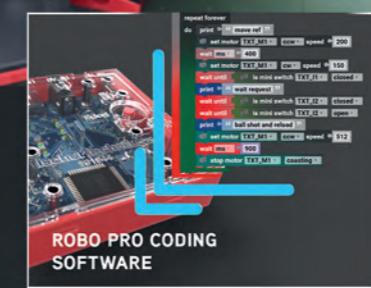
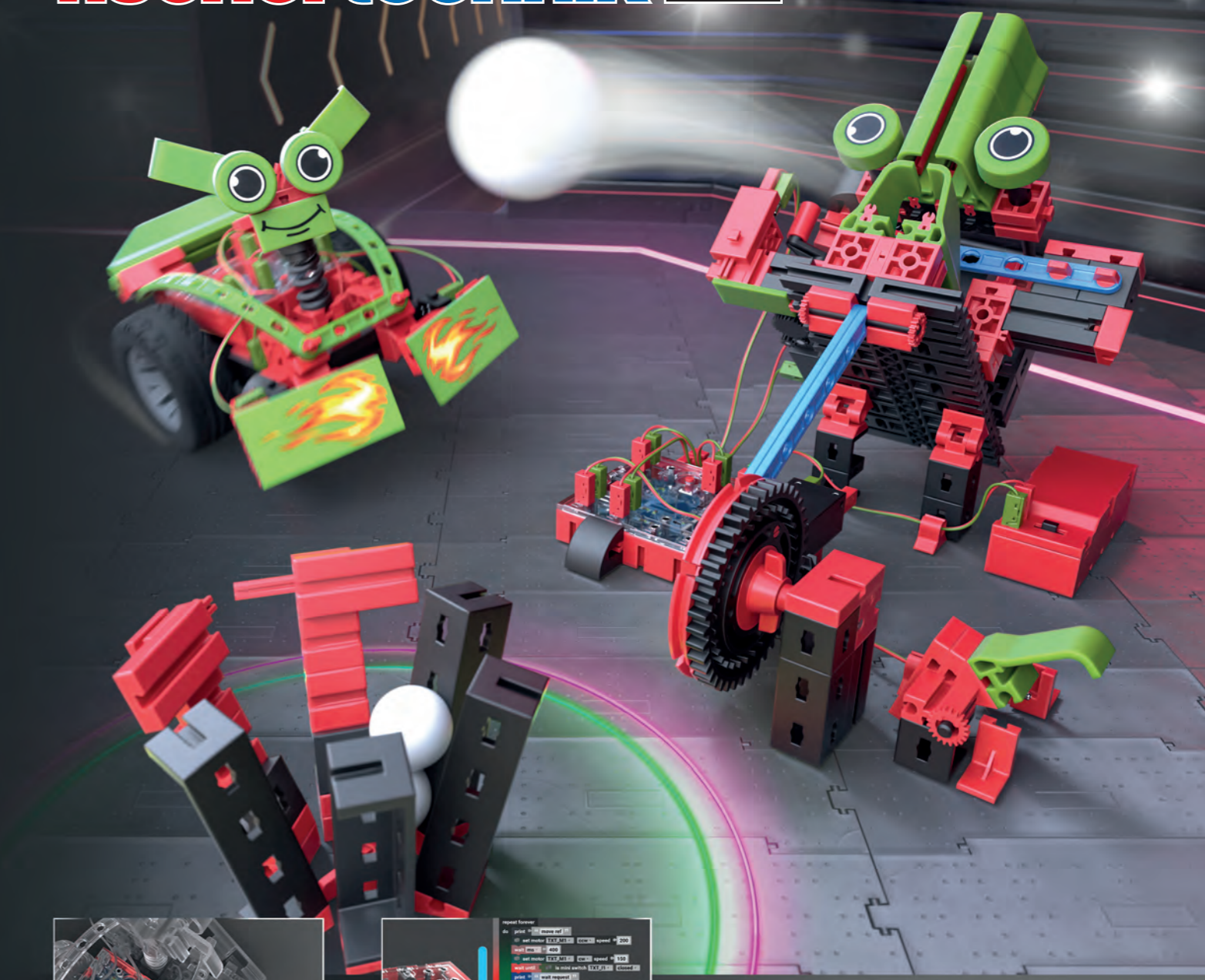




199563 - 09/23 - Co - Printed in Germany - Technische Änderungen vorbehalten - Subject to technical modifications



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 Pro

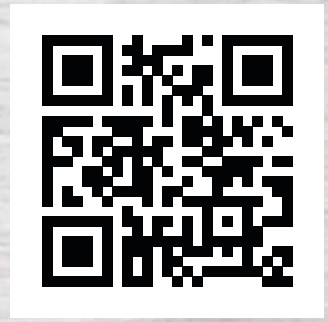
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Klaus-Fischer-Str. 1  
72178 Waldachtal  
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Phone: +4974 43/12-43 69  
Fax: +4974 43/12-45 91  
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www.fischertechnik.de

[www.fischertechnik.de](http://www.fischertechnik.de)

# ROBOTICS Smart Robots Pro

MODELS

**12**

**■ Software und didaktisches Begleitmaterial:**

Auf dem fischertechnik eLearning findest du:

- Installationshinweise zur ROBOPro Coding App (iOS, Android, Windows, MacOS, Linux)
- Informationen zum BT Smart Controller
- didaktische Begleitmaterialien

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

**■ Software and accompanying pedagogical materials:**

On the fischertechnik eLearning, you will find:

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

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

**■ 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 BT Smart
- Du matériel didactique d'accompagnement

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

**■ Software En didactisch begeleidingsmateriaal:**

Op het fischertechnik eLearning-portaal vindt je:

- Installatieaanwijzingen voor ROBOPro coding app (iOS, Android, Windows, MacOS, Linux)
- Informatie over BT Smart Controller
- didactisch begeleidingsmateriaal

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

**■ 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 BT Smart
- Materiales didácticos

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

**■ 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 BT Smart
- materiais de acompanhamento didático

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

**■ 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 BT Smart Controller
- materiale didattico di accompagnamento

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

**■ 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 BT Smart
- Дидактические сопроводительные материалы

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

**■ 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 BT Smart 控制器的信息
- 教学辅助材料

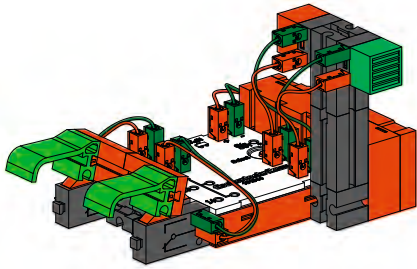
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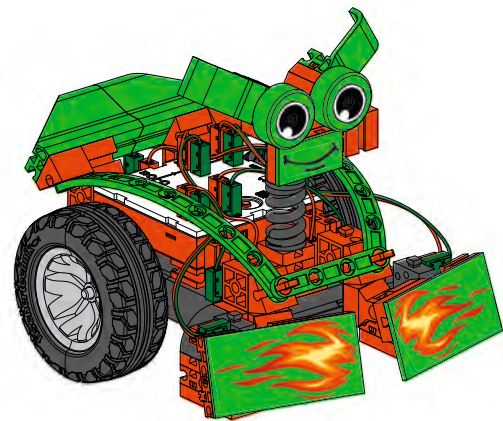
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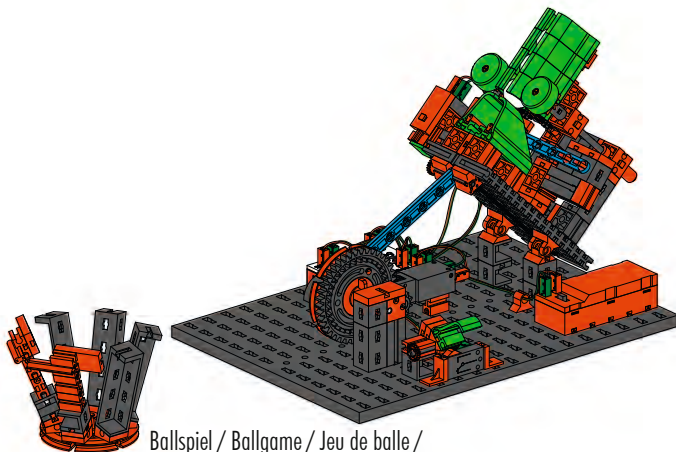
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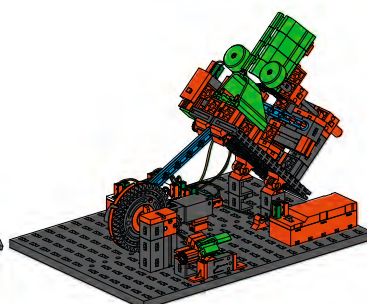
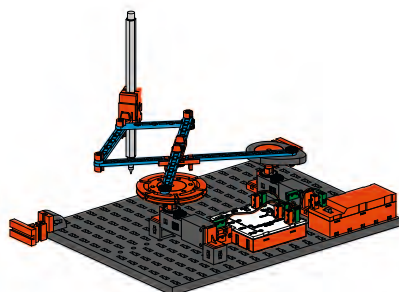
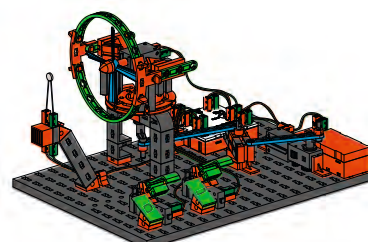
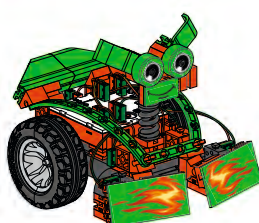
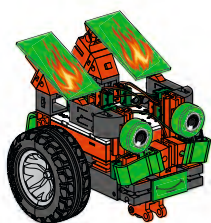
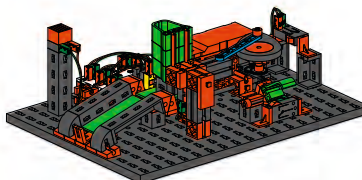
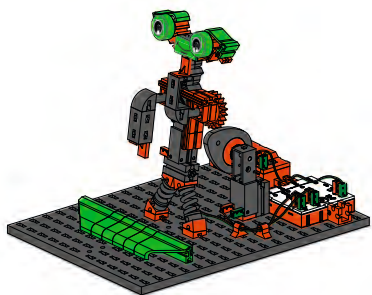
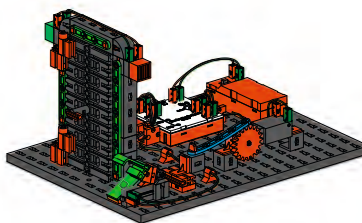
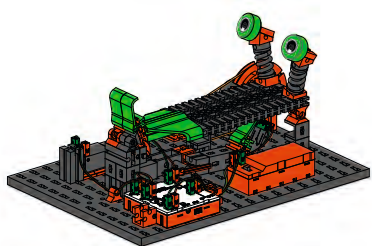
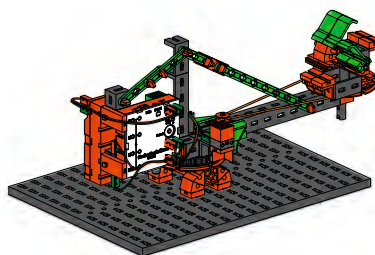
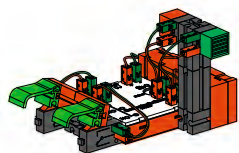
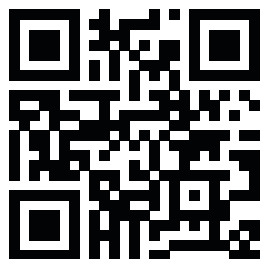
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Digitale bouw instructies voor verdere modellen / Instrucciones de construcción digitales para otros modelos / Instruções de construção digital para outros modelos /  
Istruzioni digitali per la costruzione di altri modelli / Цифровые инструкции по сборке последующих моделей /  
更多模型的数字建造说明
















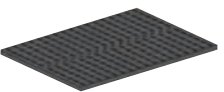



**Einzelteilübersicht**  
**Spare parts list**  
**Liste des pièces détachées**




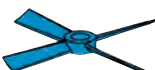













**Onderdelenoverzicht**  
**Lista da piezas**  
**Resumo de peça individual**

**Singoli componenti**  
**Перечень деталей**  
**零件概览**

	31 010 4 x
	31 011 4 x
	31 019 2 x
	31 022 1 x
	31 040 1 x
	31 058 2 x
	31 060 2 x
	31 061 4 x
	31 064 2 x
	31 078 2 x
	31 082 2 x
	31 124 4 x
	31 330 6 x
	31 360 1 x
	31 426 2 x
	31 436 2 x
	31 597 2 x

