



ROBOTICS Smart Robots Max

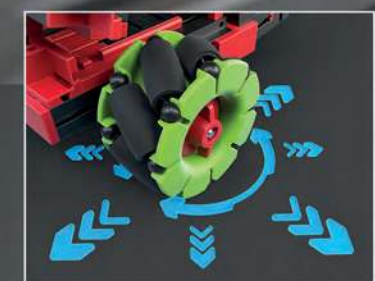
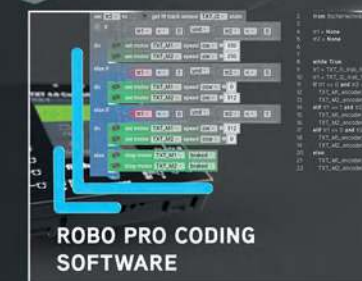
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Bauanleitung
Assembly instruction
Instructions de montage
Bouwhandleiding
Instrucciones de construcción

Manual de montagem
Istruzioni di montaggio
Инструкция по сборке
安装说明书

ROBOTICS Smart Robots Max

MODELS

9



■ **Software und didaktisches Begleitmaterial:**

Auf dem fischertechnik eLearning Portal findest du:

- Installationshinweise zur ROBOPRO Coding App (iOS, Android, Windows, MacOS, Linux)
- Informationen zum RX Controller
- didaktische Begleitmaterialien

Link zum eLearning Portal: <https://www.fischertechnik.de/elearning-smart-robots-max>

■ **Software and accompanying pedagogical materials:**

On the fischertechnik eLearning Portal, you will find:

- Installation instructions for ROBOPRO Coding App (iOS, Android, Windows, MacOS, Linux)
- Information on the RX Controller
- Accompanying pedagogical materials

Link to the eLearning Portal: <https://www.fischertechnik.de/elearning-smart-robots-max>

■ **Logiciel et matériel didactique d'accompagnement:**

Dans le portail d'E-apprentissage de fischertechnik, tu trouveras:

- Des consignes d'installation de l'application ROBOPRO Coding (iOS, Android, Windows, MacOS, Linux)
- Des informations sur le contrôleur RX
- Du matériel didactique d'accompagnement

Lien vers le Portail d'e-formation: <https://www.fischertechnik.de/elearning-smart-robots-max>

■ **Software En didactisch begeleidingsmateriaal:**

Op het fischertechnik eLearning-portaal vindt je:

- Installatieaanwijzingen voor ROBOPRO coding app (iOS, Android, Windows, MacOS, Linux)
- Informatie over RX controller
- didactisch begeleidingsmateriaal

Link naar het eLearning-portaal: <https://www.fischertechnik.de/elearning-smart-robots-max>

■ **Software y material didáctico:**

En el portal eLearning de fischertechnik encontrarás:

- Instrucciones de instalación para la aplicación de codificación ROBOPRO (iOS, Android, Windows, MacOS, Linux)
- Información sobre los controladores RX
- Materiales didácticos

Enlace al portal eLearning: <https://www.fischertechnik.de/elearning-smart-robots-max>

■ **Software e material de acompanhamento didático:**

No portal de eLearning da fischertechnik, você pode encontrar:

- Dicas de instalação para o ROBOPRO Coding App (iOS, Android, Windows, MacOS, Linux)
- Informações sobre o controlador RX
- materiais de acompanhamento didático

Link para o portal de eLearning: <https://www.fischertechnik.de/elearning-smart-robots-max>

■ **Software e materiale didattico di accompagnamento:**

Sul portale di eLearning di fischertechnik puoi trovare:

- Istruzioni per l'installazione di ROBOPRO Coding App (iOS, Android, Windows, MacOS, Linux)
- Informazioni sul controller RX
- materiale didattico di accompagnamento

Link al portale di eLearning: <https://www.fischertechnik.de/elearning-smart-robots-max>

■ Программное обеспечение и дидактические сопроводительные материалы:

На обучающем интернет-портале компании fischertechnik ты найдешь:

- Инструкции по установке приложения для программирования ROBOPRO (iOS, Android, Windows, MacOS, Linux)
- Информацию о контроллере RX
- Дидактические сопроводительные материалы

Ссылка на обучающий интернет-портал: <https://www.fischertechnik.de/elearning-smart-robots-max>

■ 软件和教学辅助材料：

在 fischertechnik eLearning 在线学习门户网站上你可以找到：

- ROBOPRO Coding App (iOS、Android、Windows、MacOS、Linux) 的安装提示
- 有关 RX 控制器的信息
- 教学辅助材料

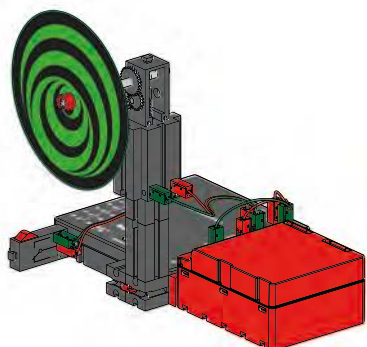
eLearning 在线学习门户网站的链接：<https://www.fischertechnik.de/elearning-smart-robots-max>

Inhalt Contents Contenu

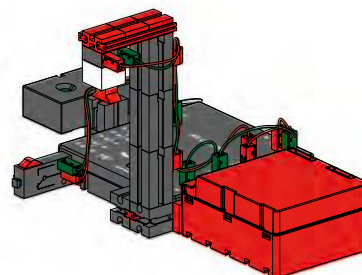
Inhoud Contenido Conteúdo

Contenuto Содержание 目录

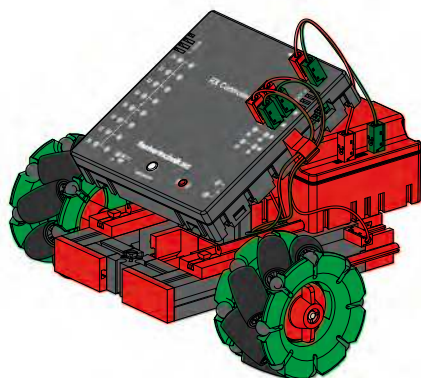
Einzelteilübersicht / Spare parts list / Liste des pièces détachées / Onderdelenoverzicht / Lista da piezas / Resumo de peça individual / Singoli componenti / Перечень деталей / 零件概览	3
Montagetips / Tips for assembly / Tuyaax pour le montage / Montagetips / Consejos para el montaje / "Dicas" para montagem / Consigli per il montaggio / Советы по сборке / 装配建议	4



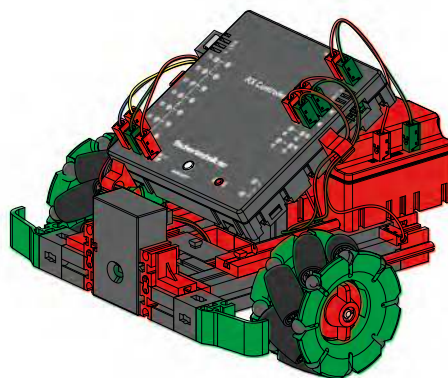
Optische Täuschung / Optical illusion / Illusion d'optique / Optische illusie /
Ilusión óptica / Ilusão de óptica / Illusione ottica /
Оптическая иллюзия / 视觉幻觉 9



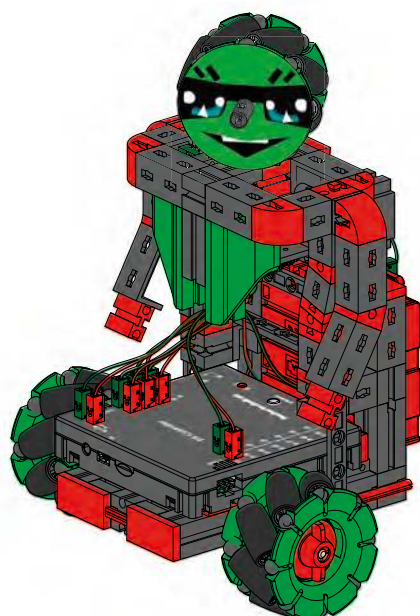
Dämmerungsschalter / Twilight switch / Interrupteur crépusculaire / Schemerschakelaar /
Interruptor crepuscular / Interruptor crepuscular / Interruttore crepuscolare /
Автомат вечернего освещения / 暮光开关 12



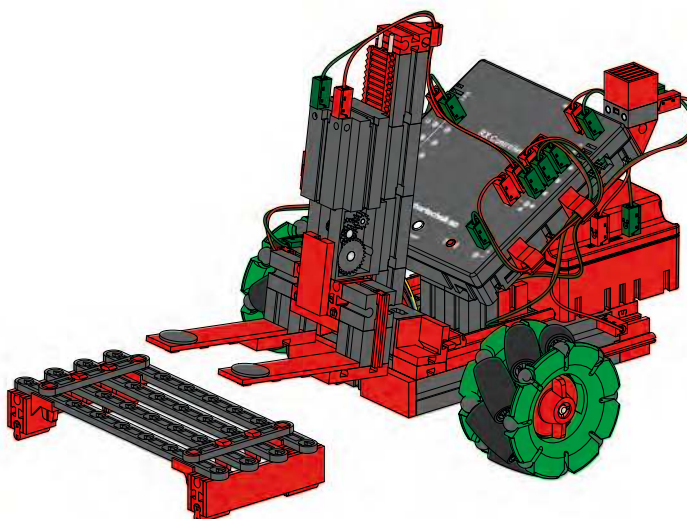
2-Radroboter / 2-wheeled robot / Robot à 2 roues / 2-wielige robot / Robot de 2 ruedas /
Robô de 2 rodas / Robot a 2 ruote / Двухколесный робот /
两轮机器人 15



Advanced 2-Radroboter (mit Sensorik) / Advanced 2-wheeled robot (with sensors) /
Robot avancé à 2 roues (avec capteurs) / Geavanceerde 2-wielige robot (met sensoren) /
Robot avanzado de 2 ruedas (con sensores) / Robô avançado de 2 rodas (com sensores) /
Robot avanzato a 2 ruote (con sensori) / Усовершенствованный
двухколесный робот (с датчиками) / 先进的两轮机器人
(带传感器) 22



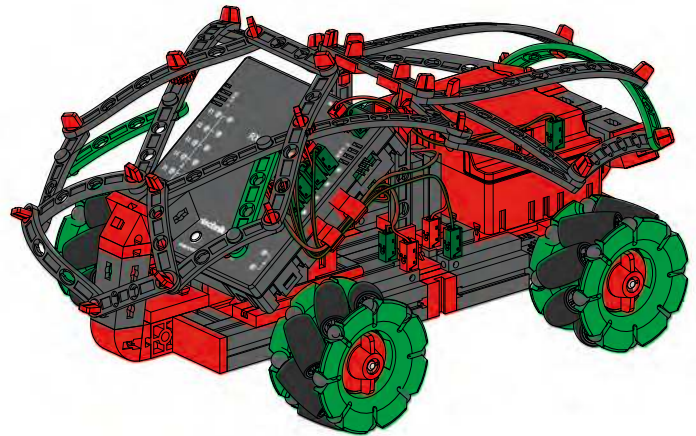
Tanzroboter / Dancing robot / Robot dansant / Dansende robot / Robot bailarín /
Robô dançarino / Robot danzante / Танцующий робот /
舞蹈机器人 30



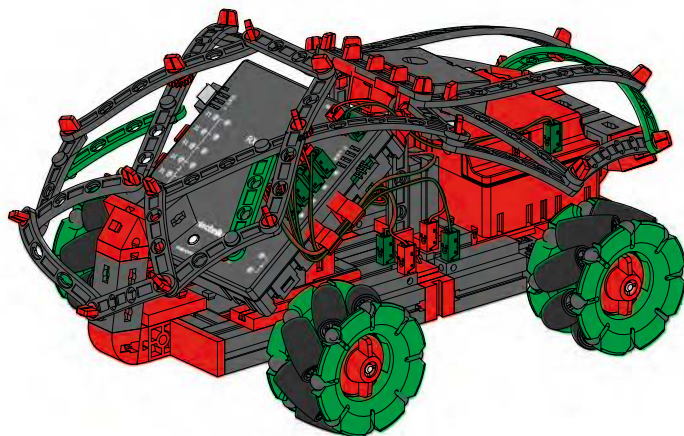
Gabelstapler / Forklift / Chariot élévateur à fourche / Vorkheftruck / Máquina elevadora /
Empilhadeira / Carrello elevatore / Робот-погрузчик / 叉车 39



Ballroboter / Ball robot / Robot à billes / Bal robot / Robot de bolas /
 Robô de votação / Palla robot / Шариковый робот /
 弹球机器人 49



Omnwheels Basismodell / Omniwheels Base Model / Omniwheels Modèle de base /
 Omniwheels Base Model / Omniwheels Modelo básico / Omniwheels Modelo básico /
 Omniwheels Modello base / Omniwheels Базовая модель /
 全能轮基本型号 62

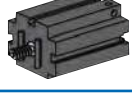


Omnwheels mit Spur- und Gestensensor / Omniwheels with track and gesture sensor
 / Omniwheels avec capteur de trajectoire et de gestes / Omniwielen met track en
 gebaar sensor / Omniwheels con sensor de huellas y gestos / Omniwheels com sensor
 de rasto e de gestos / Omniwheels con sensore di tracce e gesti / Омниколеса
 с датчиком слежения и жестов / 带轨道和手势传感器的
 全能轮 74

Einzelteilübersicht
Spare parts list
Liste des pièces détachées

	31 010 3 x
	31 011 4 x
	31 058 4 x
	31 060 5 x
	31 061 15 x
	31 078 4 x
	31 082 1 x
	31 330 7 x
	31 360 1 x
	31 597 2 x
	31 670 2 x
	31 674 4 x
	31 690 1 x
	31 848 4 x
	31 981 4 x
	31 982 37 x
	31 983 8 x

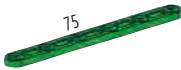
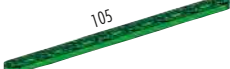
Onderdelenoverzicht
Lista da piezas
Resumo de peça individual

	32 064 6 x
	32 071 4 x
	32 085 1 x
	32 293 4 x
	32 316 4 x
	32 330 5 x
	32 879 15 x
	32 881 12 x
	32 882 12 x
	33 582 2 x
	35 031 4 x
	35 049 8 x
	35 065 1 x
	35 073 4 x
	35 079 1 x
	35 086 1 x
	35 087 2 x

	35 088 1 x
	35 969 6 x
	35 975 1 x
	36 323 15 x
	36 324 15 x
	36 334 2 x
	36 573 1 x
	36 912 1 x
	36 913 9 x
	36 914 1 x
	36 920 10 x
	36 922 9 x
	36 923 4 x
	36 950 3 x
	36 952 7 x
	36 973 1 x
	37 237 27 x

Singoli componenti
Перечень деталей
零件概览

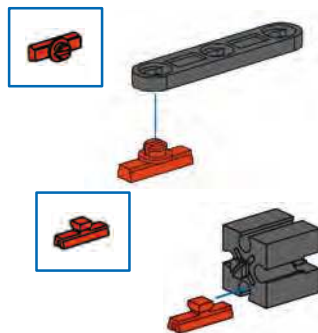
	37 238 4 x
	37 272 1 x
	37 351 2 x
	37 468 13 x
	37 679 1 x
	37 783 1 x
	38 240 10 x
	38 246 4 x
	38 423 3 x
	38 428 4 x
	38 464 4 x
	38 546 4 x
	128 598 1 x
	130 593 3 x
	132 875 1 x
	134 867 1 x
	135 465 1 x

	146 531 2 x		163 199 1 x		183 026 4 x		186 721 1 x
	156 502 1 x		163 200 8 x		183 027 32 x		188 845 1 x
	156 504 2 x		163 201 6 x		183 028 64 x		191 232 1 x
	159 781 1 x		181 583 13 x		183 267 1 x		193 745 1 x
	162 134 1 x		181 584 15 x		185 695 3 x		
	163 198 1 x		183 025 4 x		185 849 4 x		

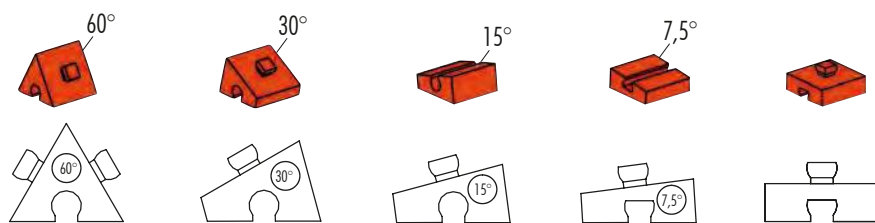


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Montagetipps Tips for assembly Tuyaux pour le montage



Montagetips Consejos para el montaje "Dicas" para montagem

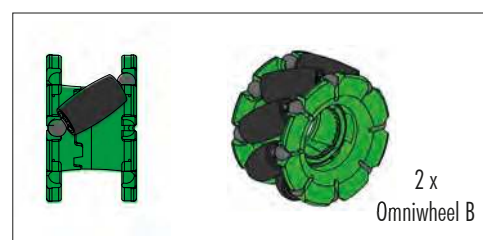
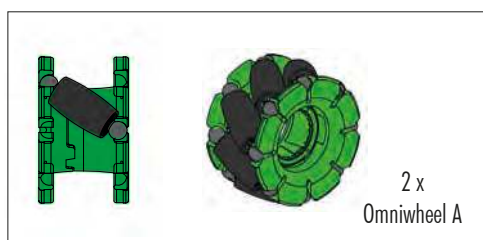
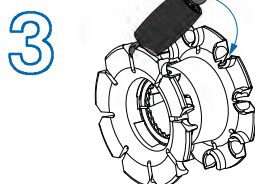
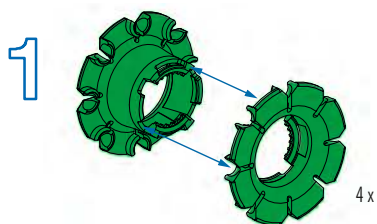
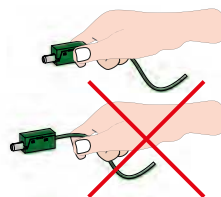
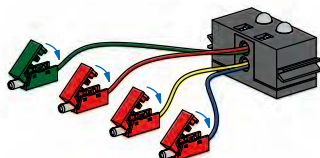
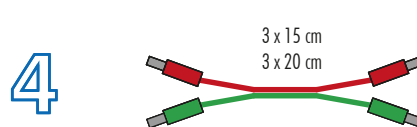
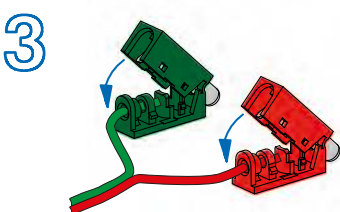
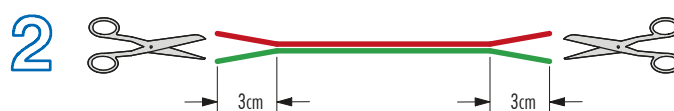
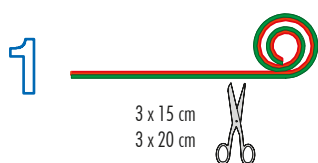


Consigli per il montaggio Советы по сборке 装配建议

Kabel und Stecker
Plugs and cables
Fiches et des câbles

Stekkers en cables
Enchufes en cables
Cabos e contatos

Cavi e connettori
Провода и штекеры
电缆和插头





9V ... / 0,01 A

LED
LED
LED
LED
LED
LED
LED
LED
LED

Achtung: Beim Anschluß auf richtige Polung achten.
Caution: Make sure the terminals are connected correctly.
Attention: lors du raccordement, veiller à ce que la polarisation soit exacte.
Pas op: let bij het aansluiten op de juiste polariteit.
Atención: al conectar, procurar que los polos estén correctamente colocados.
Atenção: Por ocasião da conexão atentar para a polaridade correta.
Attenzione: nel collegamento osservare la corretta polarità.
Внимание: при подключении соблюдать полярность.
注意: 连接时应注意极性正确。

Sicherheitshinweise Safety Information Consignes de sécurité

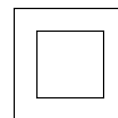
Veiligheidsrichtlijnen Indicaciones de seguridad Observações sobre segurança

Informazioni per la sicurezza

Указания по технике безопасности 安全指南

- Das Spielzeug darf nur mit einer der folgenden fischertechnik Energiequellen benutzt werden: Power Set, Art.-Nr.: 193745 Batteriehalter 9V 6AA oder Art.-Nr.: 35537 Accu Pack 8,4V.
- The toy may only be used with one of the following fischertechnik energy sources: Power Set, Art No.: 193745 Battery holder 9V 6AA or Art No.: 35537 Accu Pack 8.4V. You are not allowed to use 9V NiMH accu packs in this product.
- L'utilisation de ce jouet n'est permis qu'avec l'une des sources d'énergie fischertechnik suivantes: Power Set, Art. n° : 193745 Porte-pile 9V 6AA ou Art. n° : 35537 pack d'accumulateurs 8,4 volts.
- Het speelgoed mag uitsluitend met een van de volgende fischertechnik energiebronnen worden gebruikt: Power Set, art.nr.: 193745 Batterijhouder 9V 6AA of art.nr.: 35537 accupack 8,4V
- El juguete se debe utilizar únicamente con una de las siguientes fuentes de energía: Power Set, Art. No. 193745 Portapilas 9V 6AA o Art. No. 35537 paquete acumulador de 8,4V.
- O brinquedo somente pode ser utilizado com uma das seguintes fontes de energia da fischertechnik: Power Set, art. n°: 193745 Suporte de bateria 9V 6AA ou art. n°: 35537 Bloco de bateria de 8,4V.
- Questo giocattolo può essere utilizzato solo con le seguenti fonti di energia fischertechnik: Power Set, cod. prod.: 193745 Portabatterie 9V 6AA oppure cod. prod.: 35537 confezione batterie da 8,4V.
- Игрушку можно использовать только с одним из следующих источников энергии от fischertechnik: Power Set, арт. №: 193745 Держатель батареи 9V 6AA или арт. №: 35537 Accu Pack 8,4B
- 该玩具只允许使用如下的慧鱼 (fischertechnik) 能量源: Power Set, 或者商品号: 193745 电池座 9V 6AA 或者商品号: 35537, 8.4V 电池套件 (Accu Pack)

- Die Modelle dürfen nur an Geräte der Schutzklasse II angeschlossen werden, die mit dem entsprechenden Symbol gekennzeichnet sind.
- Ensure that the models are connected only to equipment rated in protection category II and marked with the appropriate symbol.
- Le raccordement des maquettes est uniquement permis à des appareils dotés de la catégorie de protection II qui portent le pictogramme respectif.
- De modellen mogen alleen op apparaten uit beschermingsklasse II worden aangesloten, die zijn voorzien van het bijbehorende symbool.
- Los modelos sólo pueden ser conectados a aparatos de clase de protección II que están identificados con el símbolo correspondiente.
- Os modelos somente devem ser conectados nos aparelhos da classe de proteção II, que são identificados com o símbolo correspondente.
- I modelli devono essere collegati solo ad apparecchi della classe di protezione II, contrassegnati con il relativo simbolo.
- Модели можно подключать только к приборам класса защиты II, обозначенным соответствующим знаком.
- 这些模型只允许连接到具有防护等级 II 的装置上, 这类装置被用相应的符号进行了标识。



Elektromagnetische Störungen

Sollte der Controller durch externe elektromagnetische Einflüsse gestört werden, kann er nach Ende der Störung bestimmungsgemäß weiter benutzt werden. Eventuell muss die Stromversorgung kurz unterbrochen und der Controller neu gestartet werden.

Electromagnetic Interference

If the Controller is affected by external electromagnetic influences, it can still be used for the purpose intended after the end of the interference. It is possible that the power supply will have to be interrupted for a short time and the Controller restarted.

Interférences électromagnétiques

L'emploi conforme à l'usage prévu du Controller perturbé par des interférences électromagnétiques externes est possible après l'élimination de l'origine de la perturbation. Il se pourrait cependant qu'il soit requis d'interrompre l'alimentation en courant brièvement et de redémarrer le Controller.

Elektromagnetische storingen

Als de Controller door externe elektromagnetische invloeden wordt gestoord, kan deze na het verdwijnen van de storing volgens voorschrift verder worden gebruikt. Eventueel moet de voedingsspanning kort worden onderbroken en de Controller opnieuw worden gestart.

Interferencias electromagnéticas

En caso que el Controller sea interferido por influencias electromagnéticas externas, tras finalizar la interferencia puede continuar siendo utilizado para los fines previstos. Eventualmente se debe interrumpir brevemente la alimentación de corriente y el Controller ser reiniciado.

Perturbações eletromagnéticas

Se o Controller for perturbado devido a influências externas eletromagnéticas, ele pode continuar a ser utilizado para o fim especificado depois do final da perturbação. Eventualmente, a alimentação de corrente deve ser interrompida brevemente e o Controller iniciado novamente.

Disturbi elettromagnetici

Se il Controller viene disturbato da influenze elettromagnetiche esterne, al termine del disturbo si può continuare a utilizzarlo senza problemi. Eventualmente si deve interrompere brevemente l'alimentazione elettrica e riavviare il Controller.

Электромагнитные помехи

Если внешние электромагнитные воздействия создают помехи для работы контроллера, то после окончания действия этих помех он может работать по назначению дальше. Возможно потребуется на короткое время прервать подачу электропитания и перезапустить контроллер.

电磁干扰

如果该控制器受到外部电磁影响的干扰, 则可在干扰结束后按照规定继续使用。也有可能必须短时切断电源, 然后重新启动控制器。

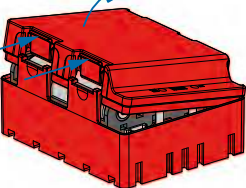
Sicherheitshinweise Safety Information Consignes de sécurité

Veiligheidsrichtlijnen Indicaciones de seguridad Observações sobre segurança

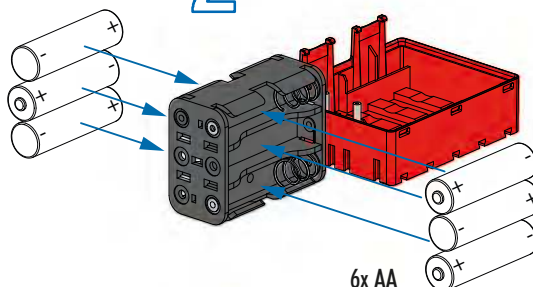
Informazioni per la sicurezza Указания по технике безопасности 安全指南

1

Batterie ist nicht Inhalt der Packung
Battery not included
Batterie non comprise
De batterij wordt niet meegeleverd
La batería no está incluida en el suministro
A bateria não é o conteúdo da embalagem
La batteria non è inclusa nella confezione
Батарея в комплект не входит
包装中不含电池

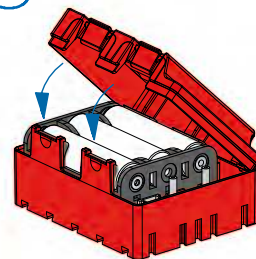


2



6x AA

3



- Nicht wiederaufladbare Batterien dürfen nicht geladen werden.
- Aufladbare Batterien dürfen nur von Erwachsenen geladen werden.
- Aufladbare Batterien sind aus dem Batteriehalter herauszunehmen, bevor sie geladen werden.
- Batterien müssen mit der richtigen Polarität eingelegt werden.
- Leere Batterien müssen aus dem Spielzeug herausgenommen werden.
- Die Anschlussklemmen dürfen nicht kurzgeschlossen werden.
- Verbrauchte Batterien dem Sondermüll zuführen.
- Drähte nicht in Steckdose einführen!
- Ladegerät regelmäßig auf Schäden überprüfen. Bei einem Schaden darf das Ladegerät bis zur vollständigen Reparatur nicht mehr verwendet werden.
- Alle elektrischen Bauteile (Motoren, Lampen) dürfen ausschließlich an Stromversorgungen von Fischertechnik angeschlossen werden.

- Do not attempt to charge NON-rechargeable batteries.
- Rechargeable batteries are only to be charged by adults.
- Take rechargeable batteries out of the battery tray before charging them.
- Insert batteries with the correct polarity.
- Remove dead batteries from the tray.
- Do not short circuit the connecting terminals!
- Discard spent dry cells at special waste disposal centre.
- Do not insert the wires into an outlet!
- Regularly inspect battery charger for damage. If the battery charger has been damaged, it should not be used further until fully repaired.
- No electrical components (motors, lamps) are to be connected to any other power supply than that provided by Fischertechnik.

- Il est interdit de recharger des piles qui ne sont pas des accumulateurs.
- Le chargement des accumulateurs doit toujours se faire par des adultes.
- Retirer les accumulateurs du support de pile avant de les recharger.
- Veiller à la polarité correcte lors de la mise en place des piles.
- Retirer impérativement les piles ou accumulateurs vides du jouet.
- Il est interdit de court-circuiter les bornes de raccordement.
- Jeter les piles usagées dans un conteneur spécial réservé à cet effet.
- Ne pas introduire les fils dans une prise!
- Contrôlez régulièrement le chargeur en vue d'éventuelles détériorations.
- En cas de détérioration, il est interdit d'utiliser le chargeur jusqu'à ce qu'il ait été intégralement réparé.
- Tous les composants électriques (moteurs, lampes) ne doivent être branchés aux alimentations électriques uniquement que par la société Fischertechnik.

- Niet-oplaadbare batterijen mogen niet worden opgeladen.
- Oplaadbare batterijen mogen uitsluitend door volwassenen worden opgeladen.
- Oplaadbare batterijen moeten uit de batterijhouder worden verwijderd, voordat deze worden opgeladen.
- De batterijen moeten met de juiste polariteit worden geplaatst.
- Lege batterijen moeten uit het speelgoed worden verwijderd.
- De aansluitklemmen mogen niet worden kortgesloten.
- Afleveren gebruikte batterijen bij het klein chemisch afval (KCA).
- Geen draden in de contactdoos steken!
- Laadtoestel regelmatig controleren op schade. Bij schade mag het laadtoestel niet meer gebruikt worden tot het volledig hersteld is.
- Alle elektrische componenten (motoren, lampen) mogen uitsluitend op stroomvoorzieningen van Fischertechnik worden aangesloten.

- Las pilas no recargables no pueden ser cargadas.
- Las pilas recargables sólo pueden ser cargadas por un adulto.
- Las pilas recargables deben ser extraídas del compartimento de pilas antes de que sean cargadas.
- Las pilas deben ser colocadas con la polaridad correcta.
- Las pilas descargadas deben ser extraídas del juguete.
- Los bornes de conexión no pueden ser puestos en cortocircuito.
- Retirar las baterías viejas, desechándolas en un depósito de basuras especiales.
- No introducir hilos en la toma de corriente!
- Comprobar con regularidad si el cargador presenta daños. En caso de presentar daños, el cargador no debe volver a ser utilizado hasta que esté completamente reparado.
- Todos los componentes eléctricos (motores, luces) deben conectarse a la alimentación de corriente de la técnica Fischer exclusivamente.

- Pilhas não recarregáveis não devem ser novamente carregadas.
- Pilhas recarregáveis somente devem ser recarregadas por adultos.
- Pilhas recarregáveis devem ser retiradas do compartimento de pilhas antes de serem carregadas.
- As pilhas devem ser colocadas com a polaridade correta.
- As pilhas descarregadas devem ser retiradas do brinquedo.
- Os terminais de conexão não devem ser curto-circuitados.
- Eliminar as baterias esgotadas como desperdício perigoso.
- Nunca introduzir fios na tomada!
- Verificar regularmente se o carregador apresenta danos. Em caso de dano, o carregador não deverá ser utilizado enquanto não estiver plenamente consertado.
- Todas as peças componentes elétricas (motores, lâmpadas) só podem ser exclusivamente conectadas em abastecimentos de corrente da Fischertechnik.

- Le batterie non ricaricabili non devono essere ricaricate.
- Le batterie ricaricabili devono essere ricaricate da persone adulte.
- Le batterie ricaricabili si devono estrarre dal supporto prima di ricaricarle.
- Le batterie si devono inserire rispettando la polarità.
- Togliere le batterie dal giocattolo quando sono scariche.
- I morsetti di allacciamento non devono essere cortocircuitati.
- Smaltire le batterie usate negli appositi contenitori per la raccolta differenziata.
- Non inserire i fili nella presa elettrica.
- Controllare periodicamente se il caricabatterie presenta dei danni. In caso di danni, il caricabatterie non deve più essere utilizzato fino alla riparazione.
- Tutti i componenti elettrici (motori, lampadine) devono essere collegati esclusivamente ad alimentatori Fischertechnik.

- Не пытайтесь заряжать перезаряжаемые батарейки.
- Зарядку перезаряжаемых аккумуляторов разрешается выполнять только взрослым.
- Перед зарядкой перезаряжаемых аккумуляторов извлеките их из аккумуляторного отсека.
- При установке аккумуляторов на место соблюдайте полярность.
- Разряженные батарейки необходимо извлечь из игрушки.
- Не замыкайте накоротко соединительные клеммы.
- Использованные батареи утилизировать как спецотходы.
- Не вставляйте в розетку провода!
- Регулярно проверяйте зарядное устройство на отсутствие повреждений. При наличии повреждений использовать зарядное устройство до выполнения его полного ремонта не разрешается.
- Все электрические детали (электромоторы, лампочки.) можно подключать только к источникам электропитания от Fischertechnik.

