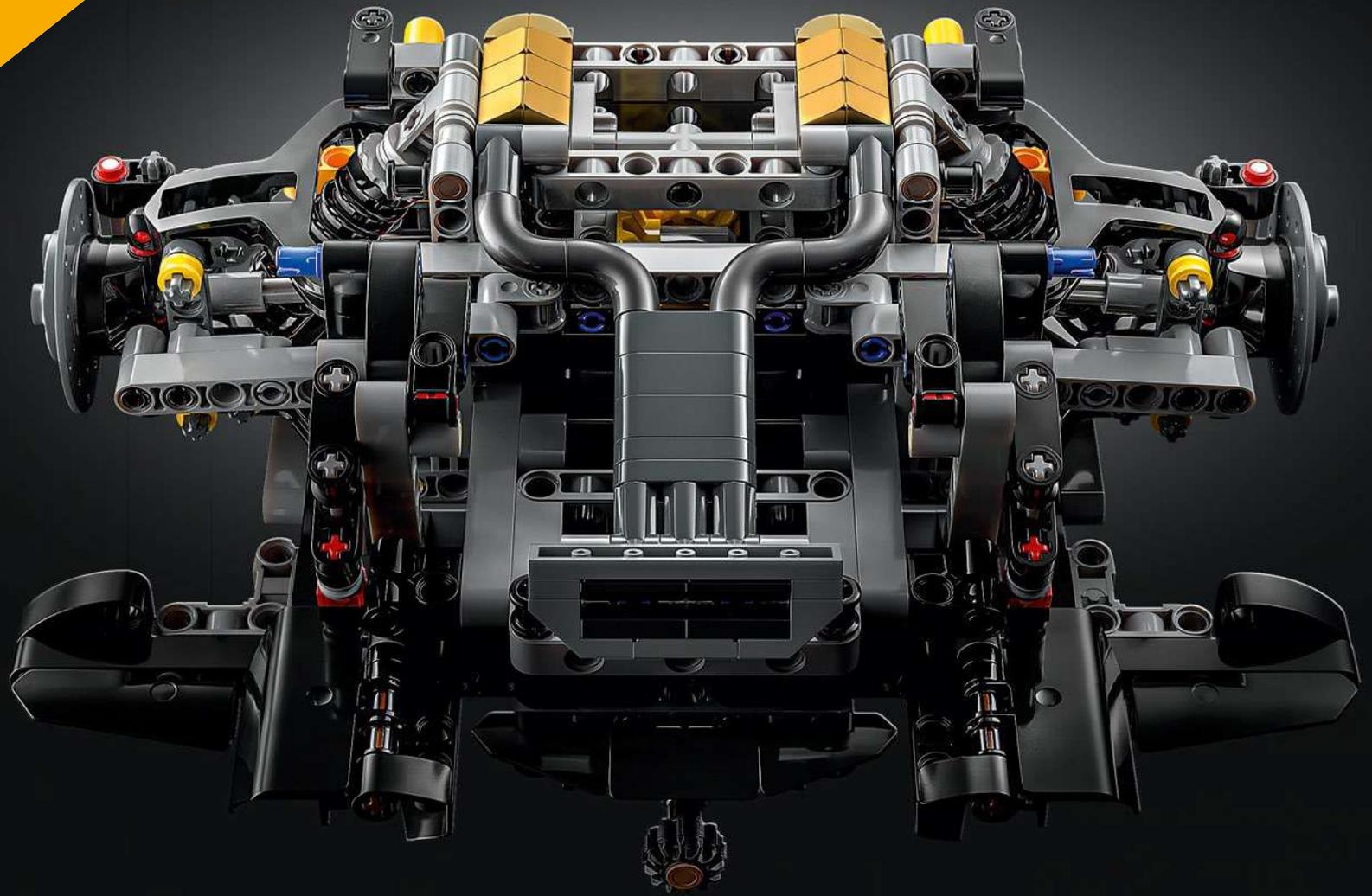


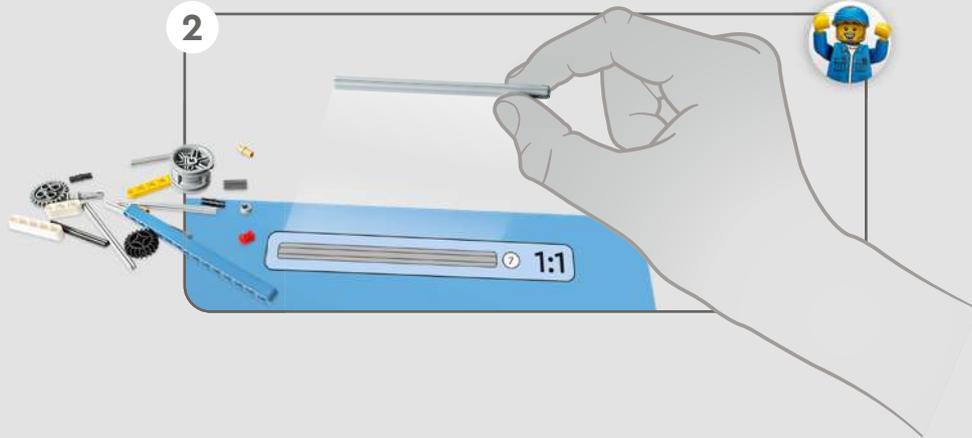
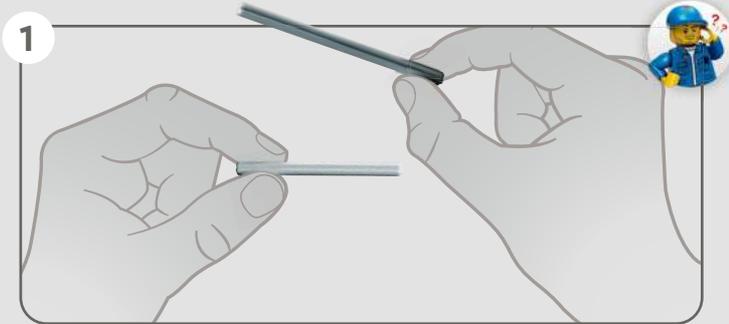
EXHAUST & REAR SUSPENSION

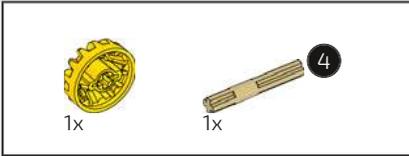
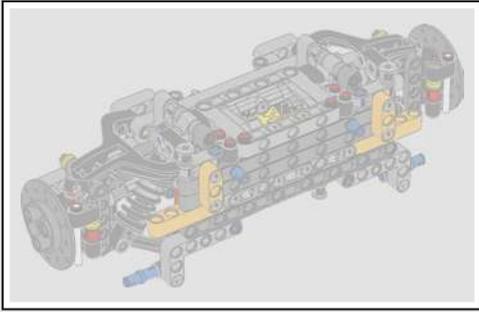
AUSPUFF & HINTERES FAHRWERK

Some of the characteristic details of the McLaren P1™ are the spoiler mechanism, the single, central exhaust and the custom-option gold-foil-lined engine bay. The application of the foil allows heat to be deflected away from the body panels. This detail was recreated in this model with gold-coloured elements. The black wishbone elements recreate the authentic suspension.

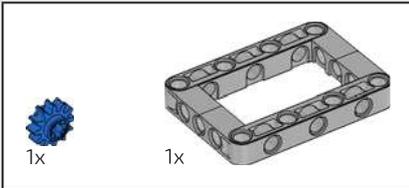
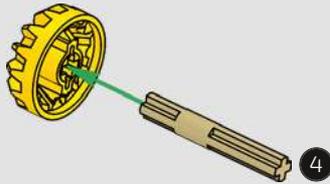
Die Mechanik des Heckspoilers, der Mittelauspuff und der optional mit Goldfolie ausgekleidete Motorraum sind nur einige der charakteristischen Details des McLaren P1™. Durch Aufbringen der Goldfolie lässt sich die Hitze von den Verkleidungen weggleiten. Dieses Detail wurde in dem Modell mit goldfarbenen Elementen nachgebildet. Die schwarzen Querlenker stellen die Radaufhängung authentisch dar.



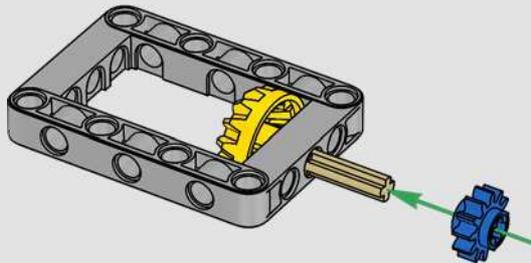




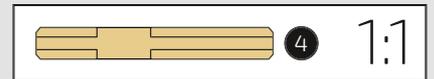
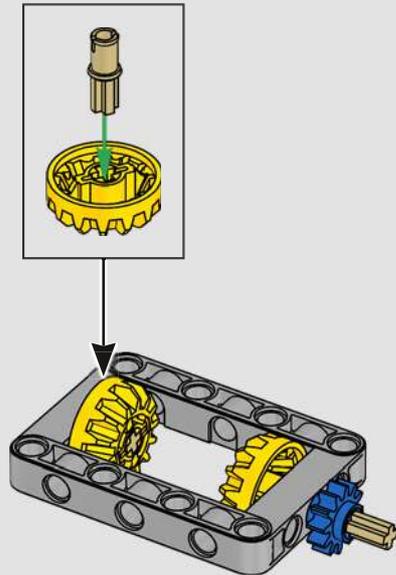
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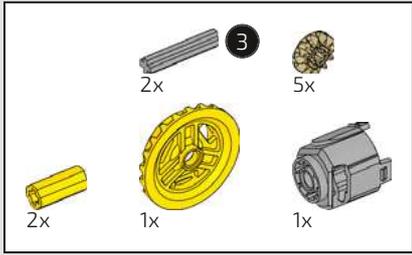


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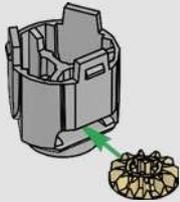
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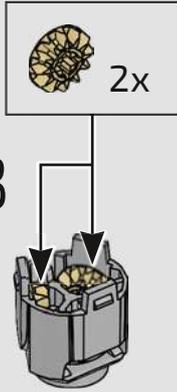
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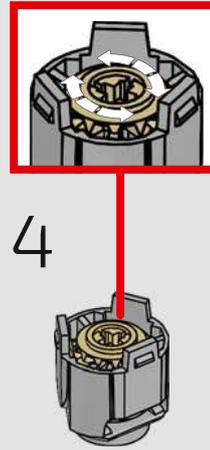
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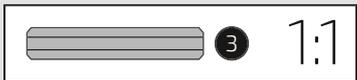
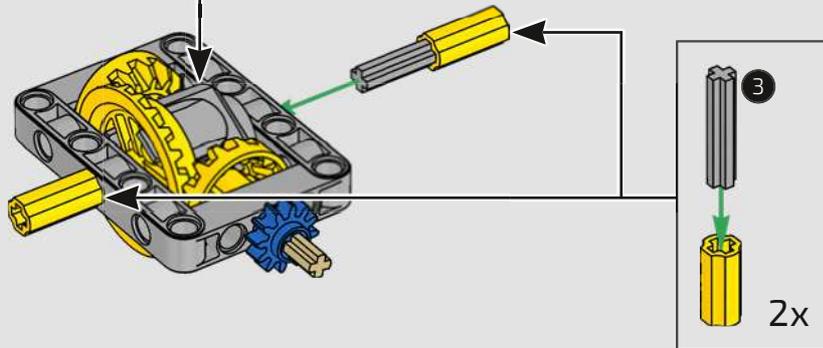
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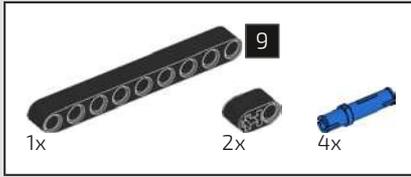


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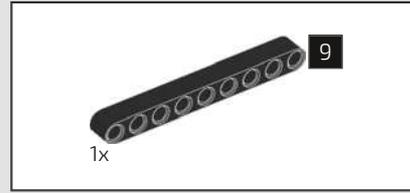
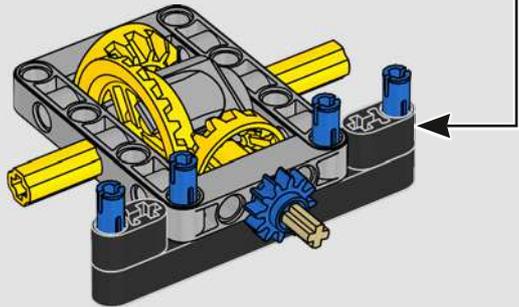
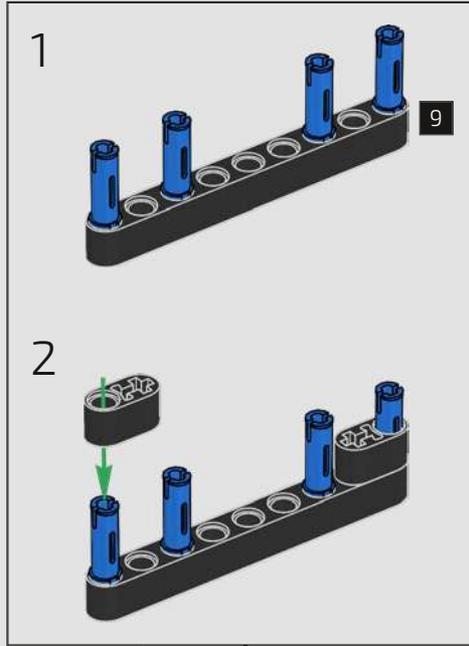


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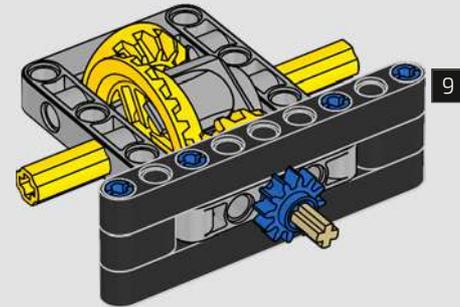


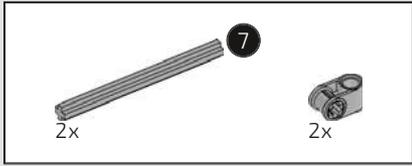


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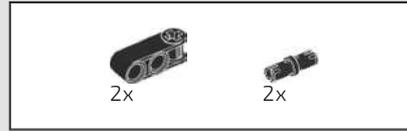
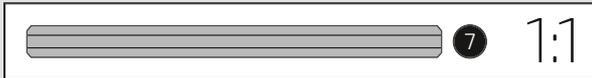
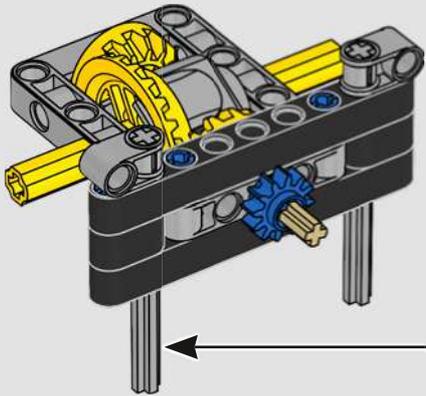
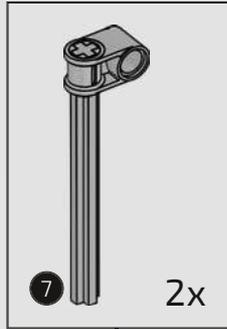


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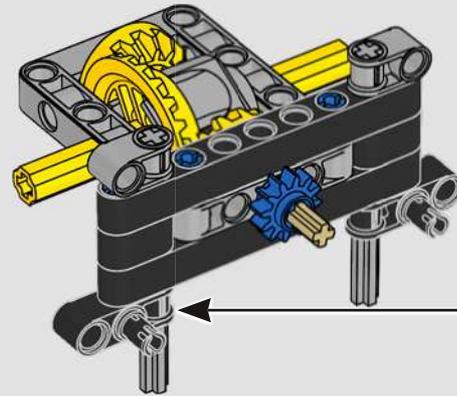
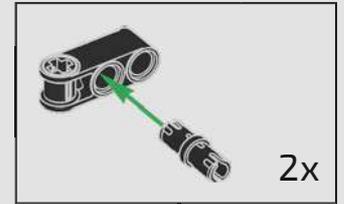


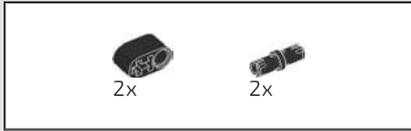


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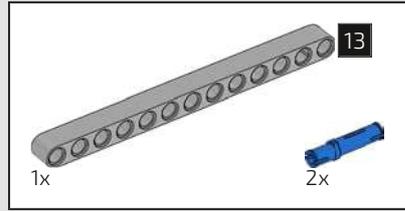
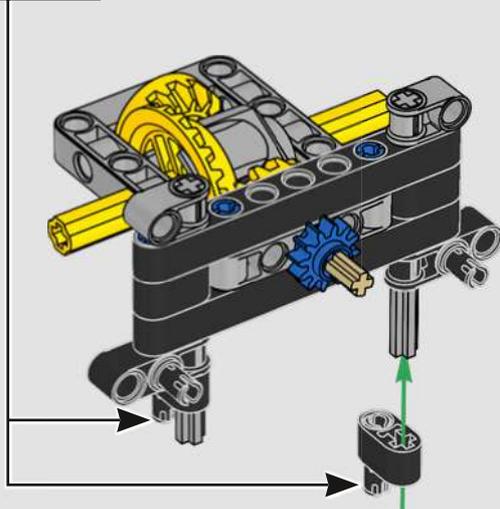
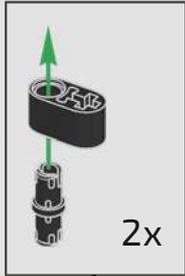


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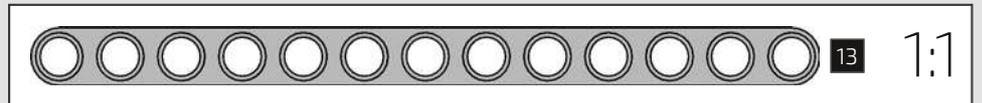
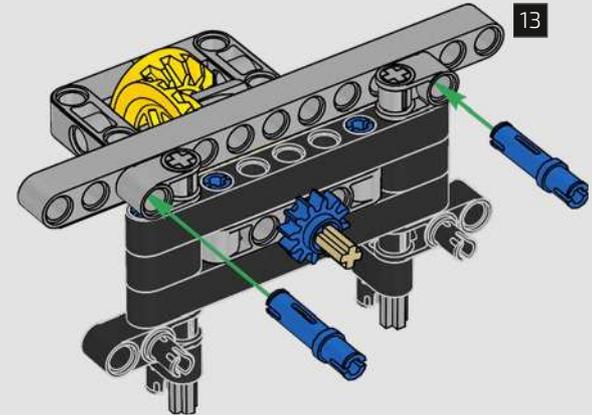


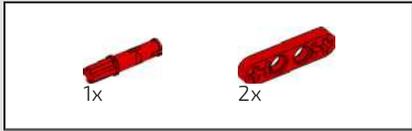


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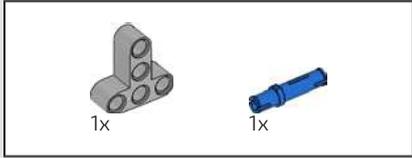
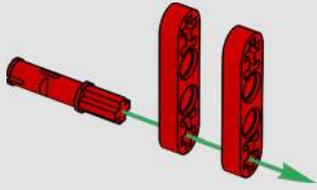


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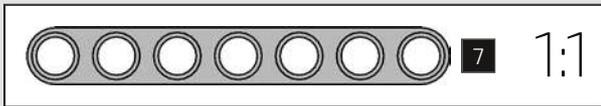
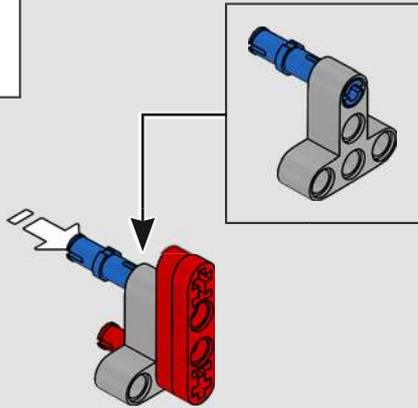




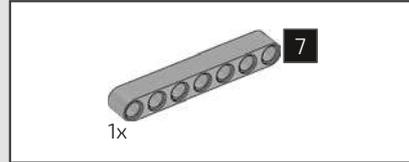
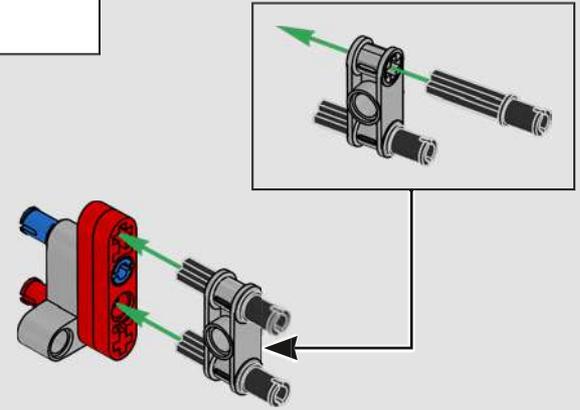
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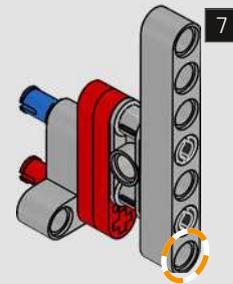
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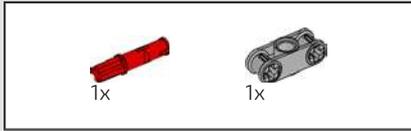


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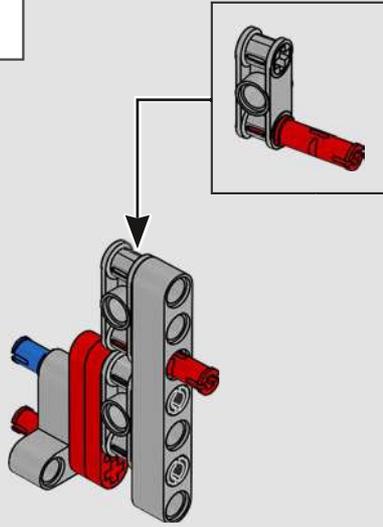


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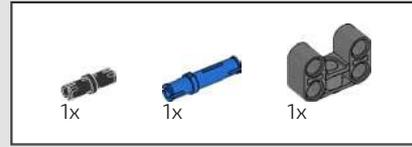
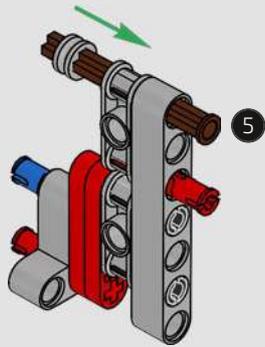




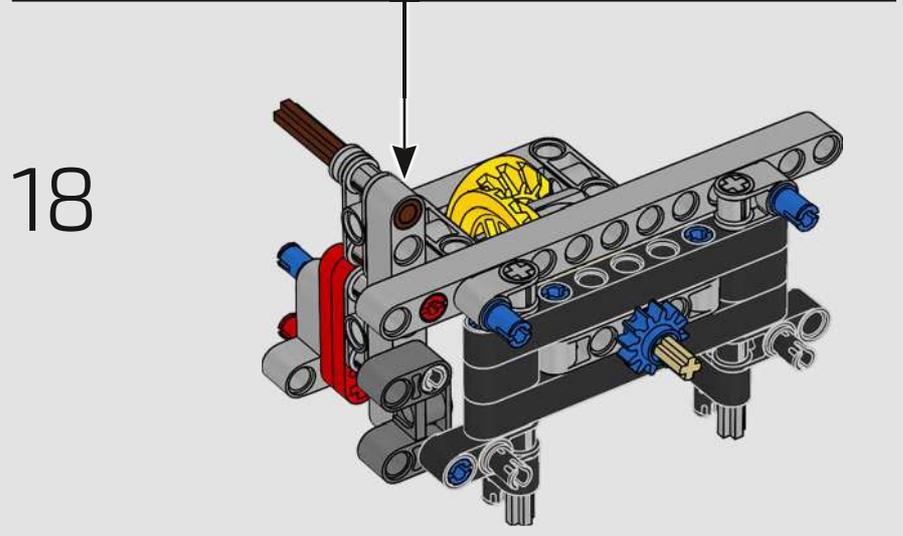
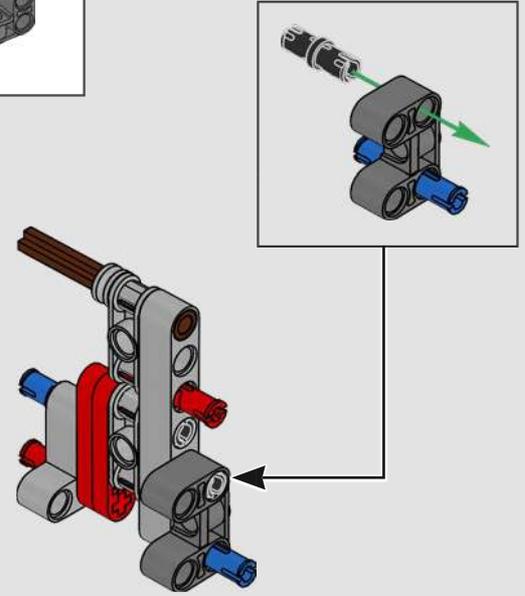
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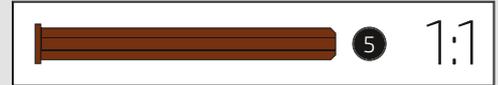
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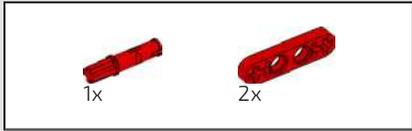


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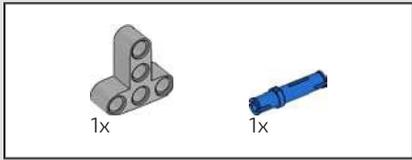
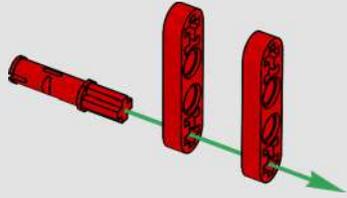


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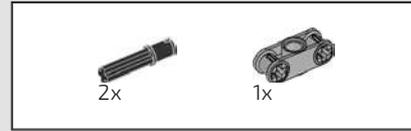
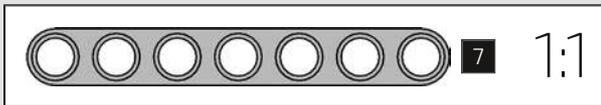
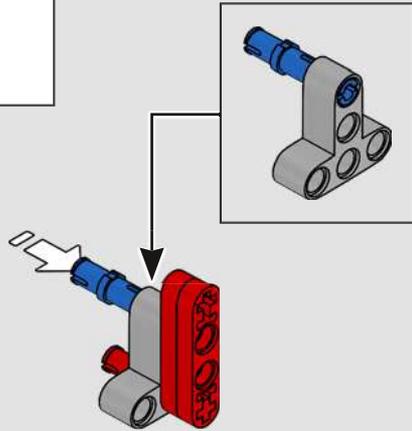




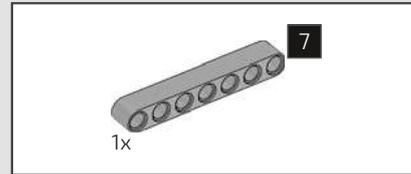
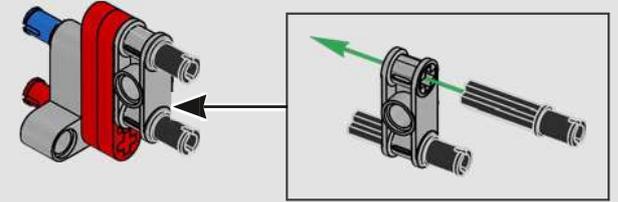
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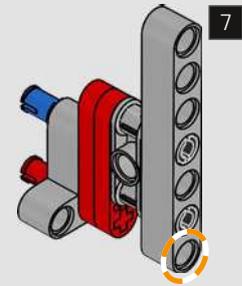
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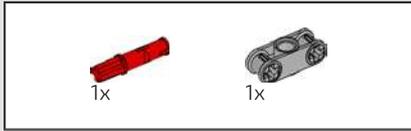


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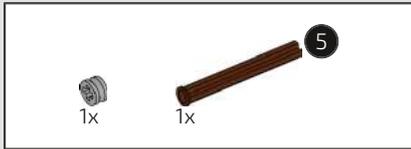
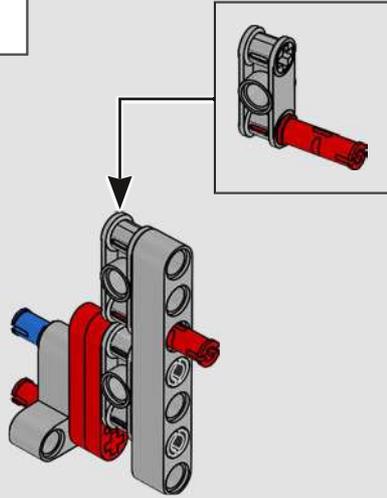


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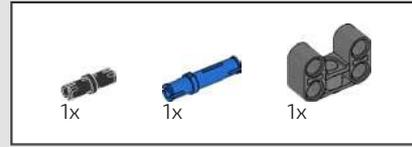
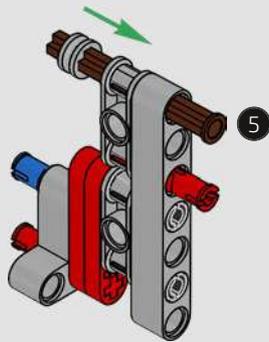




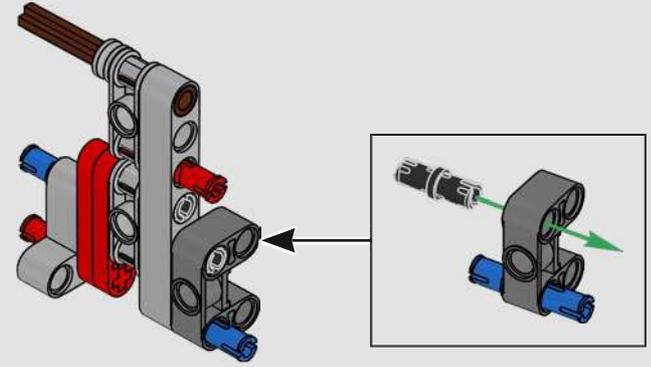
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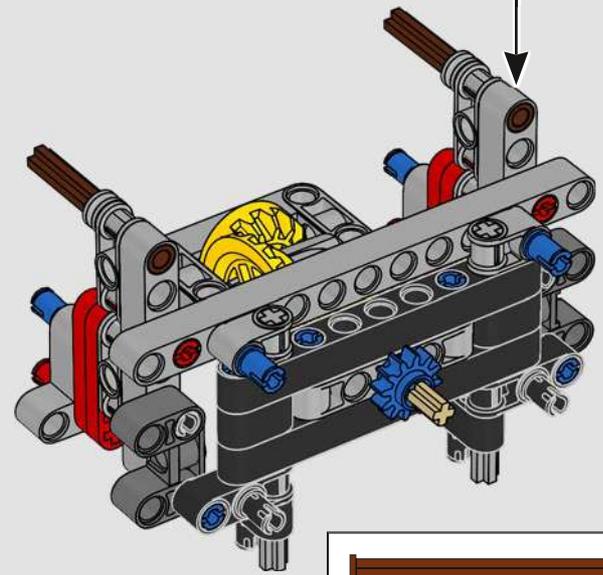
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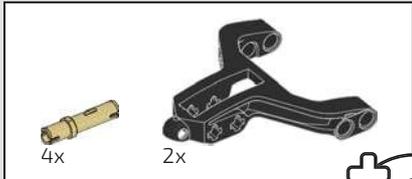


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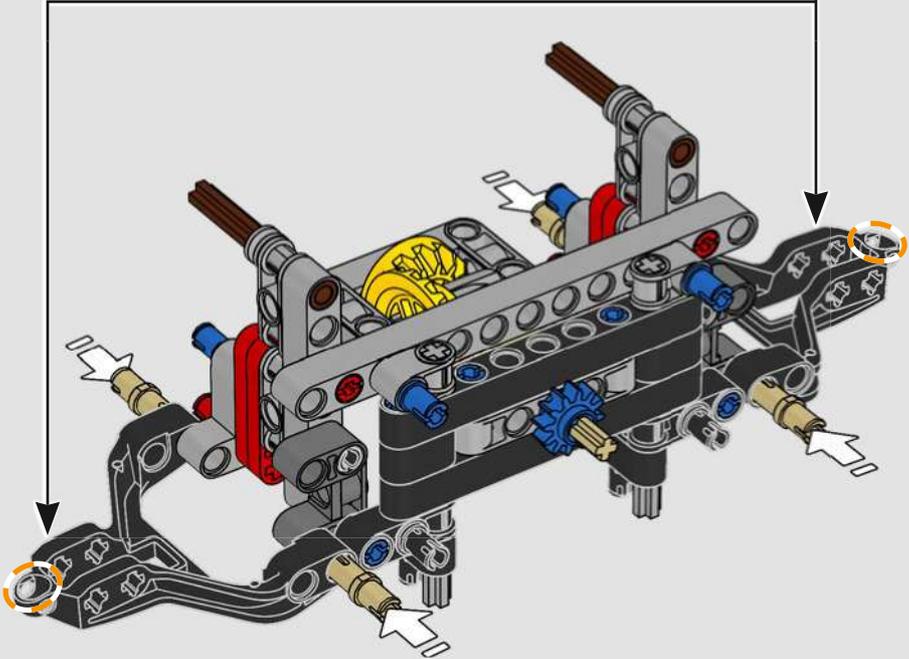
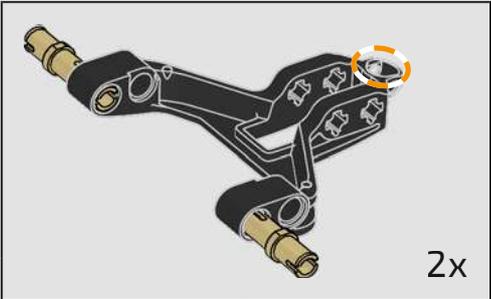
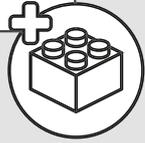


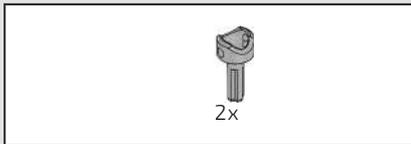
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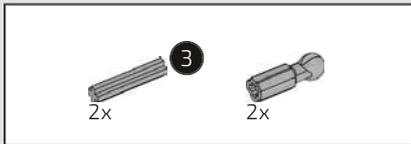
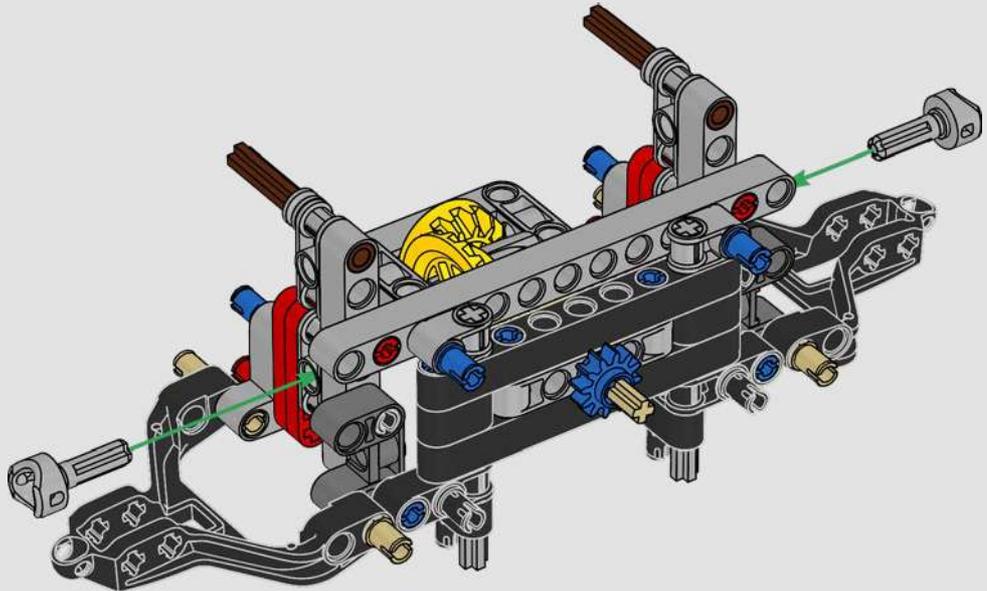


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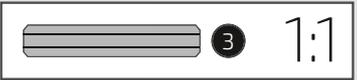
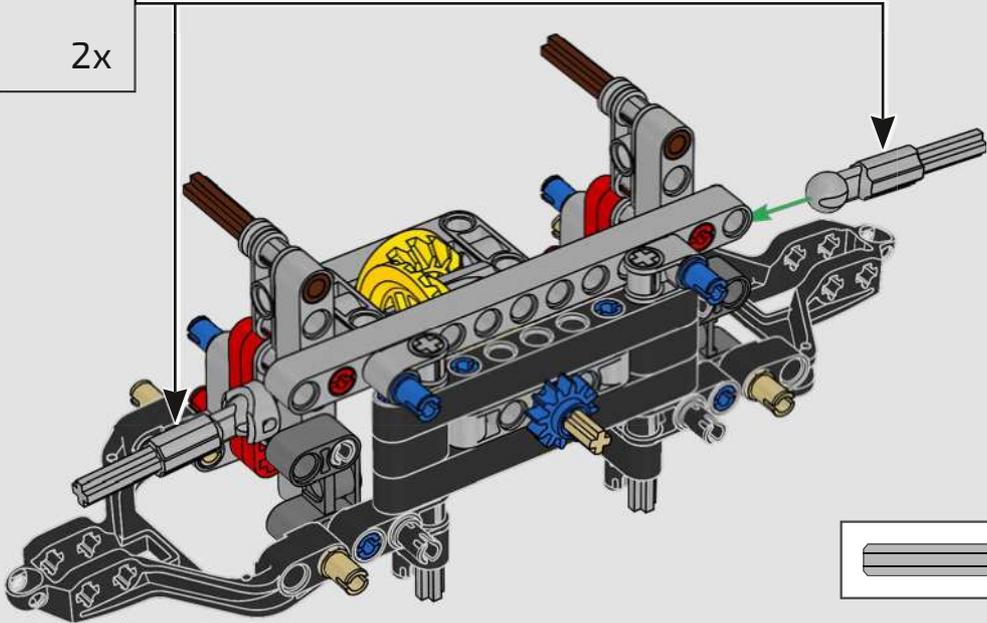
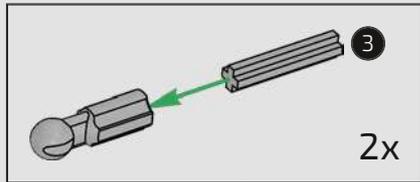


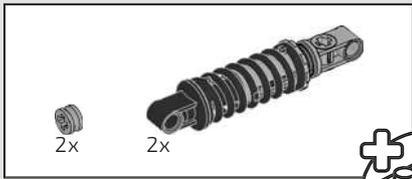


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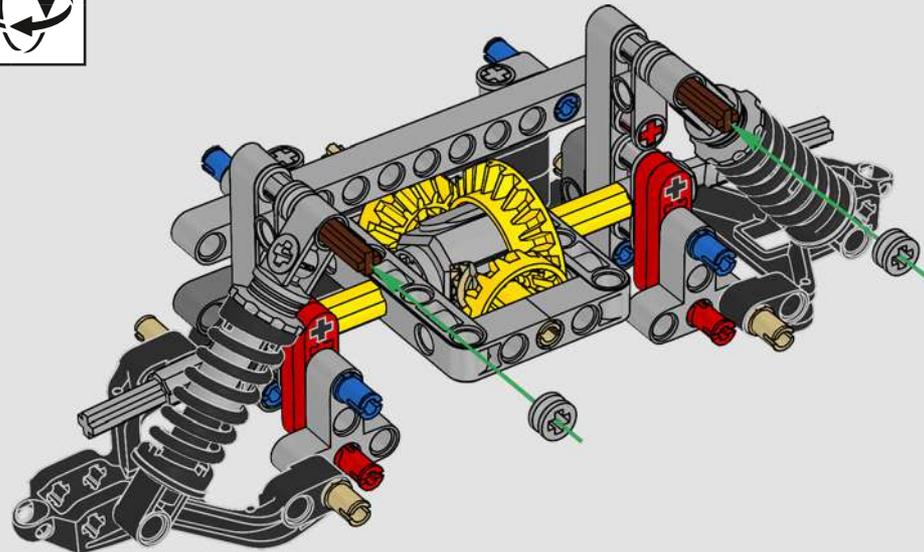
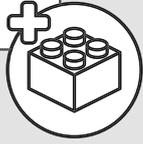


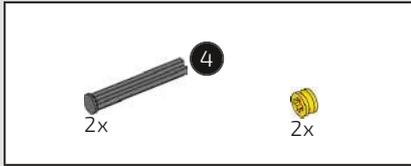
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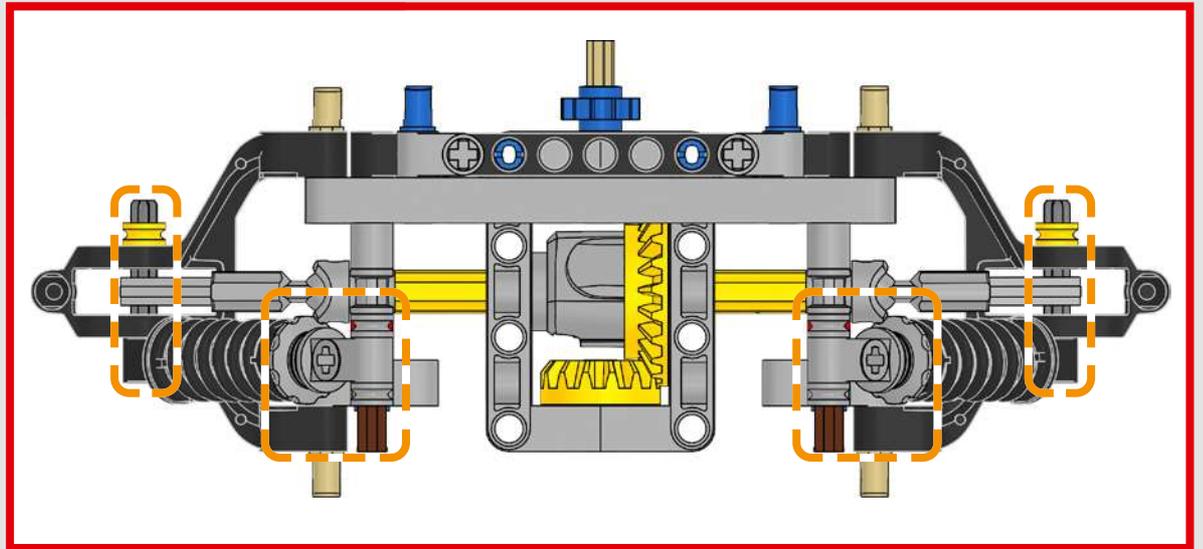
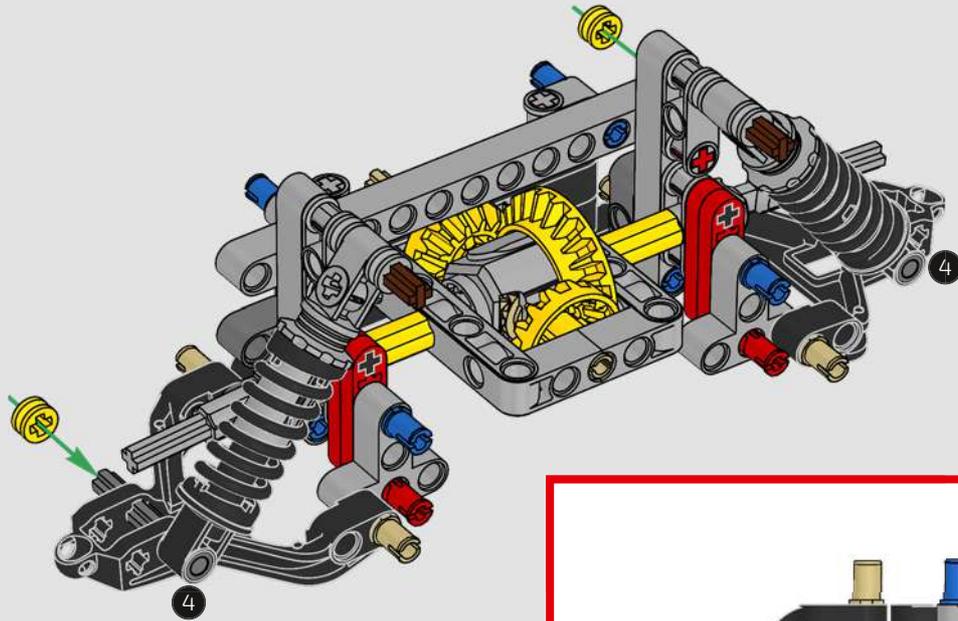


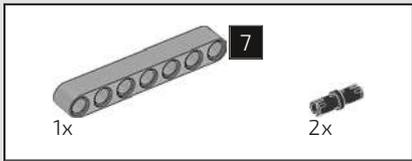
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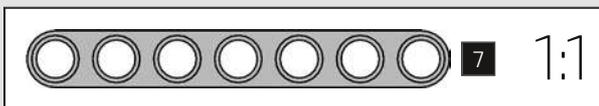
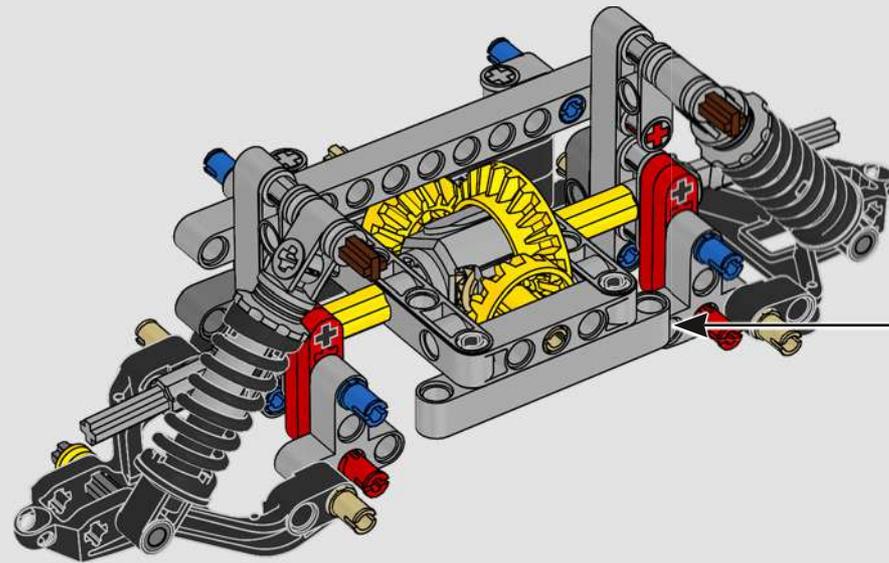
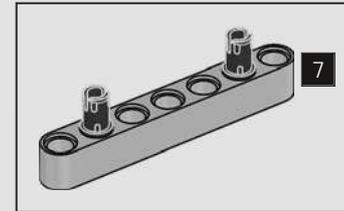


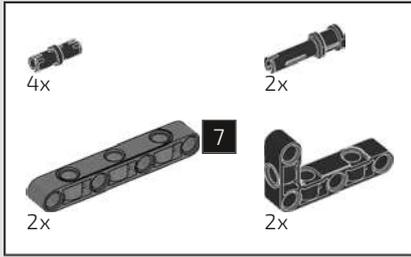
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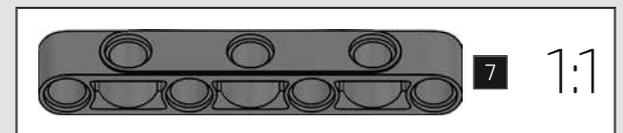
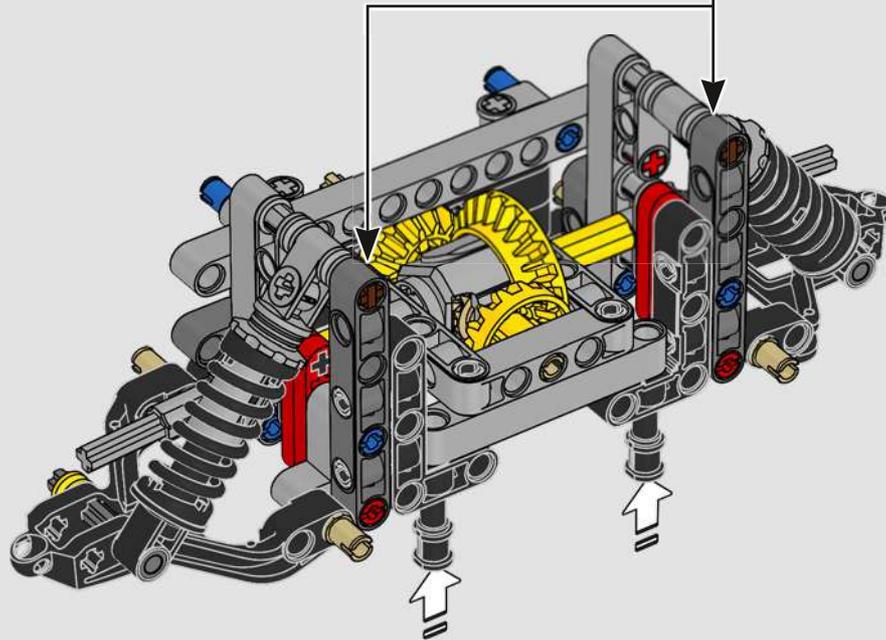
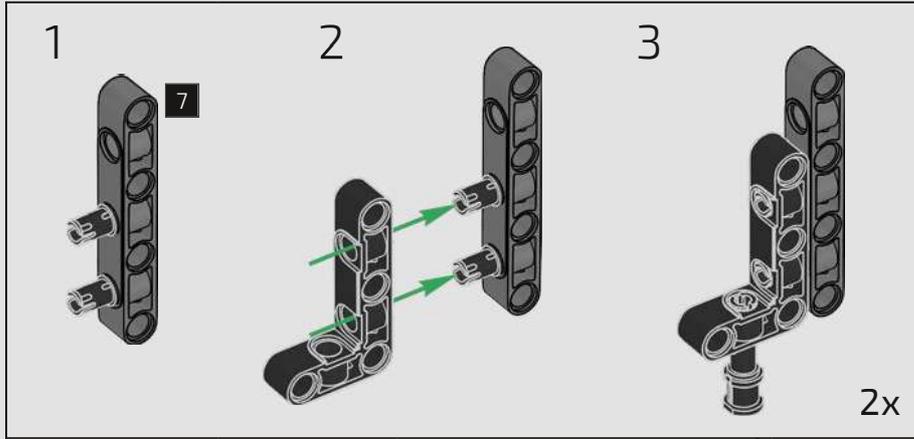


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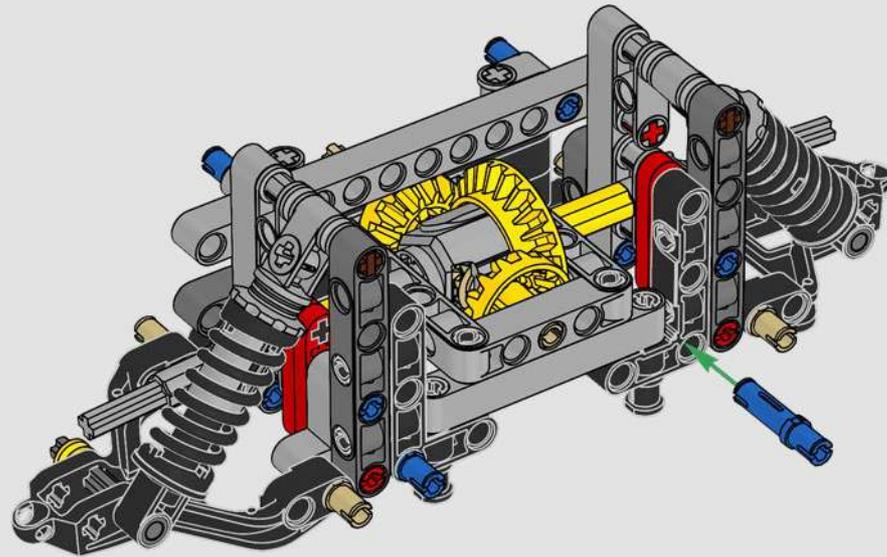


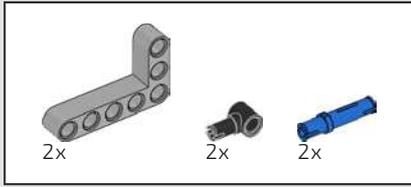
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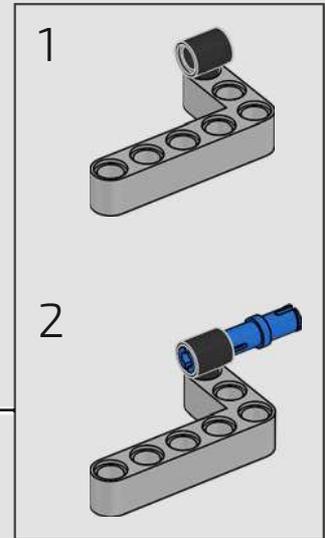
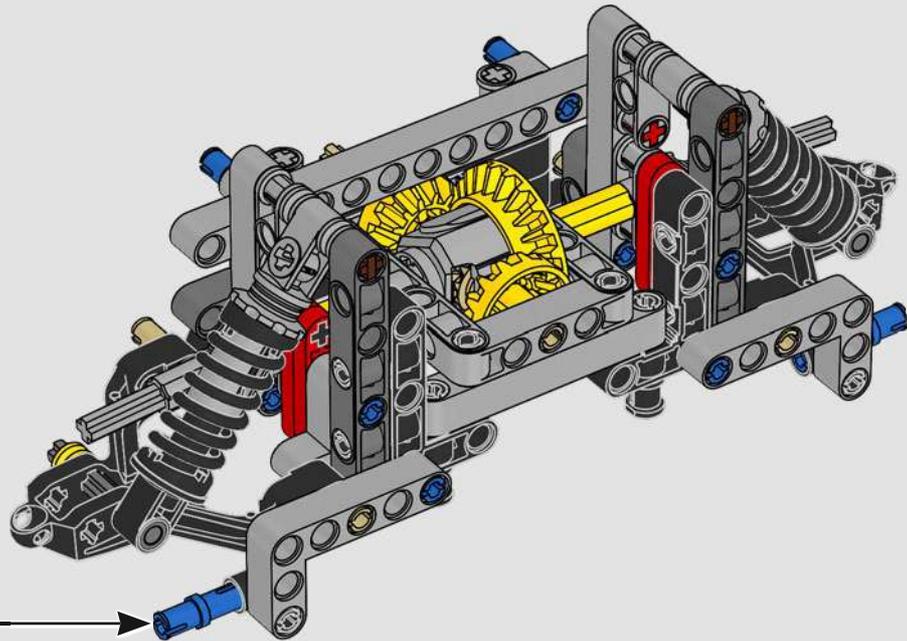
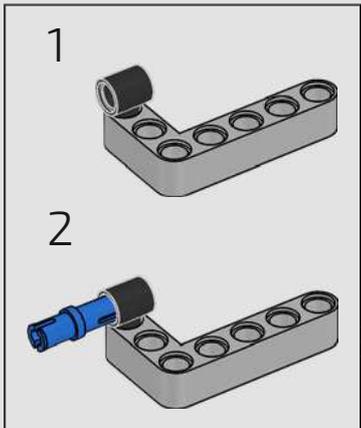


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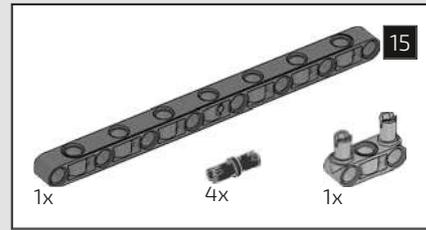
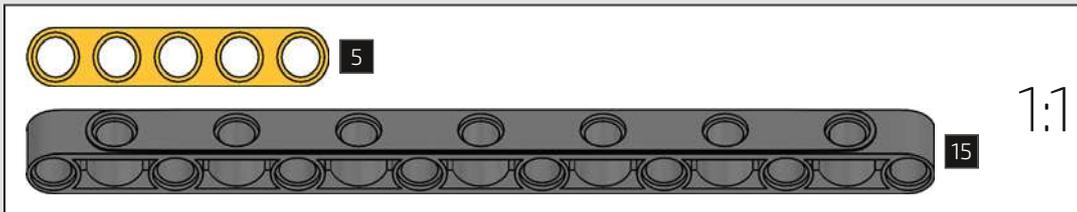
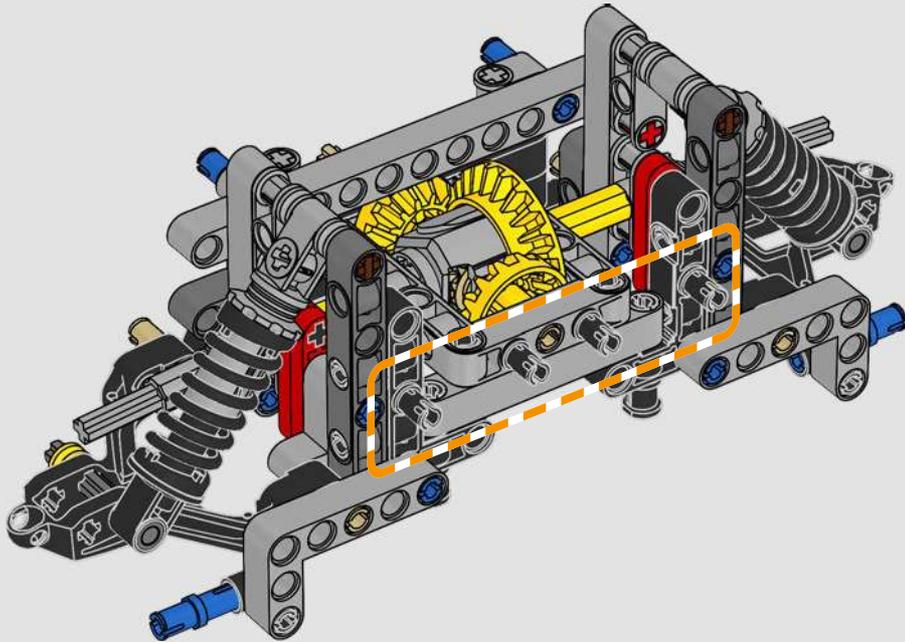


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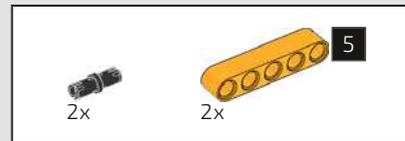
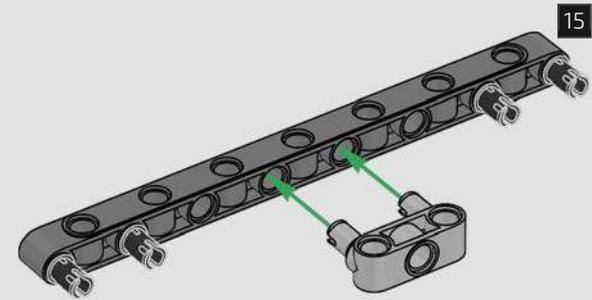




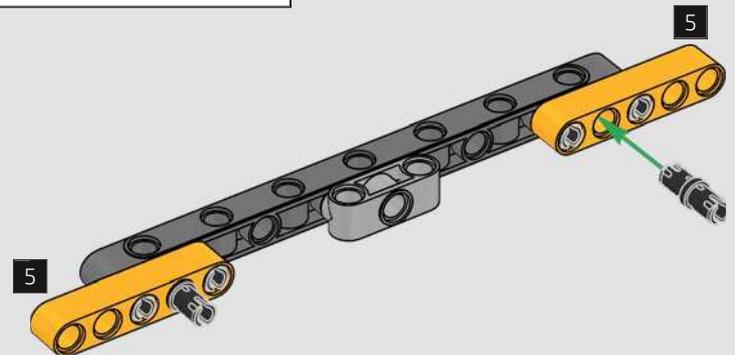
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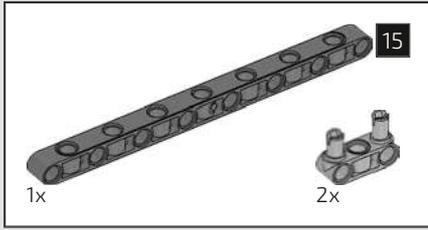


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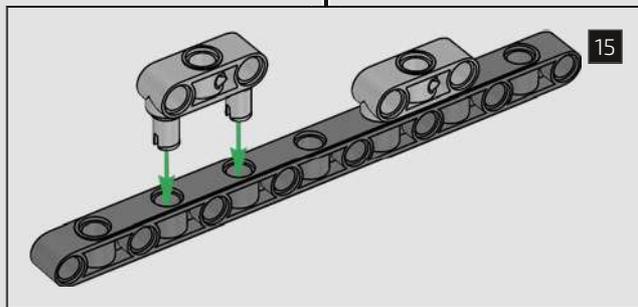
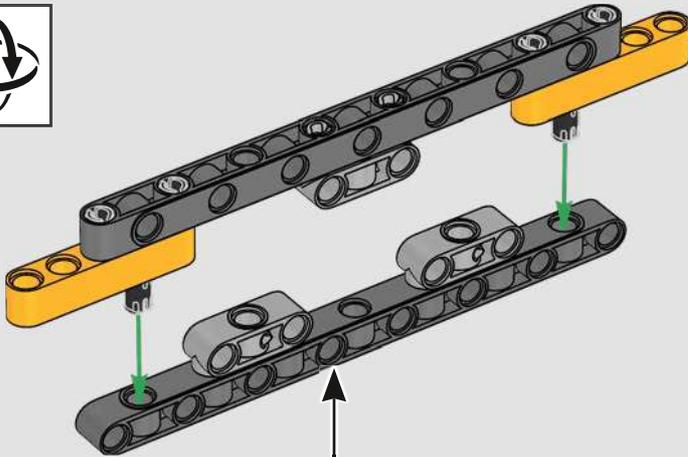


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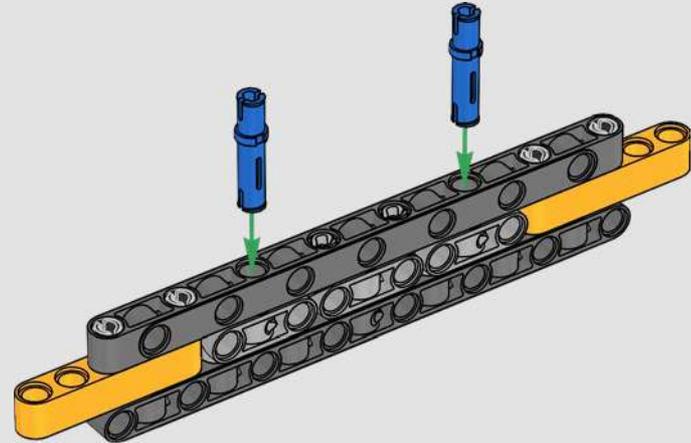




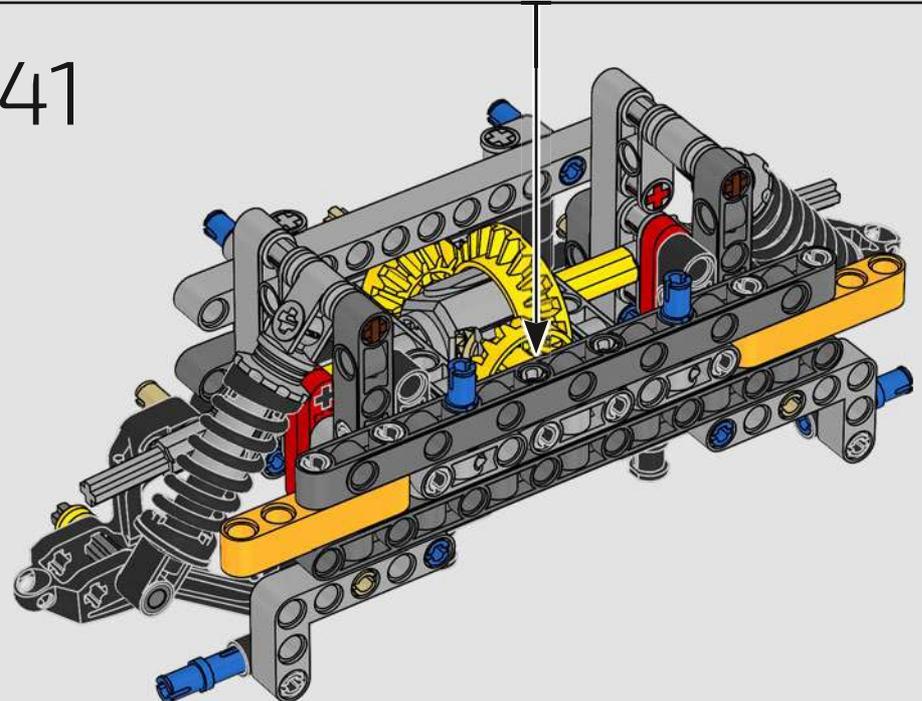
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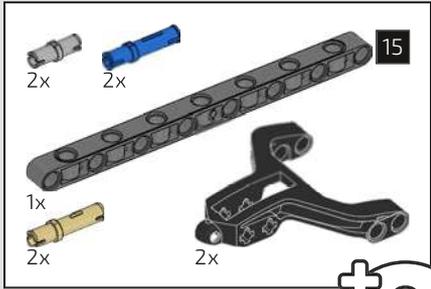