	31 668 4 x
	31 672 2 x
	31 674 1 x
	31 760 2 x
	31 848 4 x
	31 891 2 x
	31 981 8 x
	31 982 30 x
	31 983 3 x
	32 064 12 x
	32 071 4 x
	32 085 1 x
	32 321 1 x
	32 879 3 x
	32 881 3 x
	32 985 1 x
	35 031 2 x




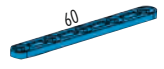


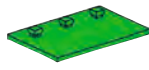
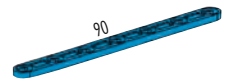

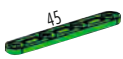
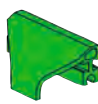


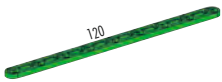









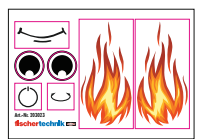




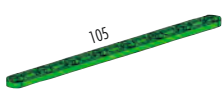







	35 049 5 x
	35 063 2 x
	35 064 2 x
	35 066 2 x
	35 079 1 x
	35 084 1 x
	35 088 2 x
	35 129 1 x
	35 404 7 x
	35 466 1 x
	35 945 2 x
	35 969 5 x
	36 120 1 x
	36 134 1 x
	36 227 2 x
	36 248 1 x
	36 293 1 x

	36 323 14 x
	36 324 2 x
	36 334 8 x
	36 337 1 x
	36 437 1 x
	36 573 1 x
	36 586 2 x
	36 920 6 x
	36 921 4 x
	36 922 4 x
	36 950 6 x
	37 237 11 x
	37 468 12 x
	37 636 4 x
	37 679 8 x
	37 681 1 x
	37 783 2 x

**Einzelteilübersicht**  
**Spare parts list**  
**Liste des pièces détachées**

**Onderdelenoverzicht**  
**Lista da piezas**  
**Resumo de peça individual**

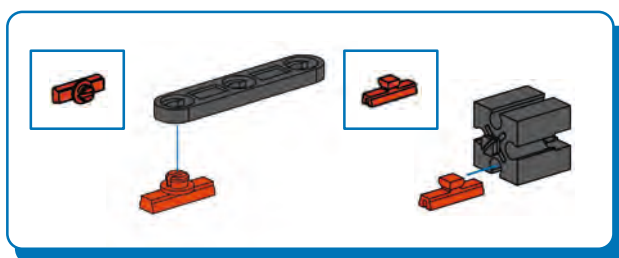
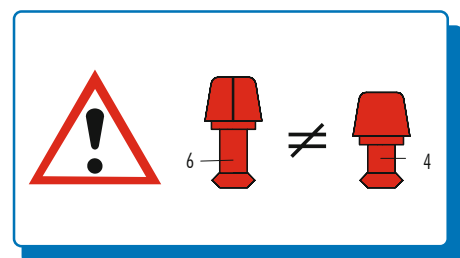
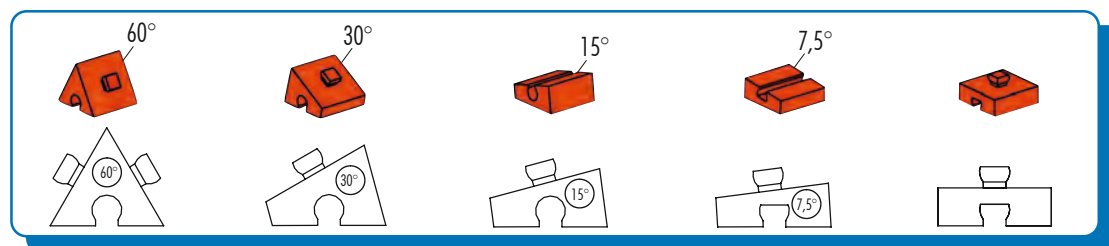
**Singoli componenti**  
**Перечень деталей**  
**零件概览**

	38 240 3 x		137 677 2 x		162 134 2 x		173 573 3 x
	38 413 2 x		143 235 1 x		163 042 1 x		173 574 3 x
	38 414 2 x		146 531 2 x		163 198 1 x		181 583 18 x
	38 423 7 x		146 533 4 x		163 199 1 x		181 584 18 x
	38 428 3 x		152 249 2 x		163 200 9 x		185 695 3 x
	119 850 1 x		154 452 2 x		163 205 2 x		203 023 1 x
	135 719 1 x		156 504 3 x		163 206 2 x		
	136 775 1 x		159 781 2 x		172 542 2 x		
	137 096 2 x		160 601 1 x		172 804 2 x		
	137 103 1 x		161 944 1 x		172 805 2 x		

**Montagetipps**  
**Tips for assembly**  
**Tuyaux pour le montage**

**Montagetipps**  
**Consejos para el montaje**  
**"Dicas" para montagem**

**Consigli per il montaggio**  
**Советы по сборке**  
**装配建议**



**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**

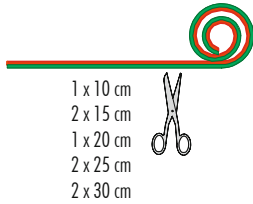
Kabel und Stecker  
 Plugs and cables  
 Fiches et des câbles

Stekkers en cables  
 Enchufes en cables  
 Cabos e contatos

Cavi e connettori  
 Провода и штекеры  
 电缆和插头



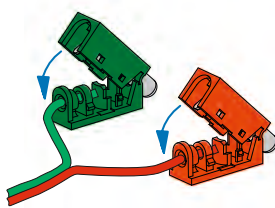
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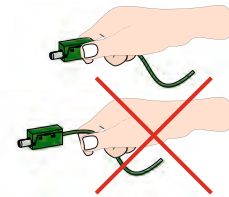
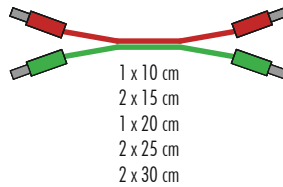
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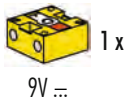
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**Sicherheitshinweise**  
**Safety Information**  
**Consignes de sécurité**

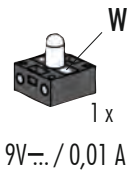
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**Indicaciones de seguridad**  
**Observações sobre segurança**

**Informazioni per la sicurezza**  
**Указания по технике безопасности**  
**安全指南**



Fototransistor  
 Phototransistor  
 Phototransistor  
 Fototransistores  
 Fototransistor  
 Fototransistor  
 Фототранзистор  
 光电晶体管

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



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。



- 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!
- Avviso: pericolo di soffocamento a causa delle piccole sfere e dei piccoli pezzi ingoiabili!
- Внимание: Опасность удушения 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!

**Sicherheitshinweise**  
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Указания по технике безопасности  
安全指南

**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.

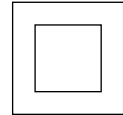
**Электромагнитные помехи**

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。

- 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。



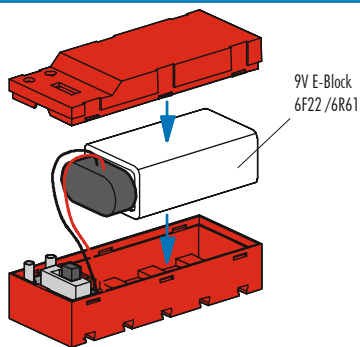
- Das Spielzeug darf nur mit einer der folgenden fischertechnik Energiequellen benutzt werden: Art.-Nr.: 135719 Batteriehalter 9V oder Art.-Nr.: 35537 Accu Pack 8,4V oder Netzgerät 9VDC, 2,3-2,5A
- The toy may only be used with one of the following fischertechnik energy sources: Art No.: 135719 battery tray 9V or Art No.: 35537 Accu Pack 8.4V or Power Supply 9VDC 2,3-2,5A. 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: Art. n° : 135719 support de pile 9 volts ou Art. n° : 35537 pack d'accumulateurs 8,4 volts ou unité d'alimentation 9VDC 2,3-2,5A
- Het speelgoed mag uitsluitend met een van de volgende fischertechnik energiebronnen worden gebruikt: art.nr.: 135719 batterijhouder 9V of art.nr.: 35537 accupack 8,4V of Voedingseenheid 9VDC 2,3-2,5A.
- El juguete se debe utilizar únicamente con una de las siguientes fuentes de energía: Art. No. 135719 soporte de pila de 9V o Art. No. 35537 paquete acumulador de 8,4V o unidad de alimentación 9VDC 2,3-2,5A.
- O brinquedo somente pode ser utilizado com uma das seguintes fontes de energia da fischertechnik: art. nº: 135719 Suporte de bateria de 9V ou art. nº: 35537 Bloco de bateria de 8,4V ou unidade de alimentação 9VDC 2,3-2,5A.
- Questo giocattolo può essere utilizzato solo con le seguenti fonti di energia fischertechnik: cod. prod.: 135719 portabatteria da 9V oppure cod. prod.: 35537 confezione batterie da 8,4V oppure unità di alimentazione 9VDC 2,3-2,5A.
- Игрушку можно использовать только с одним из следующих источников энергии от fischertechnik: арт. №: 135719 держатель батарейки 9В или арт. №: 35537 Accu Pack 8,4В
- 该玩具只允许使用如下的慧鱼 (fischertechnik) 能量源：1节9V 6F22电池或2.3-2.5A的9V直流电源



## 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



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

- 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 toy.
- 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.
- Afleren 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 compartimiento de pilas antes de que sean cargadas.
- Las pilas deben ser colocadas con la polaridad correcta.
- Las pilas descargadas deben ser retiradas 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



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](http://www.fischertechnik.de/environment)

- Lies die Anleitung vor Versuchsbeginn, befolge sie und halte sie nachschlagebereit.
  - 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 o 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 i pezzi di costruzione che hanno bordi e punte spigolosi necessari per la funzionalità del pezzo!
- Lee estas instrucciones antes de iniciar el ensayo, cúmplelas y tenlas a mano para consultas.
  - Guarda 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 obrigatórios para o funcionamento!
- Leggi le istruzioni prima di iniziare l'esperimento, rispettale 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 и 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。
  - 必要时应该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！

## Ratschläge an überwachende Erwachsene

### Advice for supervising adults

### Recommandations à l'attention des adultes chargés de la surveillance

## Adviezen voor de volwassene die toezicht houdt

### Consejos de supervisión para adultos

### Conselhos para os adultos vigilantes

## Consigli per gli adulti che sorvegliano

### Советы контролирующим

### взрослым

### 给进行监督的成人的建议

- Ausschließlich für Kinder von mindestens 8 Jahren geeignet.
  - Die Anleitungen sollen den Erwachsenen befähigen die Experimente im Hinblick auf die Eignung für das betreffende Kind abzuschätzen.
- Not intended for children under 8 years of age.
  - The instructions are intended to enable adults to assess the experiment's suitability for the child concerned.
- Boîte exclusivement appropriée aux enfants de plus de 8 ans.
  - Les instructions devraient permettre aux adultes d'évaluer si l'enfant concerné est apte à effectuer les essais respectifs.
- Uitsluitend geschikt voor kinderen vanaf minimaal 8 jaar.
  - De gebruiksaanwijzingen dienen als hulp voor de volwassene om te kunnen beoordelen of de experimenten geschikt zijn voor het desbetreffende kind.
- Adecuado exclusivamente para niños de mínimo de 8 años.
  - Las instrucciones deben facultar al adulto de evaluar el experimento con miras a su adecuación para el niño afectado.
- Adequado exclusivamente para crianças com, no mínimo, 8 anos.
  - As instruções devem capacitar os adultos a avaliar os experimentos em relação à sua adequação para a criança pertinente.
- Adatti esclusivamente per bambini di almeno 8 anni di età.
  - I manuali devono consentire all'adulto di saper valutare gli esperimenti in merito alla loro adeguatezza per il bambino in questione.
- Только для детей старше 8 лет.
  - Эти инструкции дают взрослым возможность оценить эксперименты с точки зрения их пригодности для ребёнка.
- 只适合于8岁以上的儿童
  - 说明书应该能让成人判断该实验是否适合想做实验的孩子玩。