- 不得给非充电电池充电
- 只允许由成年人给充电电池充电
- 在充电前必须将充电电池从电池夹中取出。
- 必须按照正负极正确放入电池。
- 必须从玩具中取出没有电的电池
- 接线柱不允许被短路。
- 用完了的电池应作为特种垃圾处理。
- 禁止将金属丝插入插座！
- 经常检查充电器是否有损坏情况。如果充电器有损，直到完全修好为止不可以再使用。
- 只允许将所有电气部件（传感器，电机，灯泡）与慧鱼技术产品的电源装置相连接

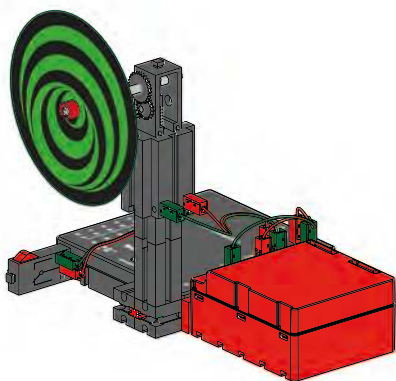
- Lies die Anleitung vor Versuchsbeginn, befolge sie und halte sie nachschlagbereit.
- Bewahre den Experimentierkasten außerhalb der Reichweite von kleinen Kindern auf.
- Alle Einzelteile, insbesondere bewegliche Teile sind falls notwendig zu warten und zu reinigen.
- Achtung! Verletzungsgefahr an Bauteilen mit funktionsbedingten scharfen Kanten und Spitzen!
- Read these instructions before starting experiments; ensure they are followed and kept readily available for reference.
- Keep the experiment kit out of reach of small children.
- All components, especially moving parts, should be maintained and cleaned as necessary.
- Caution! Be careful not to hurt yourself on components with sharp or pointed edges!
- Lisez le mode d'emploi avant de commencer les essais, suivez-le et maintenez-le à disposition afin que vous puissiez le consulter à tout moment.
- Rangez la boîte expérimentation hors de portée de mains des enfants en bas âge.
- Toutes les pièces détachées et en particulier les pièces mobiles, sont, si nécessaire, à entretenir et à nettoyer.
- Attention! Risque de blessure sur les éléments comportant des arêtes et des pointes vives indispensables au bon fonctionnement!
- Lees de gebruiksaanwijzing voor het begin van het experiment door, volg de aanwijzingen erin op en houd haar binnen handbereik voor als u het niet meer weet.
- Houd de experimenteerdoos uit de buurt van kleine kinderen.
- Alle onderdelen, vooral de bewegende delen, kunnen, indien noodzakelijk, onderhouden en gereinigd worden.
- Let op! U kunt zich bezeren aan bouwstenen met scherpe randen of punten!
- Lee estas instrucciones antes de iniciar el ensayo, cúmplelas y tenlas a mano para consultas.
- Guarda la caja de experimentación fuera del alcance de niños pequeños.
- Es necesario limpiar y mantener en buen estado todas las diferentes piezas - especialmente las piezas móviles.
- Atención! Existe el peligro de lesión con los pezos de construcción que tienen bordes y puntas puntiagudas necesarios para la funcionalidad del pezo!
- Leia as instruções antes do início do experimento, observe-as e mantenha-as sempre à mão para verificação.
- Guarde a caixa de experimentos fora do alcance de crianças pequenas.
- Caso necessário, todas as peças individuais, especialmente peças móveis, tem que ser submetidas à manutenção e ser limpas.
- Atenção! Perigo de ferimentos em peças componentes com cantos vivos e pontas obrigatórias para o funcionamento!
- Leggi le istruzioni prima di iniziare l'esperimento, rispetta e tienile a portata di mano per poterle consultare in caso di bisogno.
- Conserva la cassetta di sperimentazione lontano dalla portata dei bambini piccoli.
- Se necessario, tutti i singoli componenti, soprattutto le parti mobili, si devono eventualmente sottoporre a manutenzione e pulizia.
- Attenzione! Pericolo di lesioni dovute a componenti con spigoli vivi e punte per motivi funzionali!
- Прочитай инструкцию до начала эксперимента, выполняй её требования и держи наготове, чтобы обратиться к ней при необходимости.
- Храни набор для экспериментов в месте, недоступном для маленьких детей.
- Все детали, особенно подвижные, требуют ухода и чистки.
- Будьте осторожны! Об острые края деталей и их наконечники можно порезаться!
- 请在使用前阅读说明书，并遵守及妥善保管，以备将来参考。
- 实验构件要存放在幼儿够不到的地方。
- 必要时应保养和清洁所有零件，尤指运动部件。
- 注意！因功能需要而带有锋利的棱边和尖角的部件可能会带来受伤危险！

- Achtung: Erstickungsgefahr durch kleine Kugel und verschluckbare Kleinteile!
- Warning: risk of suffocation due to small balls and parts that can be swallowed!
- Attention : risque d'étouffement avec des petites billes et des petites pièces pouvant être avalées !
- Waarschuwing: verstikkingsgevaar door kleine kogeltjes en inslikbare kleine delen!
- Advertencia: riesgo de asfixia con las bolas y piezas pequeñas que pueden ingerirse!
- Advertência: perigo de asfixia devido a esferas pequenas e peças pequenas que podem ser engolidas!
- Aviso: periculo di soffocamento a causa delle piccole sfere e dei piccoli pezzi ingoiabili!
- Внимание: Опасность удушья маленьким шариком и маленькими деталями!
- 警告：可能误吞的小球和小零件有造成窒息的危险！



Hinweise zum Umweltschutz / Instructions for Environmental Protection / Remarques de protection de l'environnement / Bescherming van het milieu / Notas con respecto a la protección del medio ambiente / Instruções para a proteção do meio ambiente / Indicazioni sulla tutela ambientale / Указания по охране окружающей среды / 有关环保的提示：

www.fischertechnik.de/environment

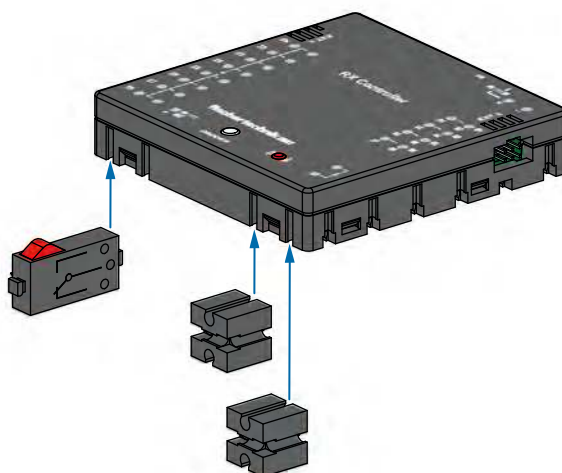
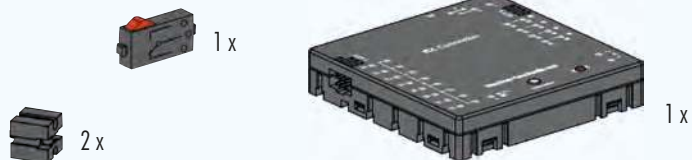


Optische Täuschung
Optical illusion
Illusion d'optique

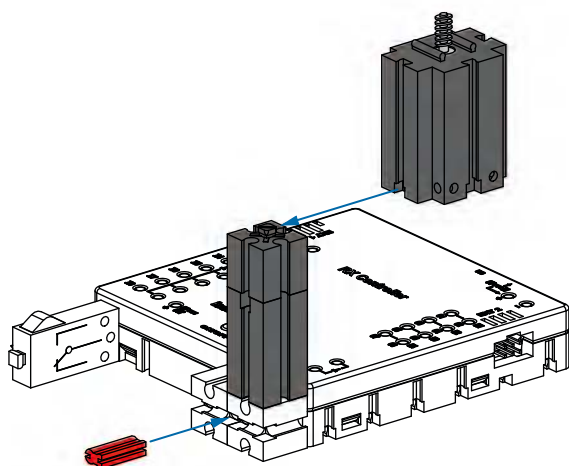
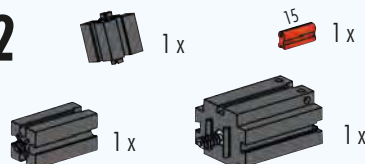
Optische illusione
Ilusión óptica
Ilusão de óptica

Illusione ottica
Оптическая
иллюзия
视觉幻觉

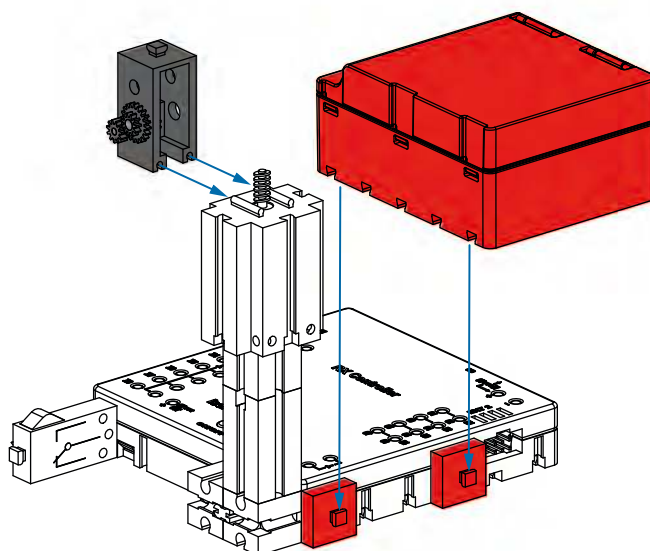
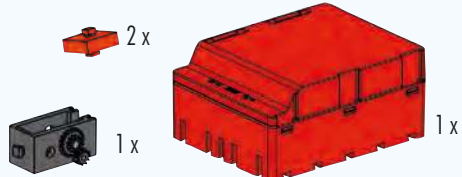
1



2



3



4

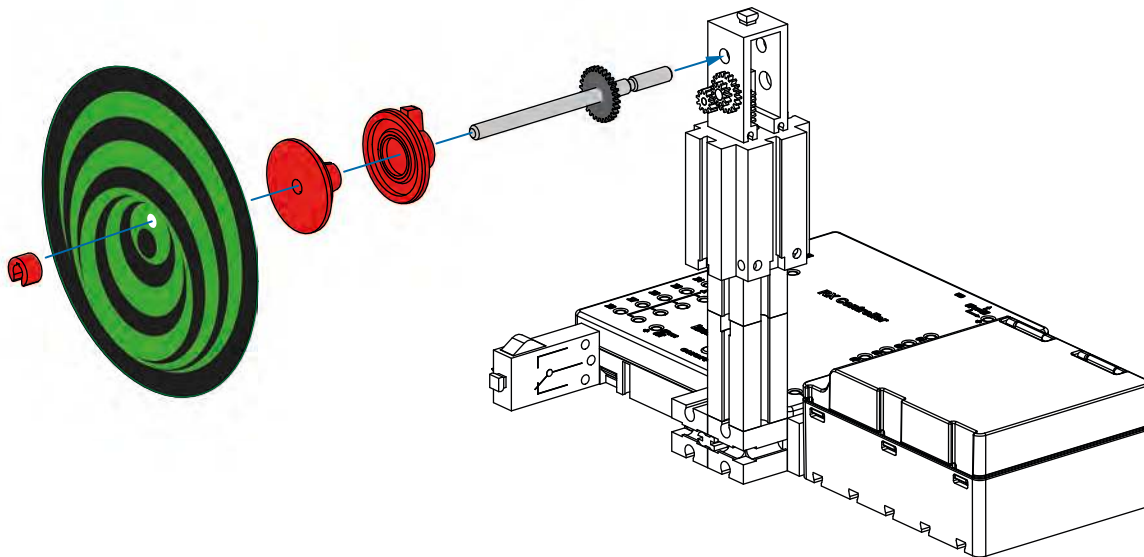
1x

1x

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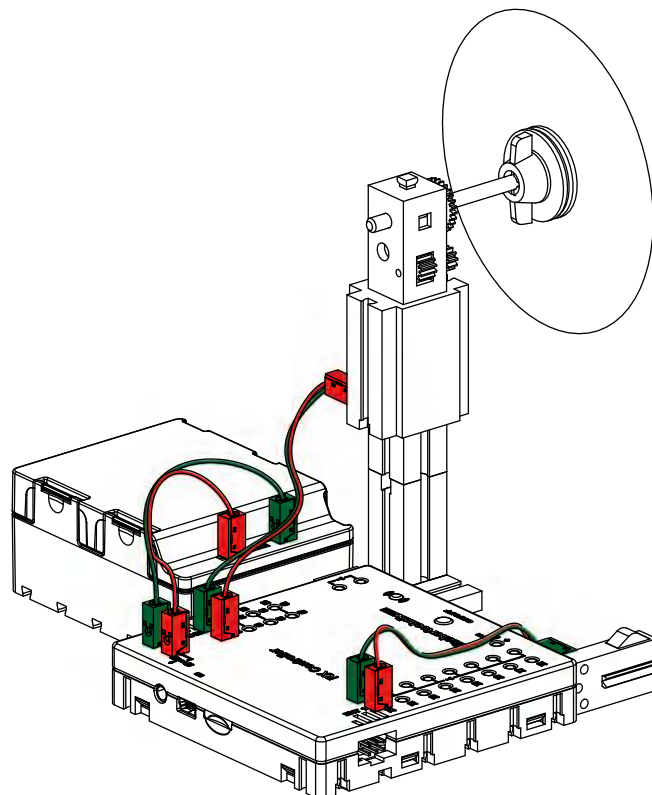
1x



5

15 cm

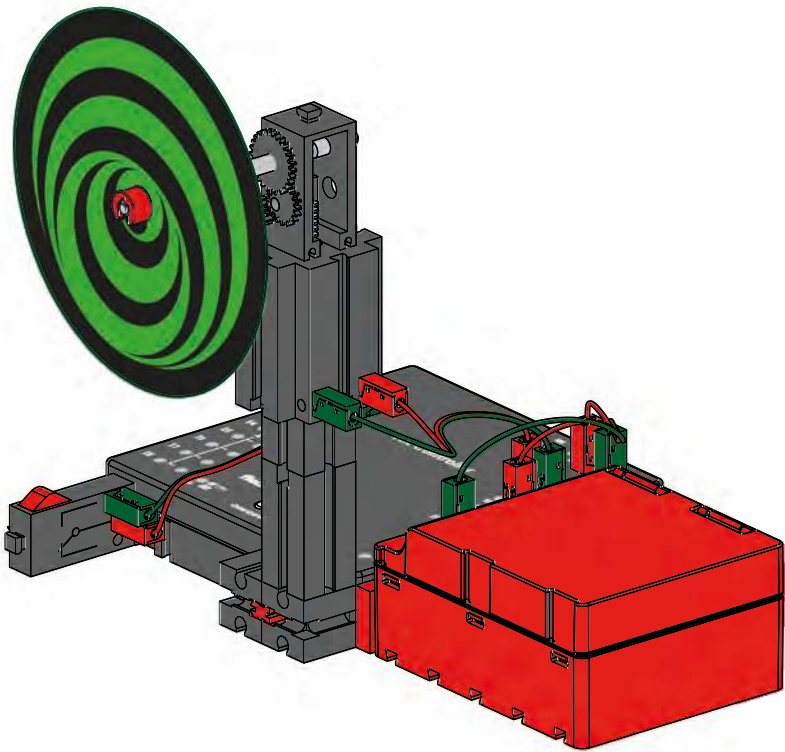
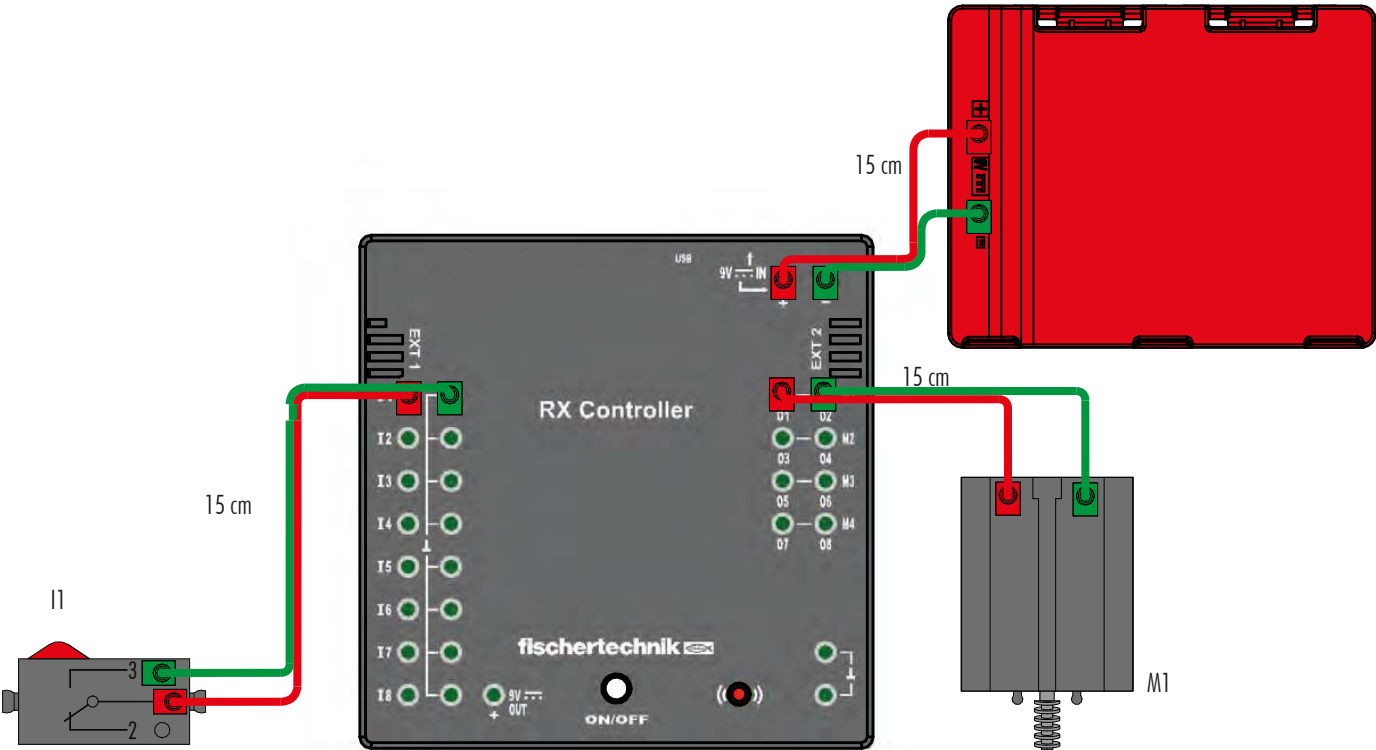
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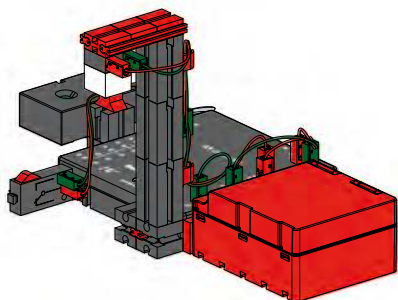


Schaltplan
Circuit diagram
Plan électrique

Schakelschema
Diagrama de circuitos
Plano elétrico de ligação

Schema elettrico
Схема подключения
电路图



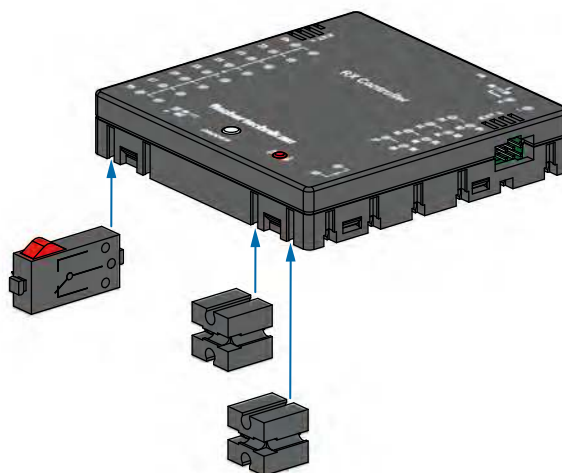
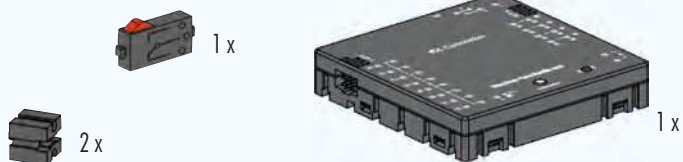


Dämmerungsschalter
Twilight switch
Interrupteur crépusculaire

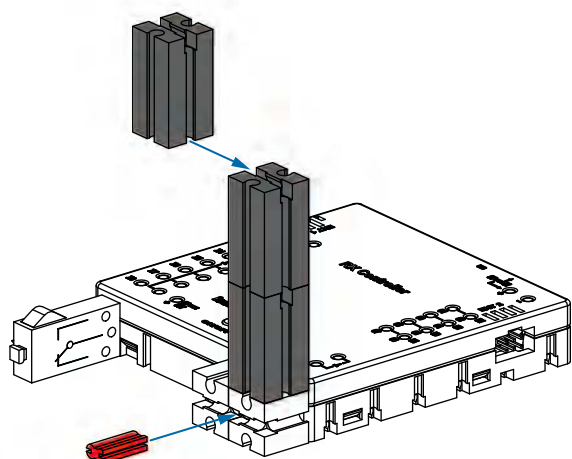
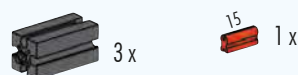
Schemerschakelaar
Interruptor crepuscular
Interruptor crepuscular

Interruttore crepuscolare
Автомат вечернего
освещения
暮光开关

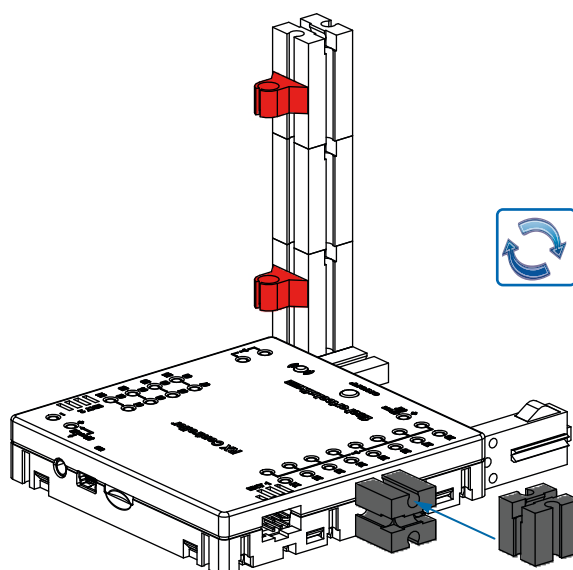
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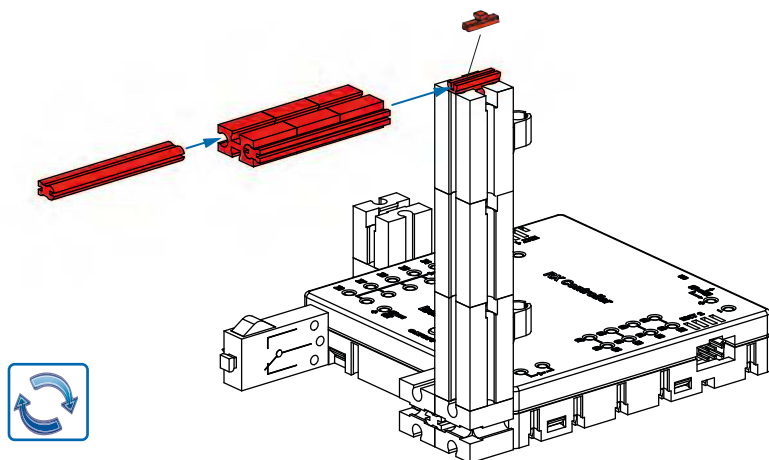


2



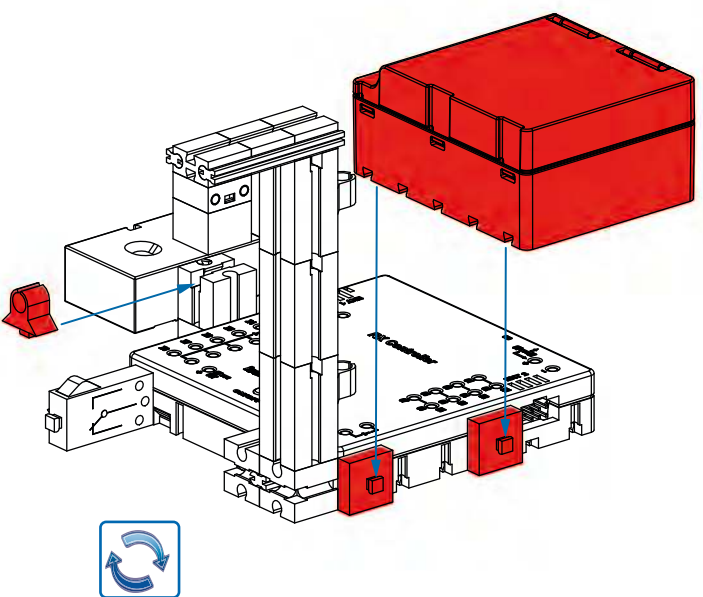
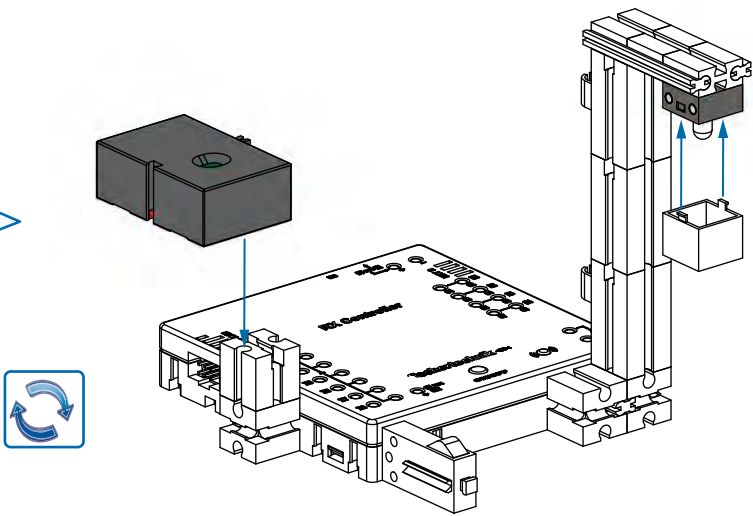
3





- 4**
- 1x (Red connector)
 - 3x (Red beam)
 - 45 (Red beam) 2x

- 5**
- 1x (Black component with 'W' label)
 - 1x (Black component)
 - 1x (Red component)



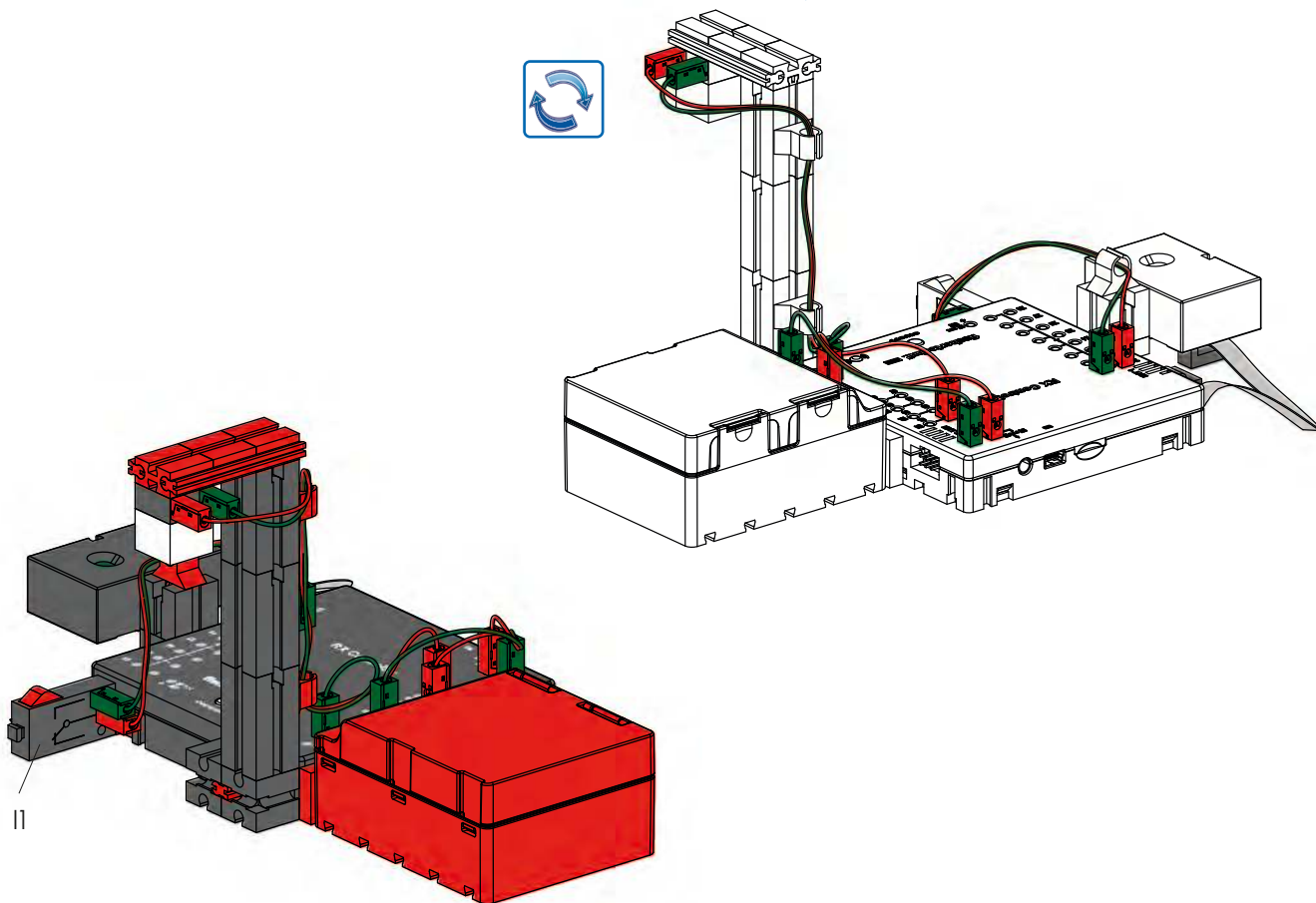
- 6**
- 1x (Red connector)
 - 2x (Red connector)
 - 1x (Red box)

7

15 cm 2 x

20 cm 1 x

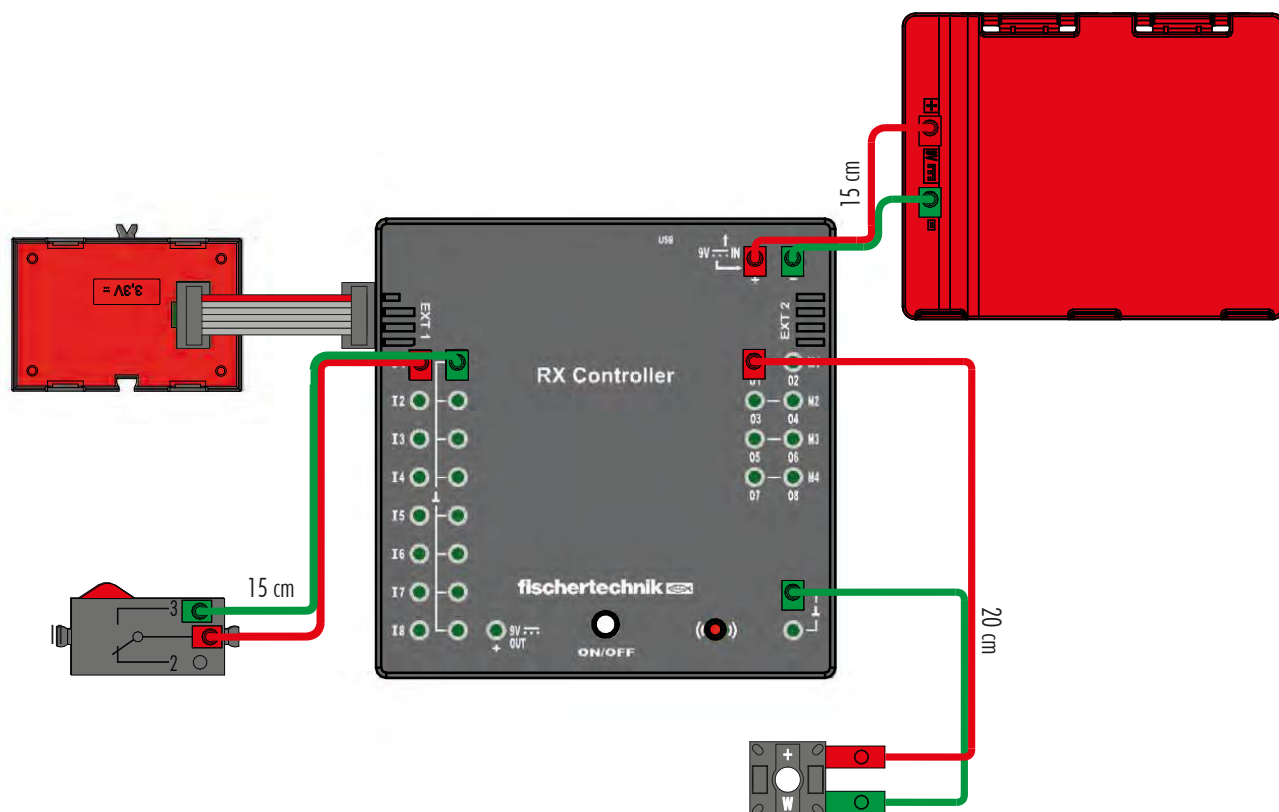
1 x

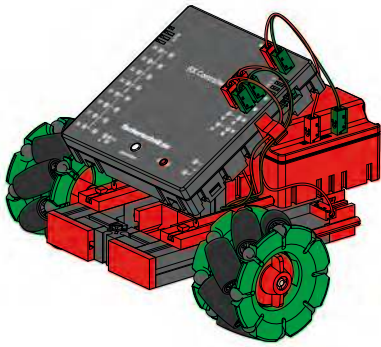


Schaltplan
Circuit diagram
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电路图



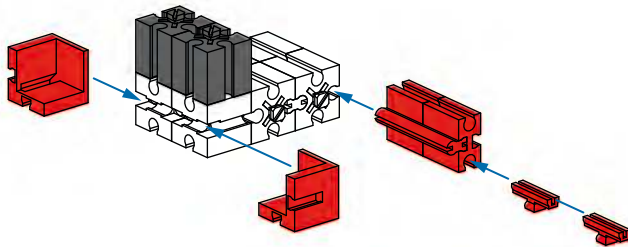
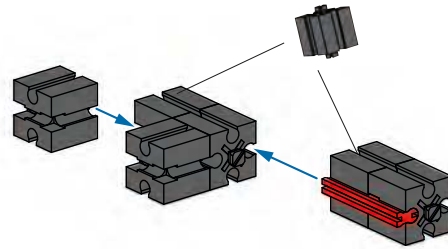
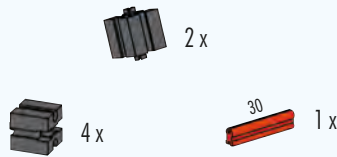


2-Radroboter
2-wheeled robot
Robot à 2 roues

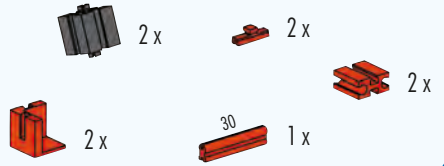
2-wielige robot
Robot de 2 ruedas
Robô de 2 rodas

Robot a 2 ruote
Двухколесный
робот
两轮机器人

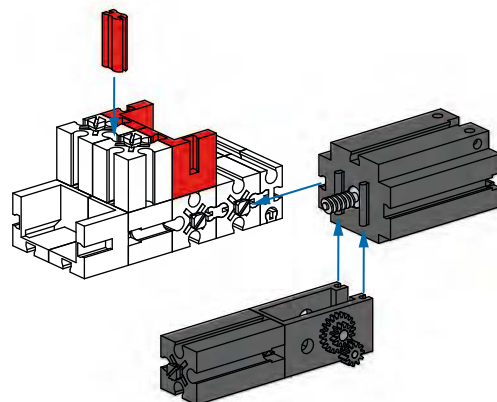
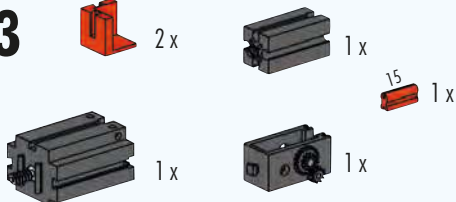
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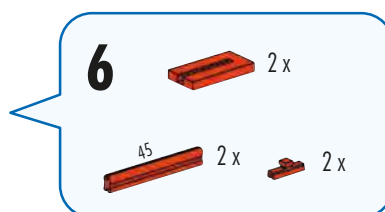
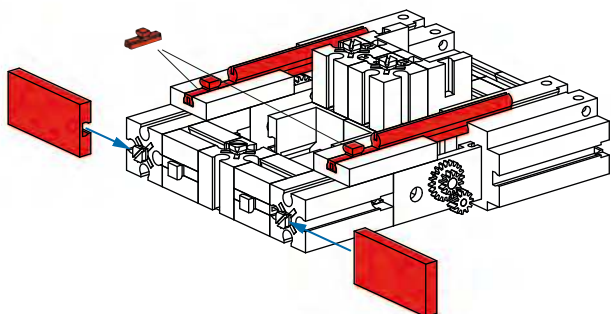
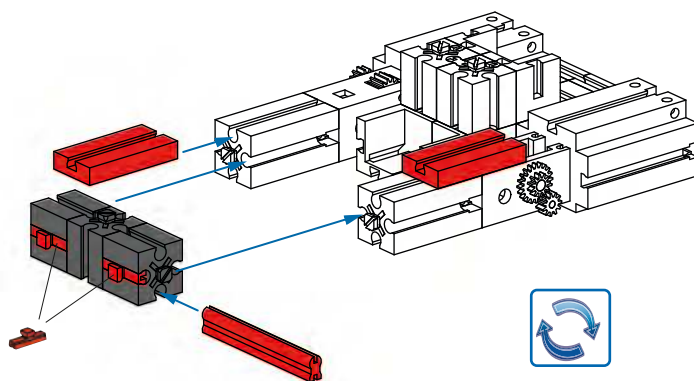
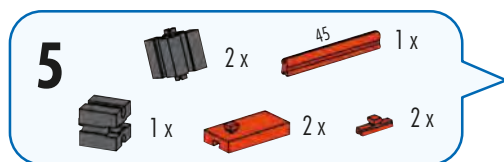
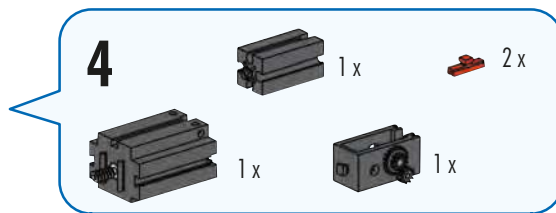
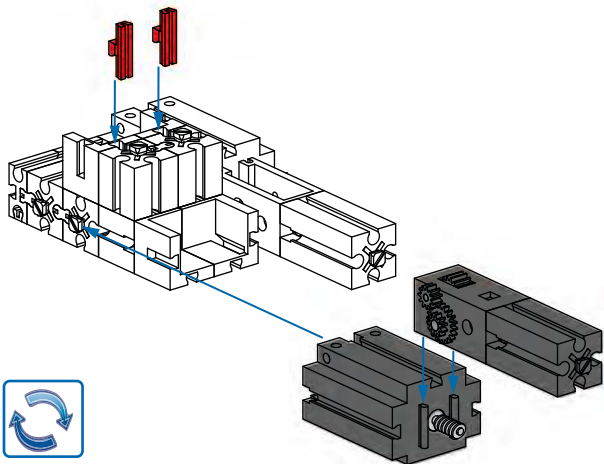


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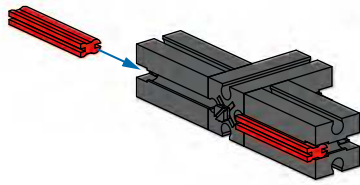
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7

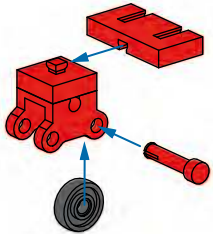
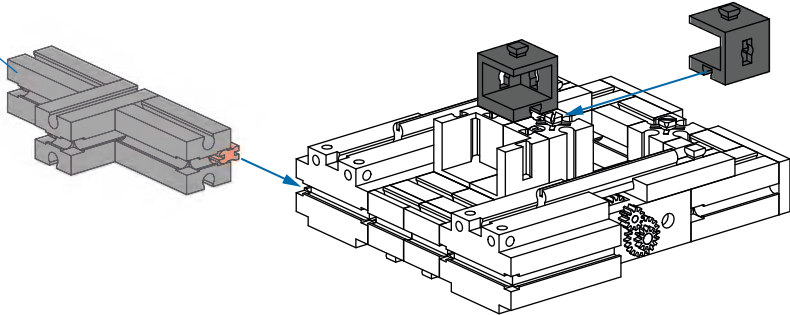
3 x  2 x 