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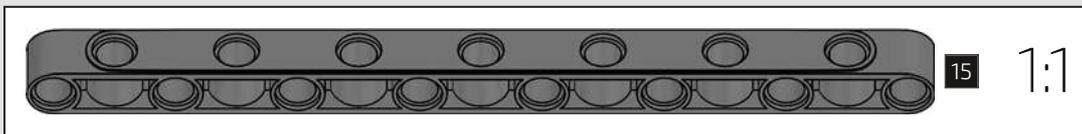
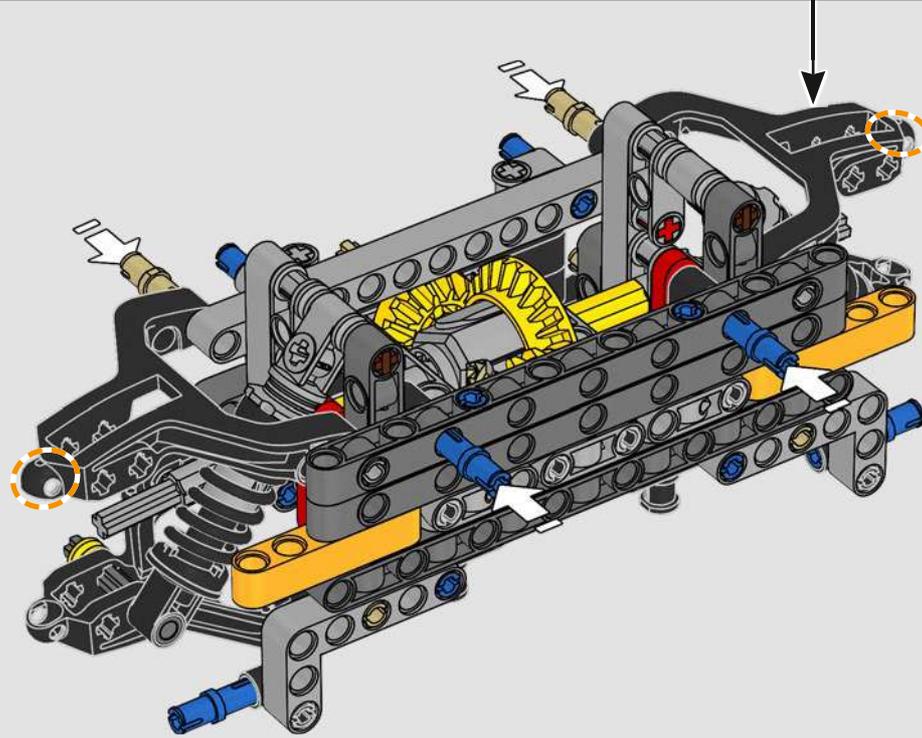
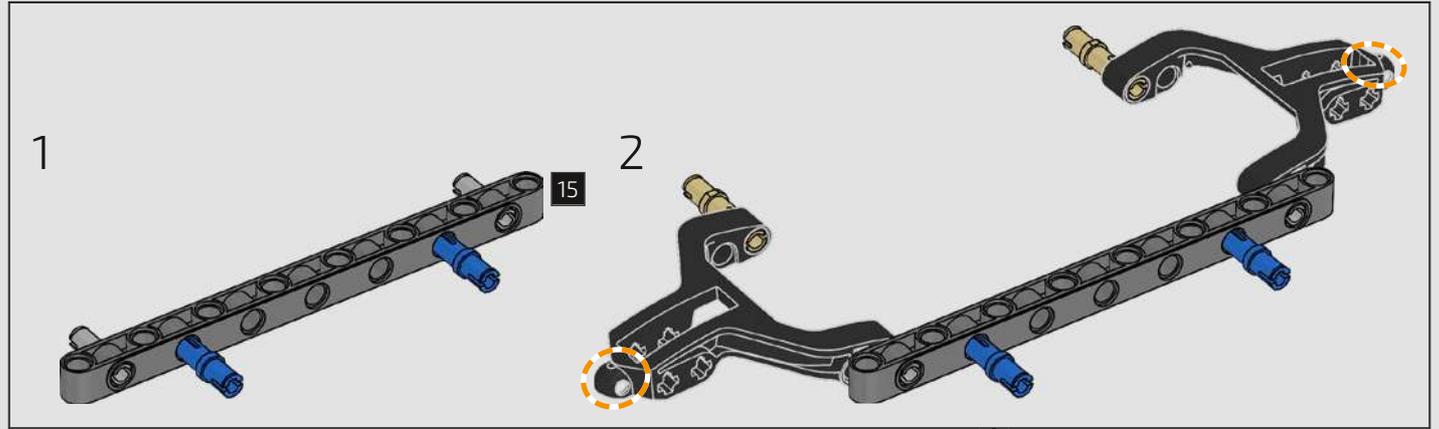
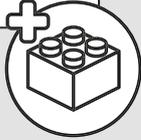


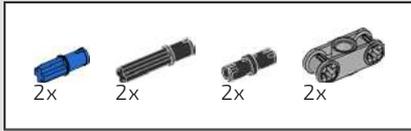
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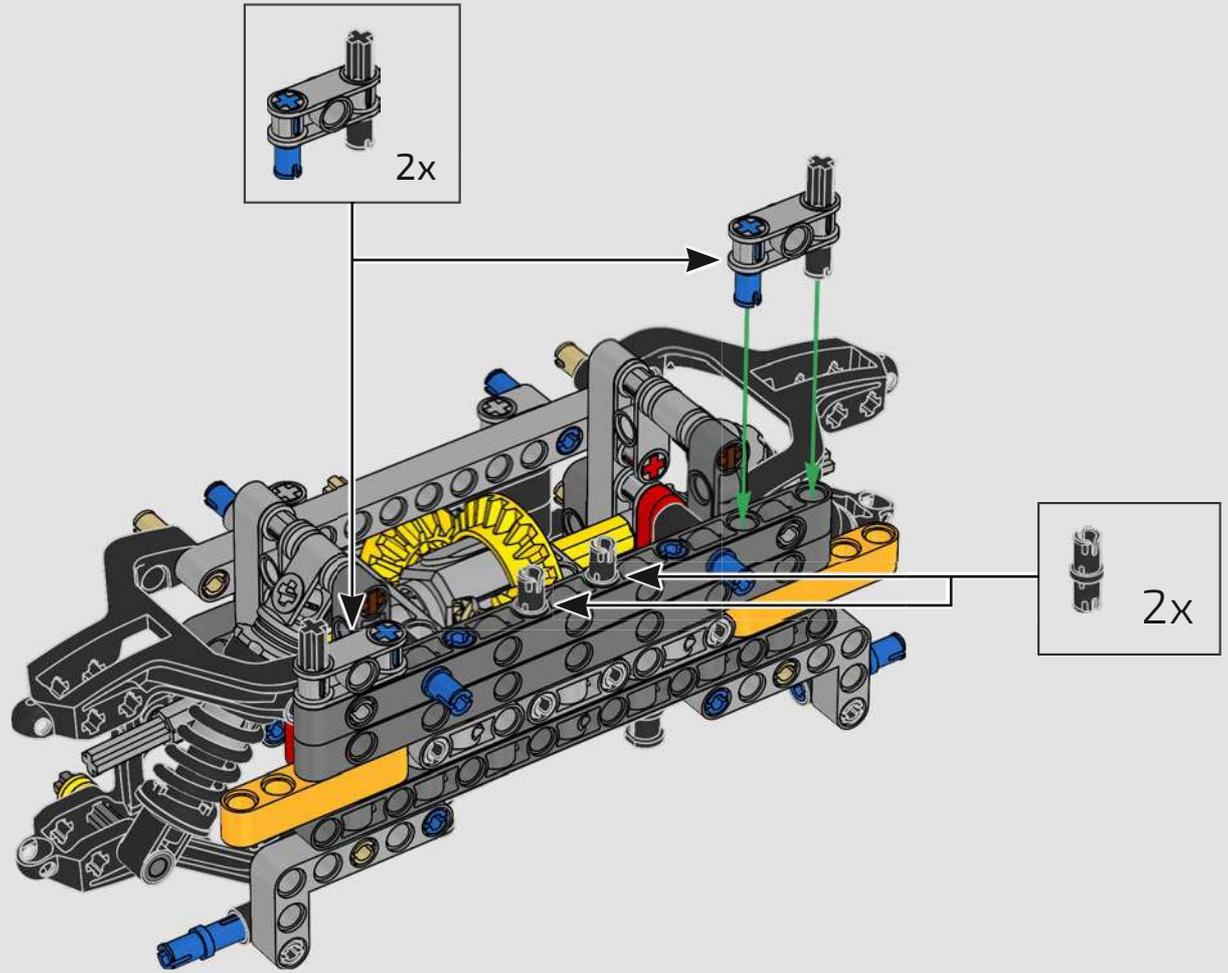


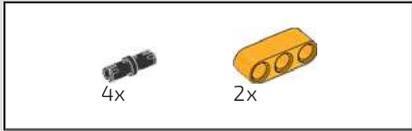
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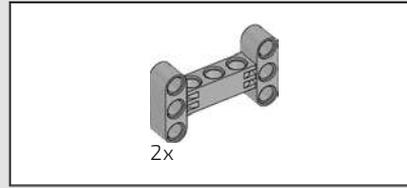
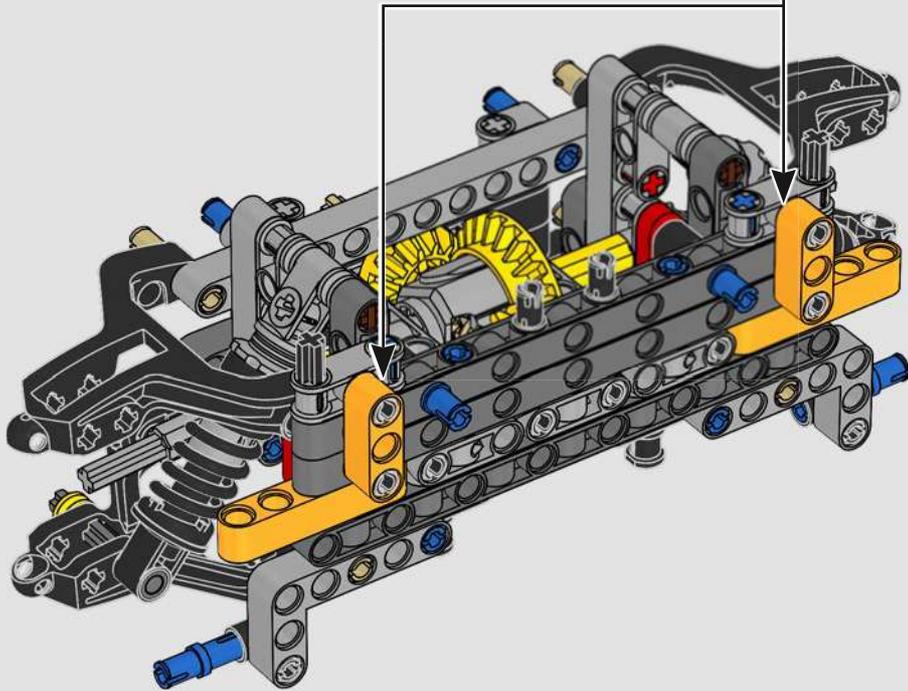
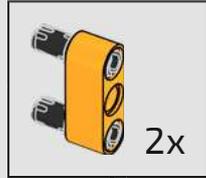


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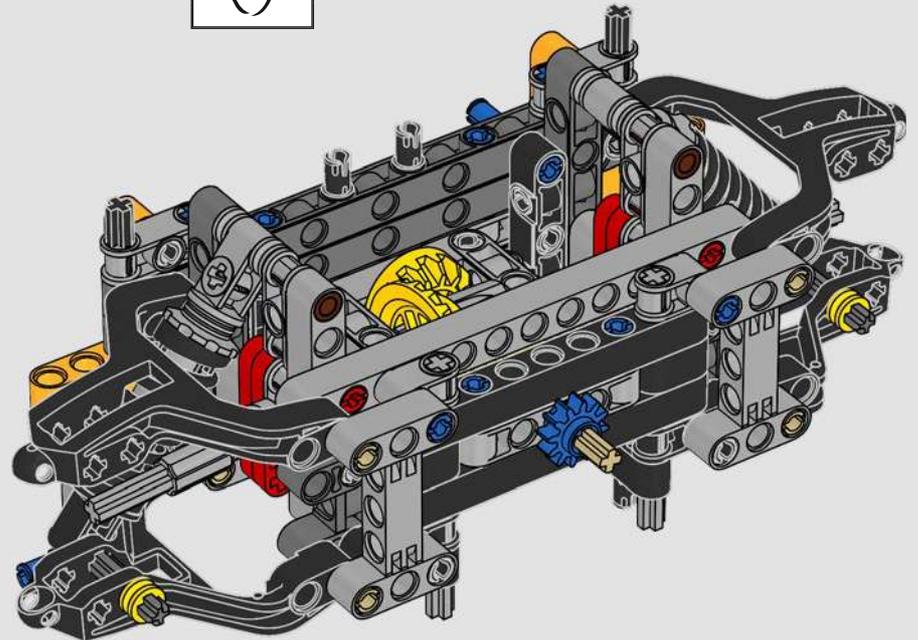


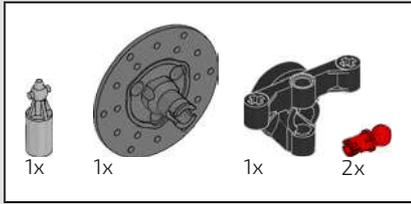


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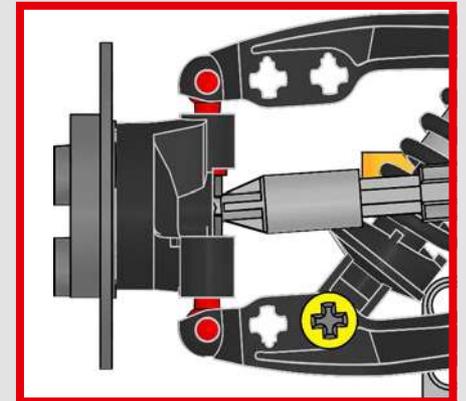
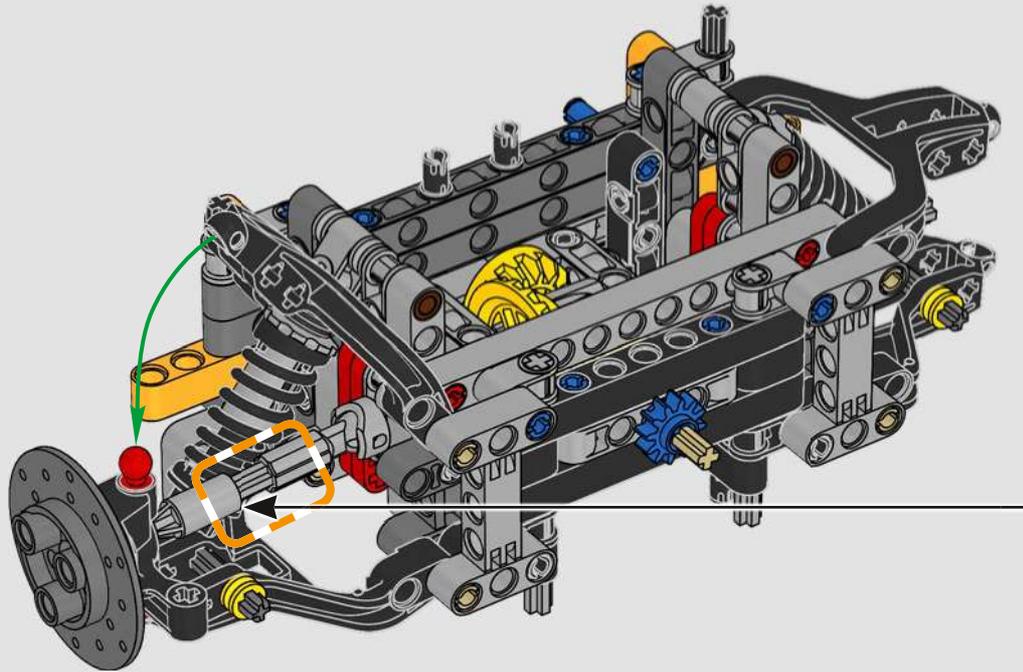
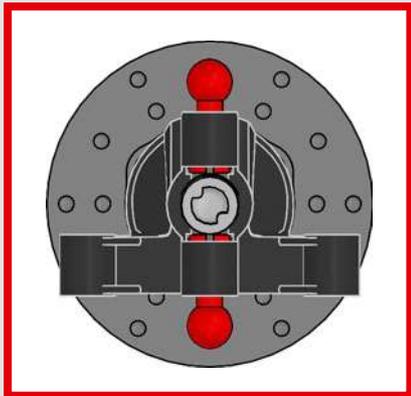
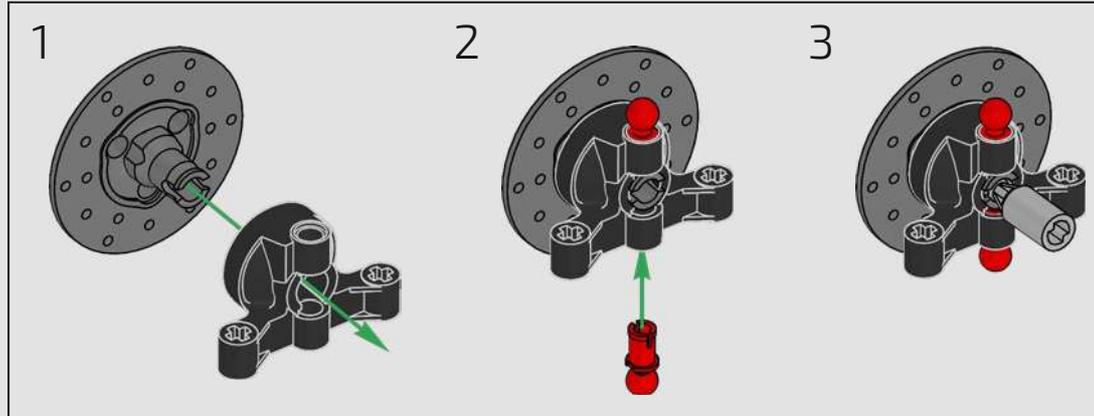


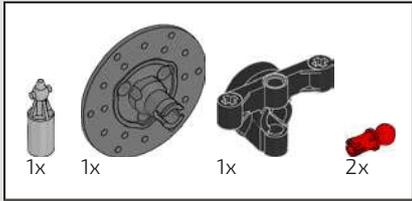
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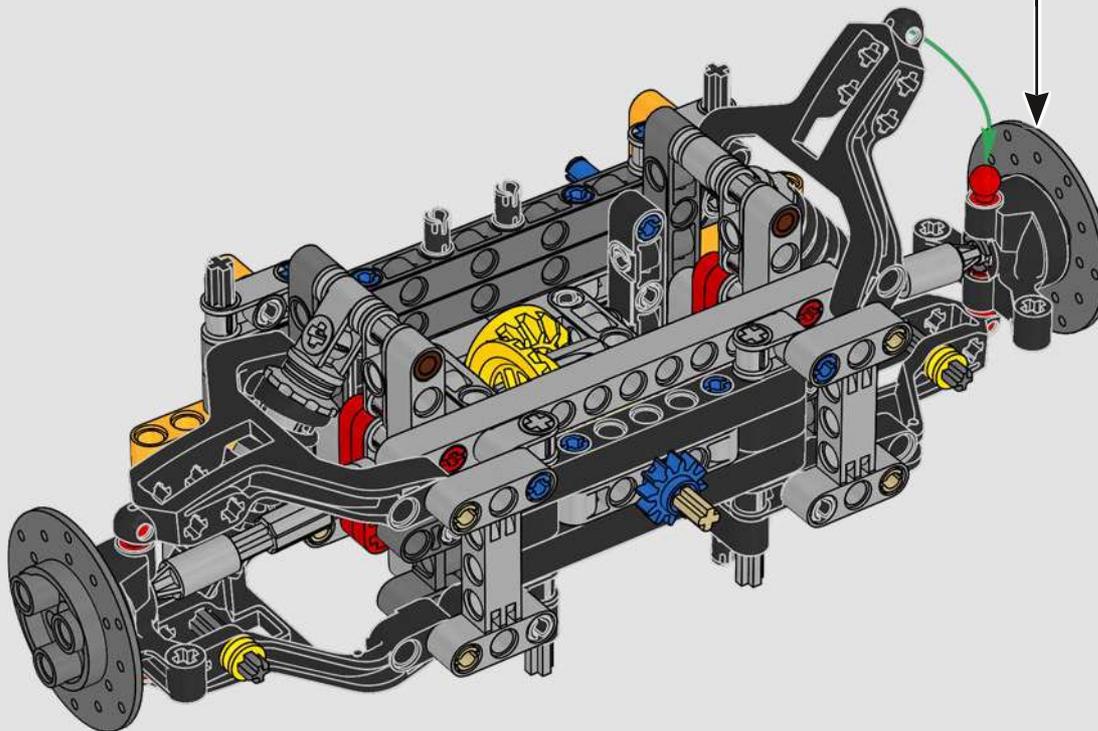
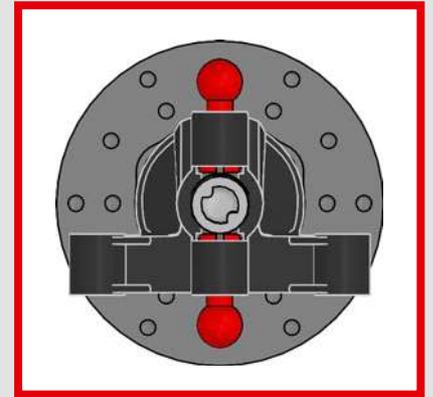
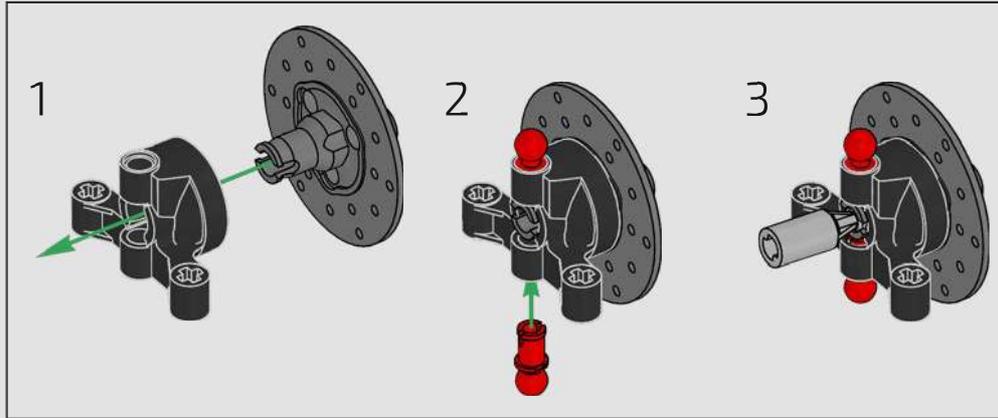


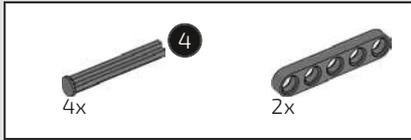
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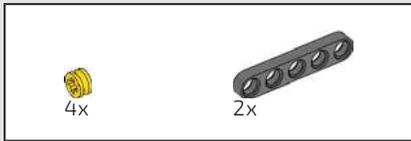
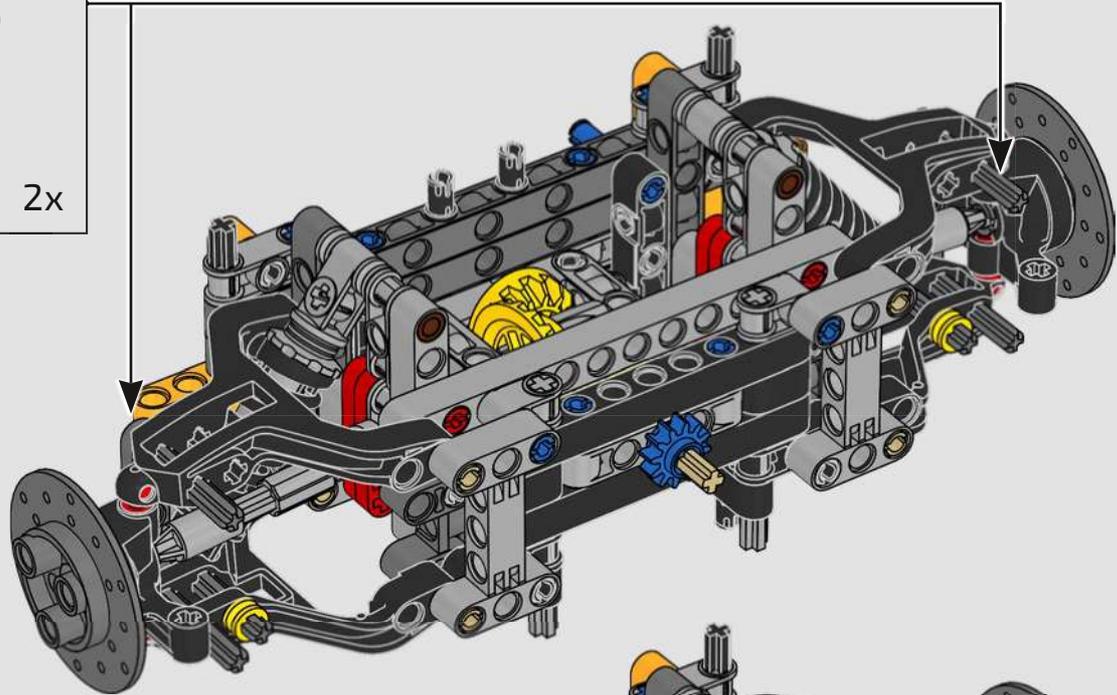
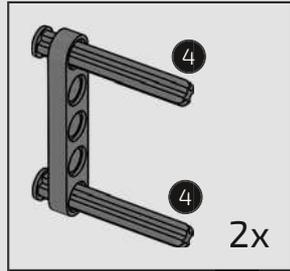


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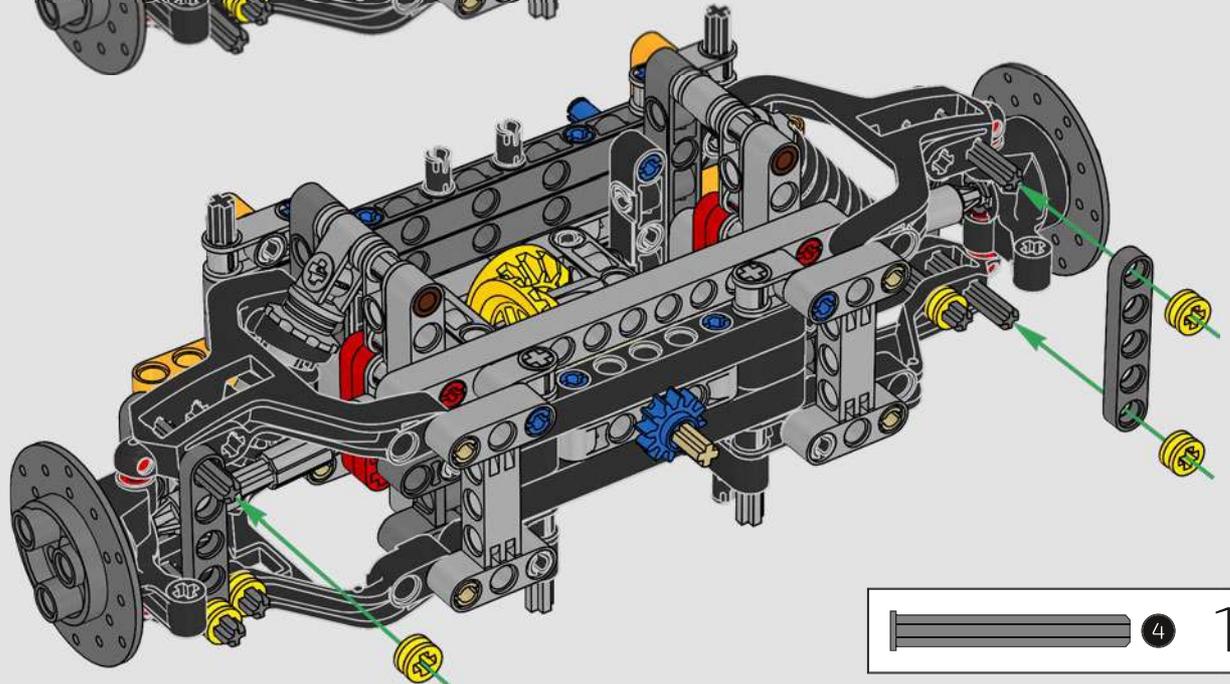


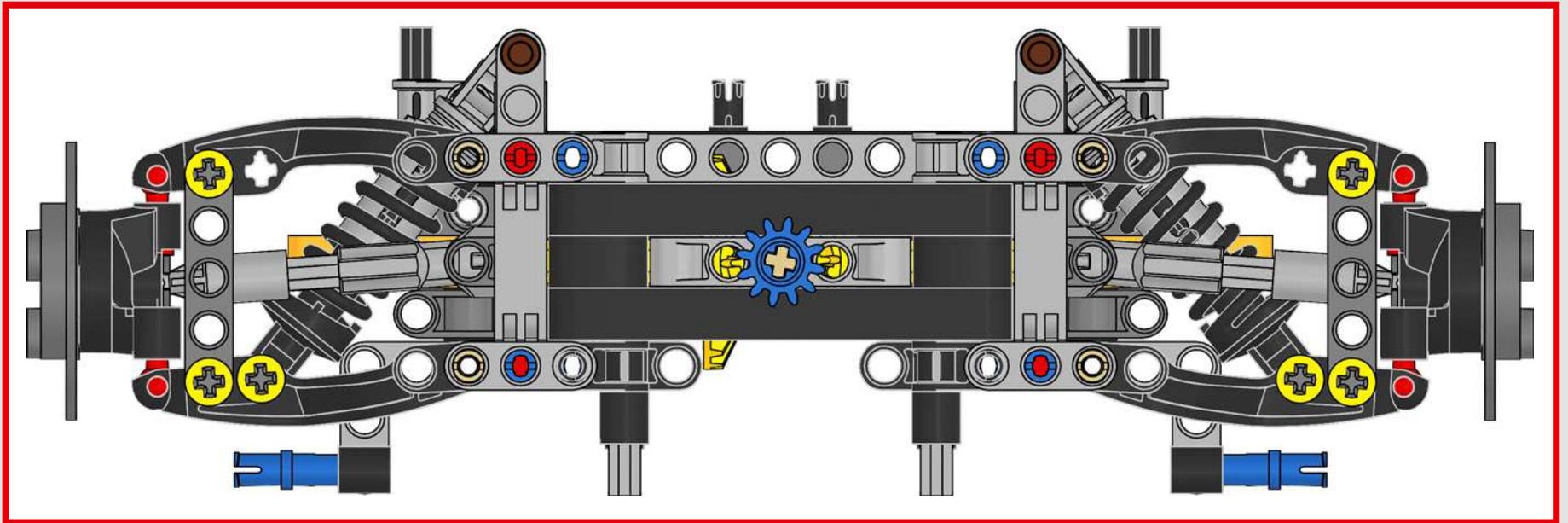


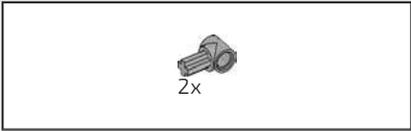
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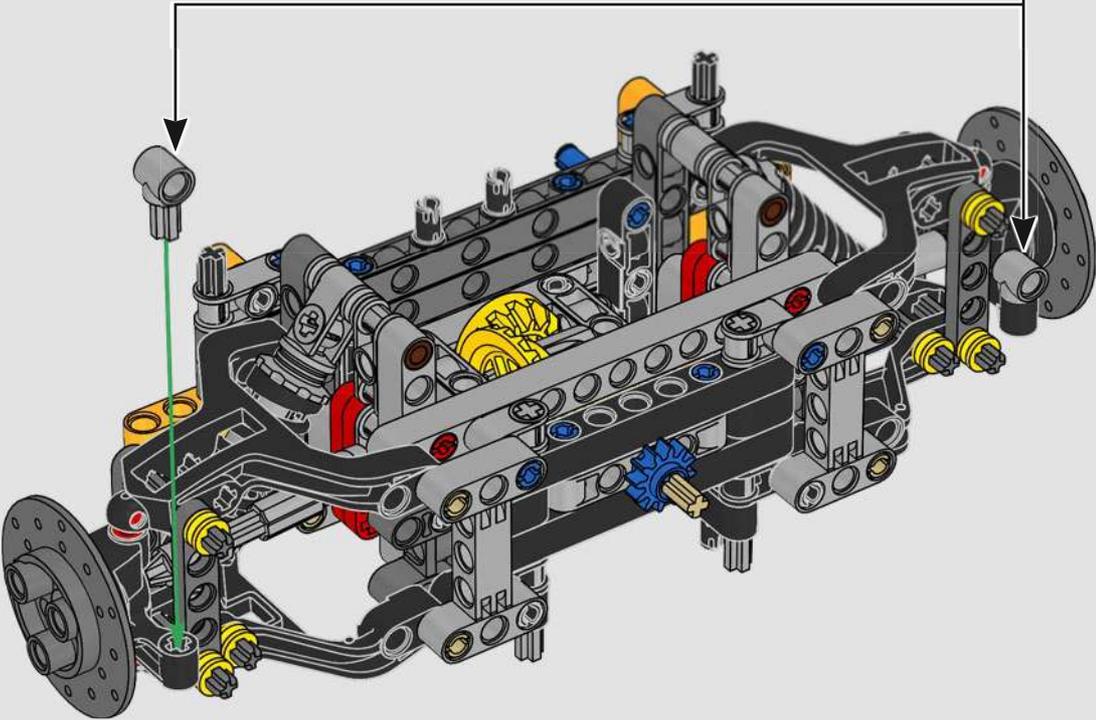
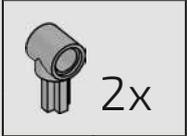
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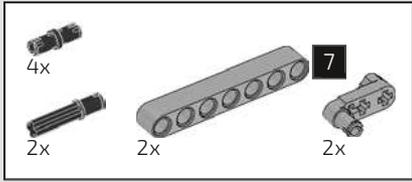




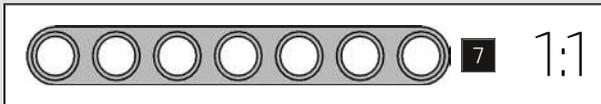
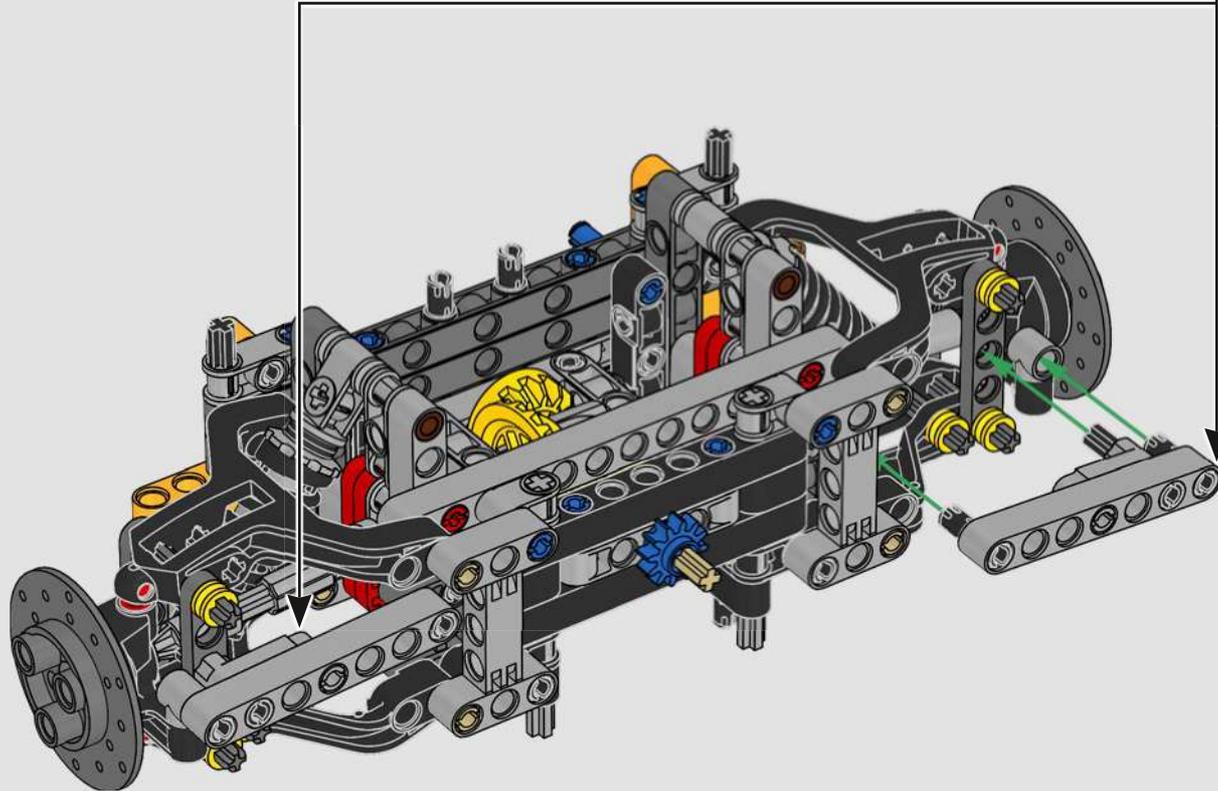
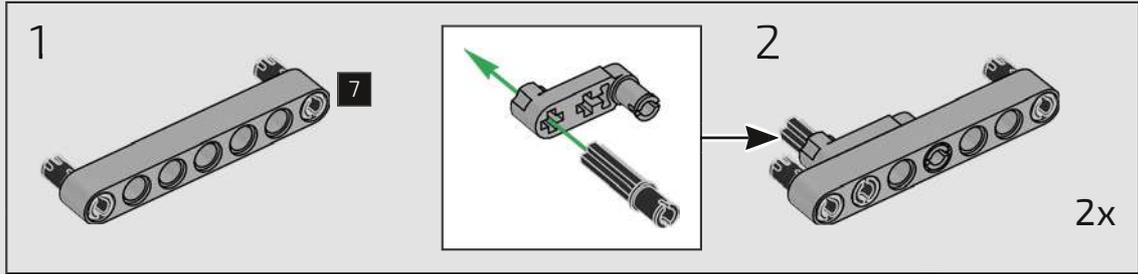


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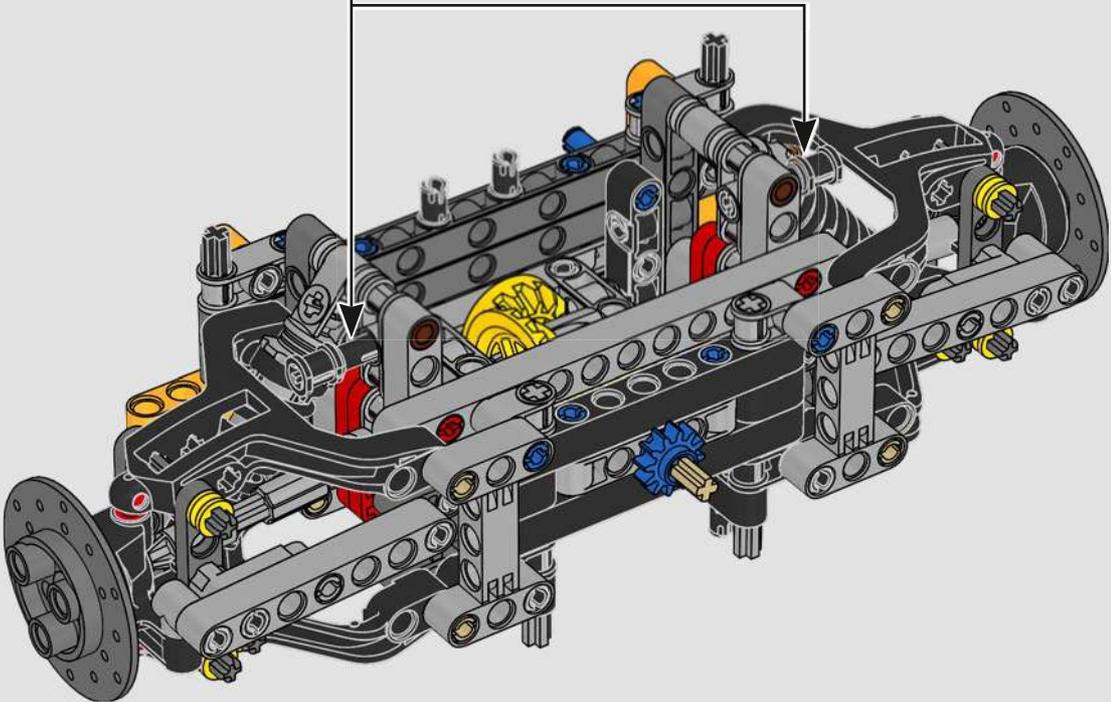


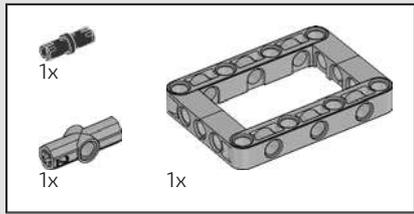
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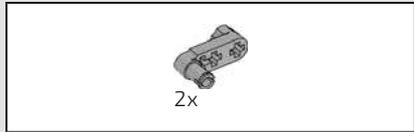
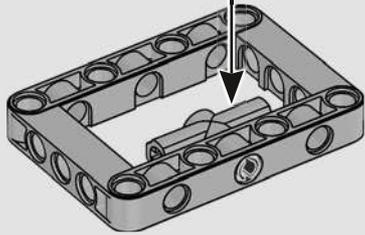
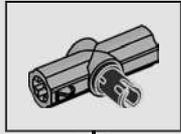


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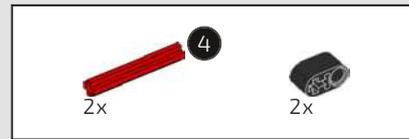
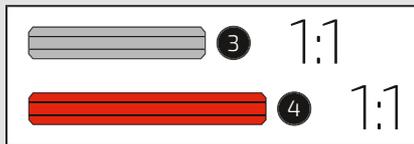
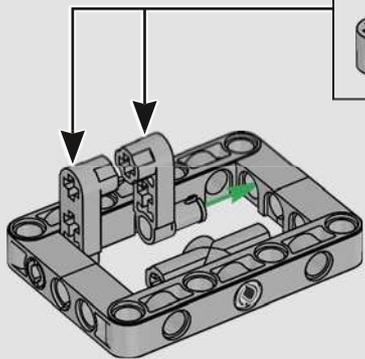
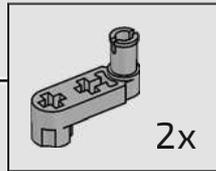




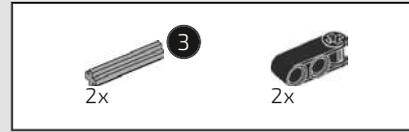
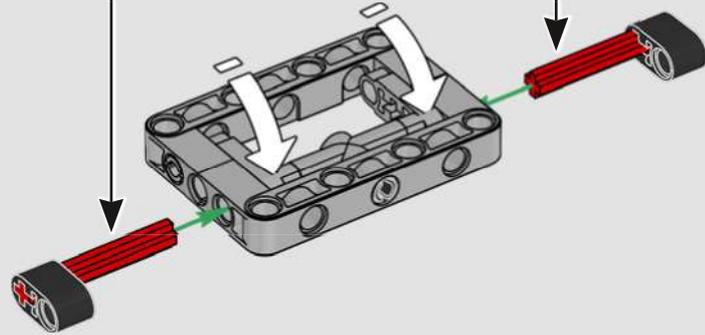
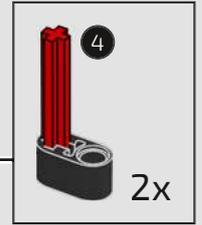
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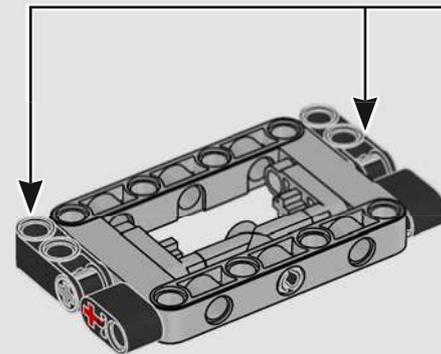
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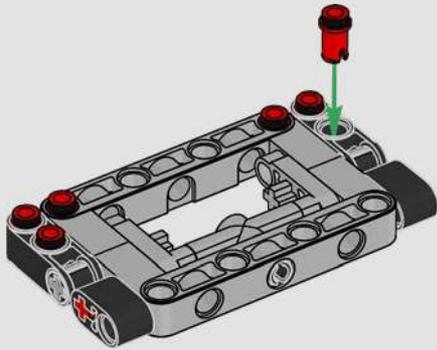


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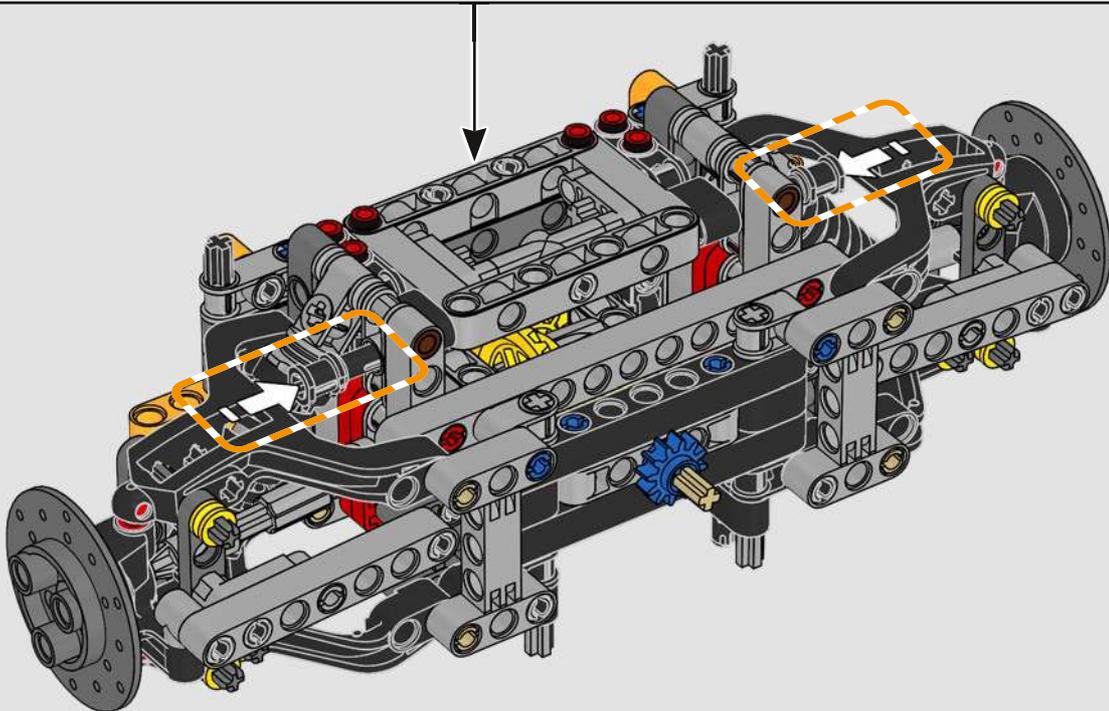


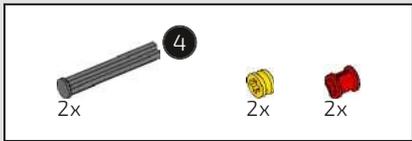


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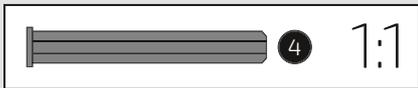
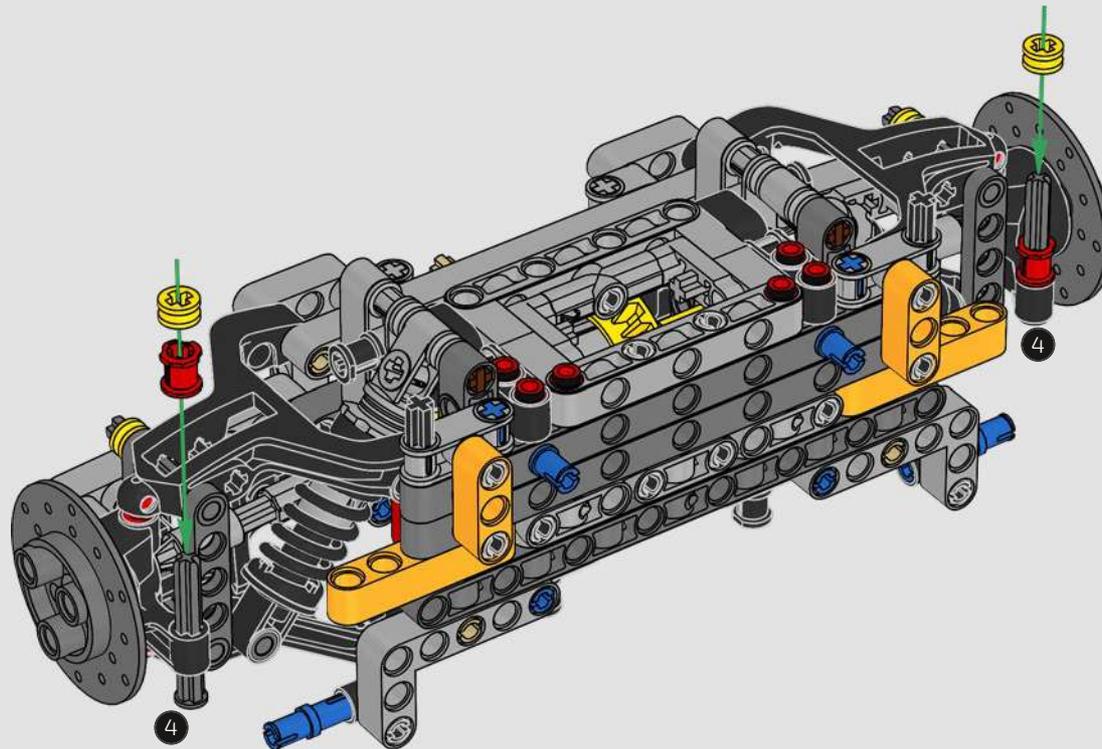


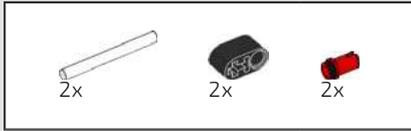
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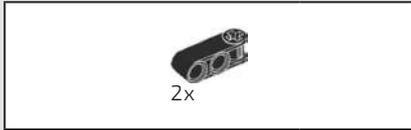
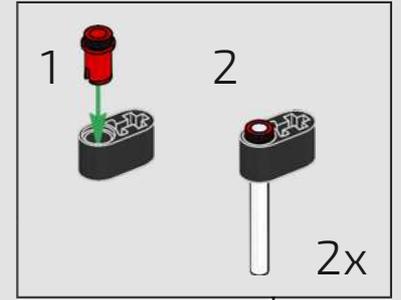
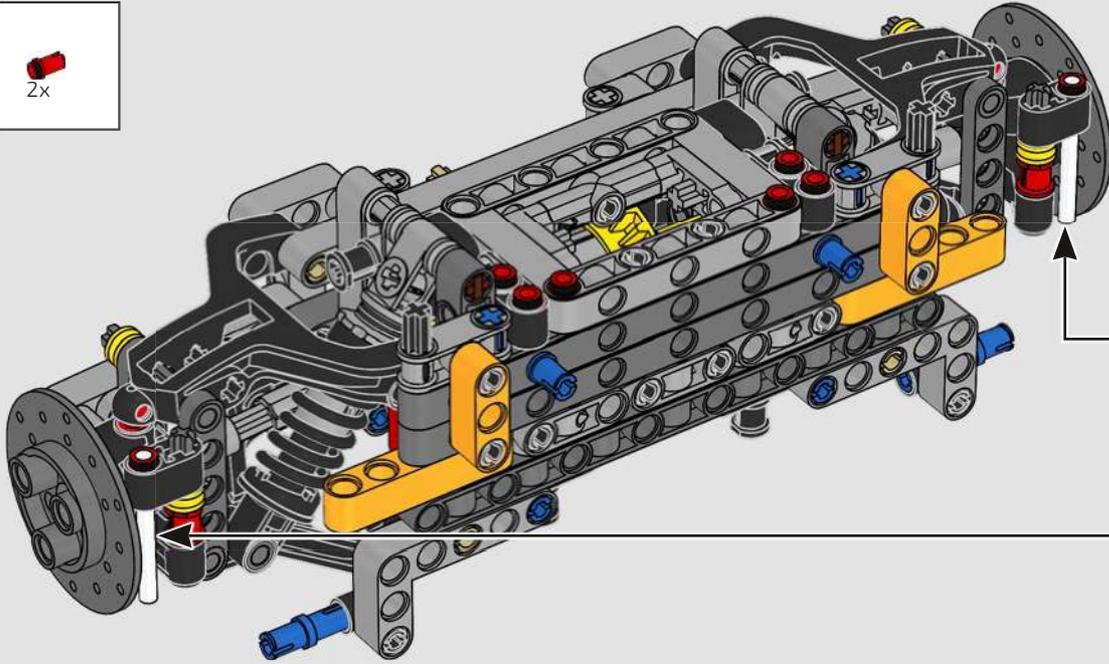


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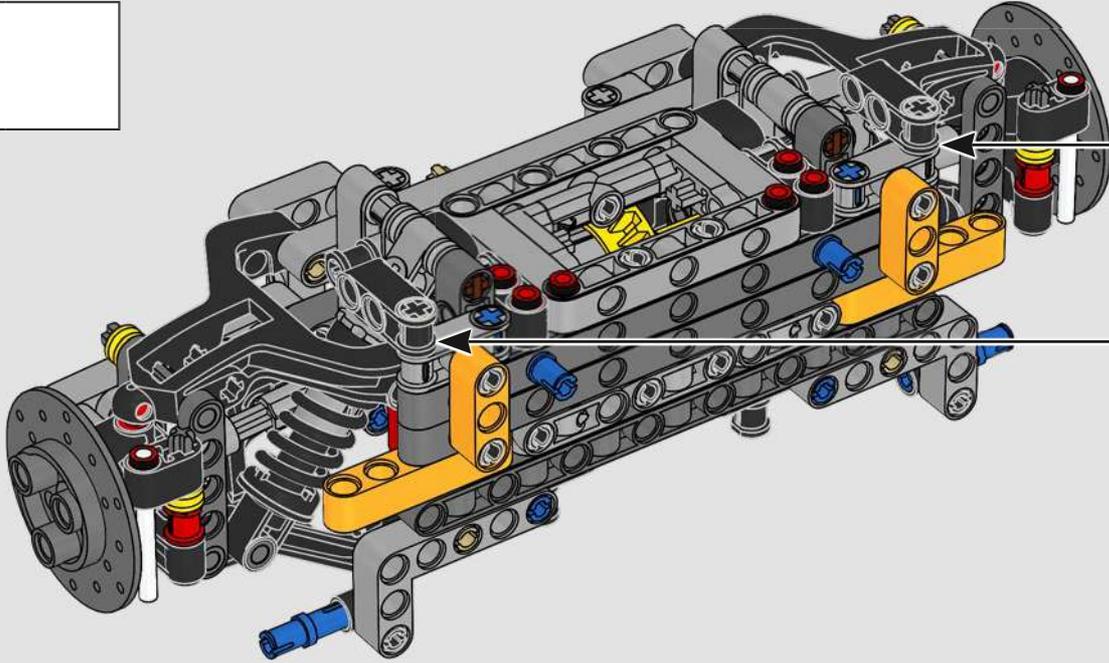


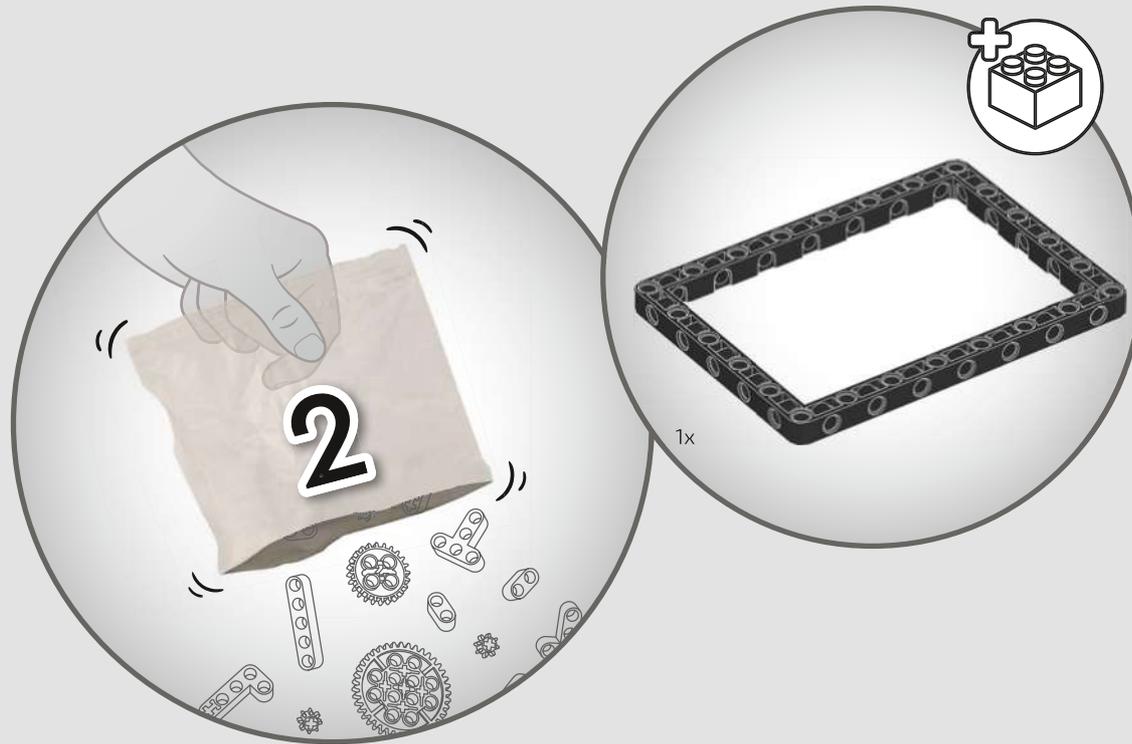


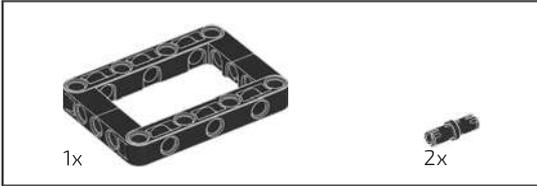
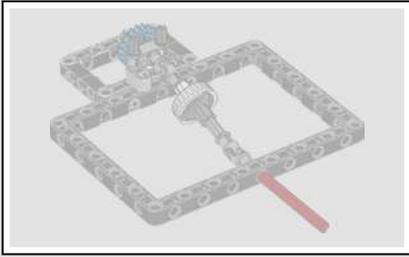
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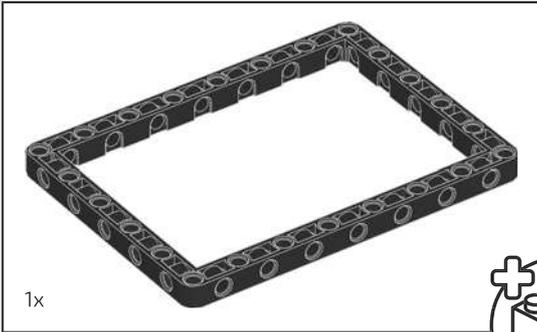
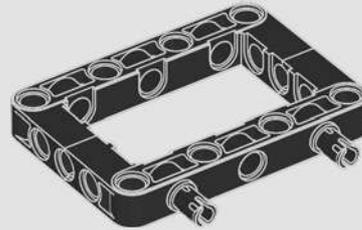
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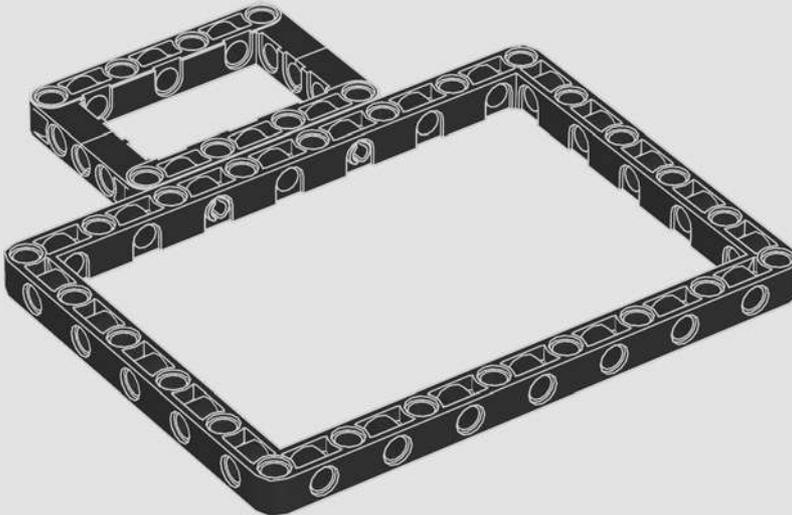
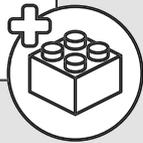


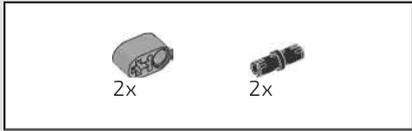


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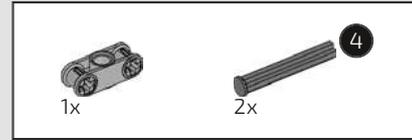
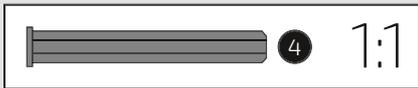
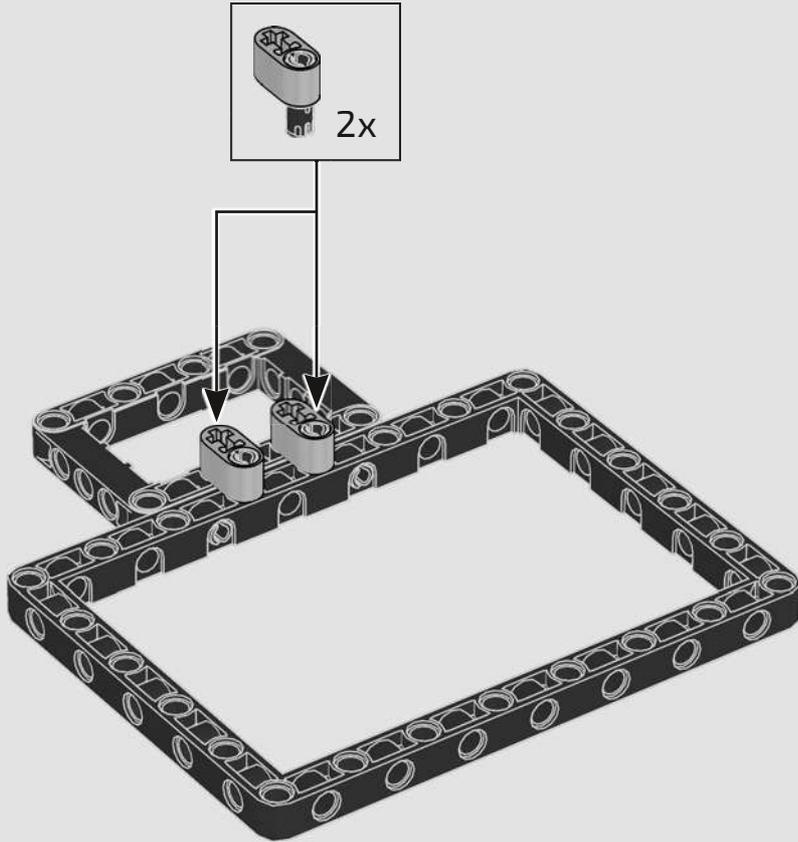


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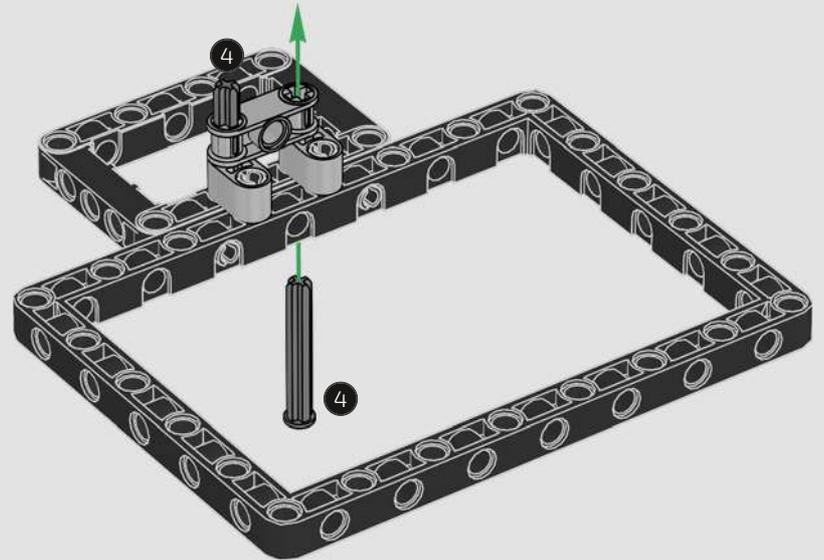