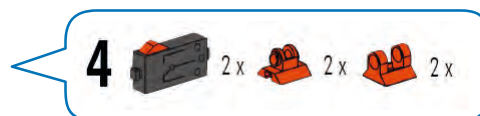
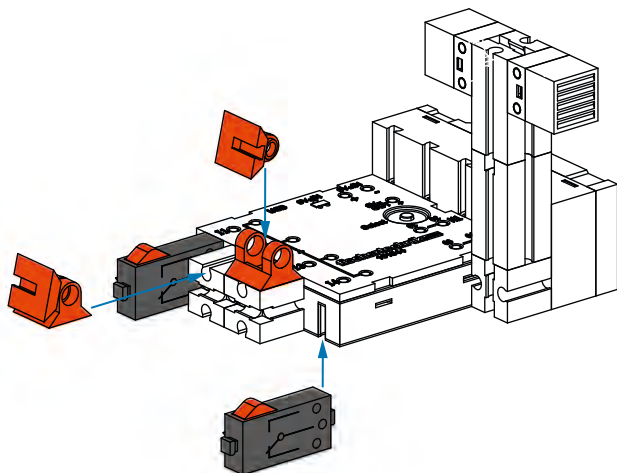
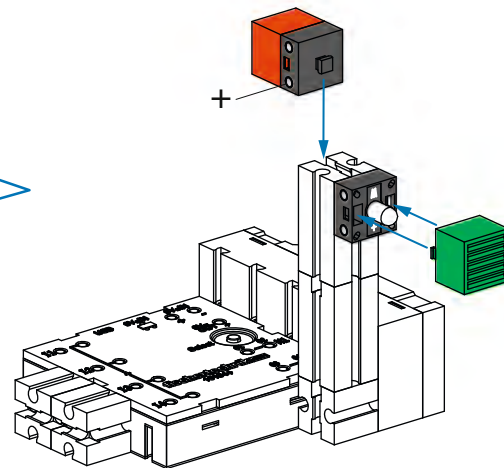
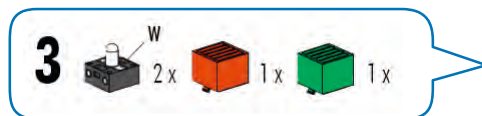
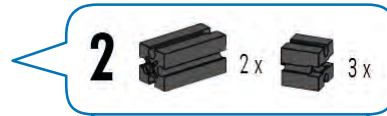
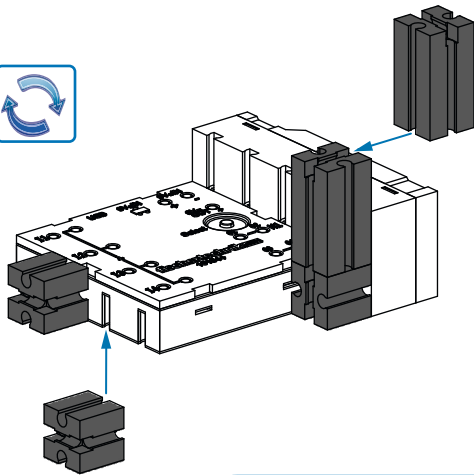
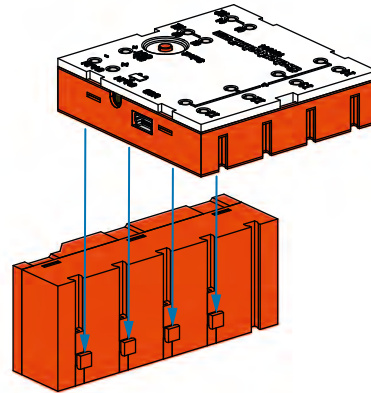
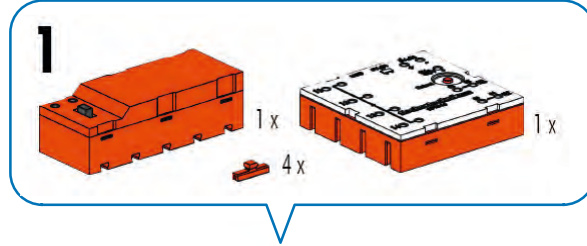
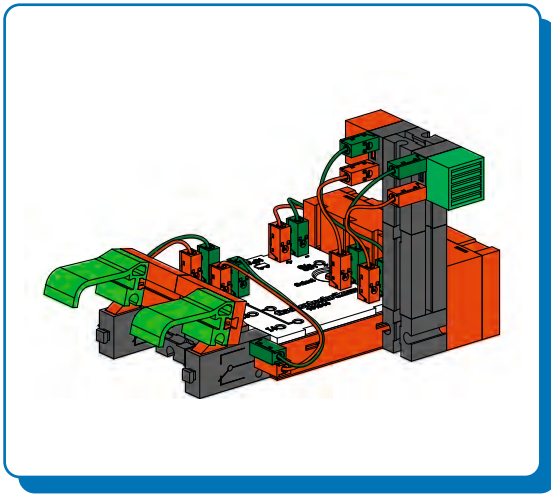


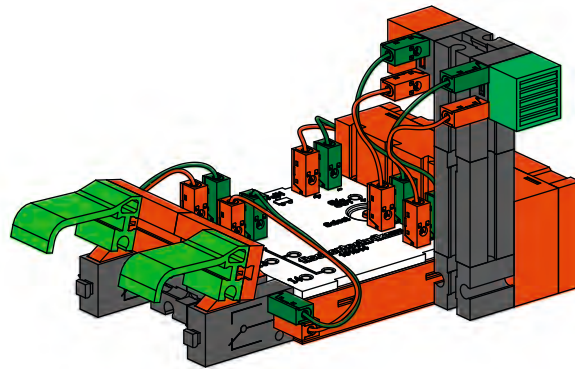
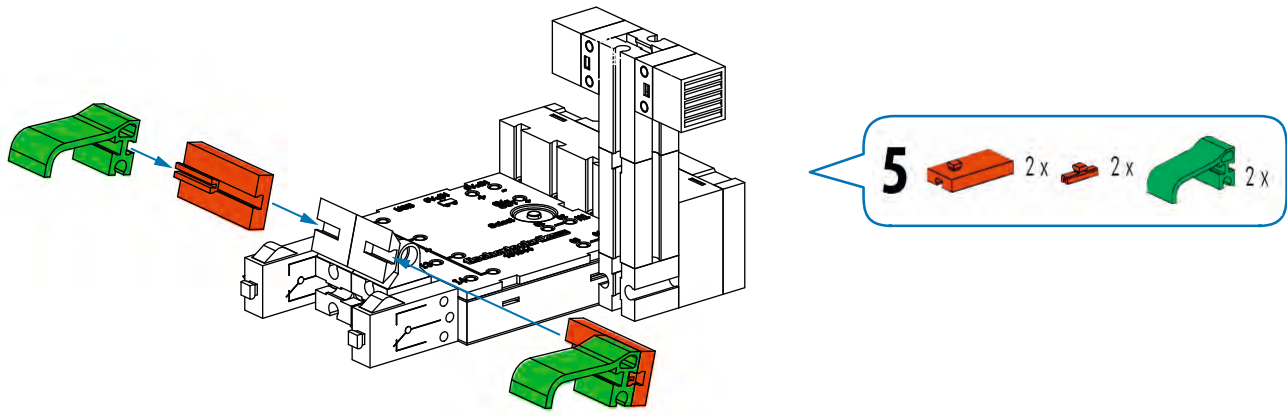
- Werde Mitglied im kostenlosen fischertechnik Fan Club und nutze die Vorteile. Melde dich hierzu einfach unter [www.fischertechnik.de/FanClub](http://www.fischertechnik.de/FanClub) an.
- Become a member of the free fischertechnik fan club and take advantage of the benefits. Simply register at [www.fischertechnik.de/FanClub](http://www.fischertechnik.de/FanClub)
- Deviens membre du Fan club fischertechnik gratuit et profite de nombreux avantages. Il suffit de t'inscrire sur [www.fischertechnik.de/FanClub](http://www.fischertechnik.de/FanClub).
- Word lid van de gratis fischertechnik Fan Club en maak gebruik van de voordelen. Meldt u hiervoor aan op [www.fischertechnik.de/FanClub](http://www.fischertechnik.de/FanClub).
- Hazte miembro del club de aficionados gratuito de fischertechnik y disfruta de todas las ventajas. Regístrate en [www.fischertechnik.de/FanClub](http://www.fischertechnik.de/FanClub).
- Torne-se um membro do fã-clube gratuito da Fischertechnik e aproveite-a. Basta registrar-se em [www.fischertechnik.de/FanClub](http://www.fischertechnik.de/FanClub).
- Diventa membro del fan club gratuito di fischertechnik e sfrutta tutti i vantaggi. Basta registrarsi a [www.fischertechnik.de/FanClub](http://www.fischertechnik.de/FanClub).
- Стань членом бесплатного фан-клуба fischertechnik и пользуйся преимуществами. Для этого просто зарегистрируйся по адресу [www.fischertechnik.de/FanClub](http://www.fischertechnik.de/FanClub).
- x免费加入慧鱼粉丝俱乐部 (fischertechnik Fan Club) 会员，即刻享受会员福利。只需前往 [www.fischertechnik.de/FanClub](http://www.fischertechnik.de/FanClub) 完成注册即可。

Getting Started  
Getting Started  
Getting Started

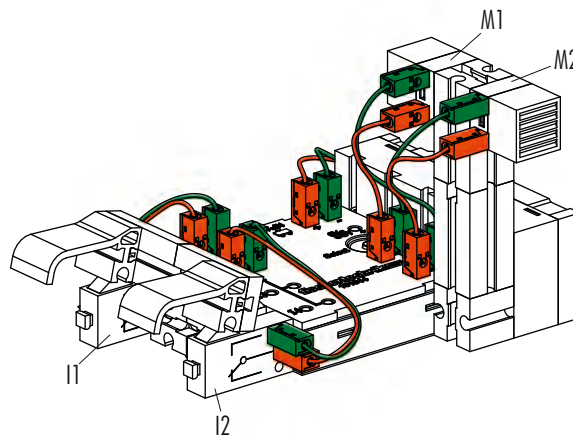
Getting Started  
Getting Started  
Getting Started

Getting Started  
Начало работы  
入门





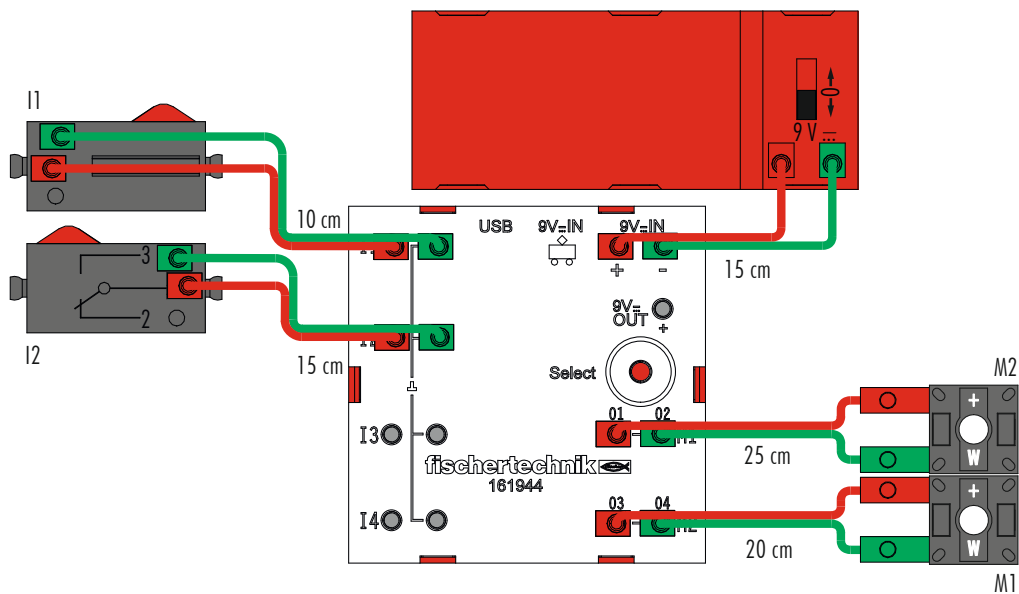
- 6**
- 10 cm I1
  - 15 cm I2
  - 15 cm 9V/IN
  - 20 cm M1
  - 25 cm M2

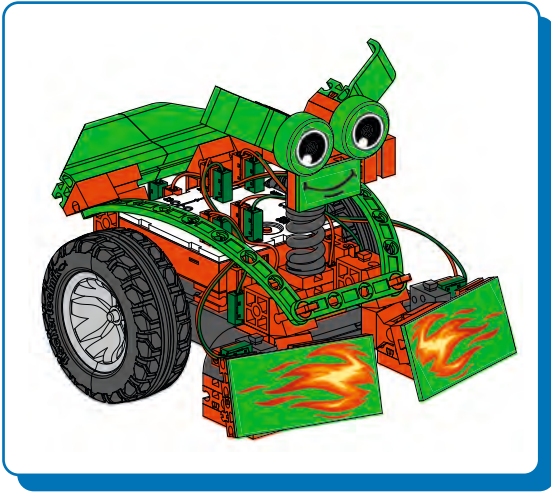


**Schaltplan**  
**Circuit diagram**  
**Plan électrique**

**Schakelschema**  
**Diagrama de circuitos**  
**Plano elétrico de ligação**

**Schema elettrico**  
**Схема подключения**  
**电路图**



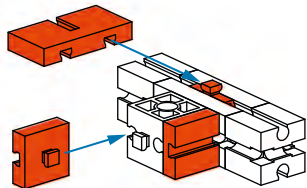
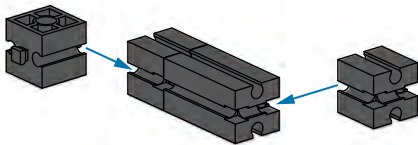