8

2 x 

7

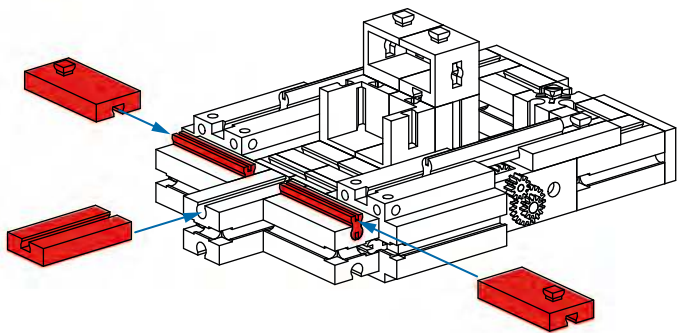


9

1 x  1 x 
 1 x  1 x  1 x 

10

3 x  2 x 

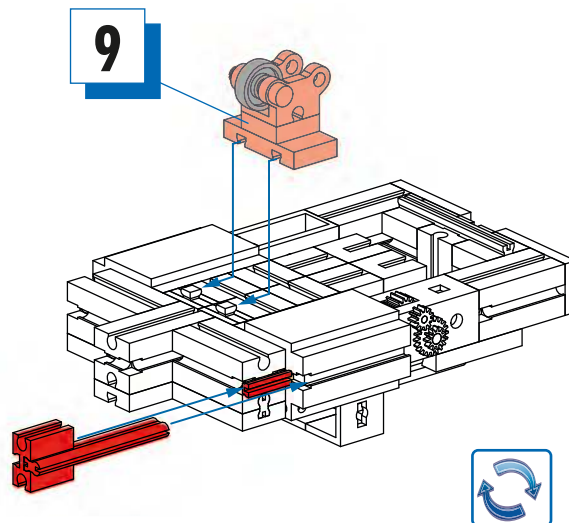


11

45 1x

1x

1x

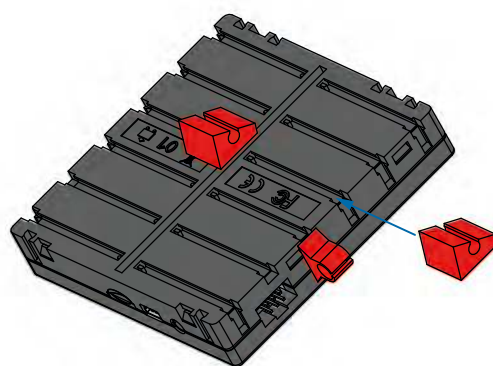
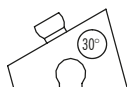


12

30° 2x

1x

1x

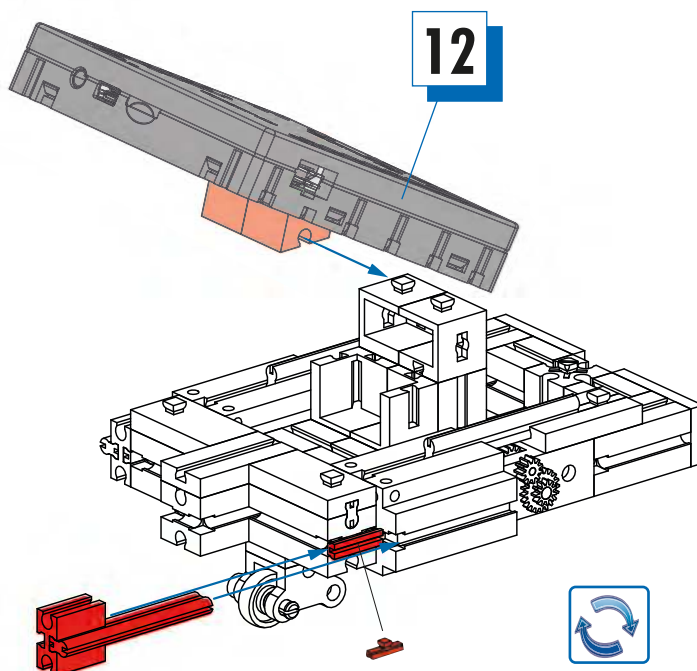


13

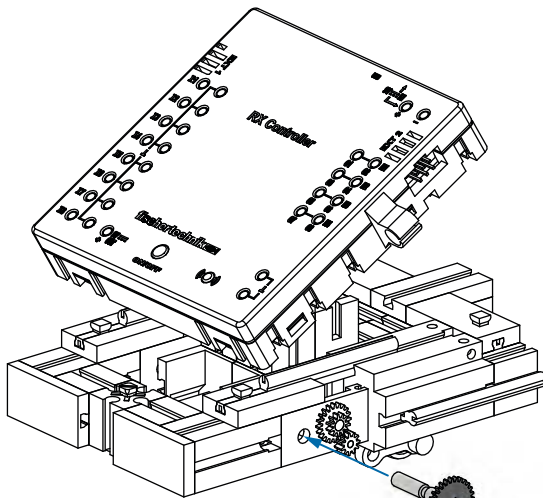
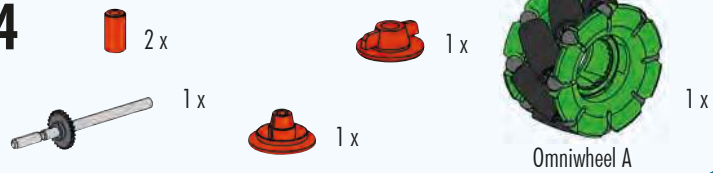
45 1x

1x

1x

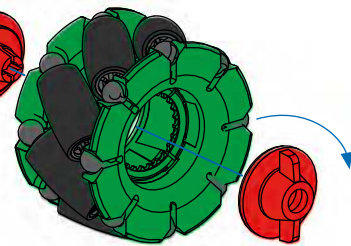


14

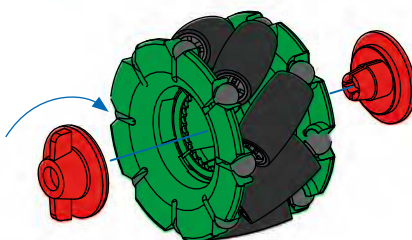
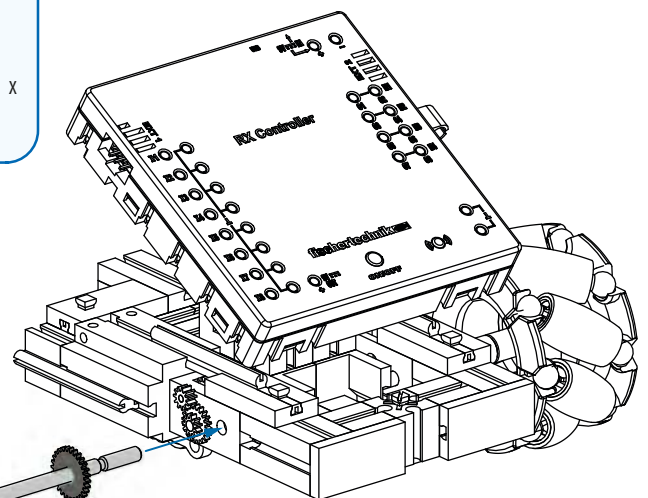
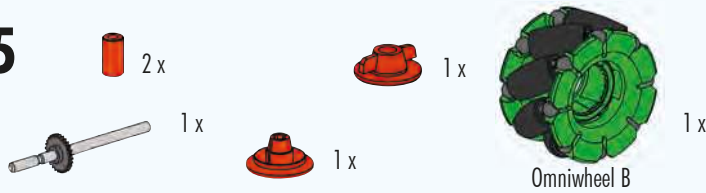


- Nabenmutter sehr fest anziehen
- Fasten the hub nut very tightly
- Serrer l'écrou du moyeu très serré
- Draai de naafmoer goed vast
- Atornillar las tuercas laterales muy fuertes
- Apertar bem as porcas de cubo
- Stringere saldamente il dado del mozzo
- Затянуть гайки ступиц
- 拧紧

Omniwheel A

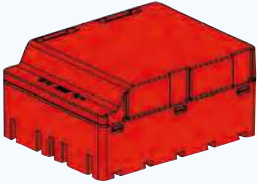


15

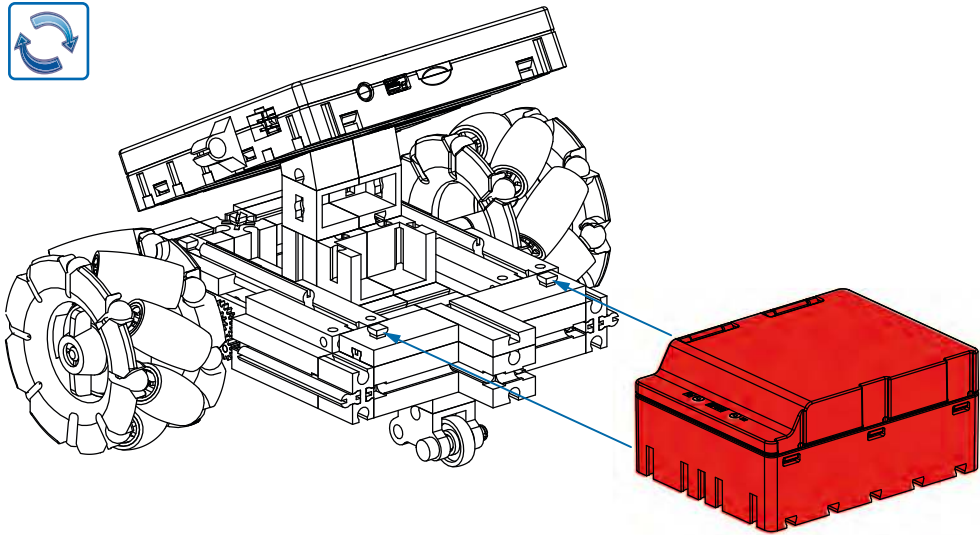


Omniwheel B

16



1 x



17



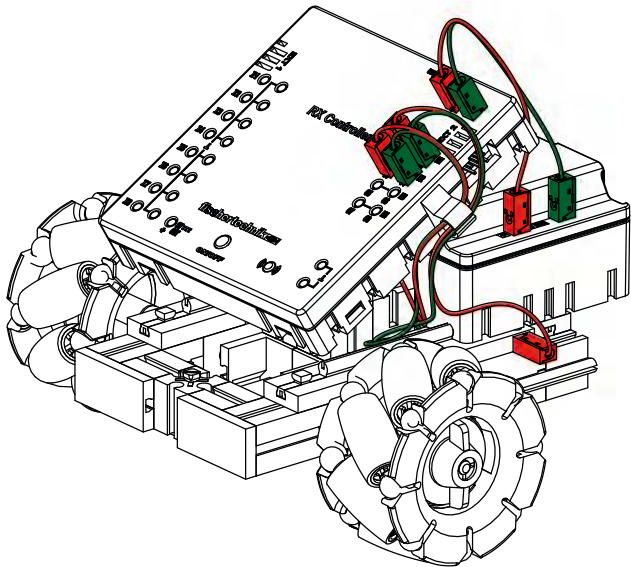
15 cm

1 x



20 cm

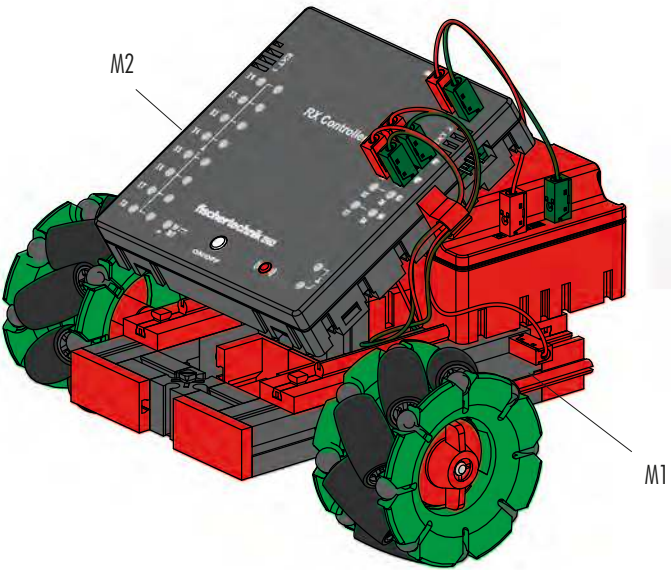
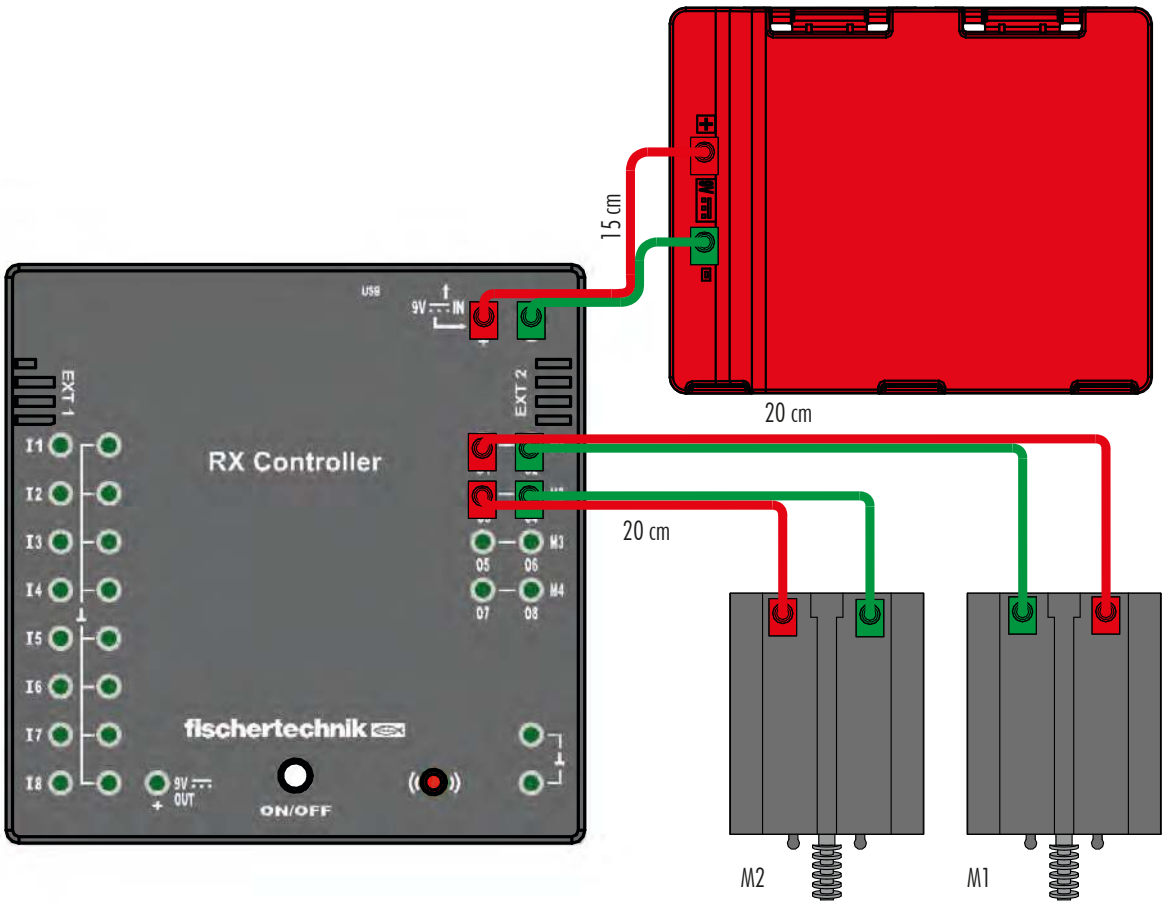
2 x

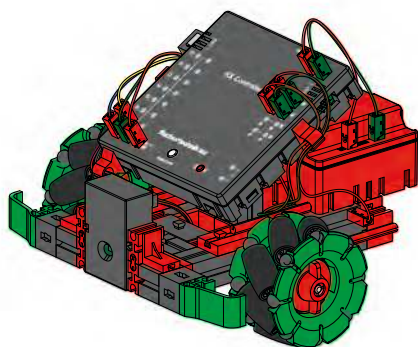


Schaltplan
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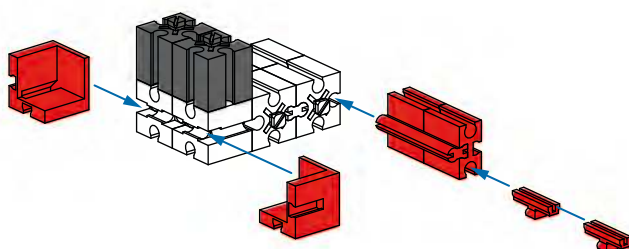
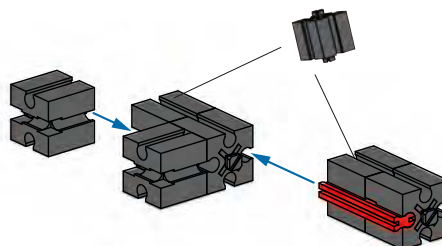
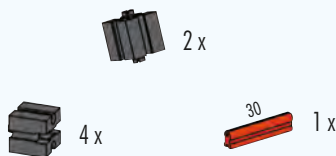


Advanced 2-Radroboter
(mit Sensorik)
Advanced 2-wheeled robot
(with sensors)
Robot avancé à 2 roues
(avec capteurs)

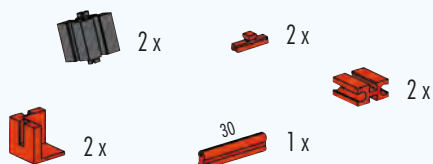
Geavanceerde 2-wielige robot
(met sensoren)
Robot avanzado de 2 ruedas
(con sensores)
Robô avançado de 2 rodas
(com sensores)

Robot avanzato a 2 ruote
(con sensori)
Усовершенствованный
двухколесный робот
(с датчиками)
先进的两轮机器人
(带传感器)

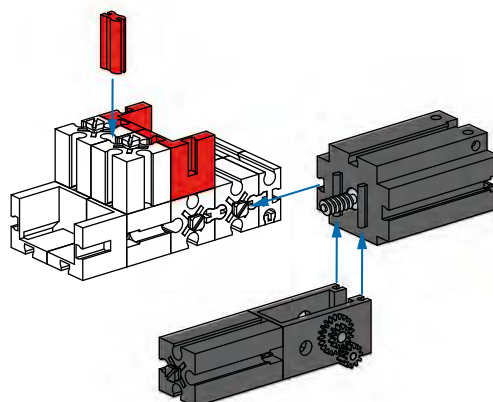
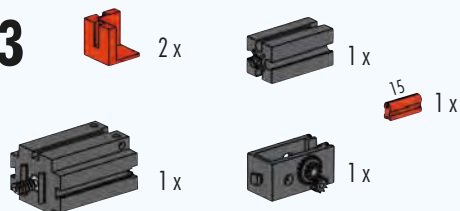
1

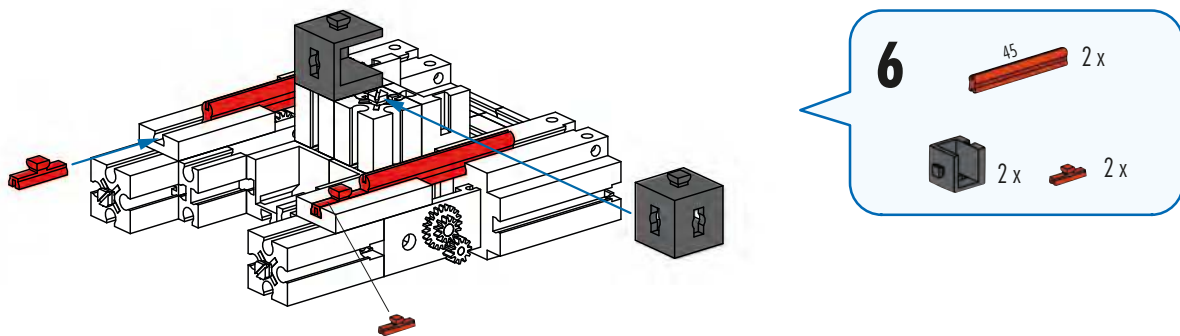
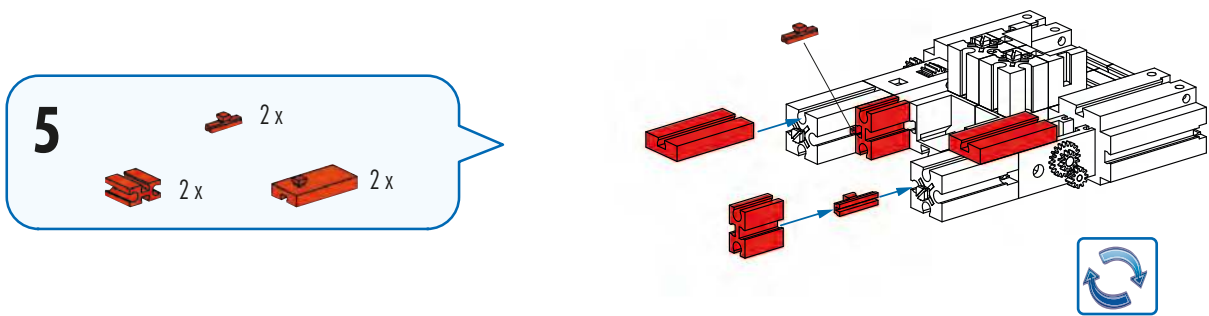
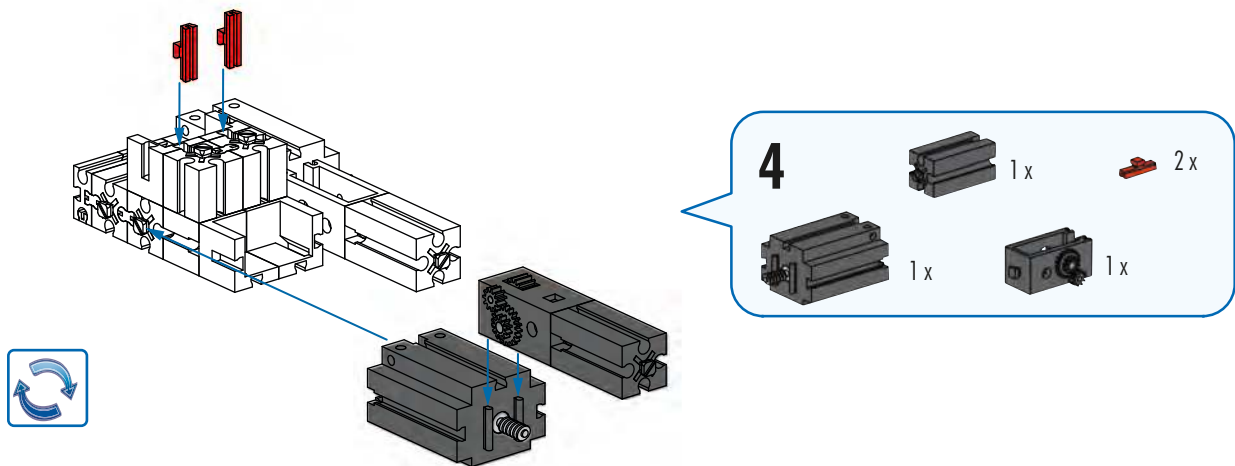


2



3





7

30°

2 x

1 x

1 x

7

8

2 x

9

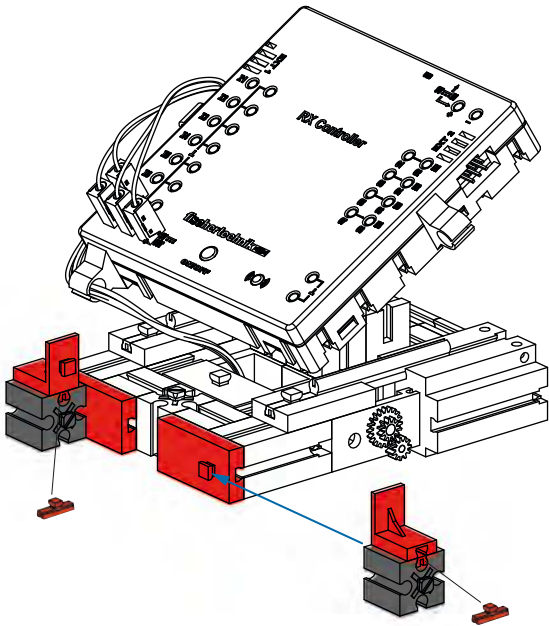
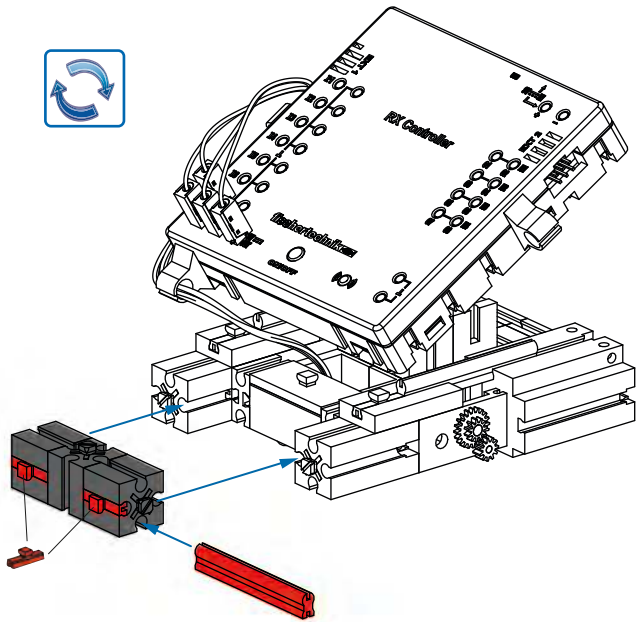
1 x

1 x

24

10

- 2x [Grey 1x3 Technic Brick]
- 1x [Grey 1x3 Technic Brick with Pin]
- 2x [Red 1x2 Technic Pin]
- 1x [Red 1x45 Technic Beam]

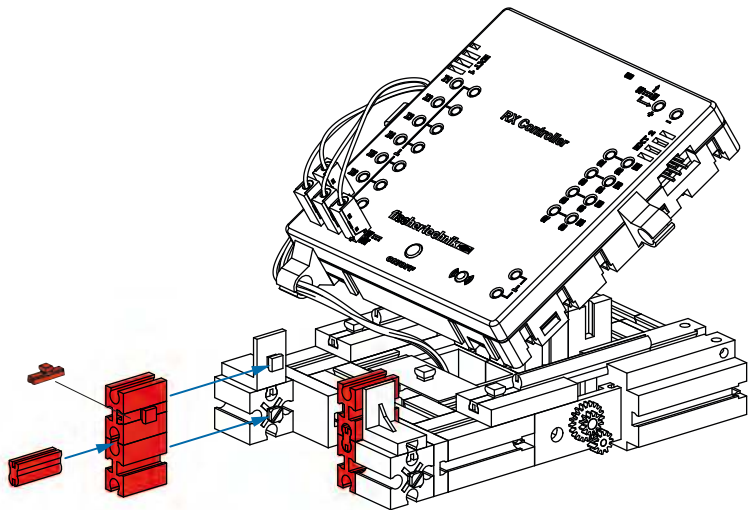


11

- 2x [Red 1x2 Technic Pin]
- 2x [Red 1x2 Technic Pin]
- 2x [Red 1x2 Technic Pin]
- 2x [Grey 1x3 Technic Brick]

12

- 4x [Red 1x2 Technic Pin]
- 2x [Red 1x2 Technic Pin]
- 1x [Red 1x2 Technic Pin]



13



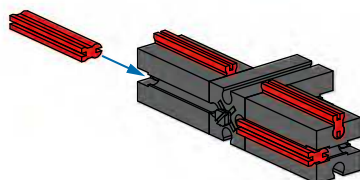
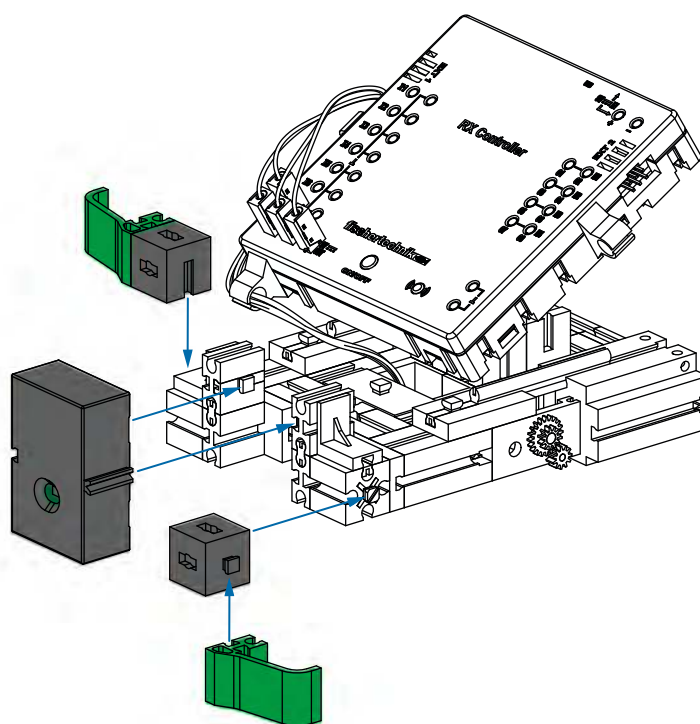
1 x



2 x



2 x



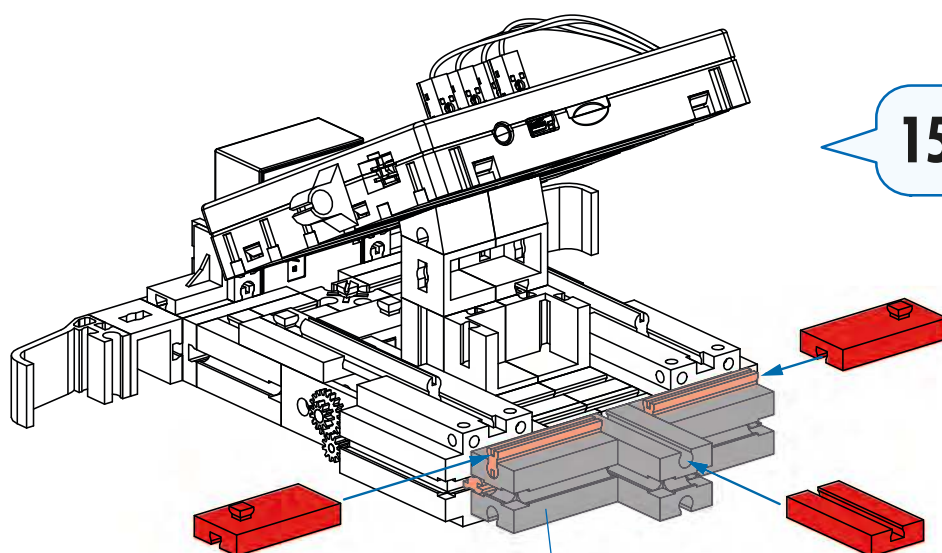
14



3 x



4 x



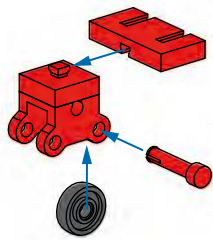
15



3 x



14



16



1 x



1 x



1 x



1 x



1 x

17



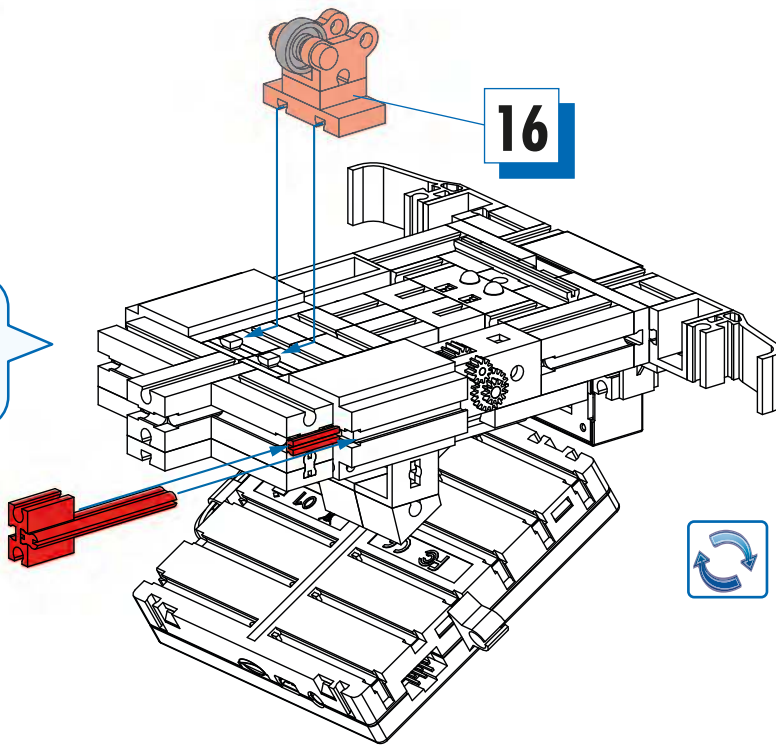
1 x



1 x



1 x



18



2 x



1 x



1 x

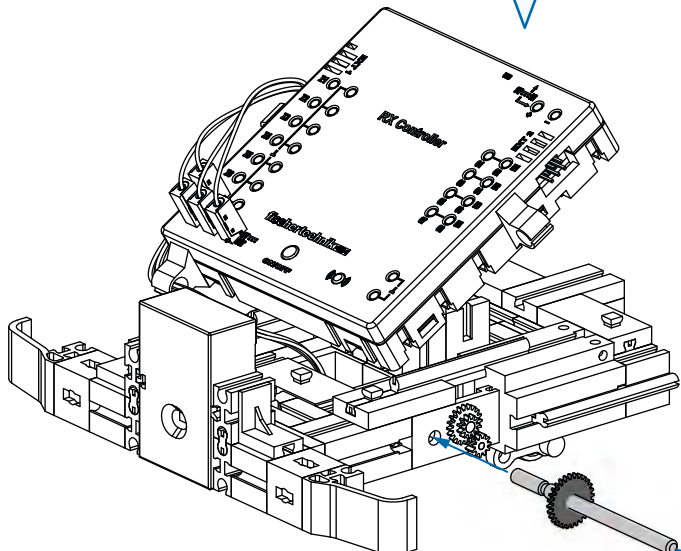


1 x

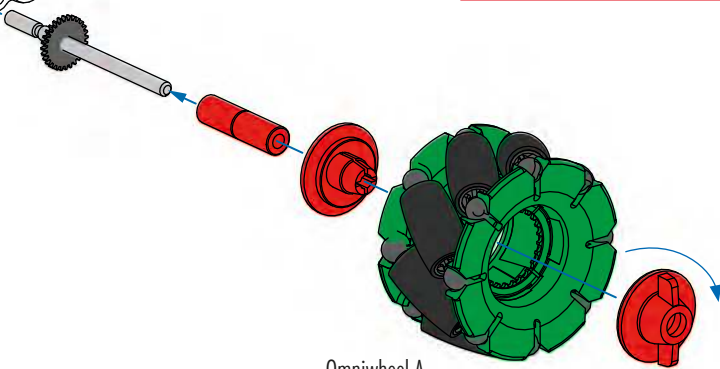


1 x

Omniwheel A



- Nabenmutter sehr fest anziehen
- Fasten the hub nut very tightly
- Serrer l'écrou du moyeu très serré
- Draai de naafmoer goed vast
- Atornillar las tuercas laterales muy fuertes
- Apertar bem as porcas de cubo
- Stringere saldamente il dado del mozzo
- Затянуть гайки ступиц
- 拧紧



Omniwheel A

19

2 x

1 x

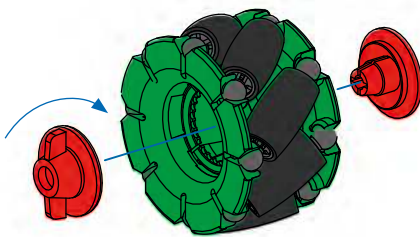
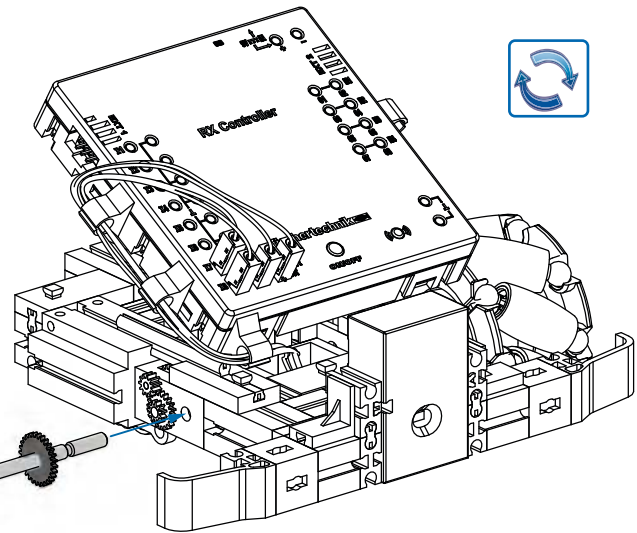
1 x



Omniwheel B



- Nabenmutter sehr fest anziehen
- Fasten the hub nut very tightly
- Serrer l'écrou du moyeu très serré
- Draai de naafmoer goed vast
- Atornillar las tuercas laterales muy fuertes
- Apertar bem as porcas de cubo
- Stringere saldamente il dado del mozzo
- Затянуть гайки ступиц
- 拧紧



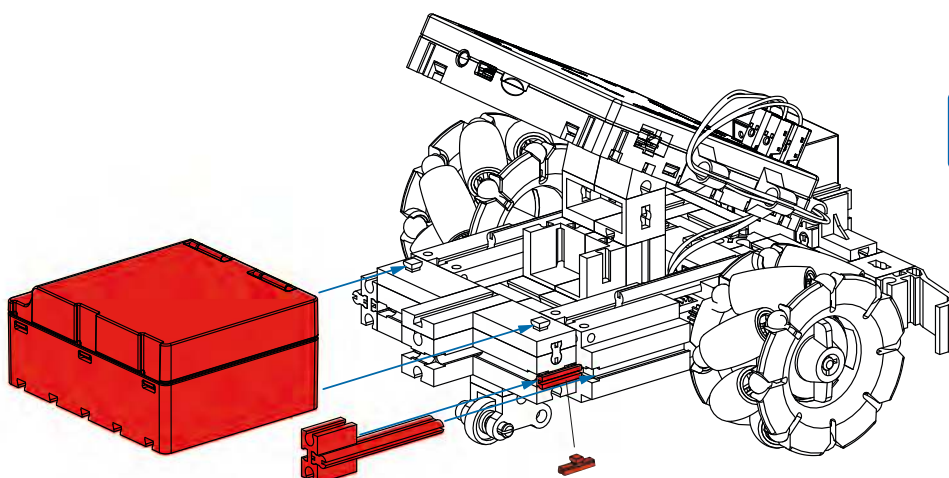
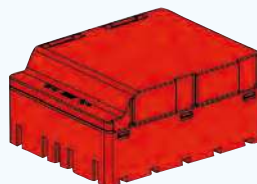
Omniwheel B