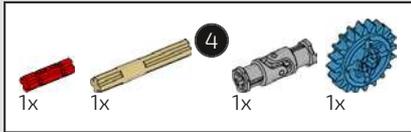


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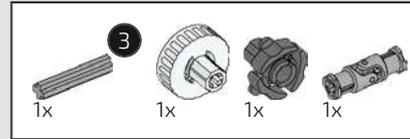
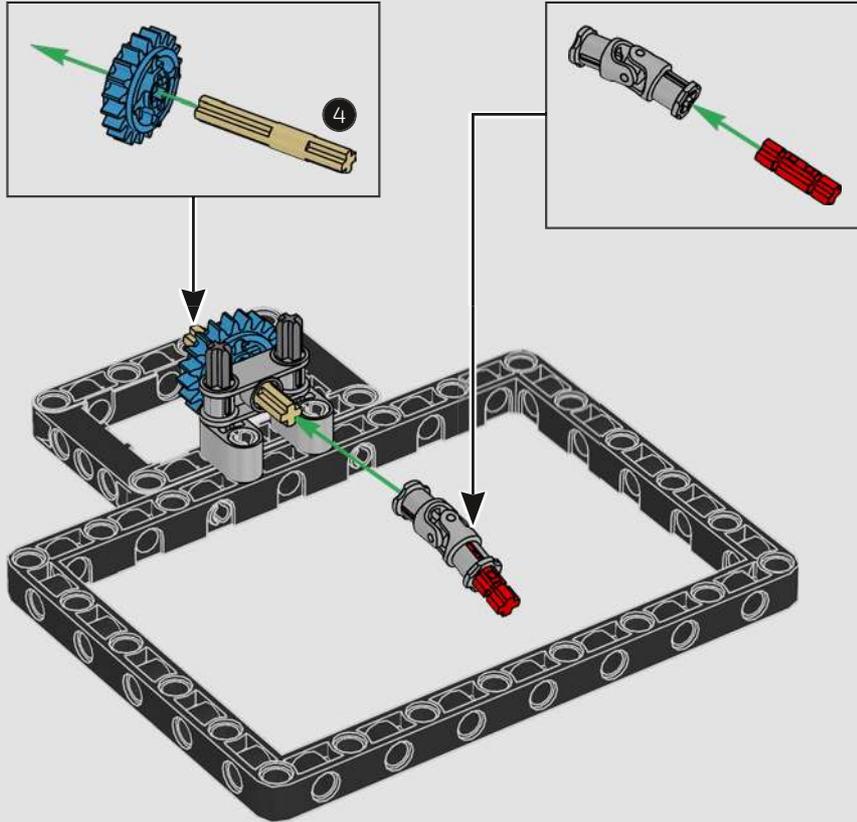


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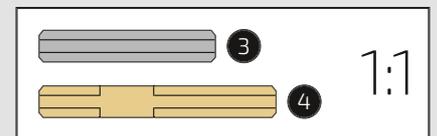
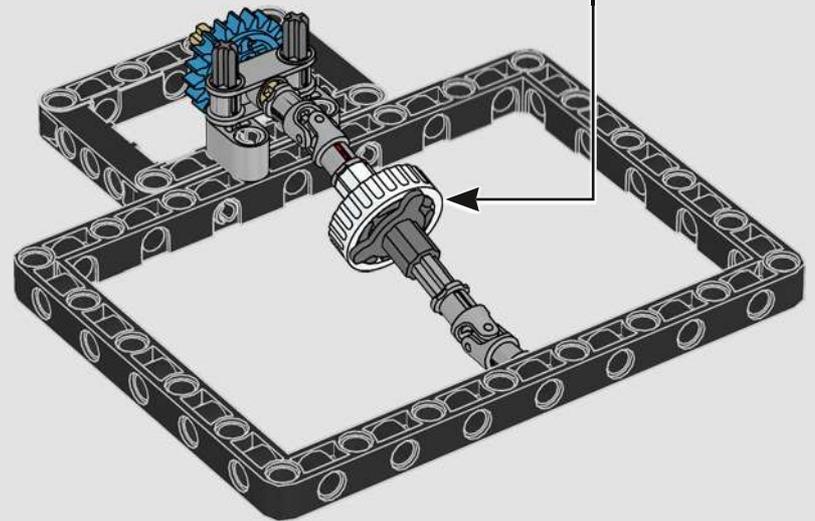
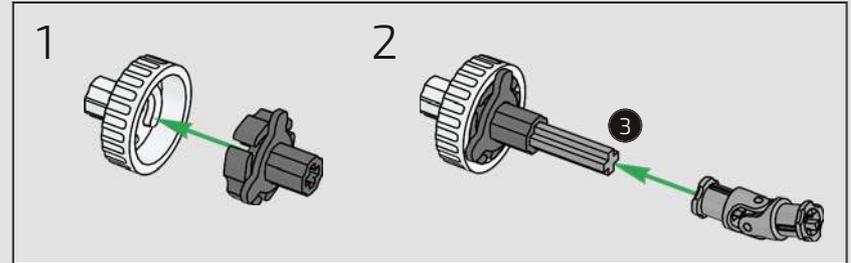


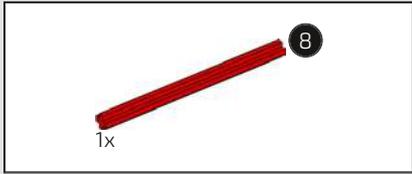


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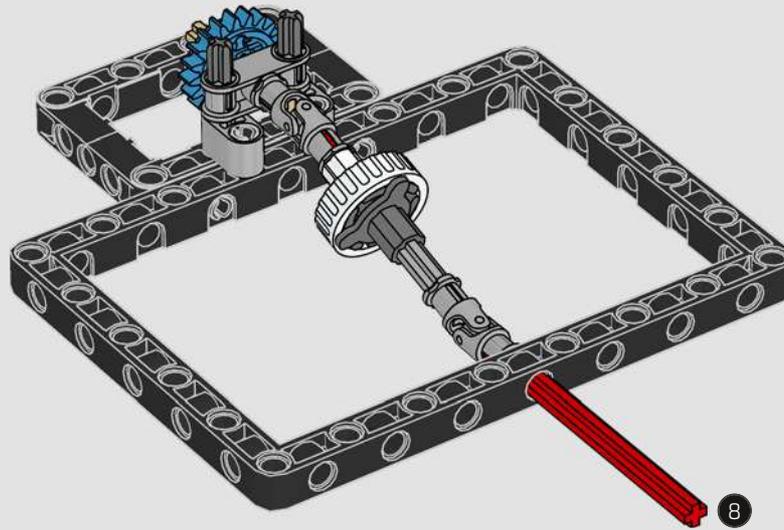


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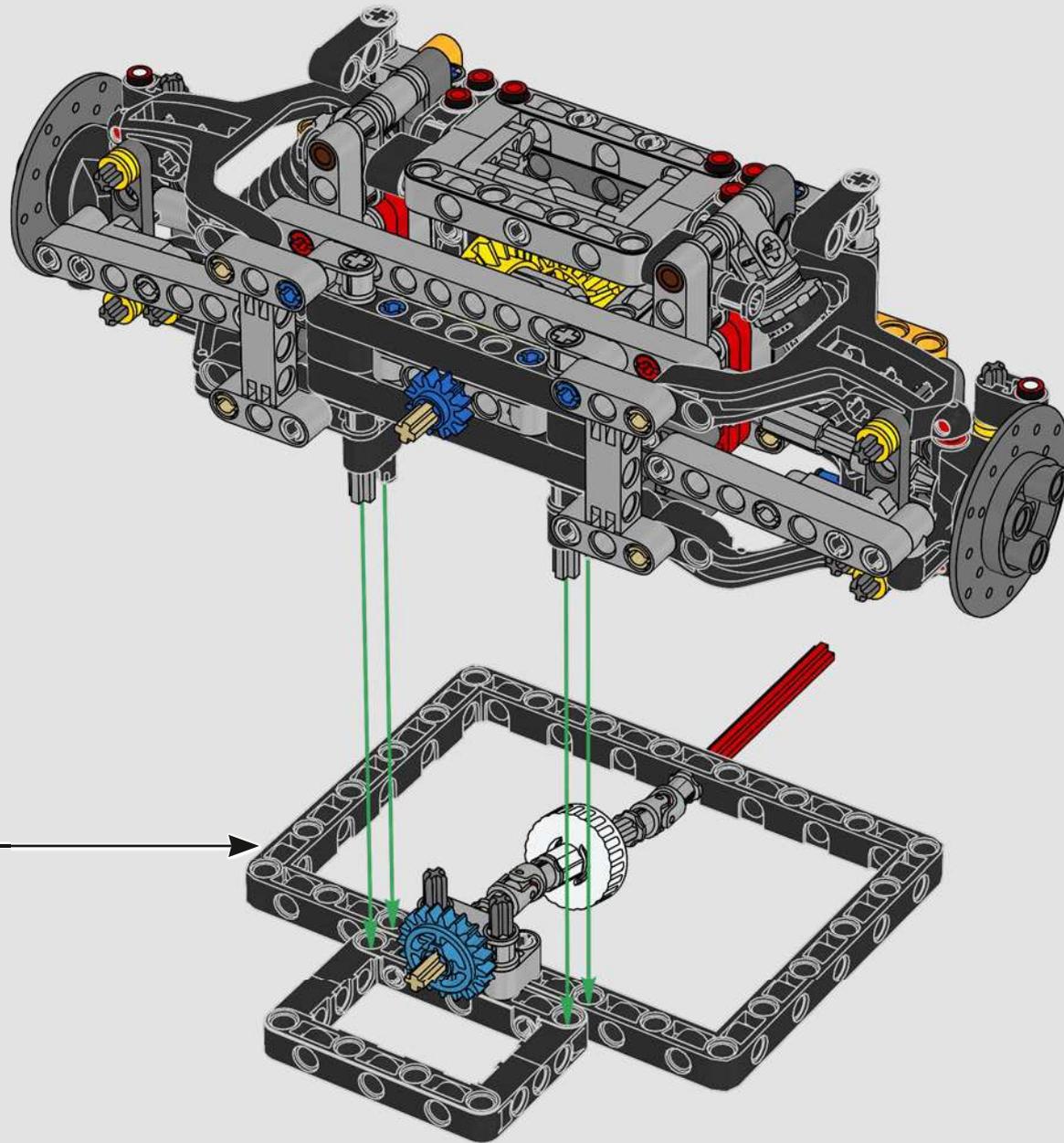




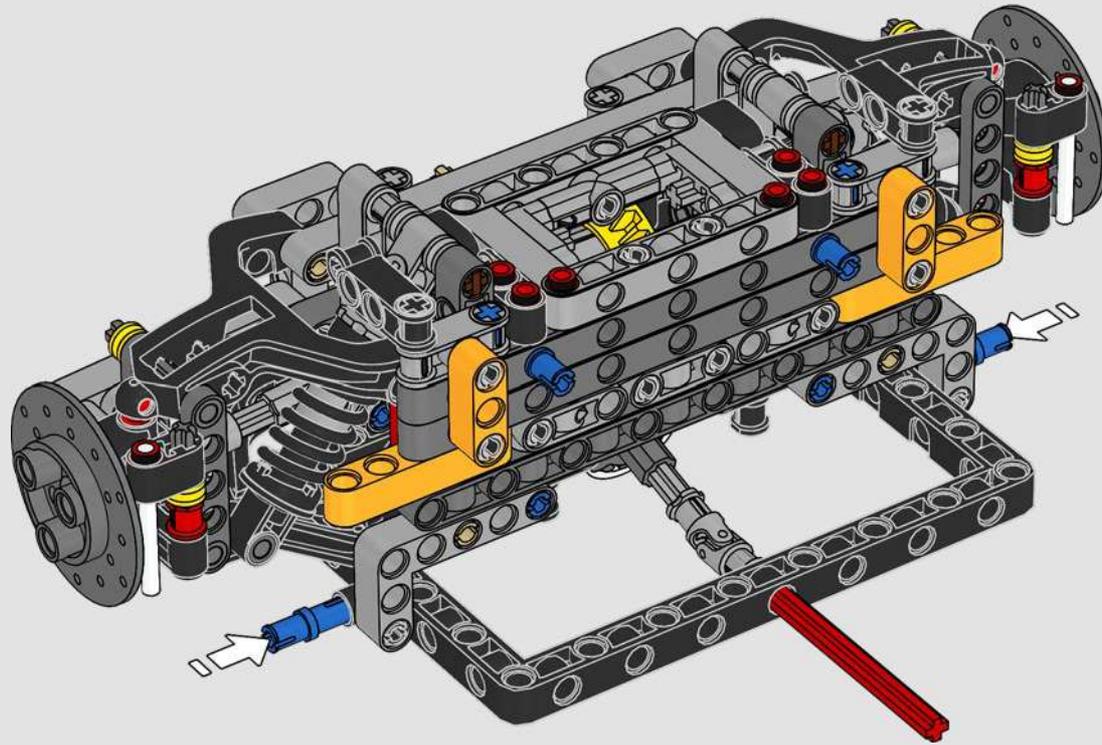
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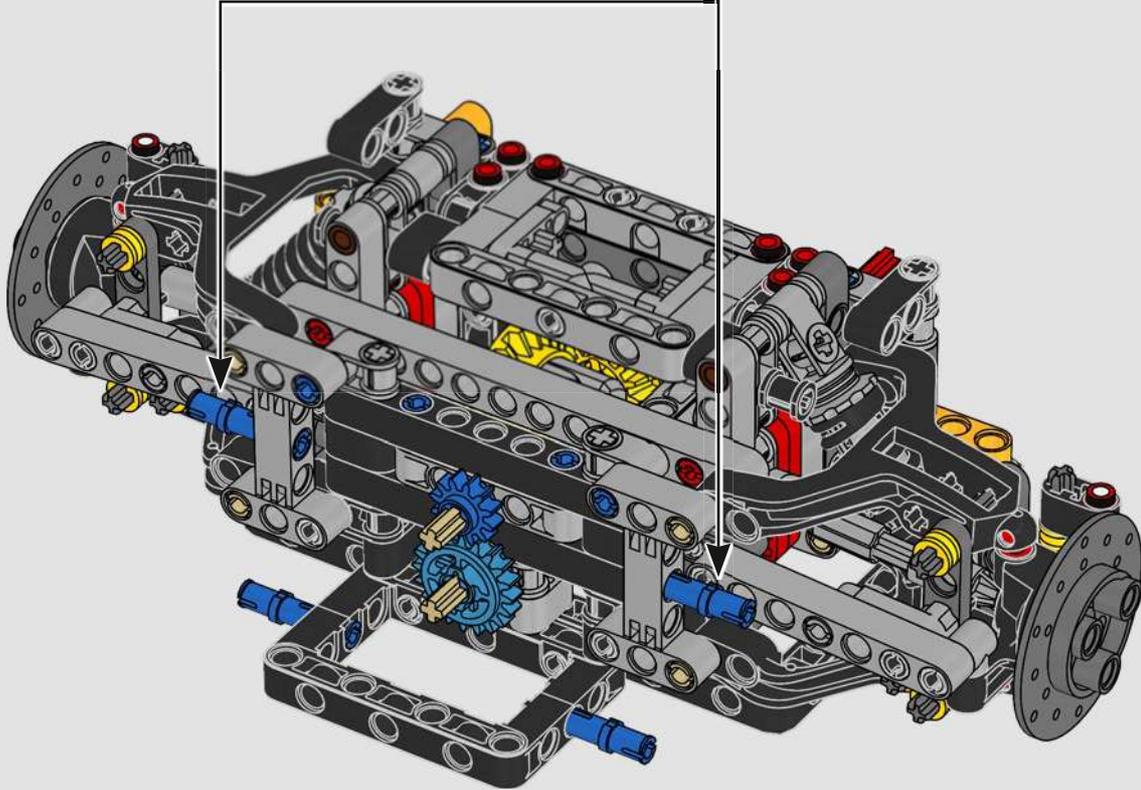
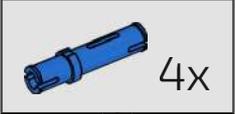


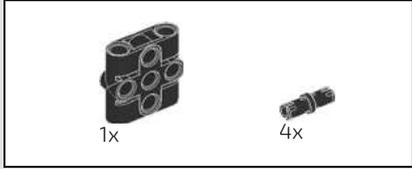
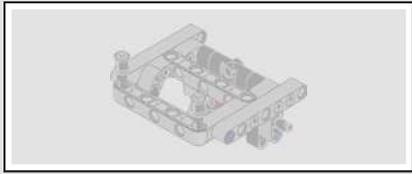
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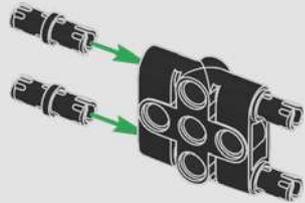


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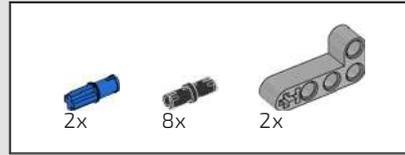
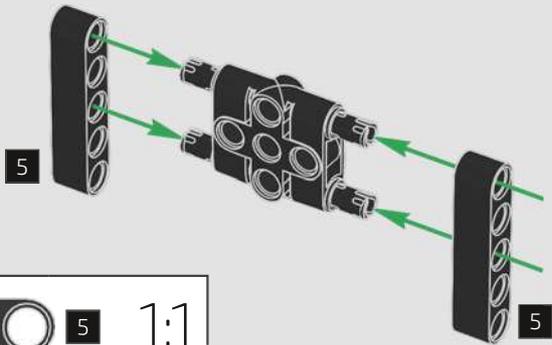




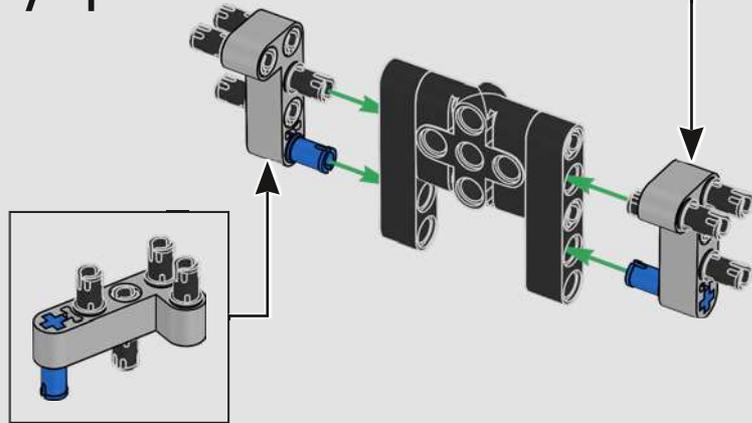
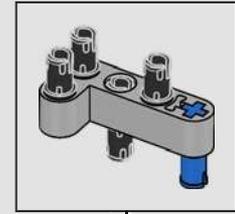
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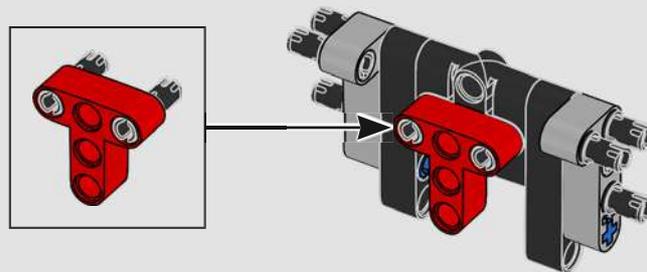
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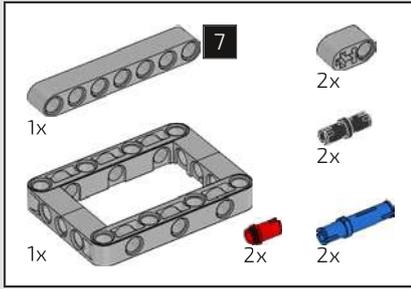


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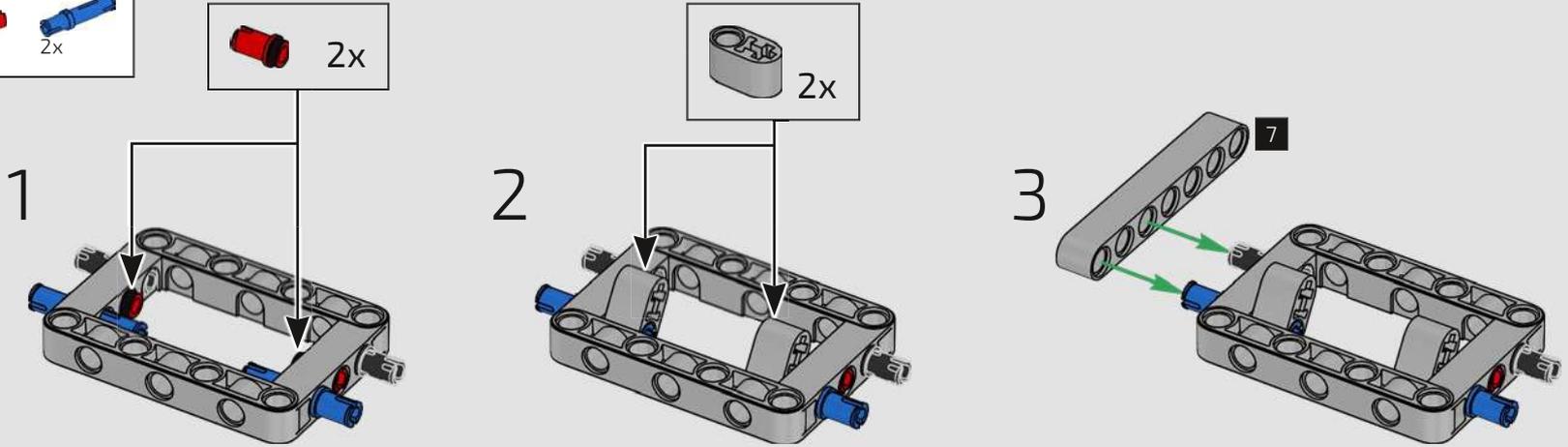


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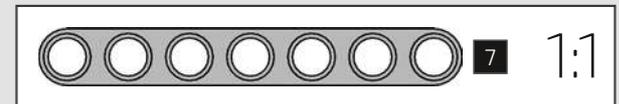
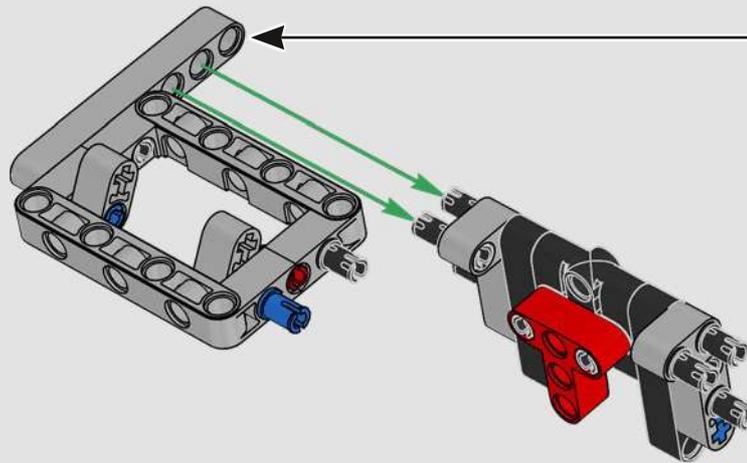


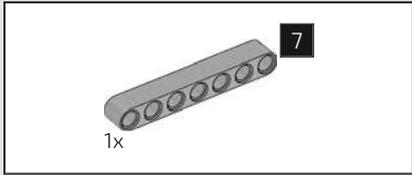


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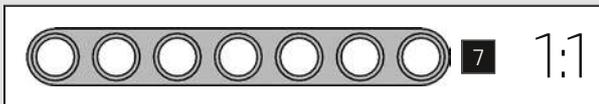
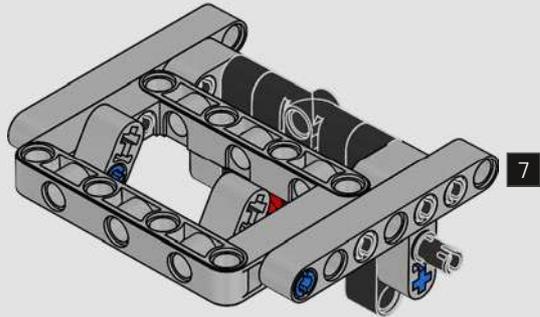


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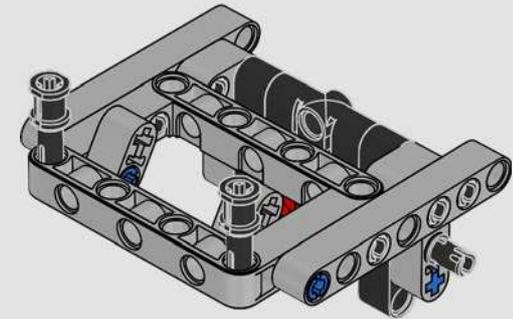




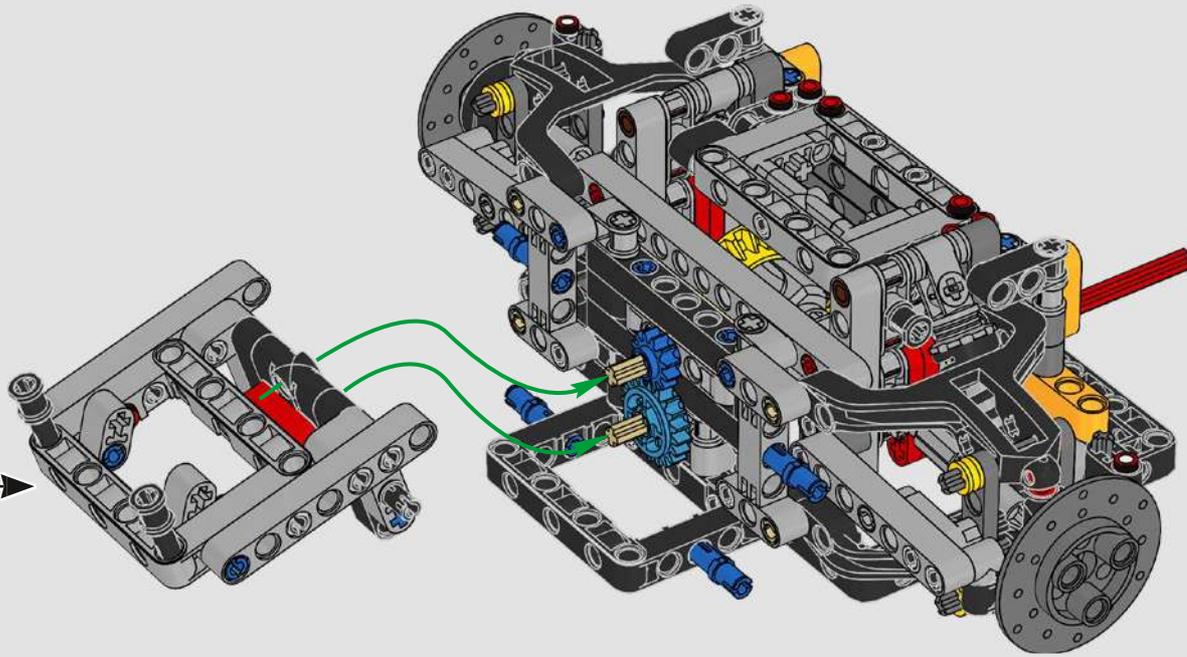
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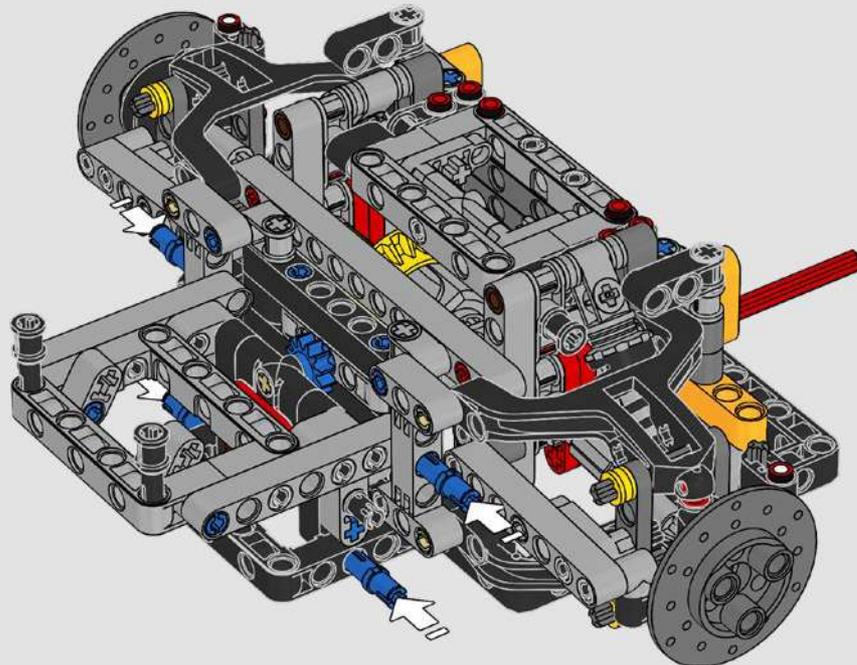
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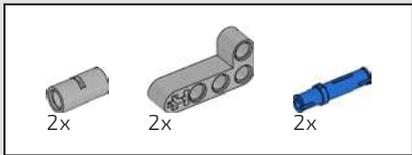


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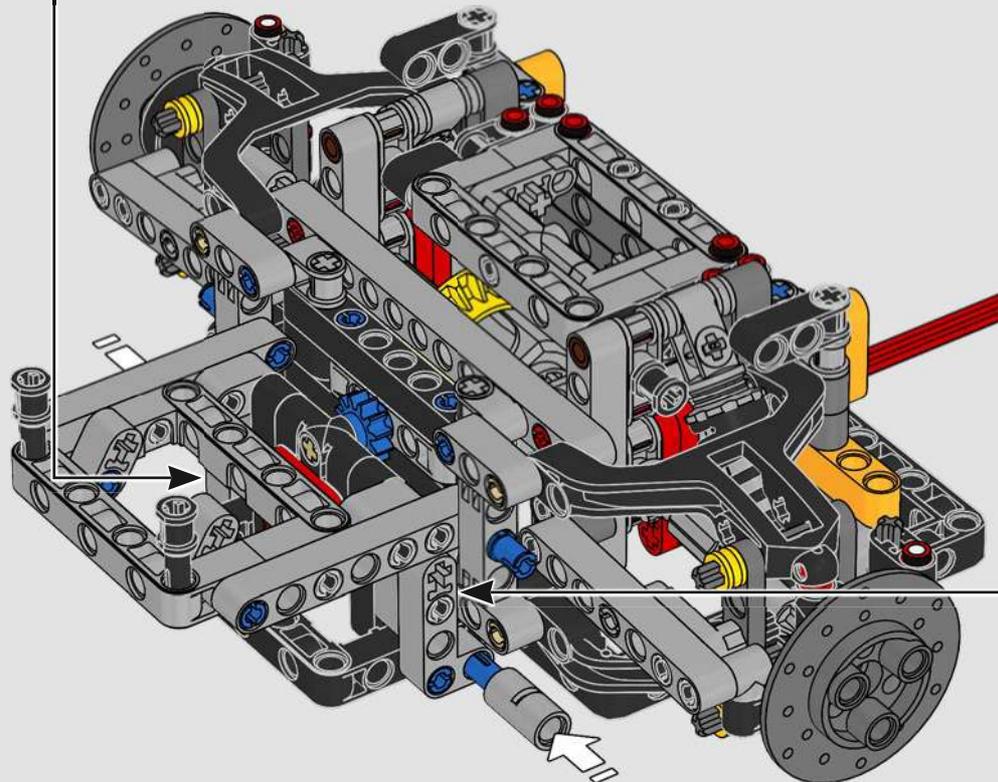
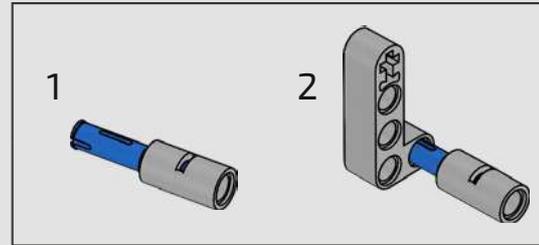
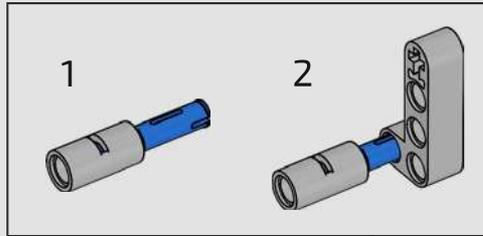


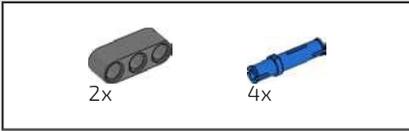
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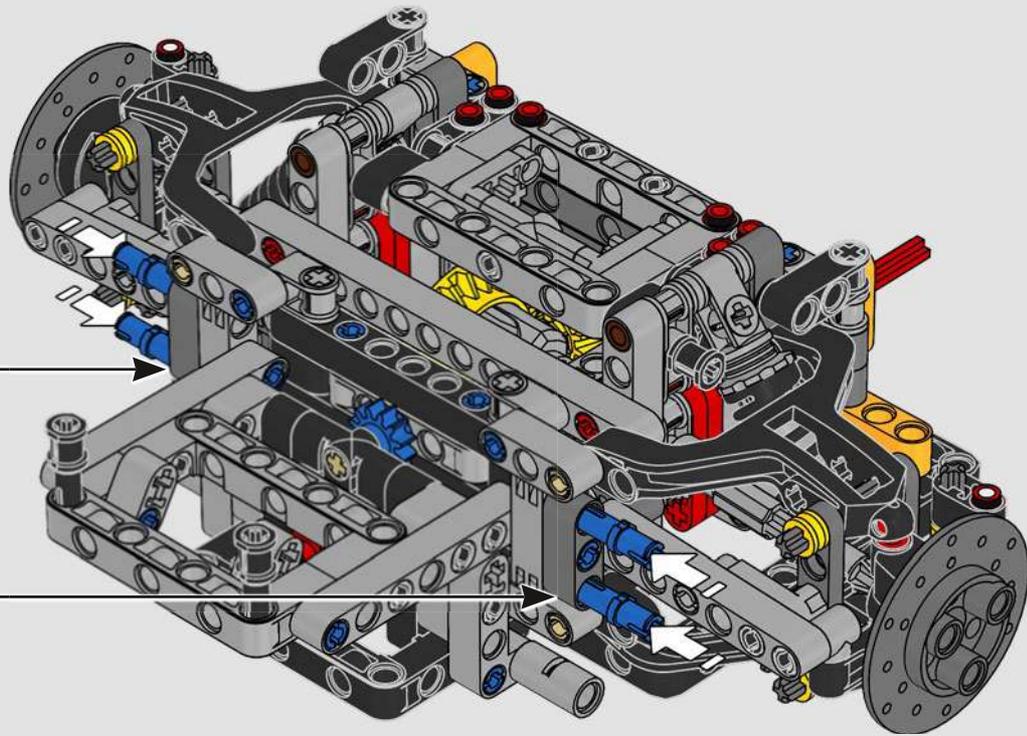
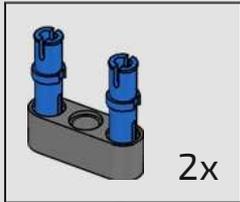


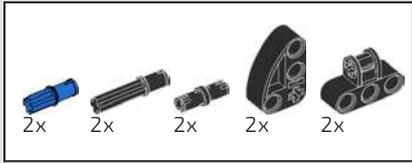
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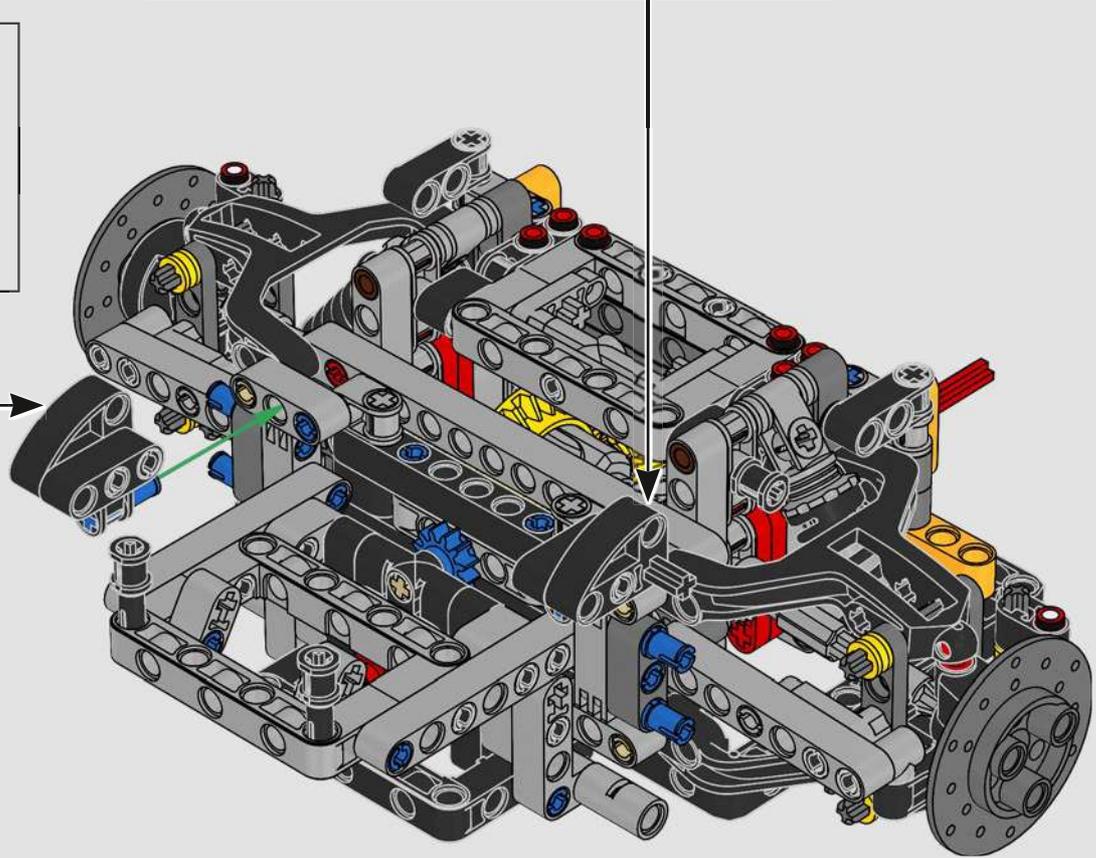
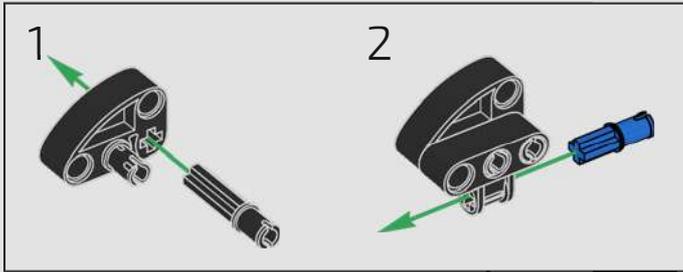
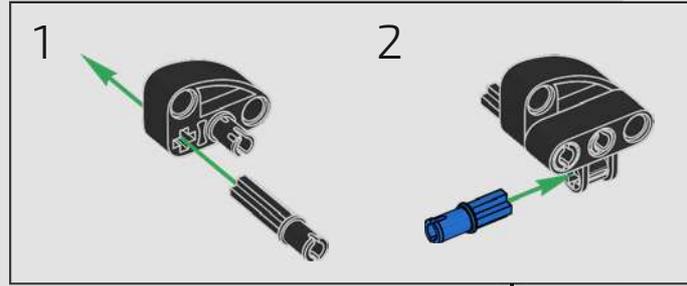


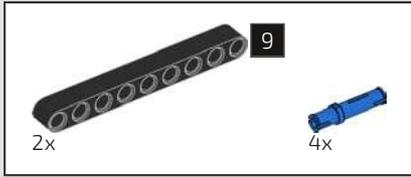
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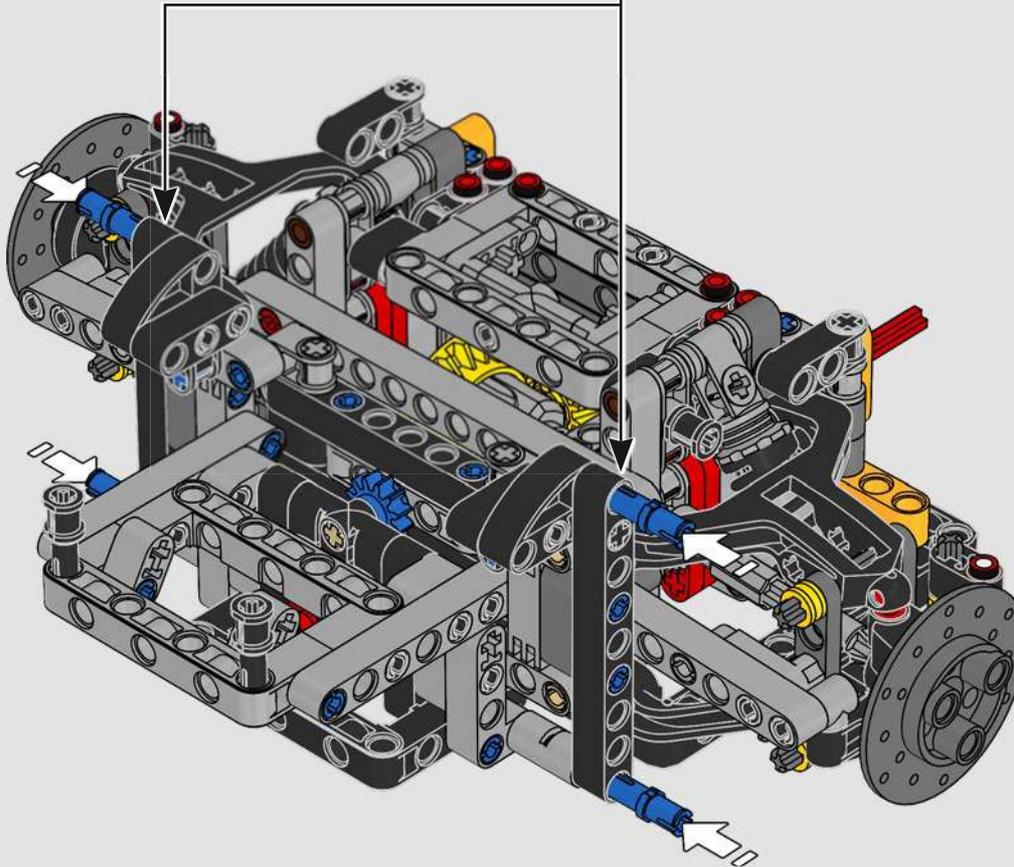
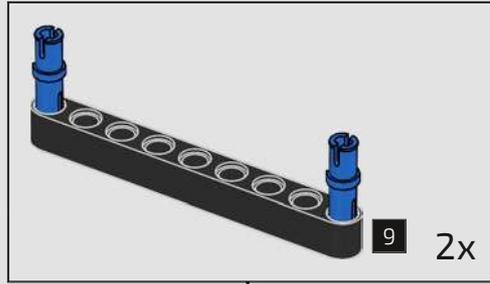


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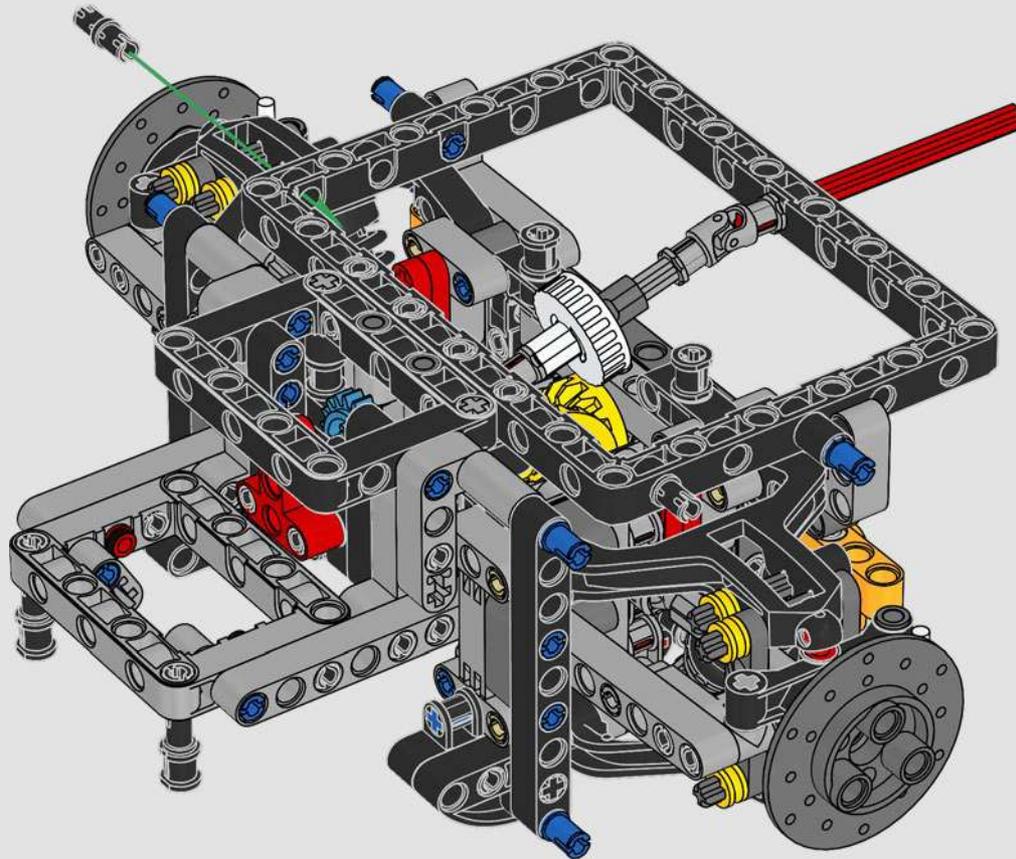


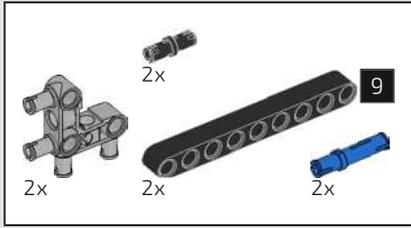
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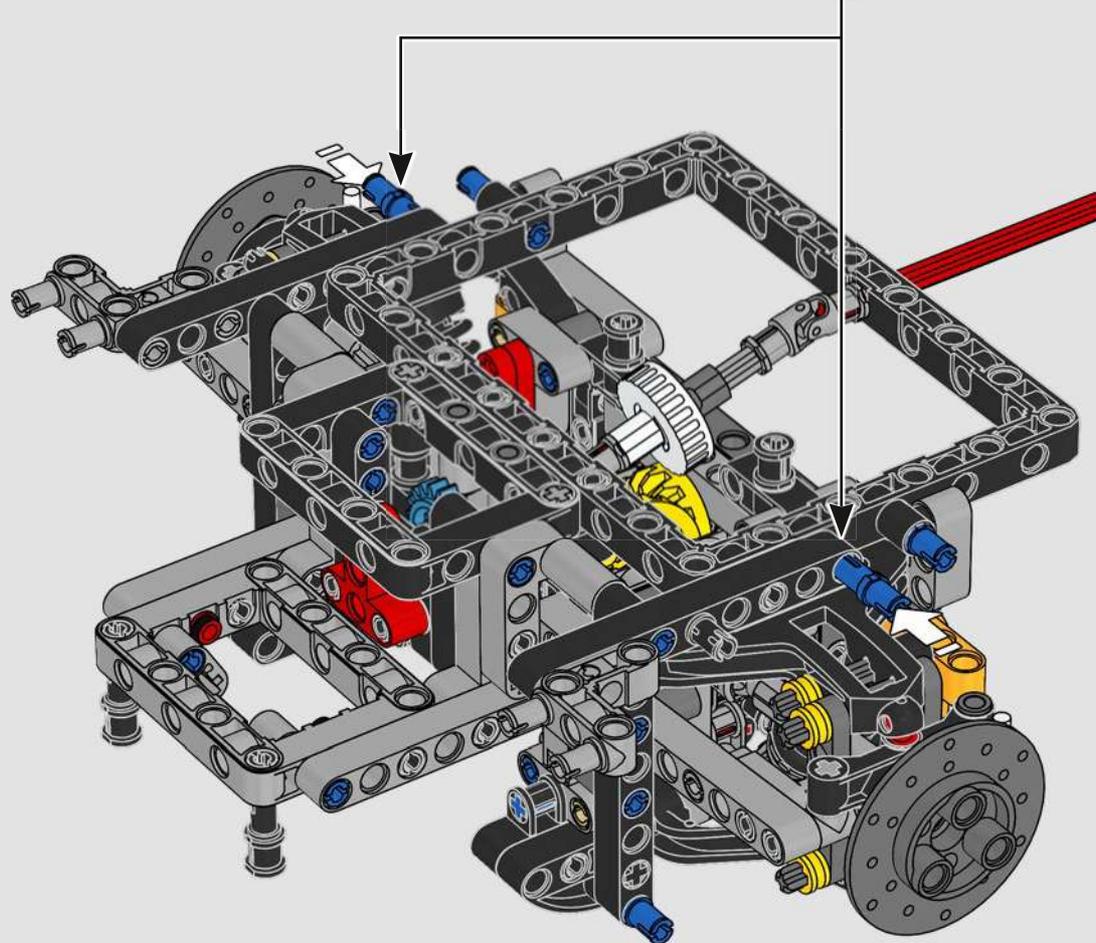
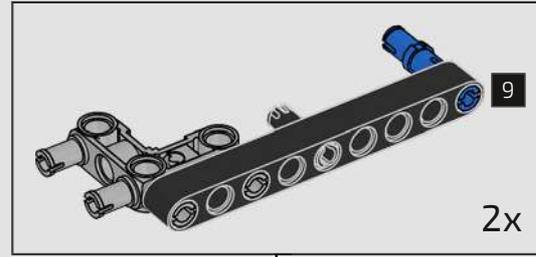


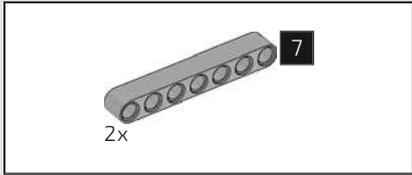
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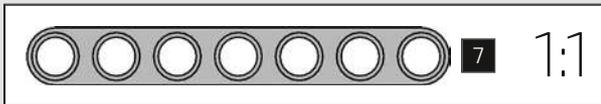
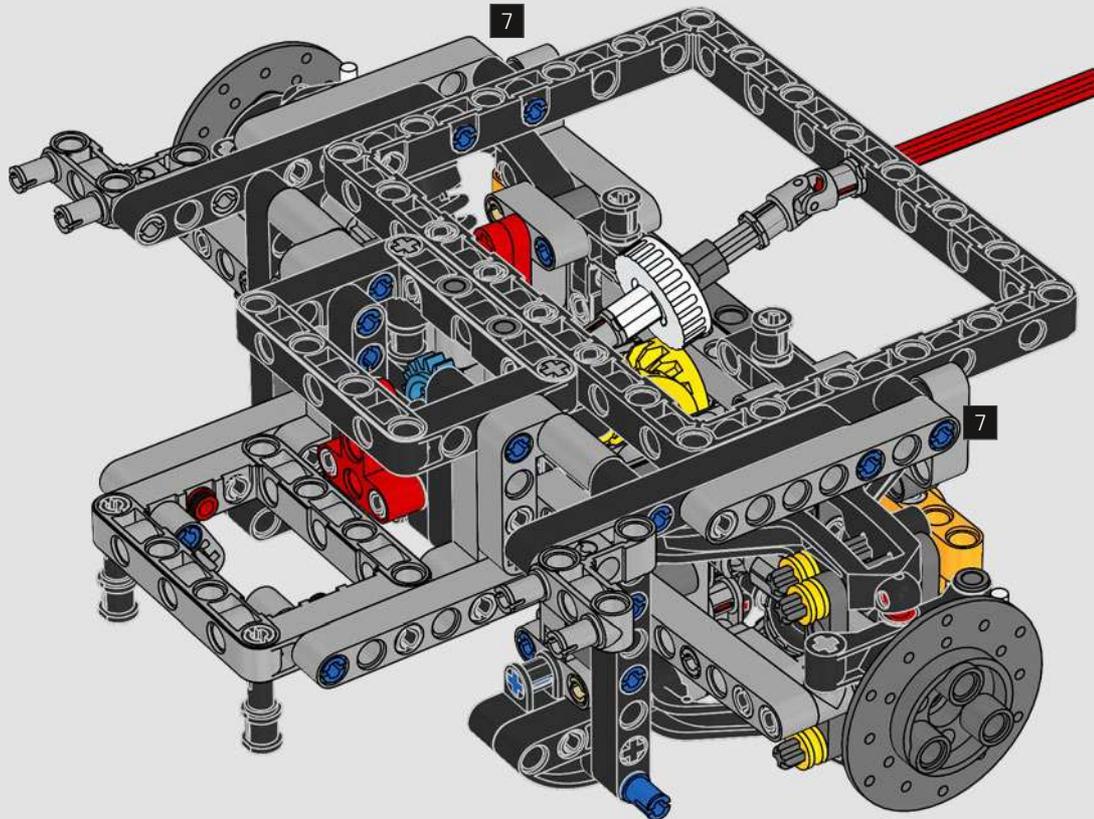


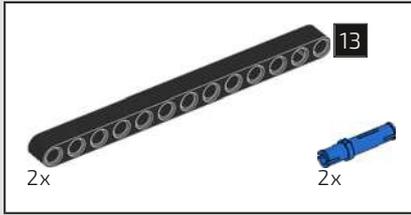
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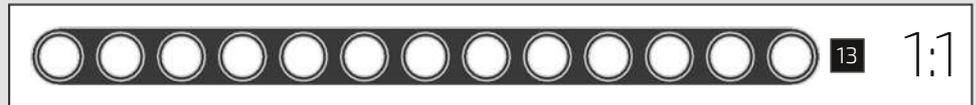
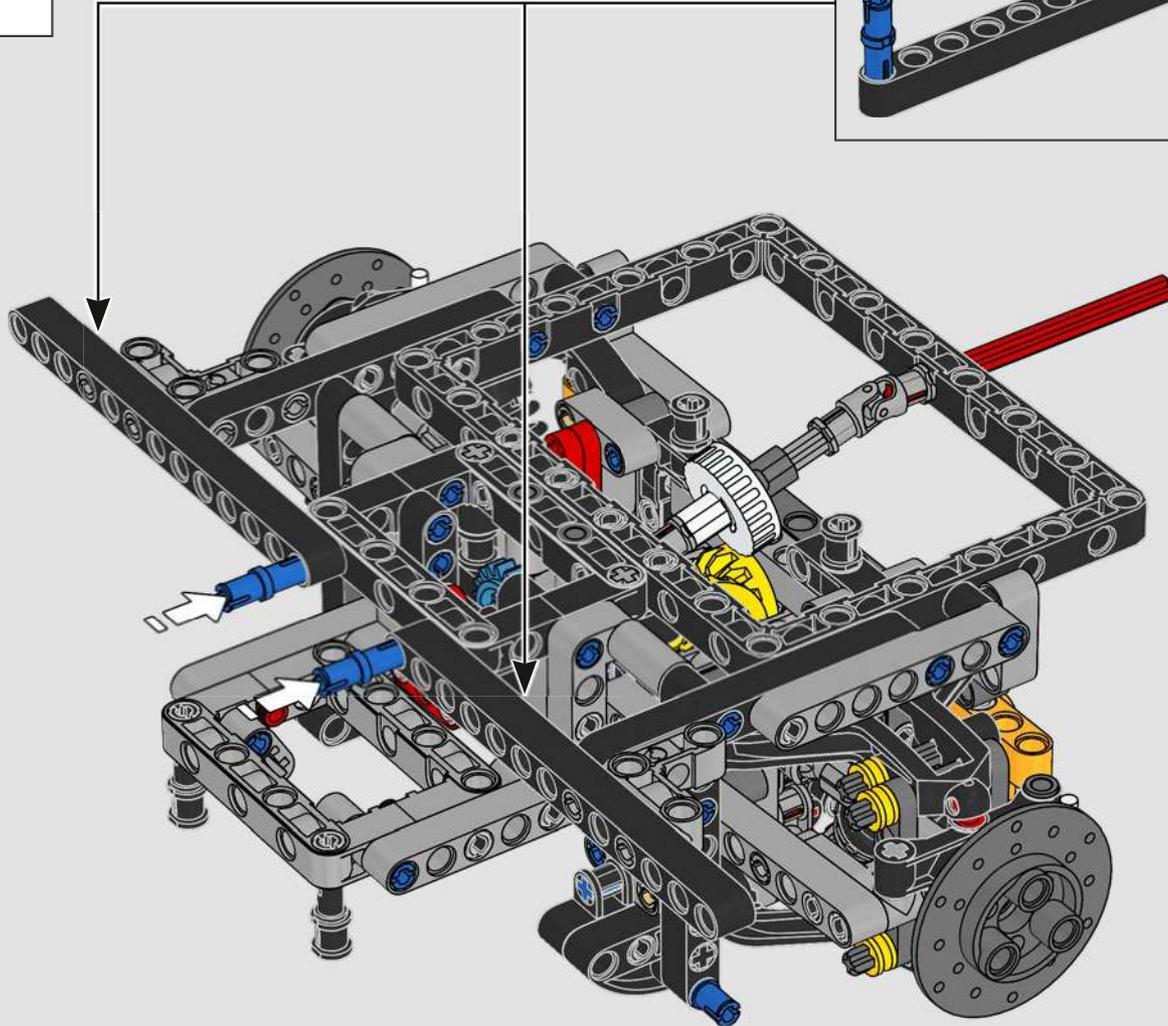
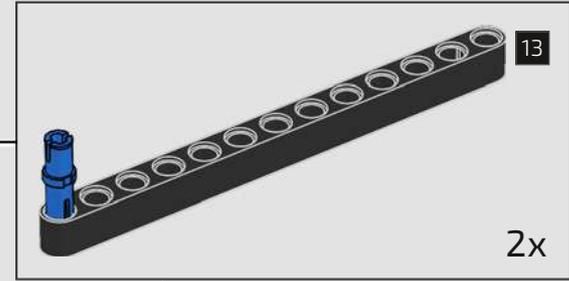


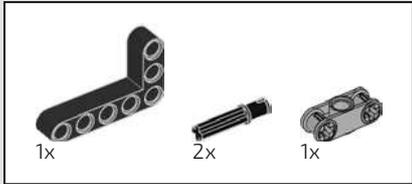
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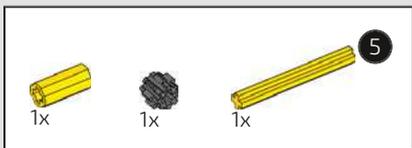
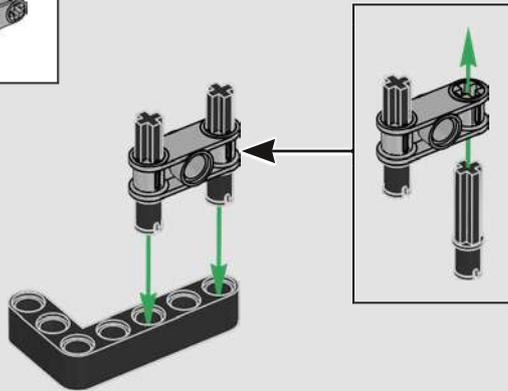


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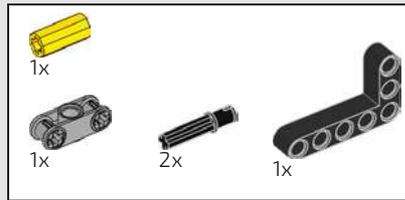
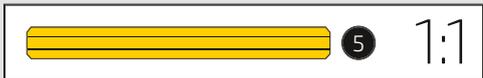
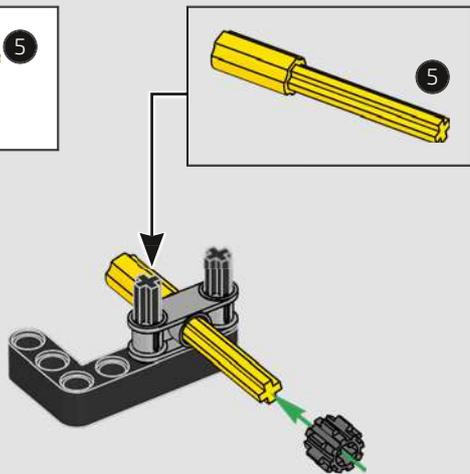




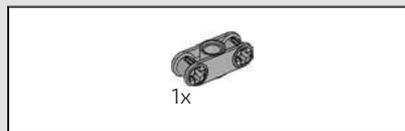
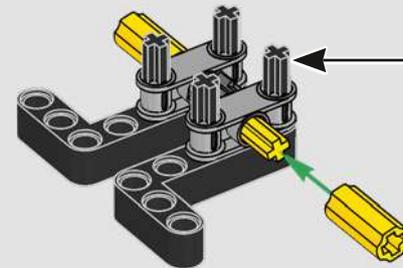
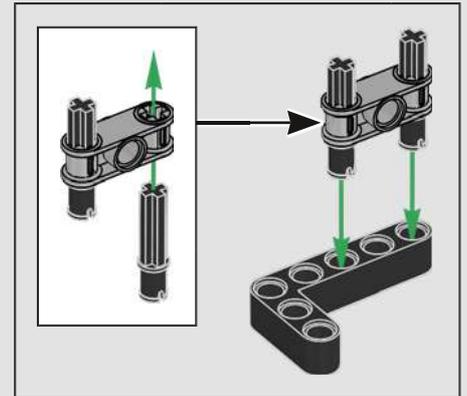
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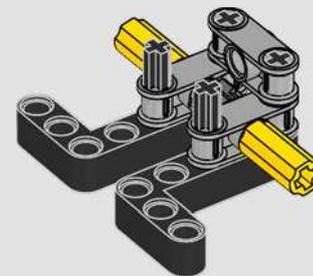
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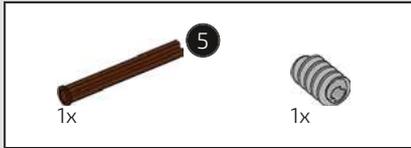


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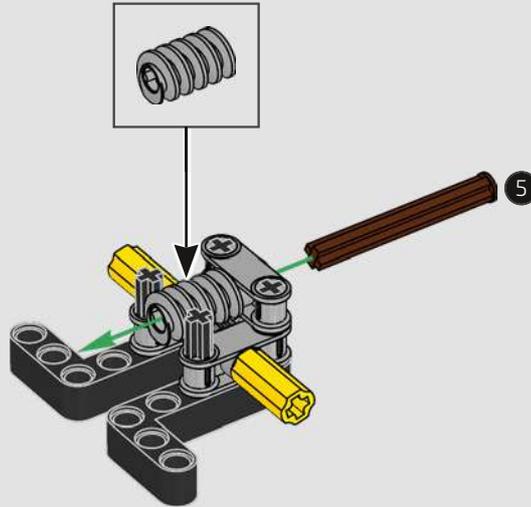


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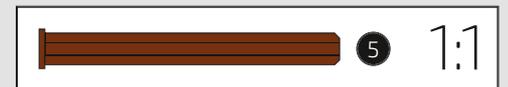
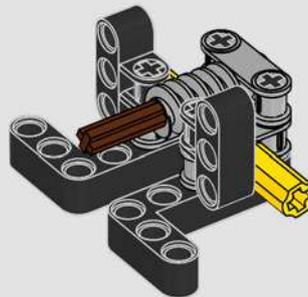


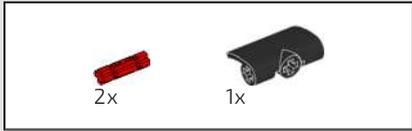


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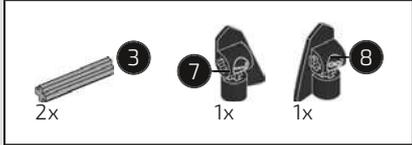


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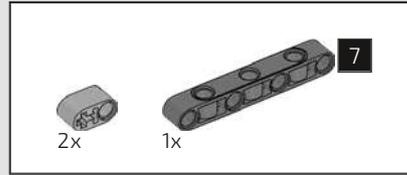
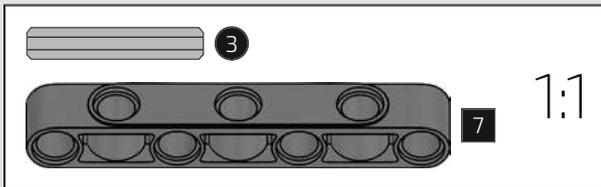
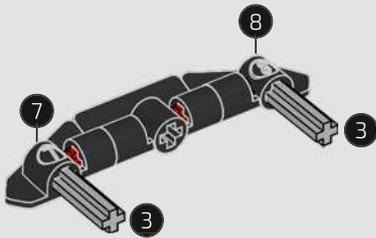