Drivebot  
Drivebot  
Drivebot

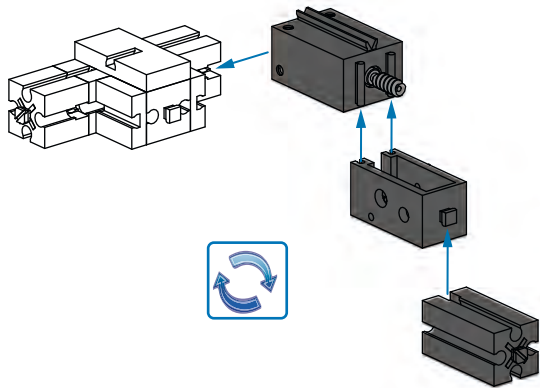
Drivebot  
Drivebot  
Drivebot

Drivebot  
робот-драйвер  
驱动机器人

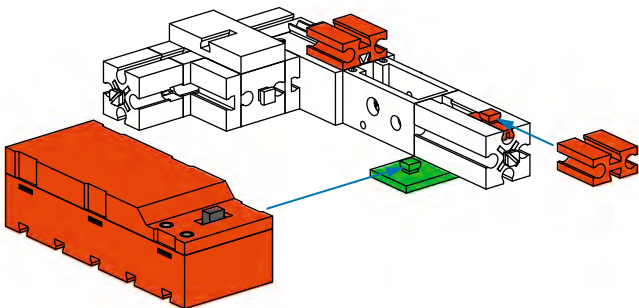
**1** 1x 2x 2x 1x







**2** 2x 1x 1x

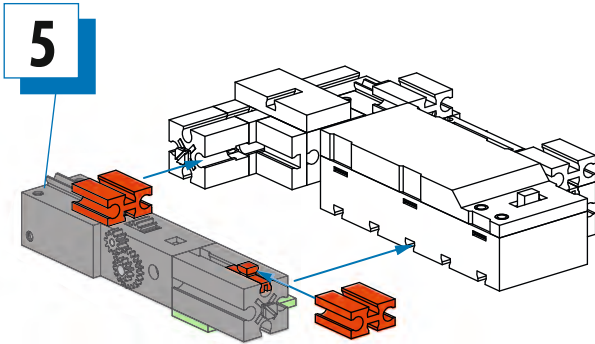
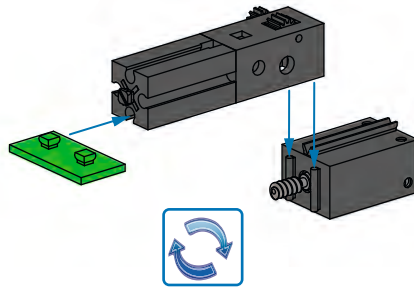


**3** 1x 1x 1x






**4** 1x 2x 1x 1x

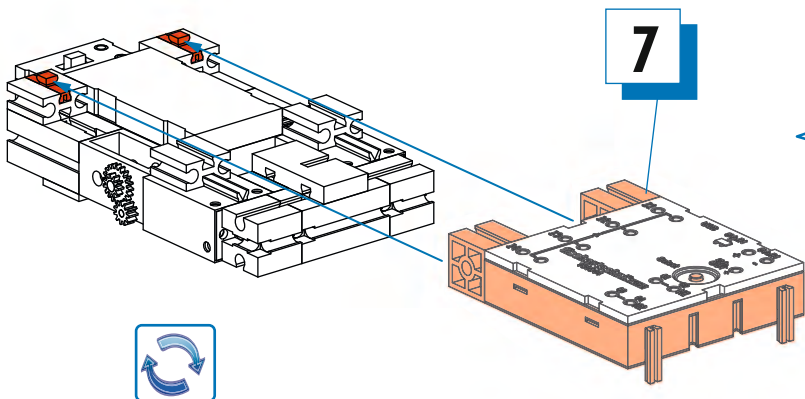
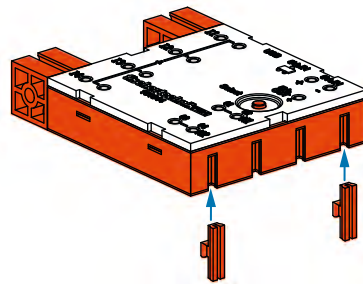
- 5**
- 1x 
  - 1x 
  - 1x 
  - 1x 



- 6**
- 2x 
  - 1x 

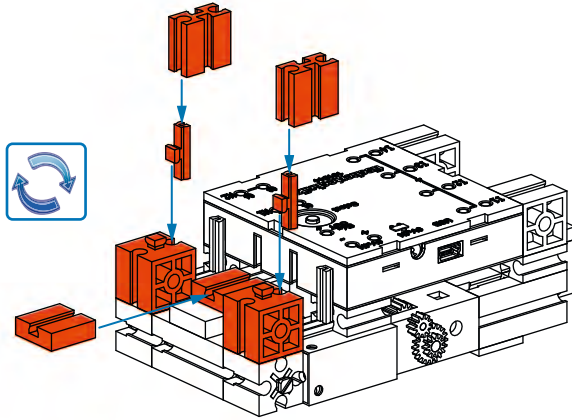


- 7**
- 2x 
  - 2x 
  - 1x 



- 8**
- 2x 



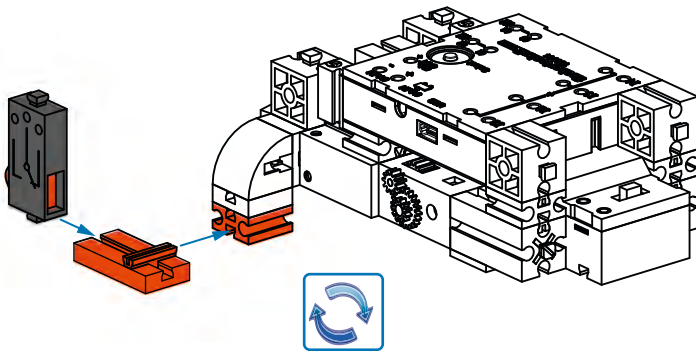
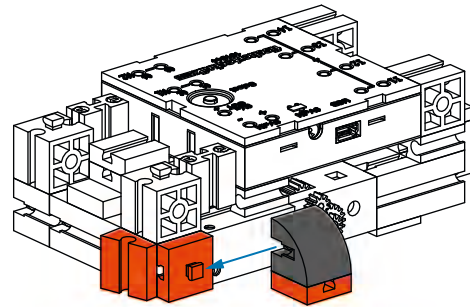


**9**

- 2x [Orange 1x3 Technic Brick]
- 2x [Orange 1x2 Technic Pin]
- 2x [Orange 1x3 Technic Brick with Hole]
- 2x [Orange 1x2 Technic Pin]

**10**

- 2x [Orange 1x3 Technic Brick]
- 1x [Grey 1x3 Technic Brick]
- 1x [Orange 1x3 Technic Brick with Hole]
- 15° [Grey 1x3 Technic Brick with Hole]

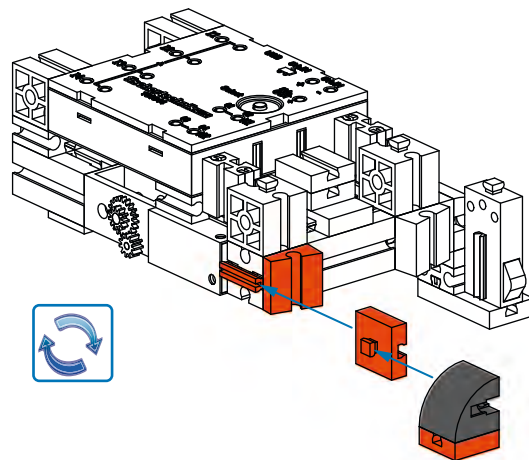


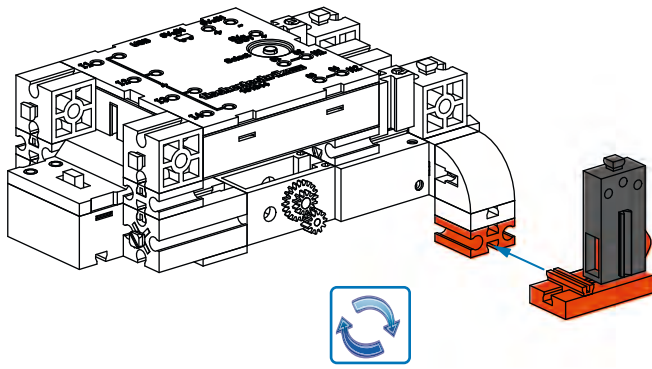
**11**

- 1x [Grey 1x3 Technic Brick]
- 1x [Orange 1x3 Technic Brick]
- 1x [Orange 1x2 Technic Pin]
- 1x [Grey 1x3 Technic Brick with Hole]

**12**

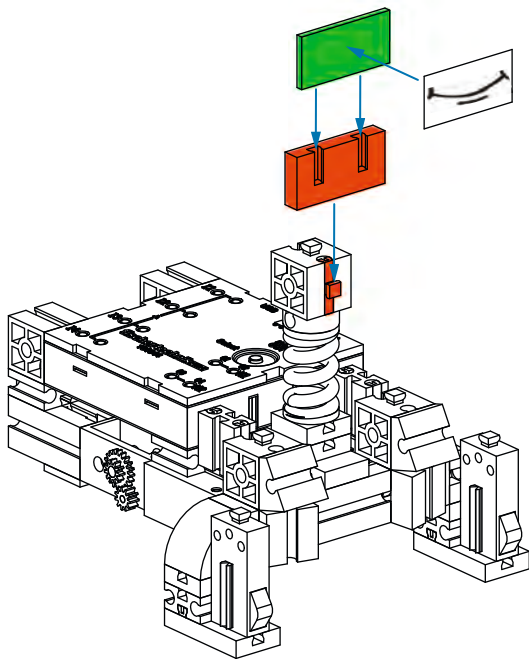
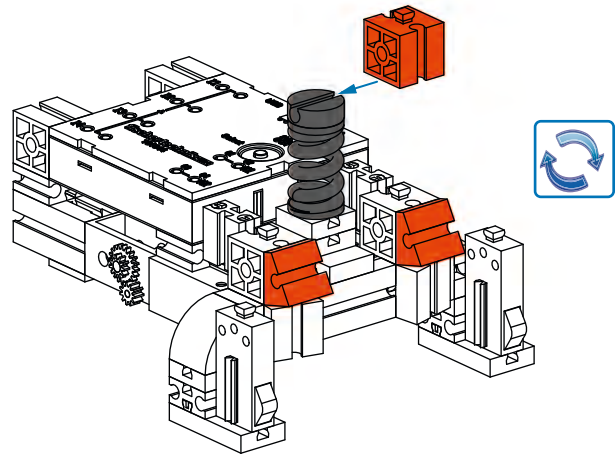
- 2x [Orange 1x3 Technic Brick]
- 1x [Orange 1x2 Technic Pin]
- 1x [Grey 1x3 Technic Brick]
- 1x [Orange 1x3 Technic Brick with Hole]
- 15° [Grey 1x3 Technic Brick with Hole]





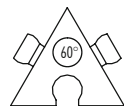
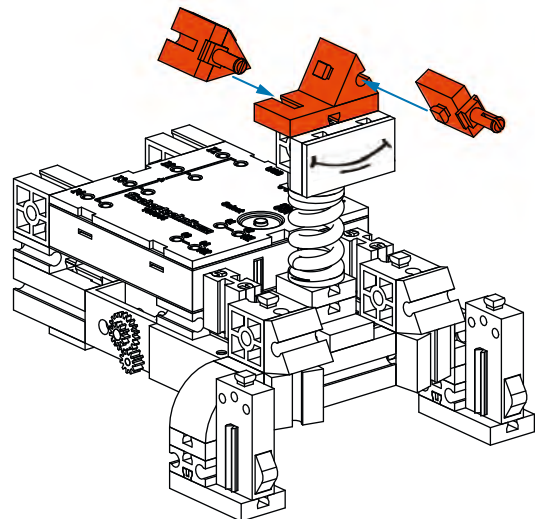
- 13**
- 1x (orange 1x3 Technic Pin)
  - 1x (orange 1x3 Technic Pin)
  - 1x (orange 1x3 Technic Pin)
  - 1x (grey 1x3 Technic Pin)