20

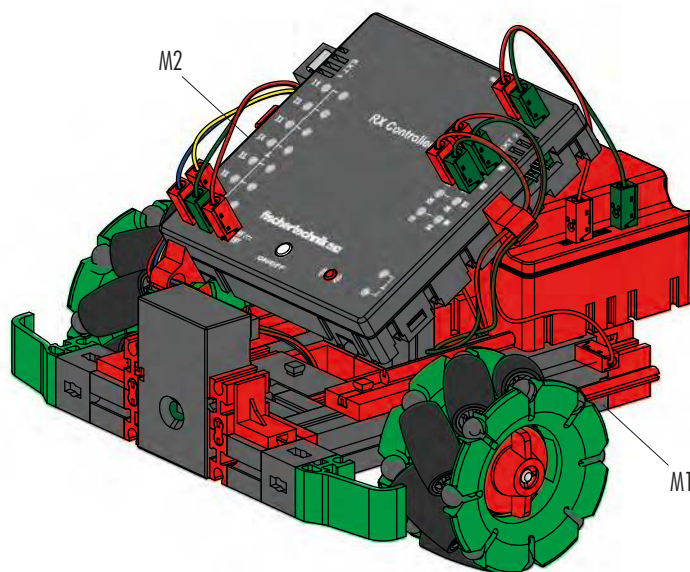
1 x

1 x

1 x



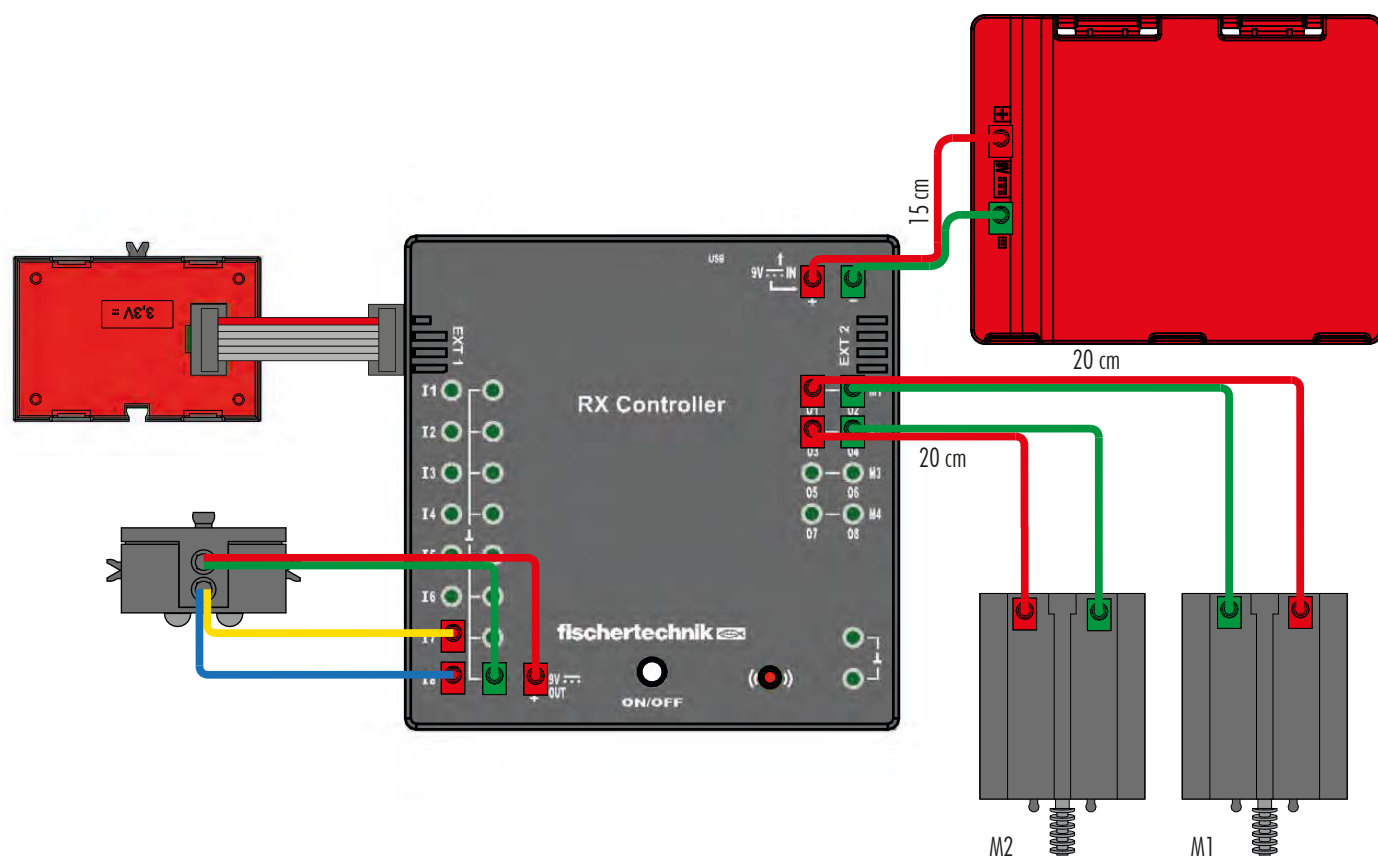
21

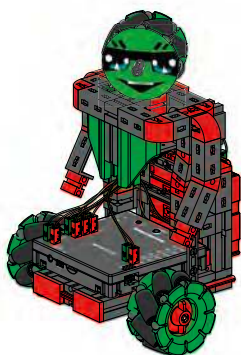


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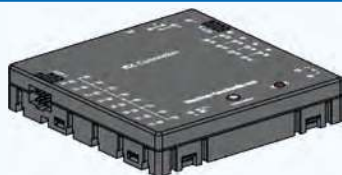


Tanzroboter
Dancing robot
Robot dansant

Dansende robot
Robot bailarín
Robô dançarino

Robot danzante
Танцующий робот
舞蹈机器人

1



1 x



2 x



1 x

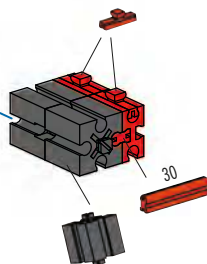
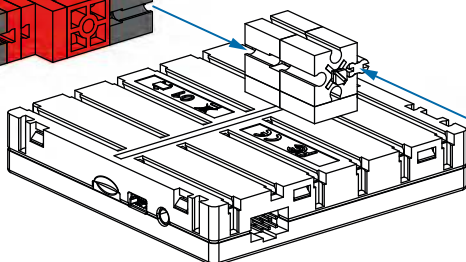
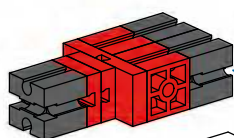
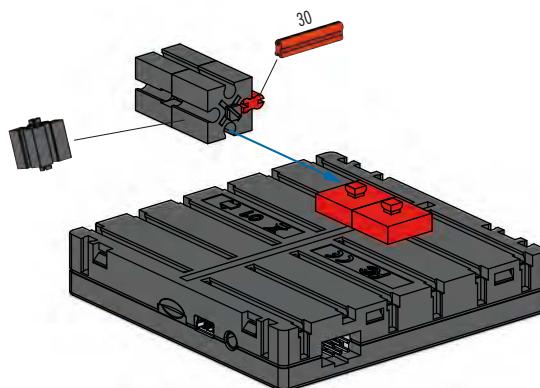


1 x



30

1 x



2



4 x



1 x



2 x



1 x



2 x



1 x



2 x



2 x



30

1 x

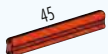
3



1 x

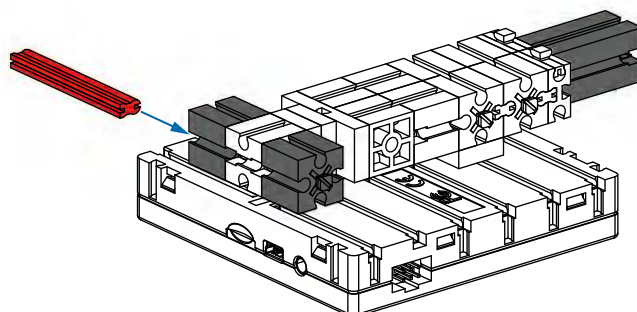


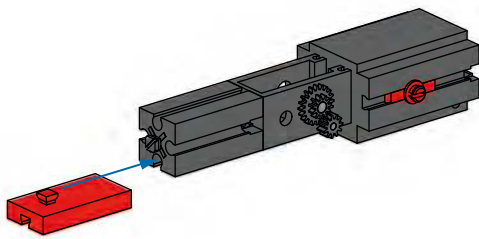
2 x



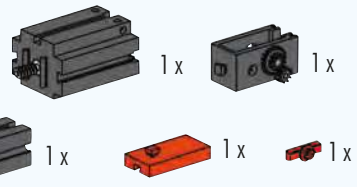
45

1 x

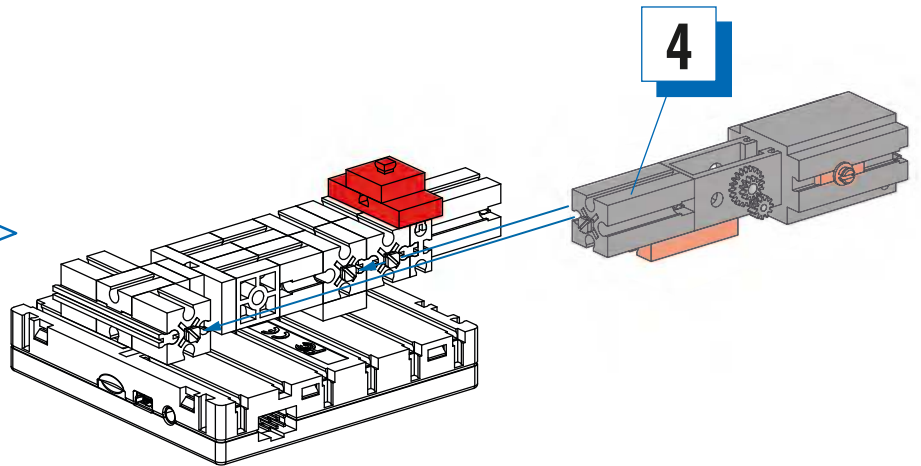




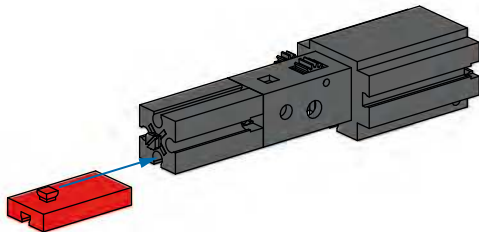
4



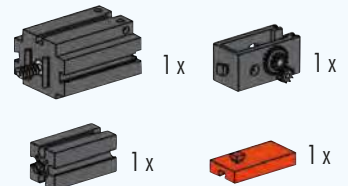
5



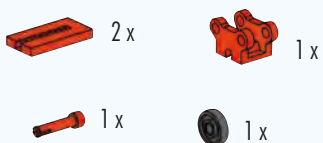
4



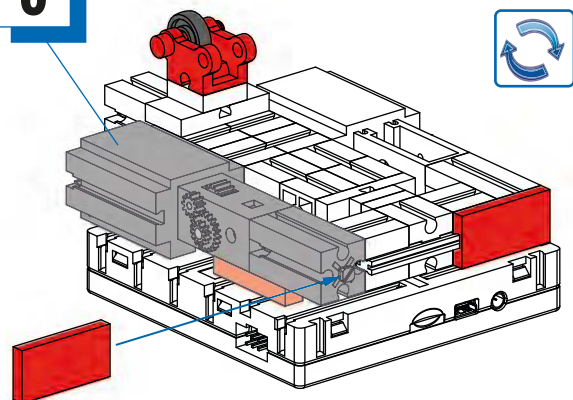
6

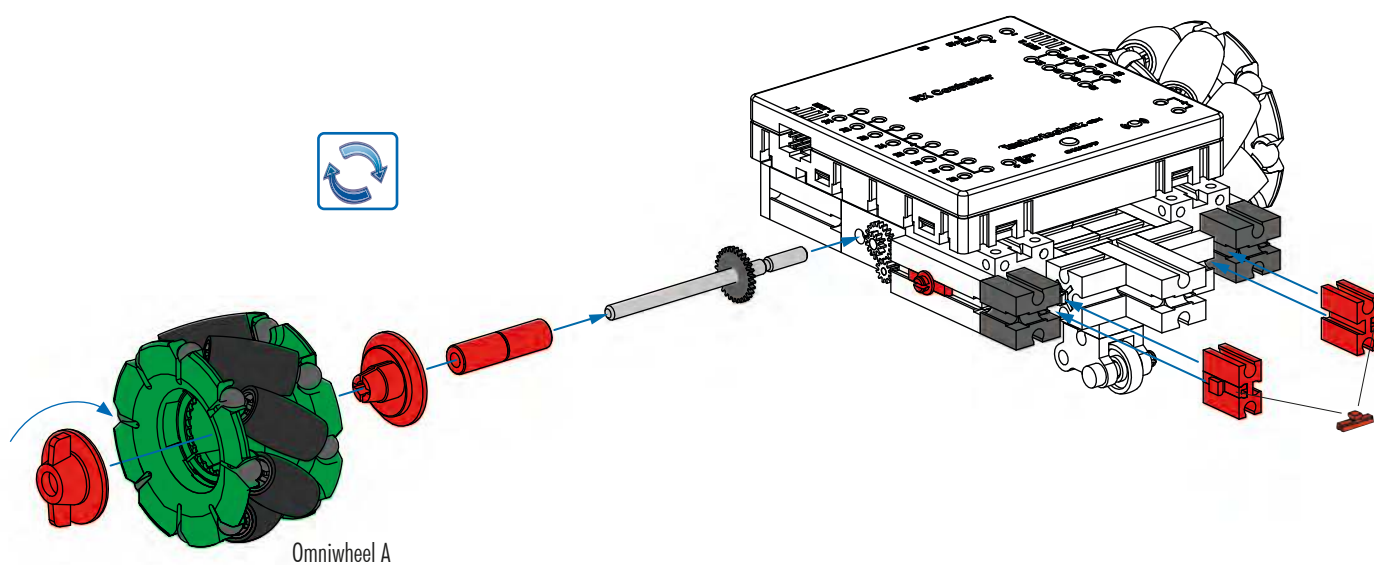
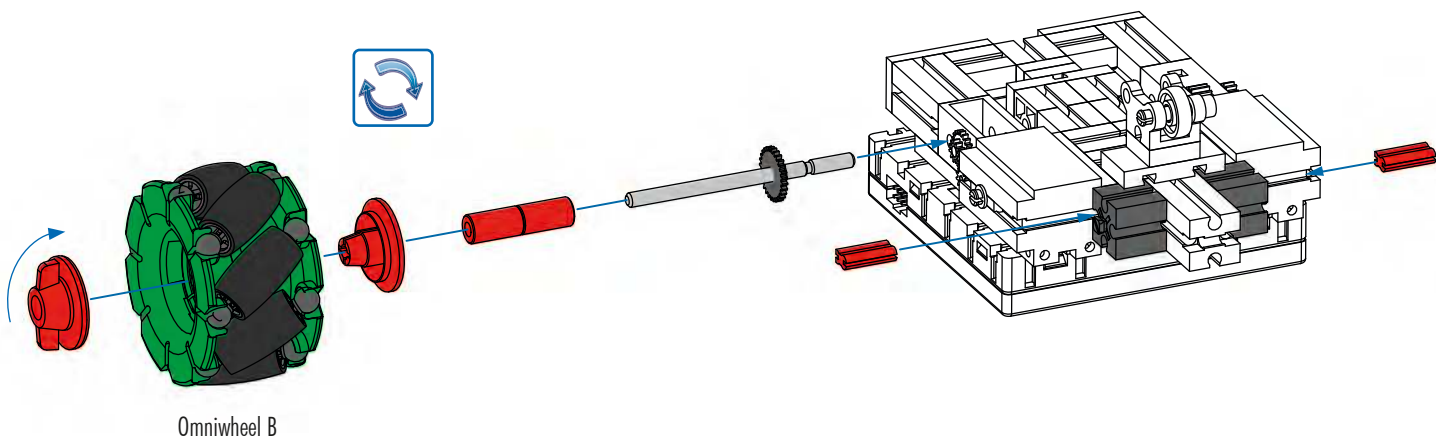


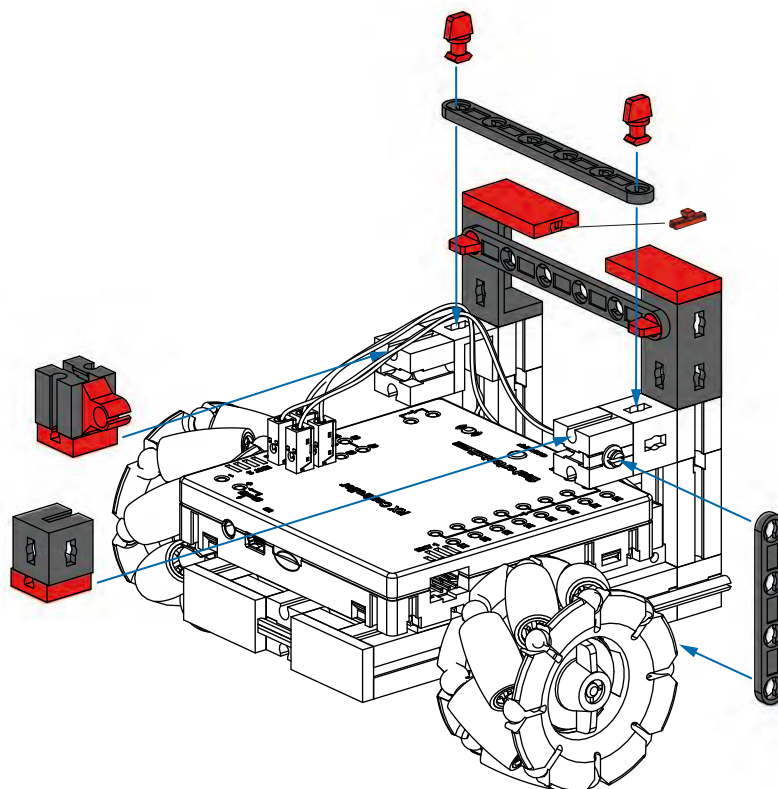
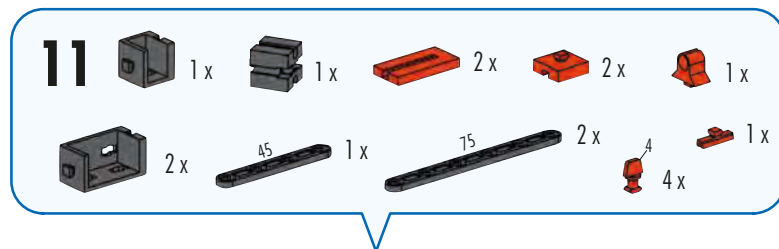
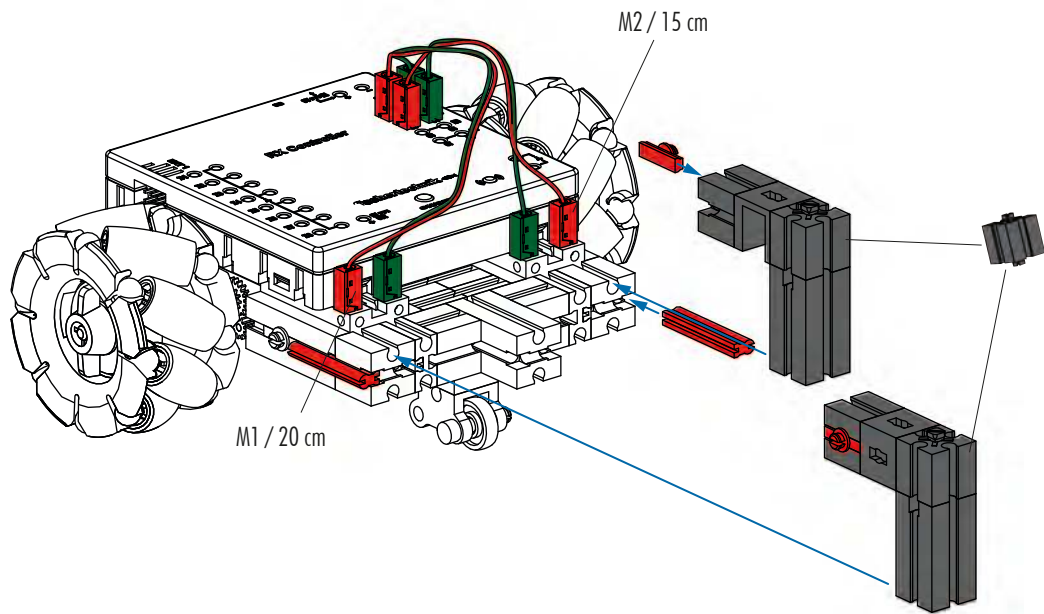
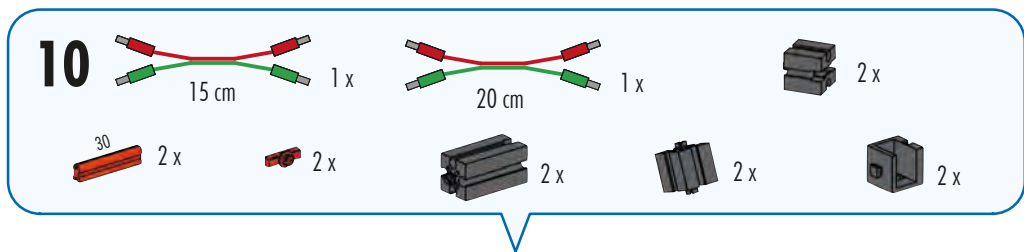
7



6







12



2 x



4 x



2 x



1 x



15°

4 x



4 x



2 x

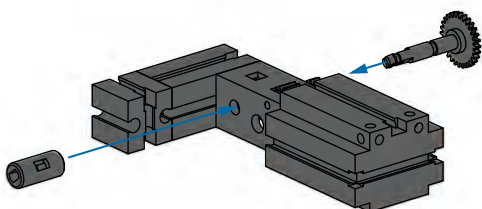
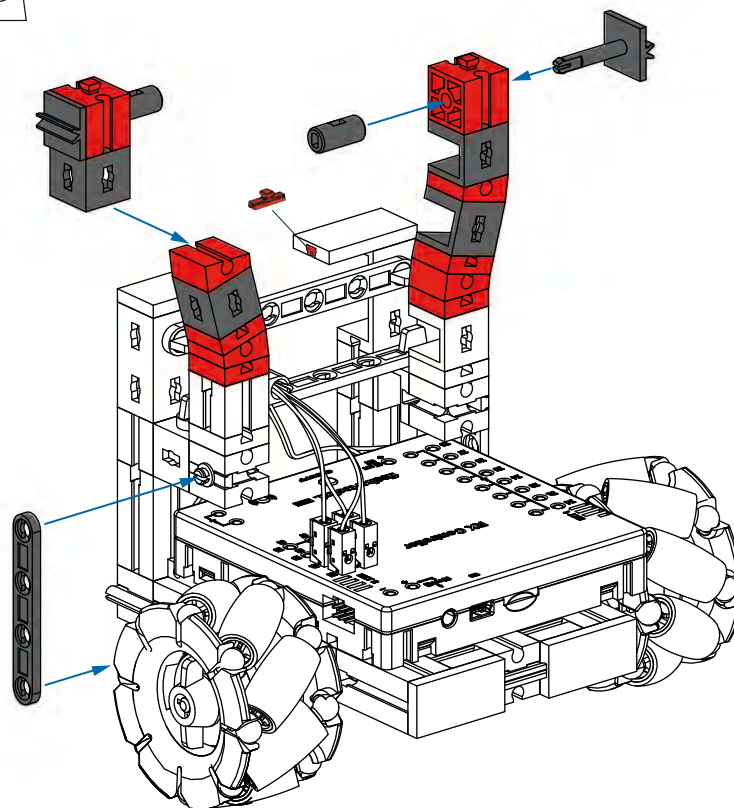


45°

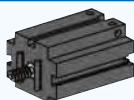
1 x



15°



13



1 x



1 x



1 x



1 x

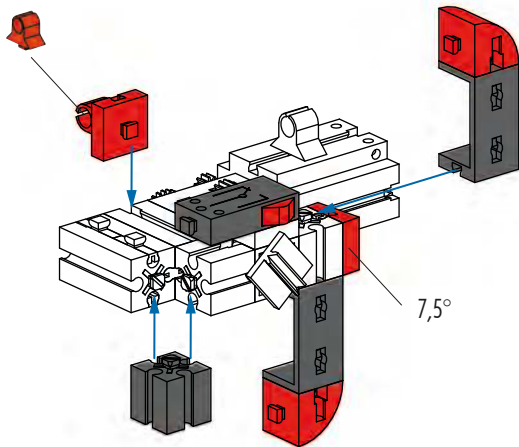
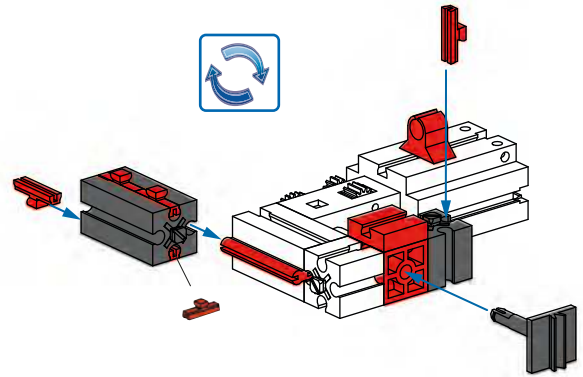
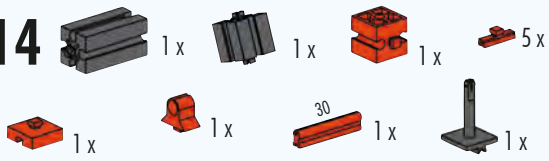


1 x

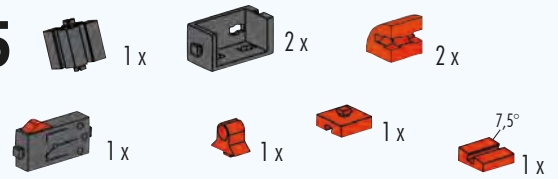


1 x

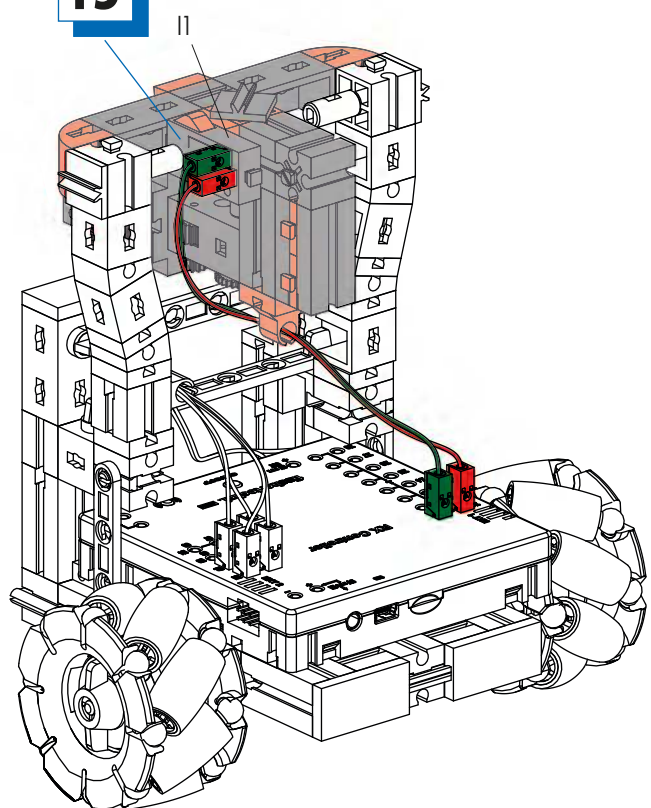
14



15

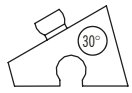


15



16





17



1x



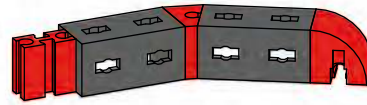
2x



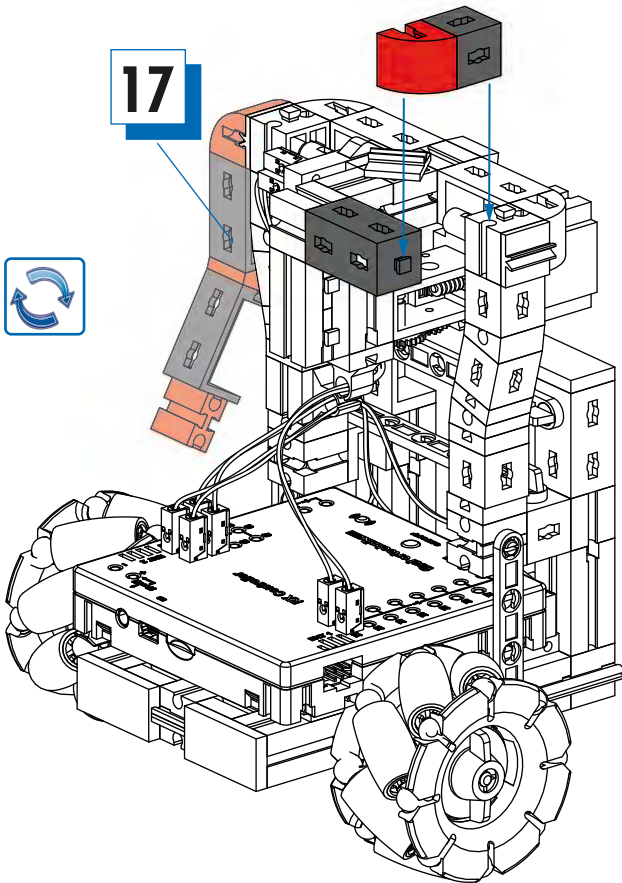
1x



1x



17



18



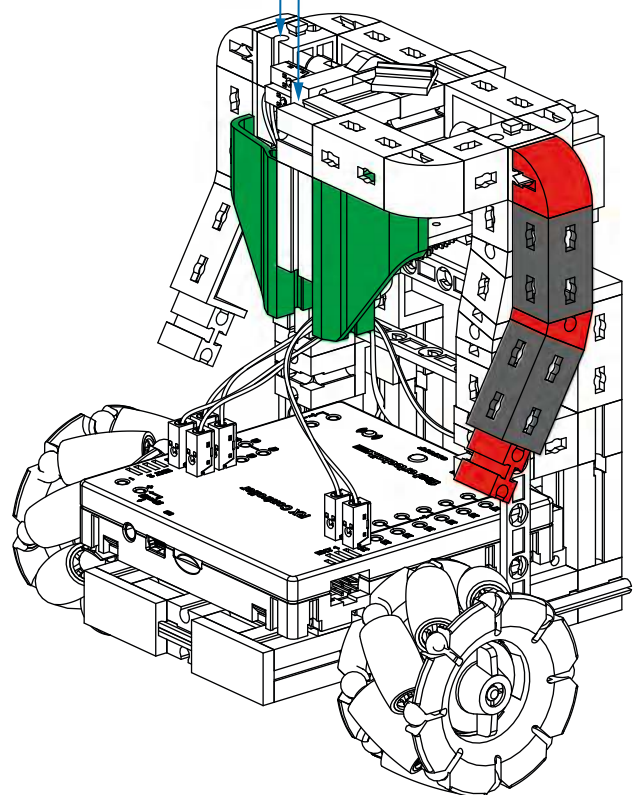
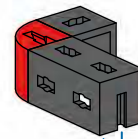
1x



1x



1x



19



2x



1x

1x



1x



30°

1x



1x

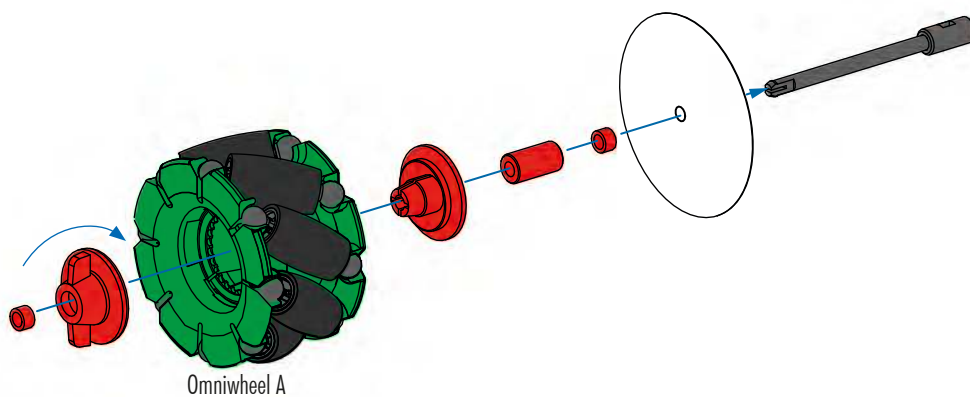
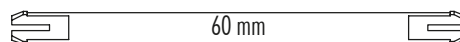
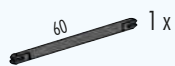


3x

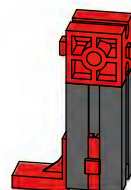


1x

20



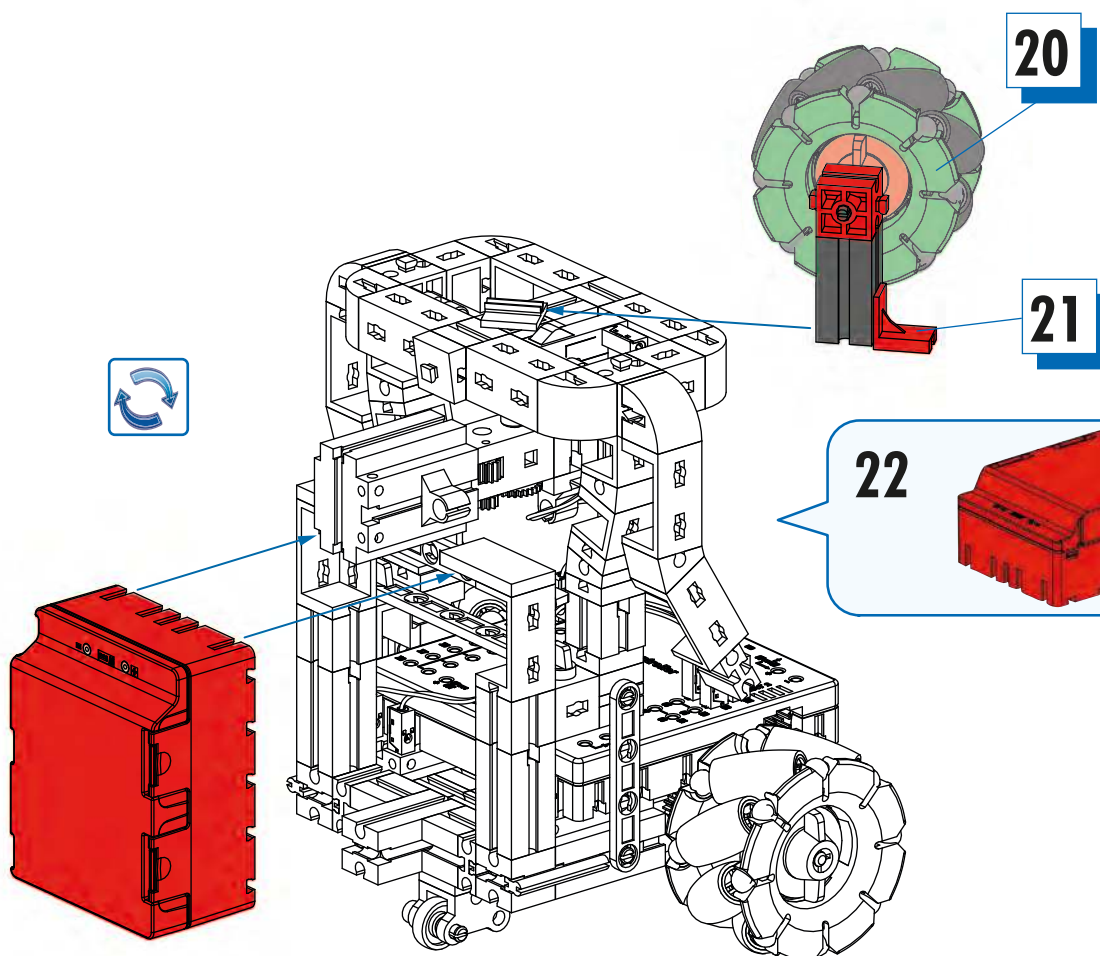
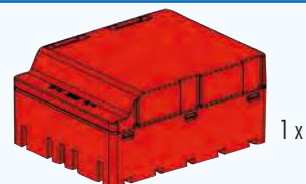
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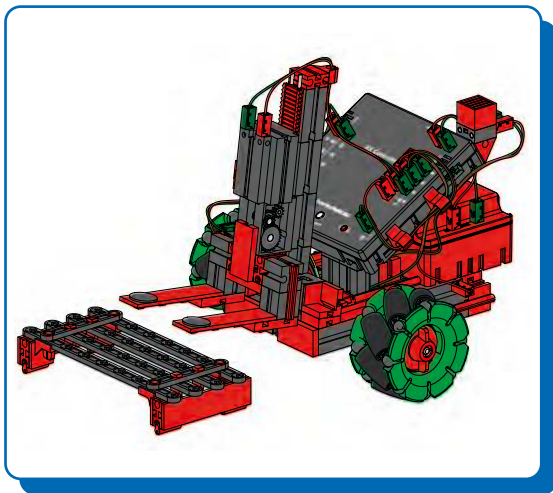