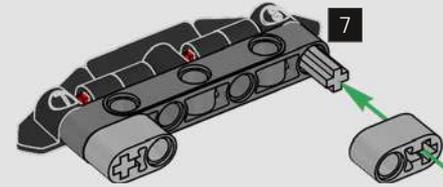
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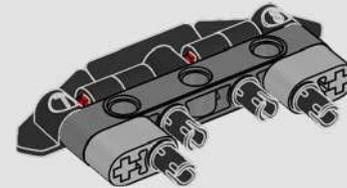
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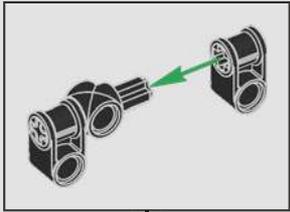
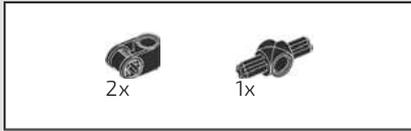


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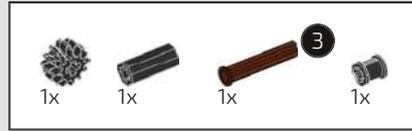
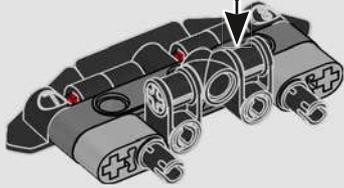


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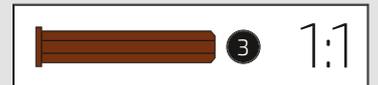
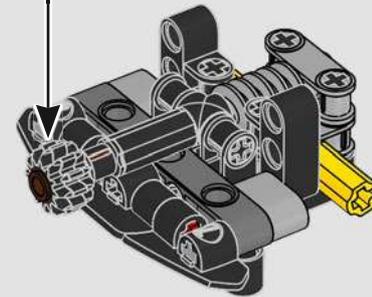
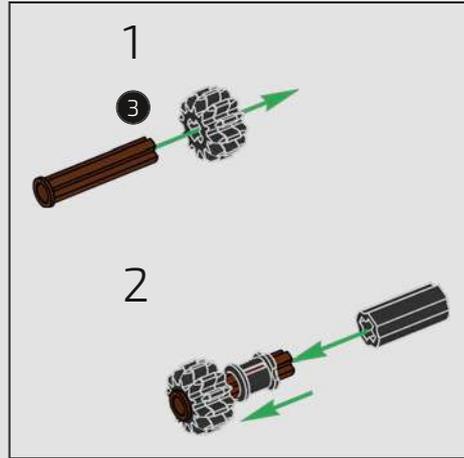




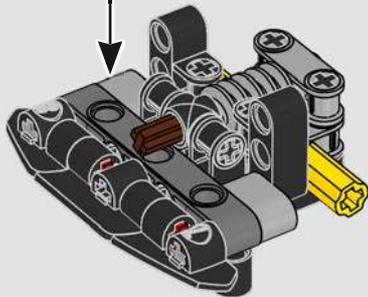
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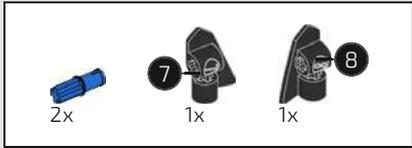


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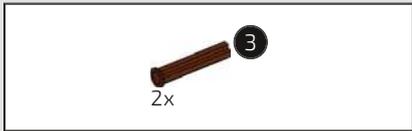
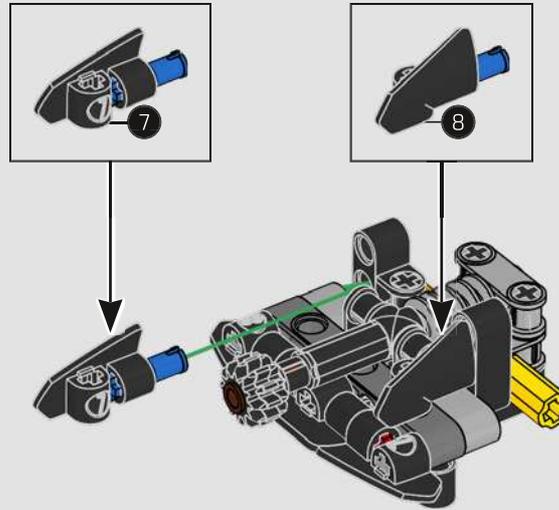


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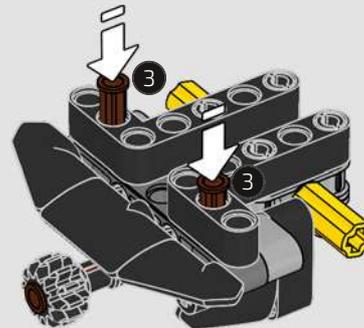




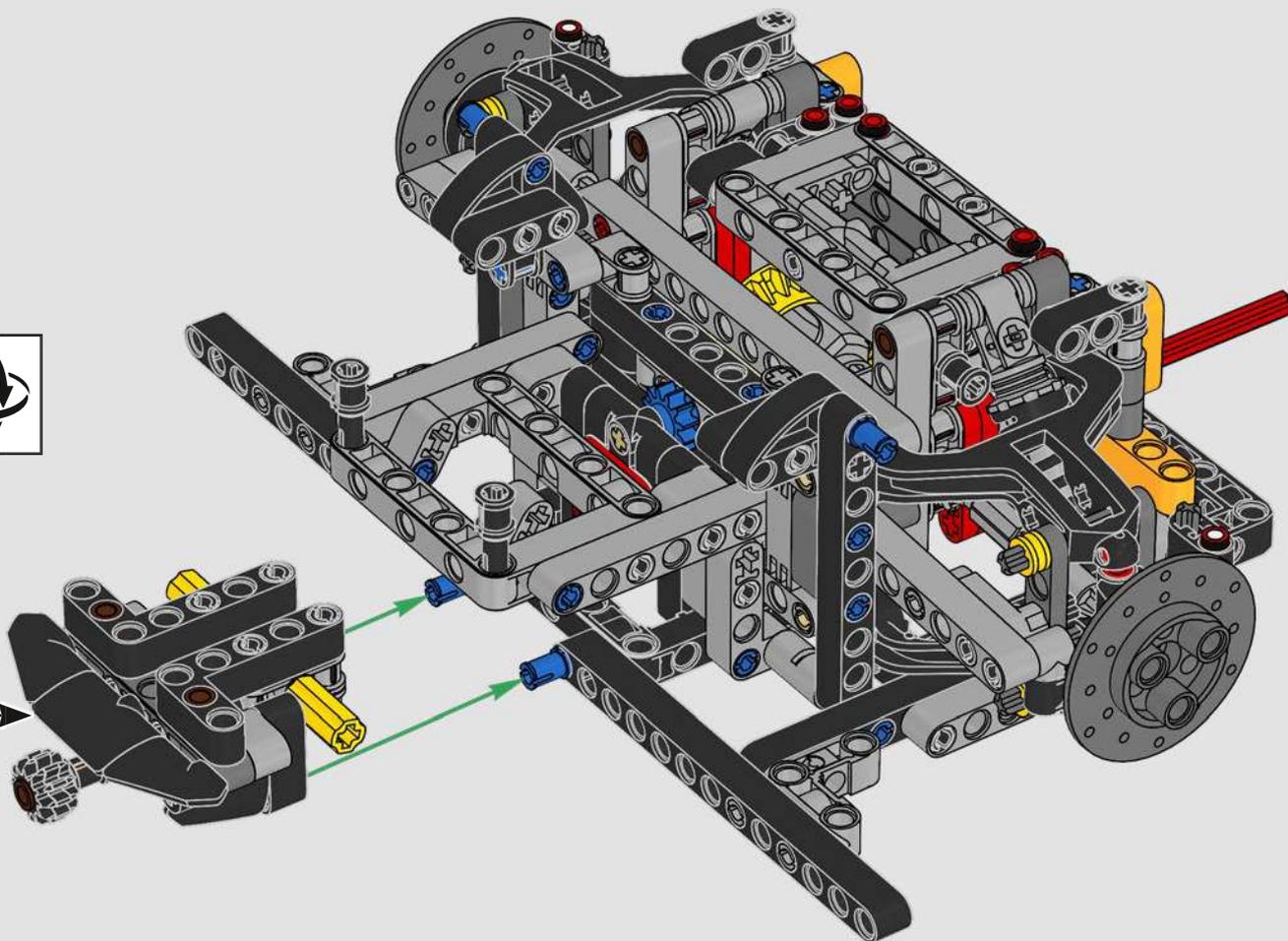
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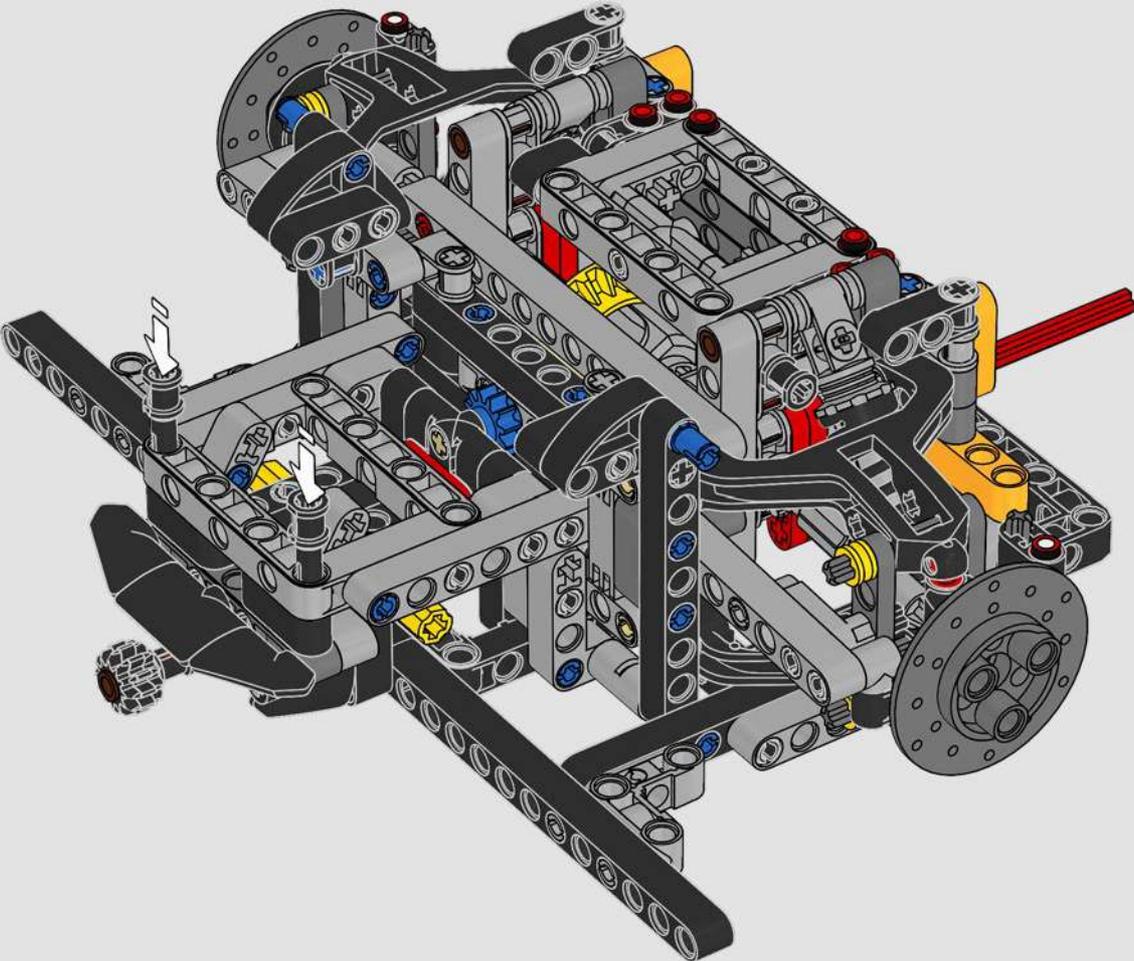


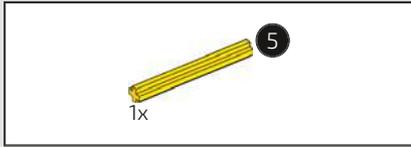
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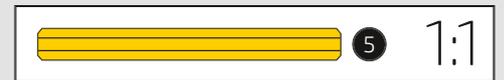
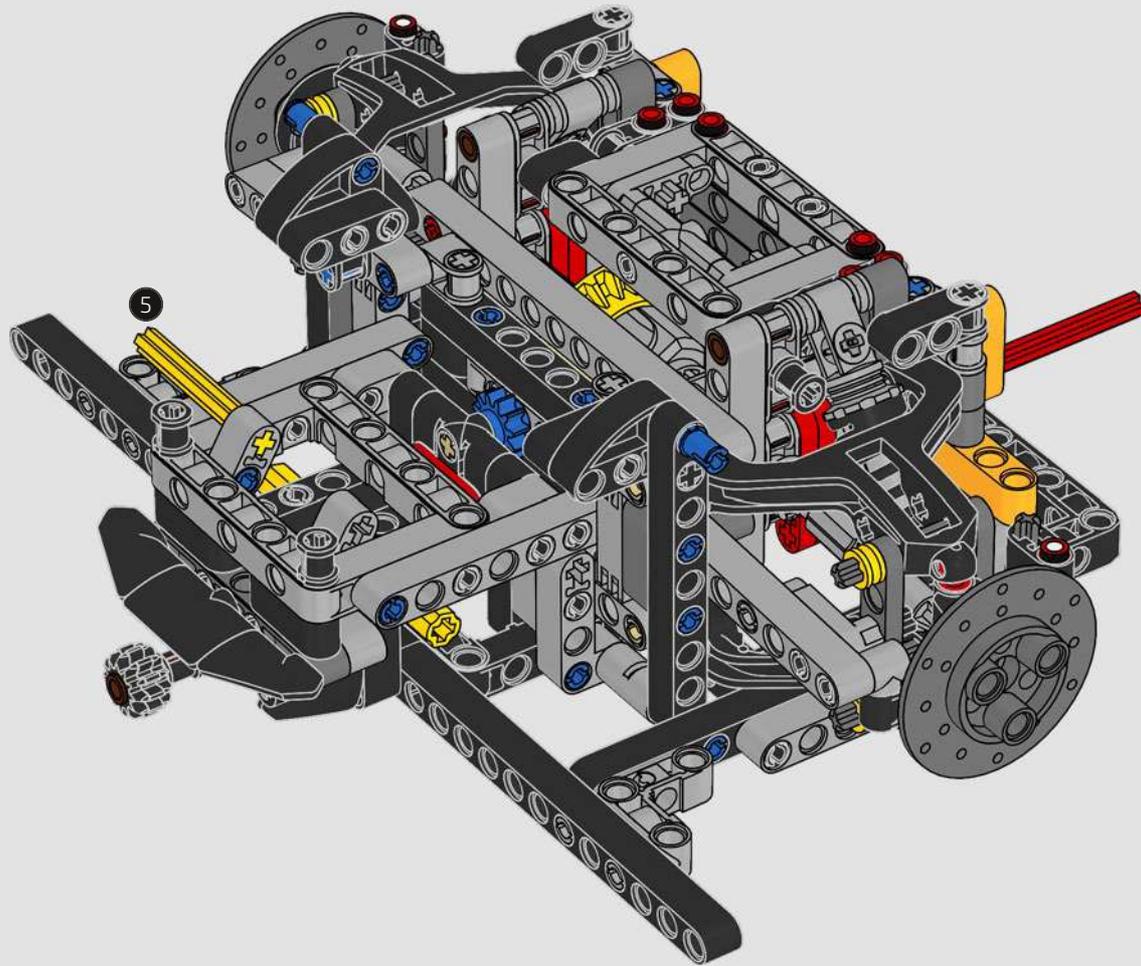
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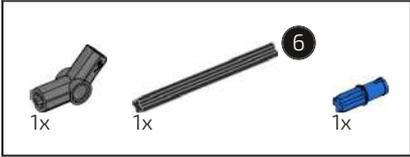
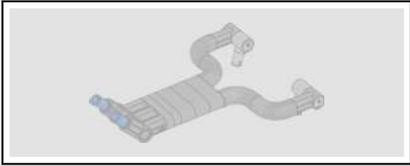




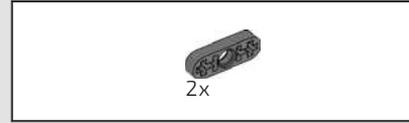
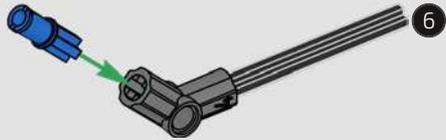


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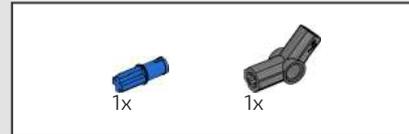
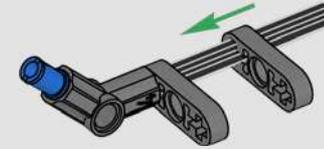




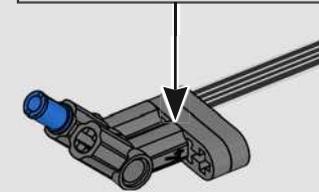
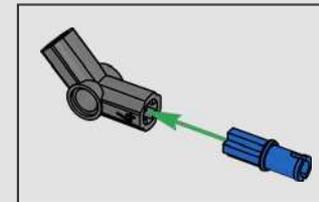
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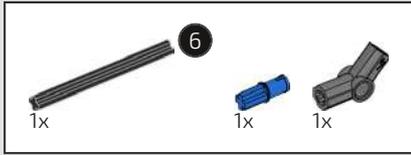


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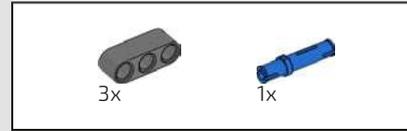
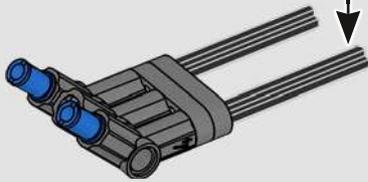
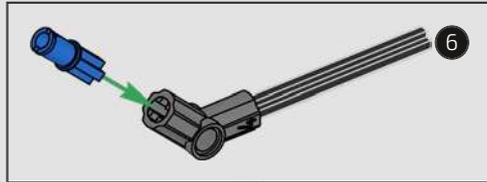


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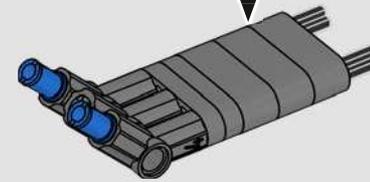
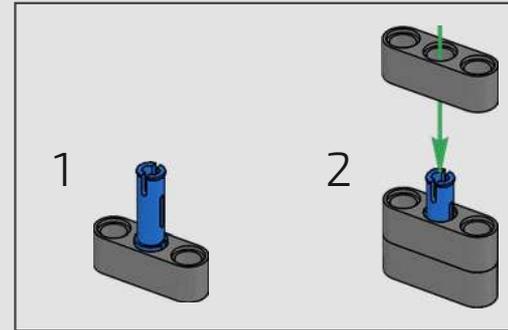


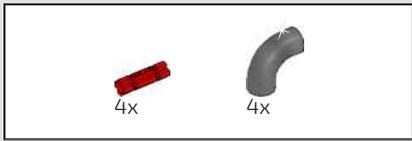


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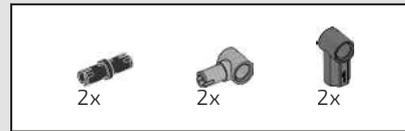
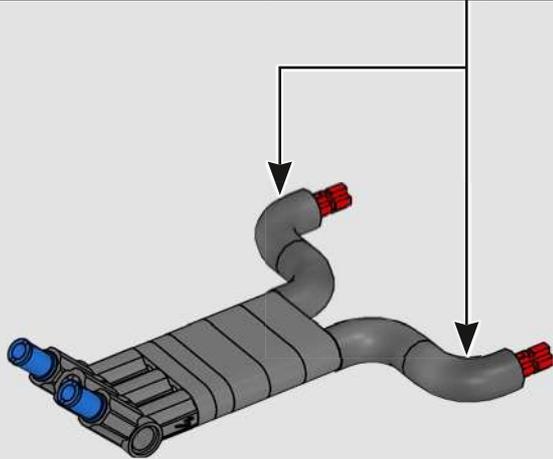
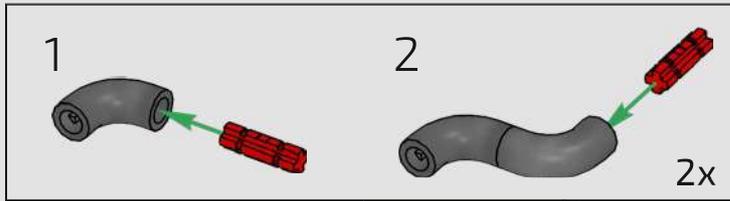


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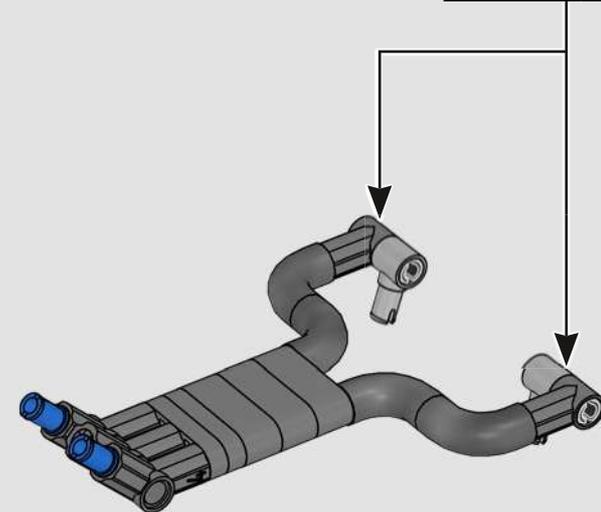
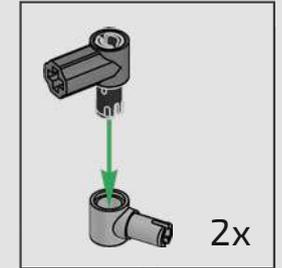




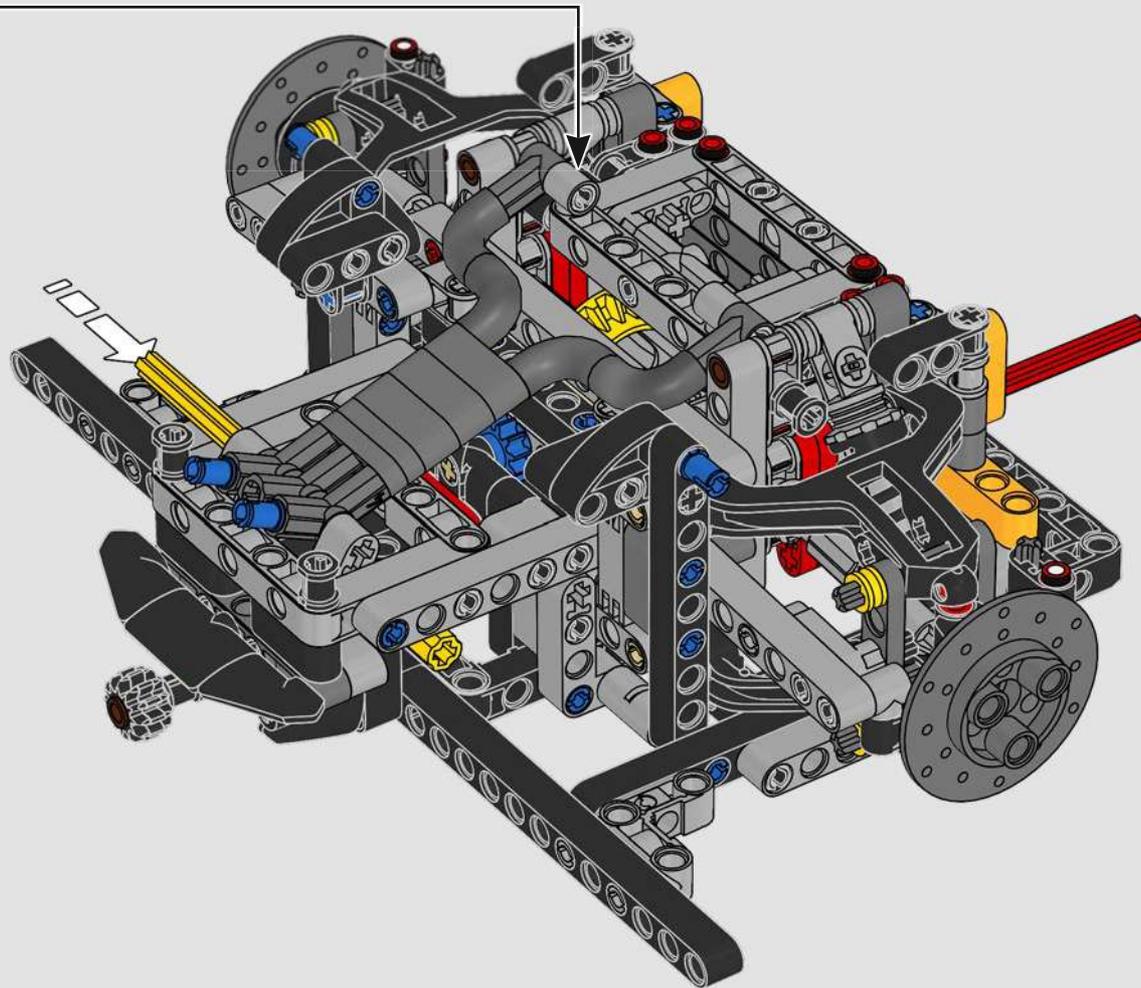
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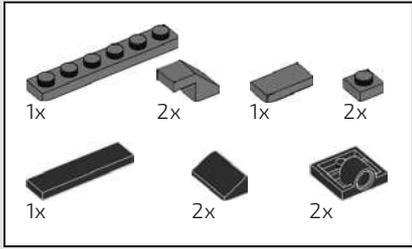


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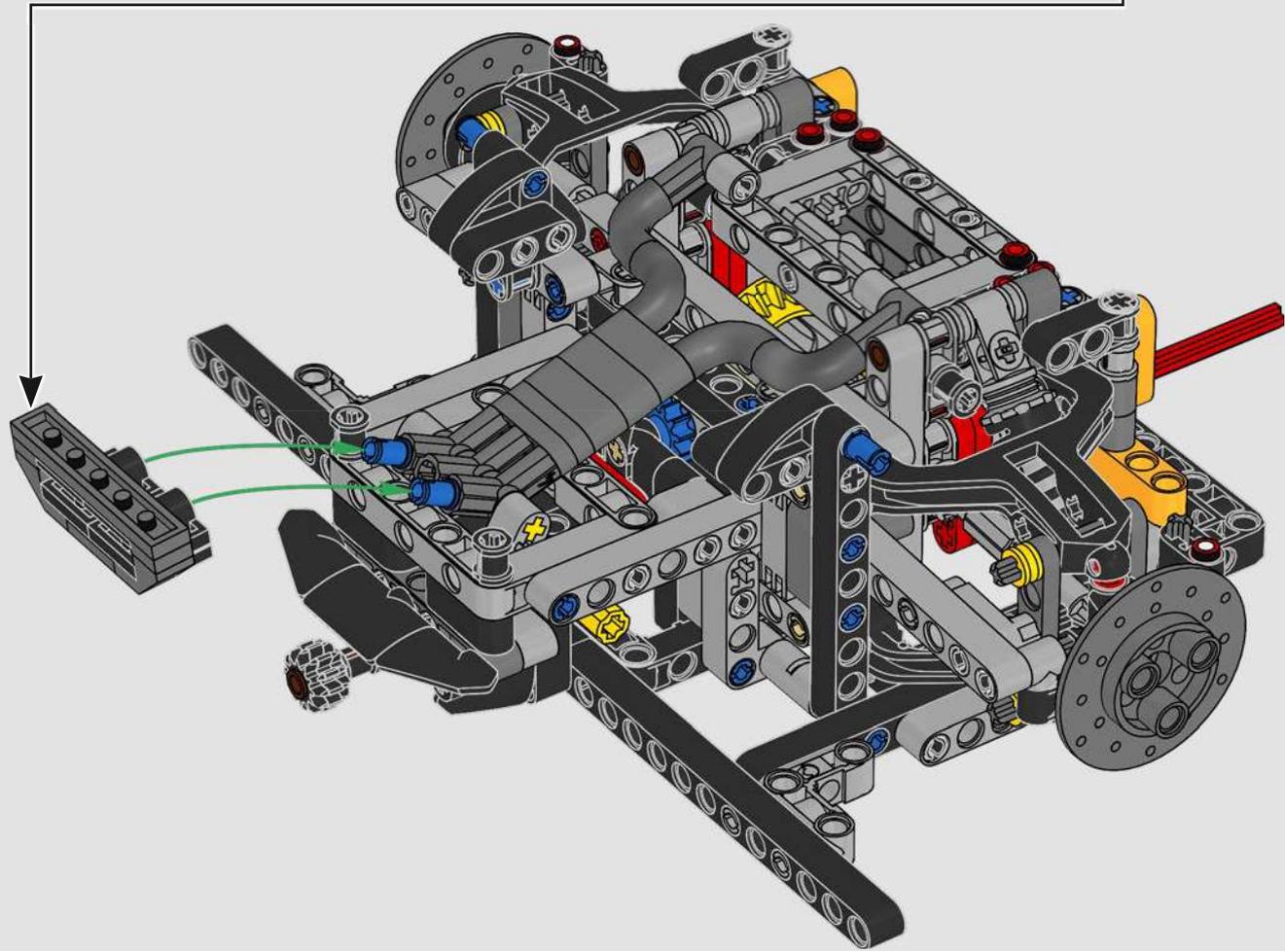
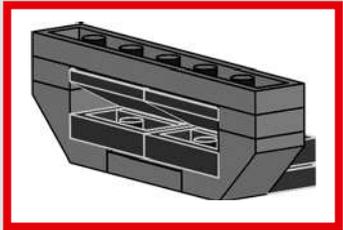
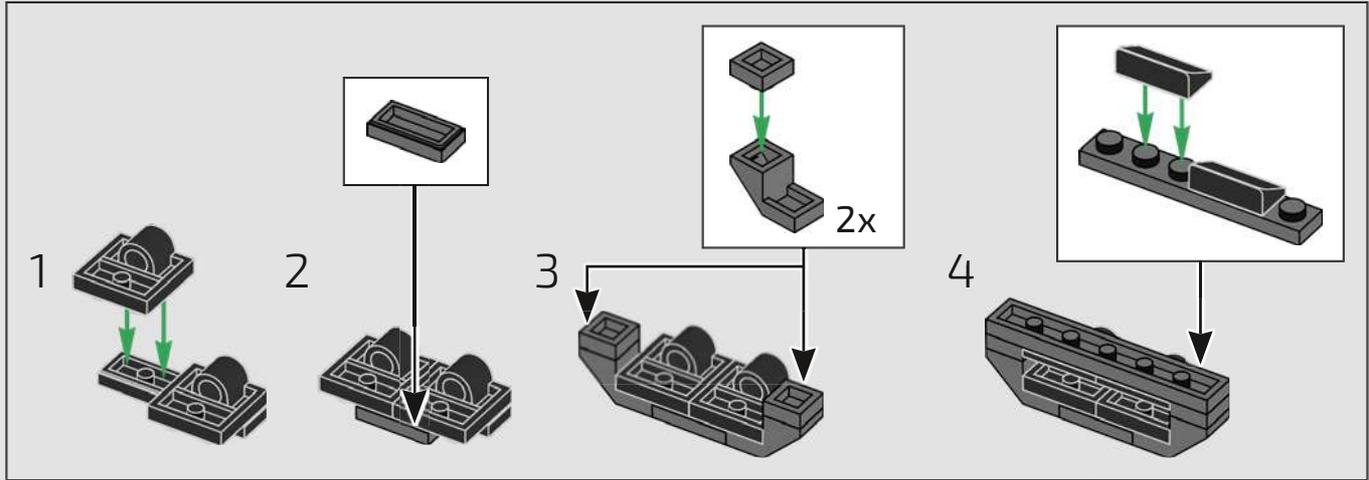


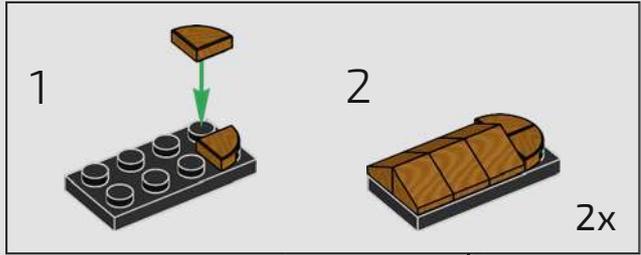
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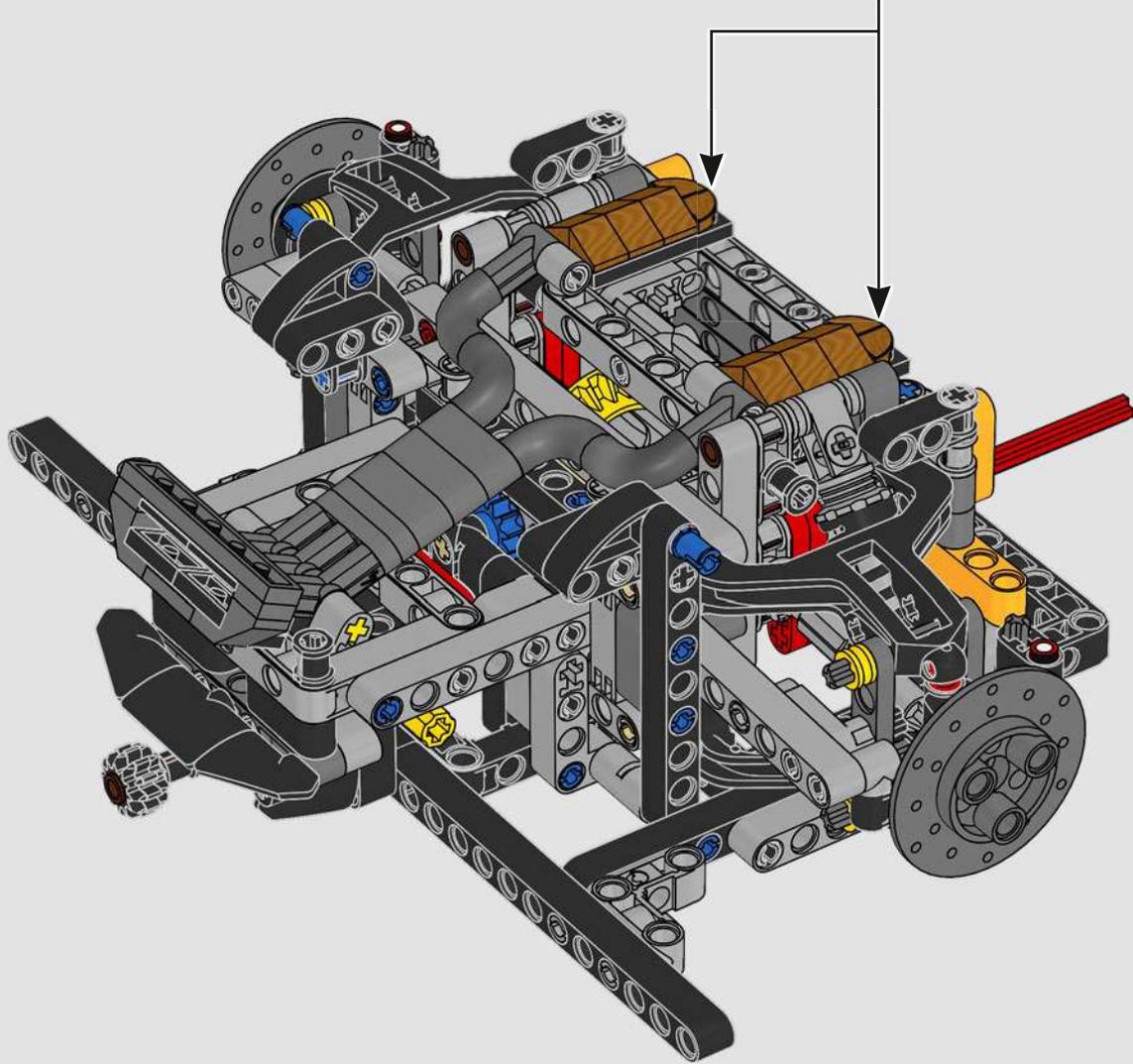


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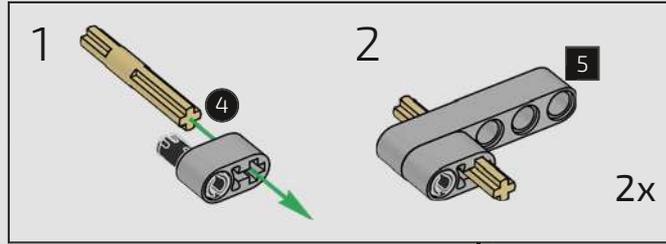
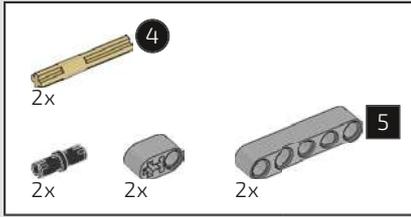




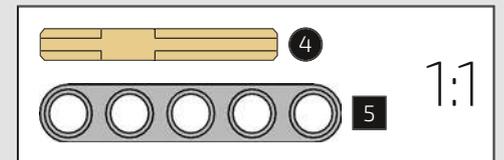
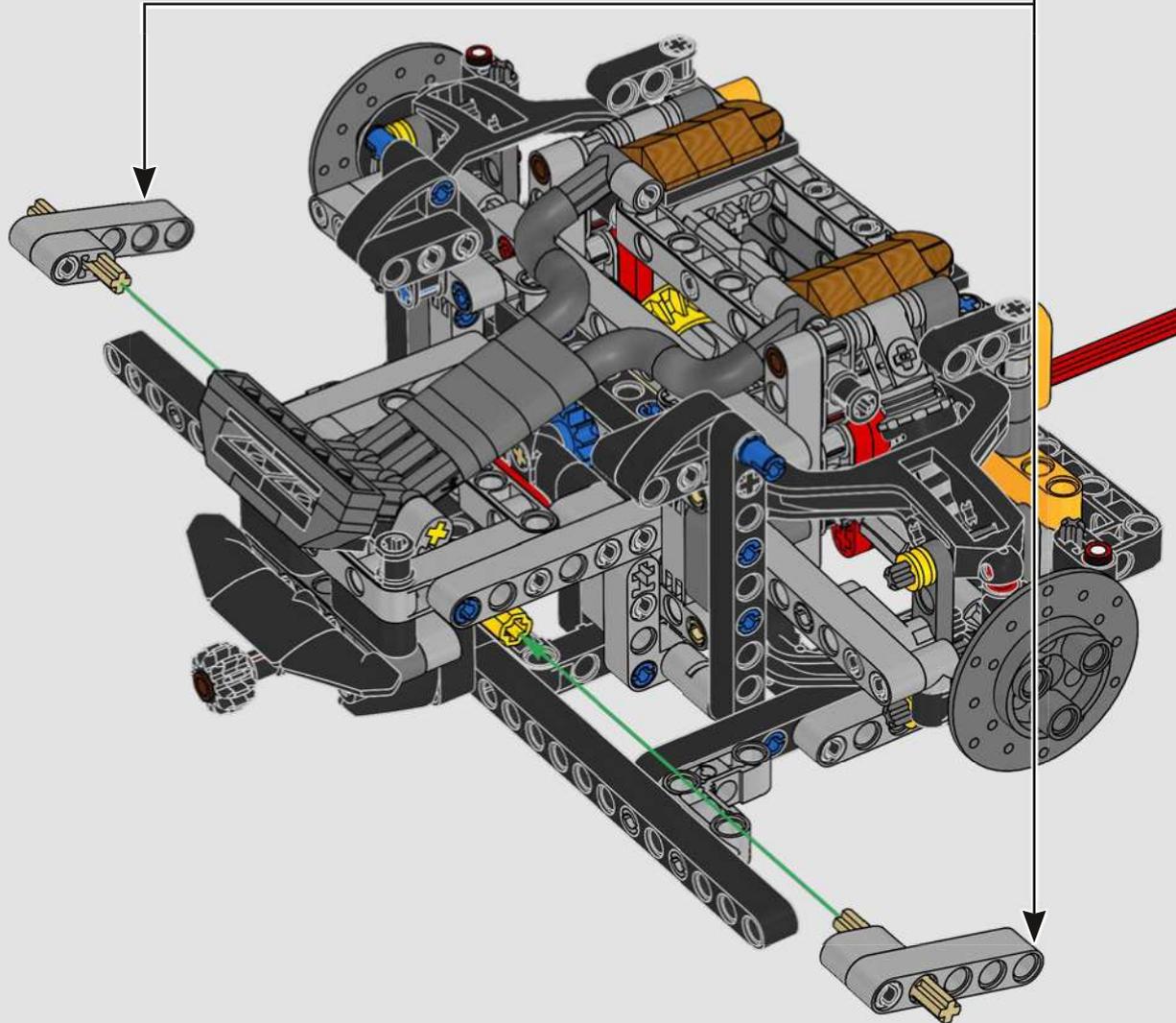
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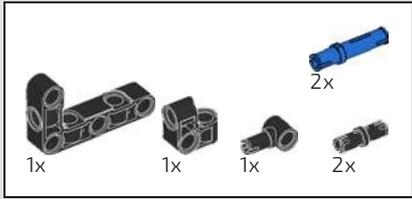






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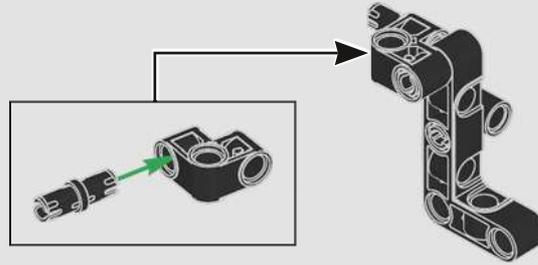


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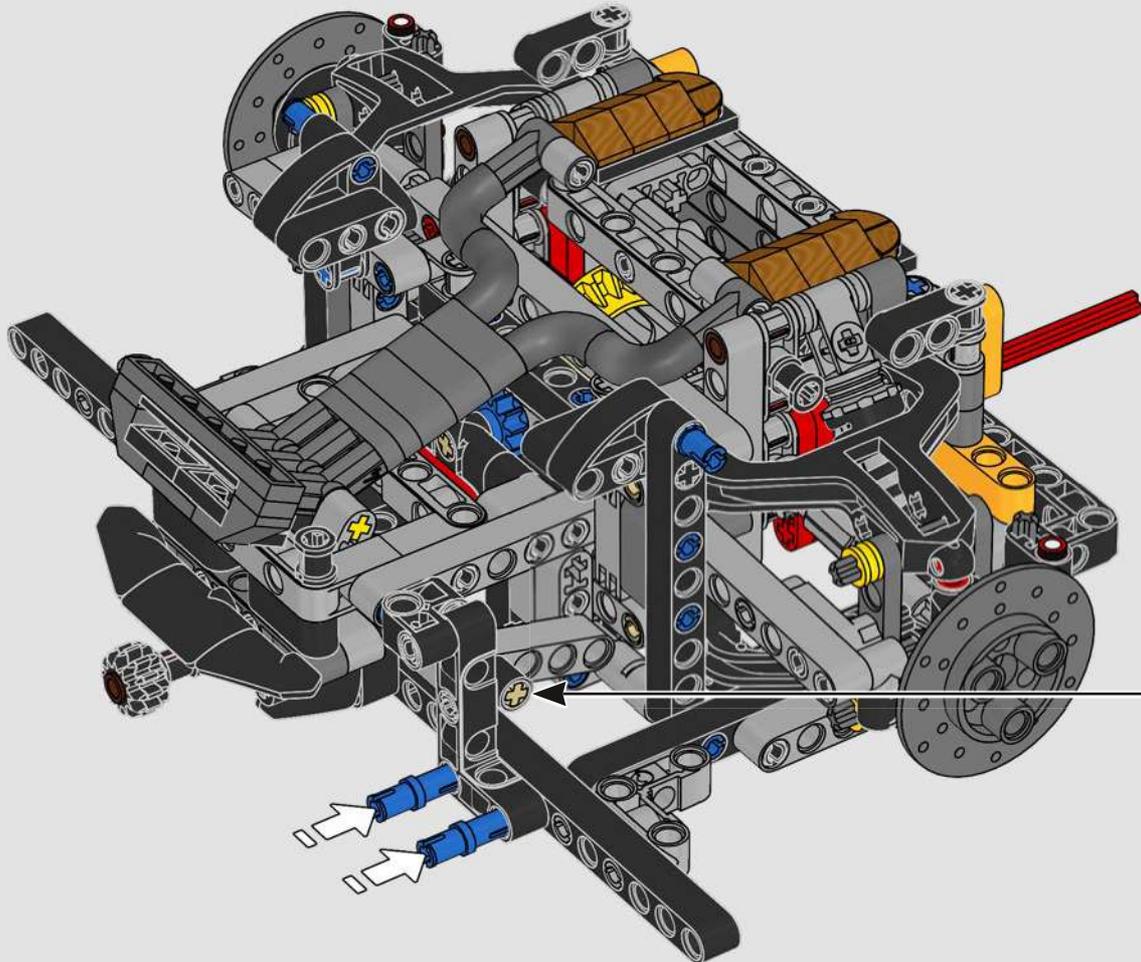
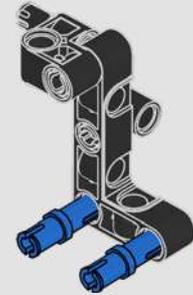
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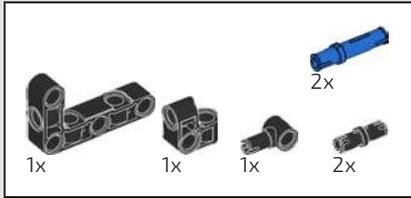


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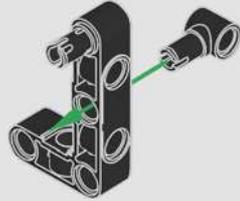
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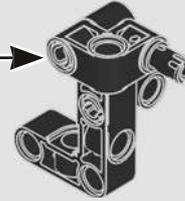
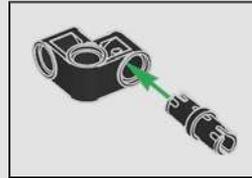


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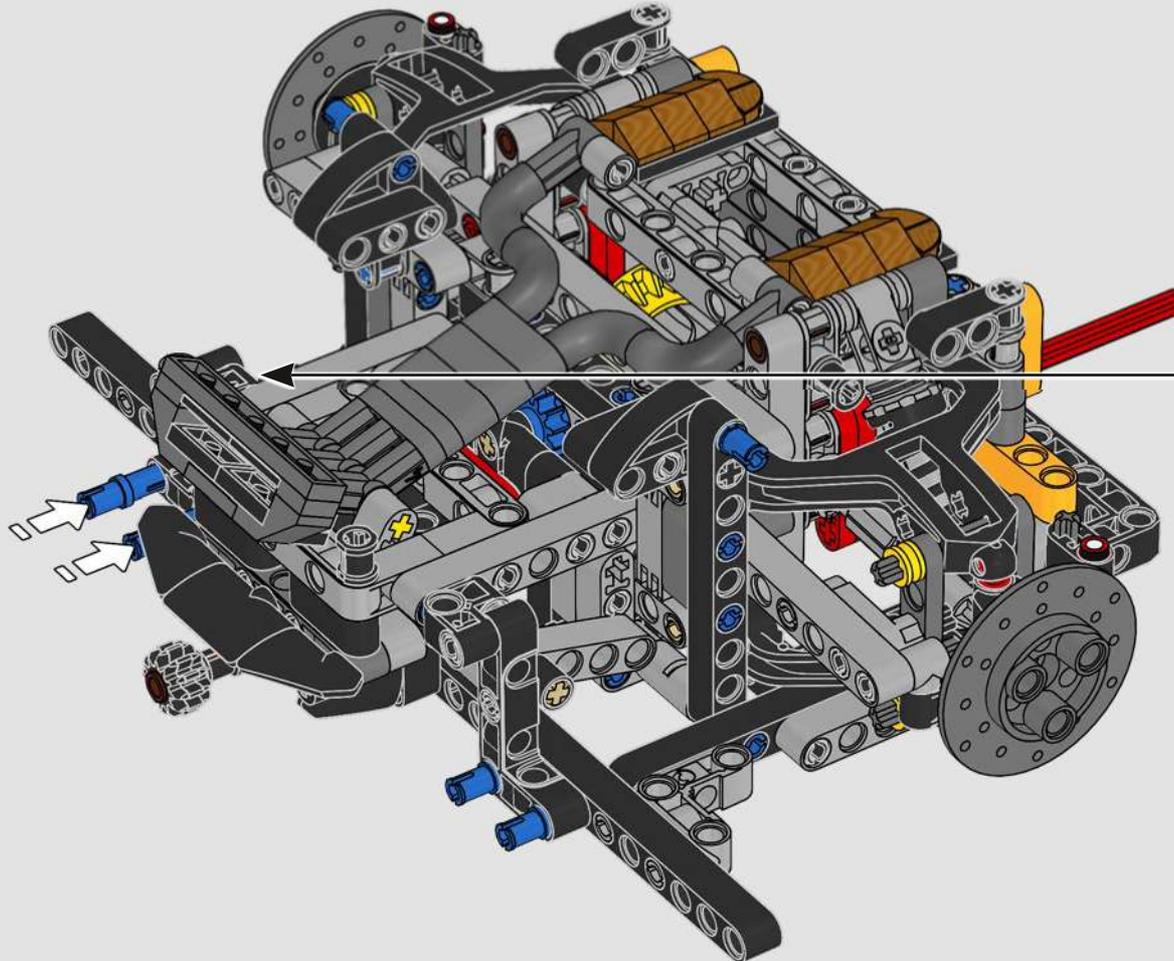
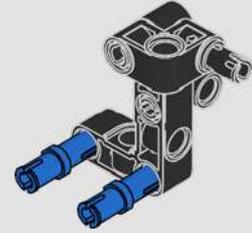
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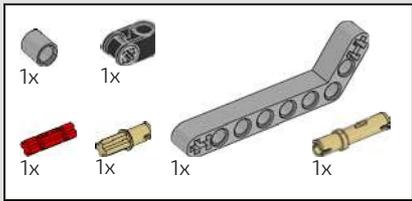


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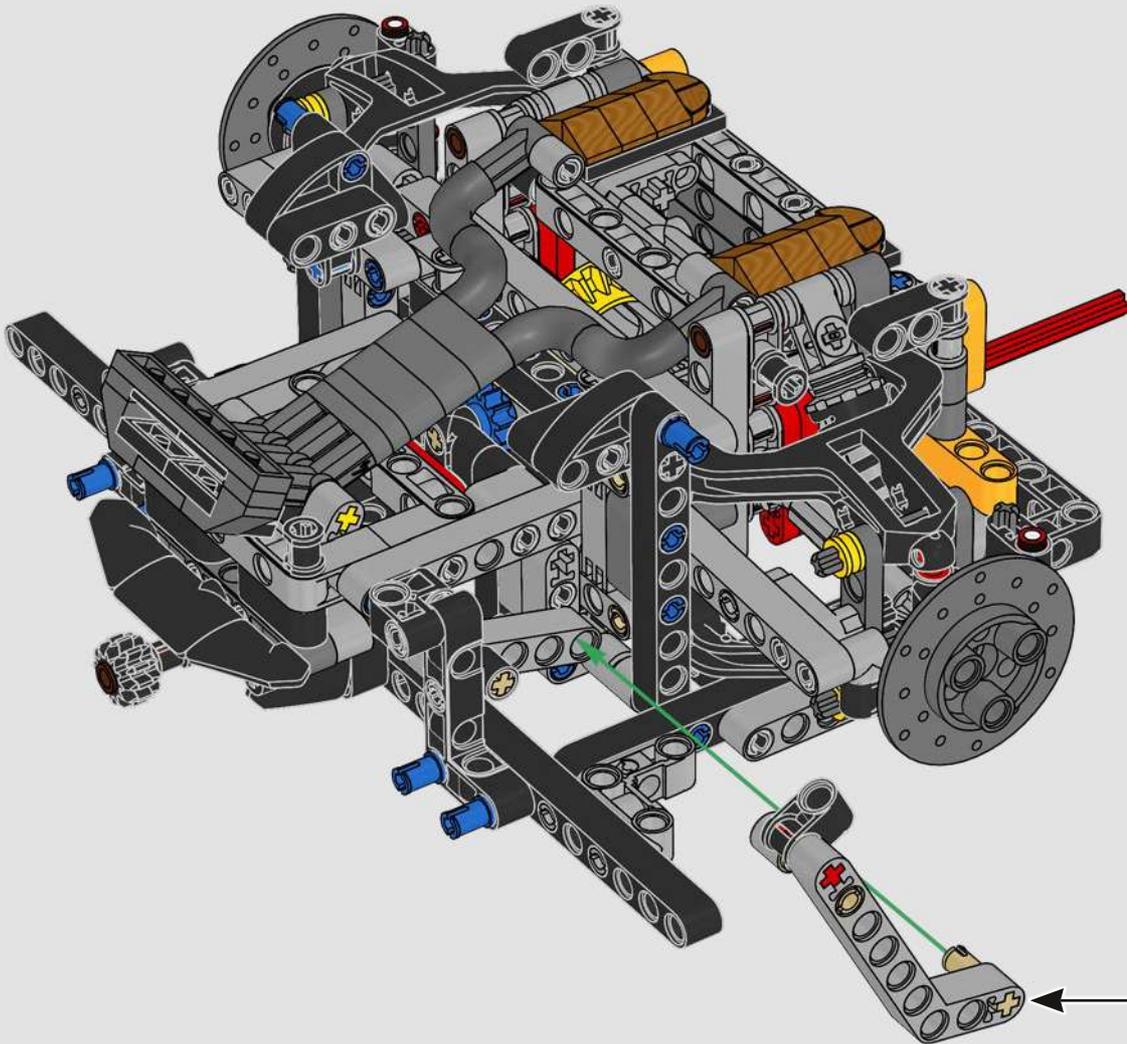


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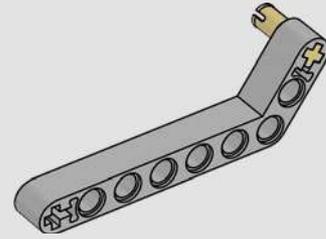




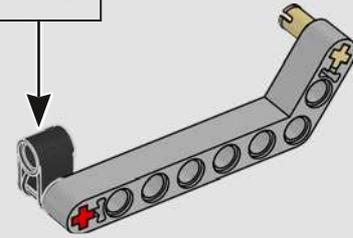
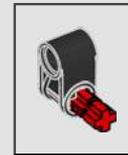
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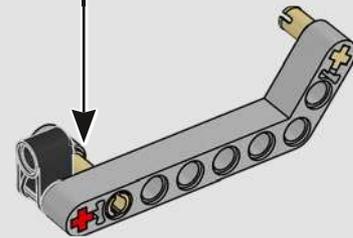
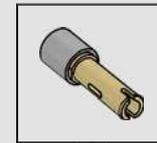
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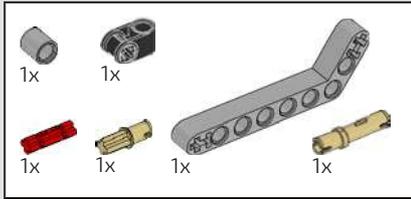


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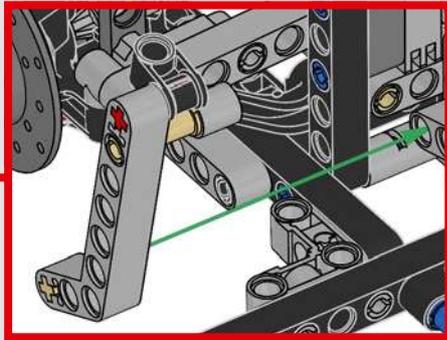
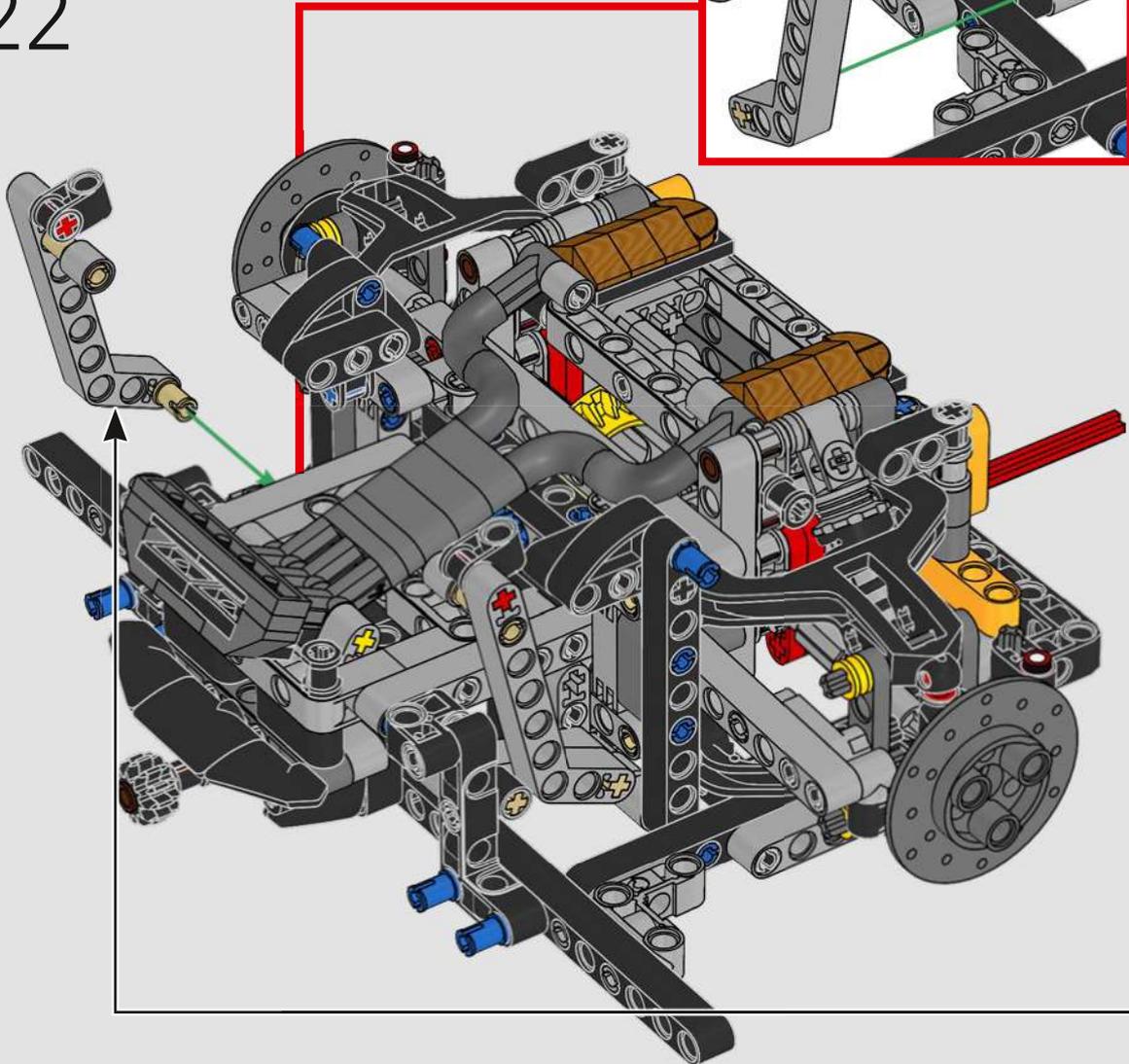


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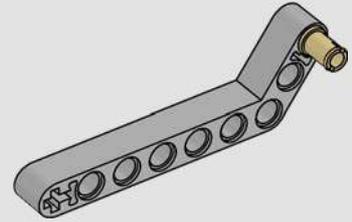




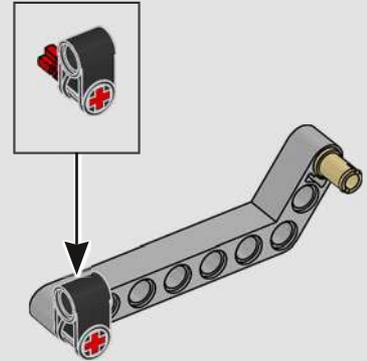
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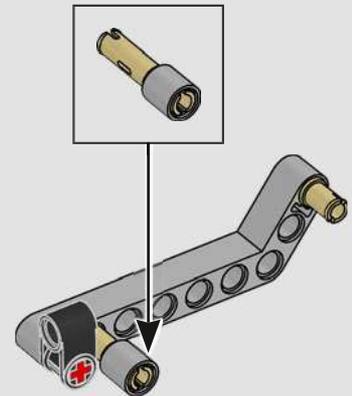
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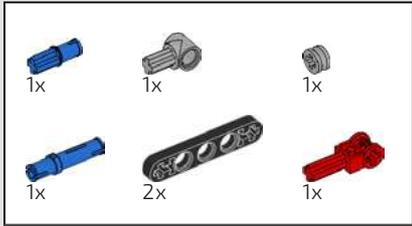


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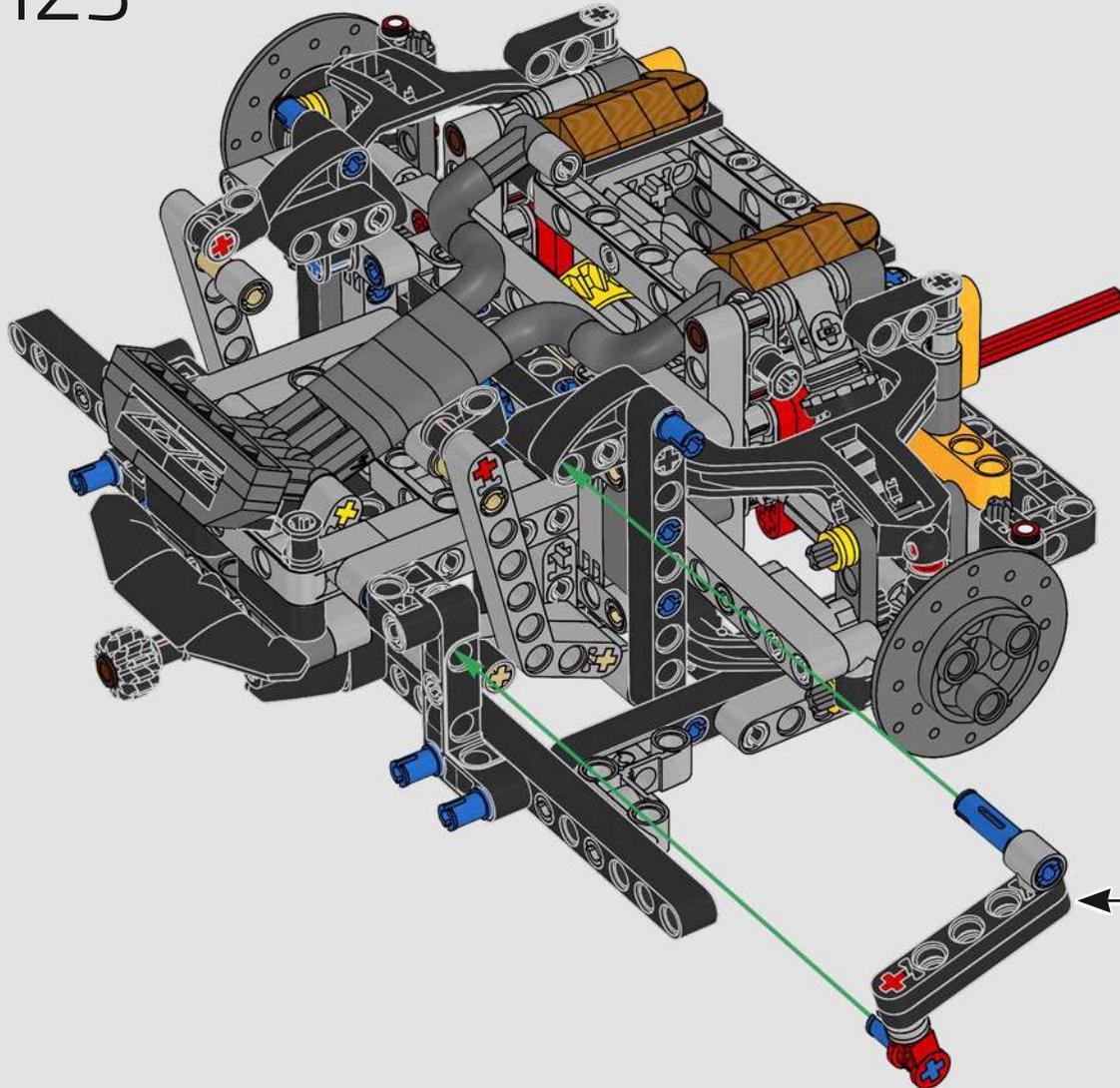