- 14**
- 1x (grey 1x3 Technic Pin)
  - 1x (grey 1x3 Technic Pin)
  - 1x (grey 1x3 Technic Pin)
  - 1x (orange 1x3 Technic Pin)
  - 2x (orange 30° Technic Wedge)
  - 1x (orange 1x3 Technic Pin)





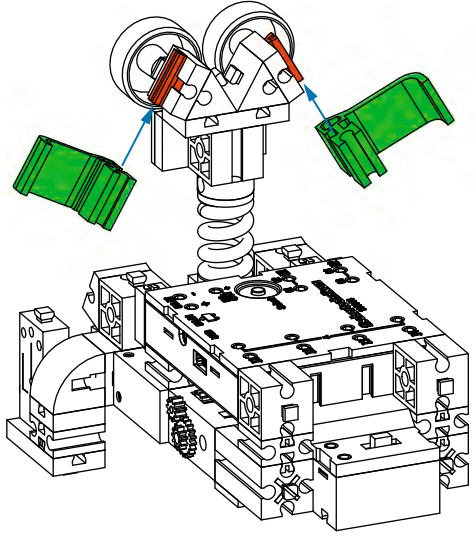
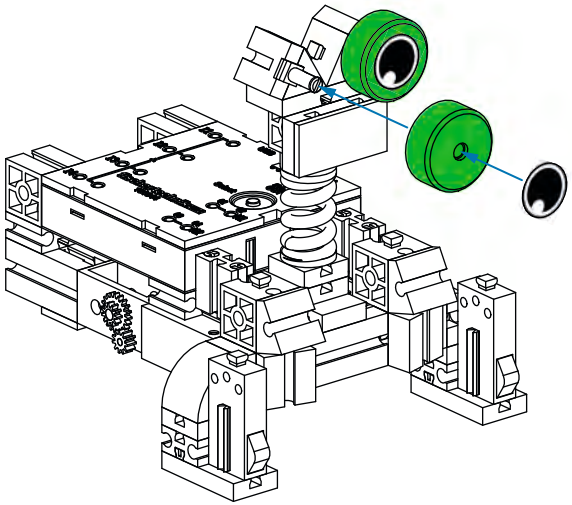
- 15**
- 1x (orange 1x3 Technic Pin)
  - 1x (green 1x3 Technic Plate)
  - 1x (orange 1x3 Technic Pin)
  - 1x (orange 1x3 Technic Pin)

- 16**
- 2x (orange 1x3 Technic Pin)
  - 1x (orange 1x3 Technic Pin)
  - 2x (orange 60° Technic Wedge)










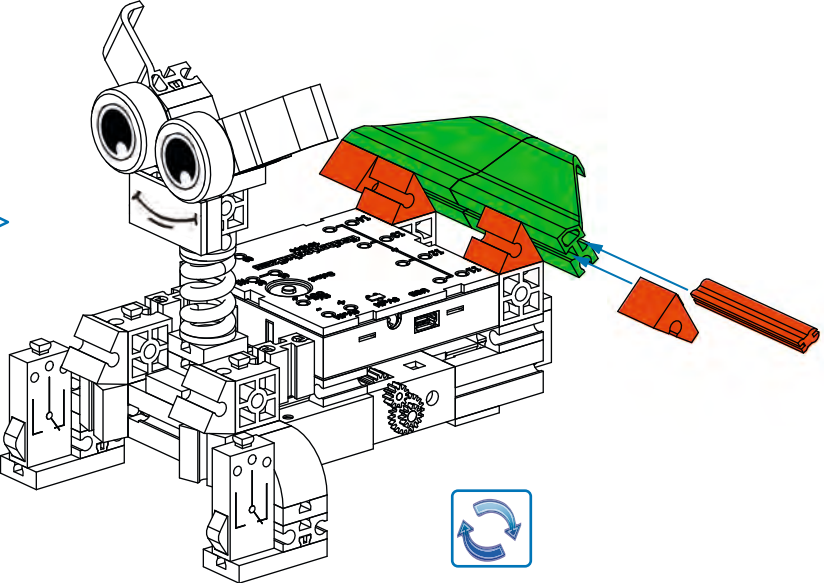
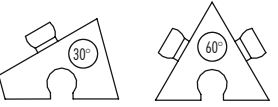
**17**  2x  2x

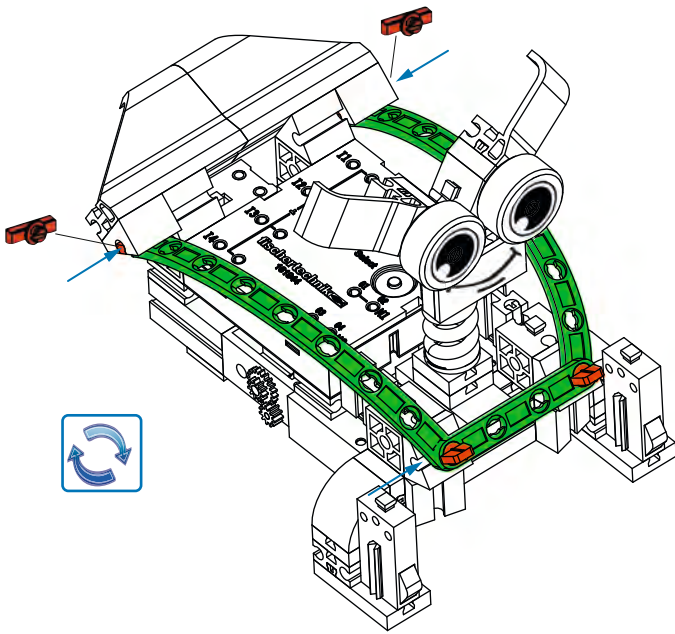


**18**  2x  2x



**19**  1x  2x  2x  
 1x  1x



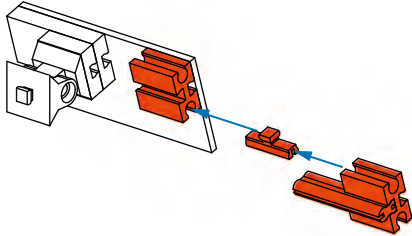
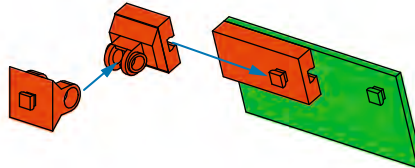


**20**

- 45 1x
- 120 2x
- 2x
- 6 2x

**21**

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

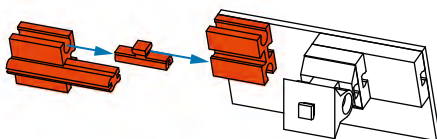
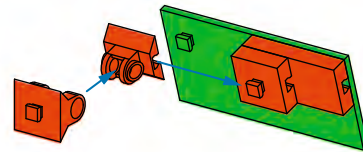


**22**

- 1x
- 30 1x
- 2x

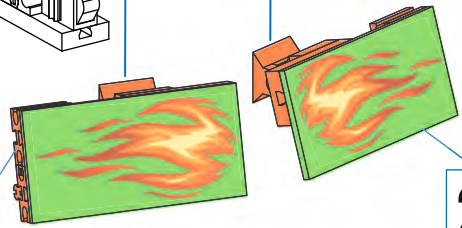
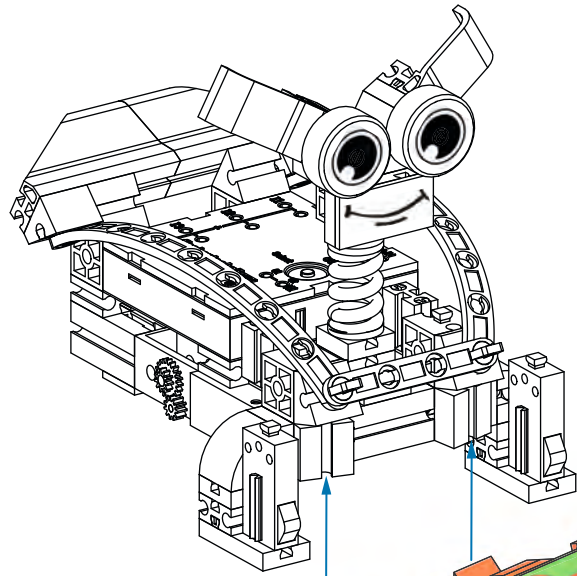
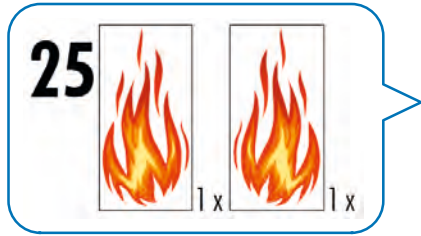
**23**

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



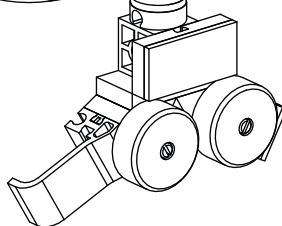
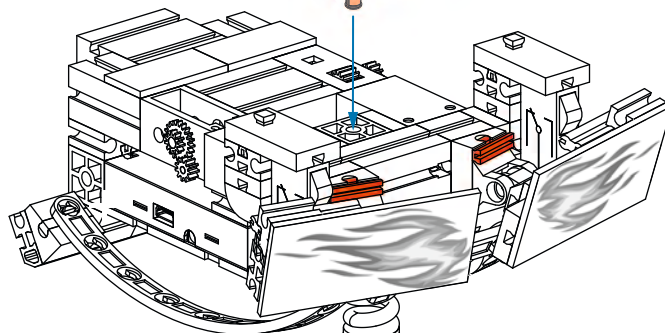
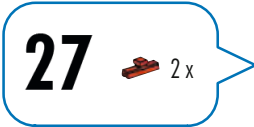
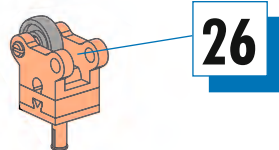
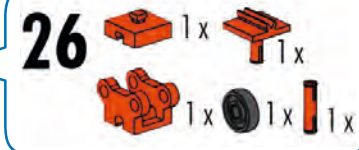
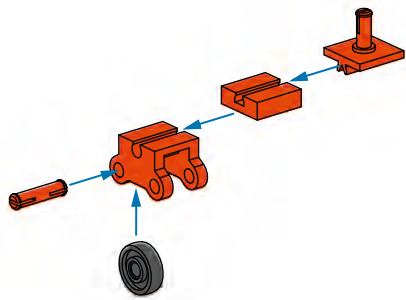
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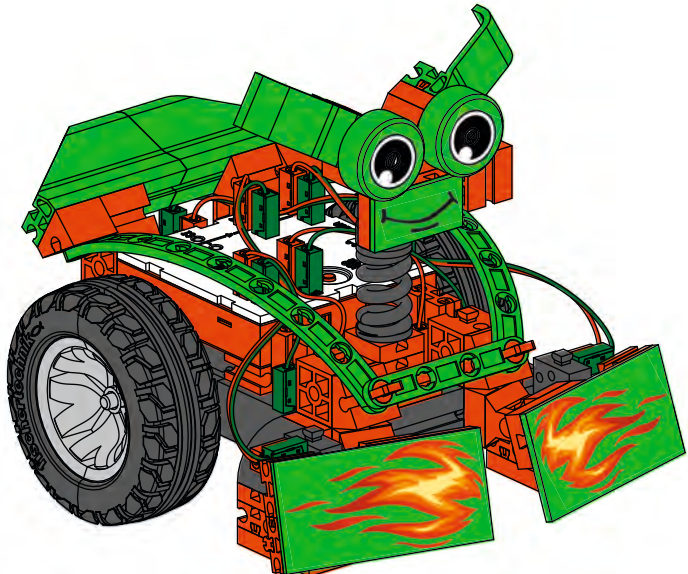
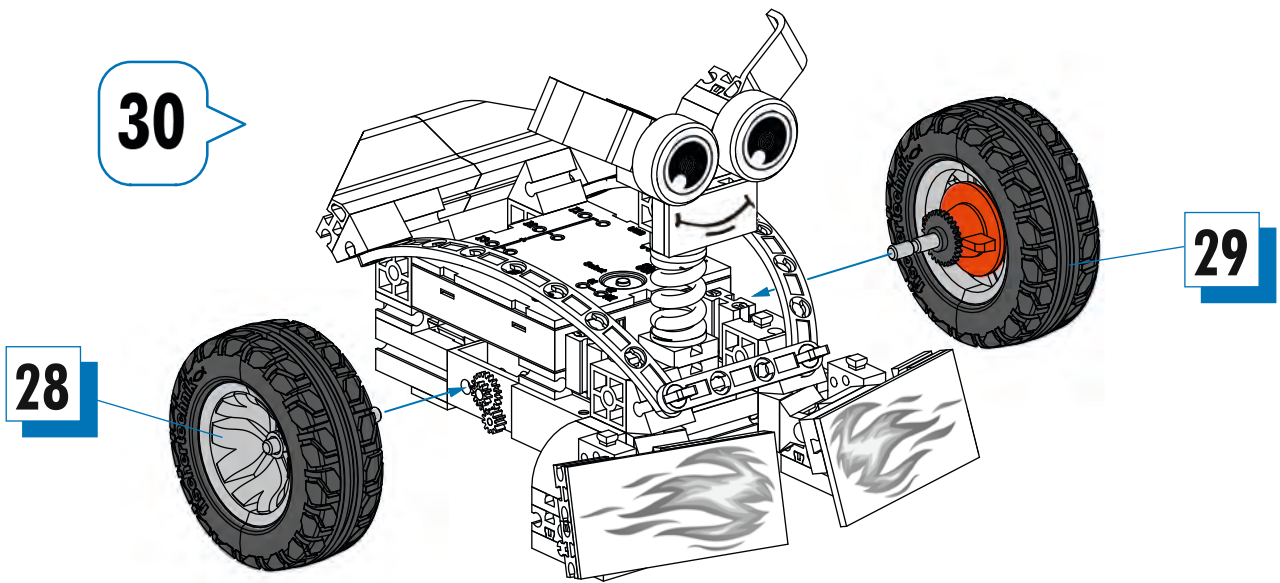
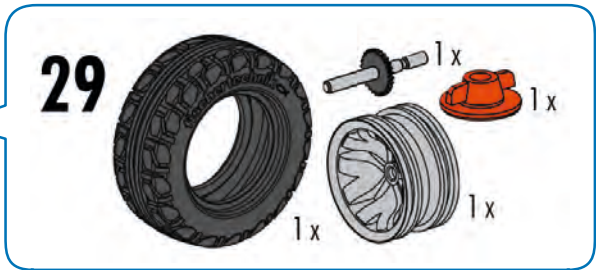
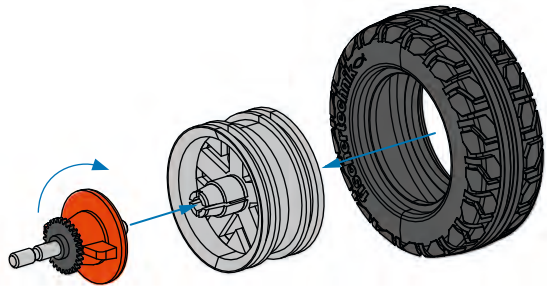
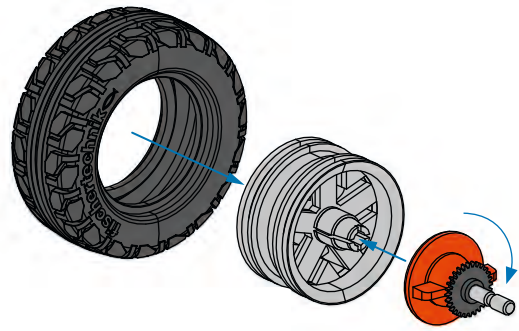
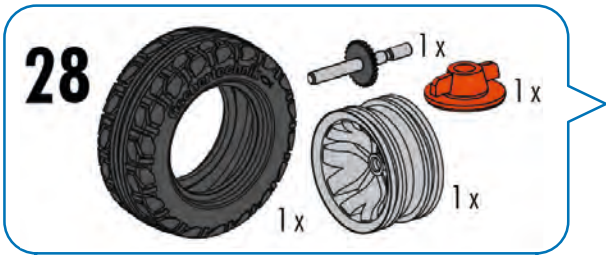
- 1x
- 30 1x
- 2x