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21

22



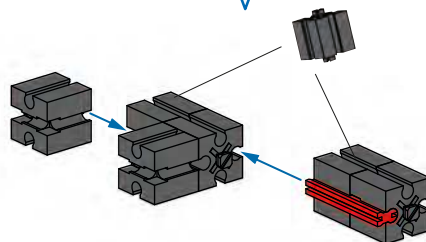
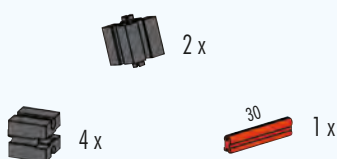


Gabelstapler
Forklift
Chariot élévateur à
fourche

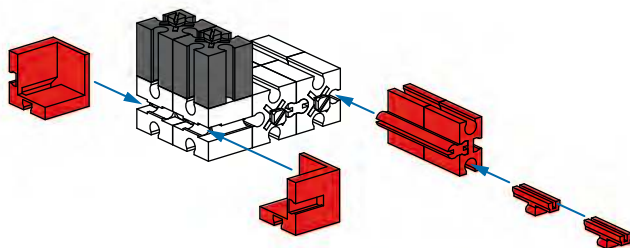
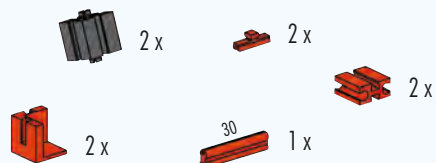
Vorkheftruck
Máquina elevadora
Empilhadeira

Carrello elevatore
Робот-погрузчик
叉车

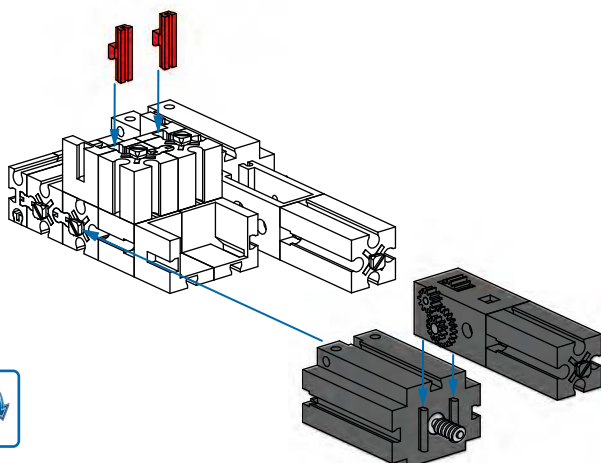
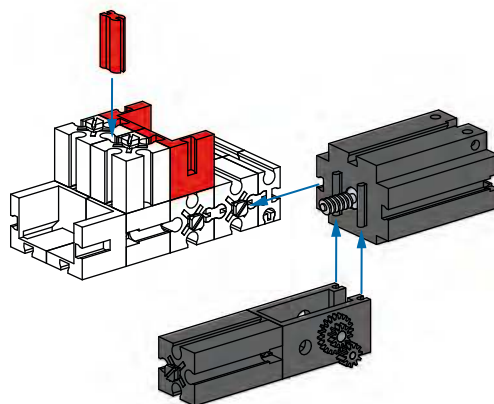
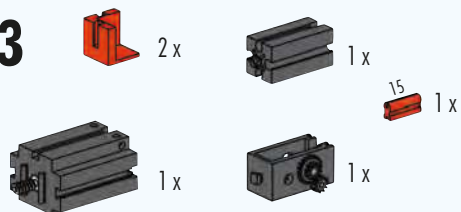
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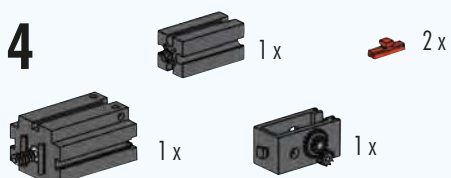
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3



4

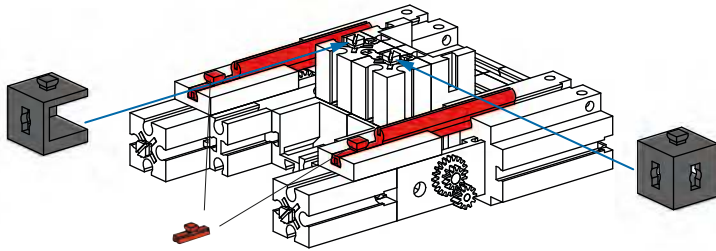
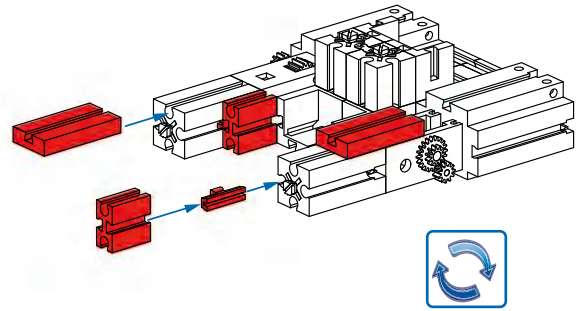


5

2 x

2 x

2 x



6

45 2 x

2 x

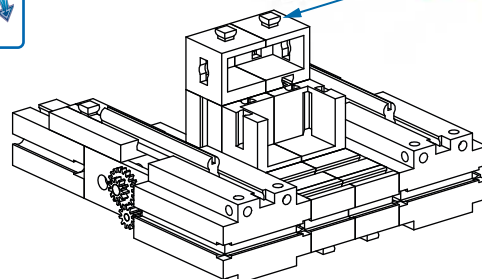
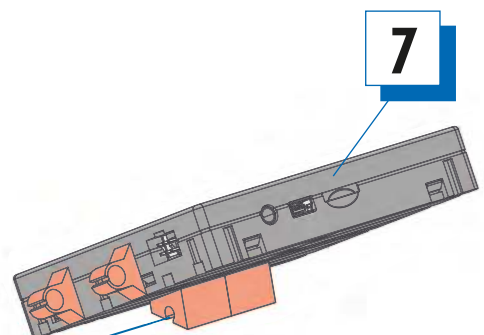
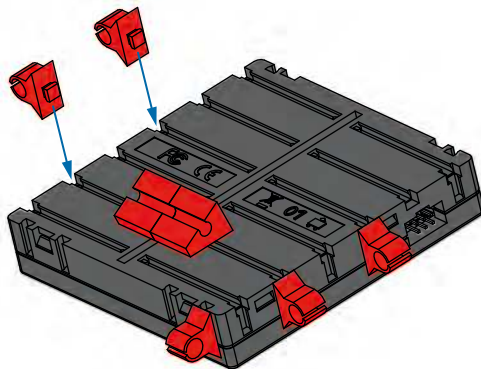
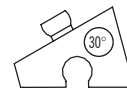
2 x

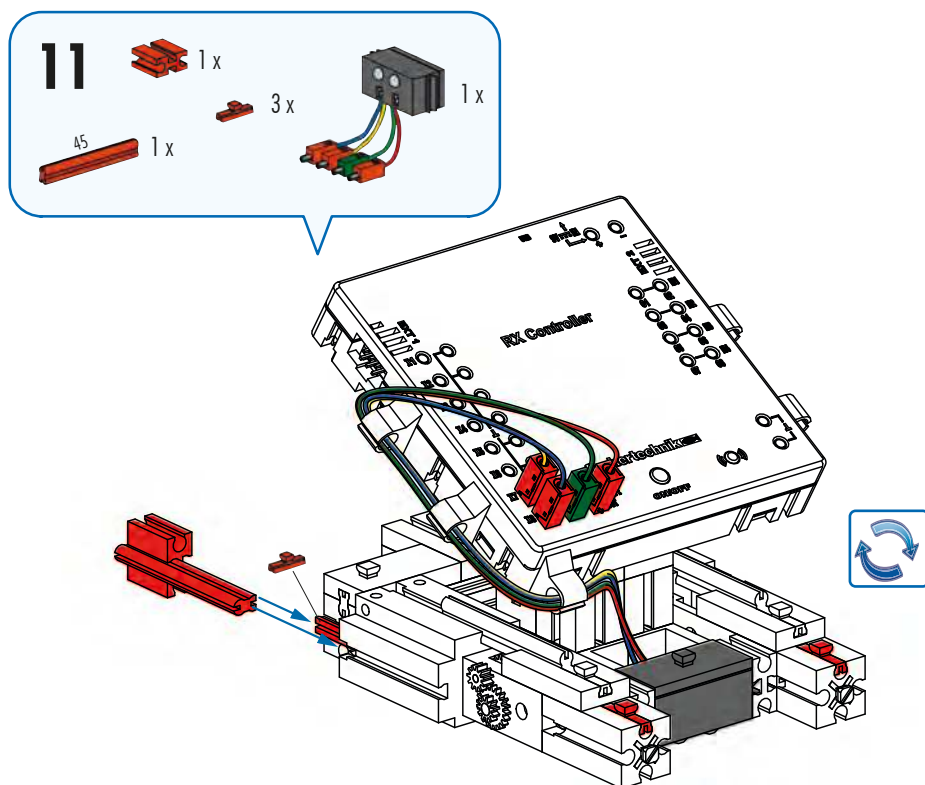
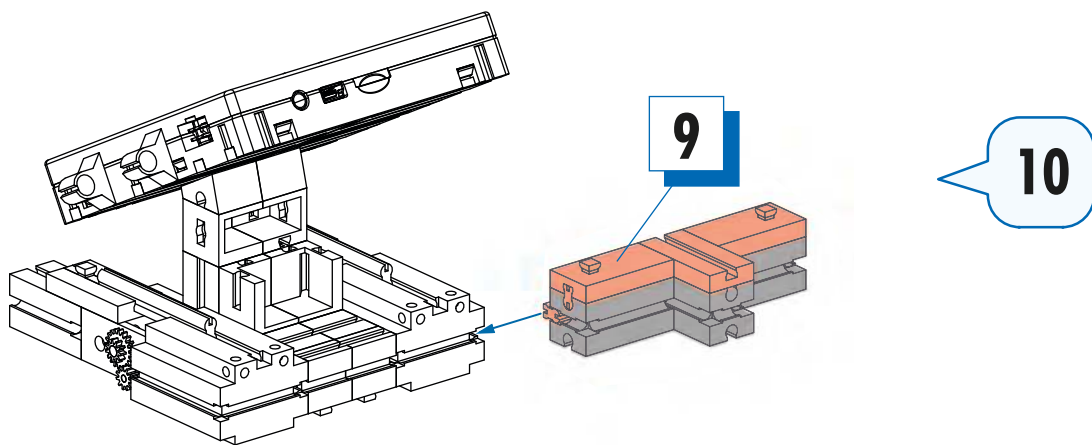
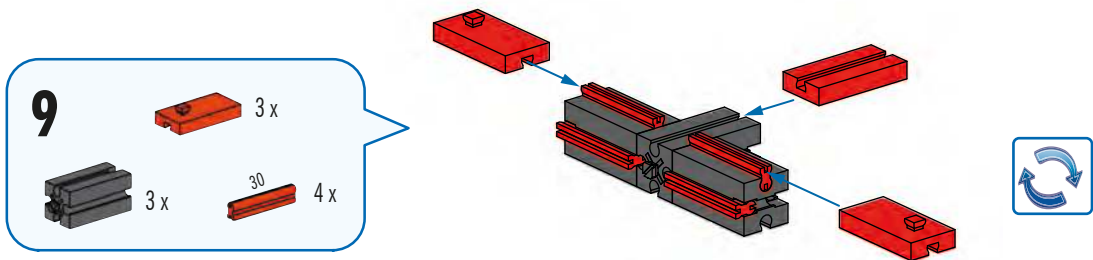
7

30° 2 x

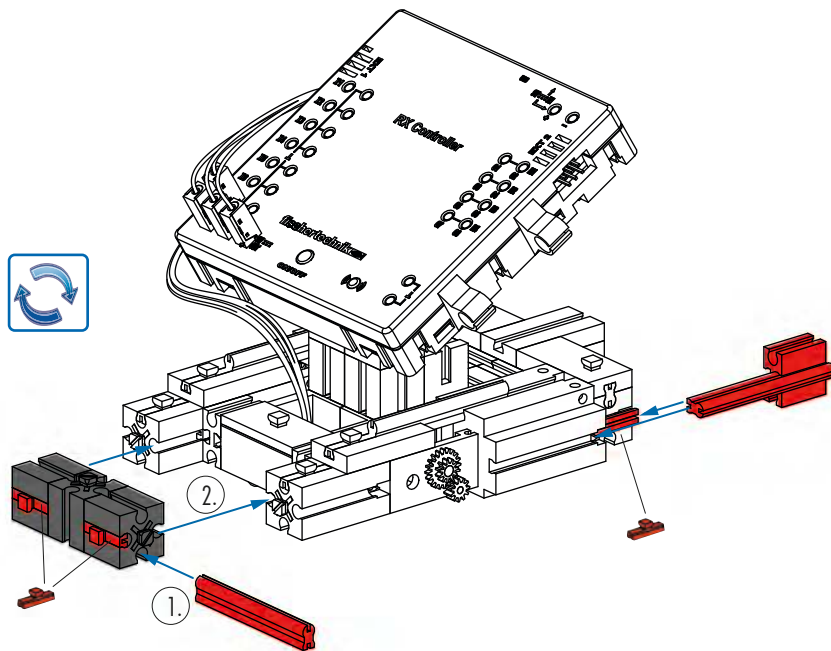
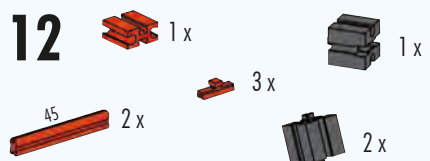
5 x

1 x

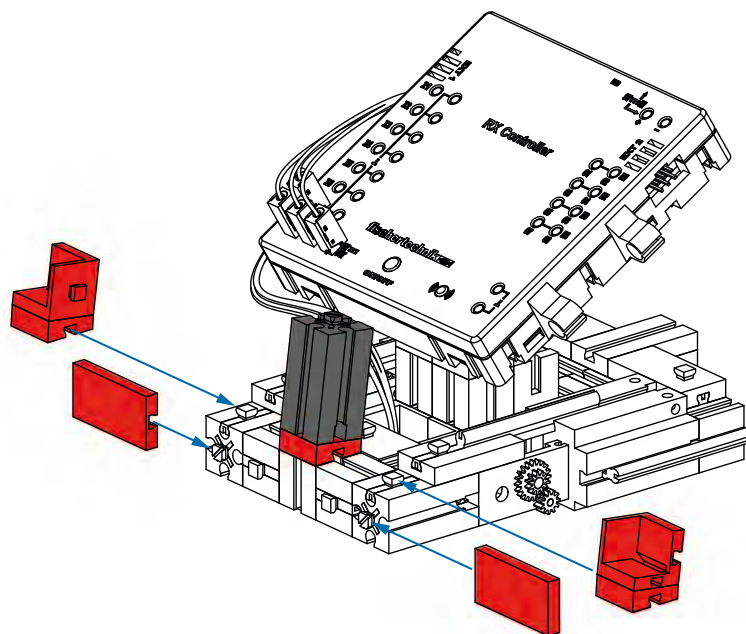
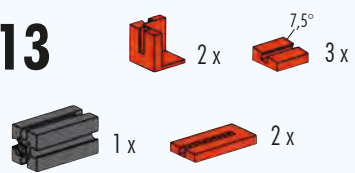


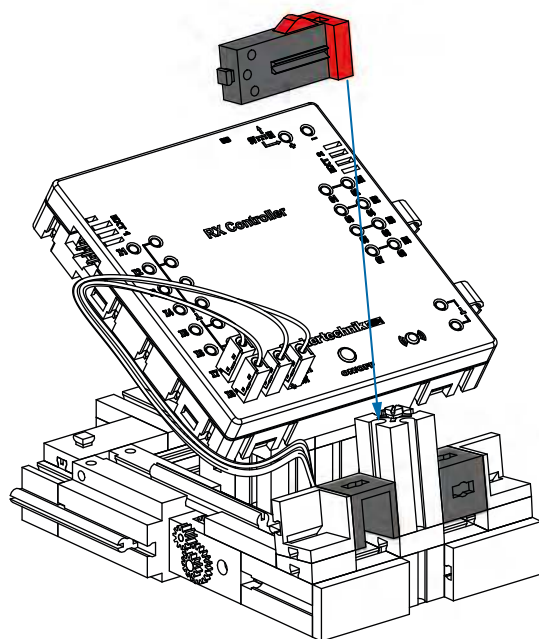


12



13





14



1 x



1 x



2 x

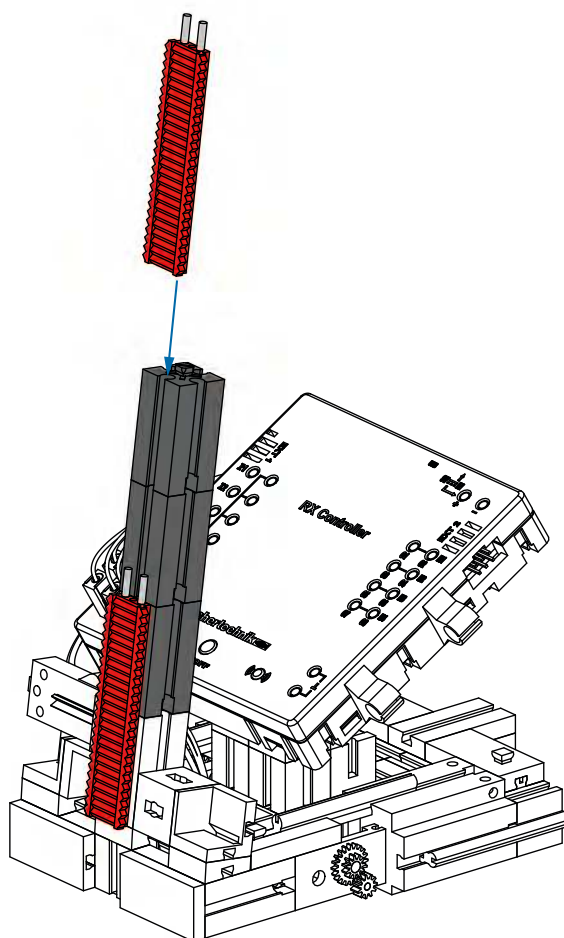
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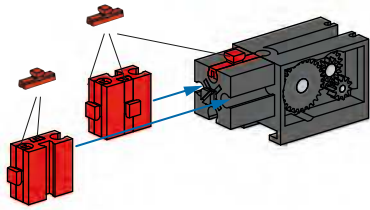


3 x

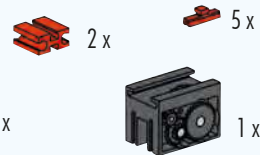


2 x

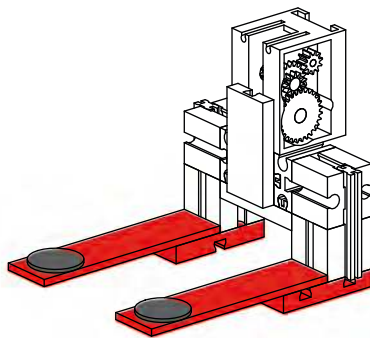
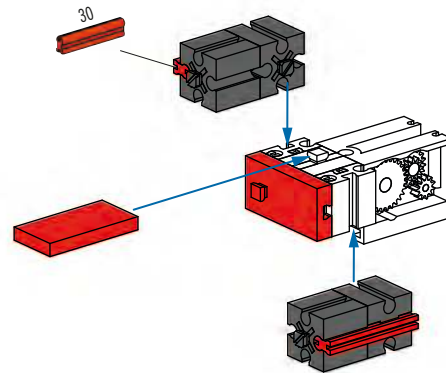
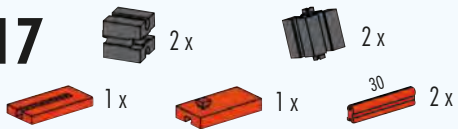




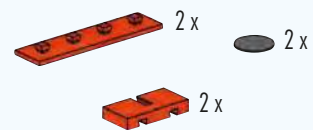
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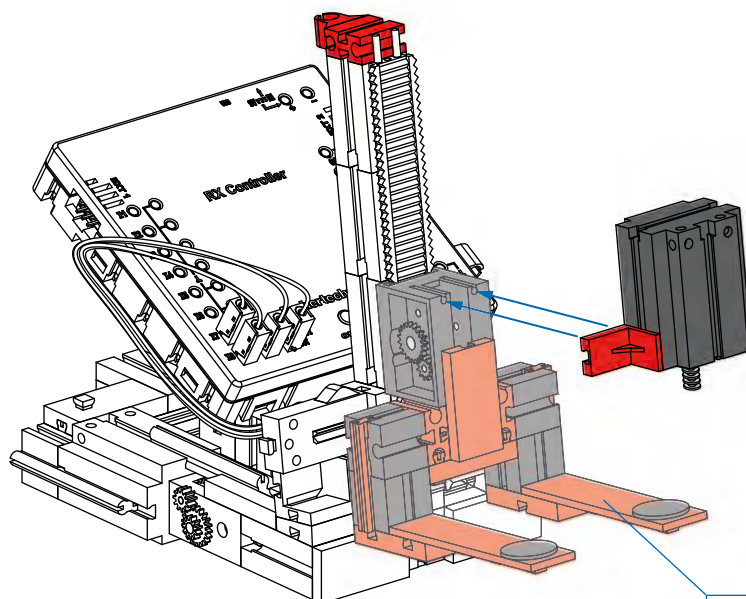
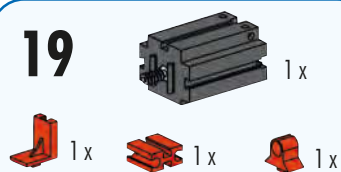
17



18



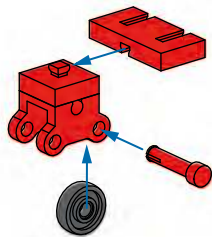
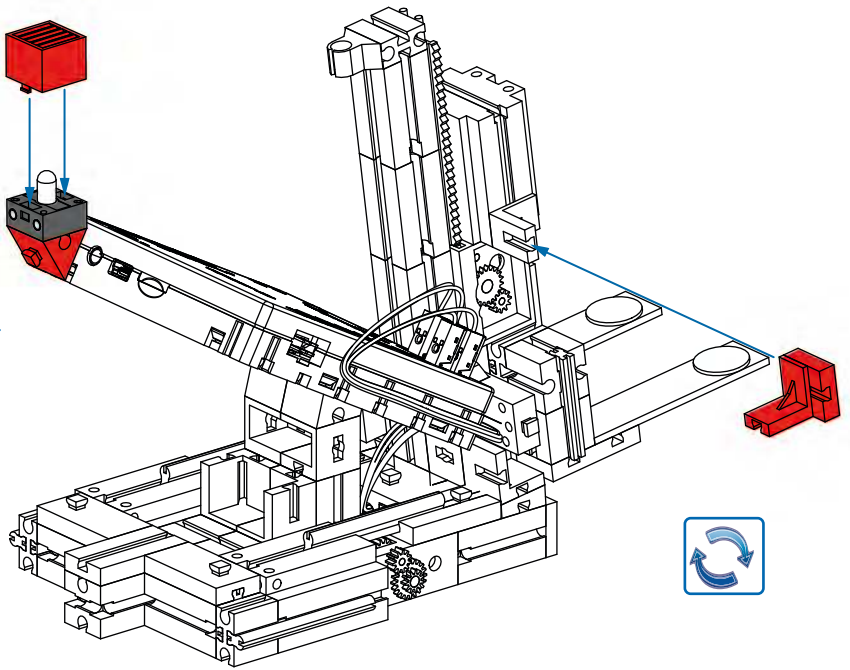
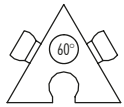
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18

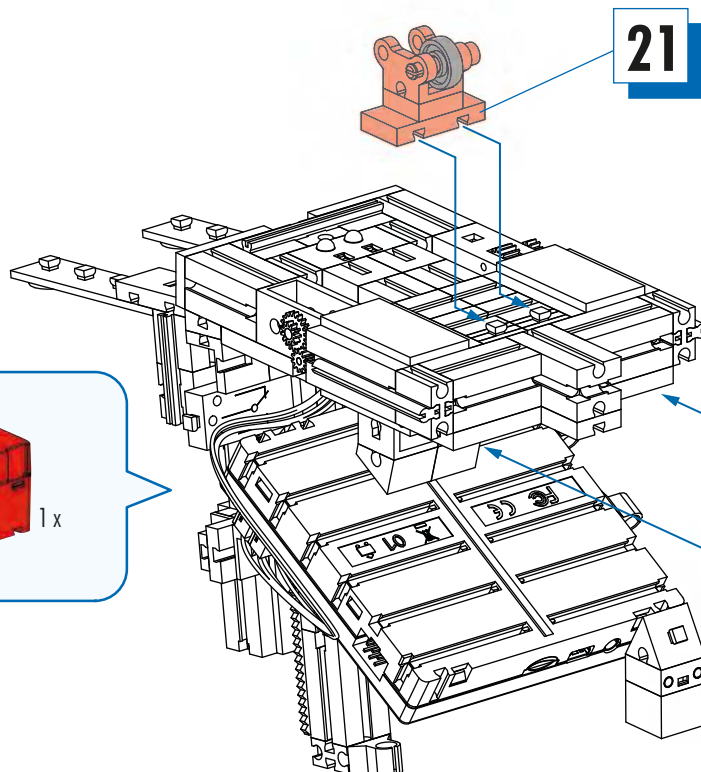
20

 1x
  1x
 1x
  1x
  1x



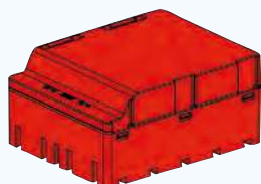
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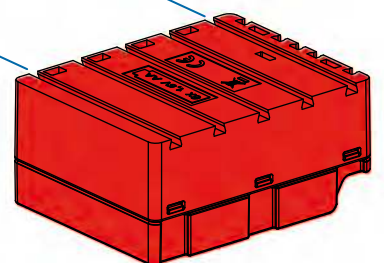
 1x
  1x
 1x
  1x
  1x



21

22

 1x



23

2 x

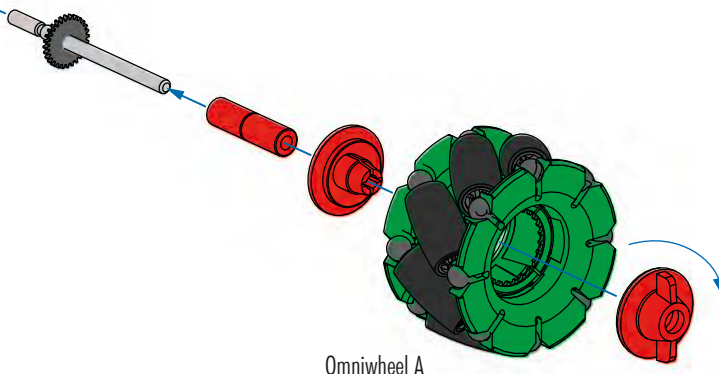
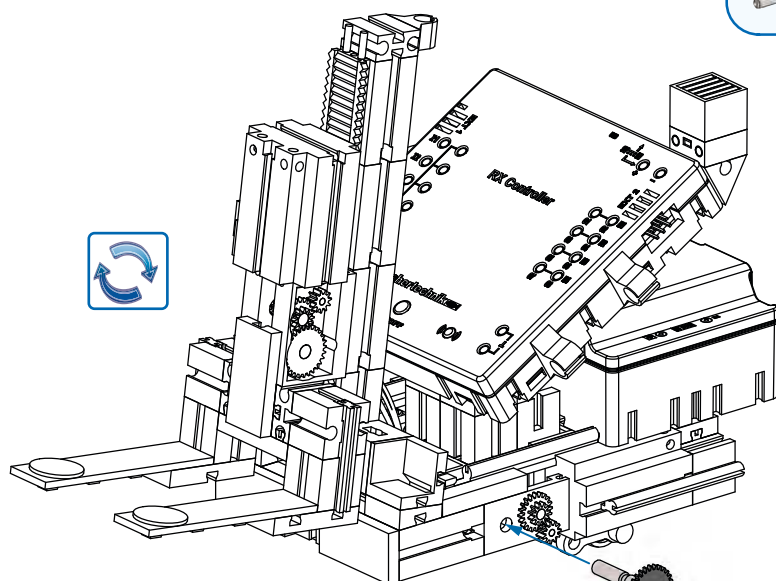
1 x



1 x



Omniwheel A



Omniwheel A



- Nabenmutter sehr fest anziehen
- Fasten the hub nut very tightly
- Serrer l'écrou du moyeu très serré
- Draai de naafmoer goed vast
- Atornillar las tuercas laterales muy fuertes
- Apertar bem as porcas de cubo
- Stringere saldamente il dado del mozzo
- Затянуть гайки ступиц
- 拧紧

24

2 x



1 x



1 x

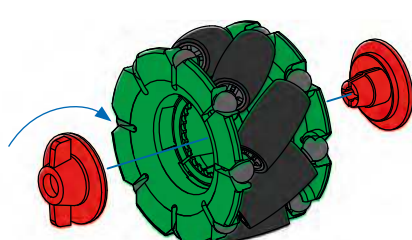
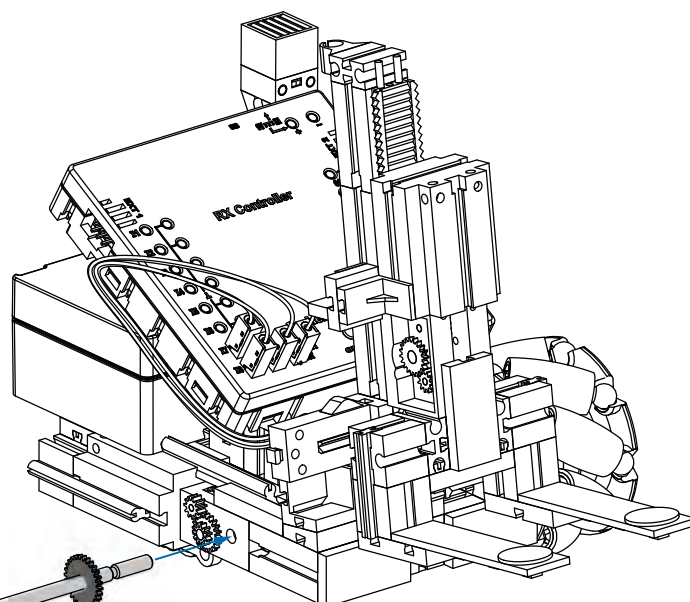


1 x

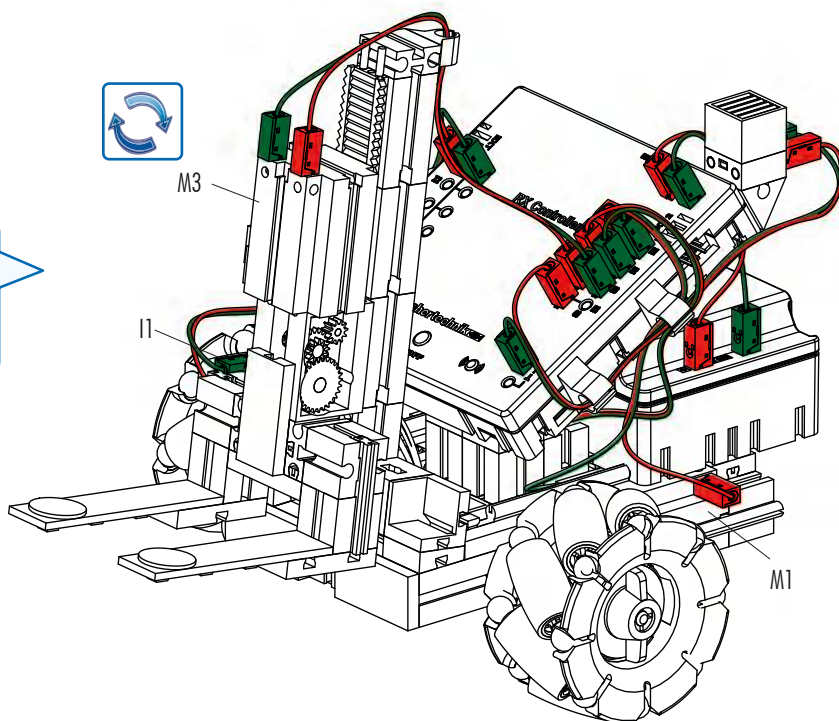
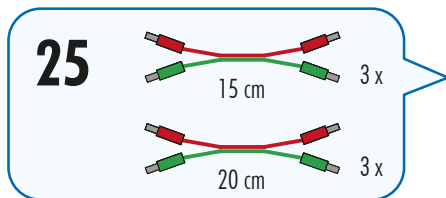


1 x

Omniwheel B



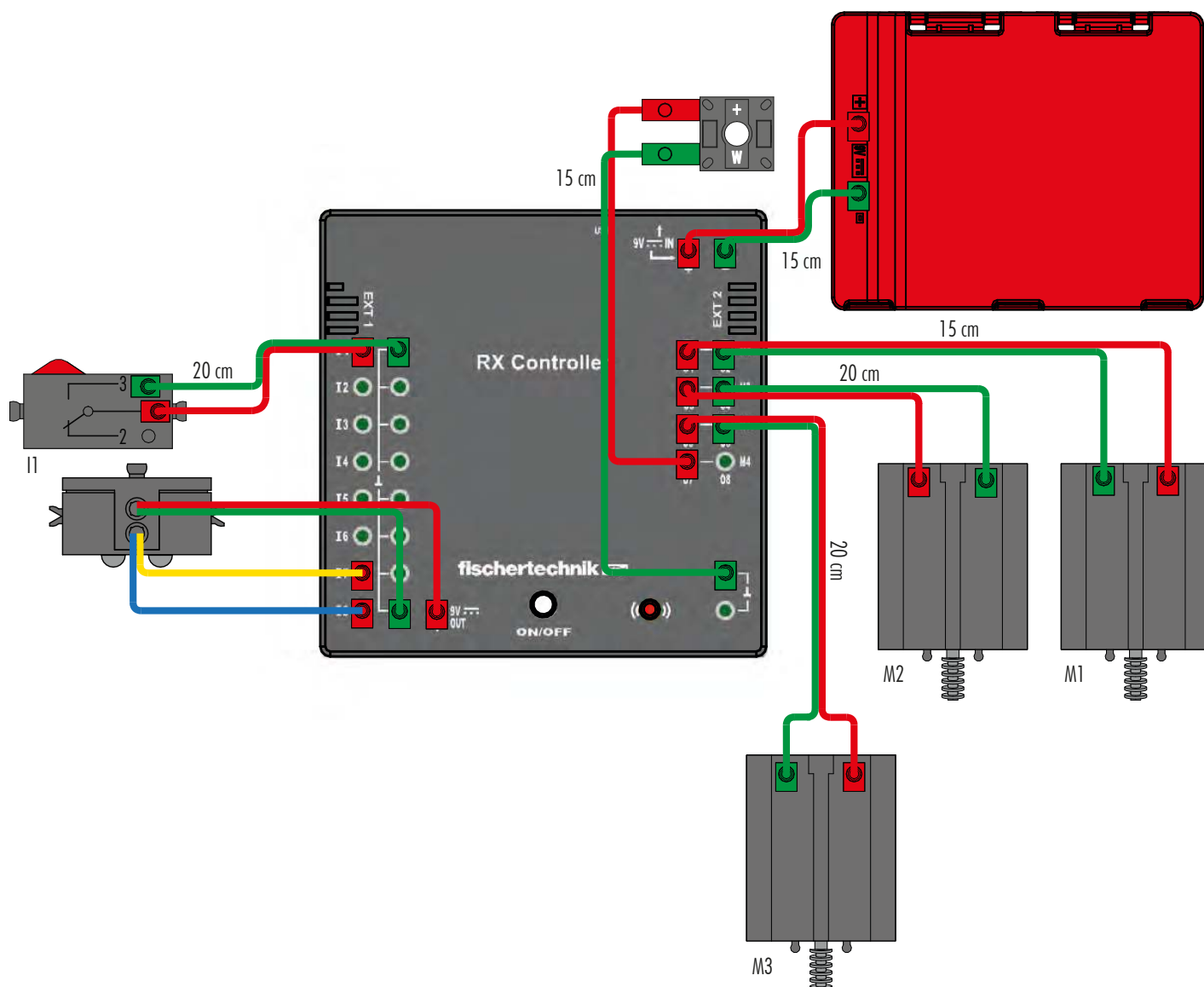
Omniwheel B



Schaltplan
Circuit diagram
Plan électrique

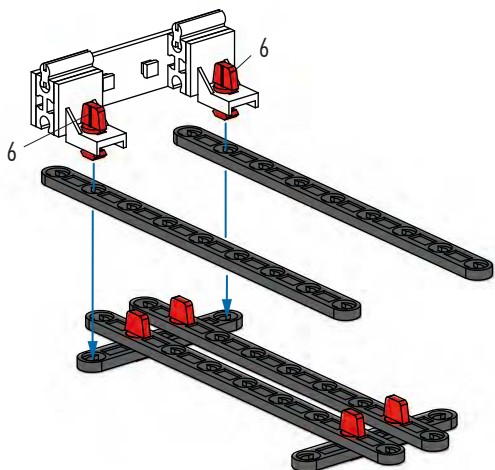
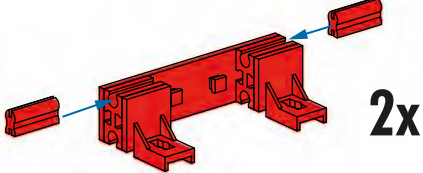
Schakelschema
Diagrama de circuitos
Plano elétrico de ligação