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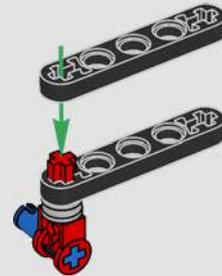
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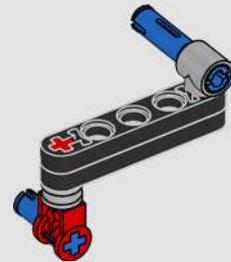
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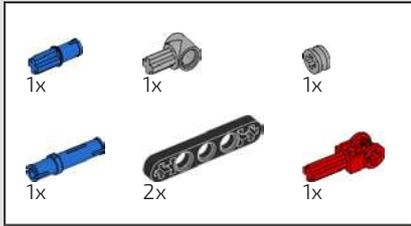


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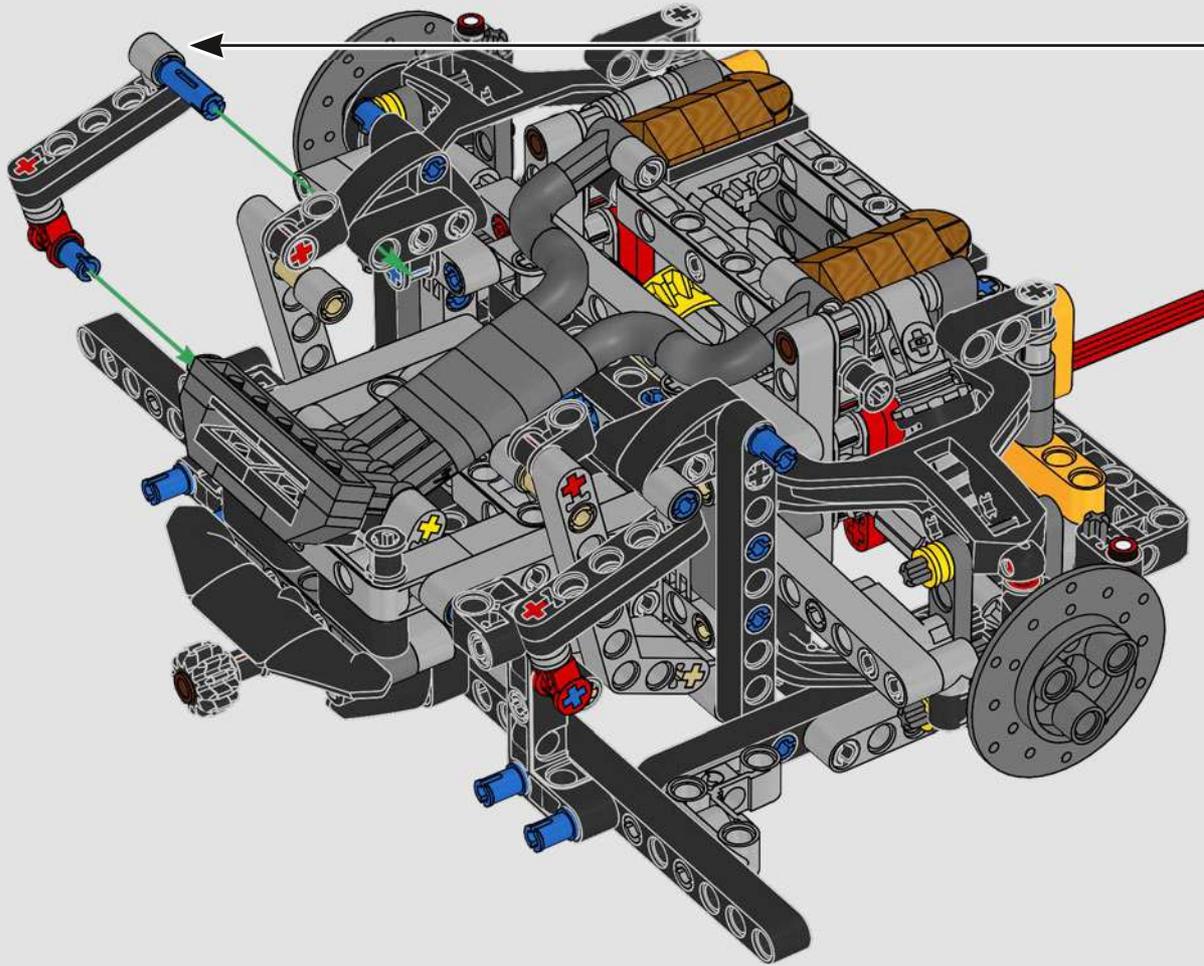


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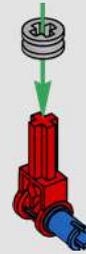




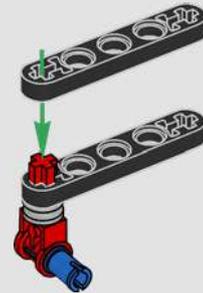
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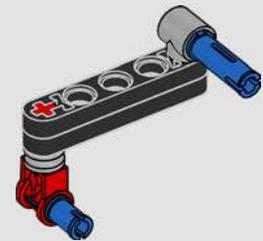
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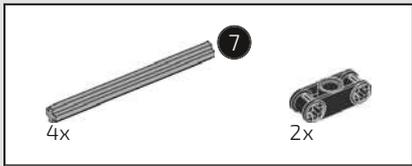


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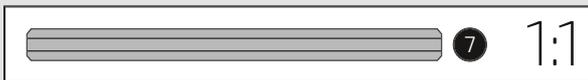
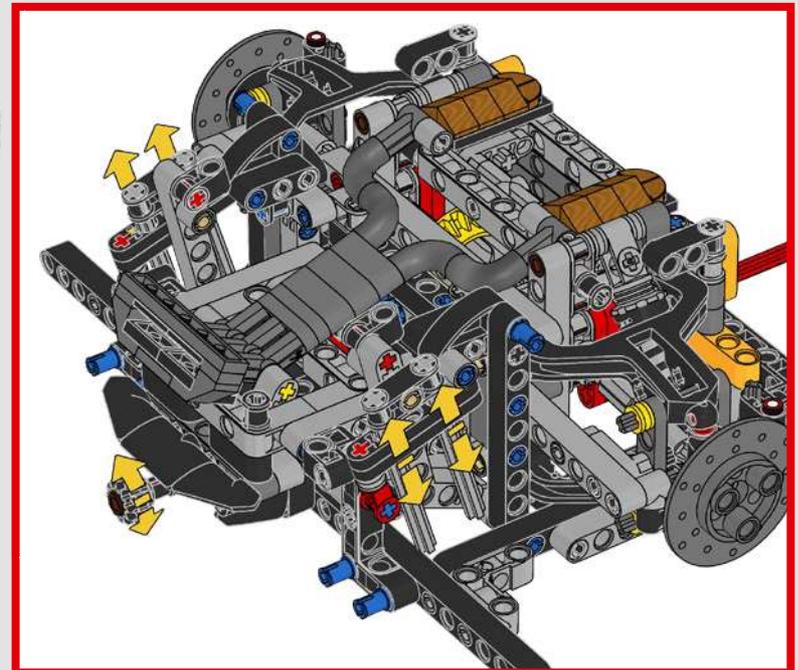
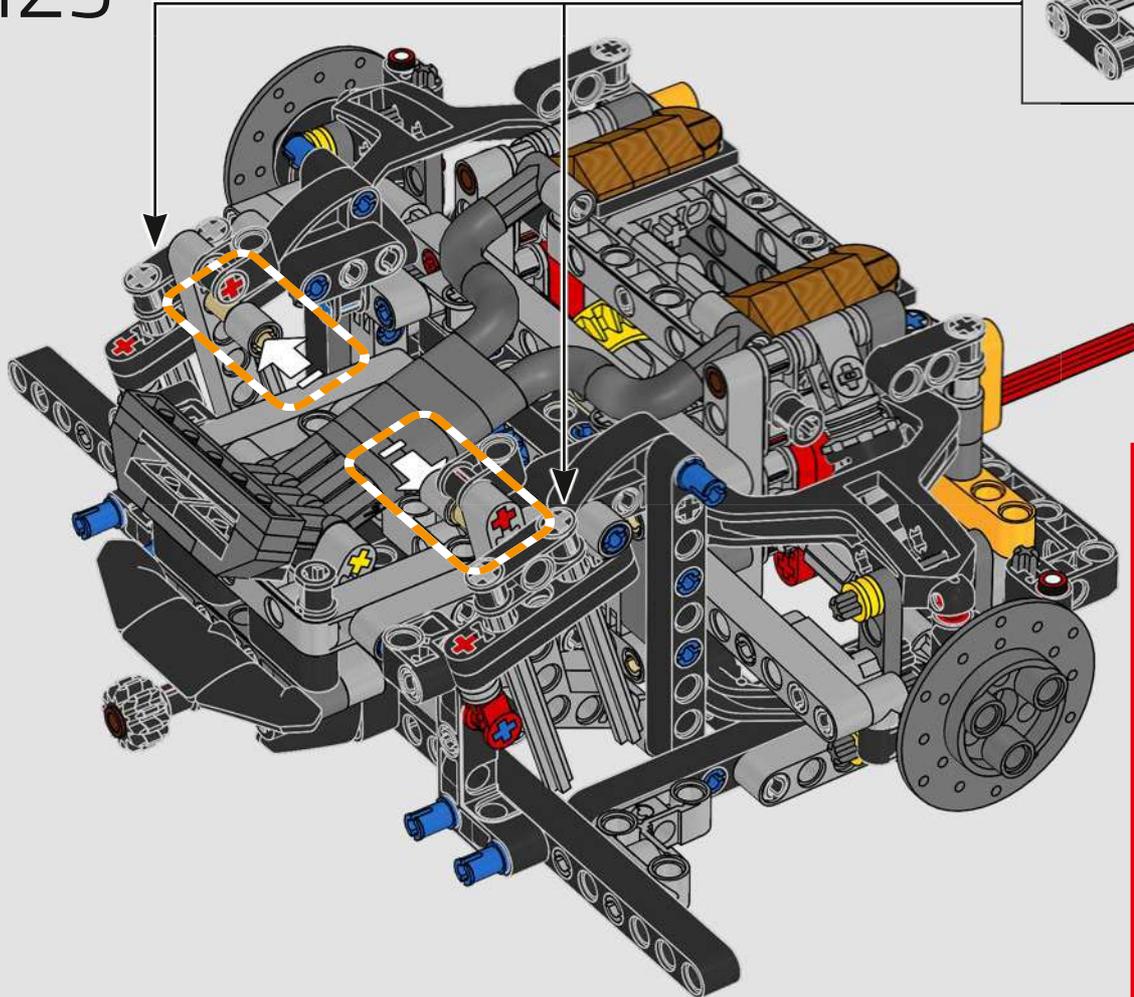
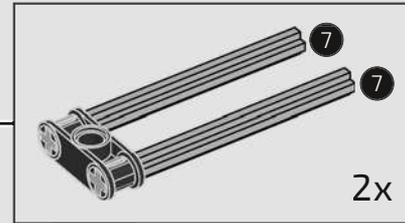


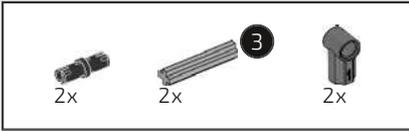
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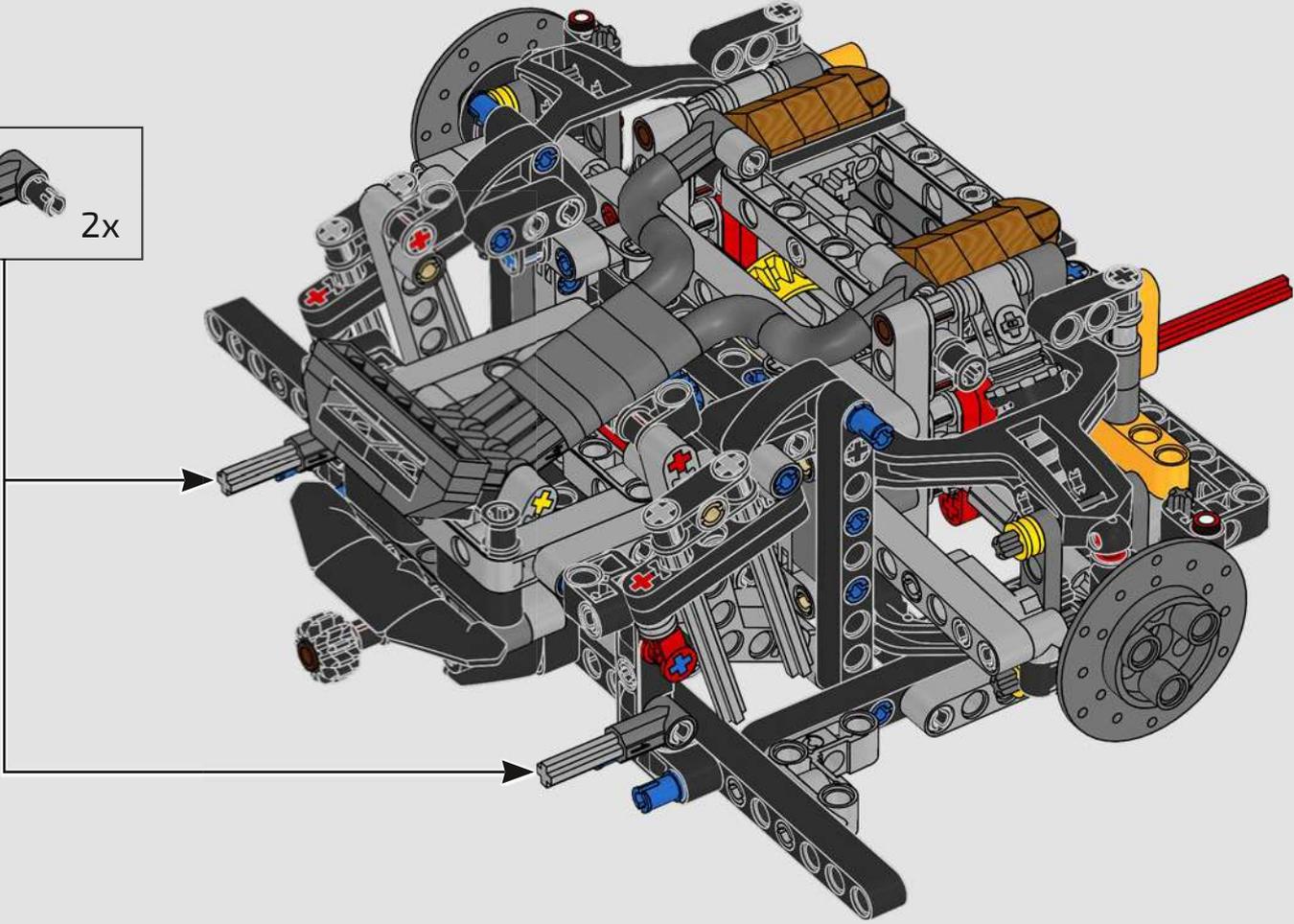


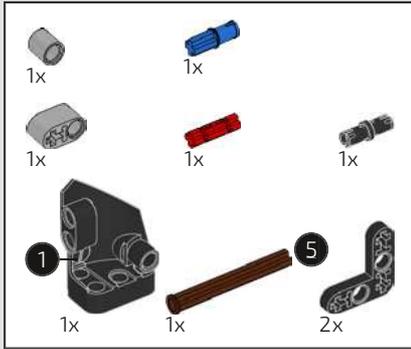
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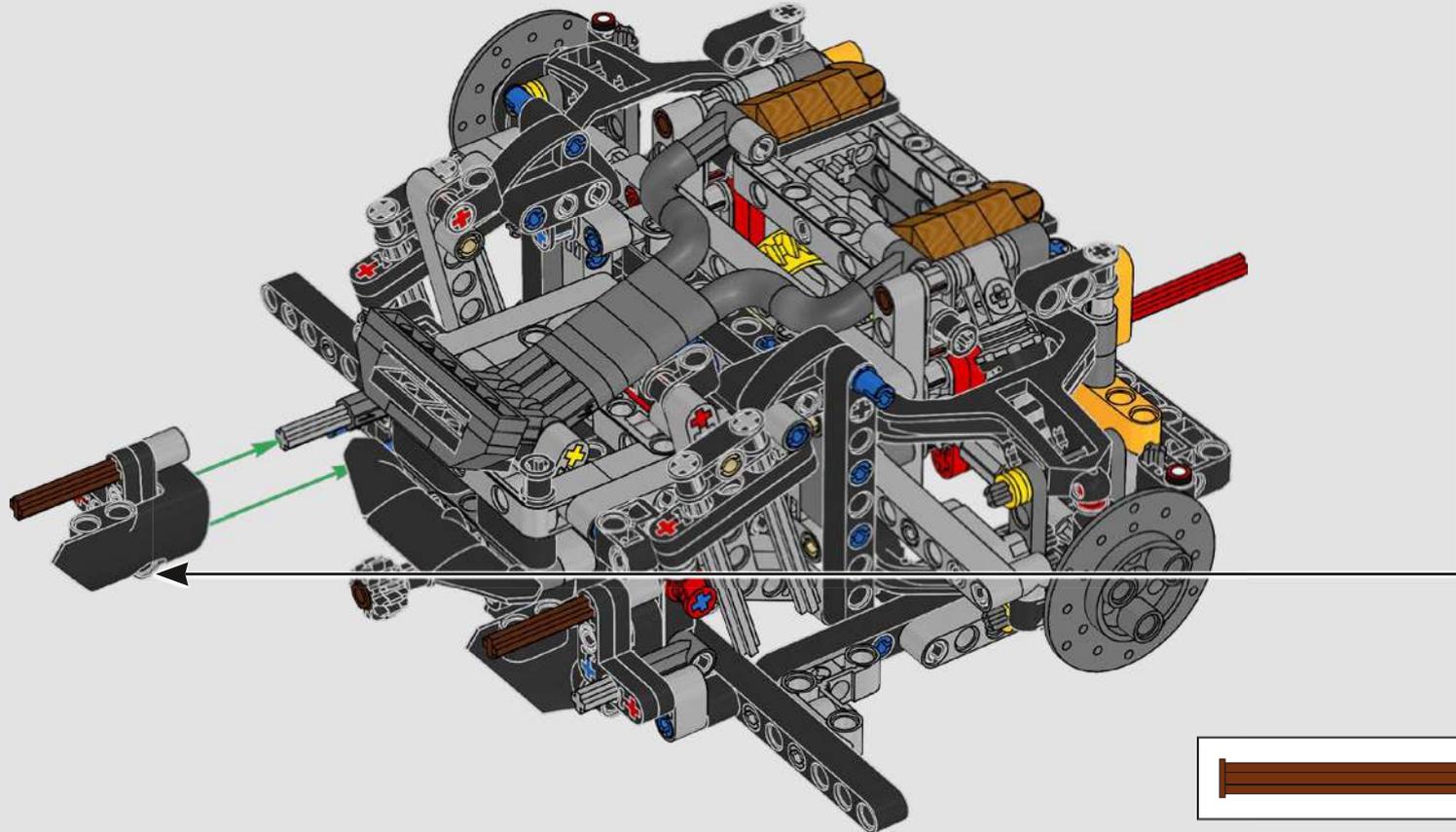
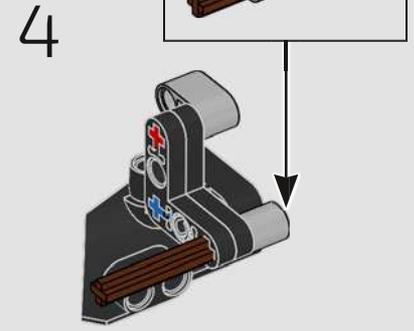
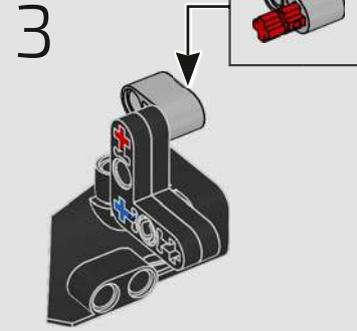
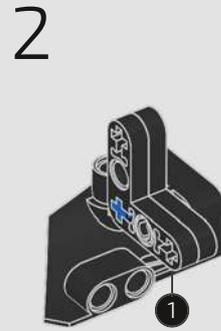
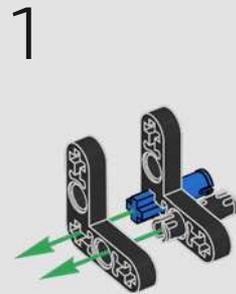


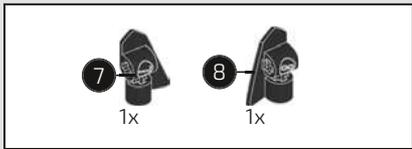
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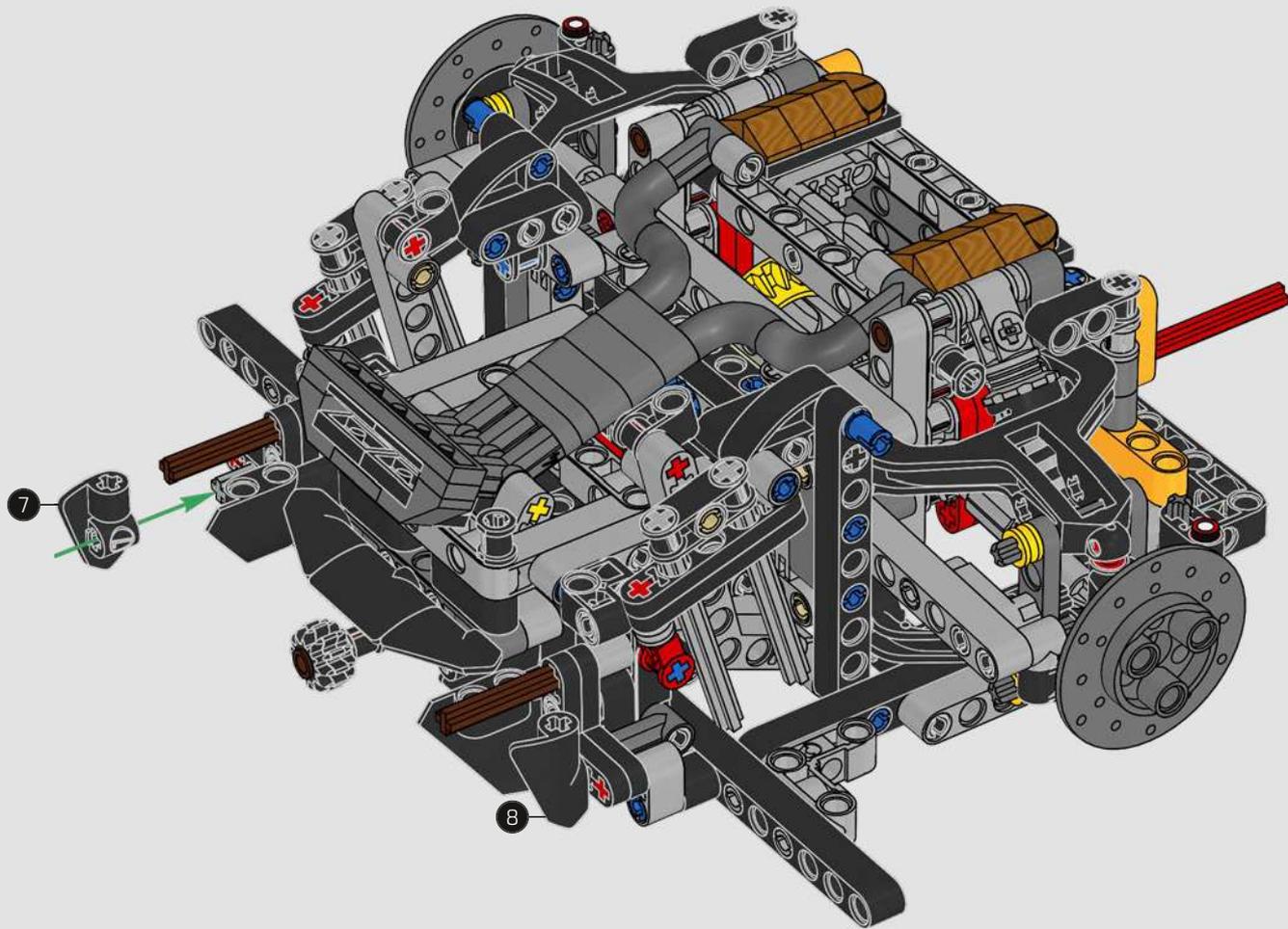


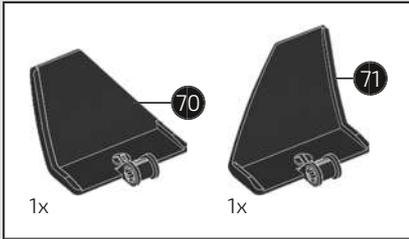
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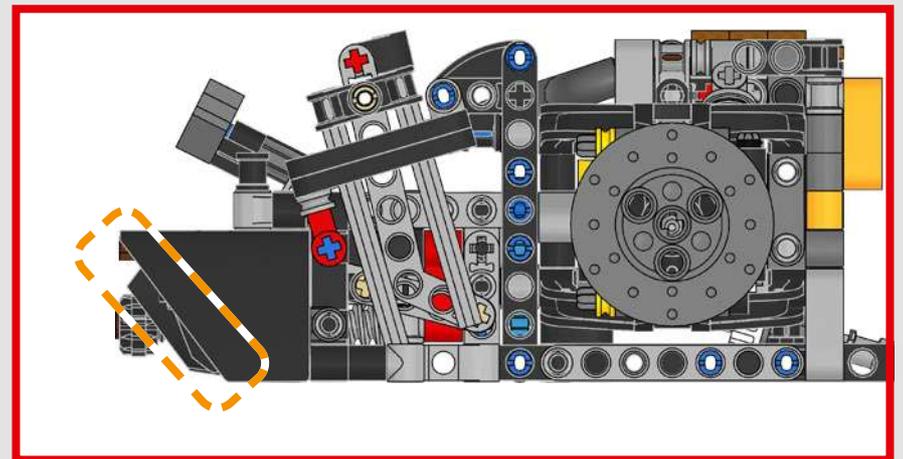
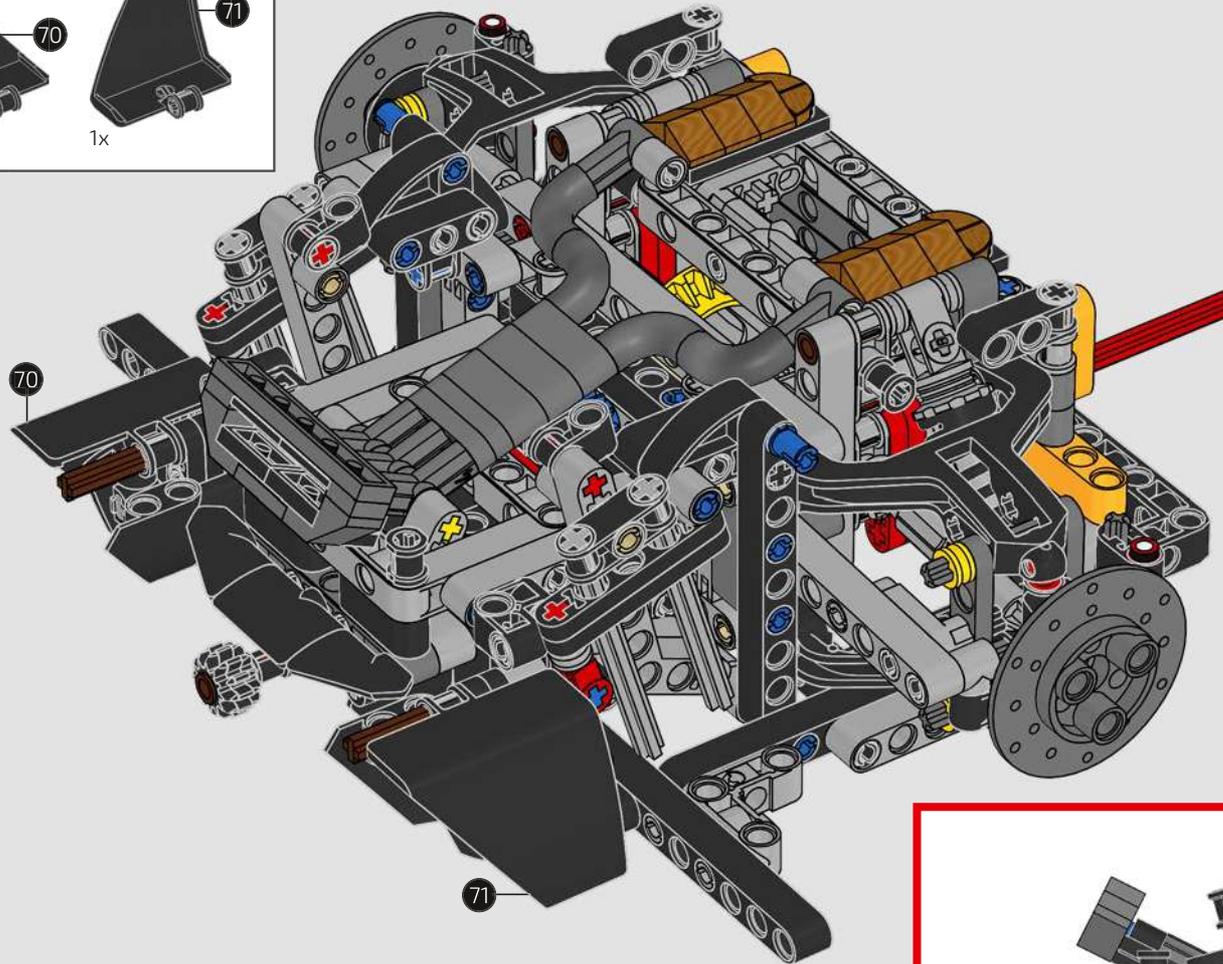


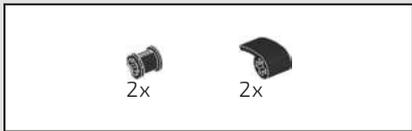
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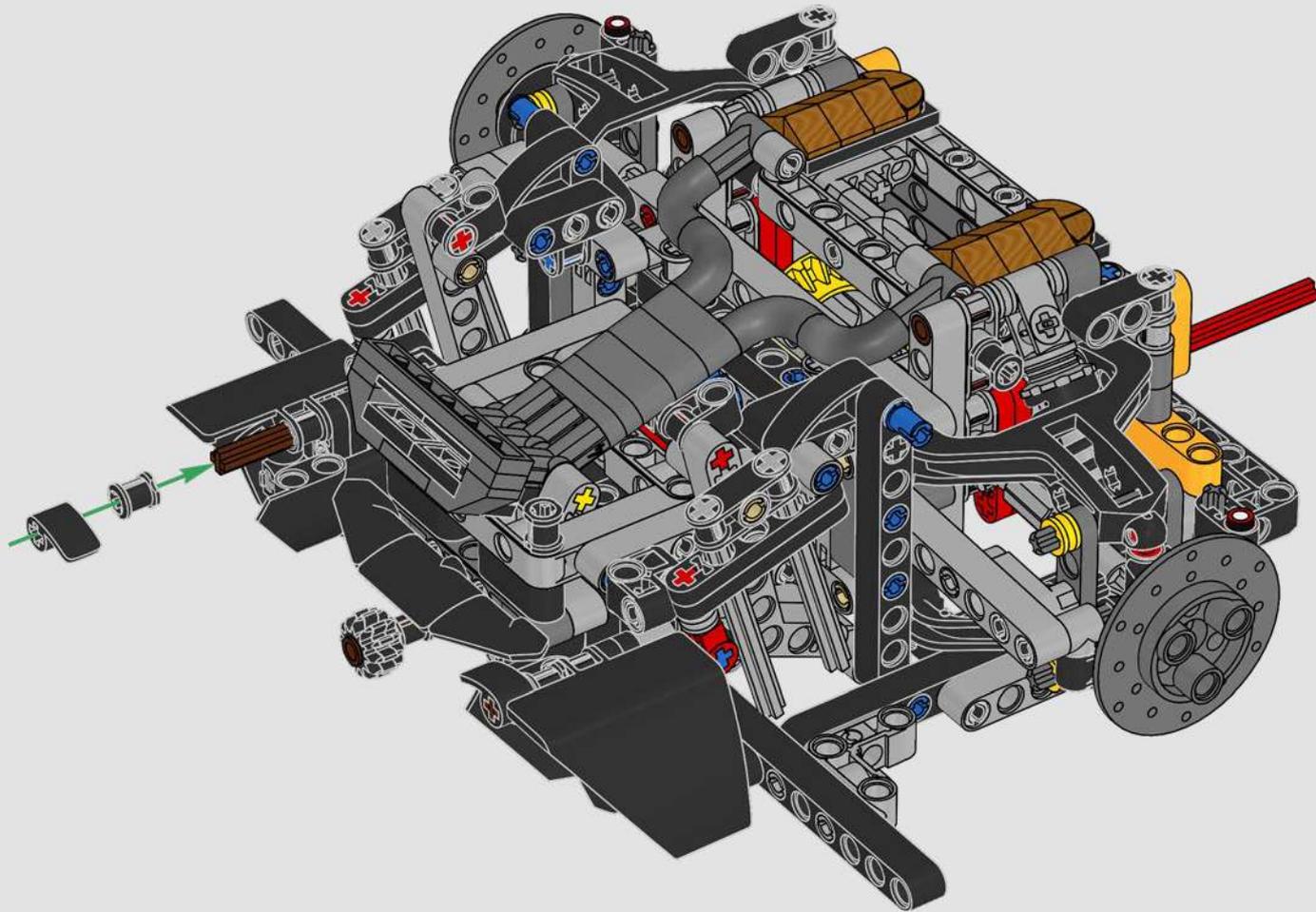


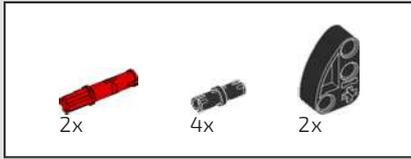
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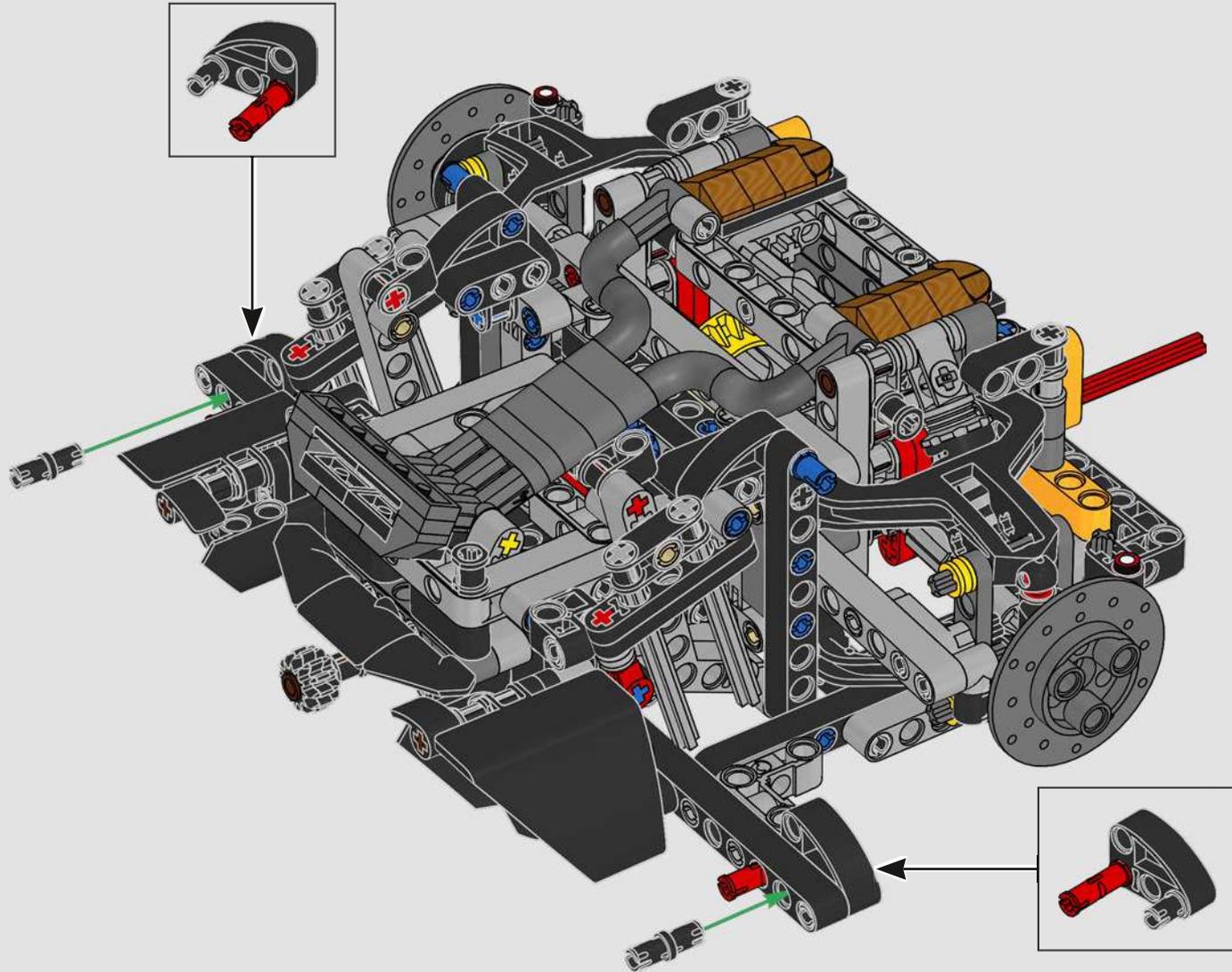


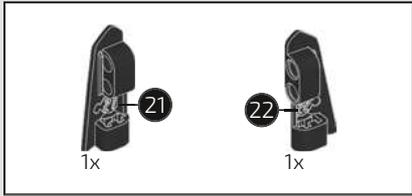
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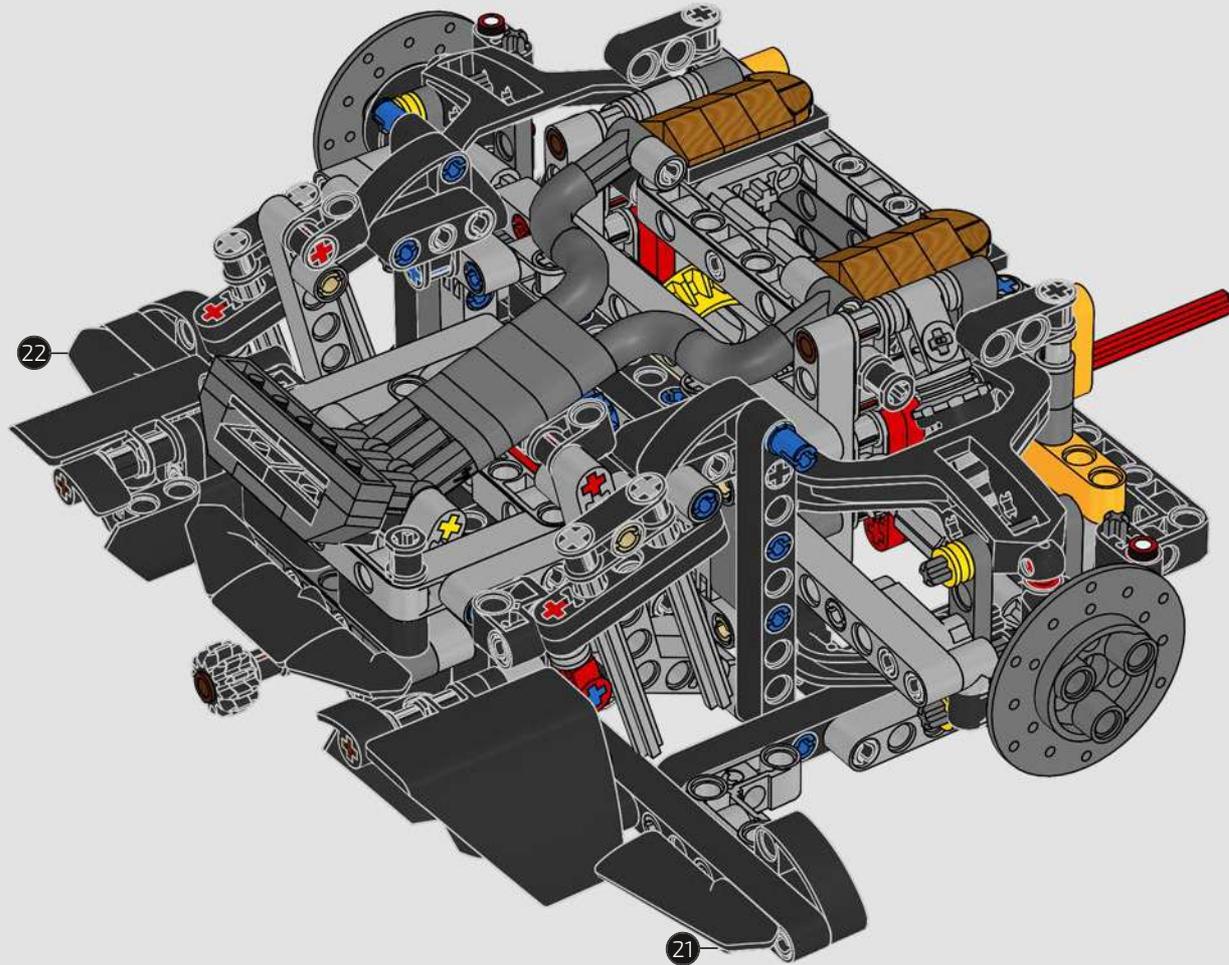


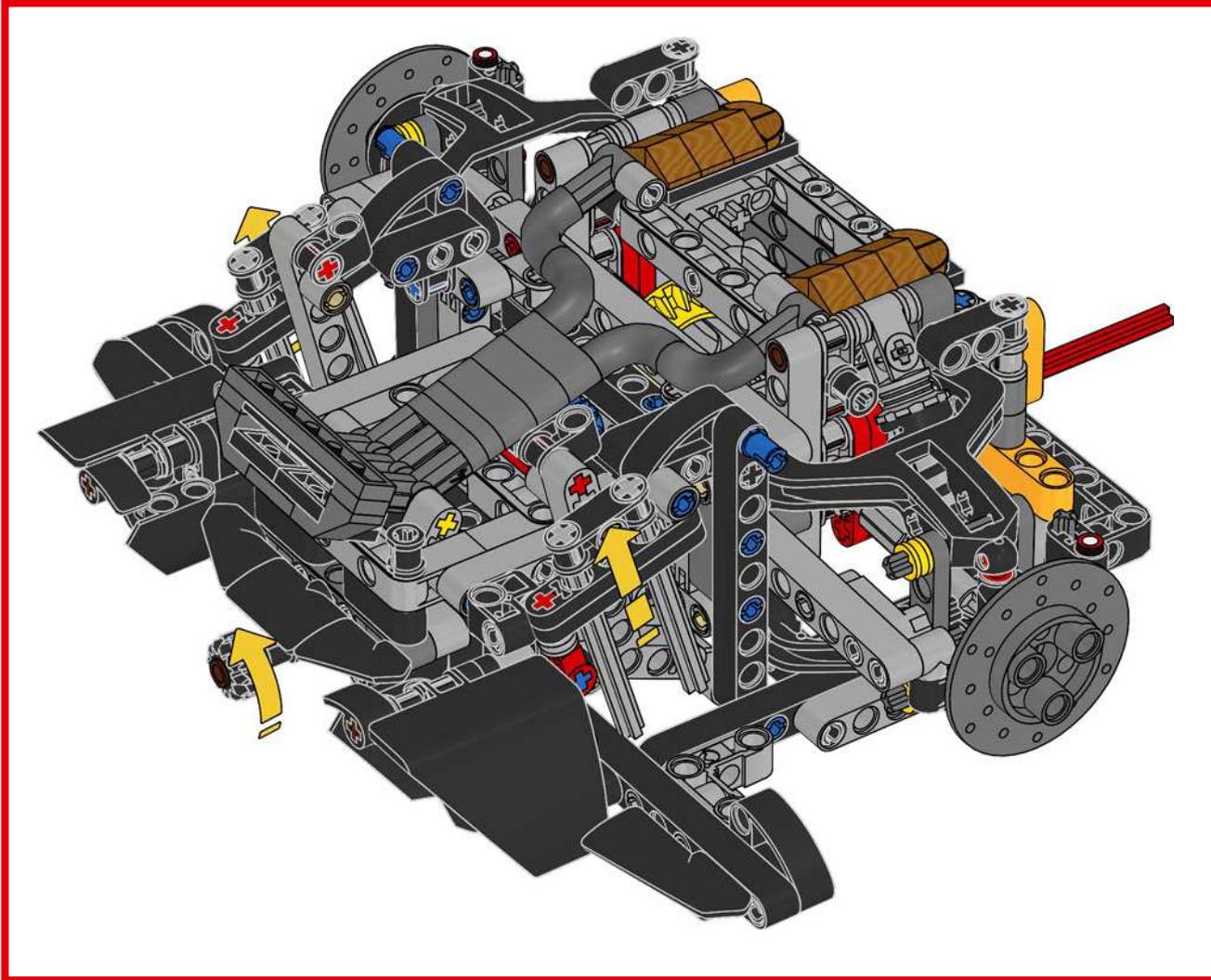
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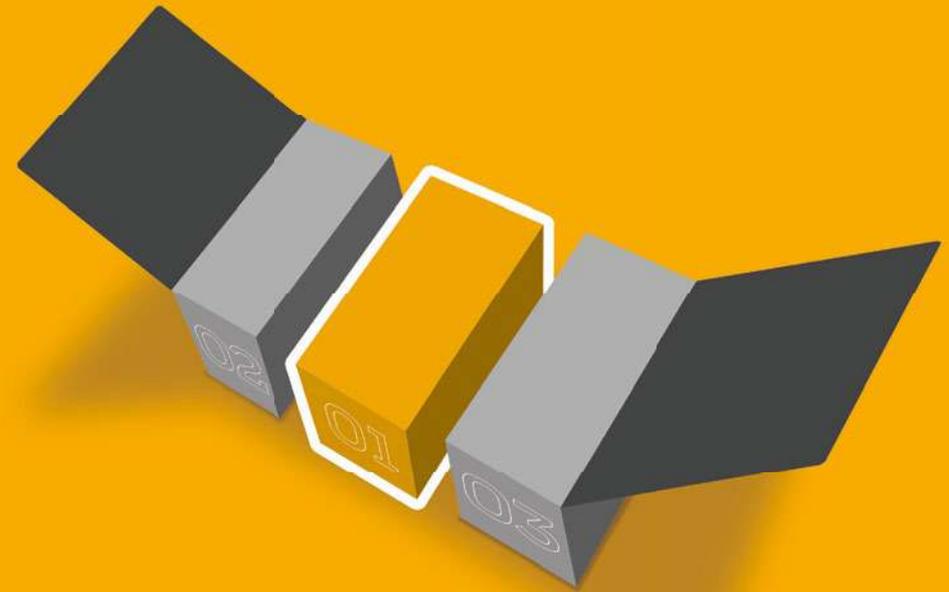


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O1 BOX

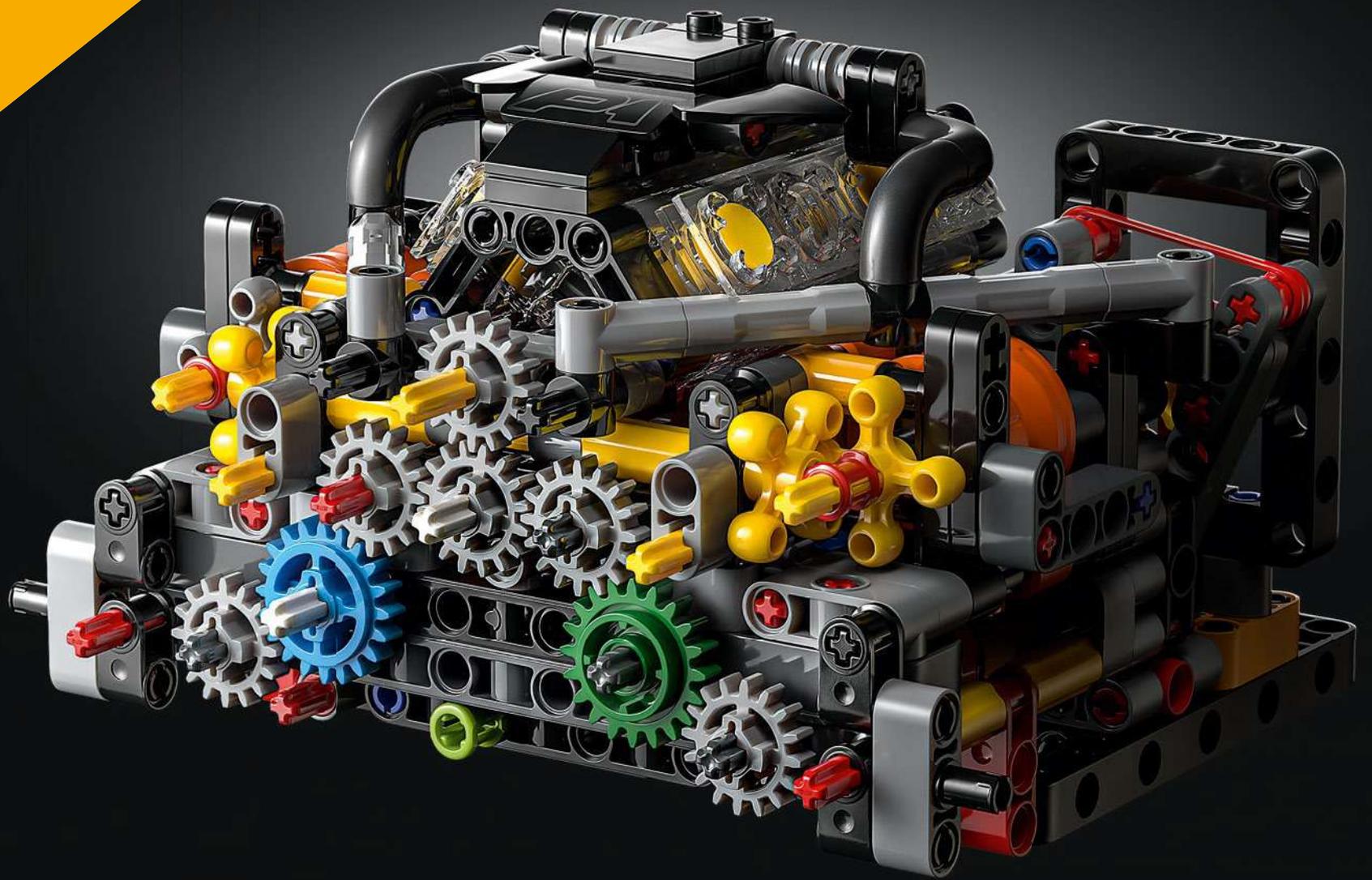


7-SPEED GEARBOX & V8 ENGINE

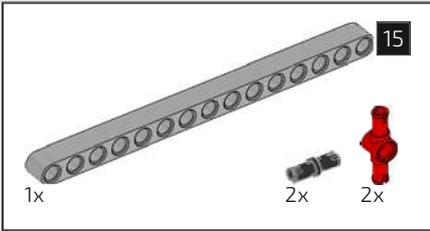
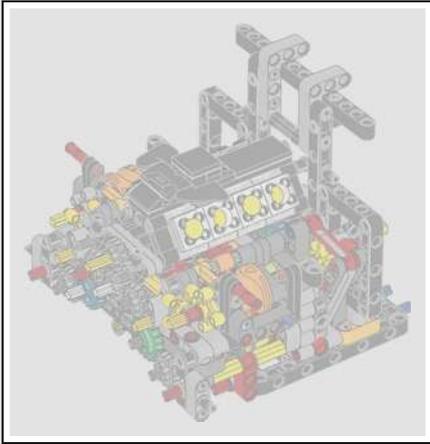
7-GANG-GETRIEBE & V8-MOTOR

Creating a 7-speed gearbox with existing LEGO® Technic elements would have put too much strain on the elements and construction. Instead of opting for an alternative 6- or 8-speed version, we developed new building techniques and shifter drum elements and two new gear wheels to mimic the real-life version.

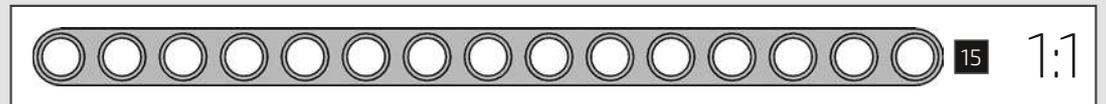
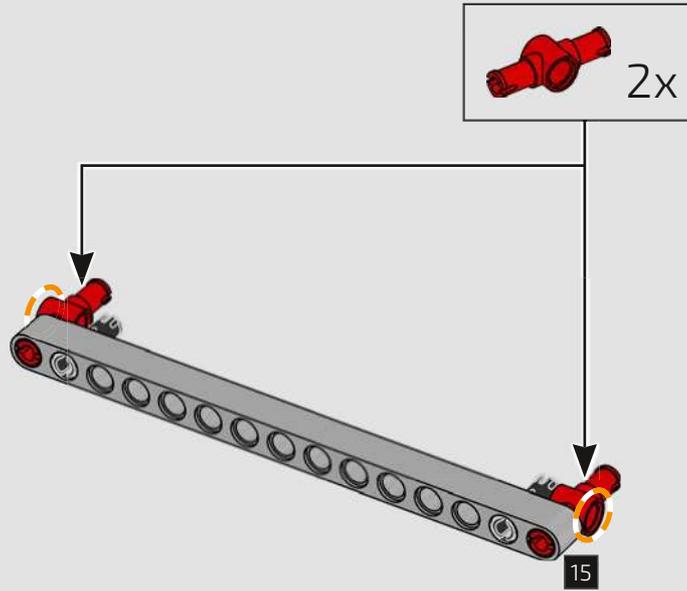
Wenn wir das 7-Gang-Getriebe mit den vorhandenen LEGO® Technic Elementen gebaut hätten, wären die Elemente und die Konstruktion zu stark beansprucht worden. Anstatt eine alternative 6- oder 8-Gang-Version auszuwählen, haben wir lieber neue Bautechniken, Schaltwalzen und zwei neue Zahnräder entwickelt, um das echte Auto originalgetreu nachzubilden.

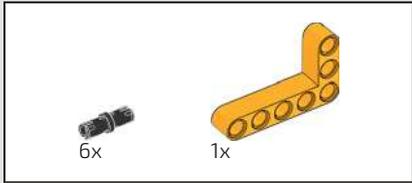




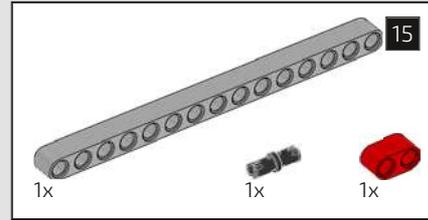
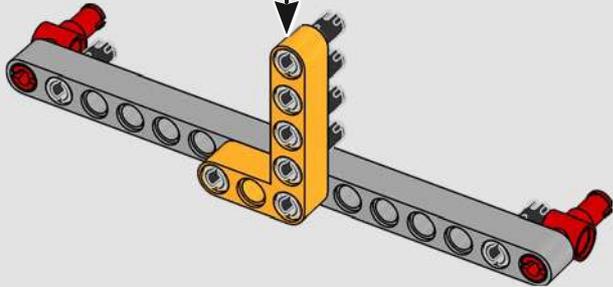
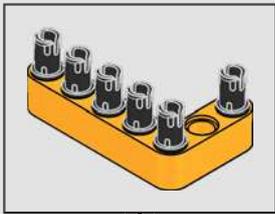


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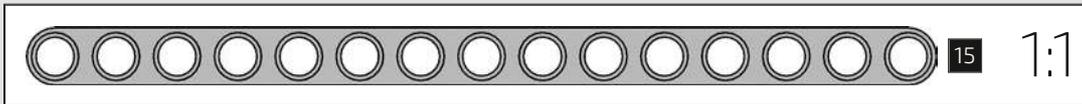
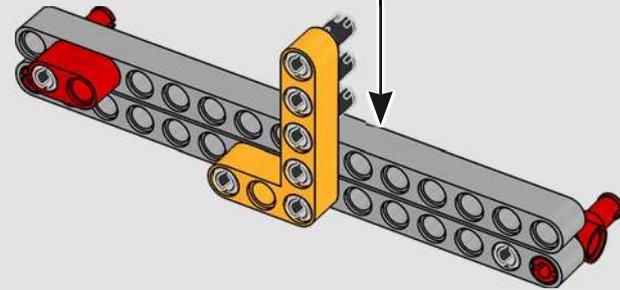
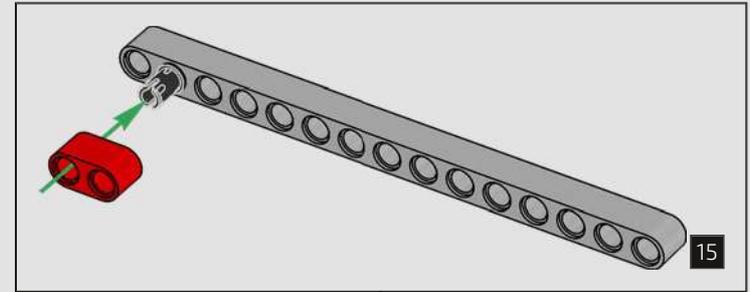


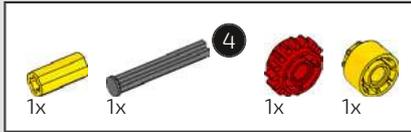


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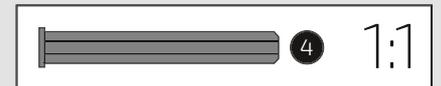
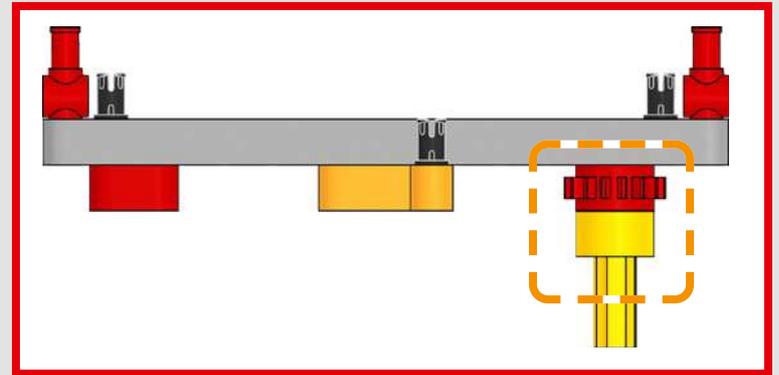
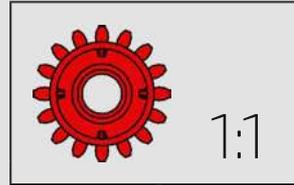
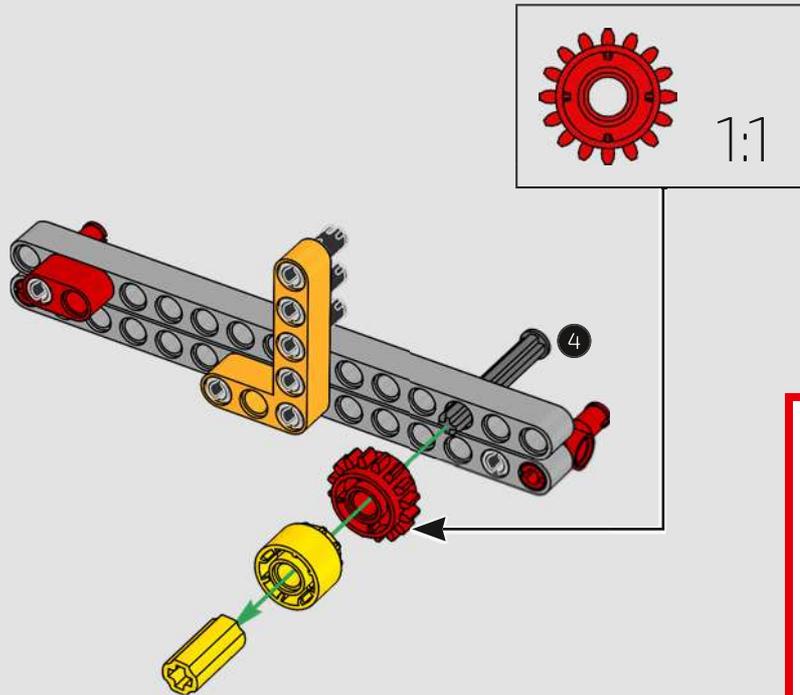


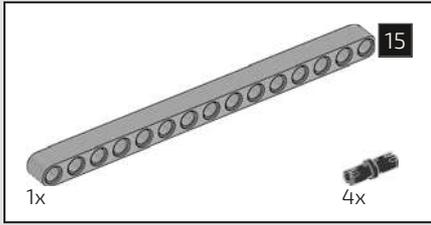
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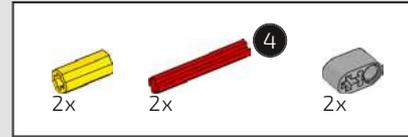
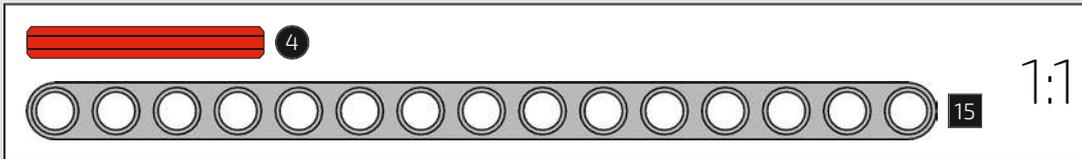
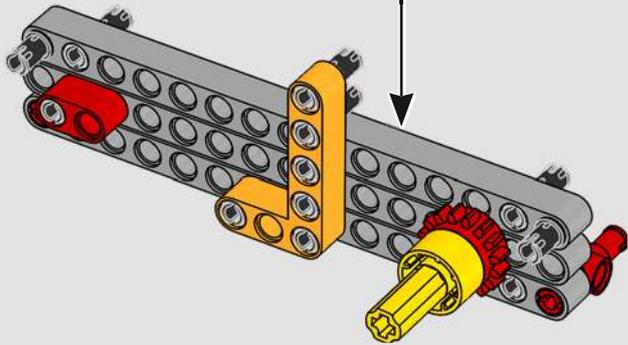
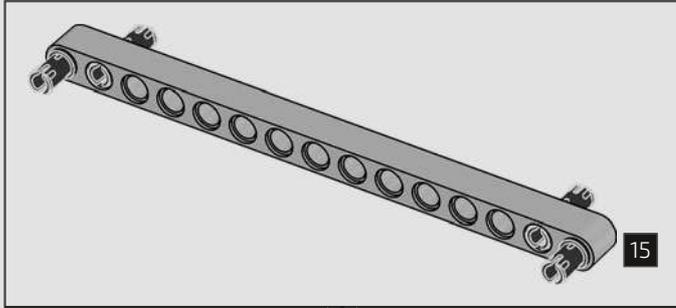


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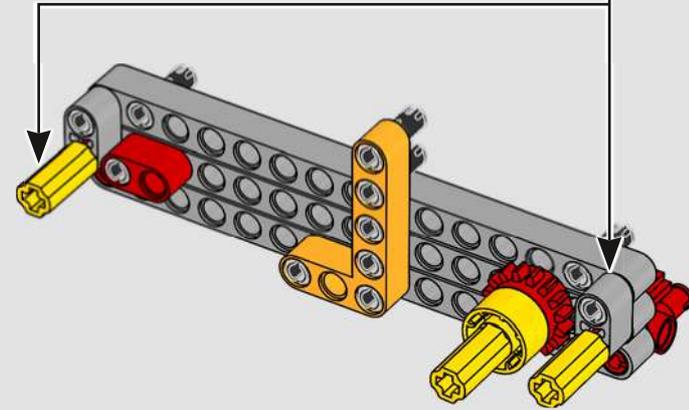
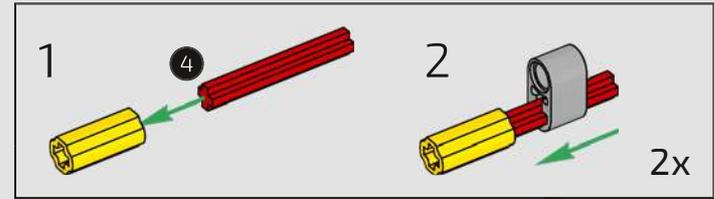


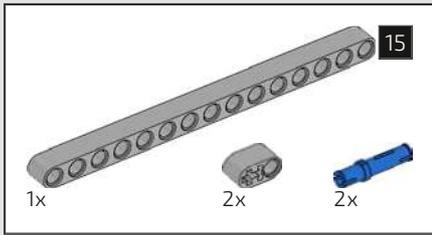


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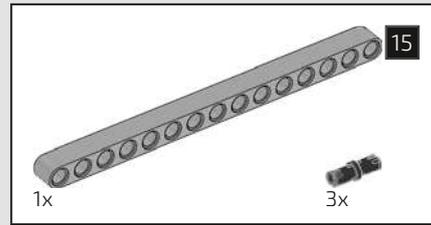
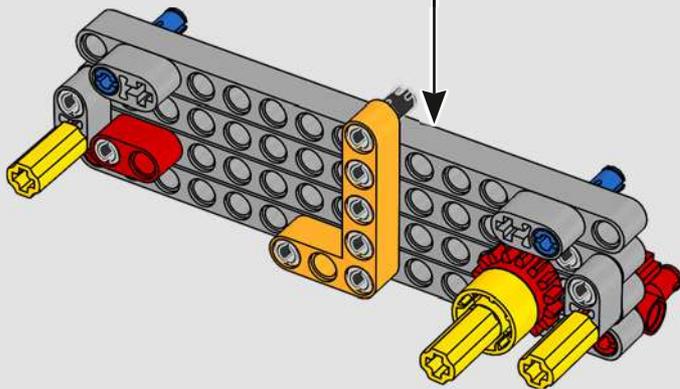
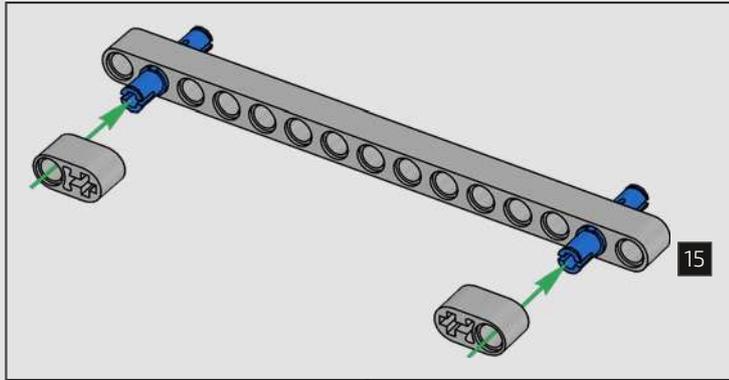