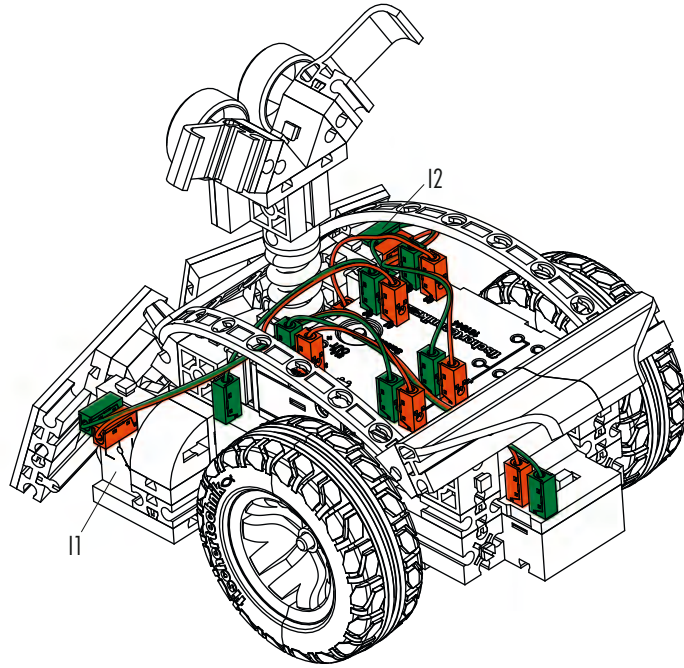
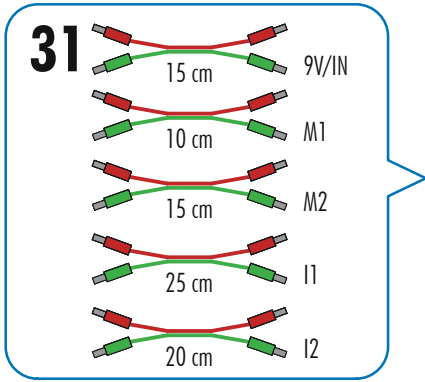


**22**

**24**



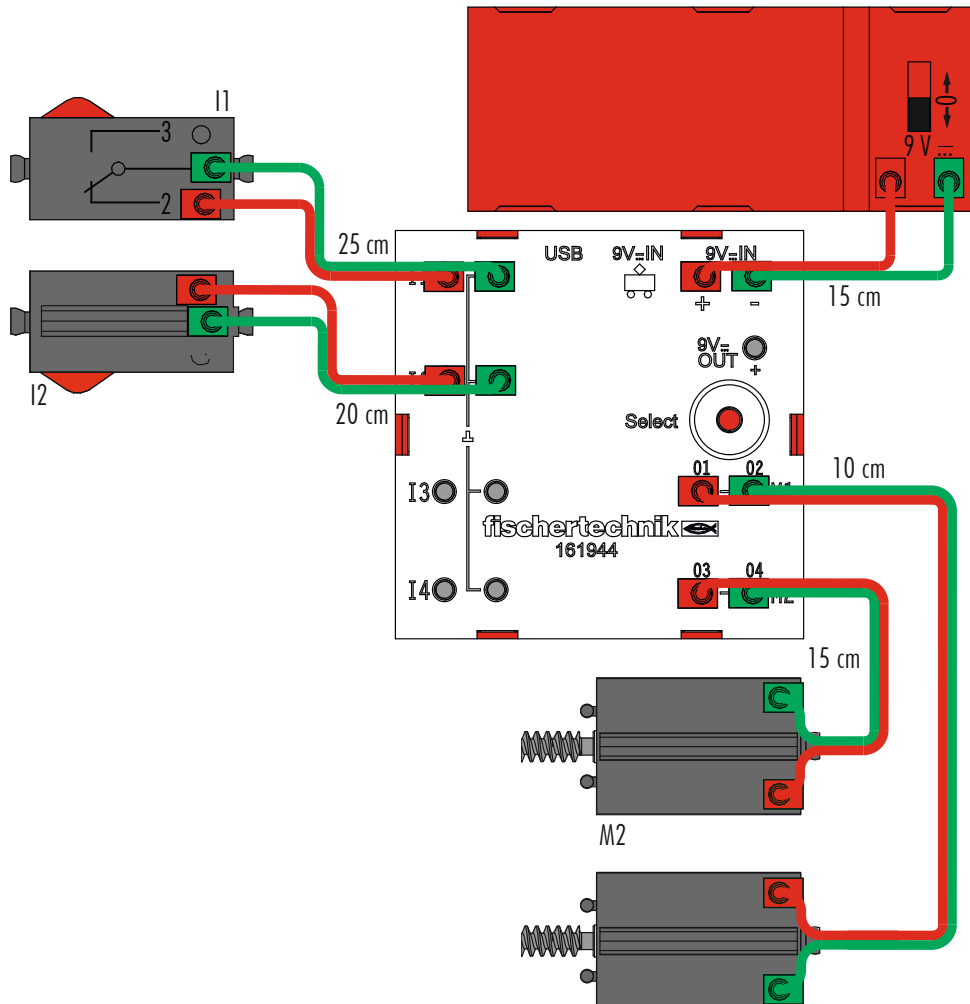


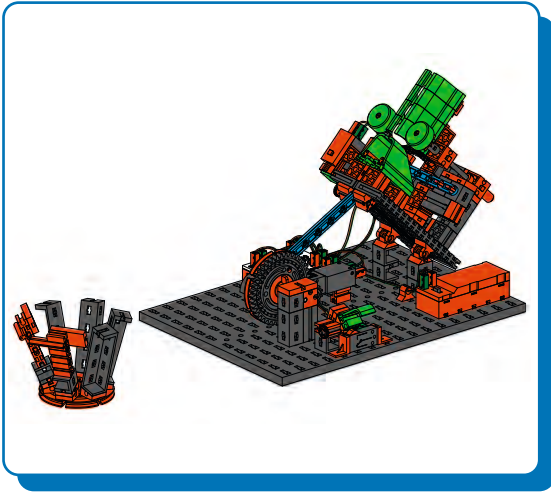


Schaltplan  
Circuit diagram  
Plan électrique

Schakelschema  
Diagrama de circuitos  
Plano elétrico de ligação

Schema elettrico  
Схема подключения  
电路图

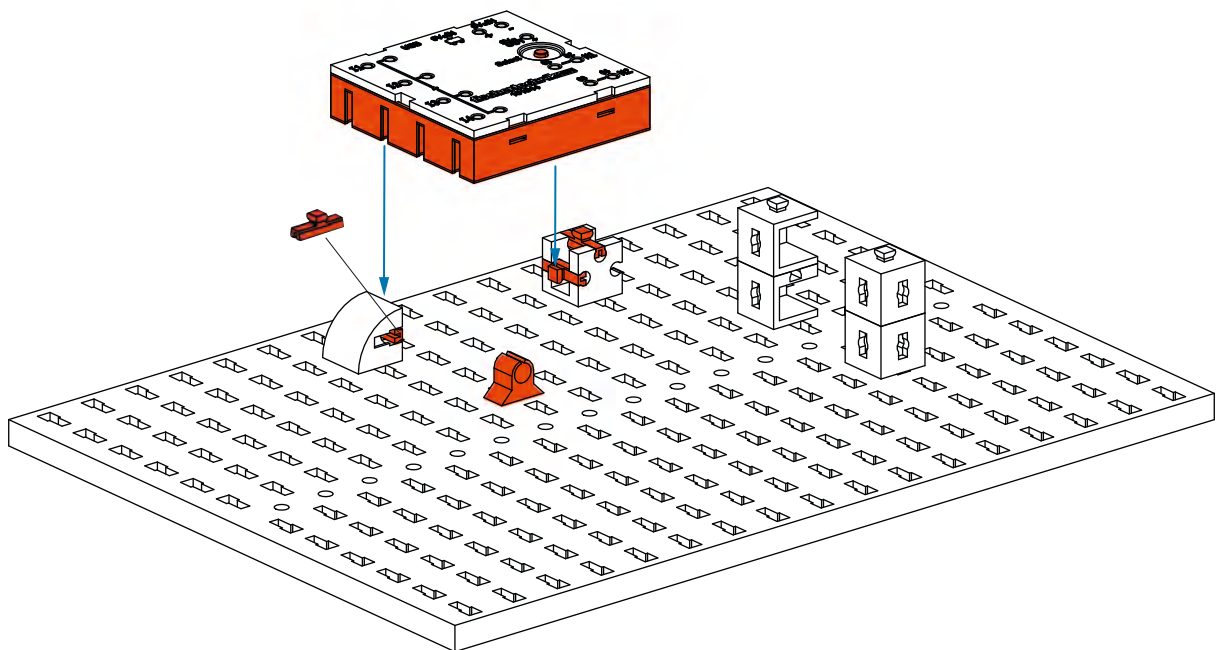
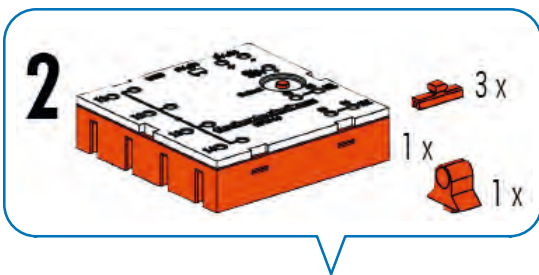
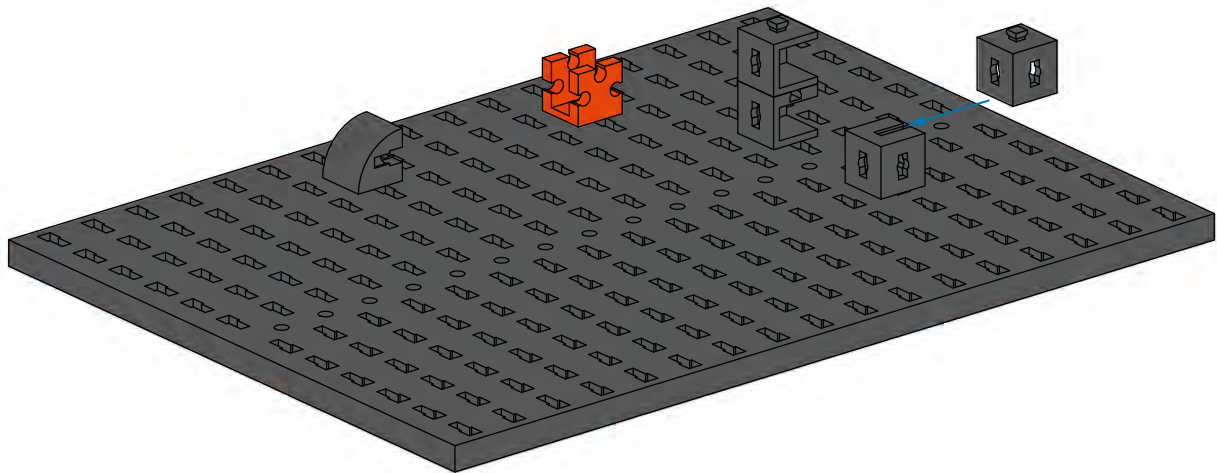
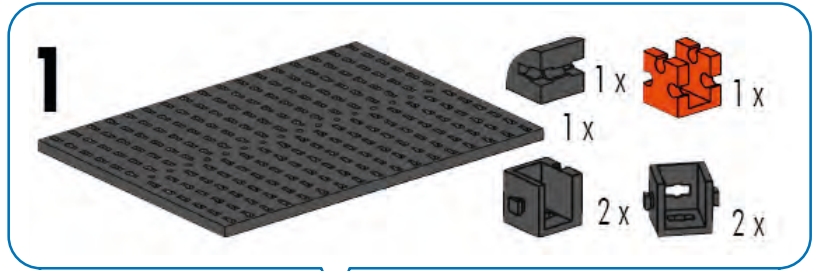