Schema elettrico
Схема подключения
电路图



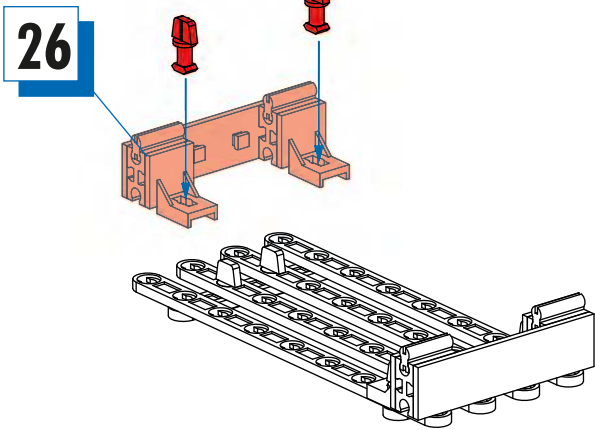
26

4 x  4 x  2 x 



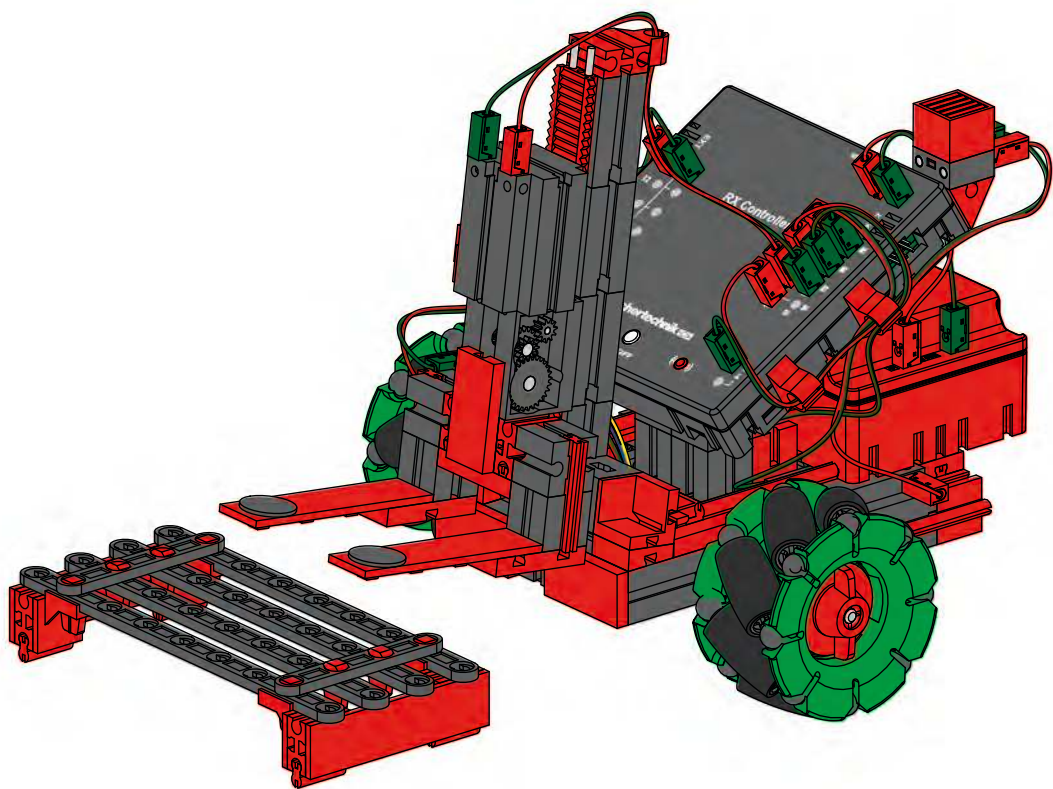
27

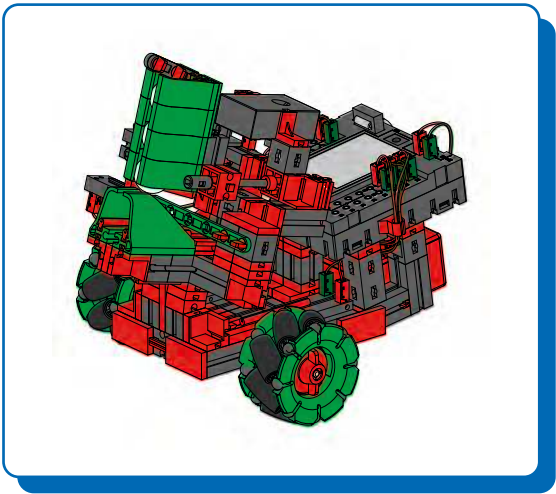
2 x  4 x  4 x  2 x 



28

2 x 





Ballroboter
Ball robot
Robot à billes

Bal robot
Robot de bolas
Robô de votação

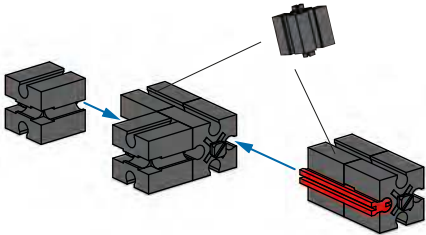
Palla robot
Шариковый робот
弹球机器人

1

2 x

4 x

1 x



2

1 x

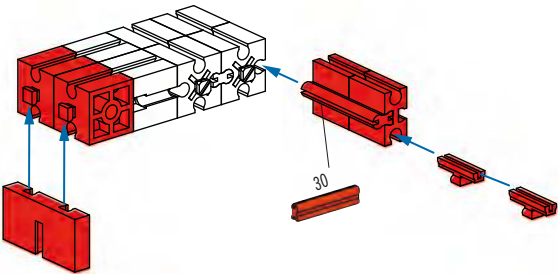
2 x

2 x

2 x

1 x

2 x



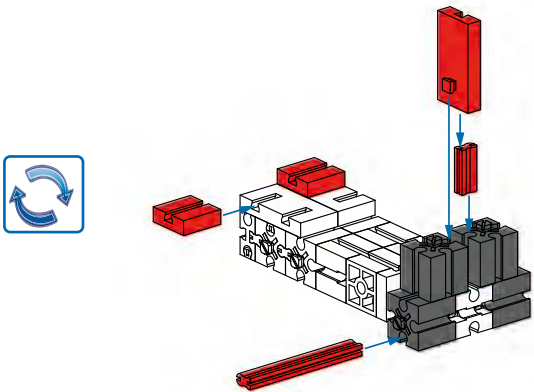
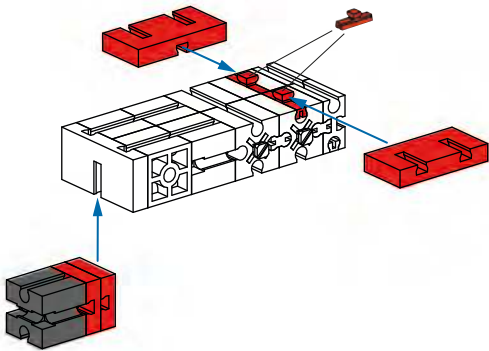
3

1 x

2 x

2 x

2 x



4

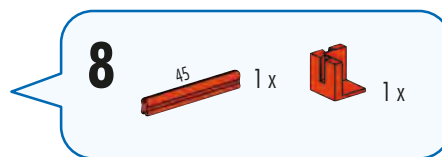
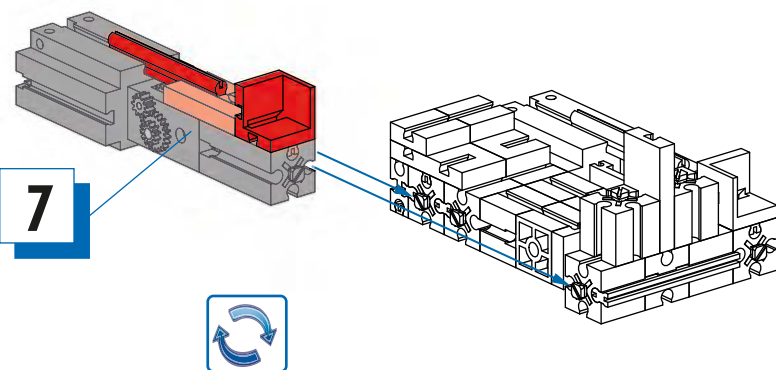
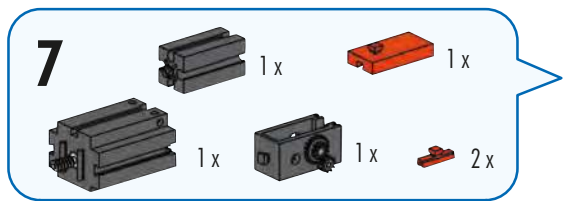
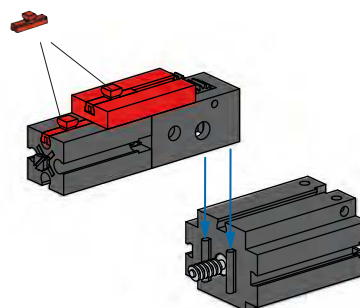
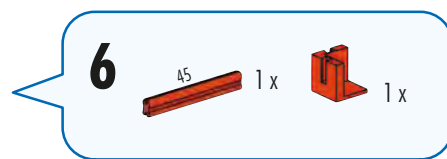
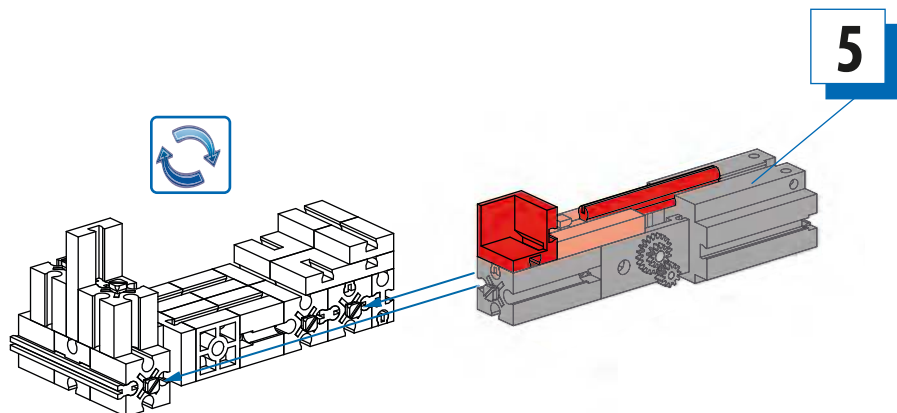
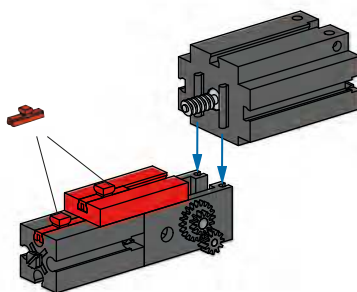
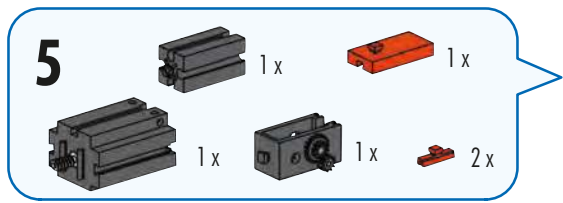
4 x

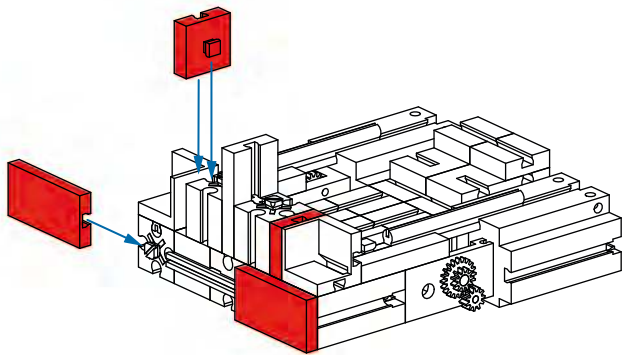
2 x

1 x

1 x

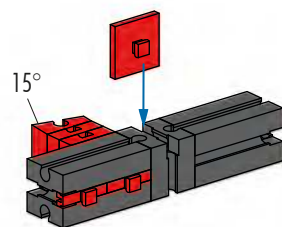
1 x





9

- Red 1x4 plate 2x
- Red 1x2 plate 2x



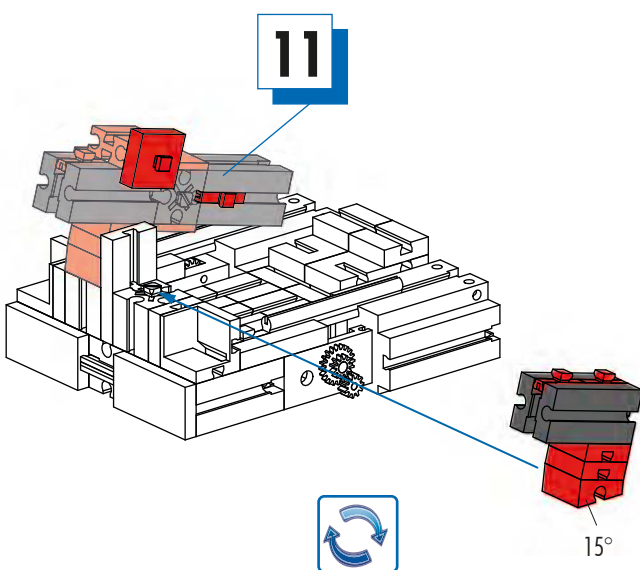
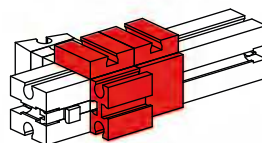
10

- Grey 1x4 plate 2x
- Grey 1x2 plate 1x
- Red 1x2 plate 2x
- Red 1x4 plate 1x
- Red 1x2 plate 2x
- Red 1x4 plate 1x



11

- Red 1x2 plate 2x
- Red 1x4 plate 1x
- Red 1x2 plate 1x



12

- Grey 1x4 plate 1x
- Red 1x2 plate 3x
- Red 1x4 plate 2x
- Red 1x2 plate 1x
- Red 1x4 plate 1x



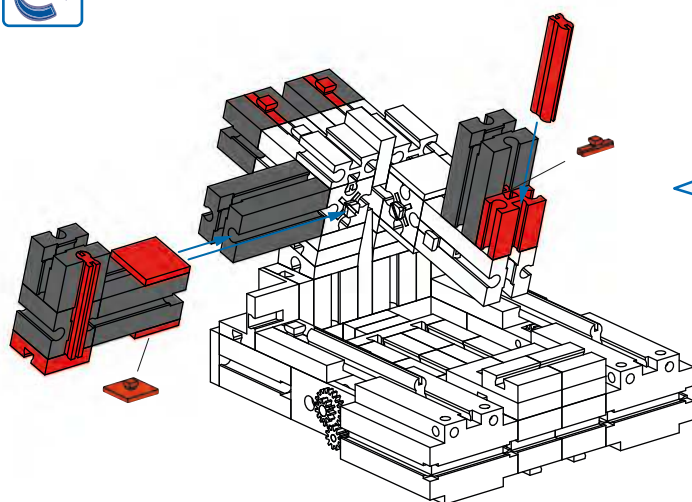
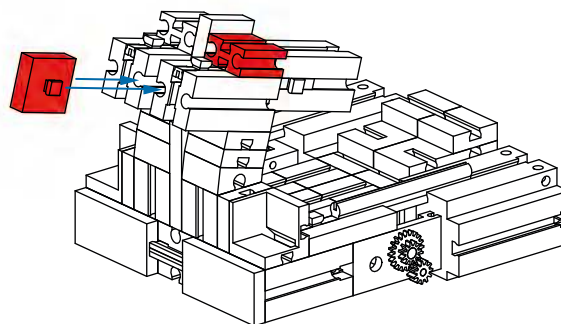
13



1x



1x



14



3x



4x



2x



2x



3x



1x



1x

15



4x



1x



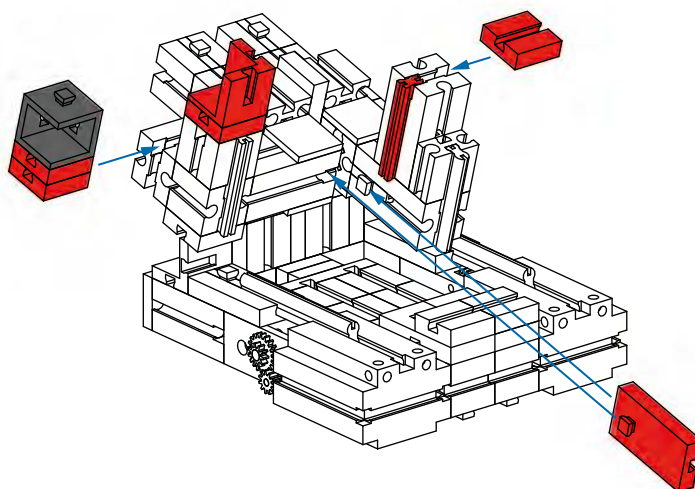
1x

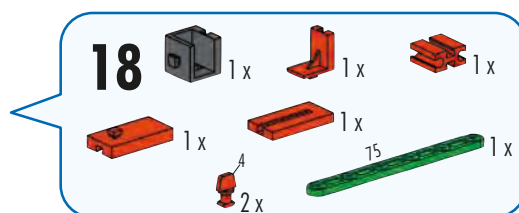
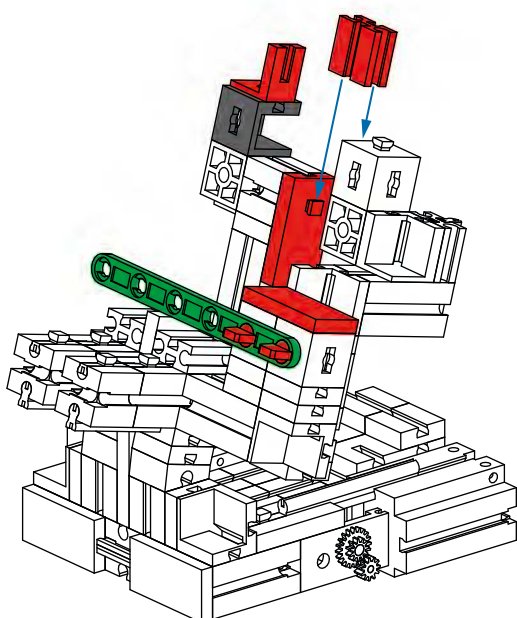
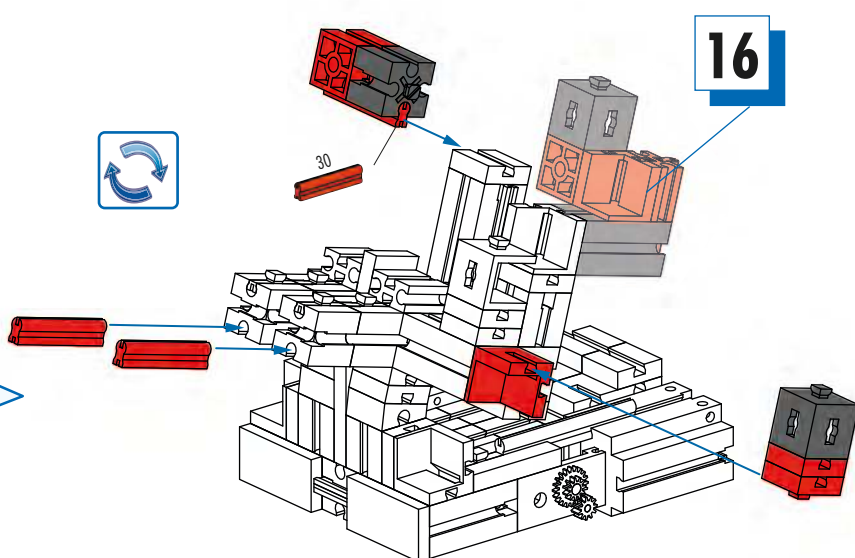
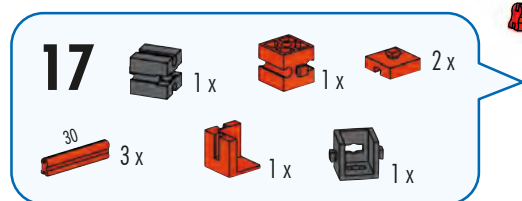
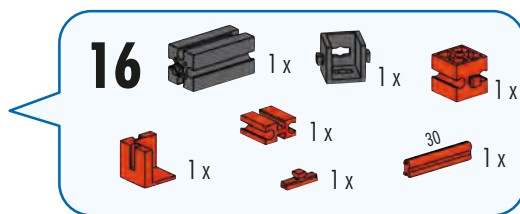


1x



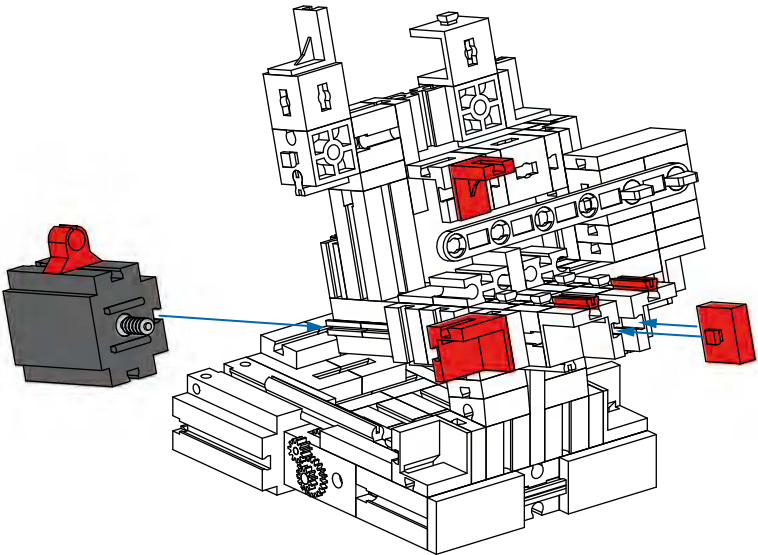
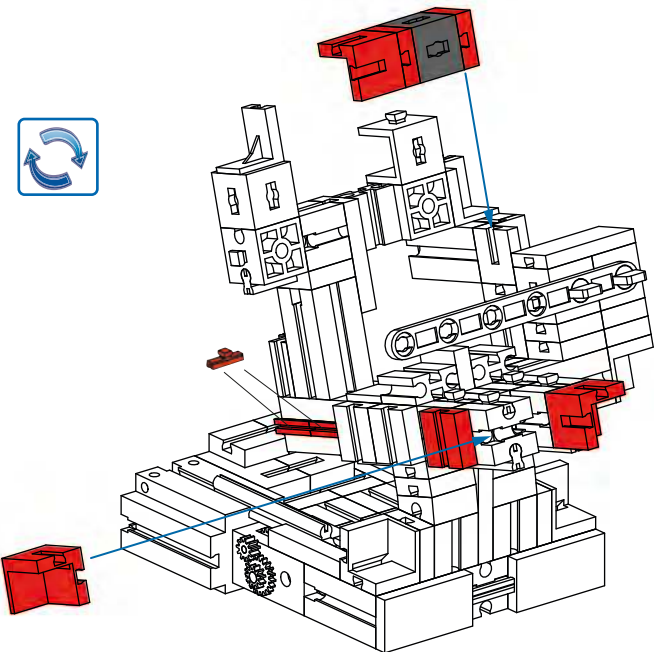
1x





19

- 3x
- 1x
- 2x
- 3x

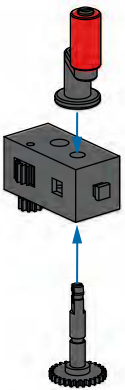


20

- 1x
- 1x
- 1x
- 2x
- 1x
- 1x

21

- 1x
- 1x
- 1x
- 1x



22

1 x  1 x  1 x  1 x  2 x 

21

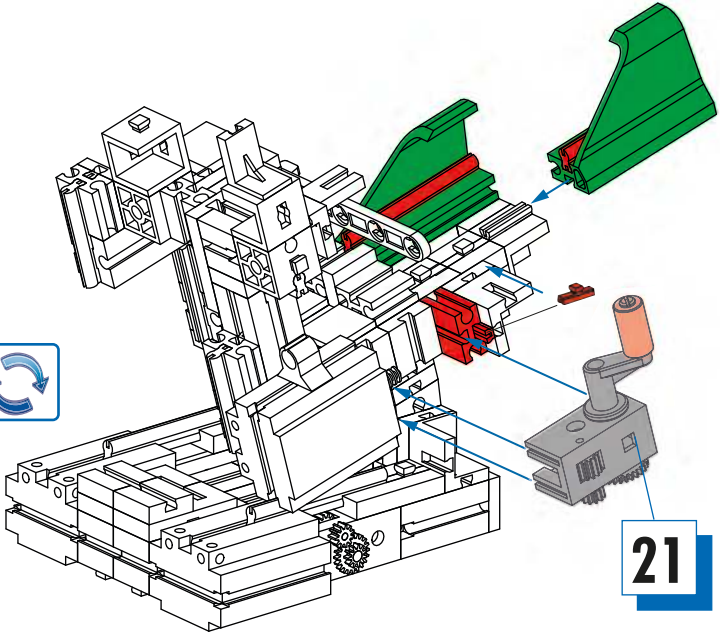
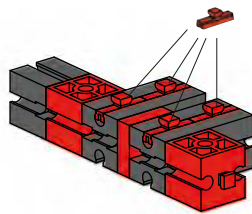


Diagram showing the assembly of a motorized mechanism. A green curved beam is being attached to the top of the structure. A motor is shown on the right, connected to the mechanism. A blue circular arrow icon indicates a rotation or movement.

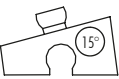


23

2 x  1 x  2 x  1 x  4 x 

24

2 x  1 x  2 x  2 x 

15° 

25

5 x  1 x  1 x 

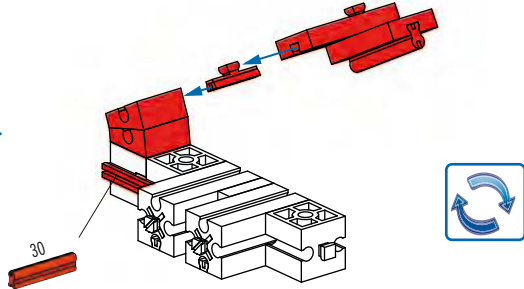
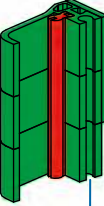


Diagram showing the assembly of a red 1x3 Technic beam to the top of the structure. A blue circular arrow icon indicates a rotation or movement.

25

5 x  1 x  1 x 

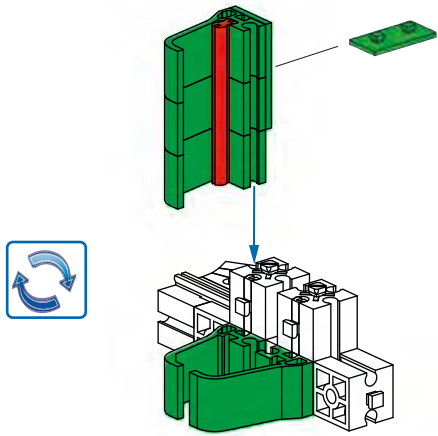
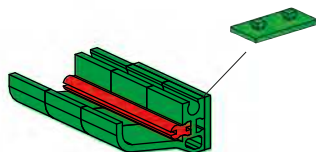


Diagram showing the assembly of a green 1x3 curved Technic beam to the top of the structure. A blue circular arrow icon indicates a rotation or movement.



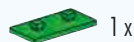
26



3 x



1 x



1 x

27



1 x



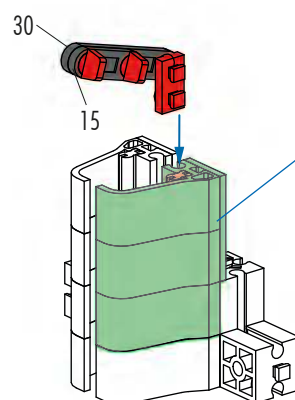
2 x



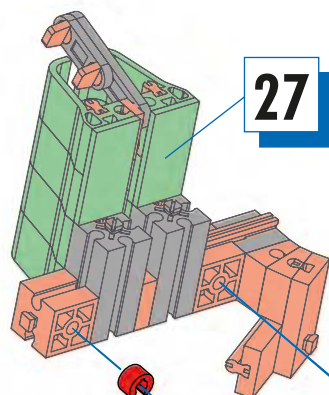
1 x



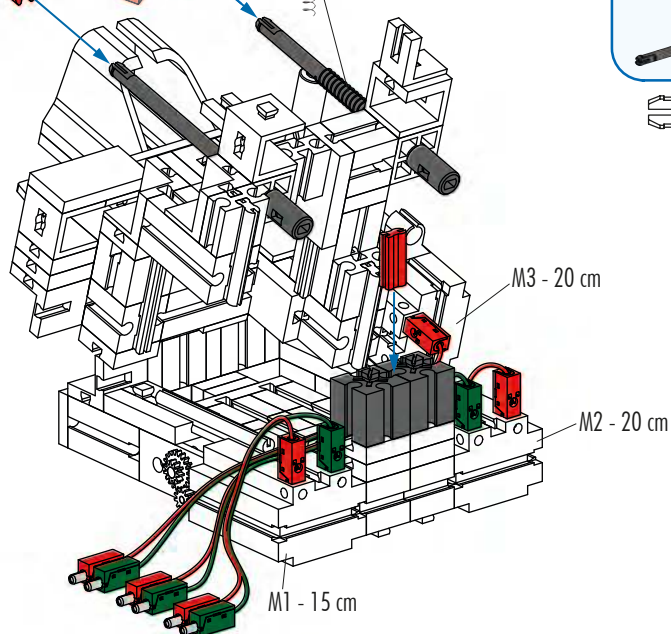
1 x



26



27



28



1 x



1 x



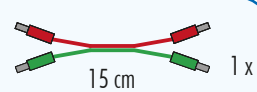
2 x



2 x



2 x



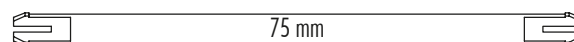
15 cm

1 x

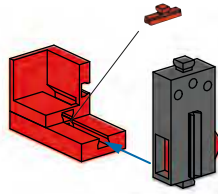


20 cm

2 x



75 mm



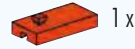
29

1x

1x



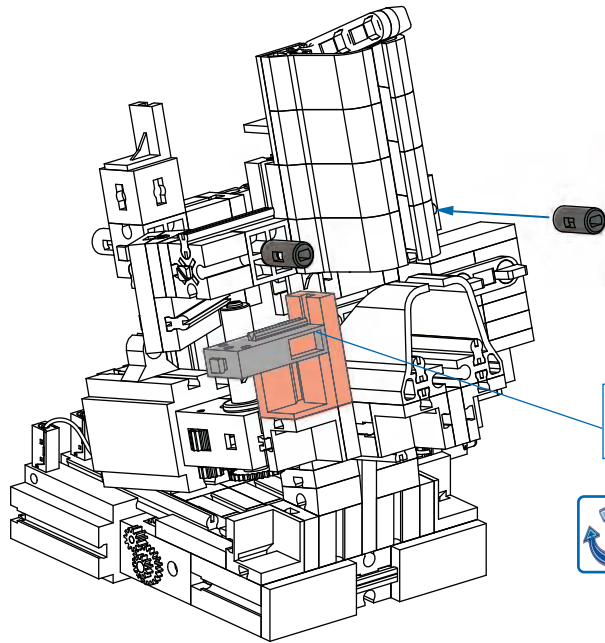
1x



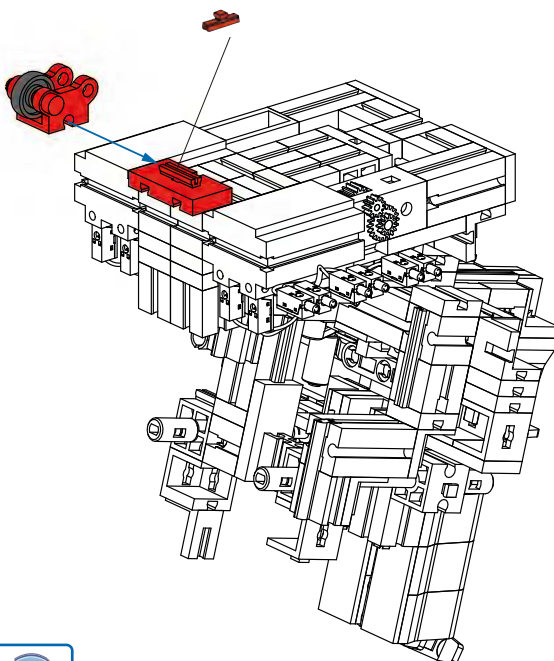
1x

30

2x



29



31

1x

1x



1x



1x

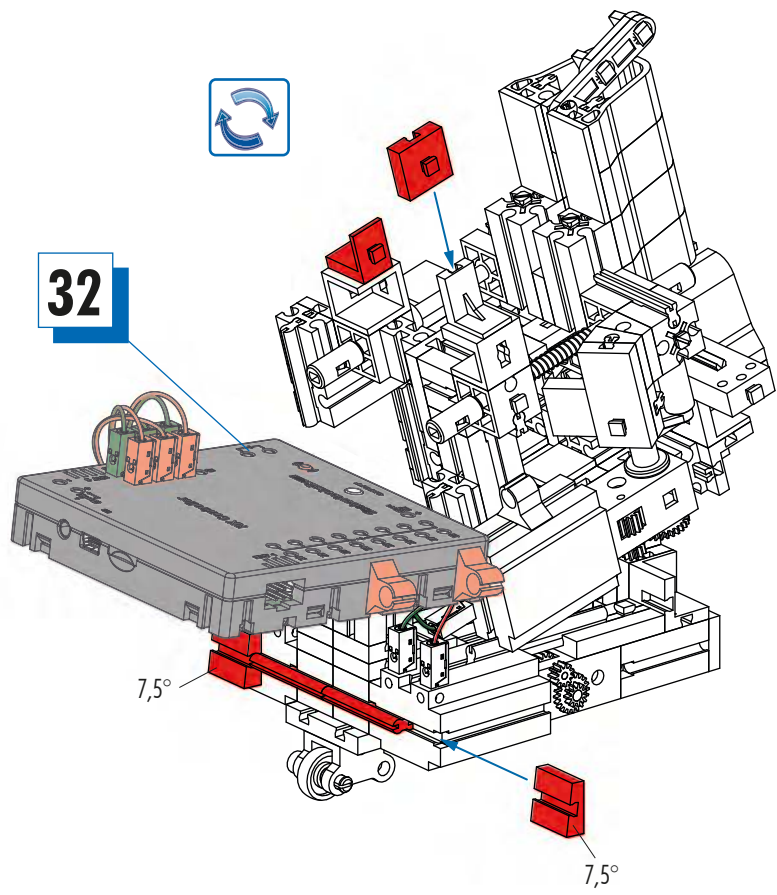
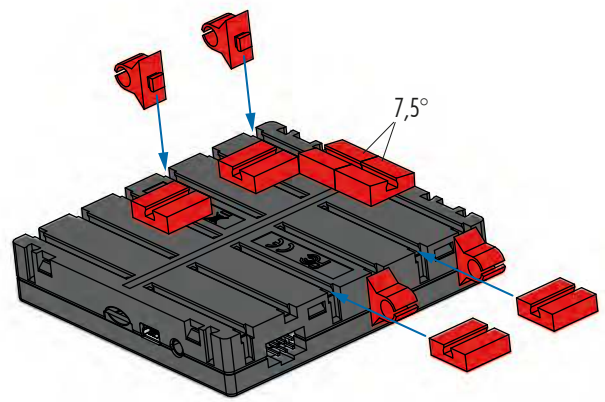


1x



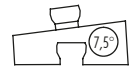
32

- 7,5° 2 x
- 1 x
- 4 x
- 4 x



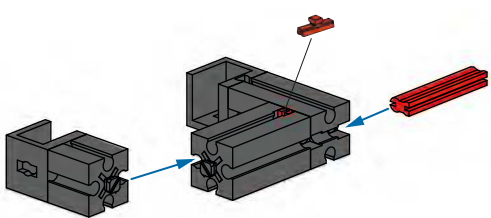
33

- 1 x
- 1 x
- 30 2 x
- 7,5° 2 x

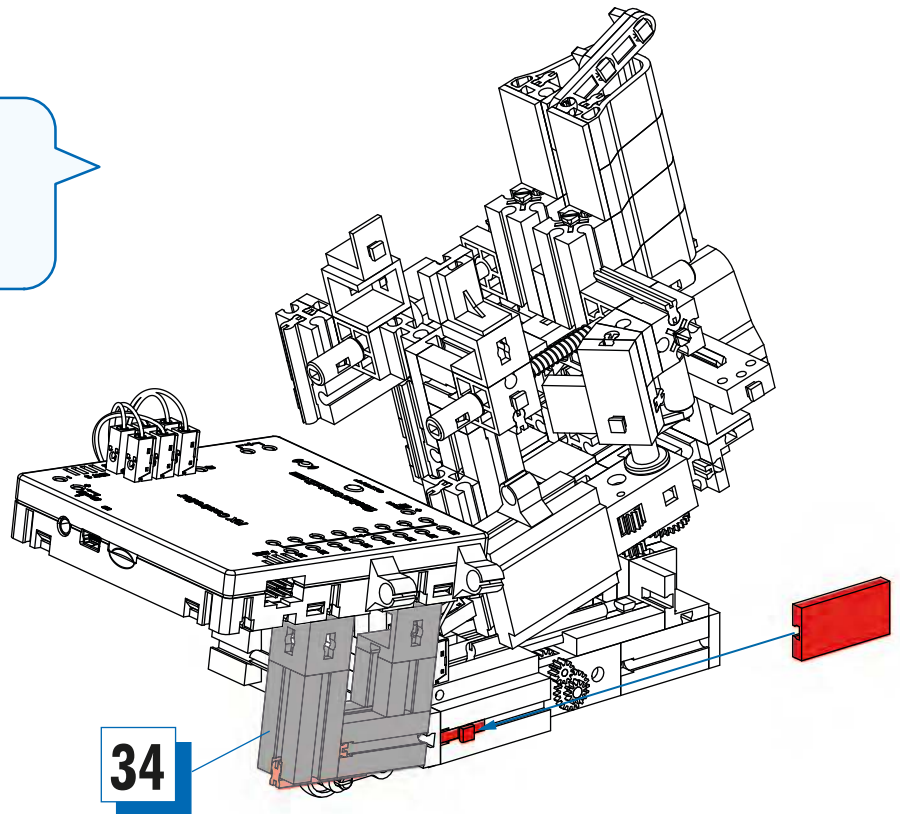
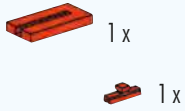