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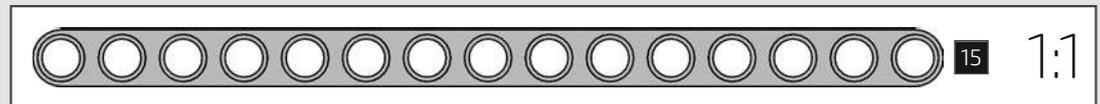
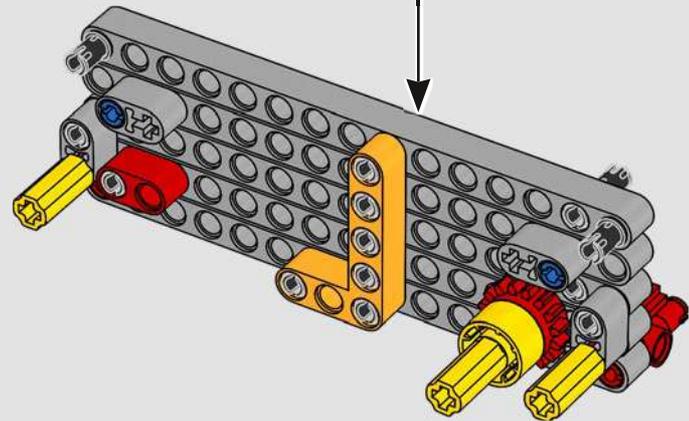
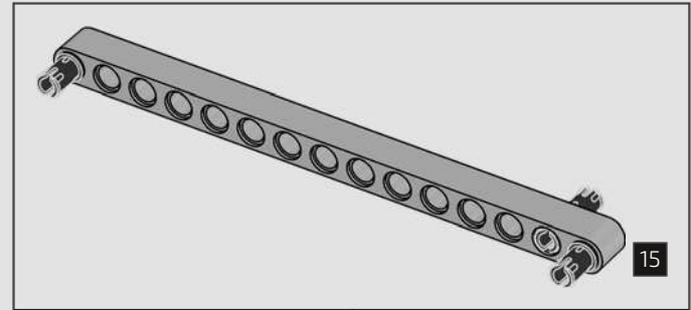


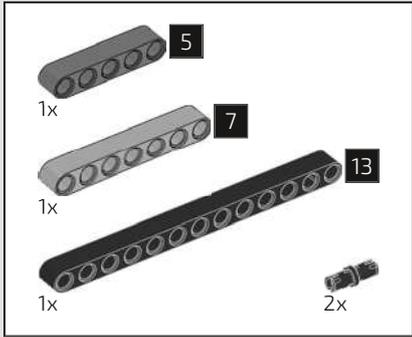


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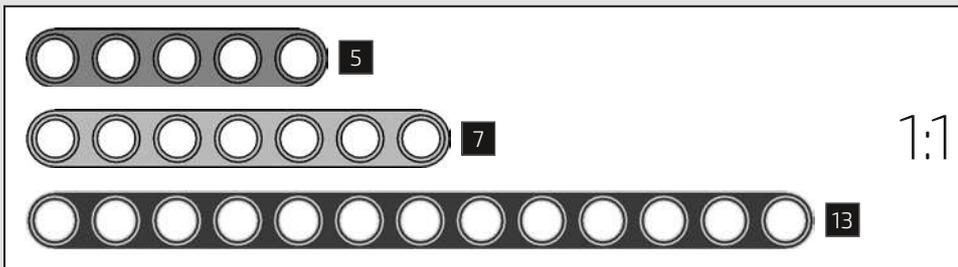
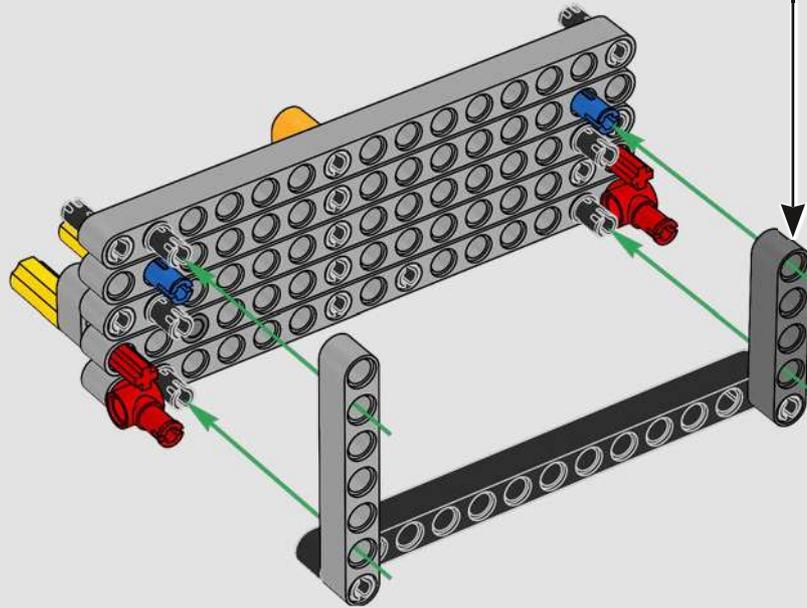
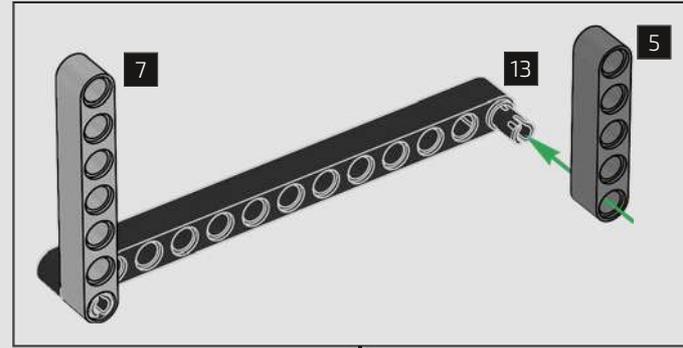


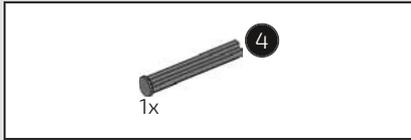
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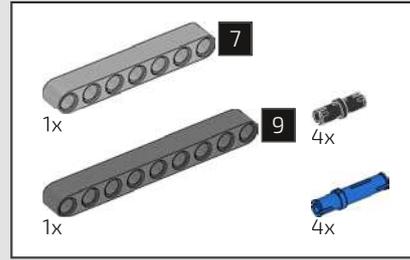
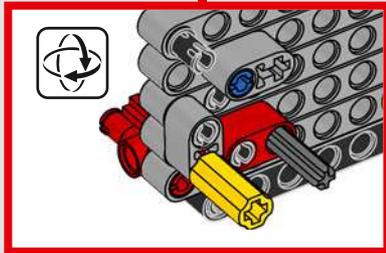
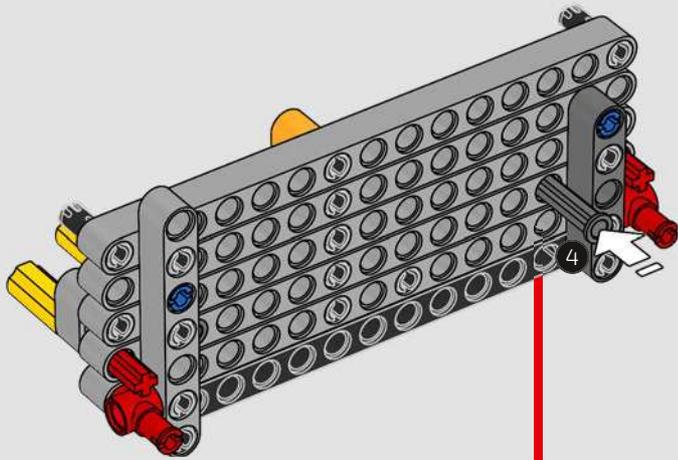


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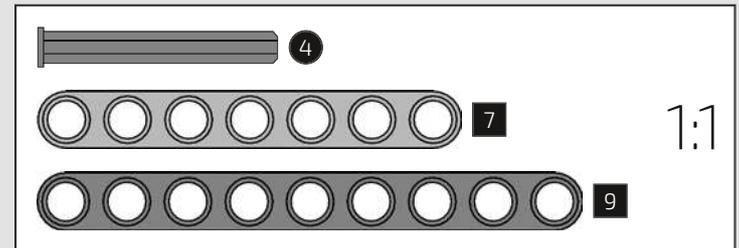
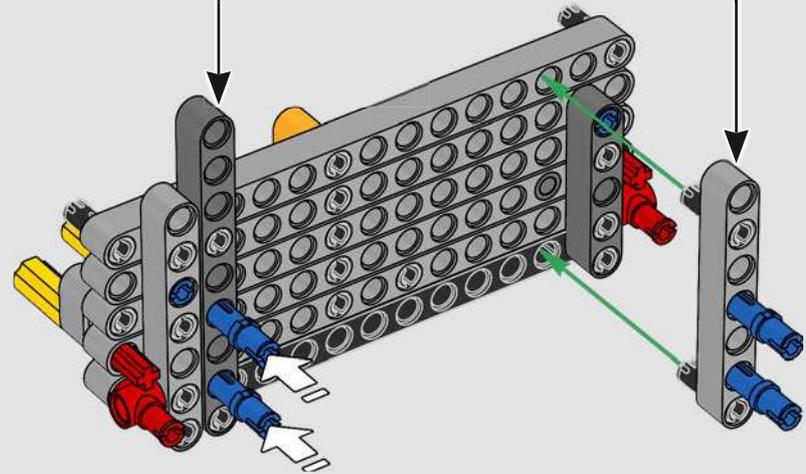
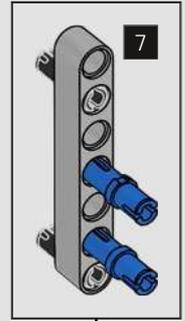
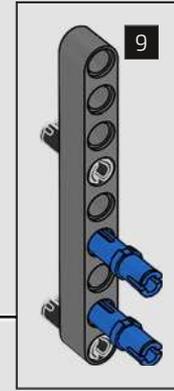


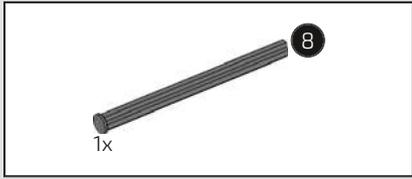


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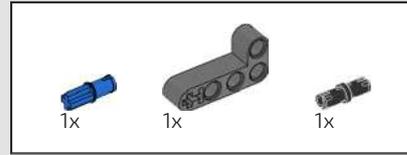
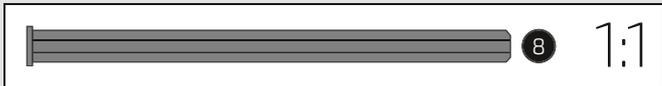
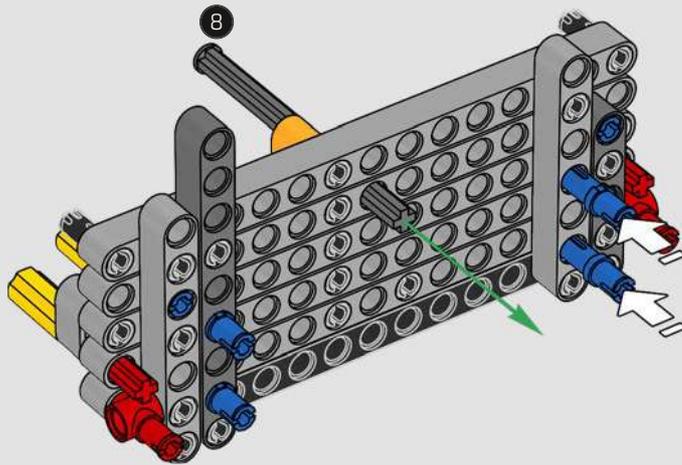


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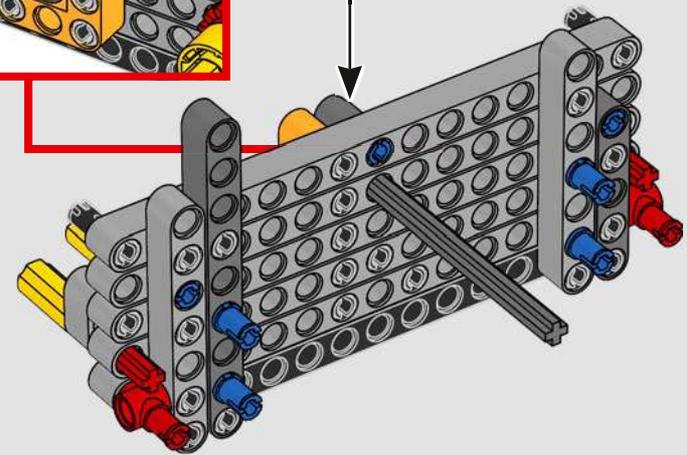
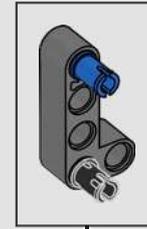
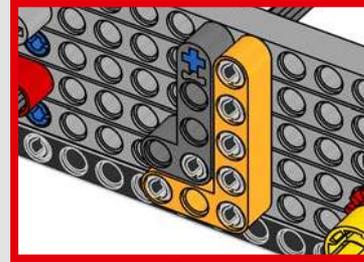


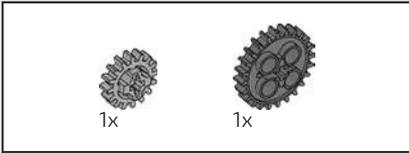


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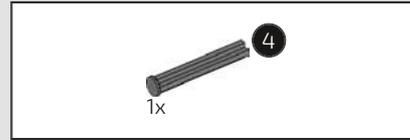
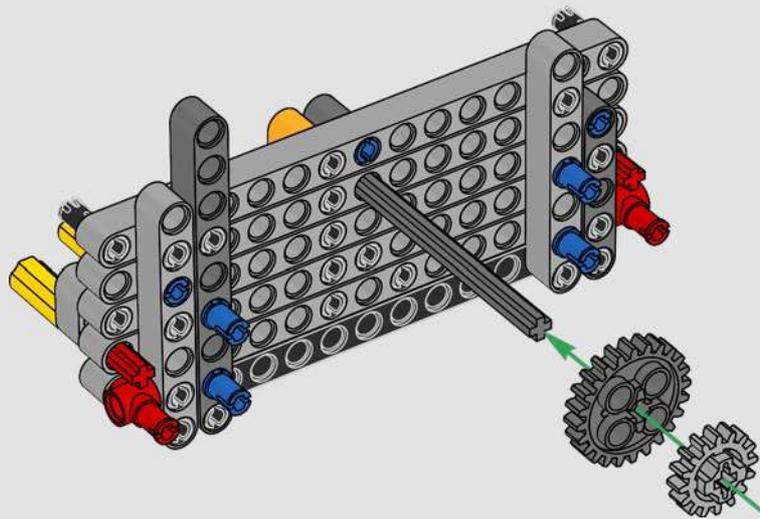


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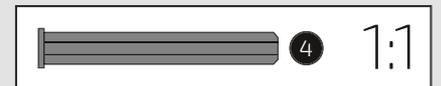
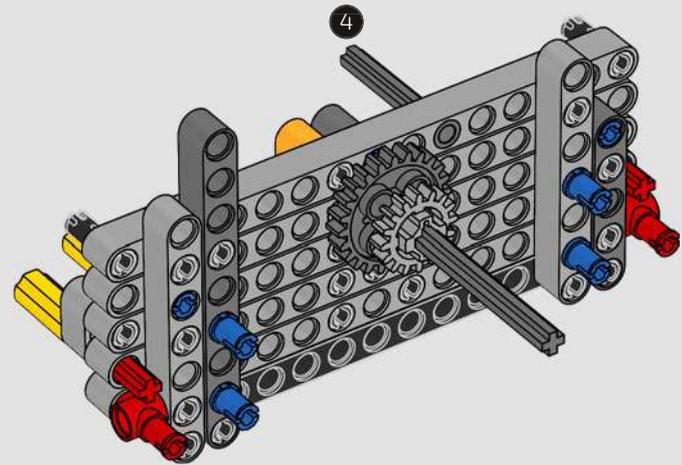


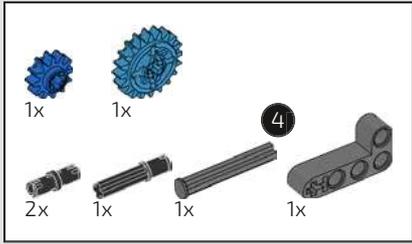


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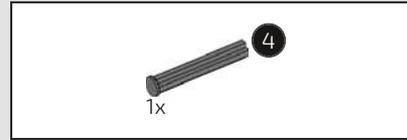
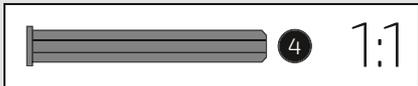
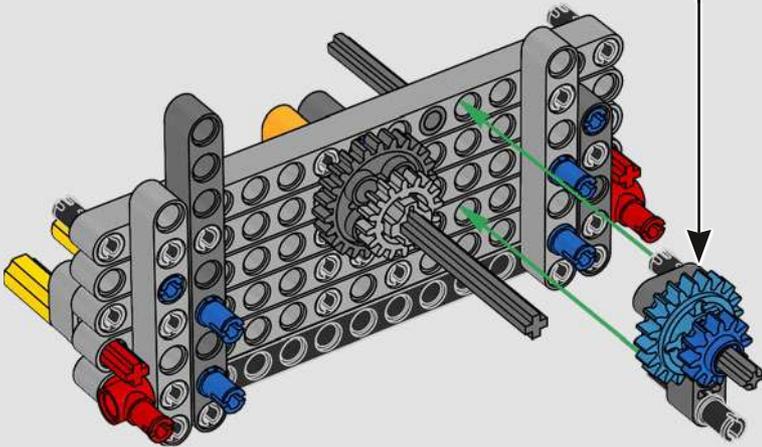
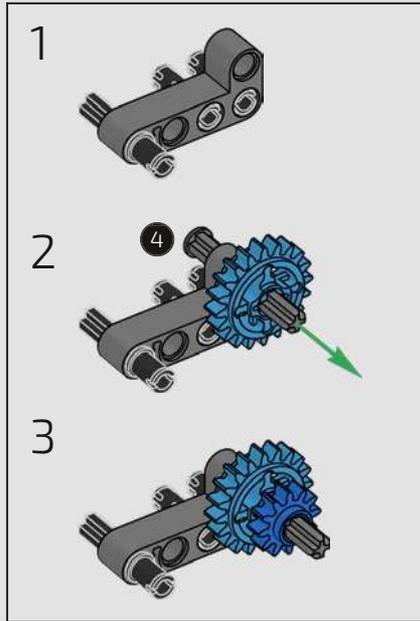


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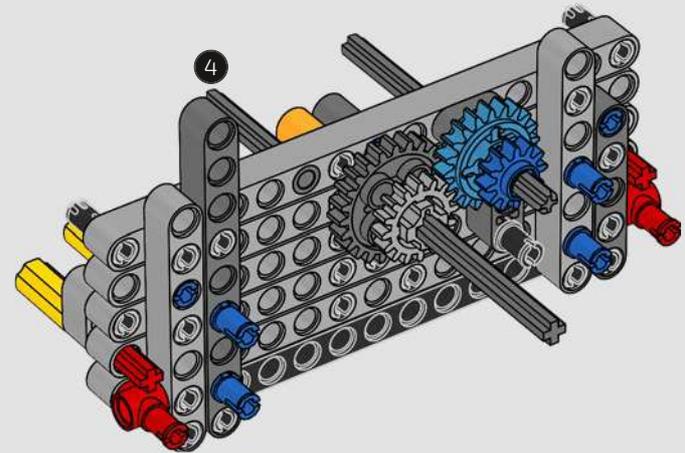


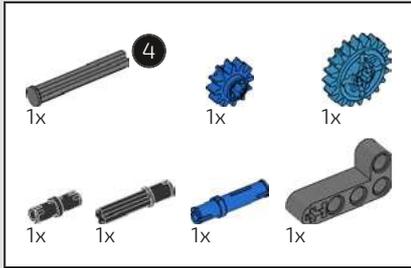


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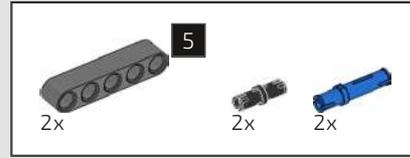
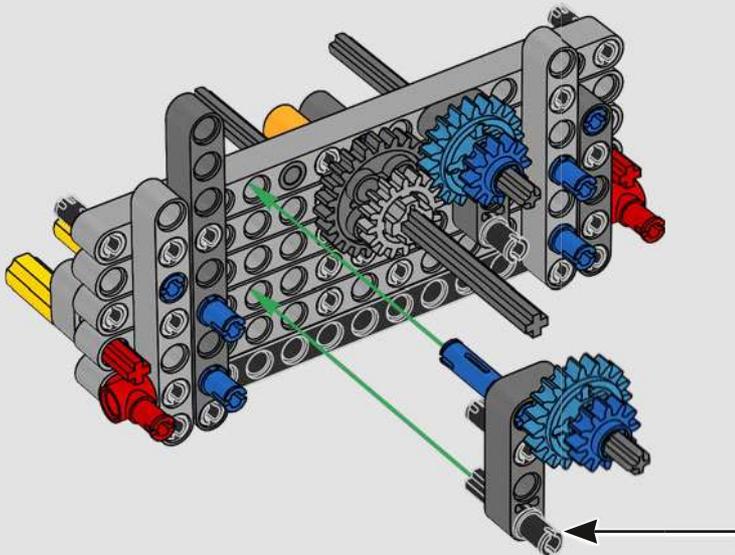
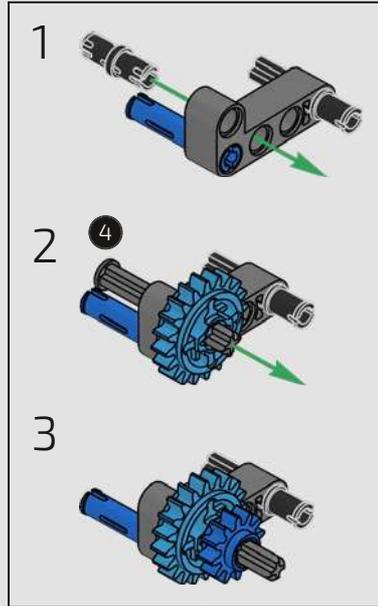


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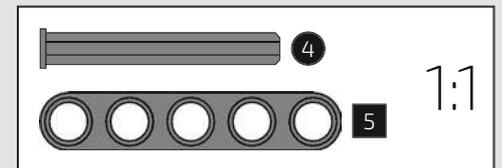
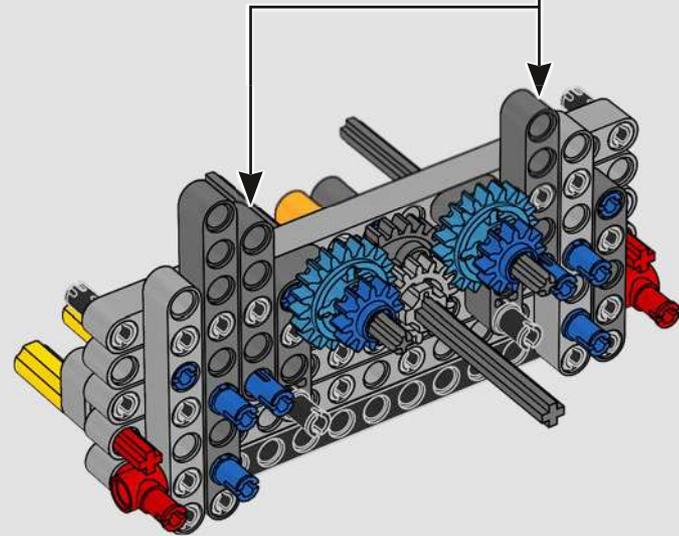
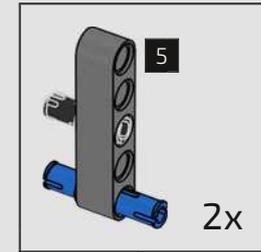


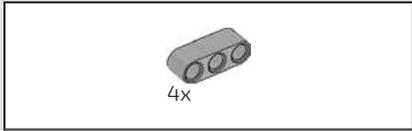


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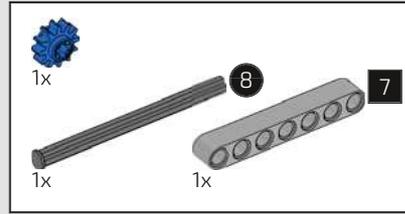
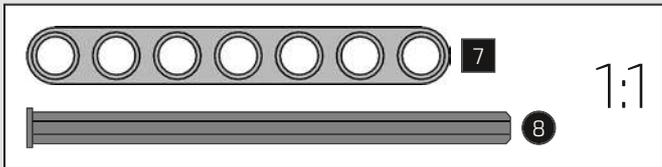
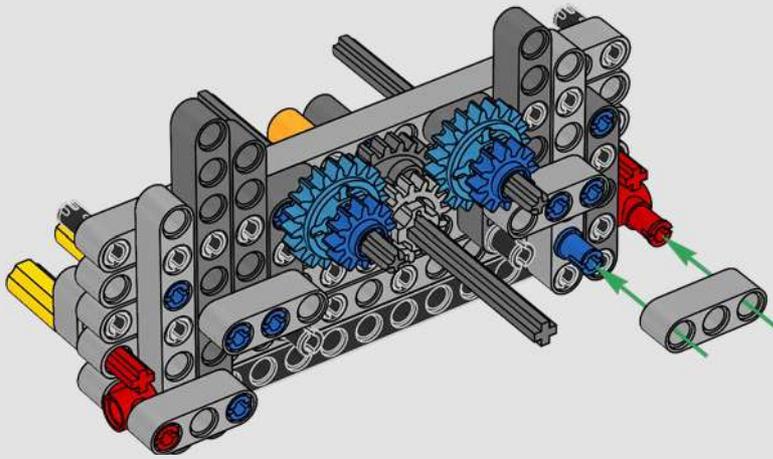


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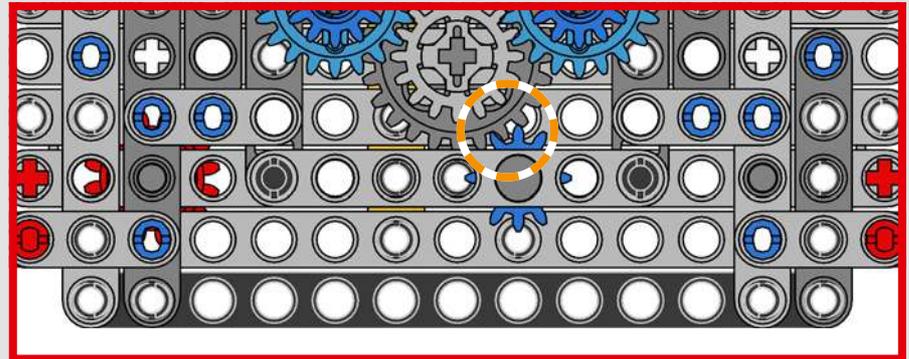
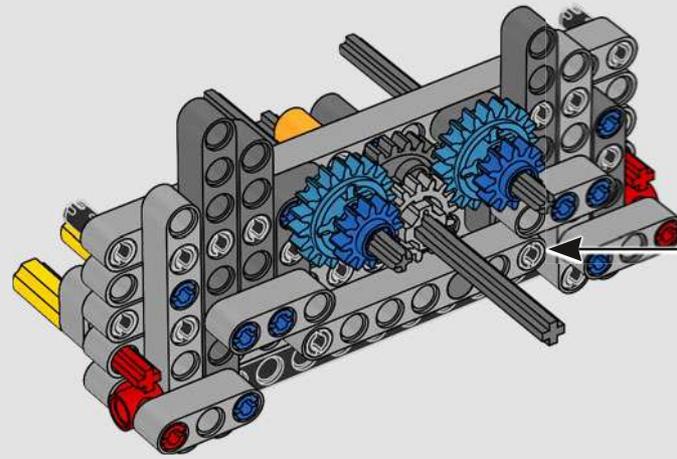
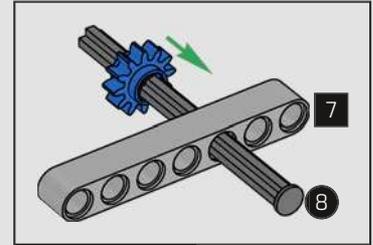


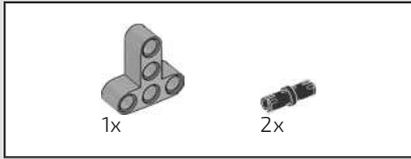


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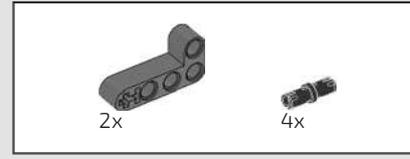
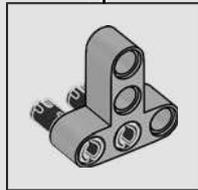
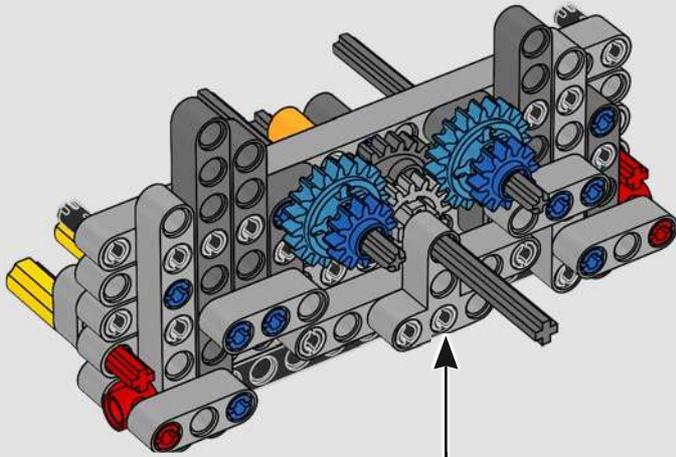


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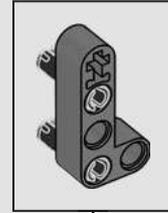
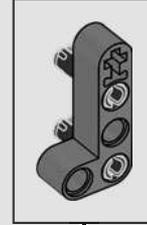
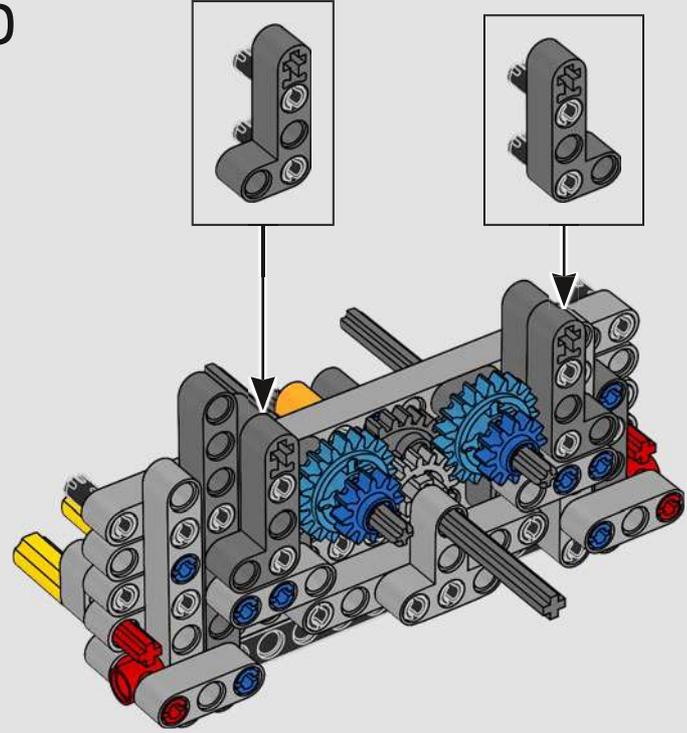


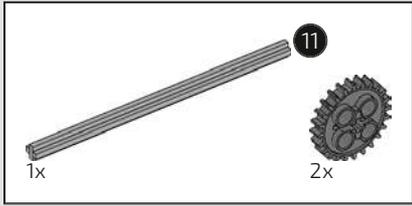


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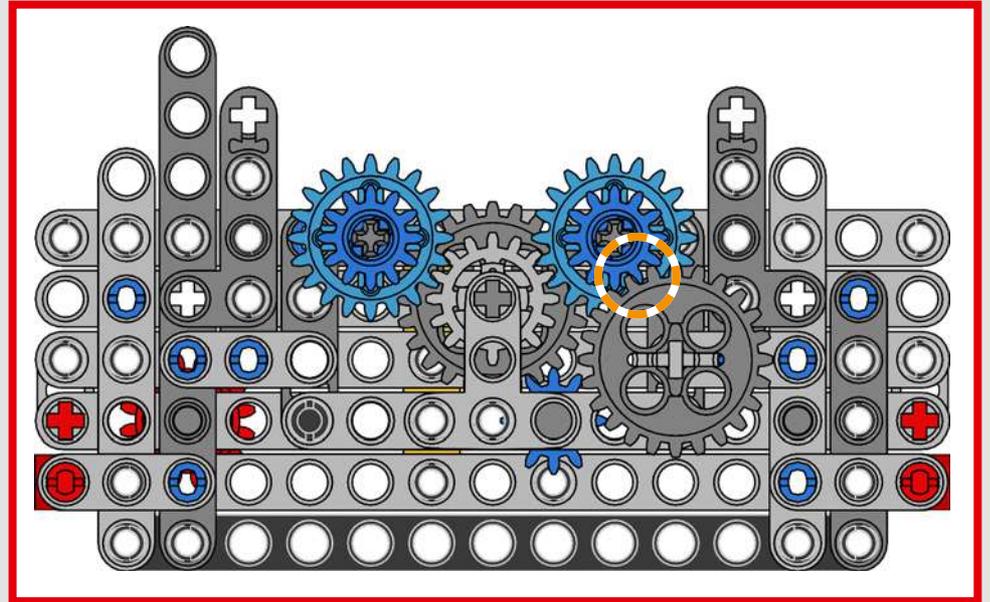
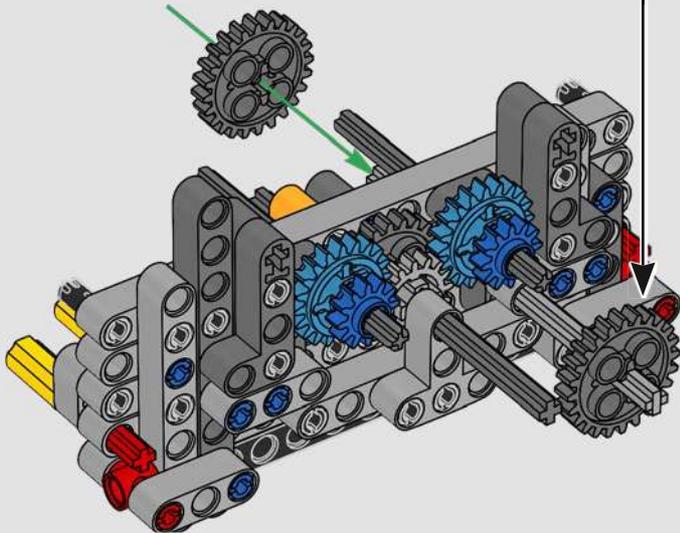
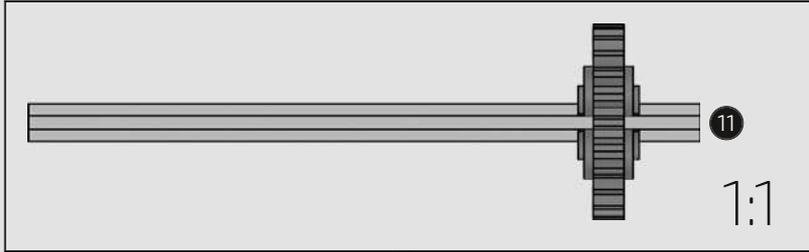


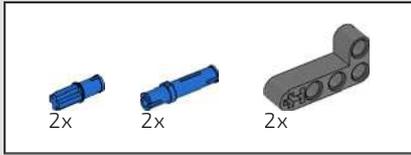
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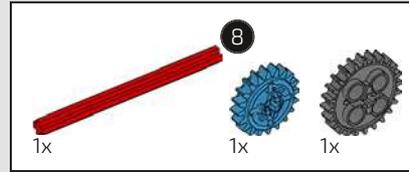
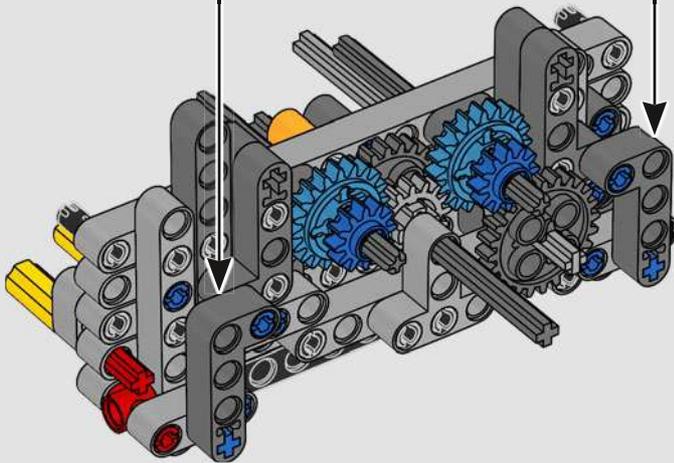
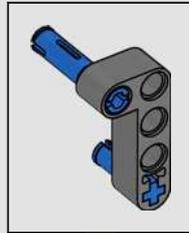
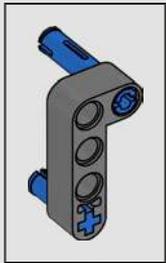


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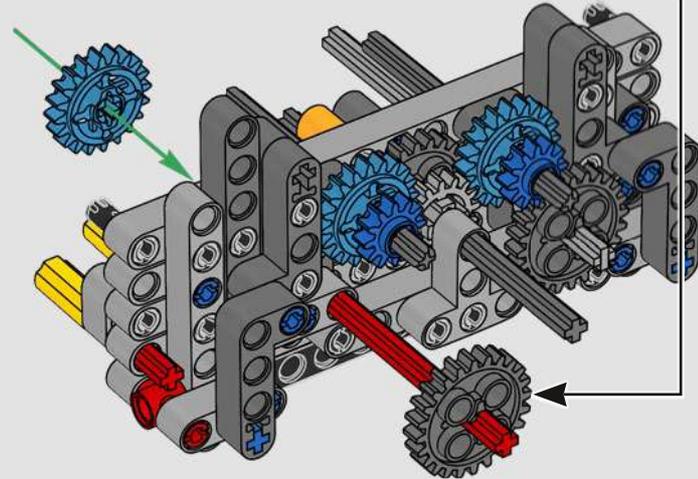
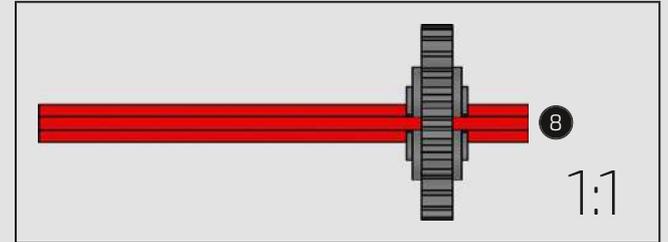


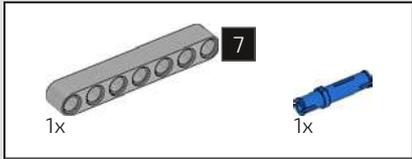


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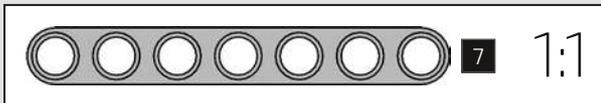
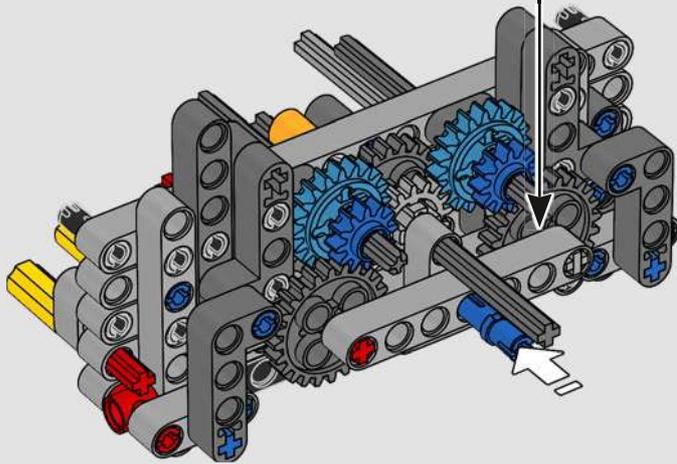
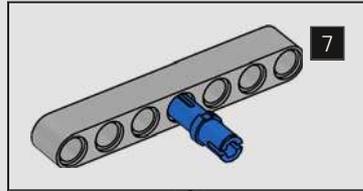


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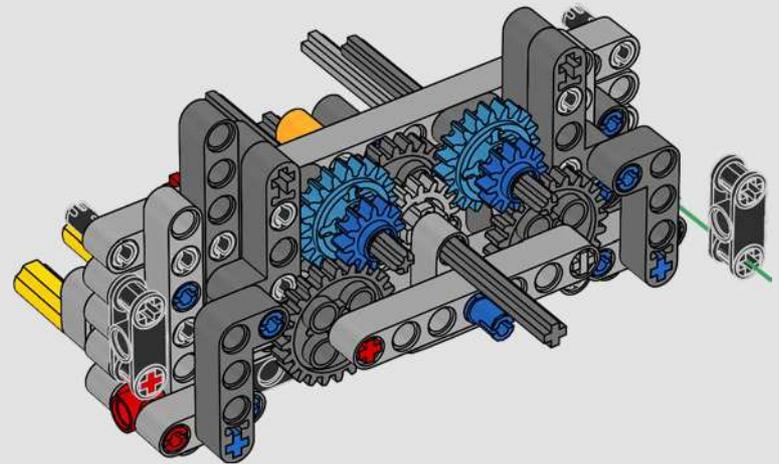


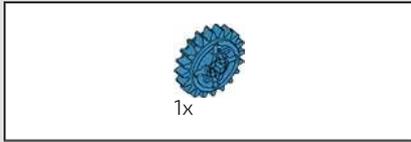


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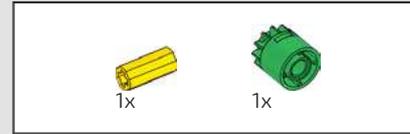
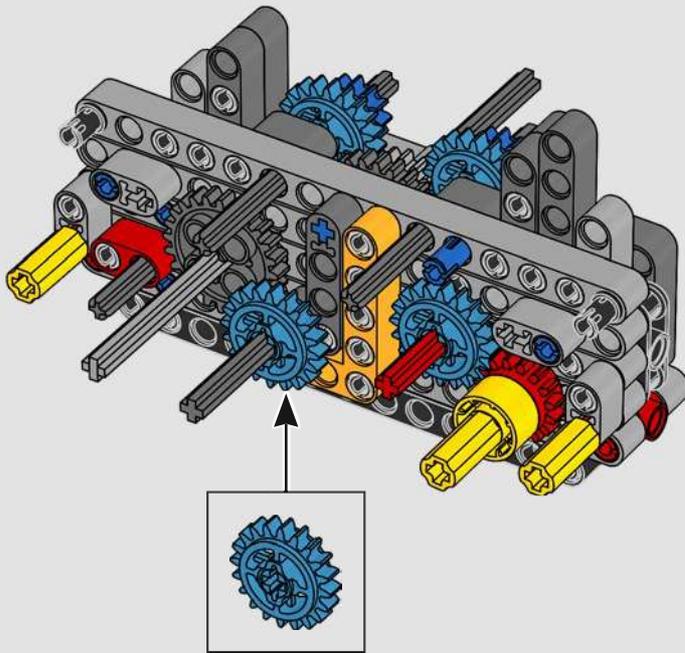


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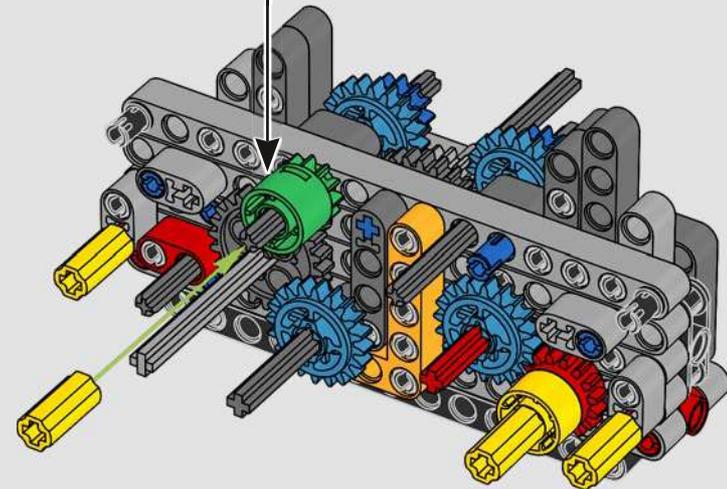
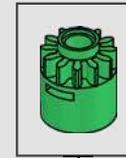


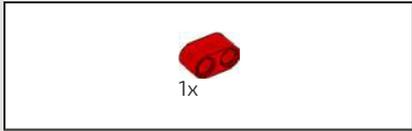


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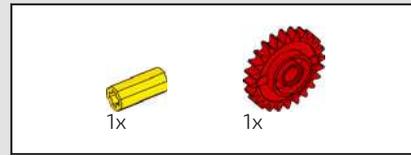
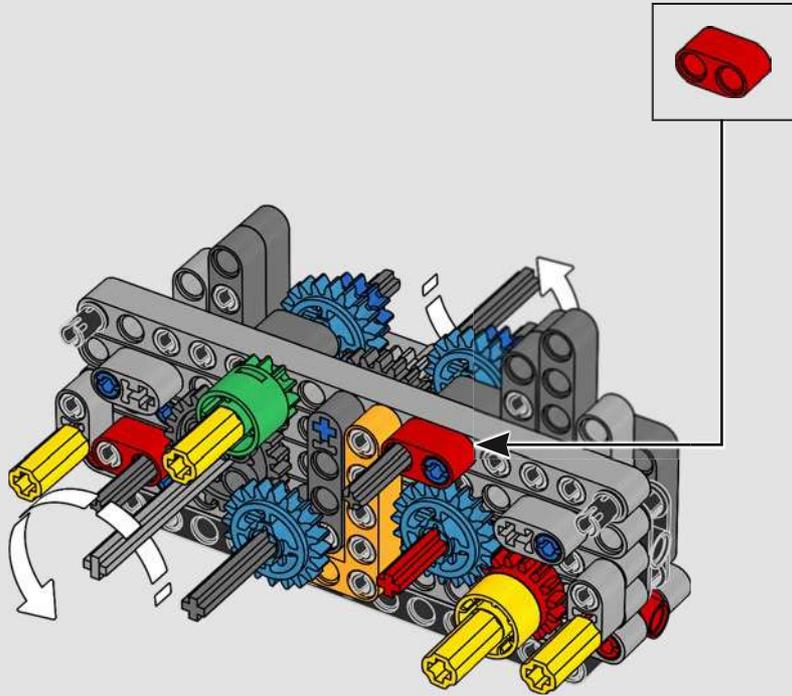


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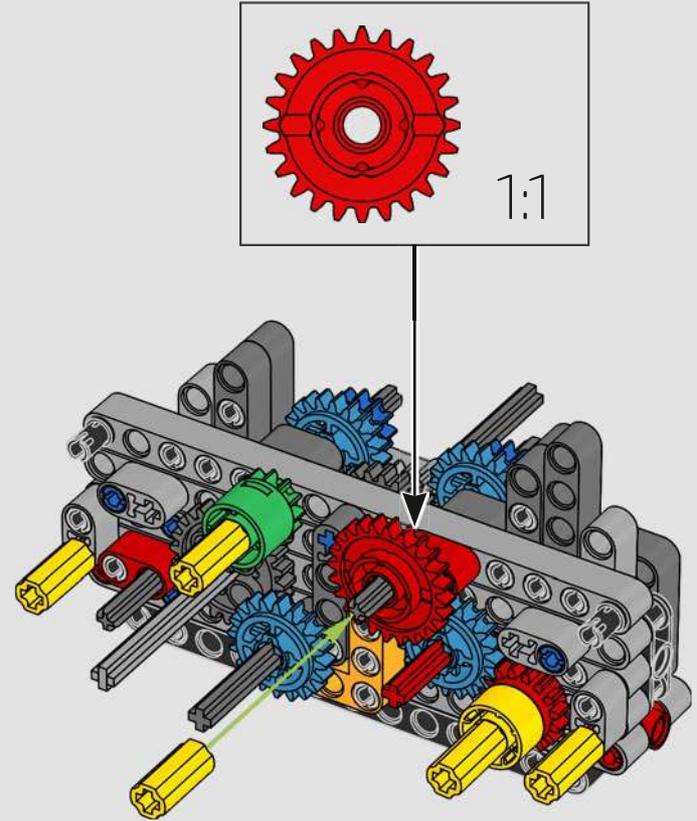


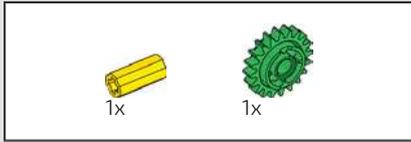


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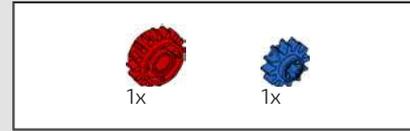
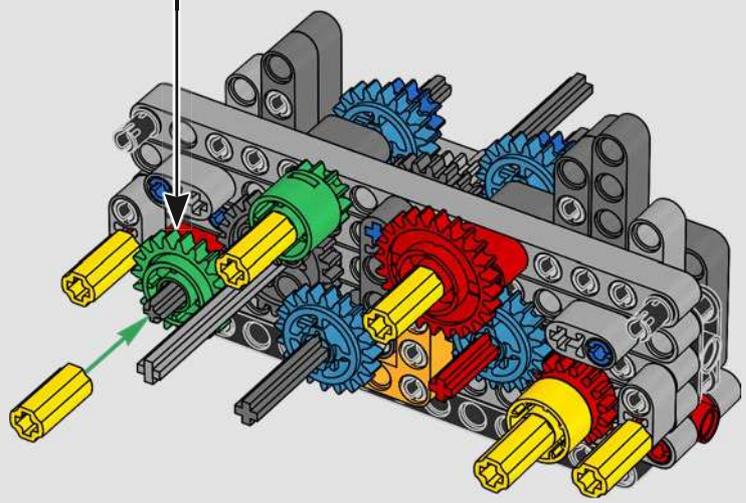
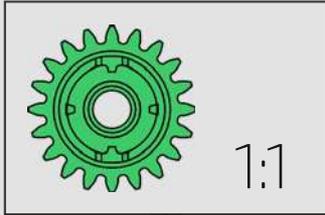


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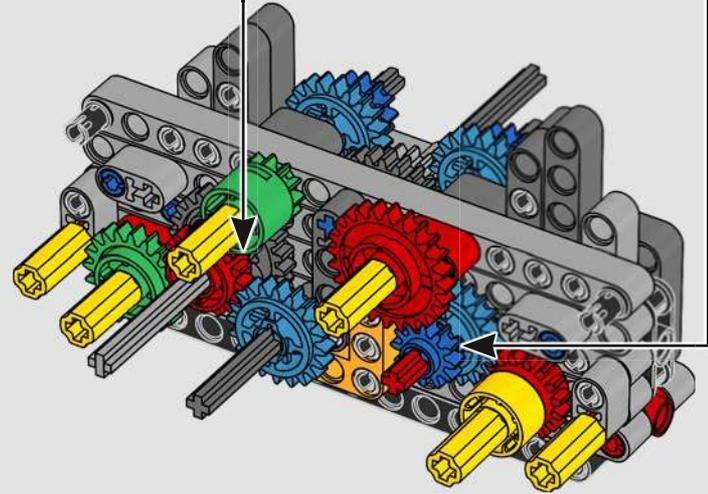
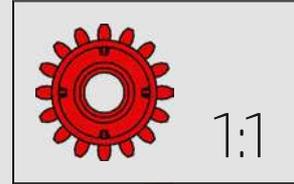


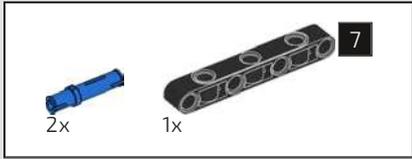


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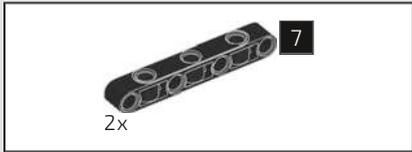
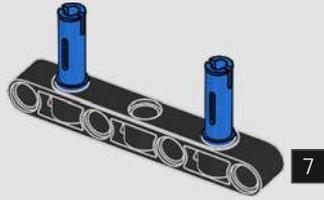


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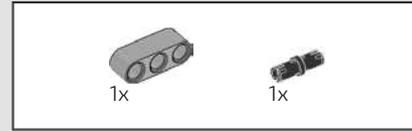
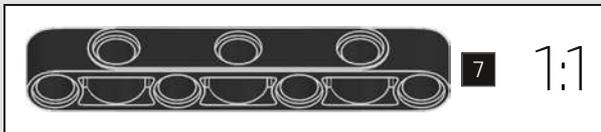
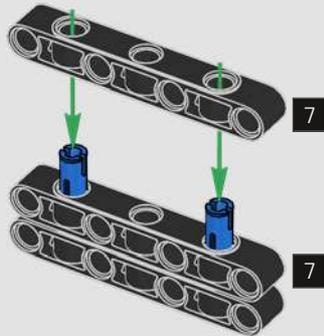




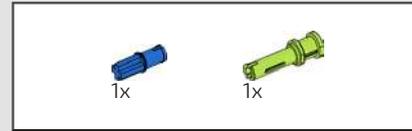
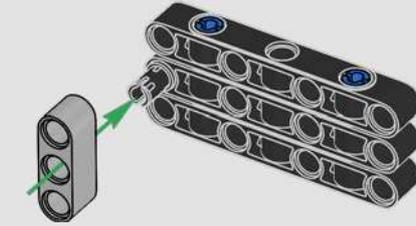
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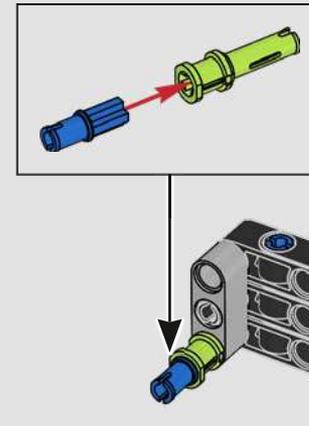
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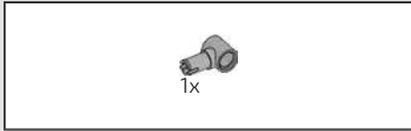


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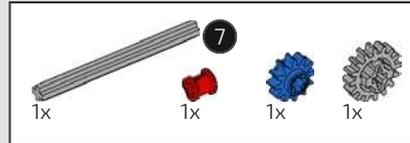
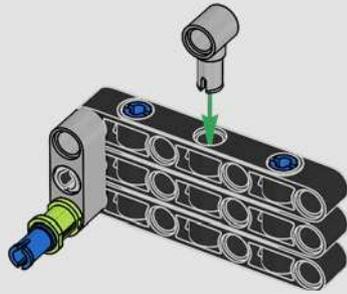


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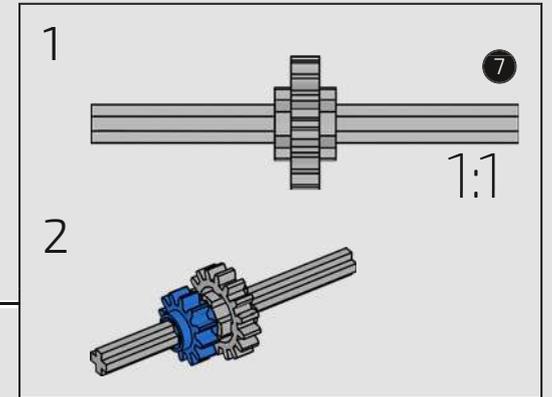
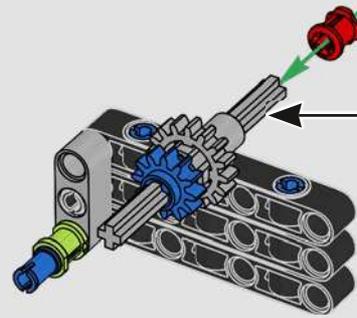




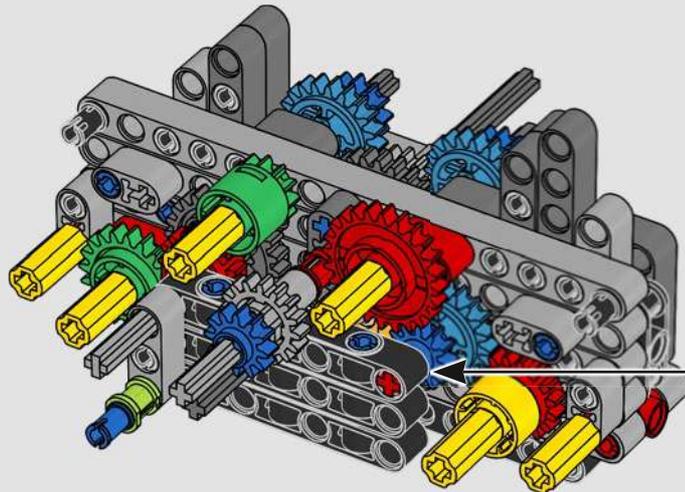
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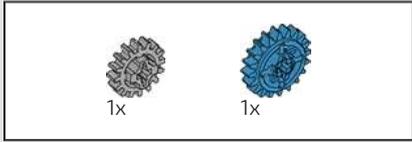


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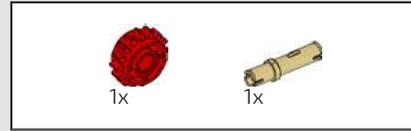
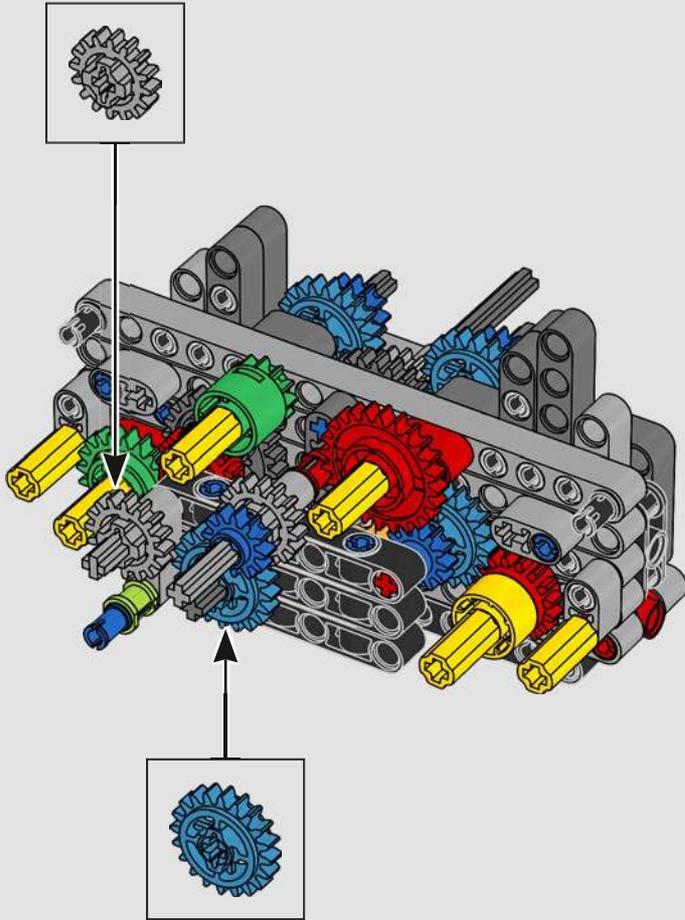


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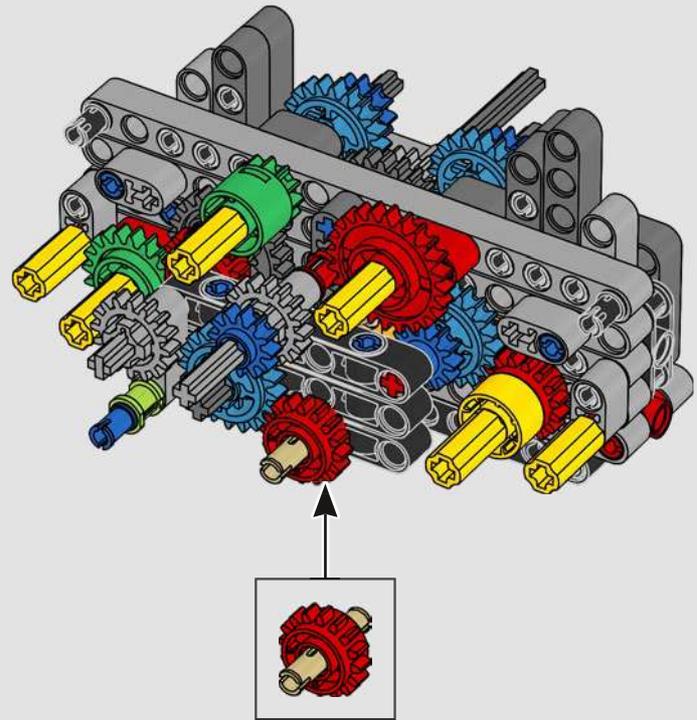




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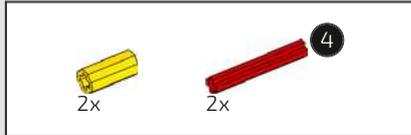
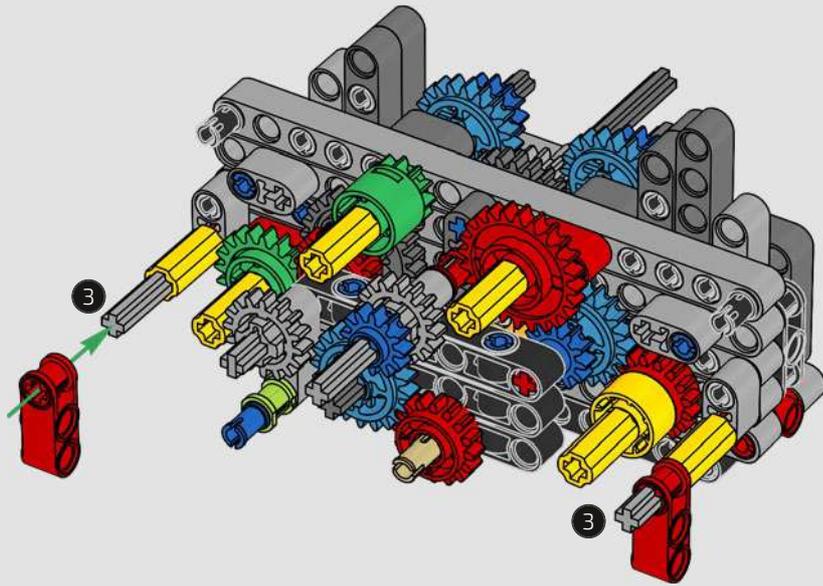


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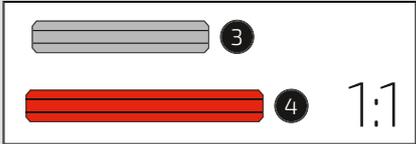
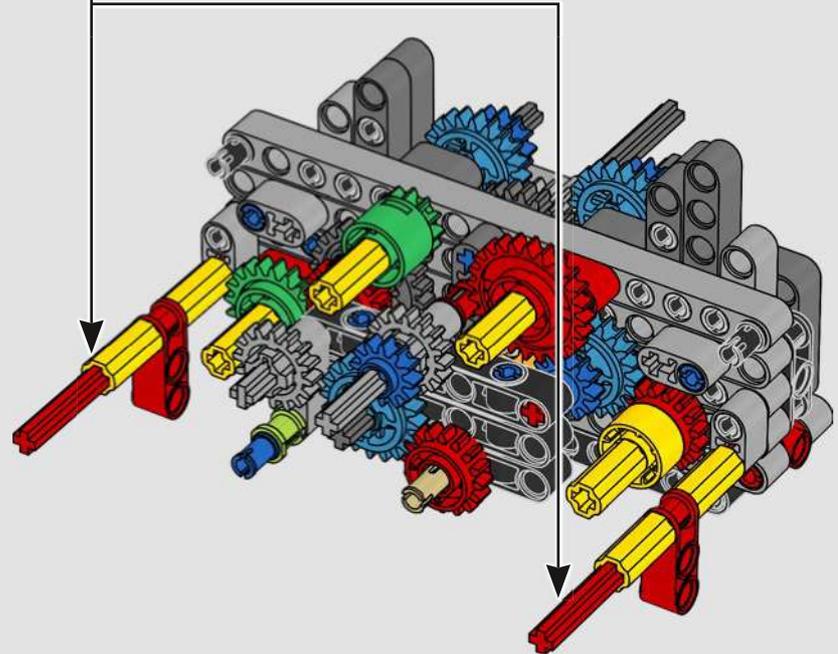
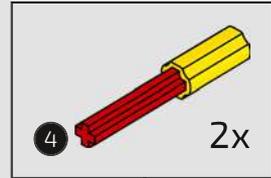