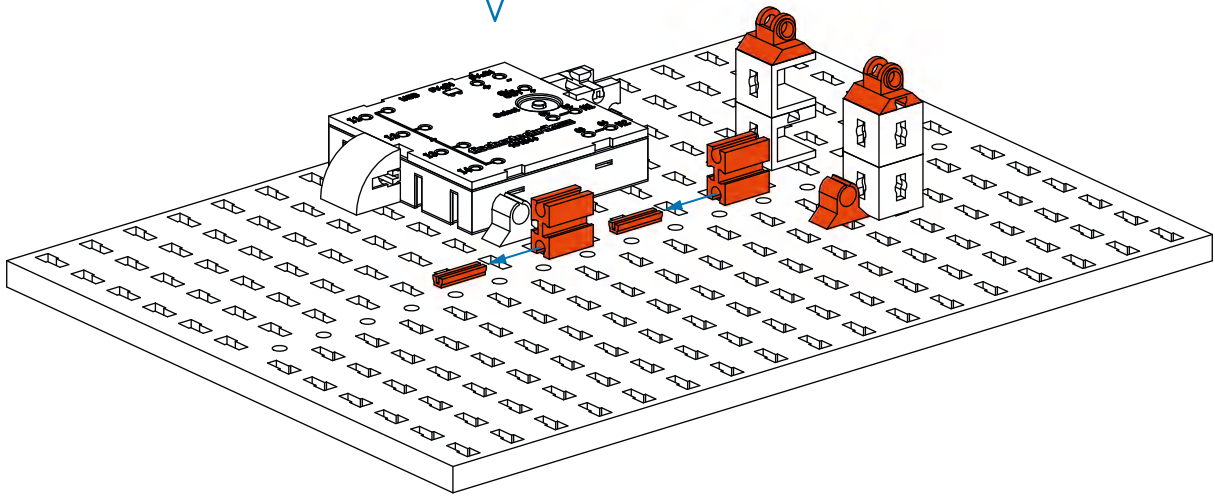
**Ballspiel**  
**Ballgame**  
**Jeu de balle**

**Balspel**  
**Juego de pelota**  
**Jogo de bola**

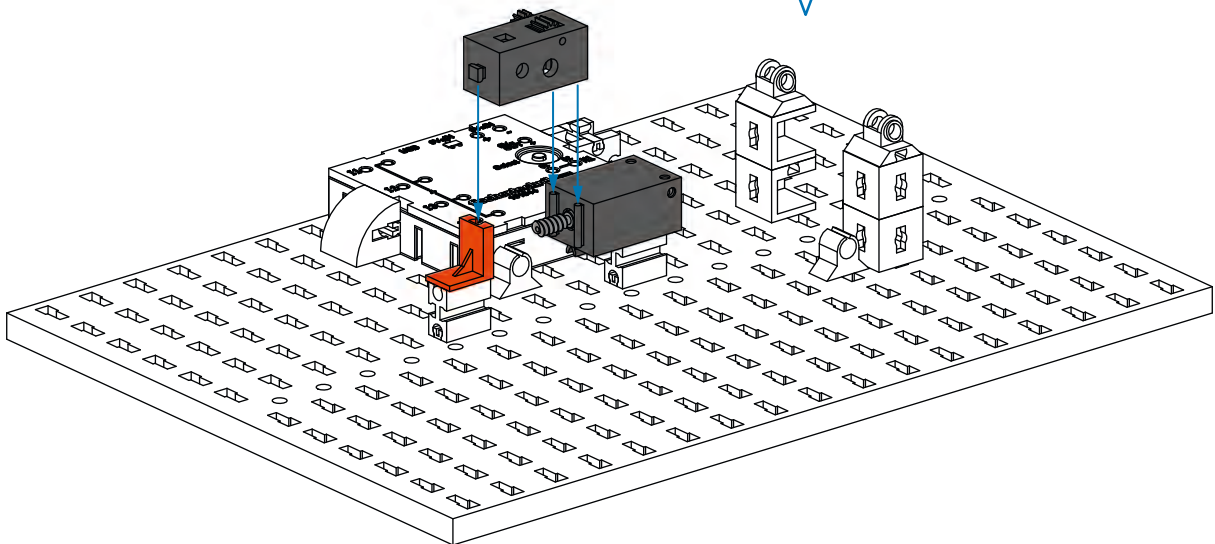
**Gioco della palla**  
**Игра с мячом**  
**球类运动**



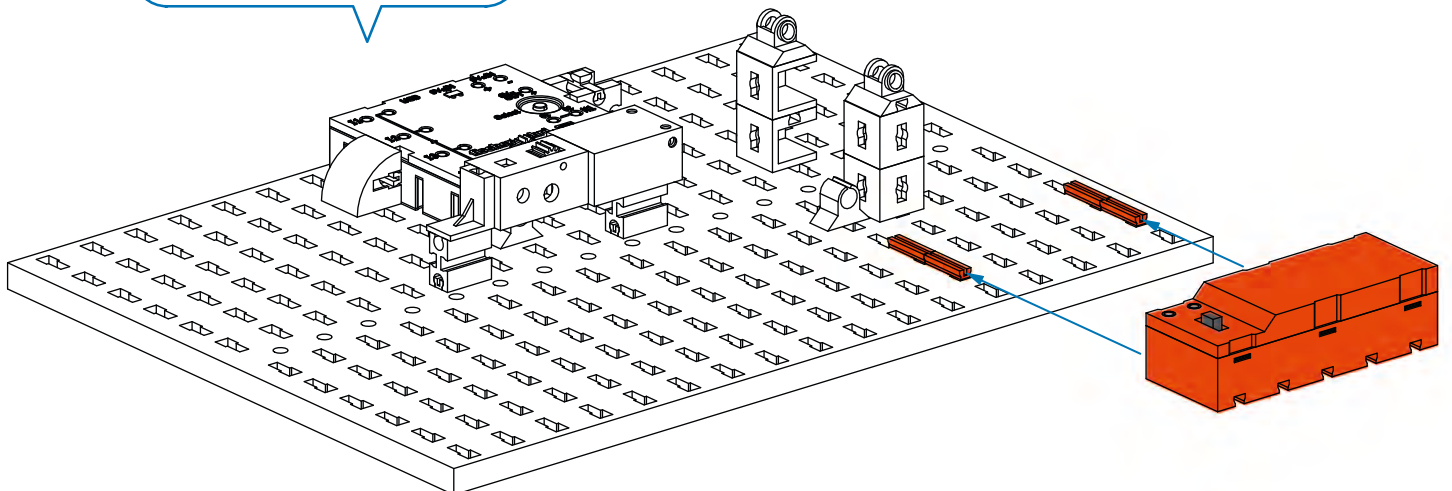
3  2x  2x  1x  2x



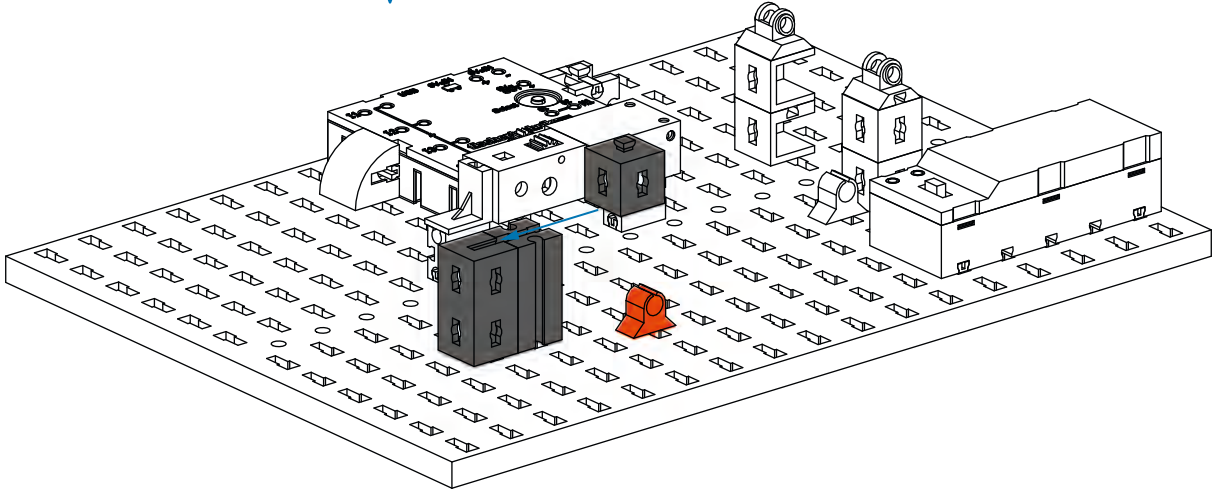
4  1x  1x 



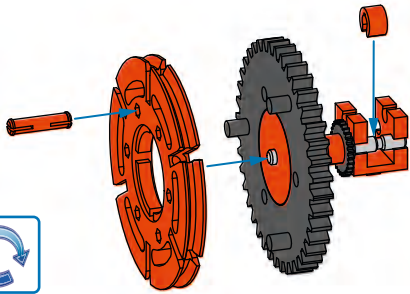
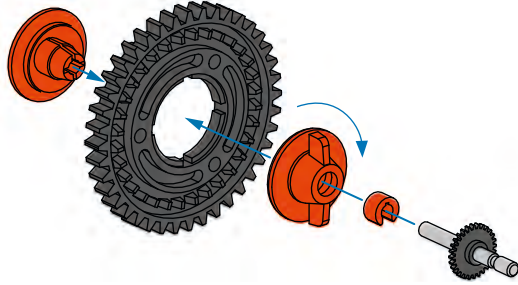
5  1x  4x