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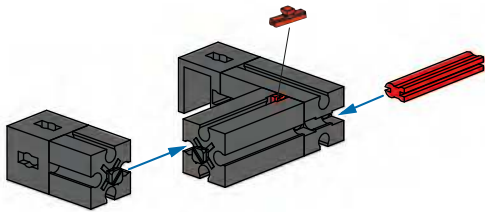
- 2 x
- 2 x
- 1 x
- 1 x
- 30 1 x



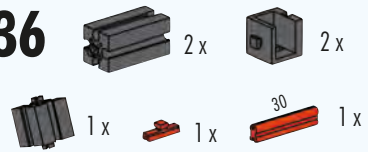
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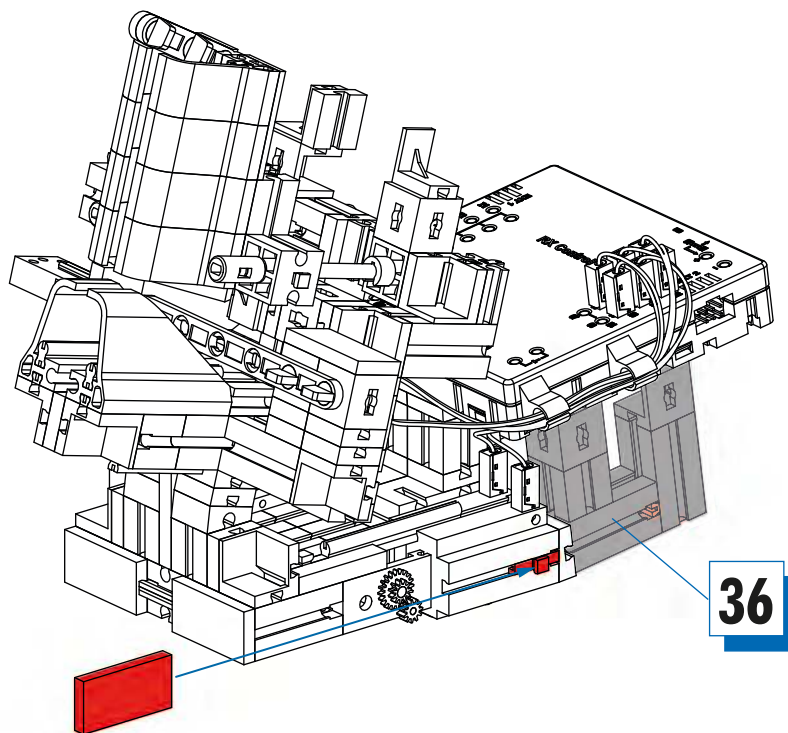
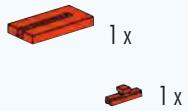
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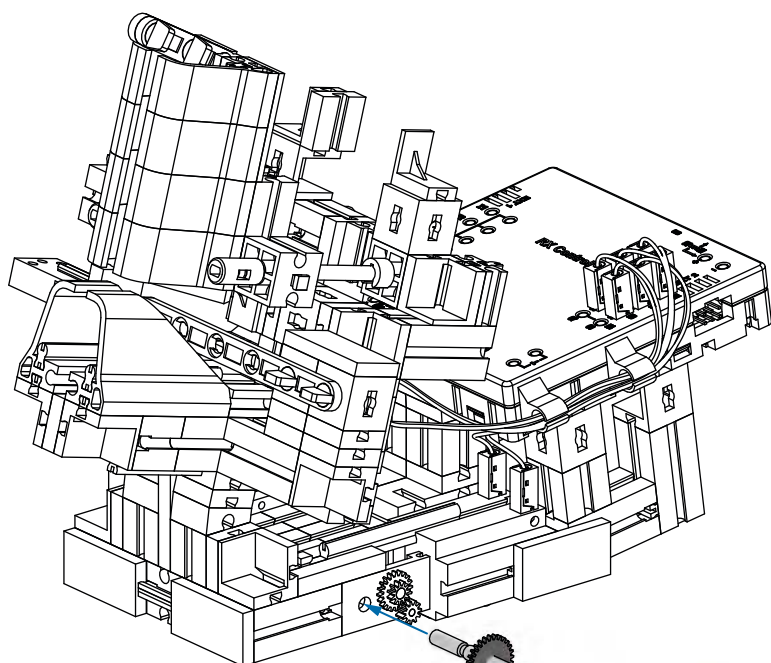
36



37



36



38

2 x

1 x

1 x

1 x



Omniwheel A

Omniwheel A



- Nabenmutter sehr fest anziehen
- Fasten the hub nut very tightly
- Serrer l'écrou du moyeu très serré
- Draai de naafmoer goed vast
- Atornillar las tuercas laterales muy fuertes
- Apertar bem as porcas de cubo
- Stringere saldamente il dado del mozzo
- Затянуть гайки ступиц
- 拧紧

39

2 x

1 x

1 x

1 x

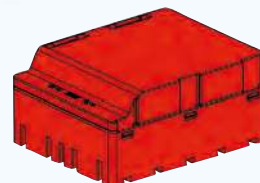
1 x



Omniwheel B



1 x



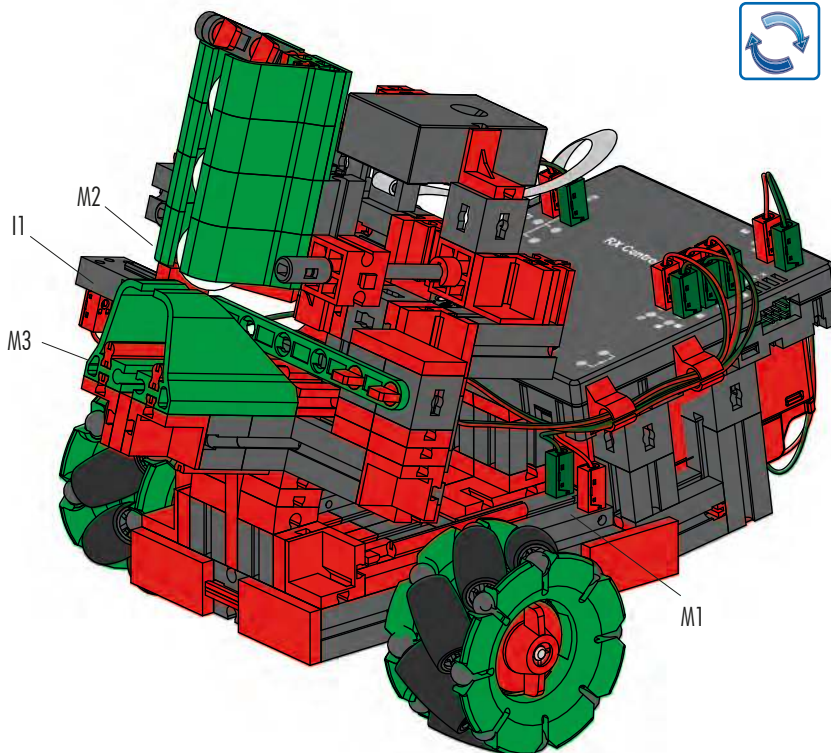
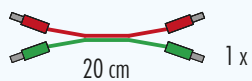
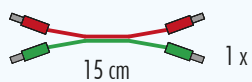
1 x



Omniwheel B



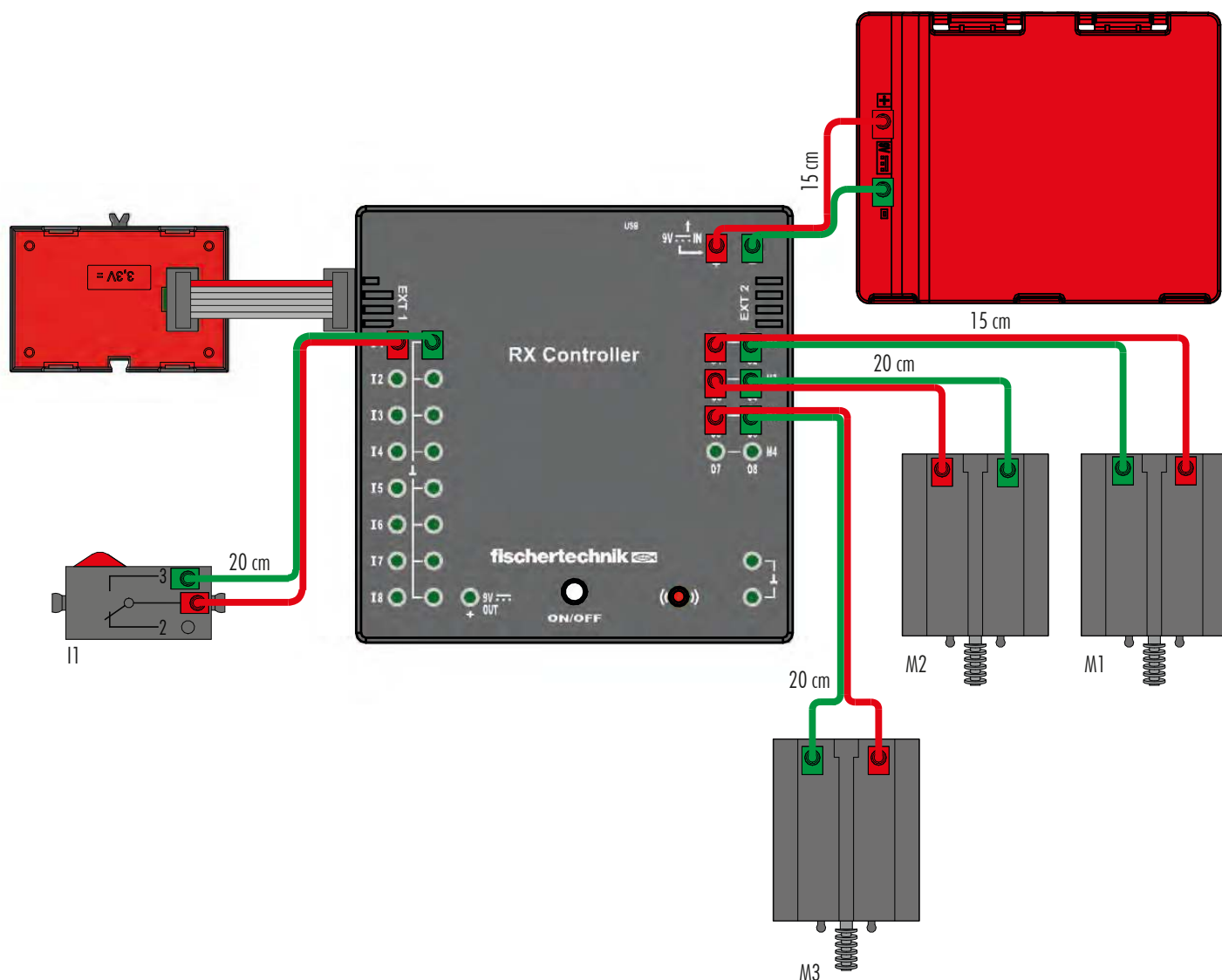
40

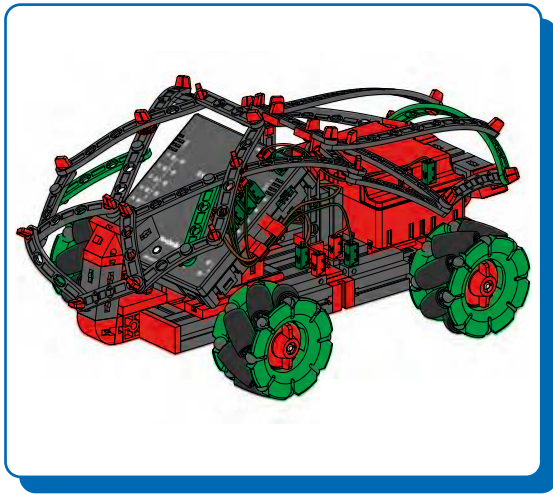


Schaltplan
Circuit diagram
Plan électrique

Schakelschema
Diagrama de circuitos
Plano elétrico de ligação

Schema elettrico
Схема подключения
电路图





Omniwheels Basismodell
Omniwheels Base Model
Omniwheels Modèle de
base

Omniwheels Base Model
Omniwheels Modelo básico
Omniwheels Modelo básico

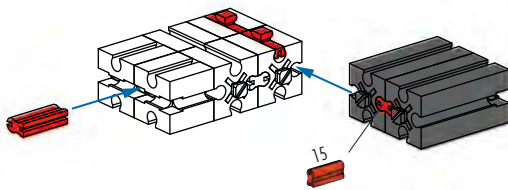
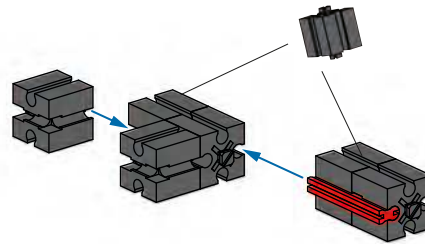
Omniwheels Modello base
Omniwheels Базовая
модель
全能轮基本型号

1

2 x

4 x

30 1 x

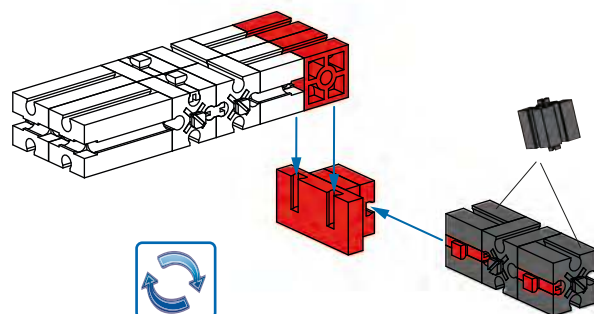


2

2 x

2 x

15 2 x



3

1 x

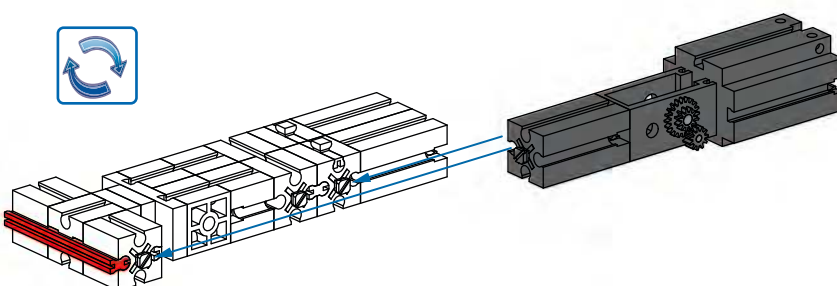
2 x

2 x

1 x

2 x

2 x



4

45 1 x

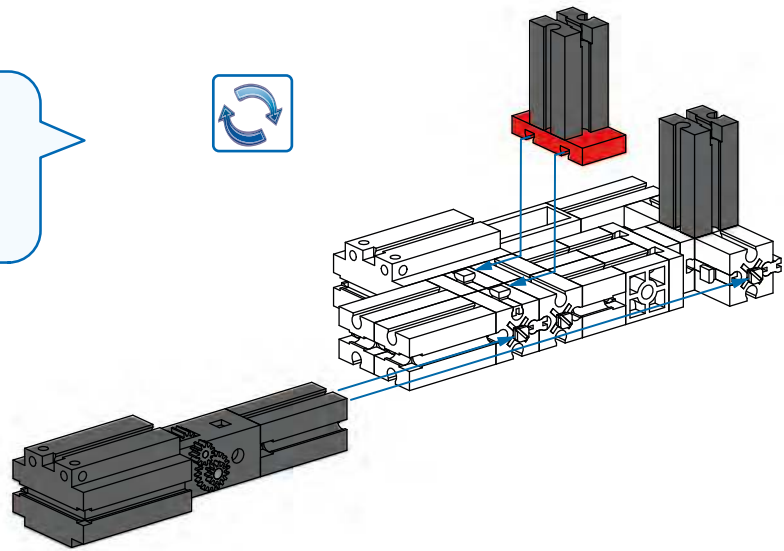
1 x

1 x

1 x

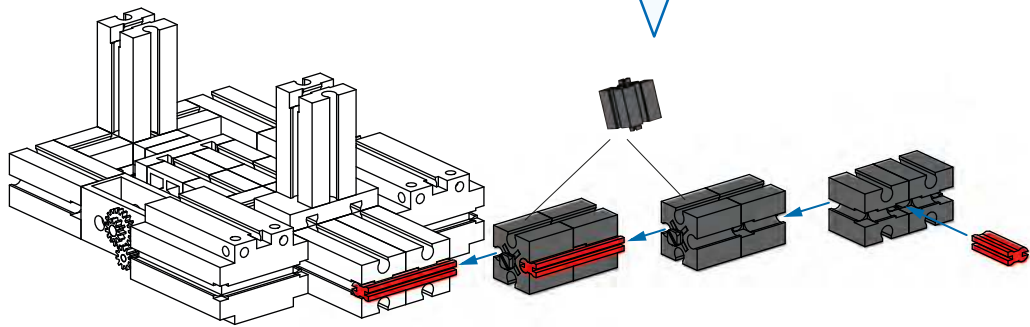
5

- 3 x [Black 1x3 Technic Beam]
- 1 x [Red 1x3 Technic Beam]
- 1 x [Black 1x3 Technic Beam with Pin]
- 1 x [Black 1x3 Technic Beam with Pin]



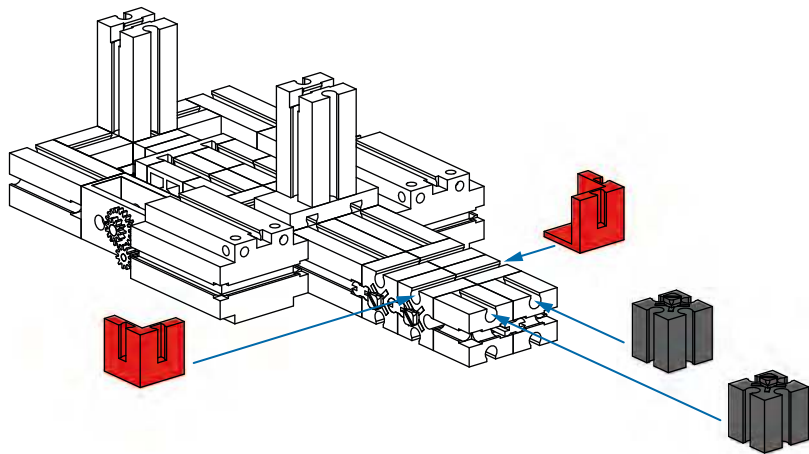
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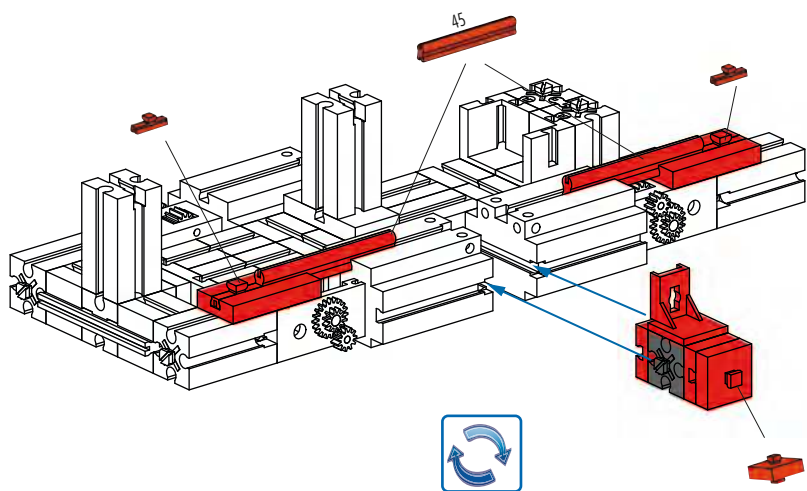
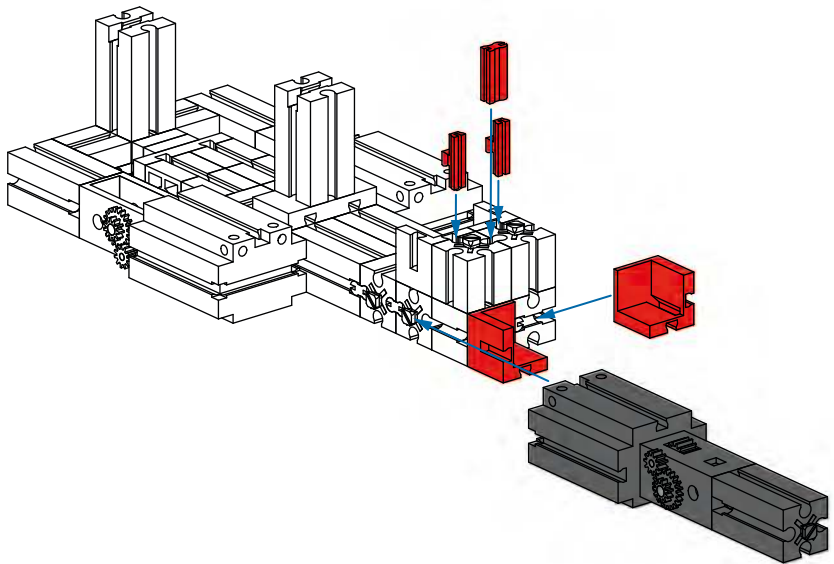
- 2 x [Black 1x3 Technic Beam]
- 2 x [Red 1x3 Technic Beam]
- 4 x [Black 1x3 Technic Beam]
- 1 x [Red 1x3 Technic Beam]



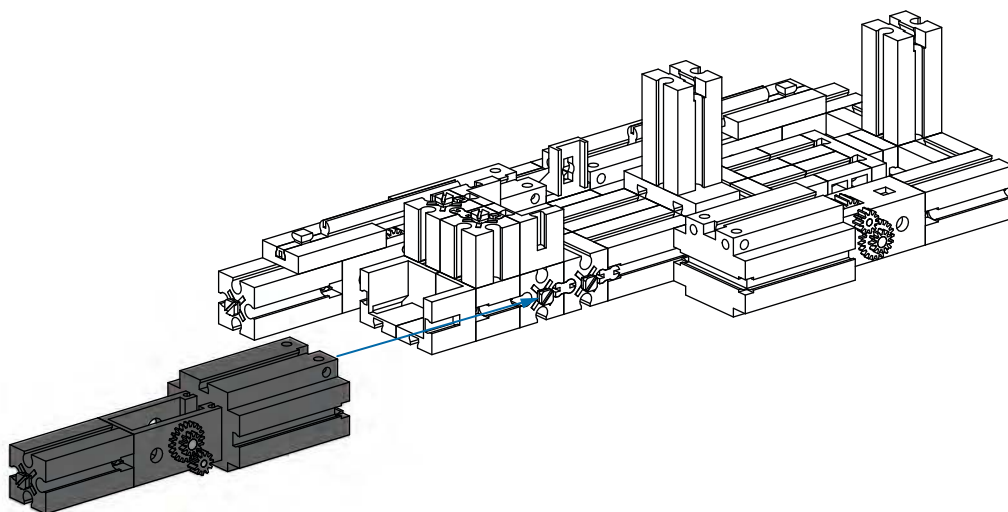
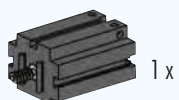
7

- 2 x [Red 1x3 Technic Beam]
- 2 x [Black 1x3 Technic Beam]

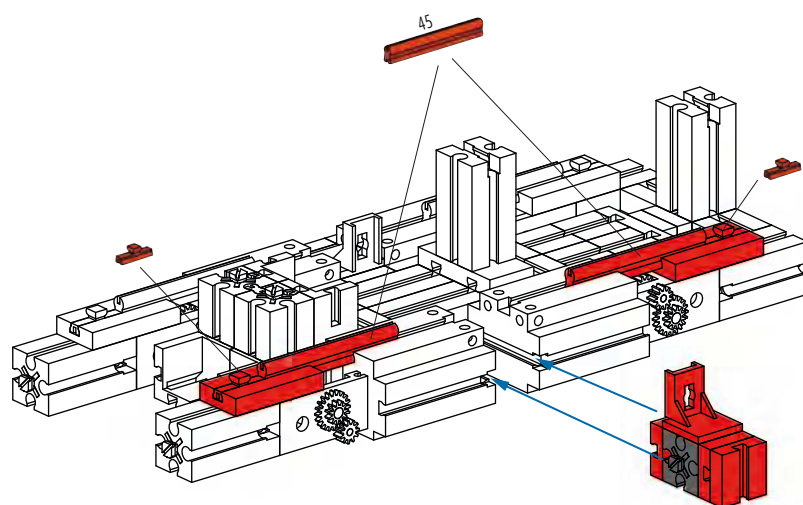


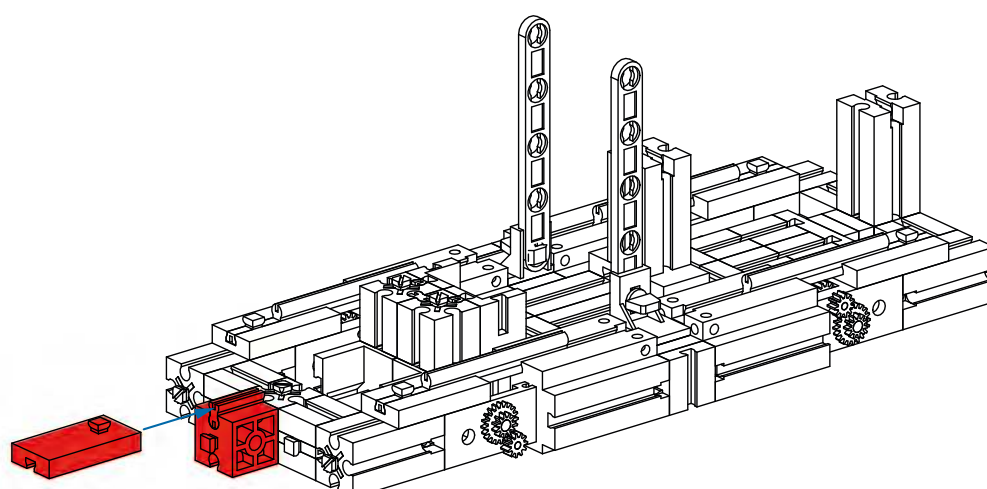
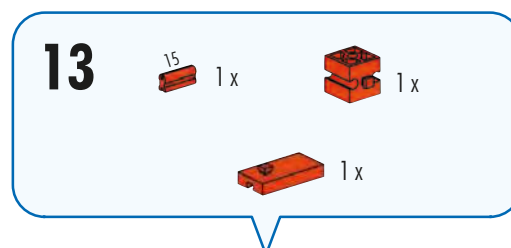
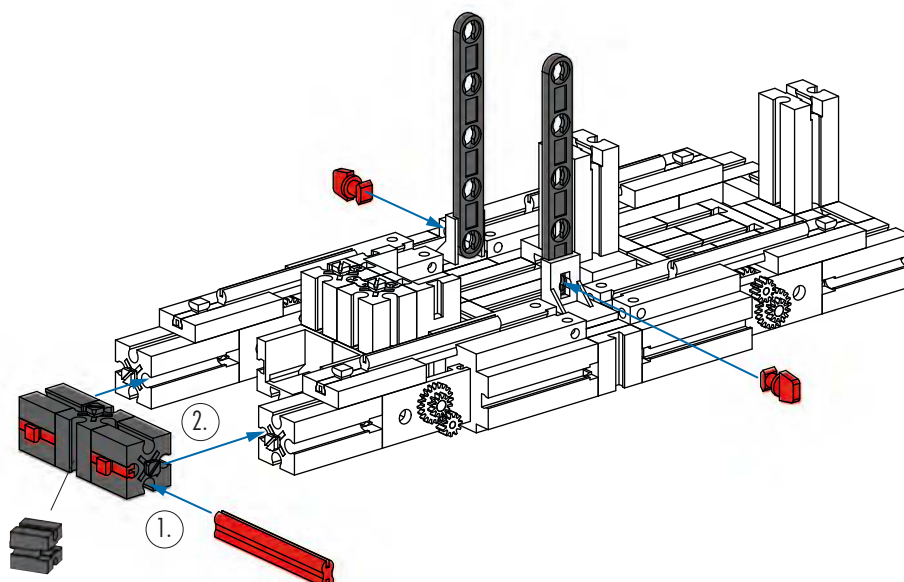
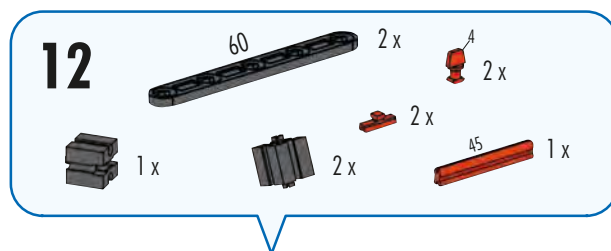


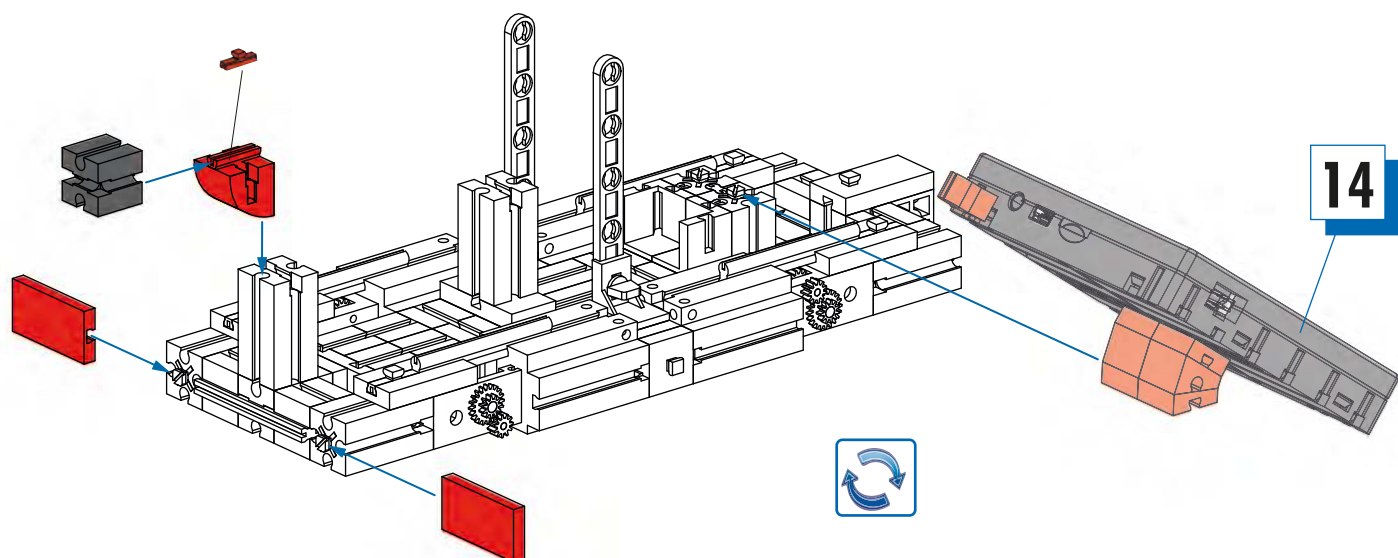
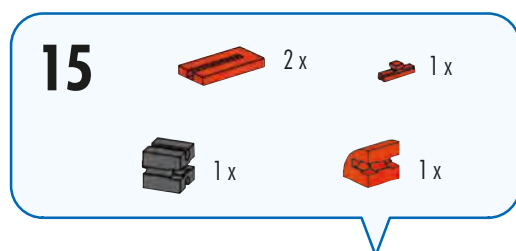
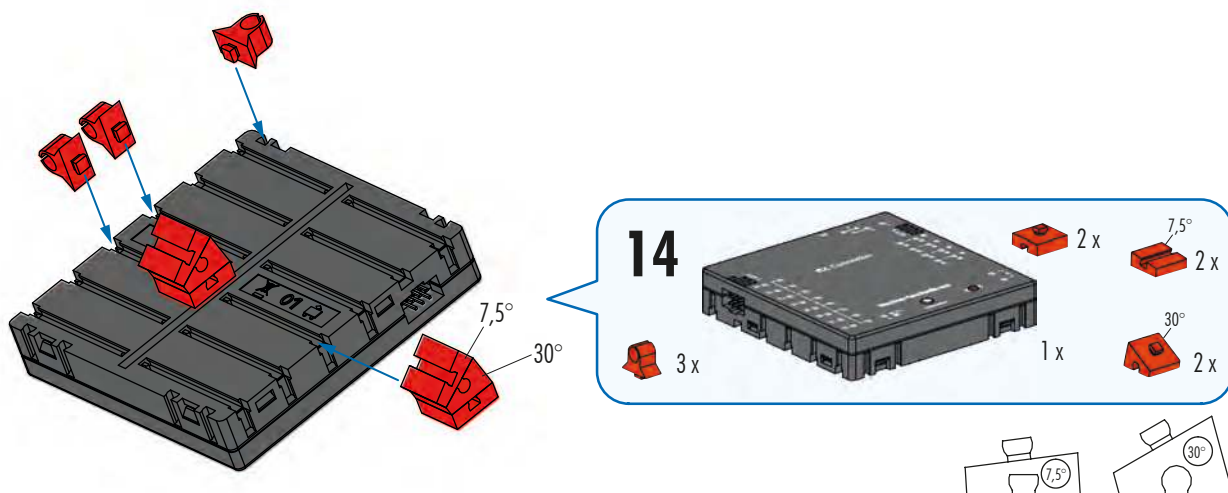
10



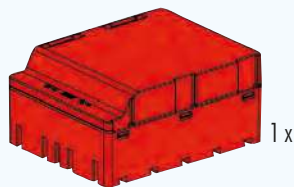
11







16



2 x



2 x



2 x



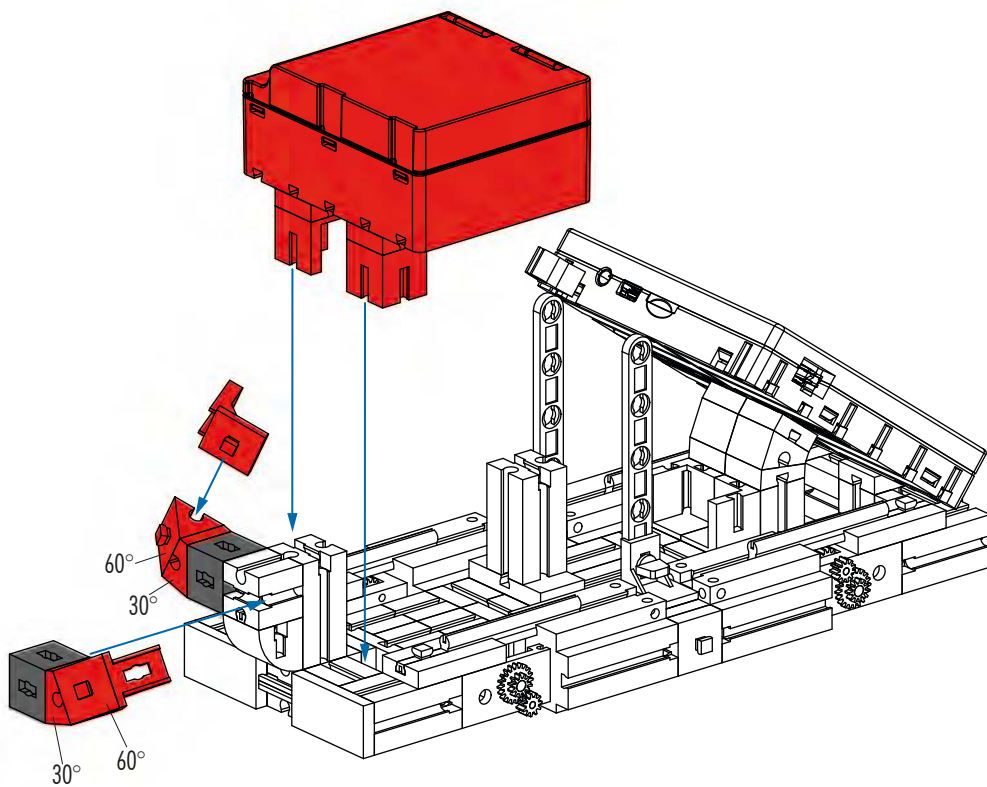
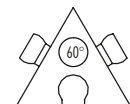
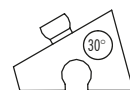
2 x