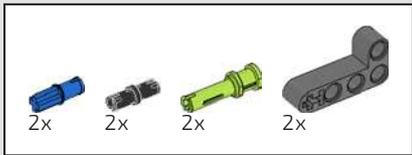


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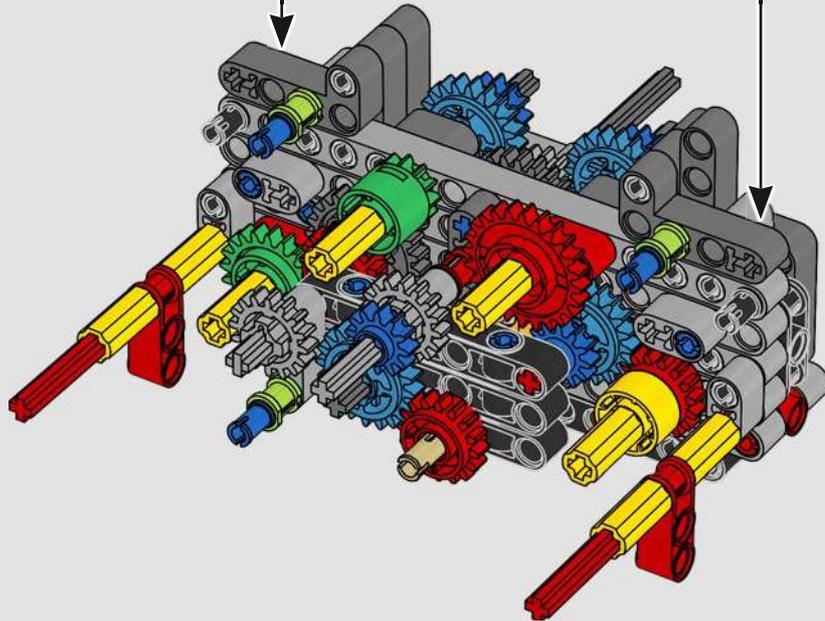
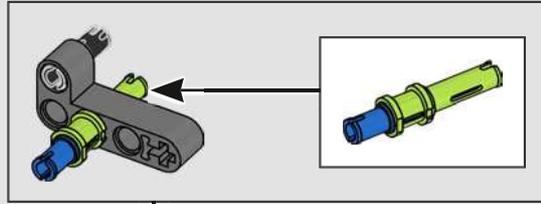
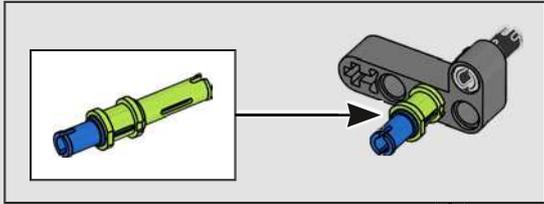


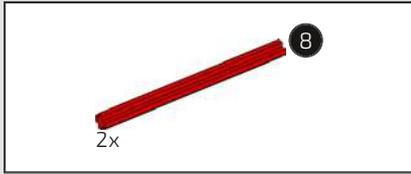
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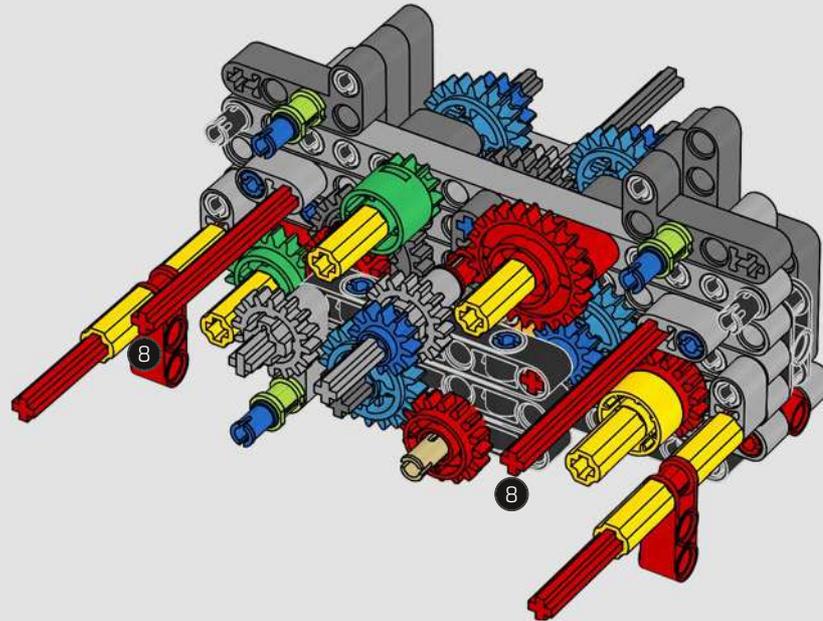


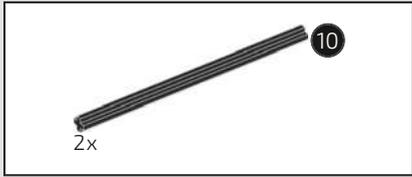
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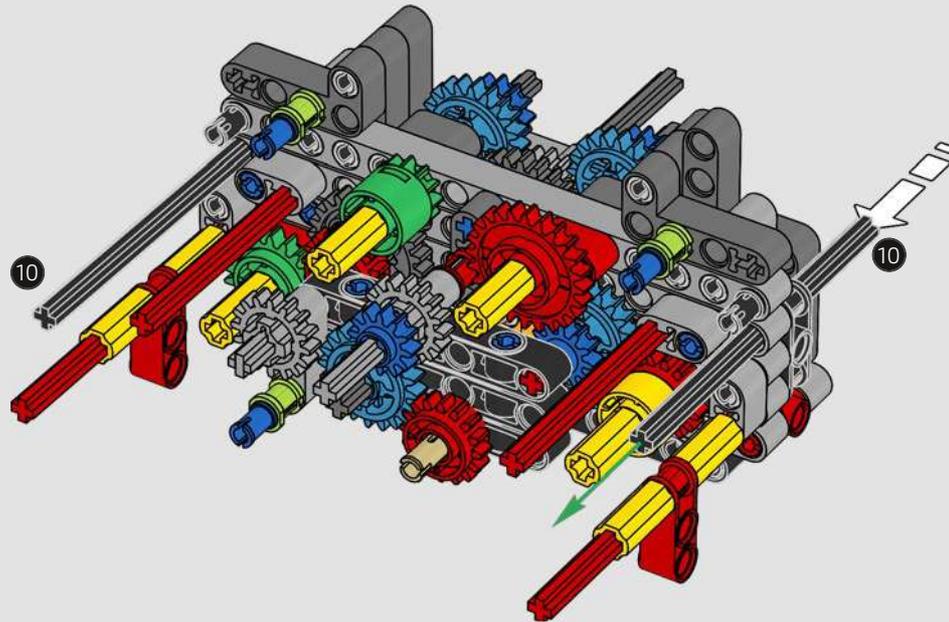


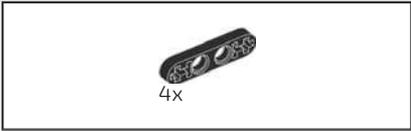
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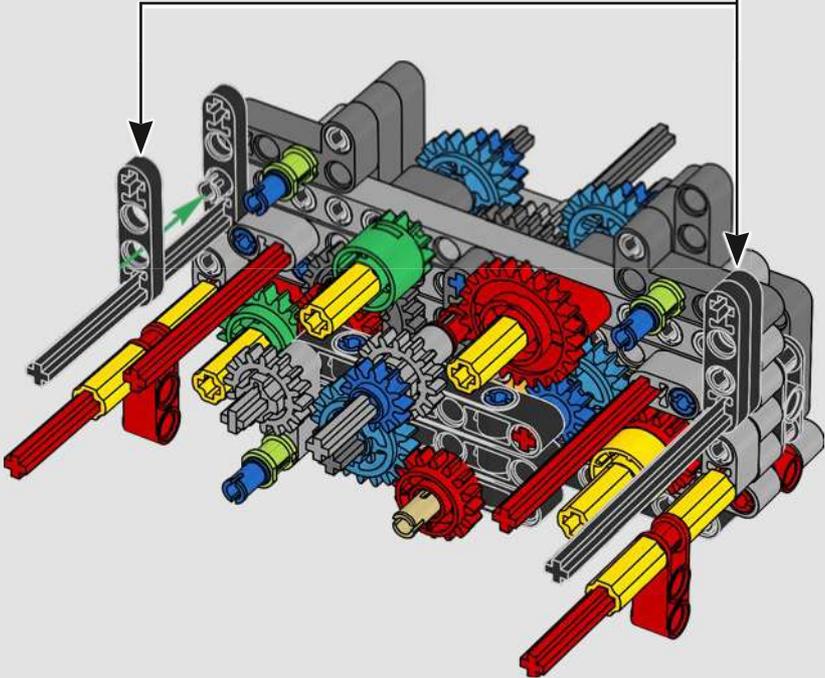


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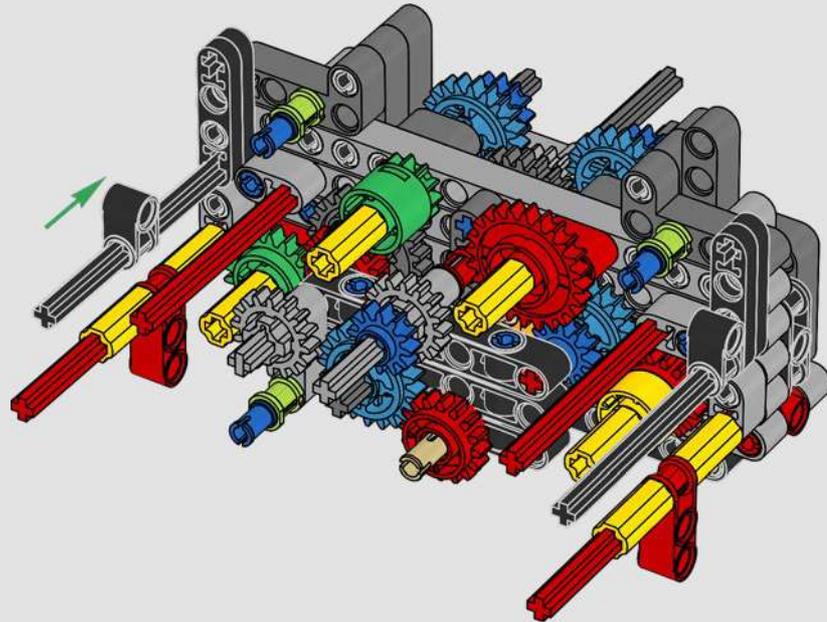
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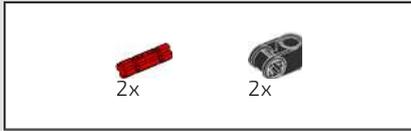




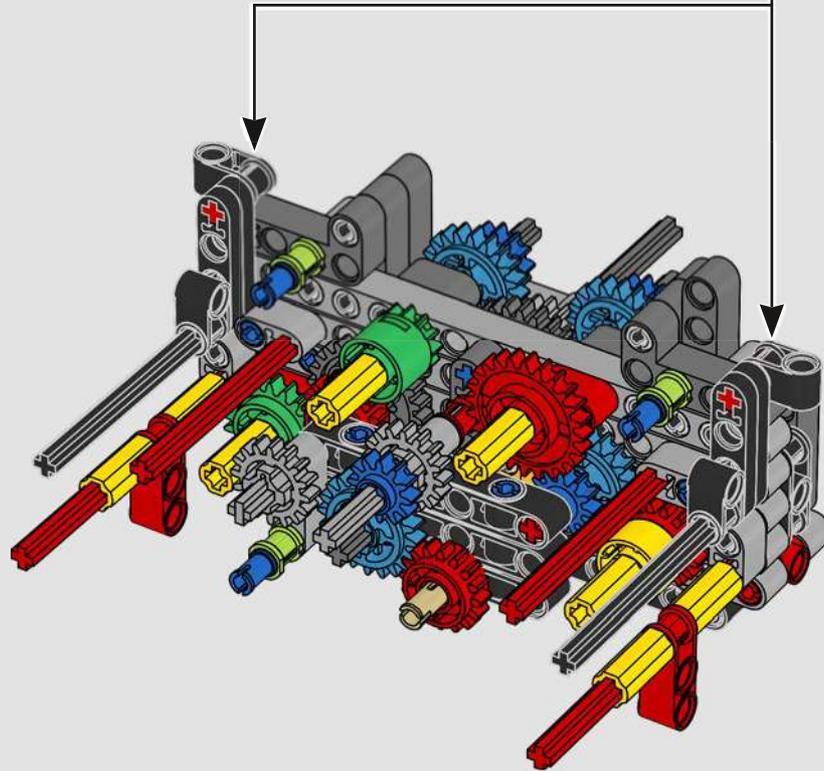
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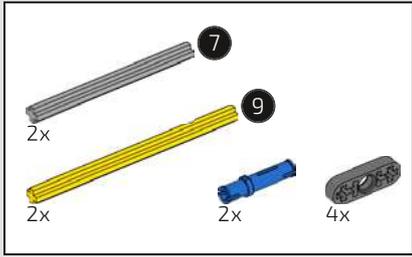
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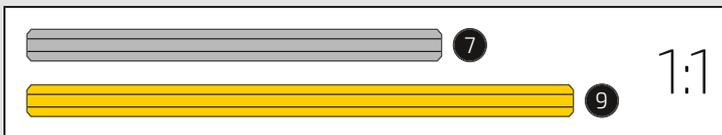
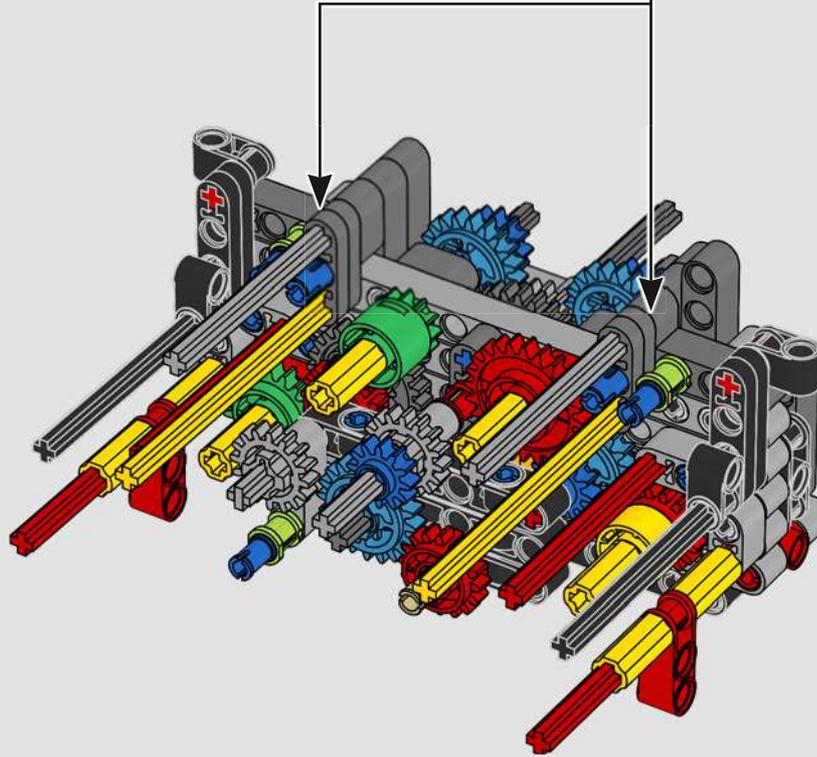
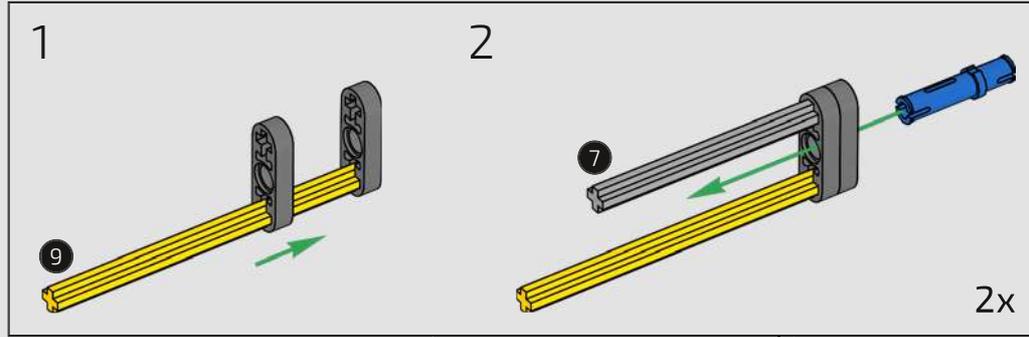


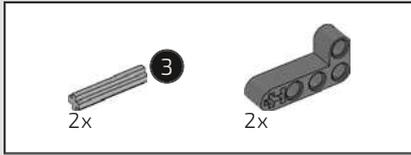
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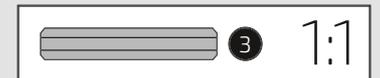
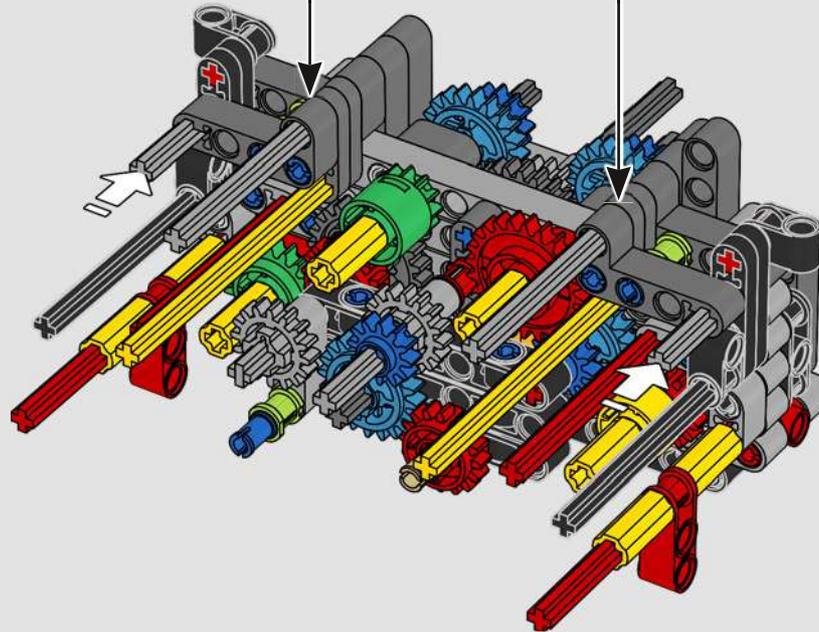
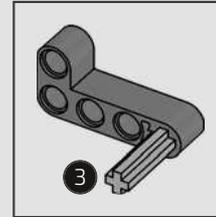
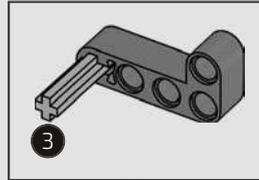


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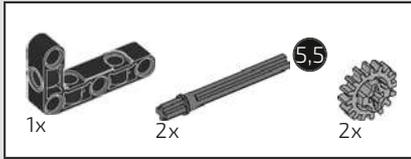




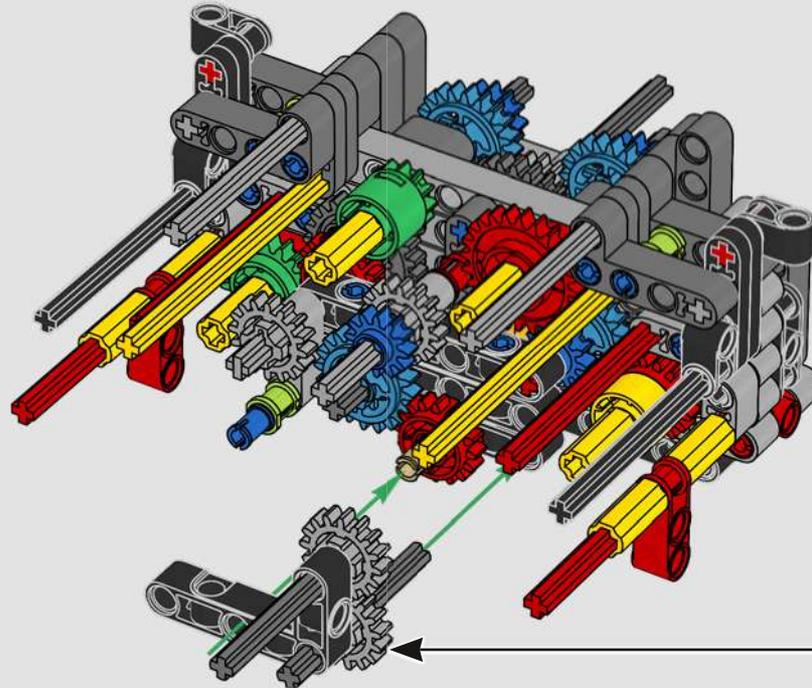
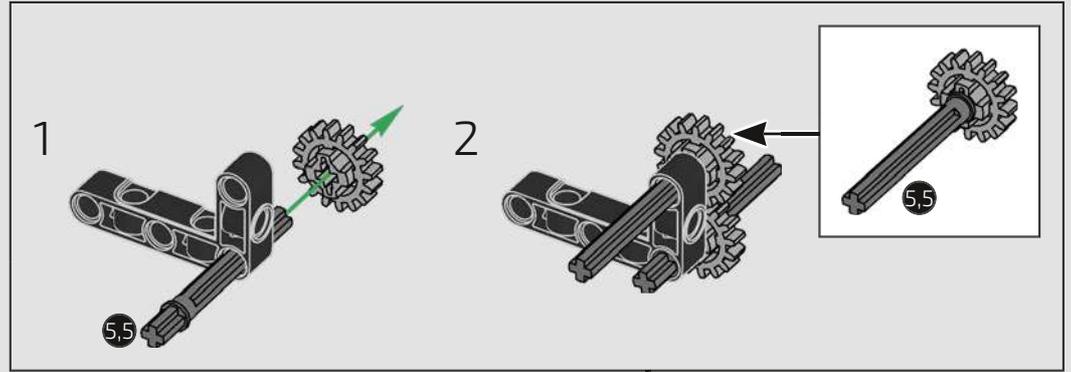
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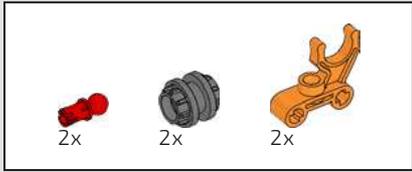




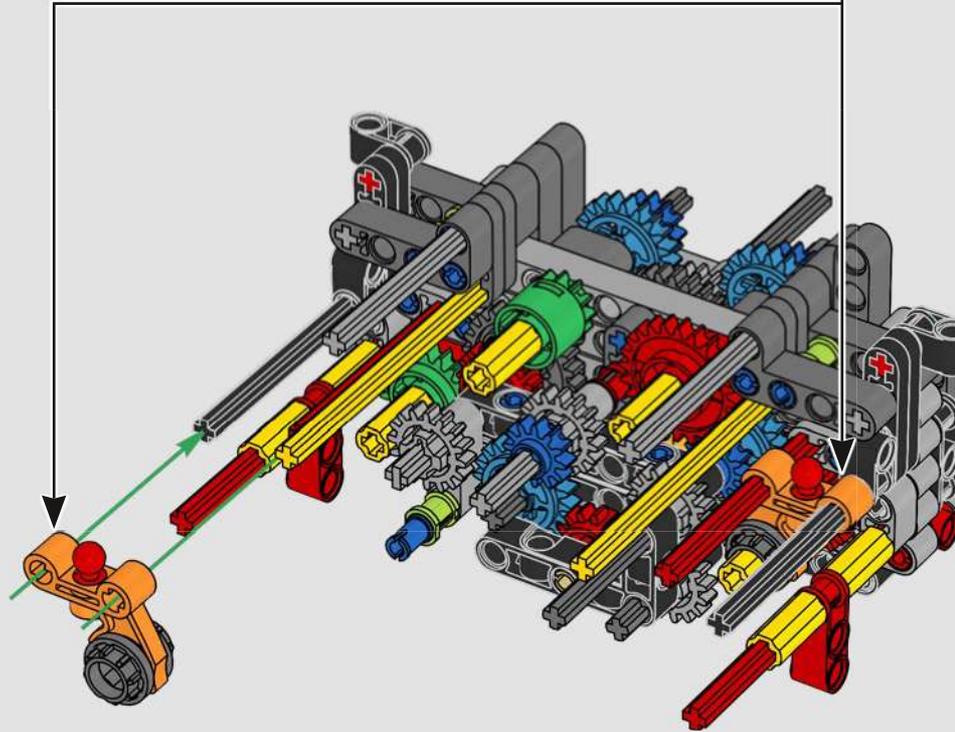
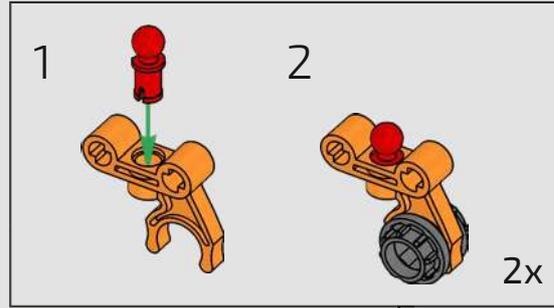


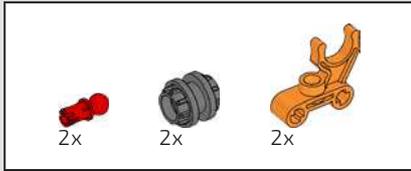
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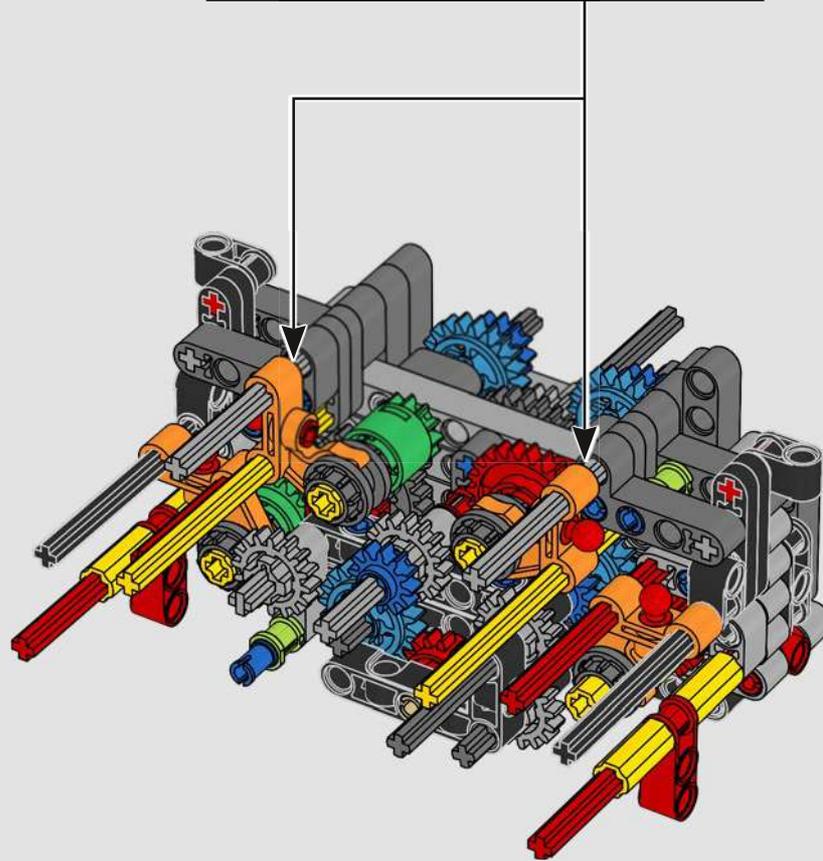
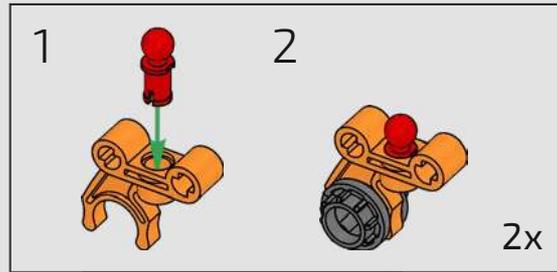


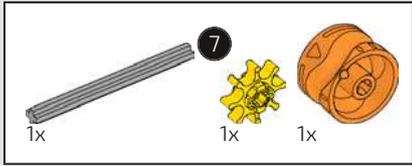
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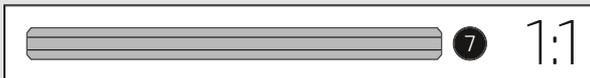
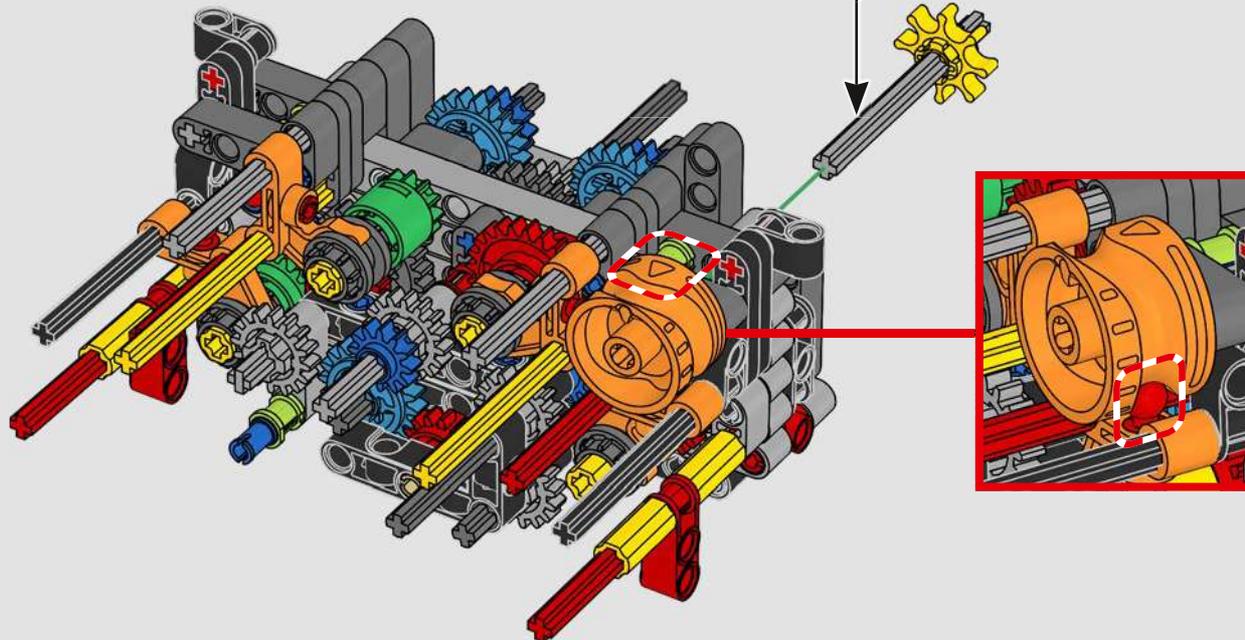
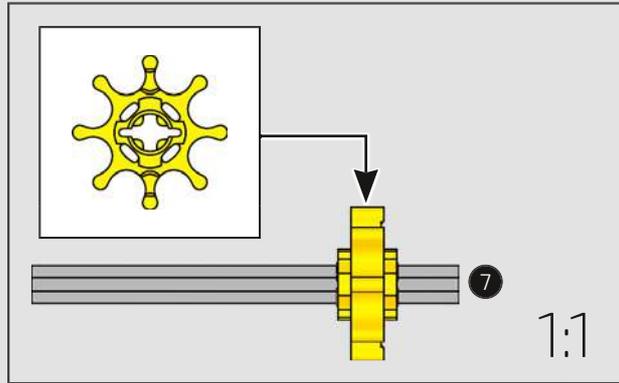


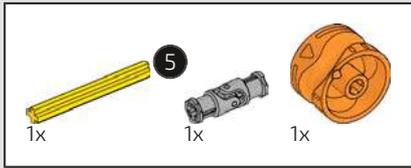
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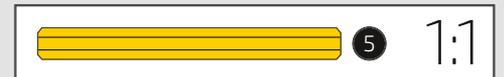
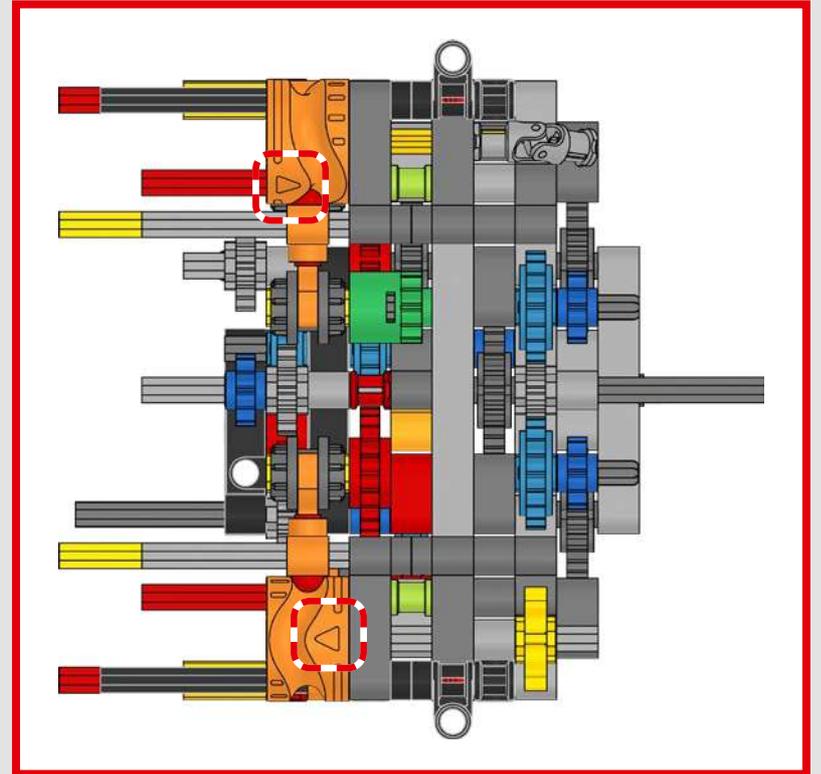
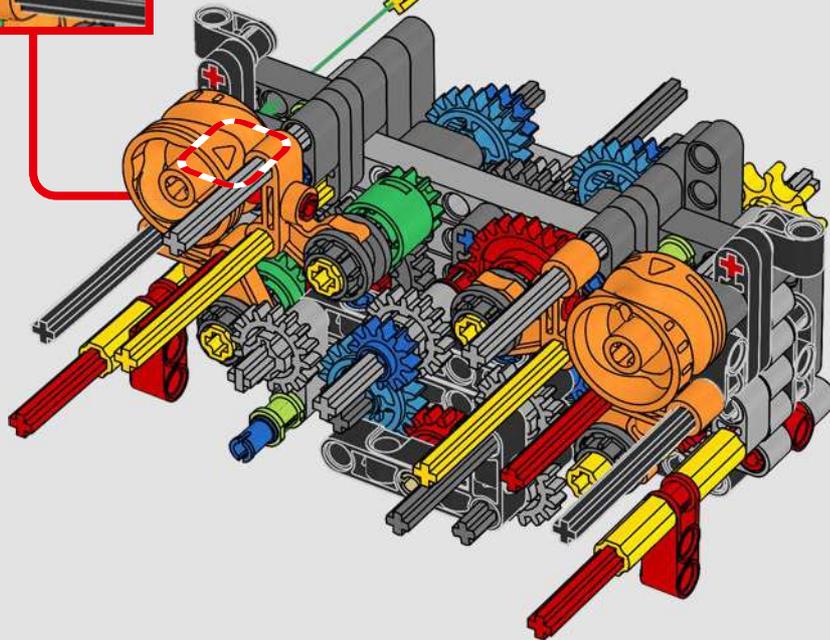
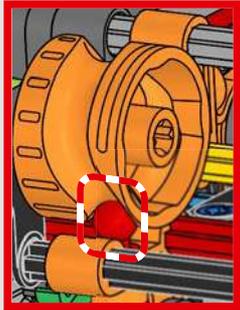
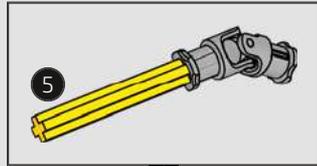


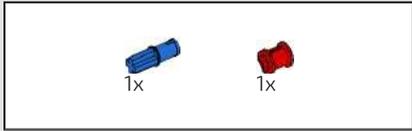
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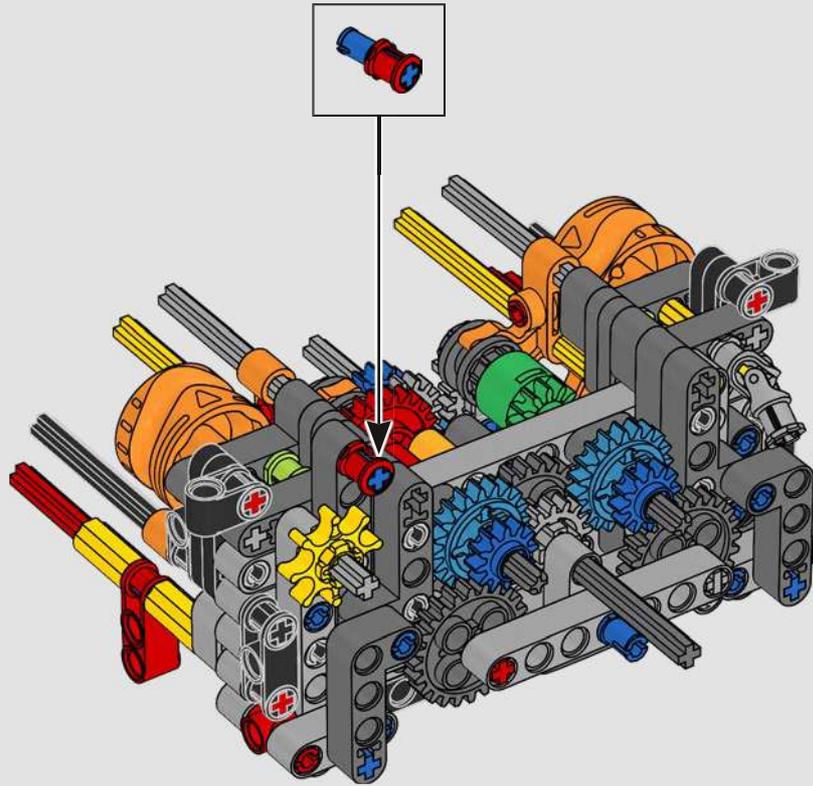


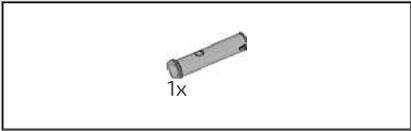
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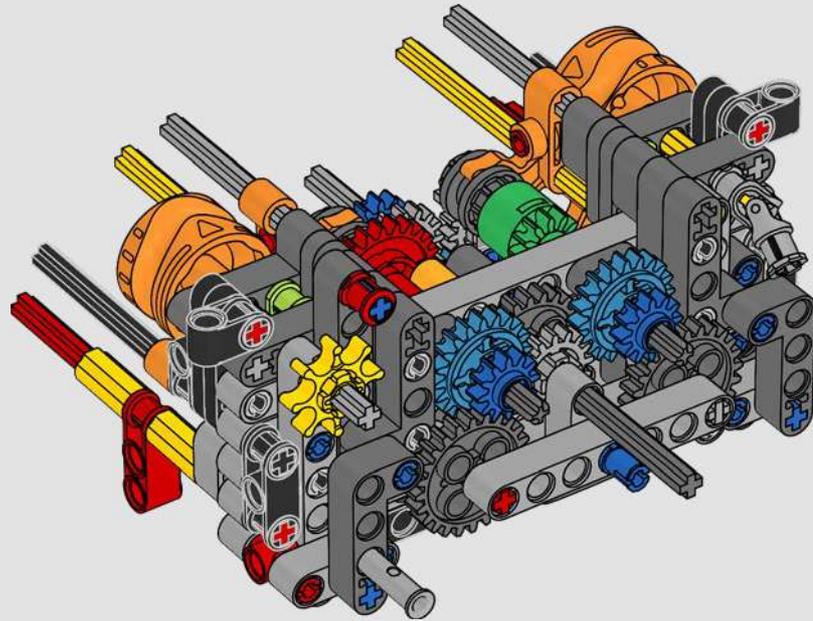


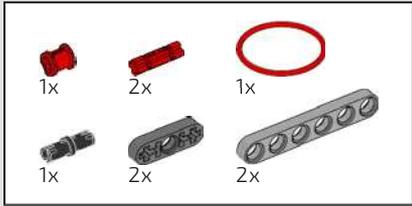
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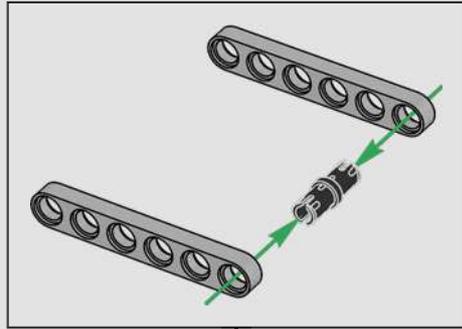


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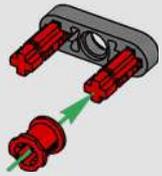




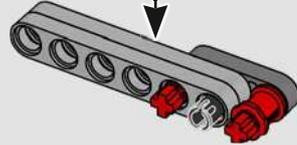
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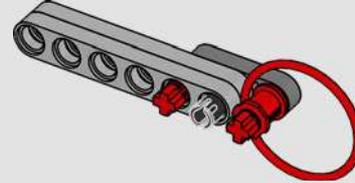
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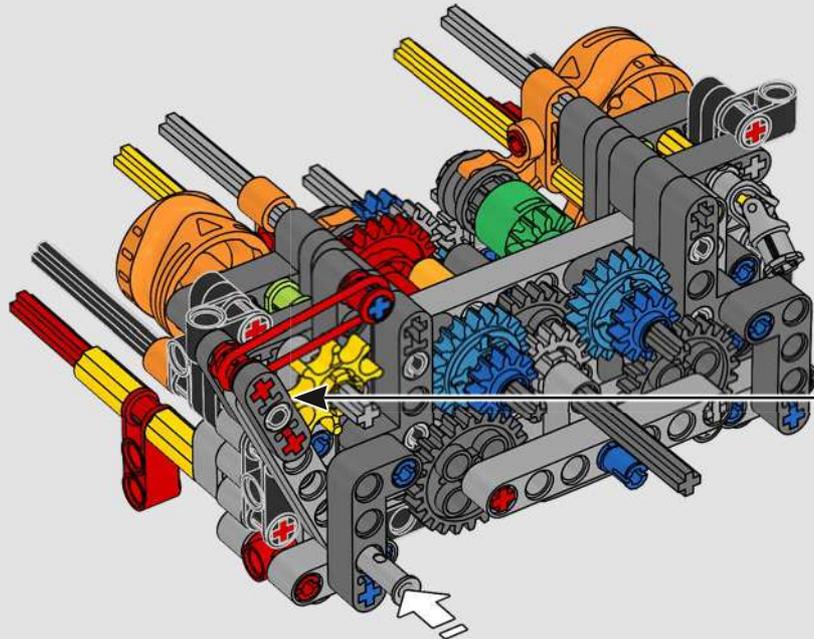
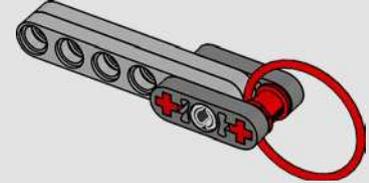
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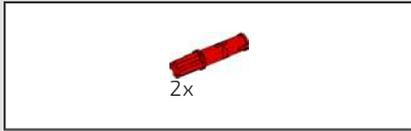


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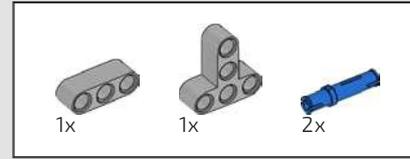
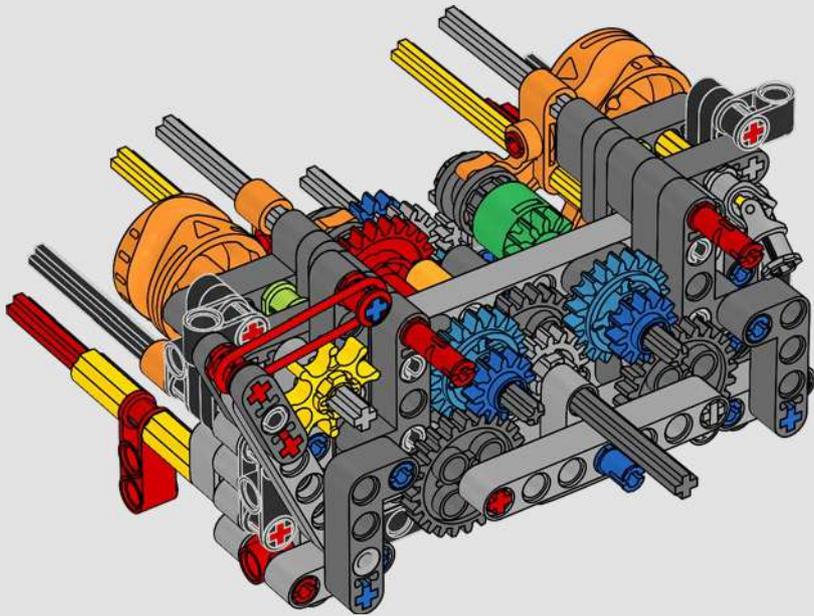


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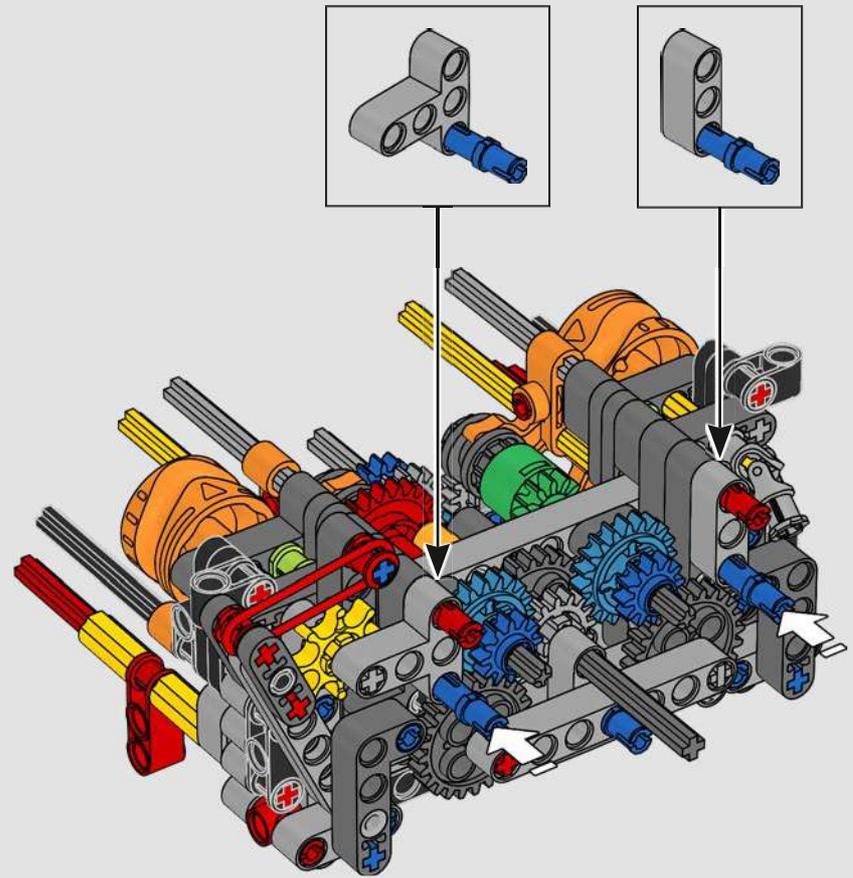


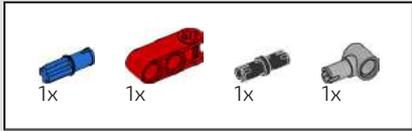


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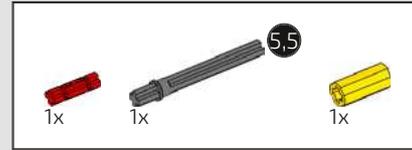
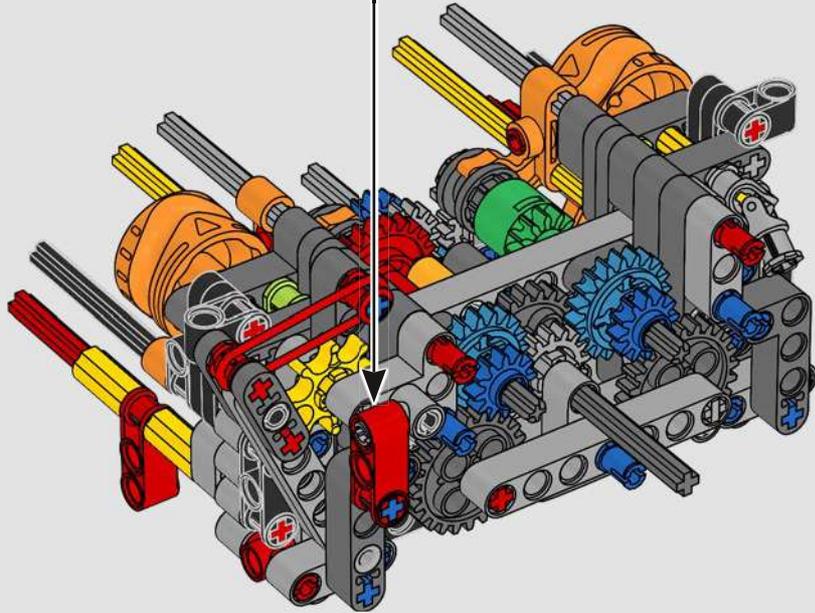
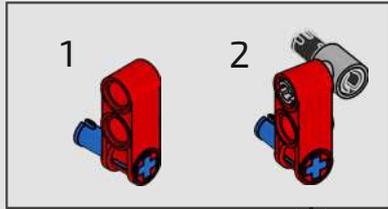


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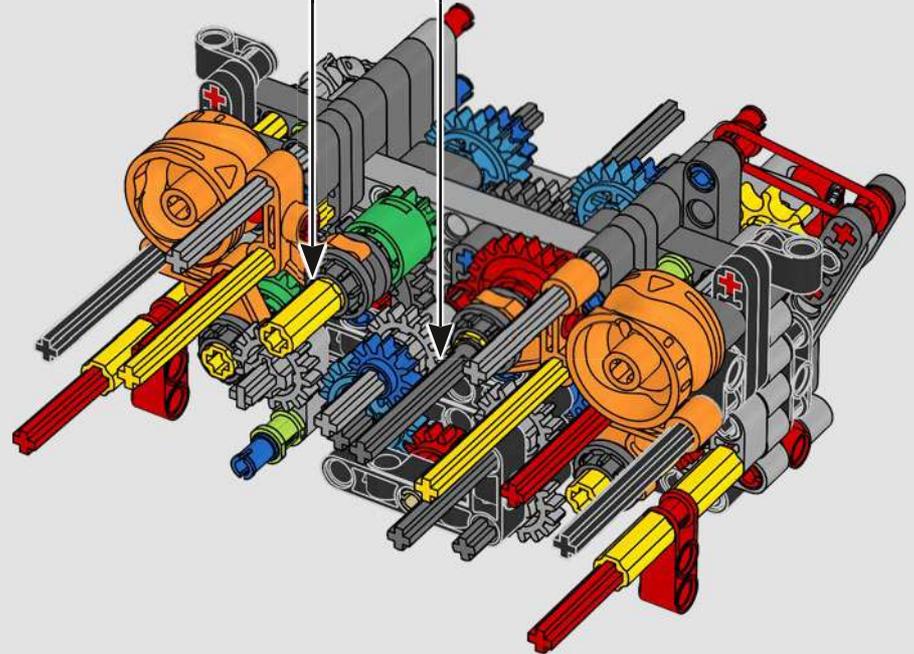
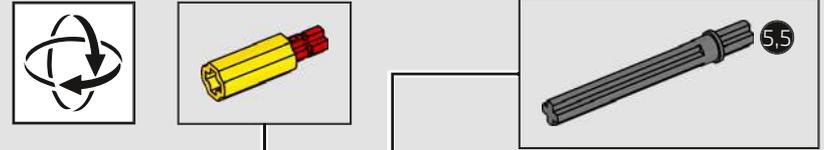


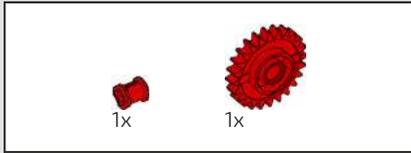


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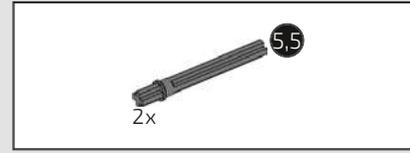
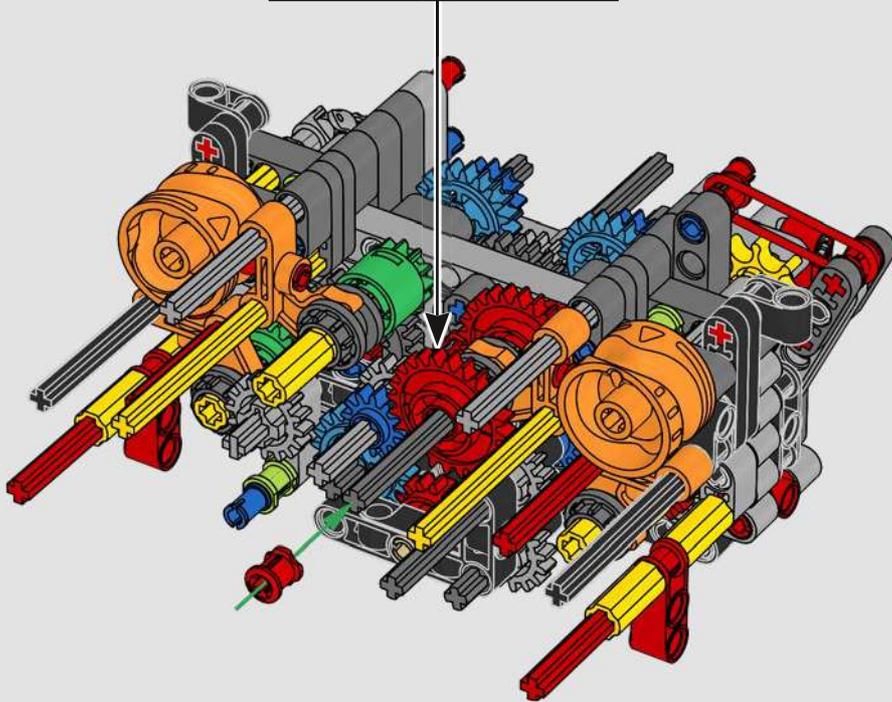
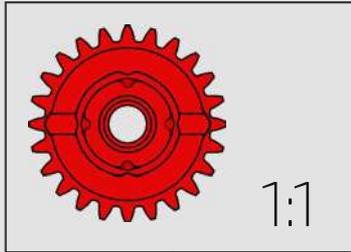


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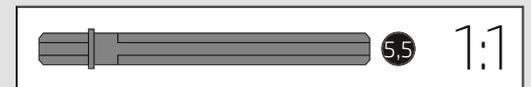
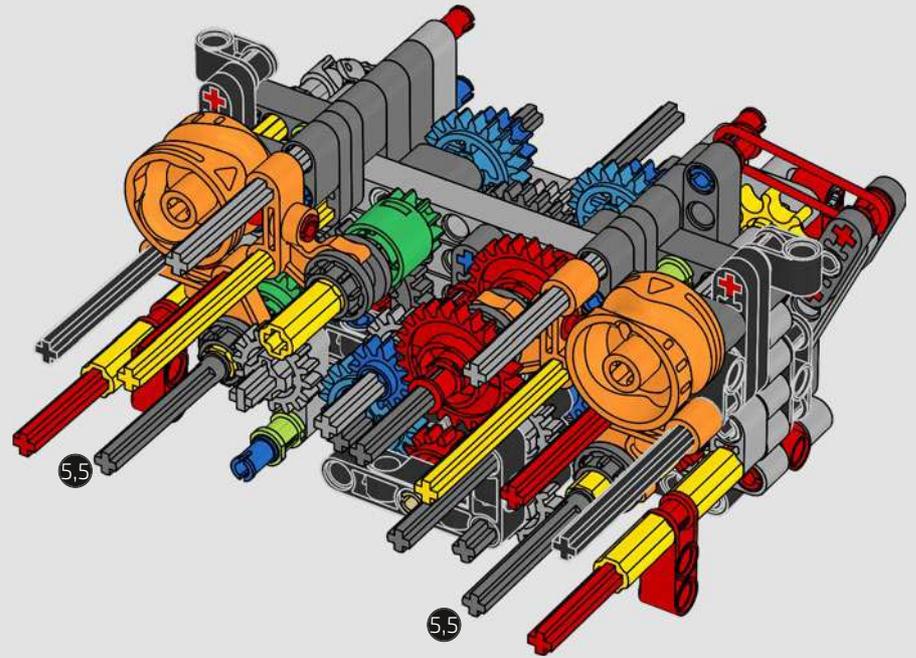


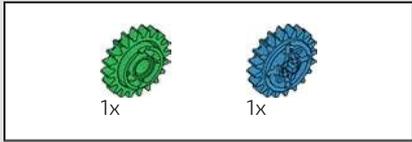


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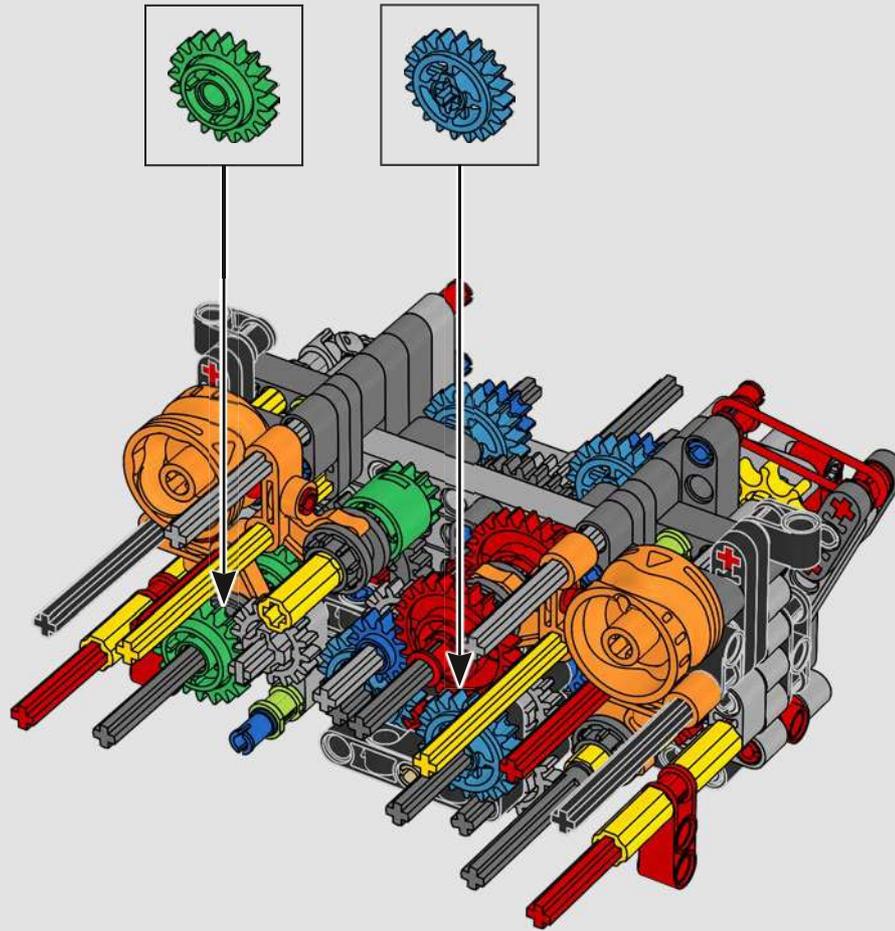


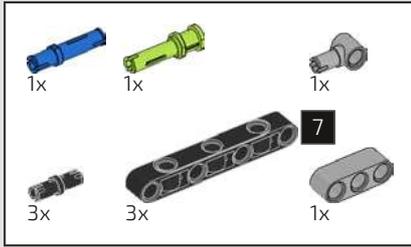
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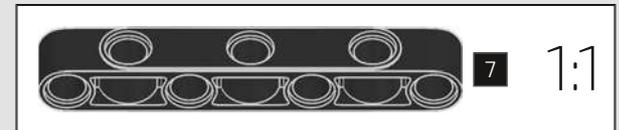
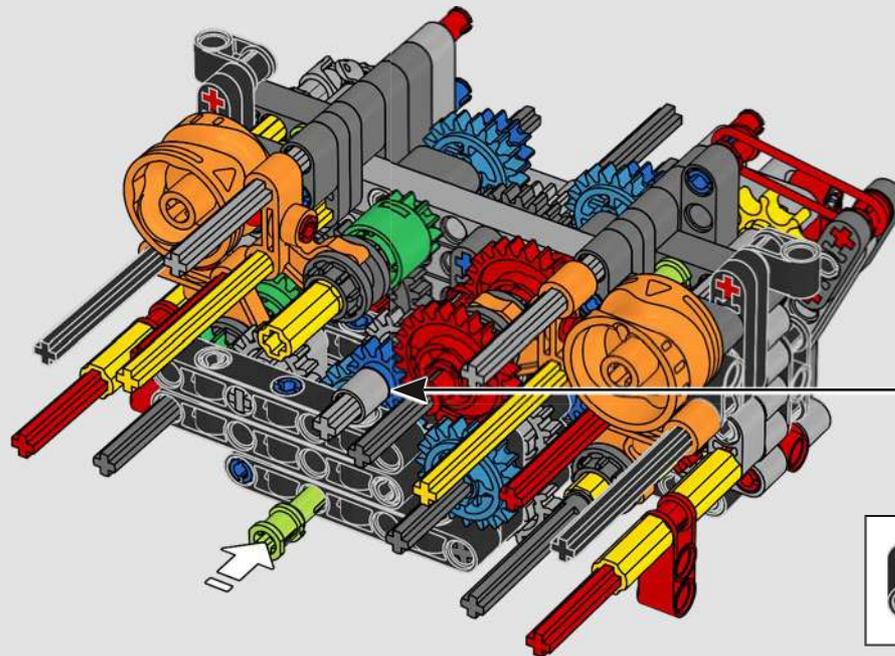
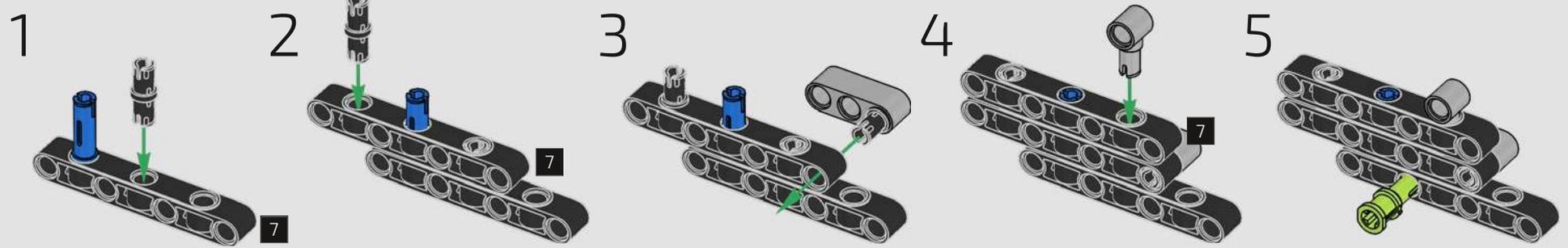