2 x



2 x



17



2 x



1 x



1 x



2 x



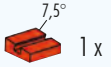
1 x



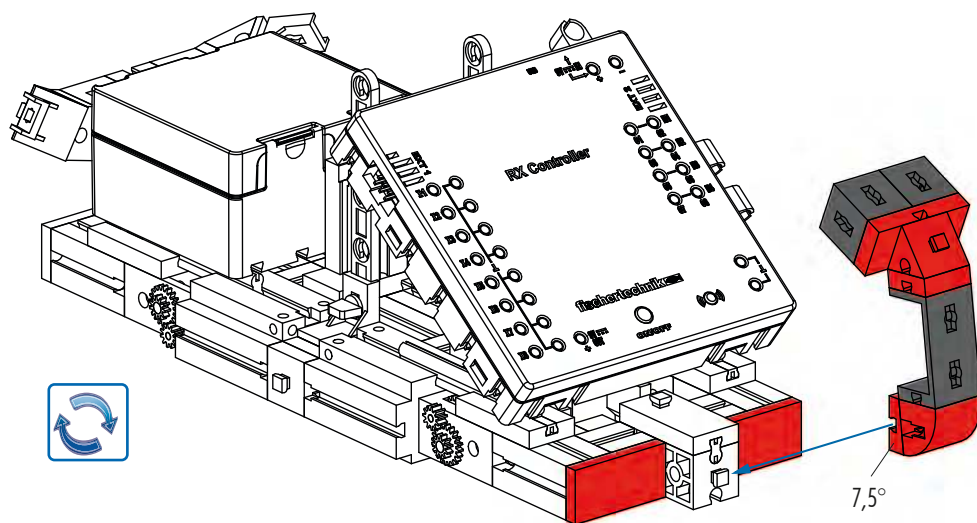
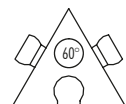
1 x



1 x

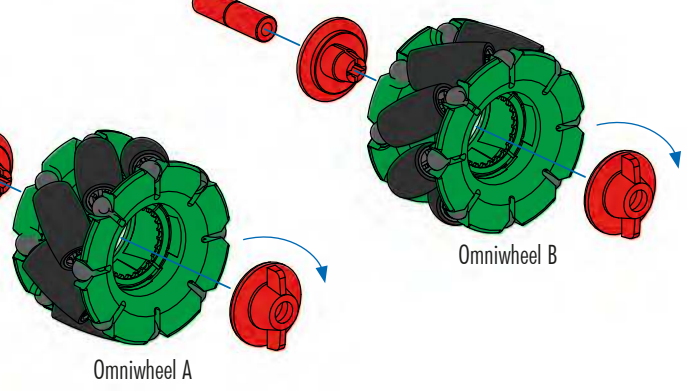
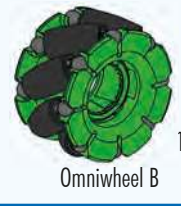
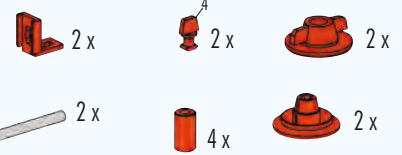


1 x



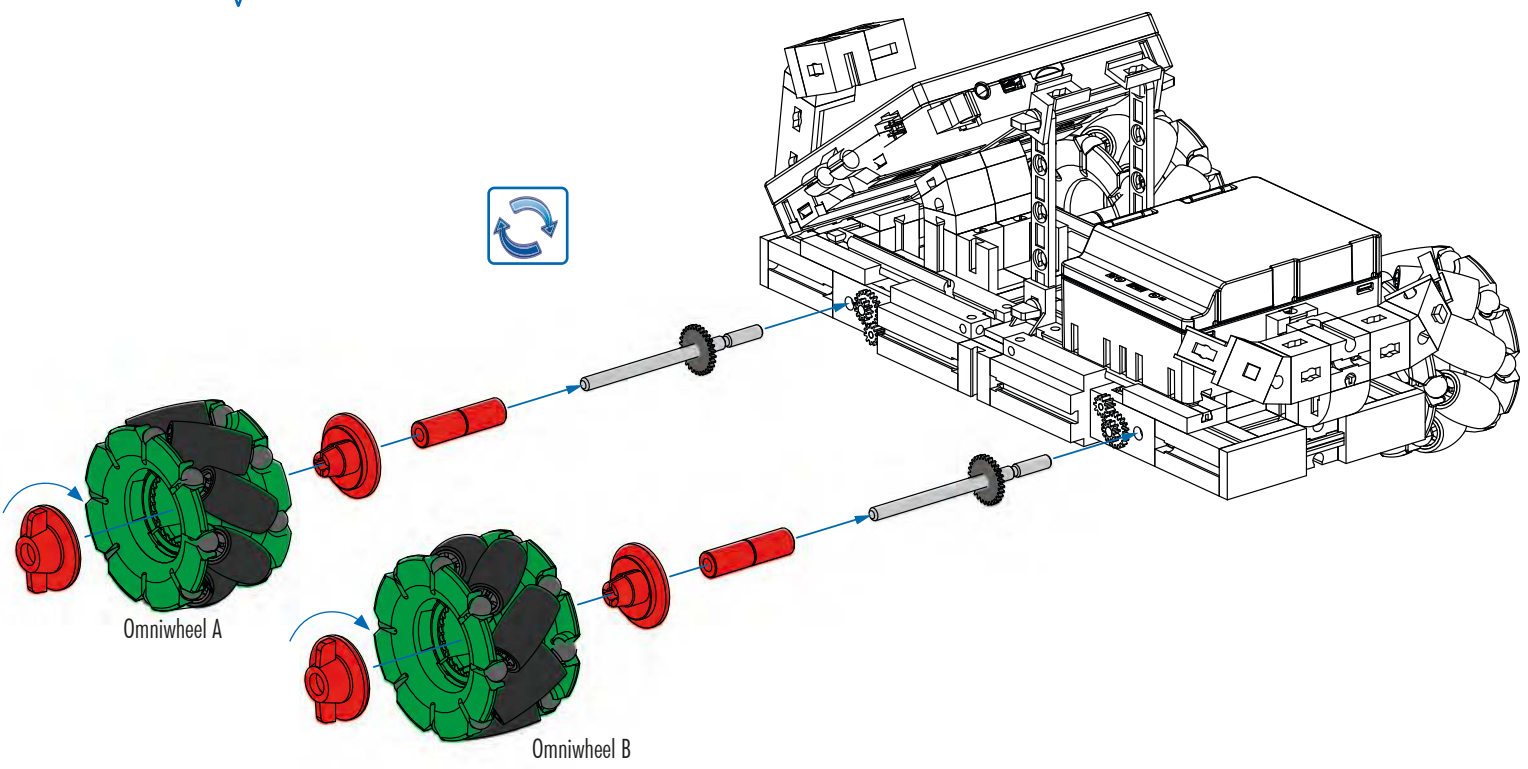
7,5°

18



- Nabenmutter sehr fest anziehen
- Fasten the hub nut very tightly
- Serrer l'écrou du moyeu très serré
- Draai de naafmoer goed vast
- Atornillar las tuercas laterales muy fuertes
- Apertar bem as porcas de cubo
- Stringere saldamente il dado del mozzo
- Затянуть гайки ступиц
- 拧紧

19



20

4

2 x

6

2 x

75

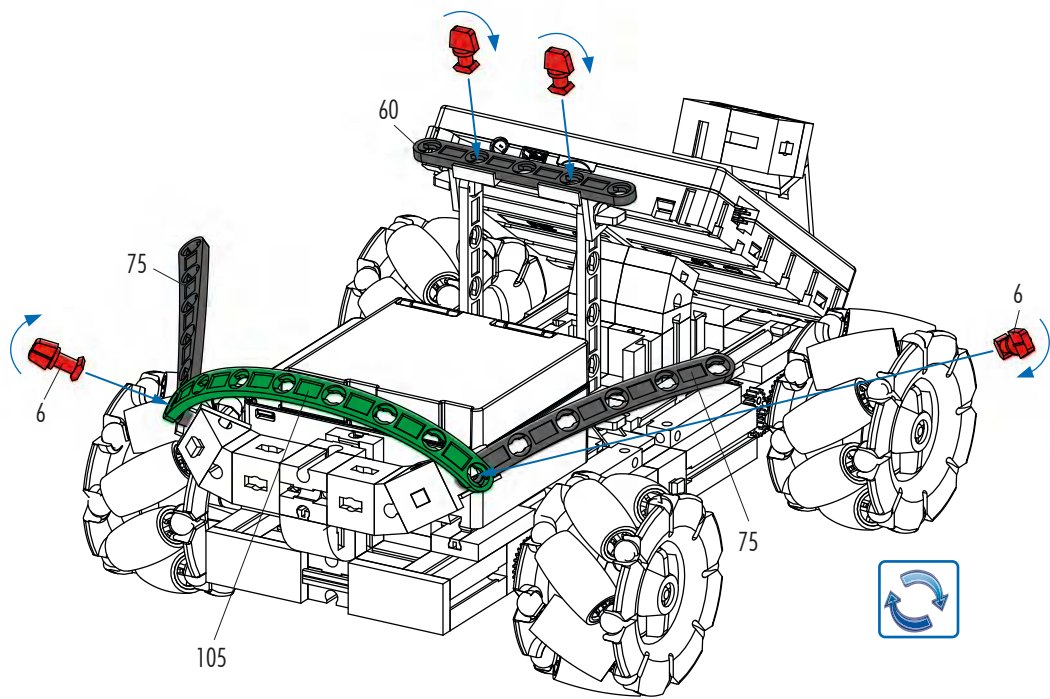
2 x

60

1 x

105

1 x



21

4

2 x

6

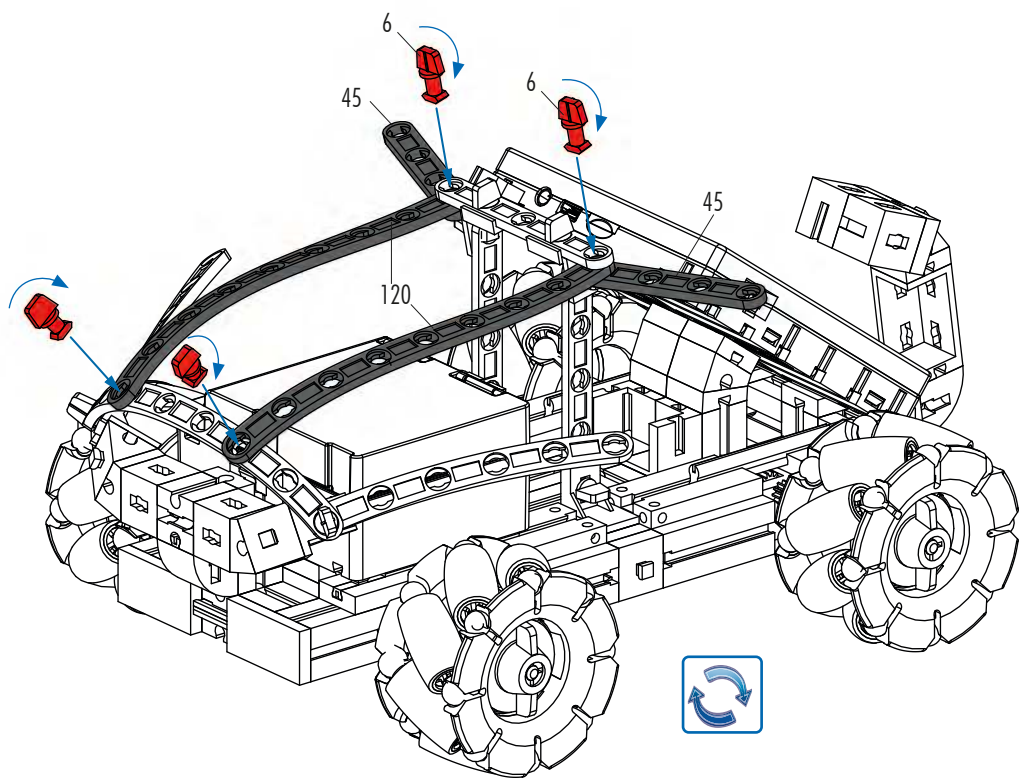
2 x

45

2 x

120

2 x



22

4

2 x

6

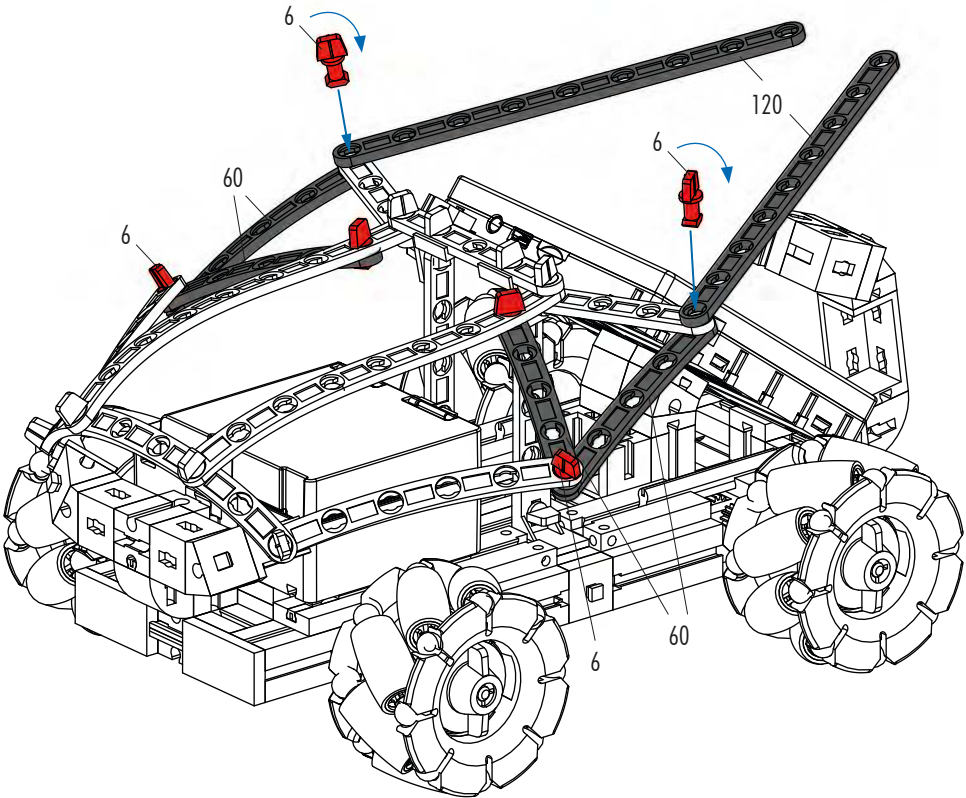
4 x

60

4 x

120

2 x



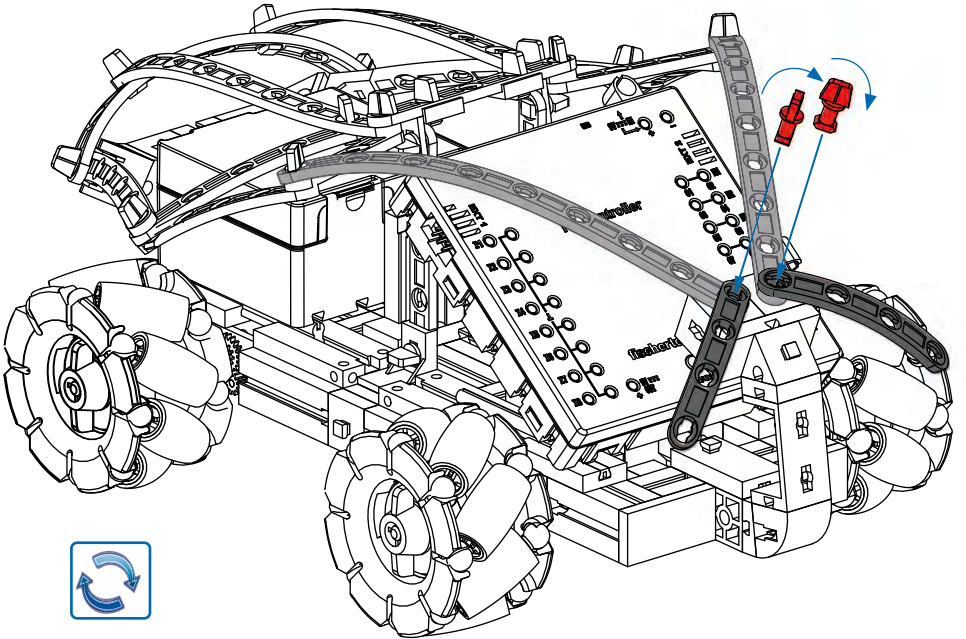
23

6

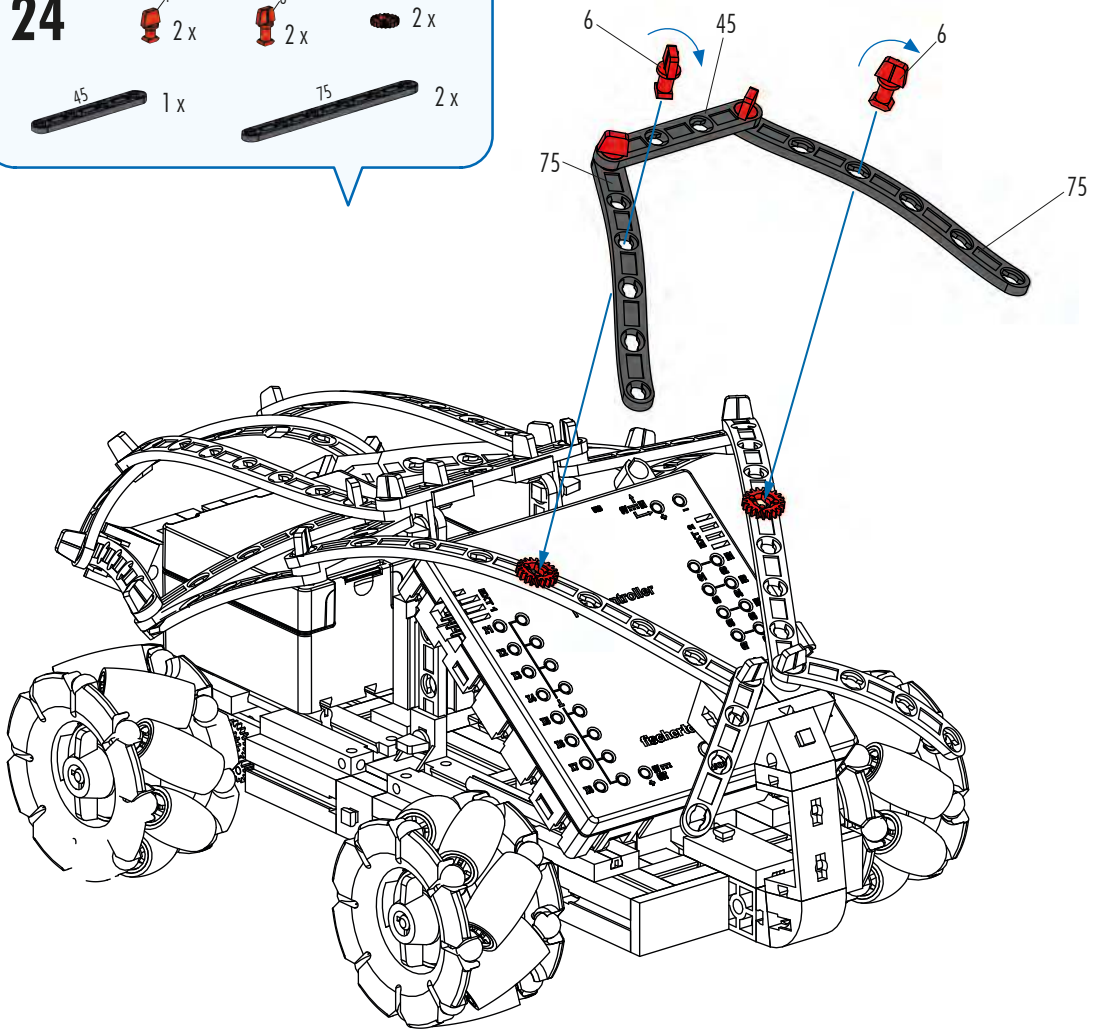
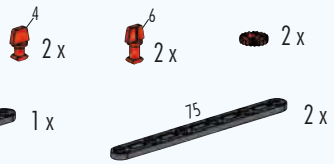
2 x

45

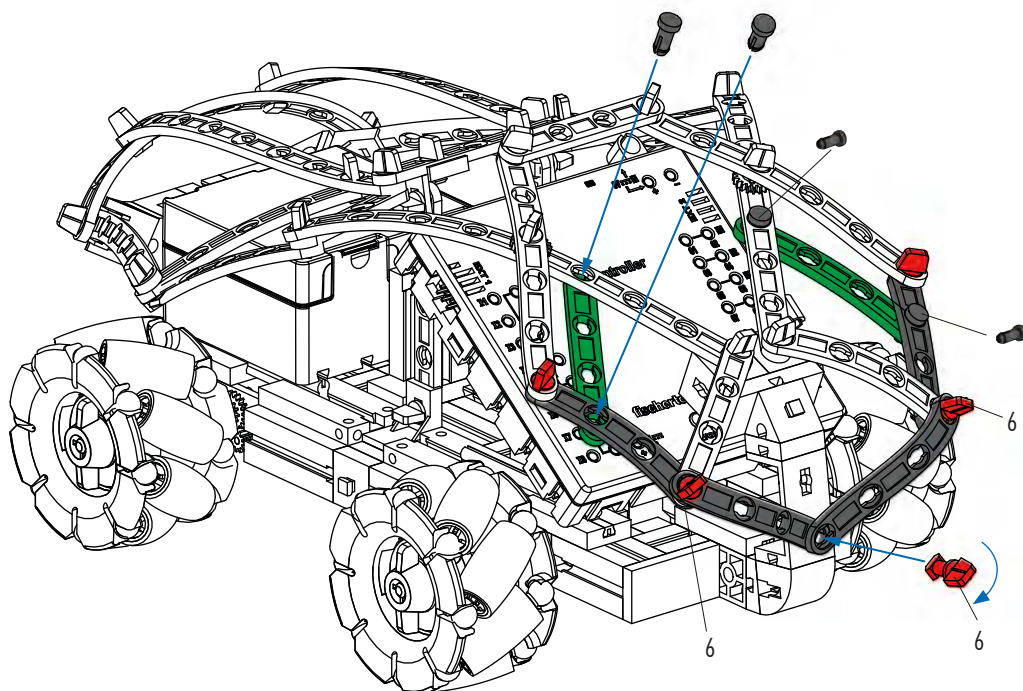
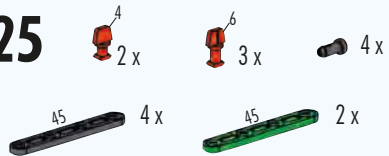
2 x

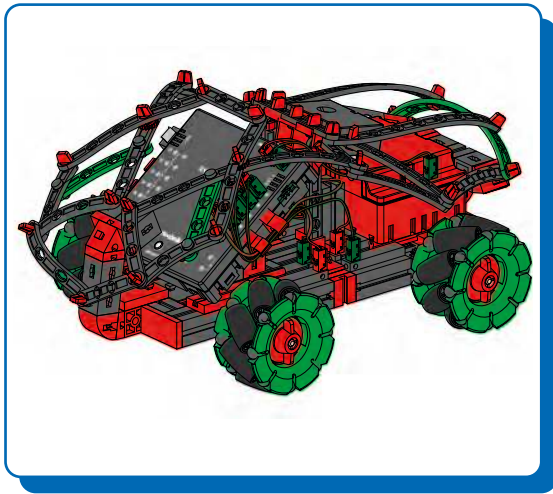


24



25





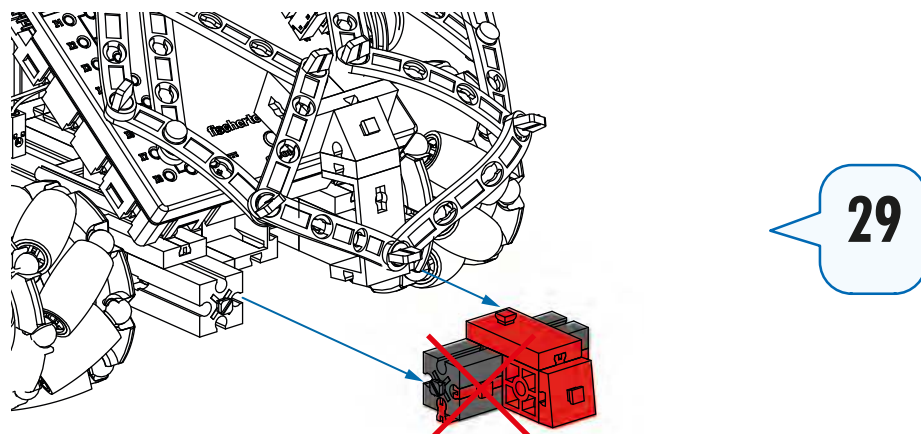
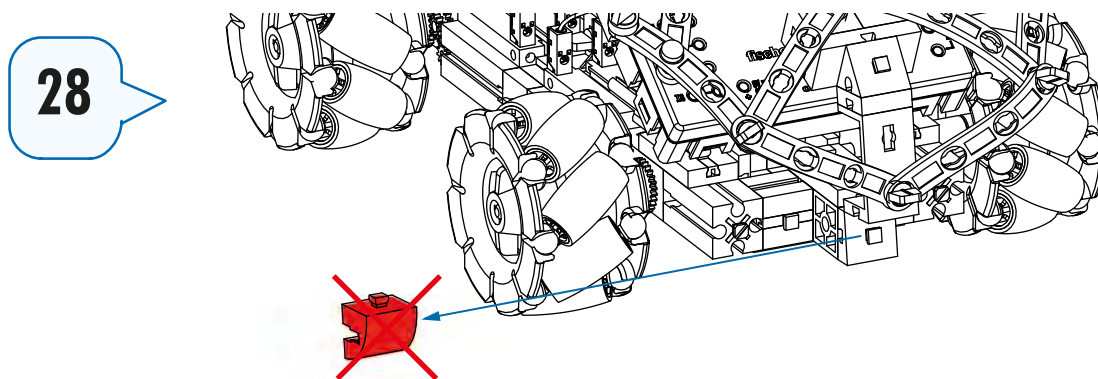
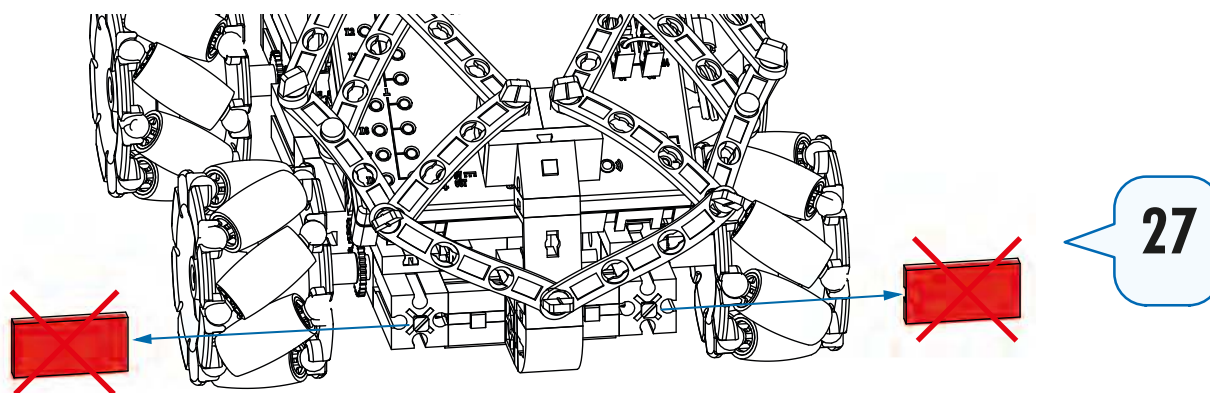
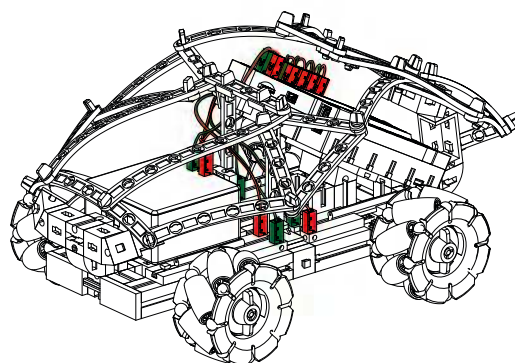
Omniwheels mit Spur- und Gestensensor
Omniwheels with track and gesture sensor
Omniwheels avec capteur de trajectoire et de gestes

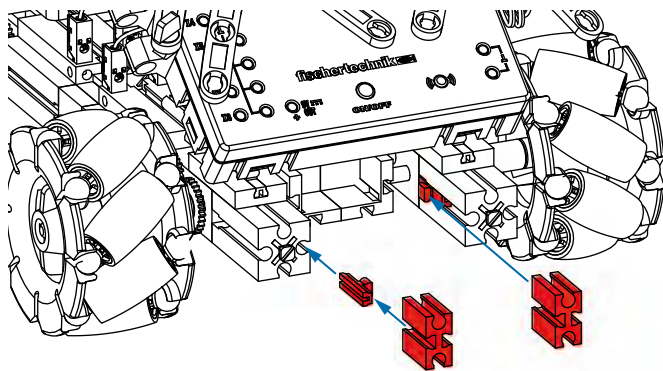
Omniwielen met track en gebaar sensor
Omniwheels con sensor de huellas y gestos
Omniwheels com sensor de rasto e de gestos

Omniwheels con sensore di tracce e gesti
Омниколеса с датчиком слежения и жестов
带轨道和手势传感器的全能轮

1-26

Seite 62
Page 62
Page 62
Bladzijde 62
Página 62
Pagina 62
Pagina 62
Страница 62
页次 62





30

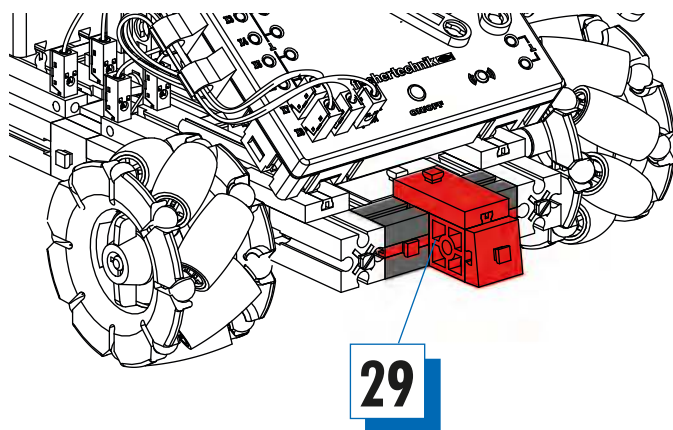
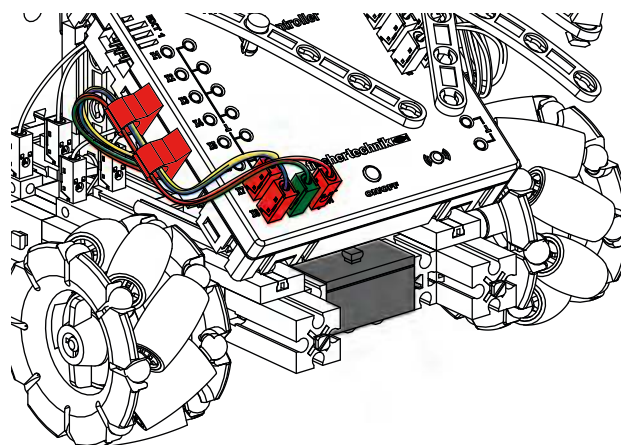
2 x

2 x

31

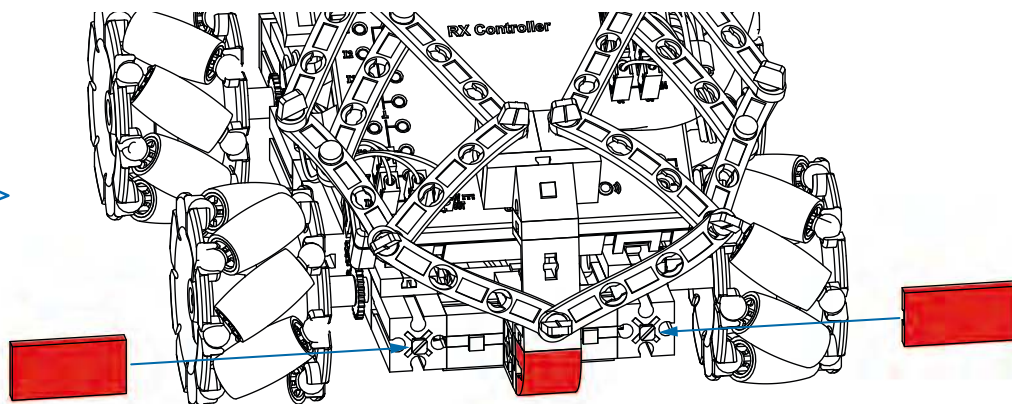
1 x

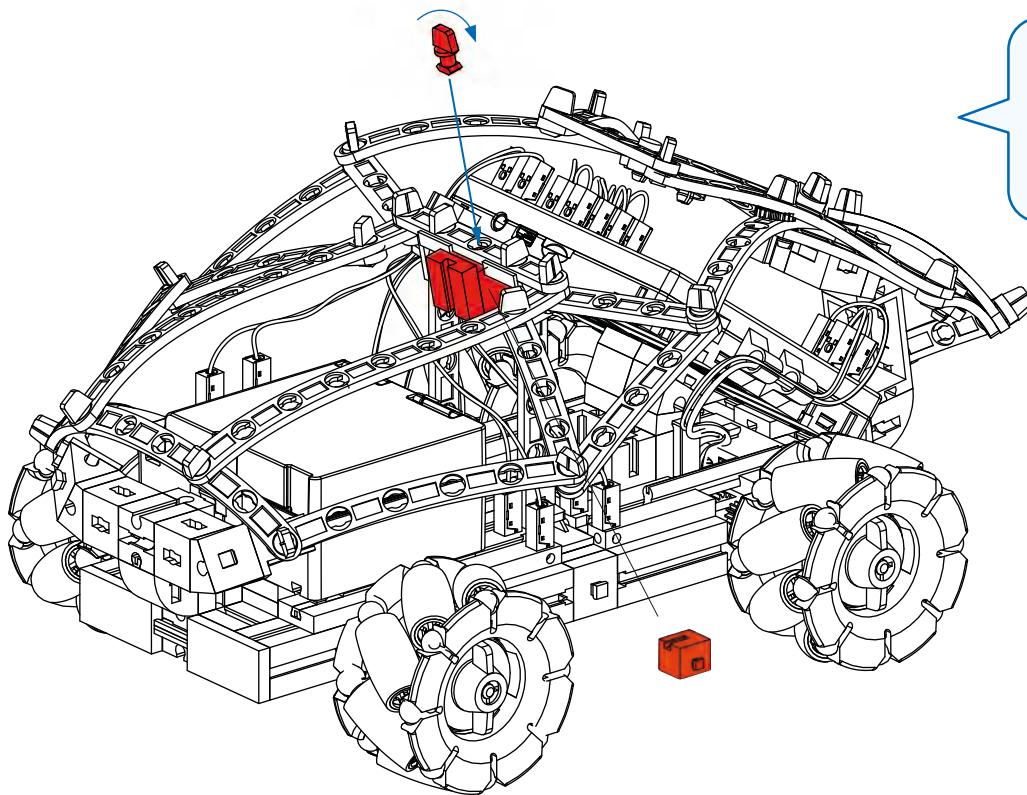
2 x



32

33





34



1x



1x



1x

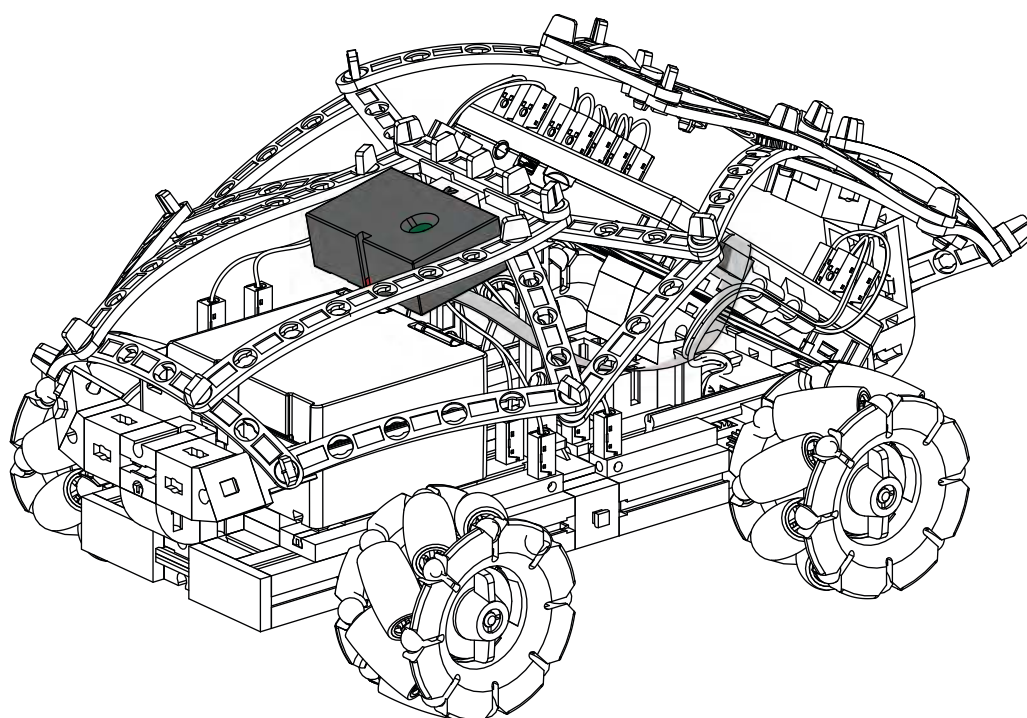
35



1x



1x



Schaltplan
Circuit diagram
Plan électrique

Schakelschema
Diagrama de circuitos
Plano elétrico de ligação

Schema elettrico
Схема подключения
电路图