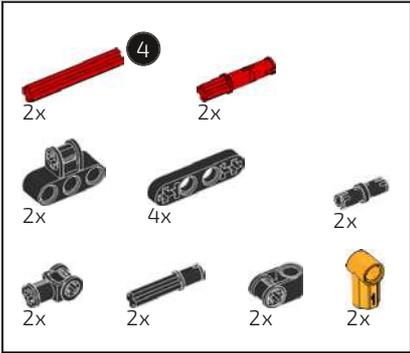
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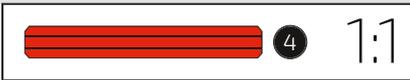
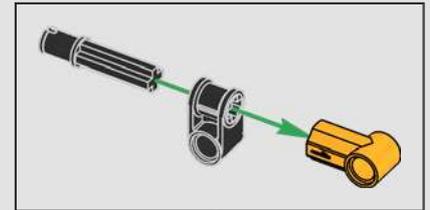
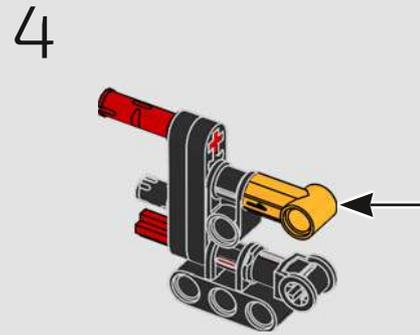
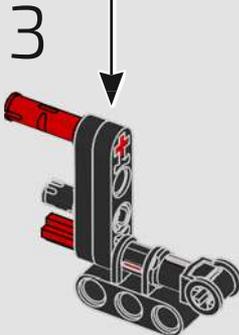
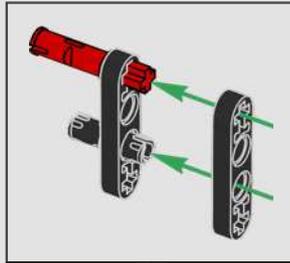
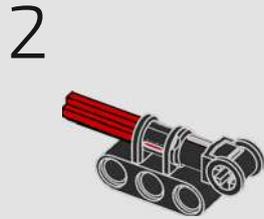
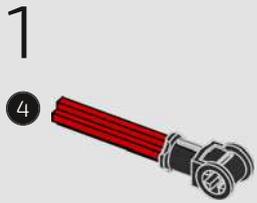


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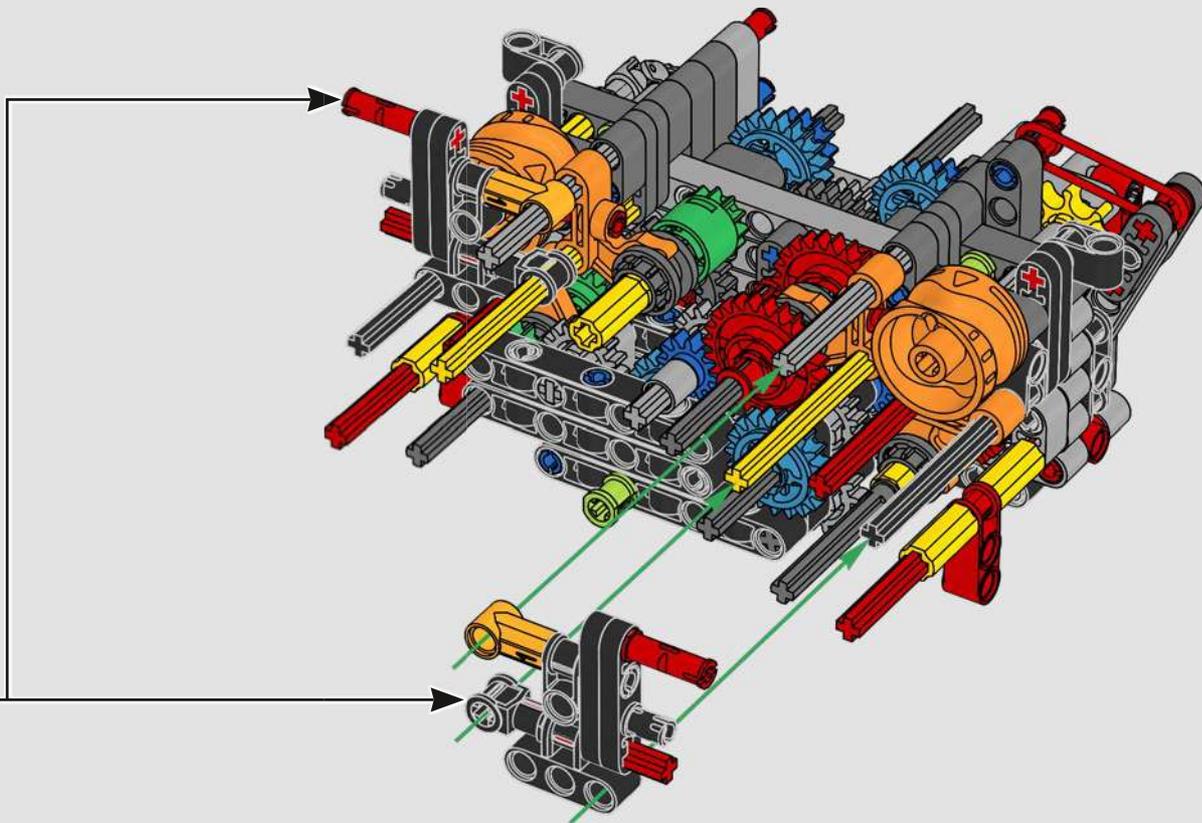


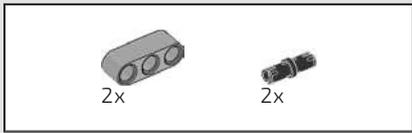


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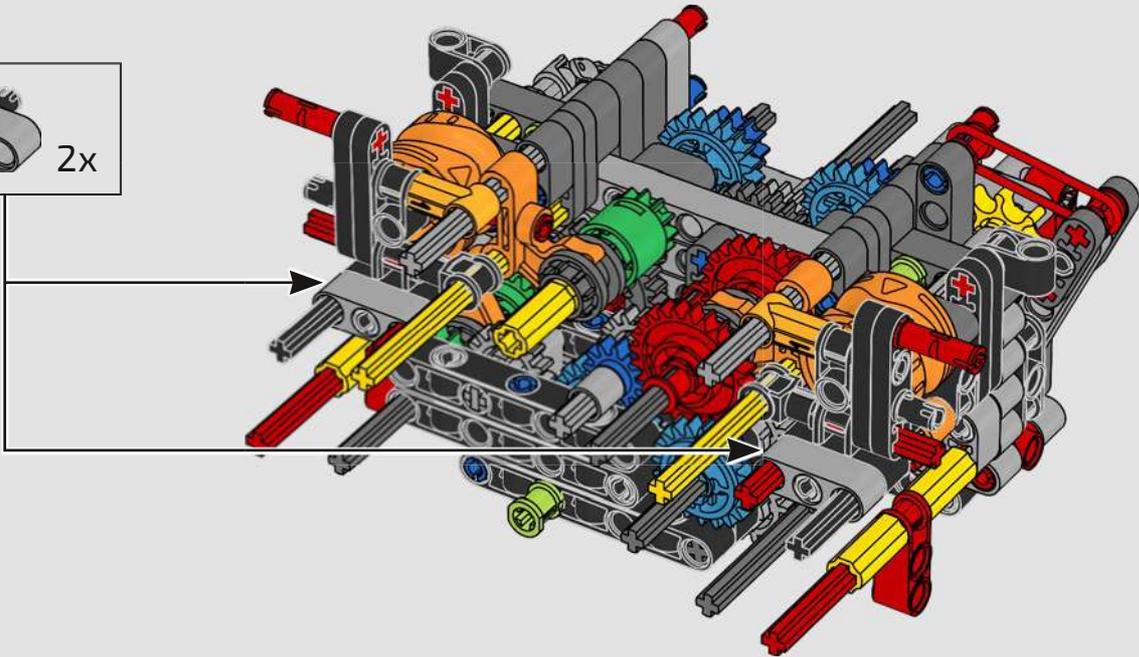


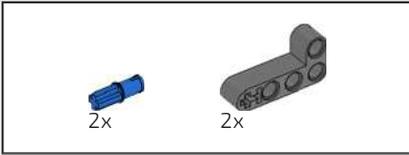
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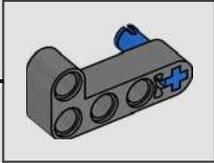
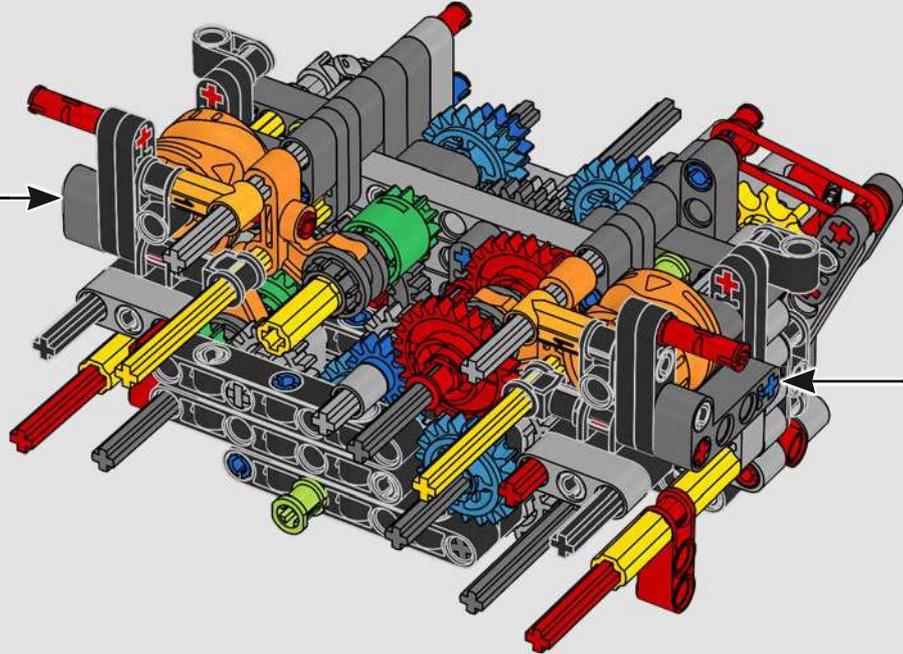
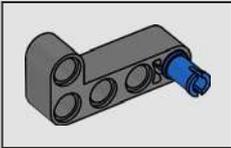


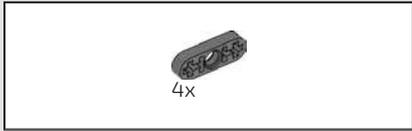
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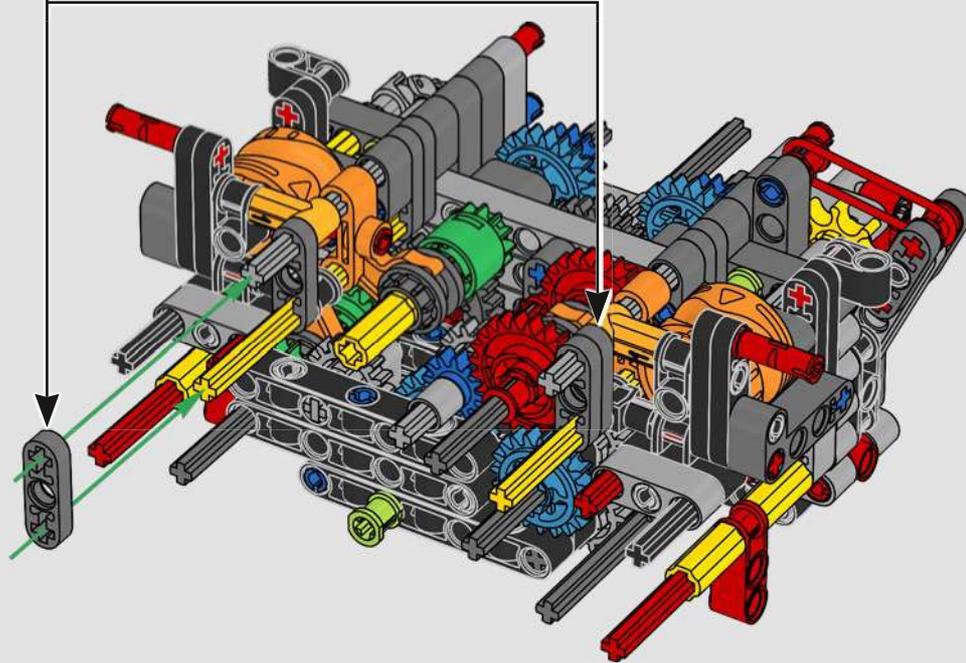


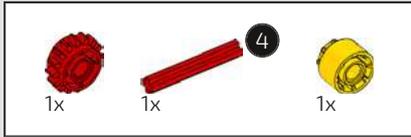
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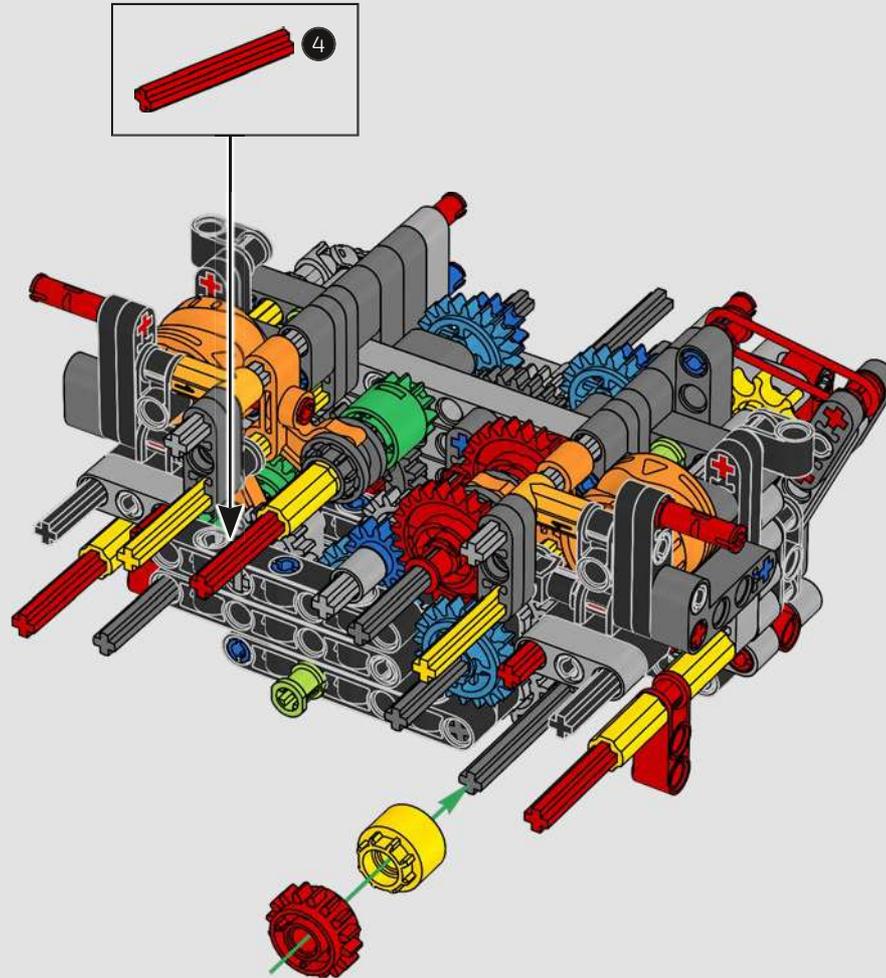


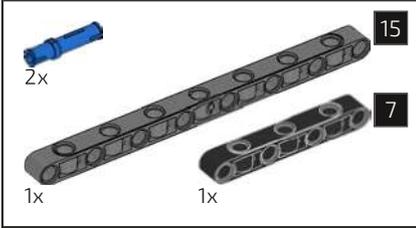
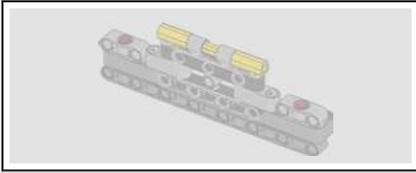
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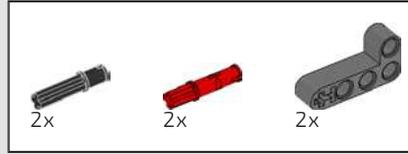
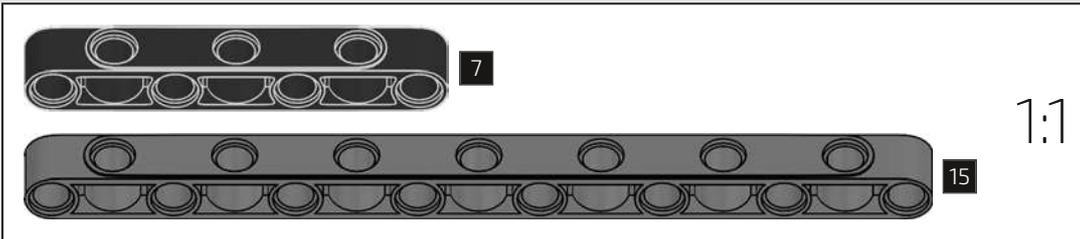
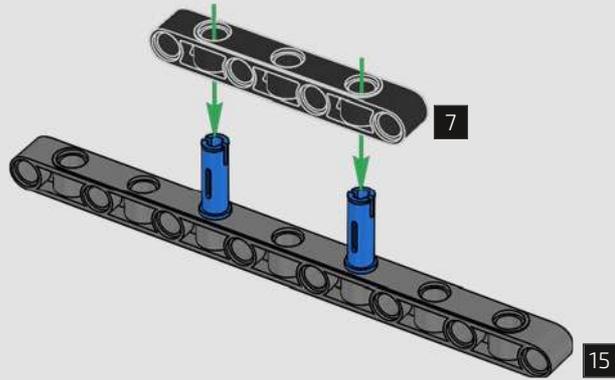


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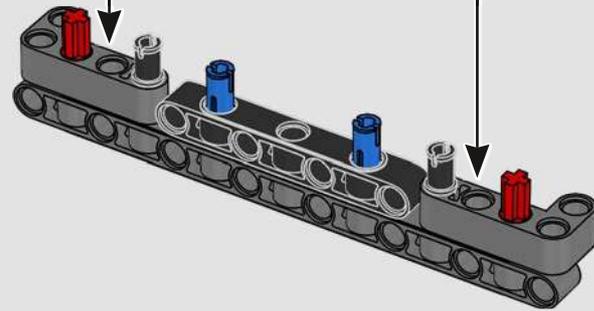
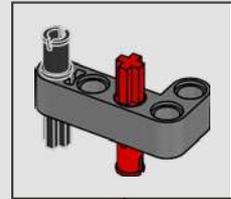
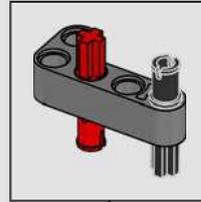


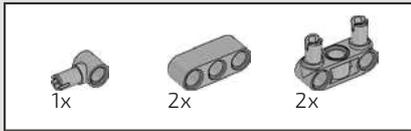


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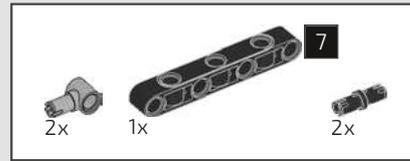
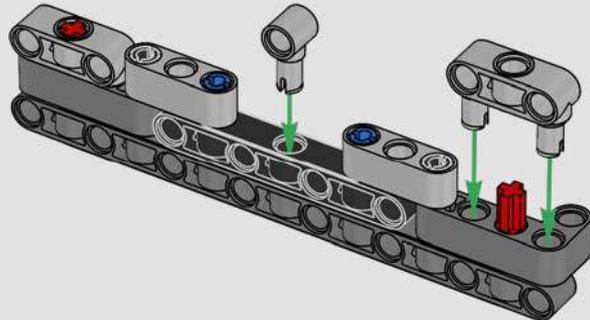


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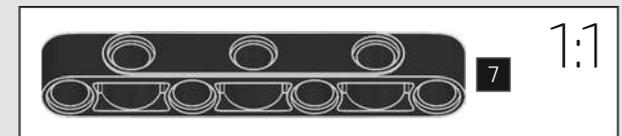
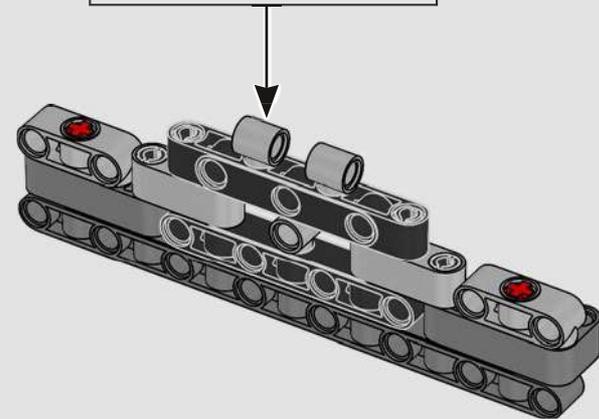
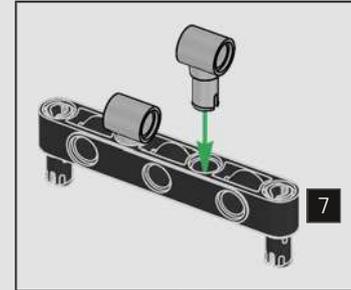


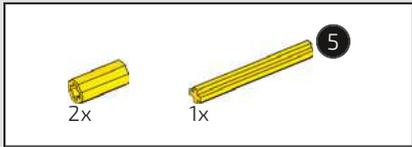


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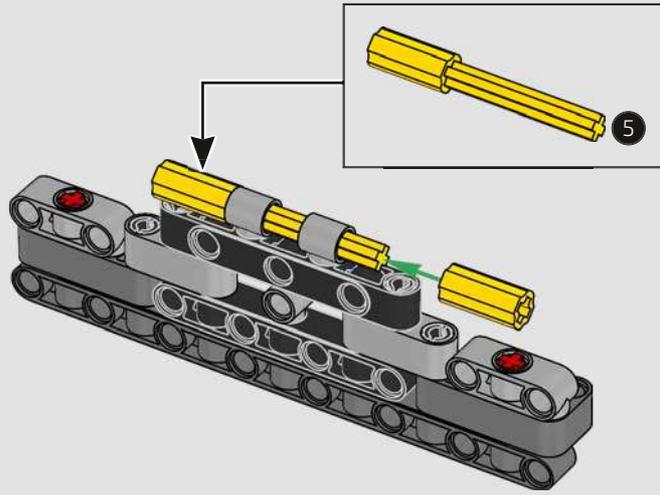


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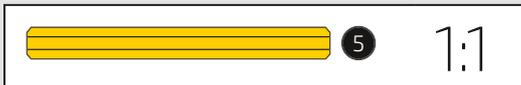
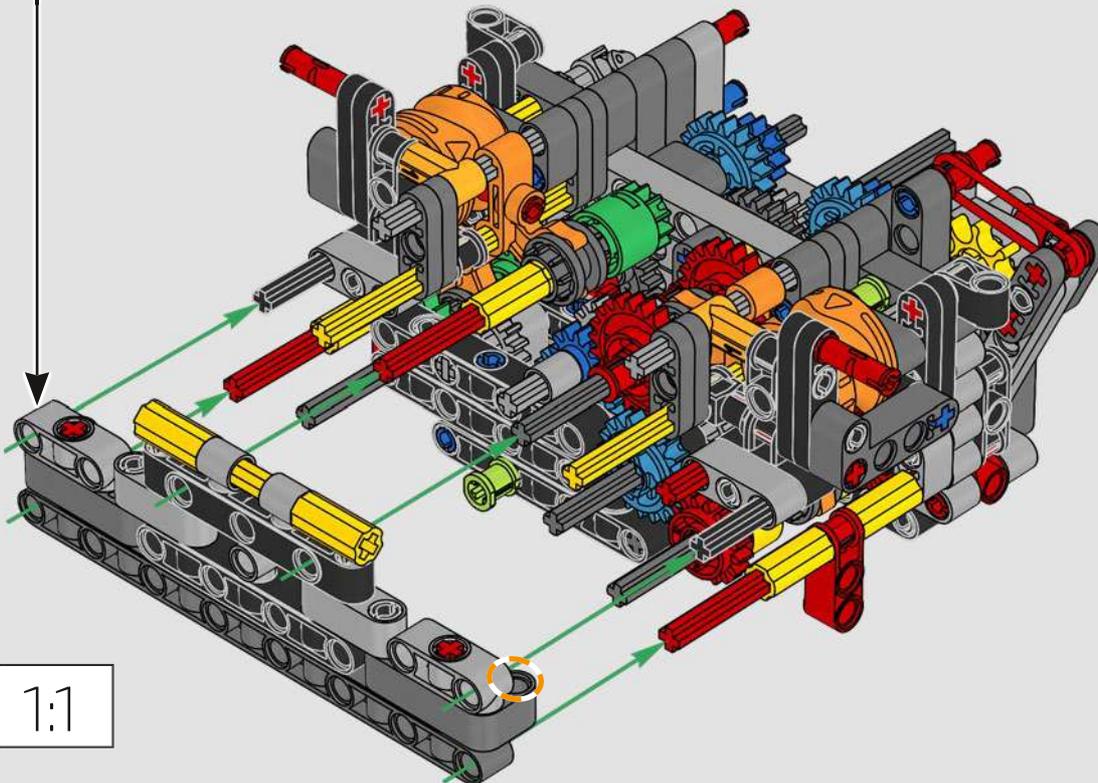


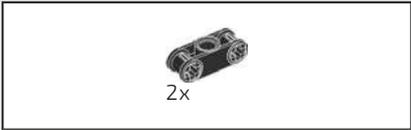


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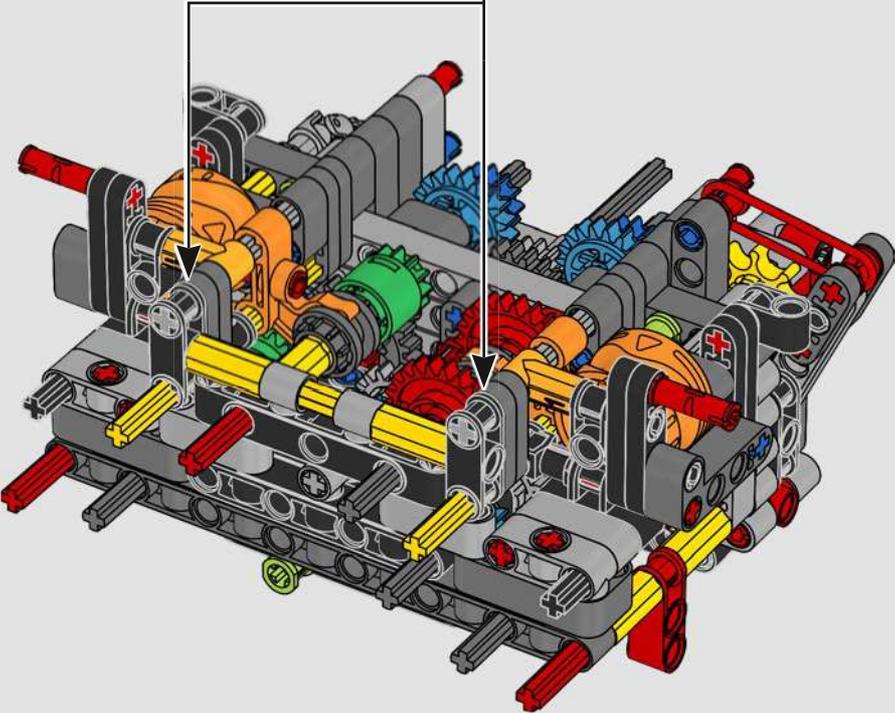


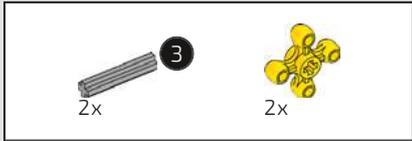
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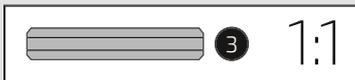
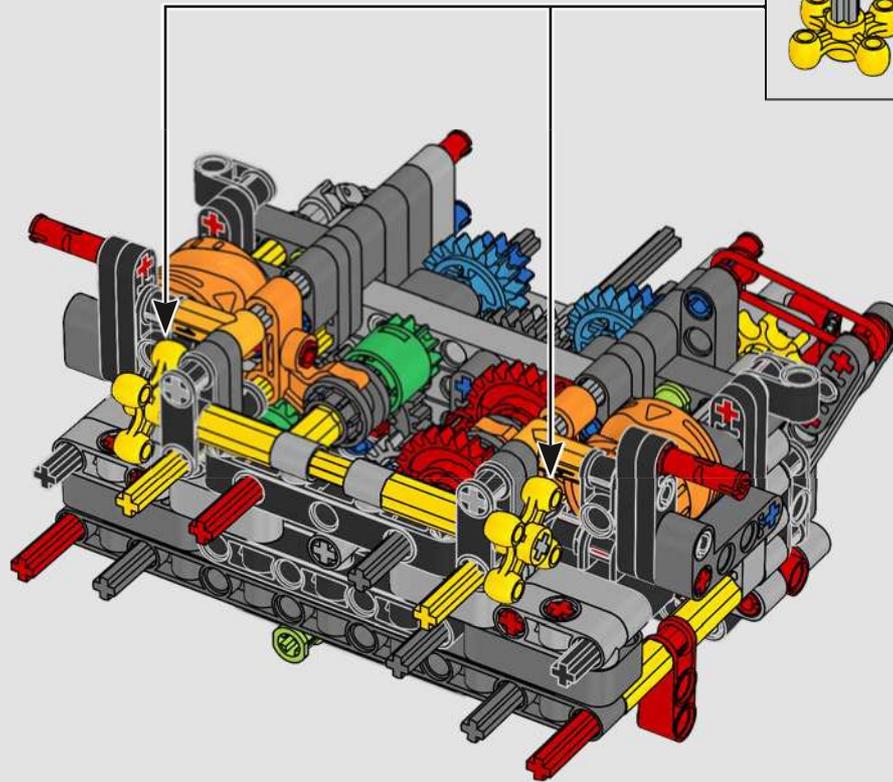


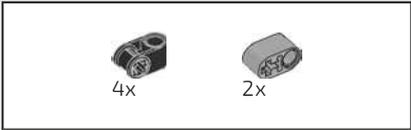
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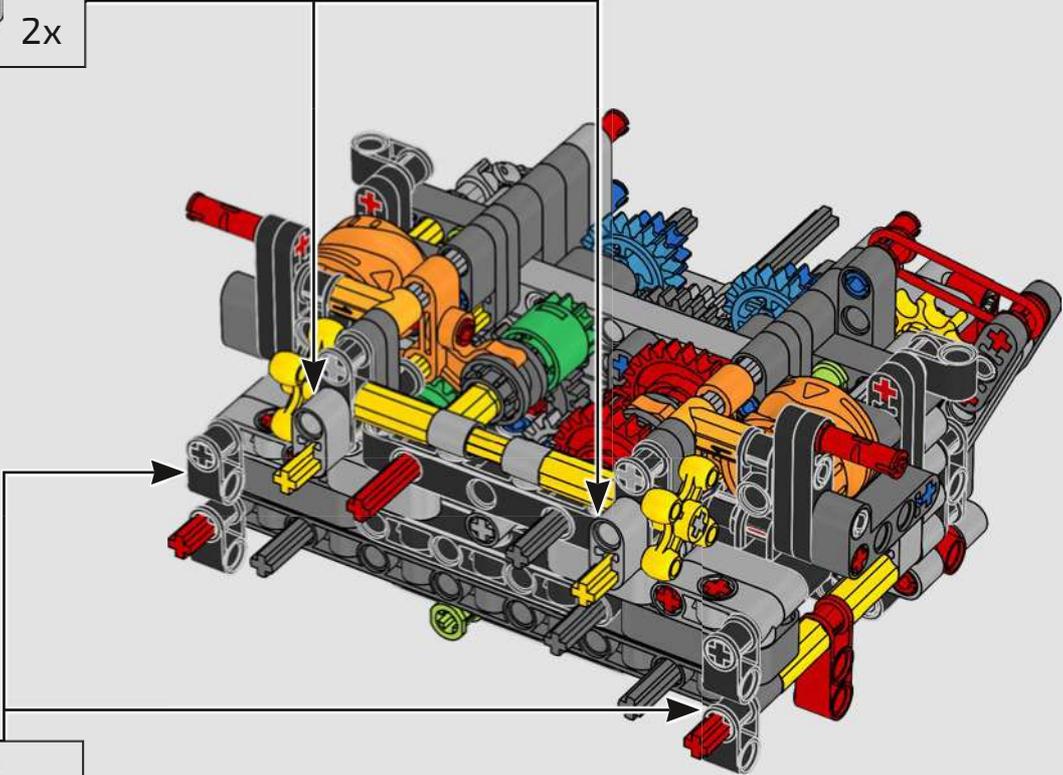
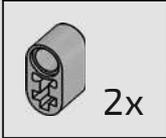


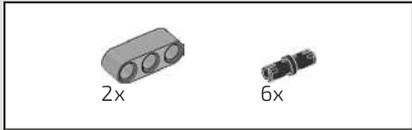
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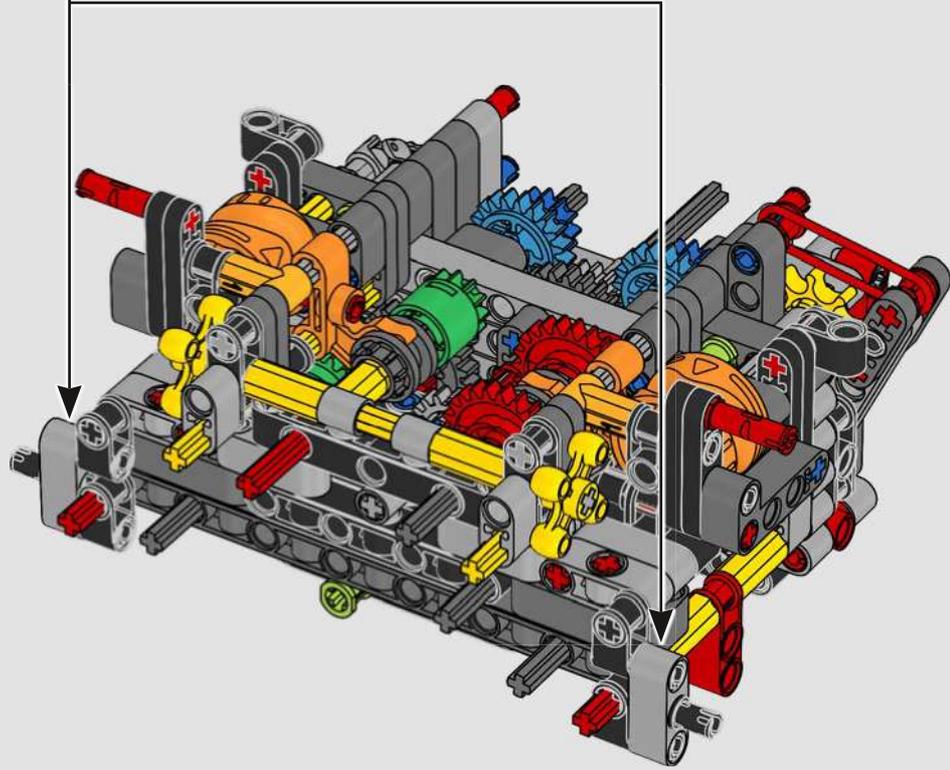
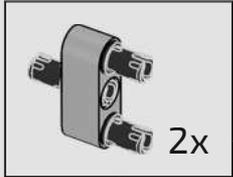


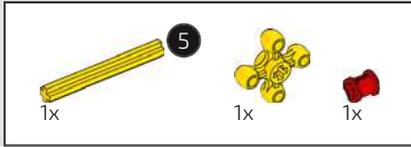
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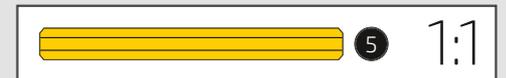
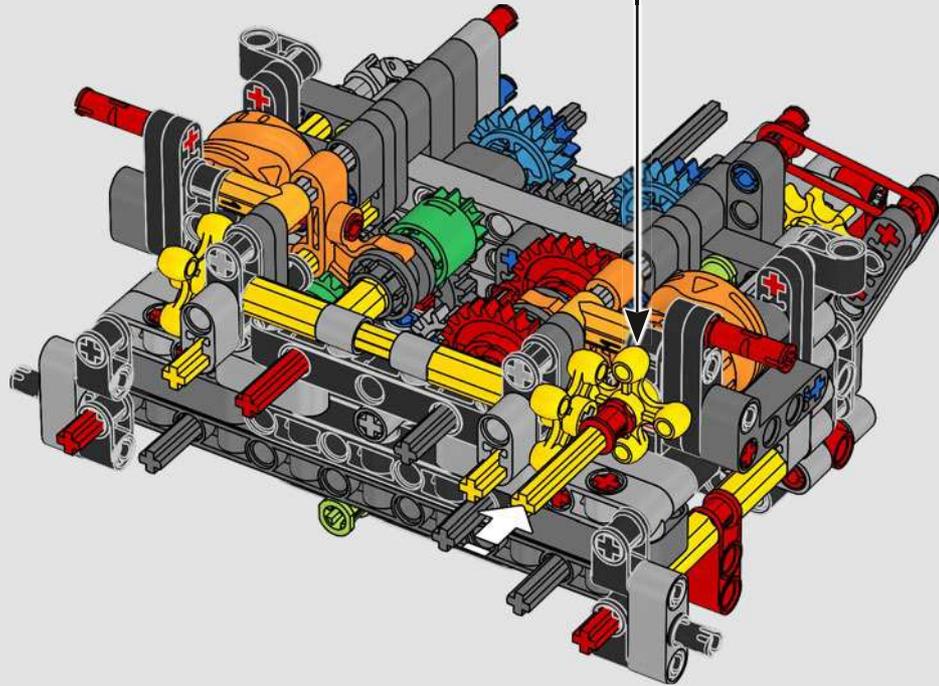
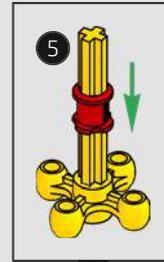


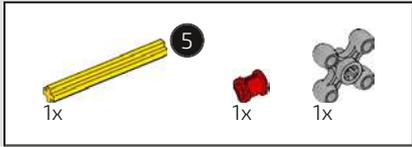
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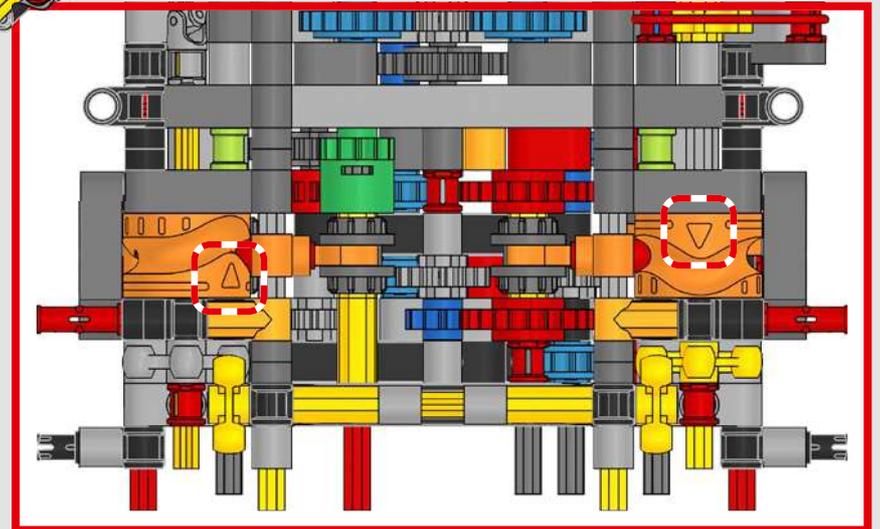
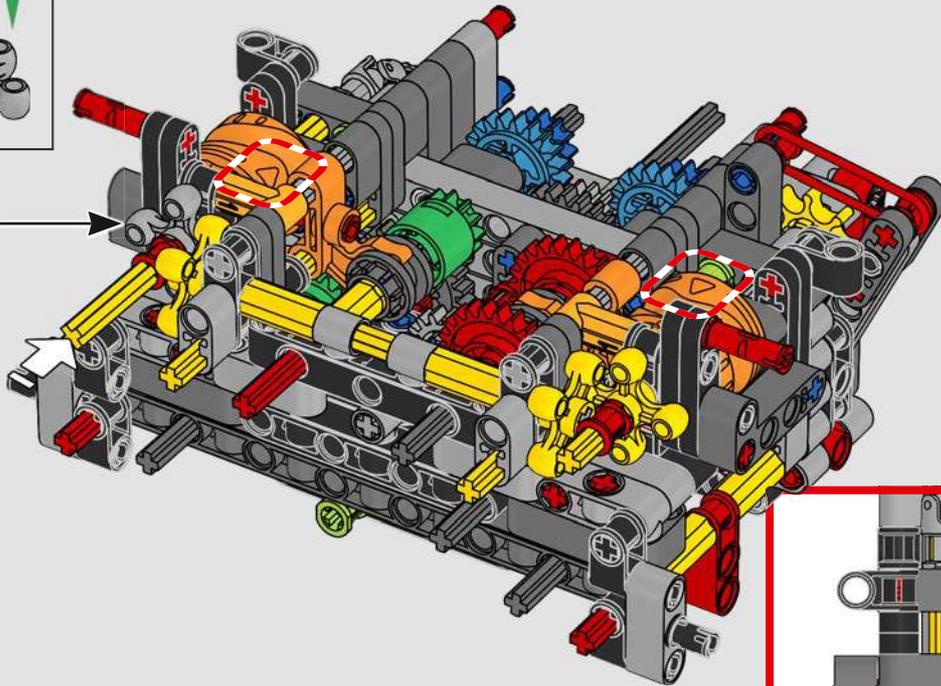
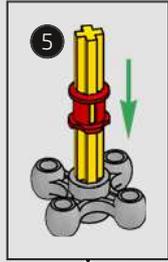


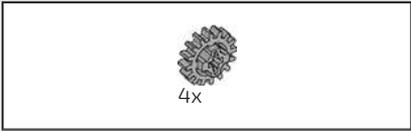
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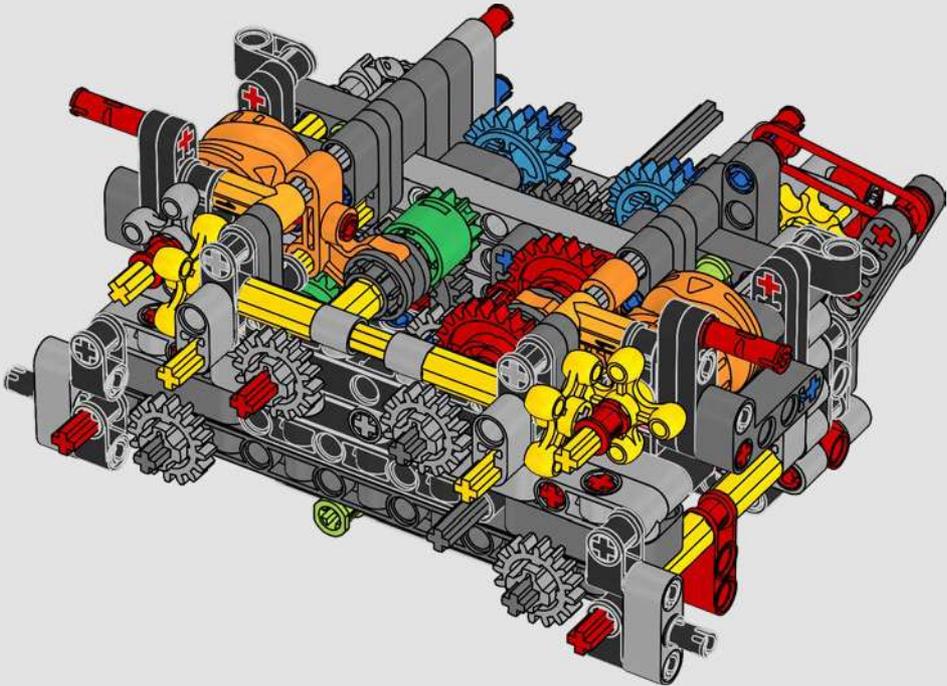


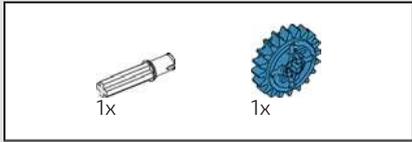
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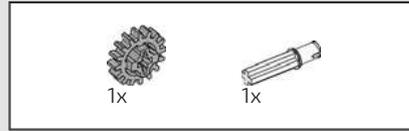
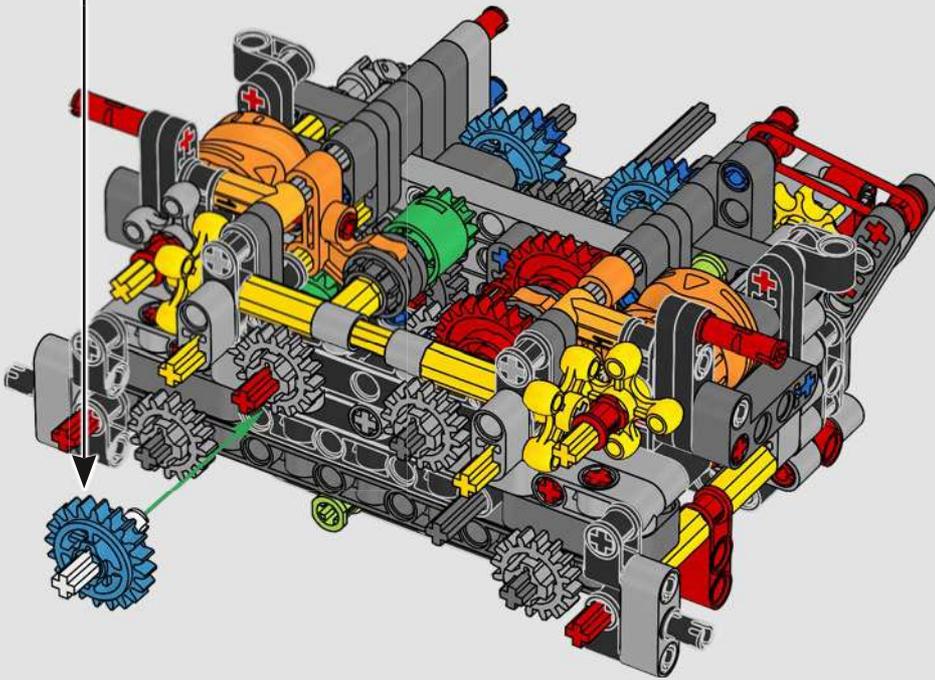
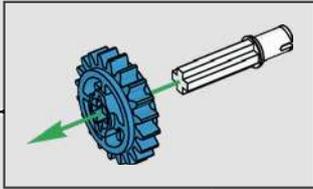


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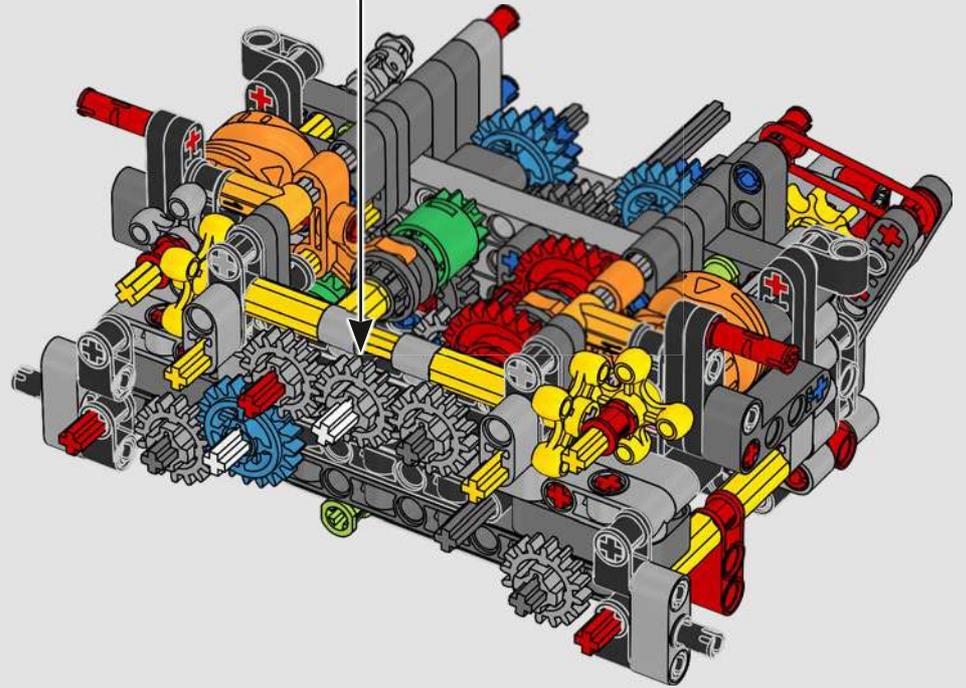
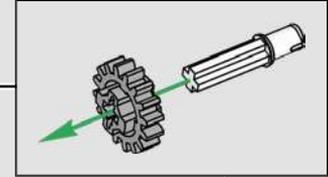


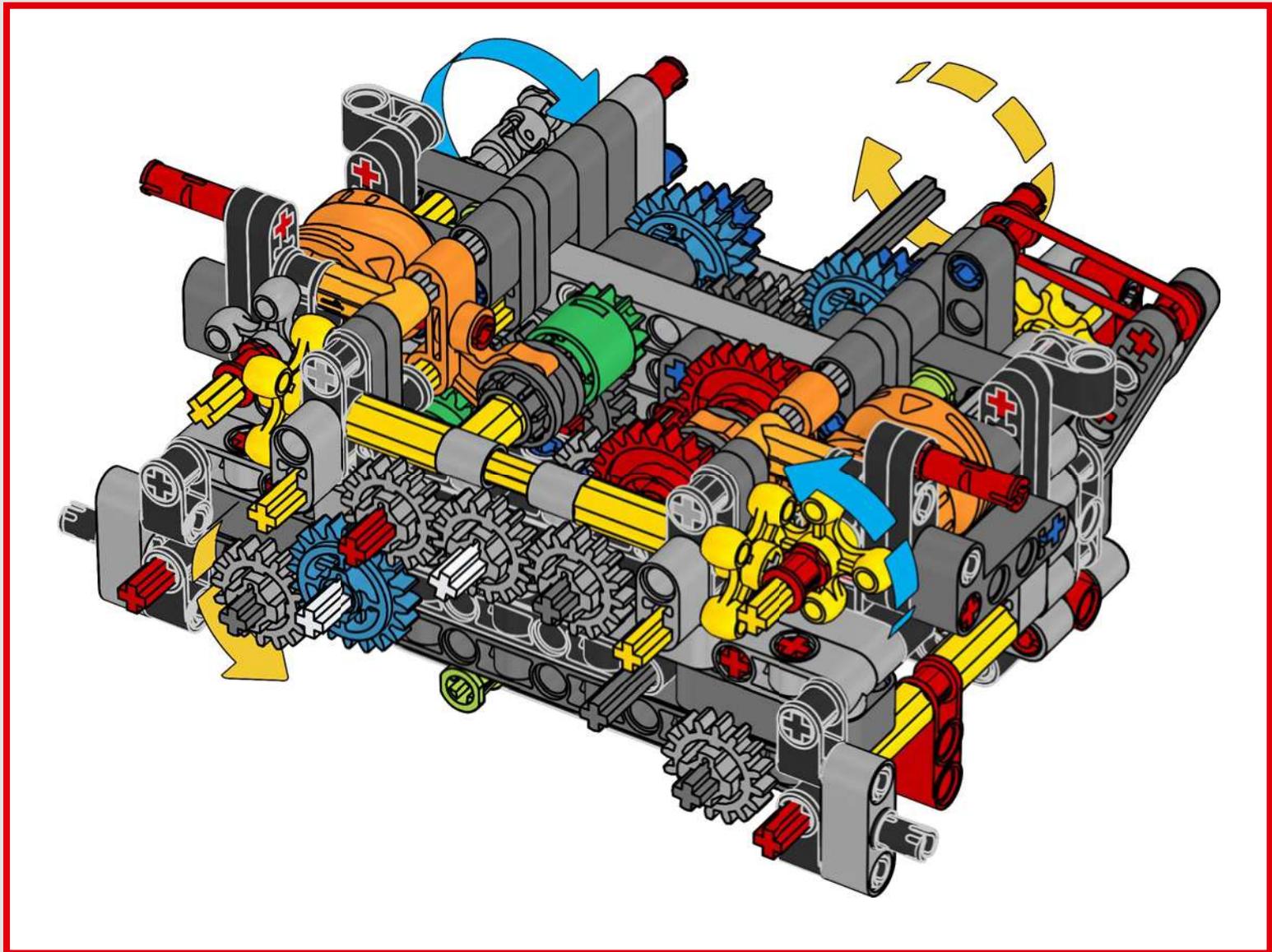


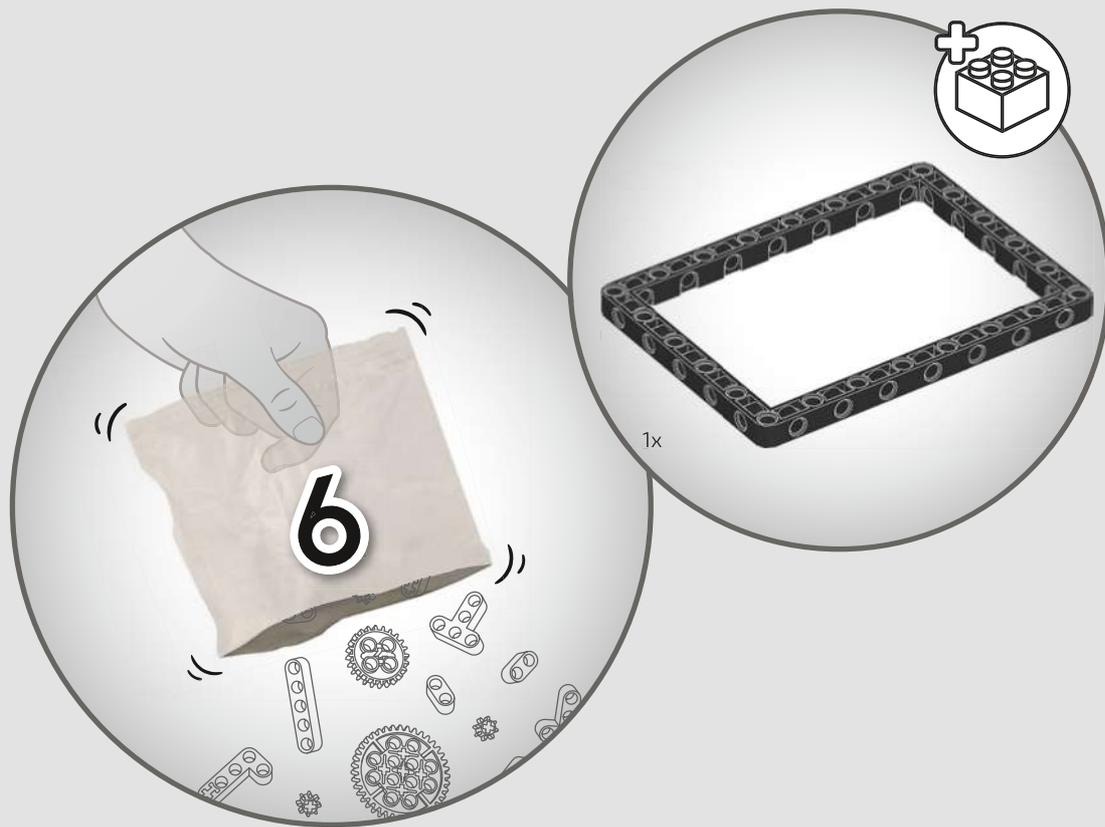
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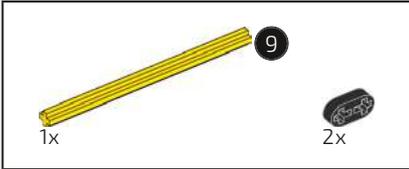
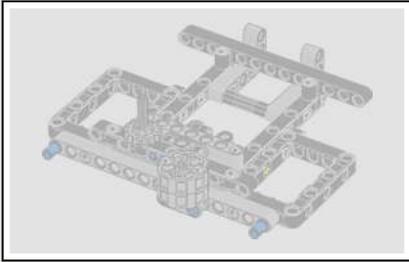


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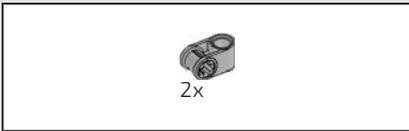
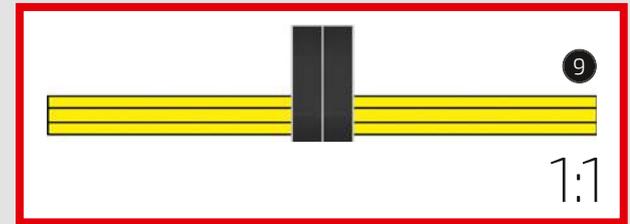
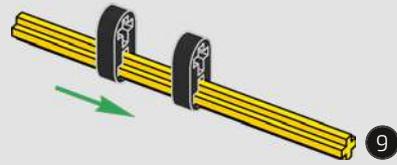




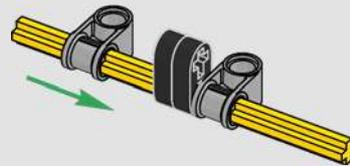


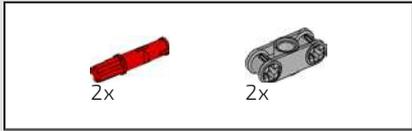


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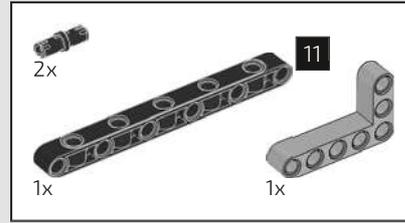
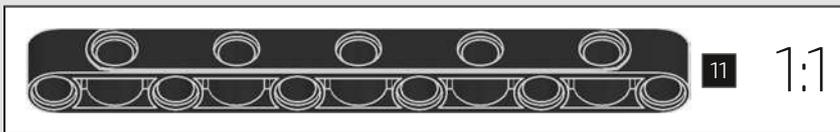
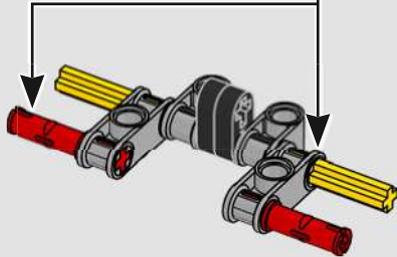
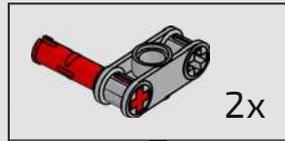


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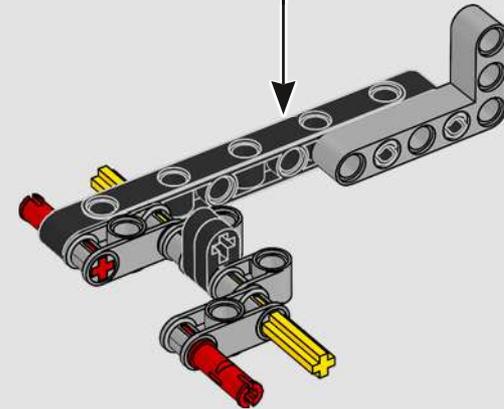
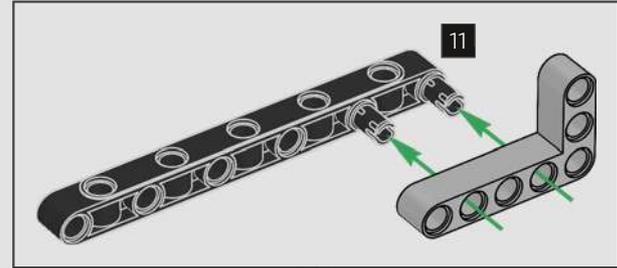


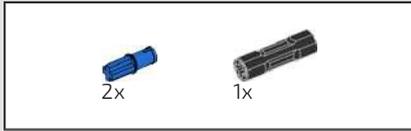


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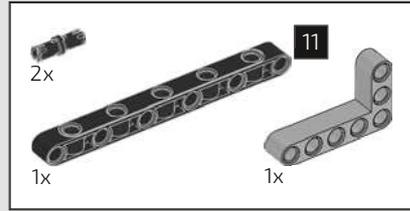
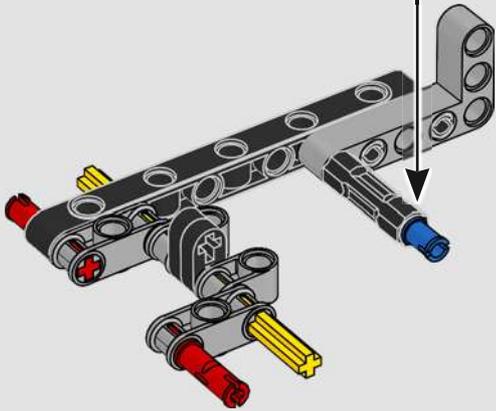
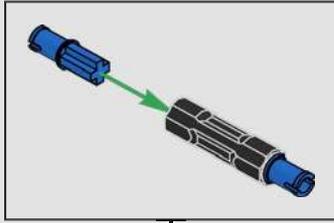


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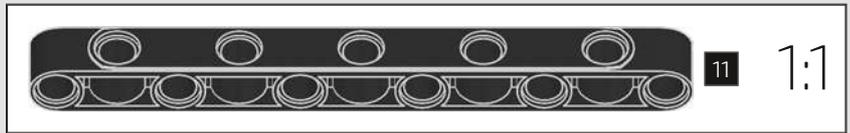
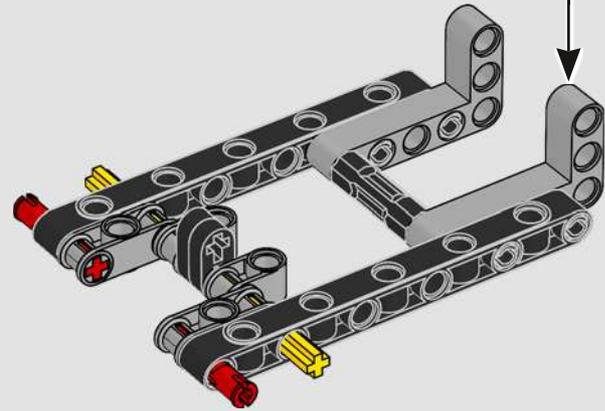
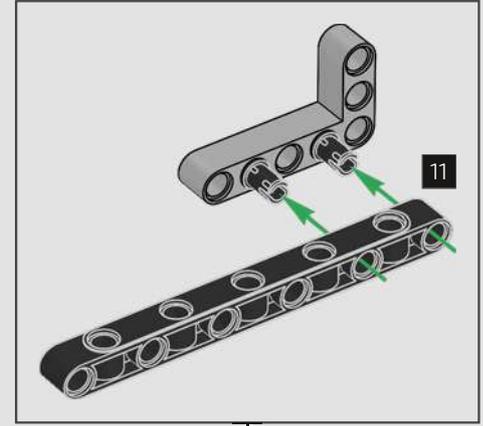




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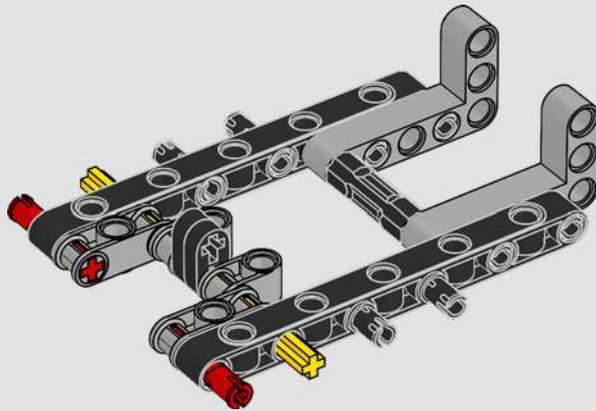


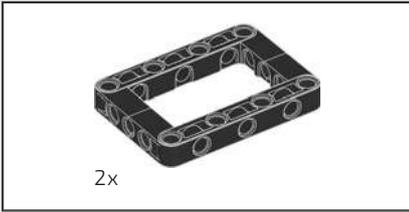
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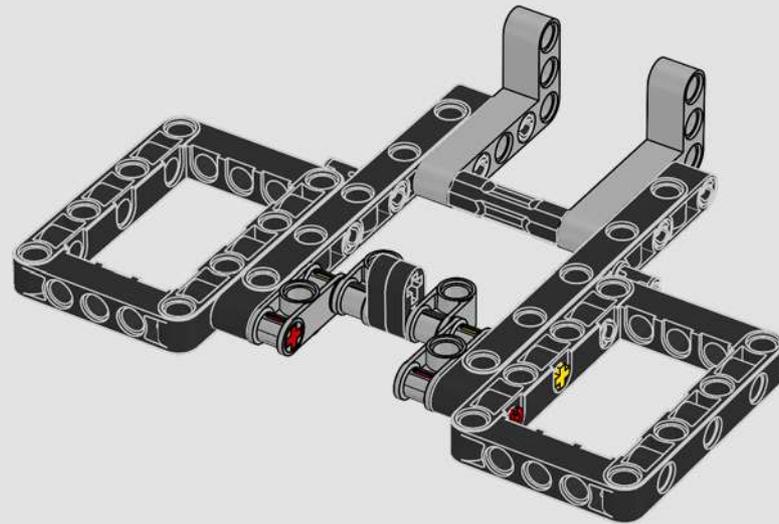


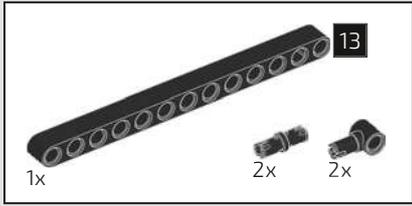
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