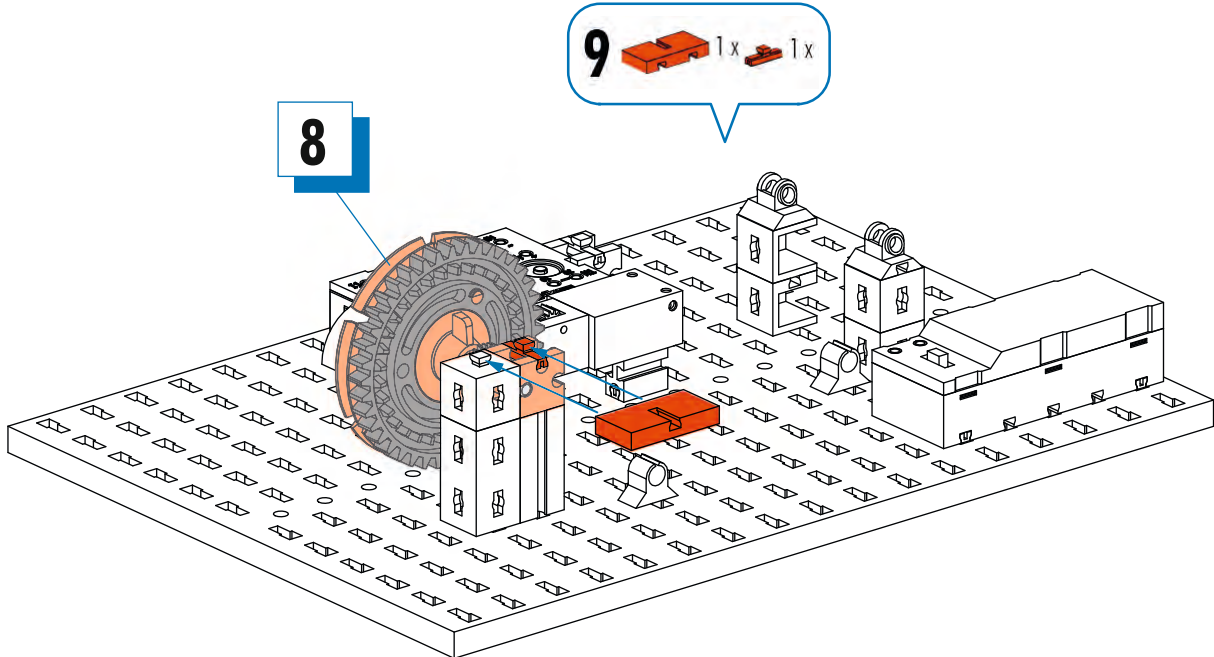
- 6** 1x 1x 1x 1x 1x



- 7** 1x 1x 1x 1x 1x

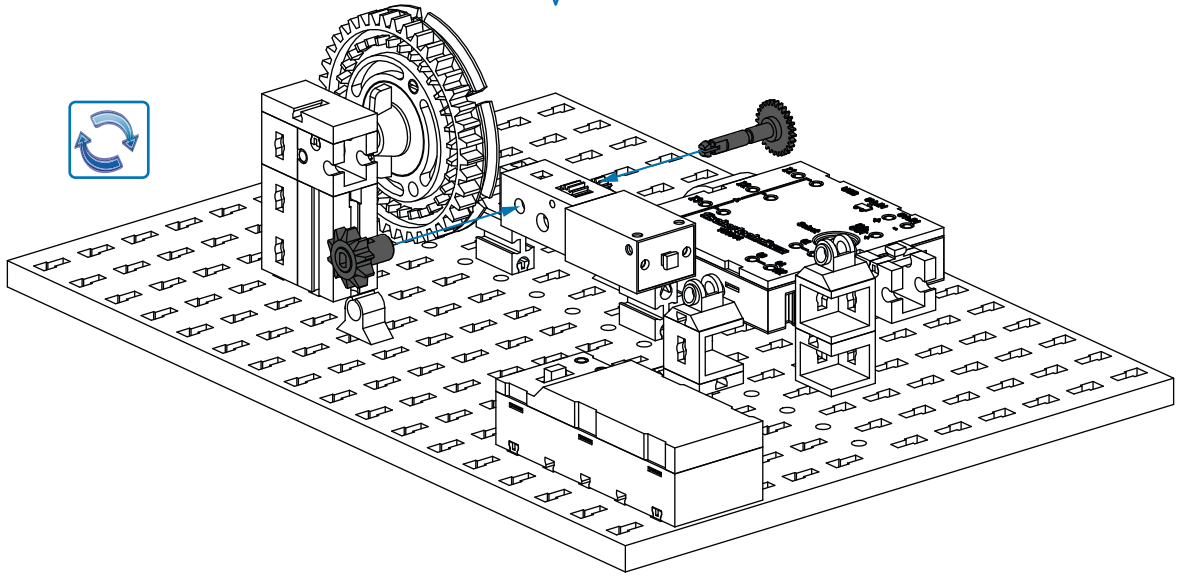





- 8** 1x 1x 1x 1x

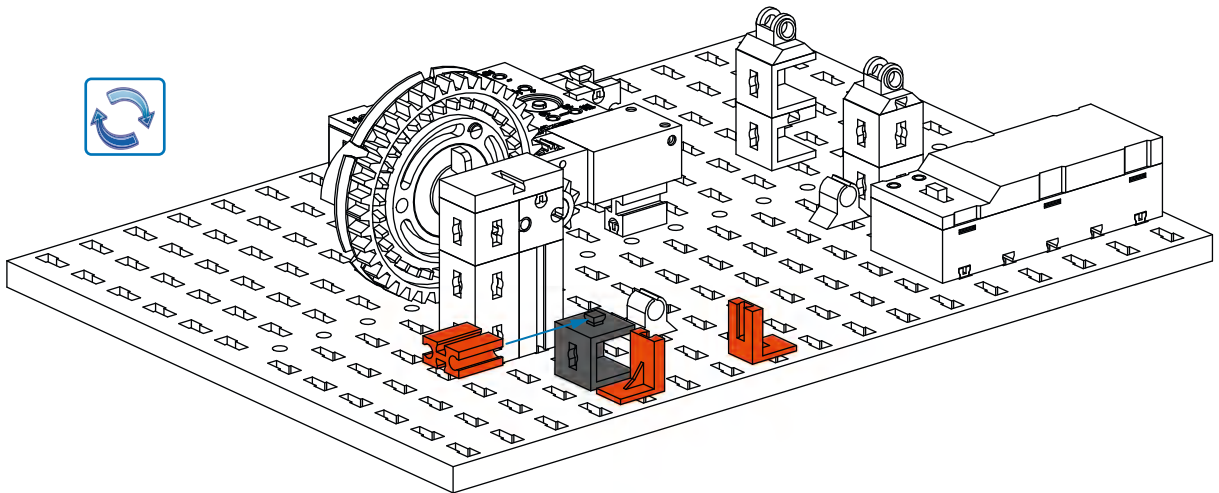








10  1x  1x

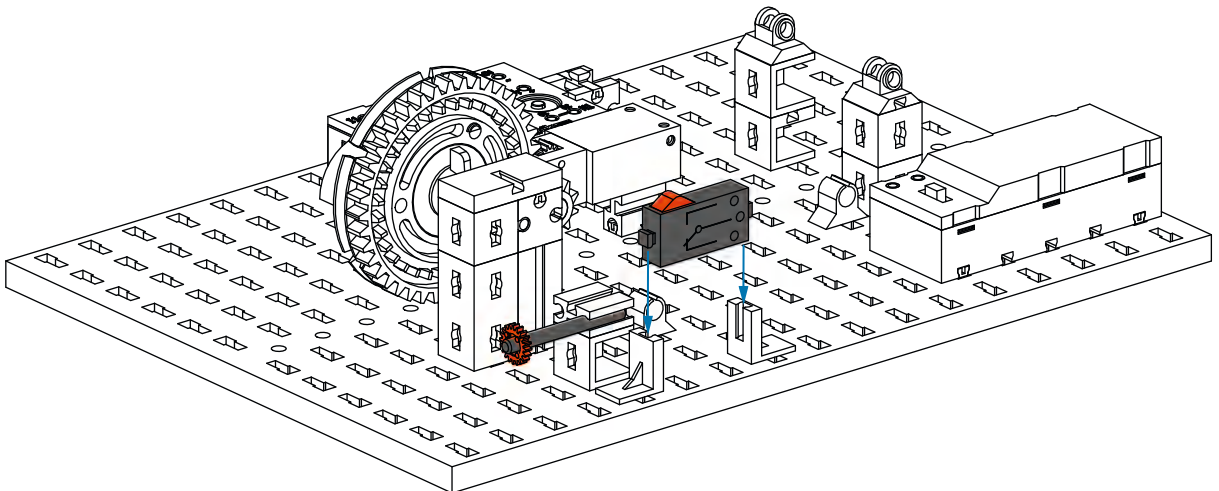


11  1x  1x  2x

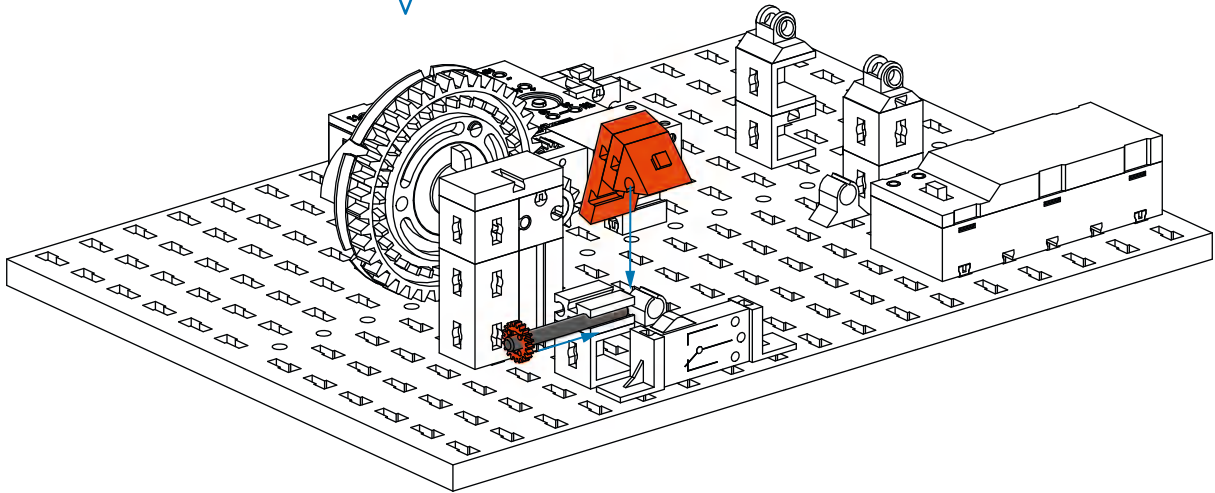
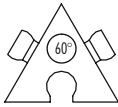


12  1x  40  1x  1x

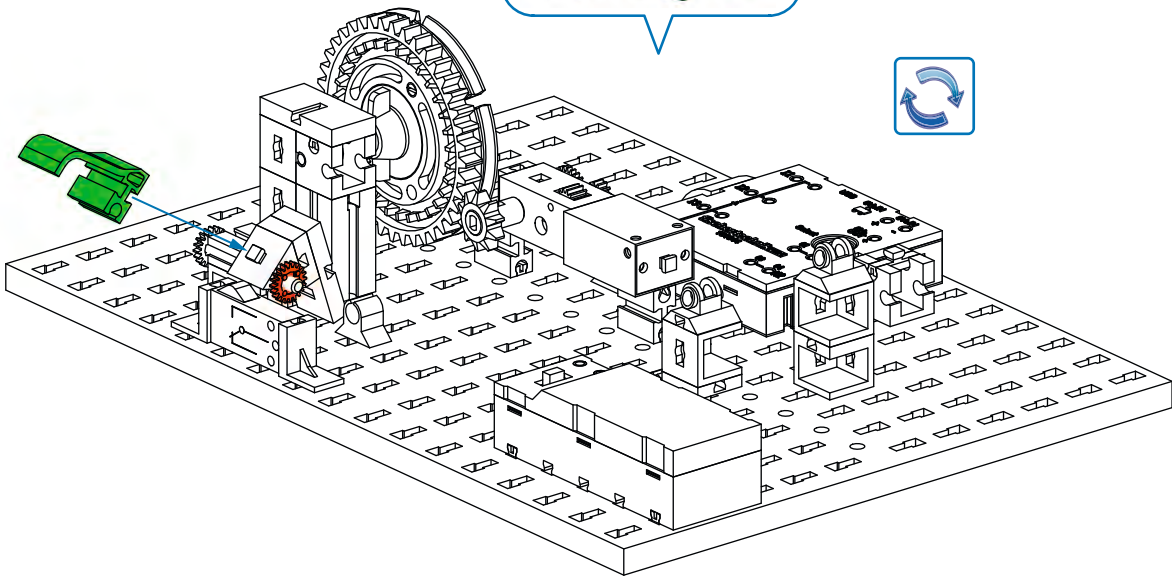
40 mm



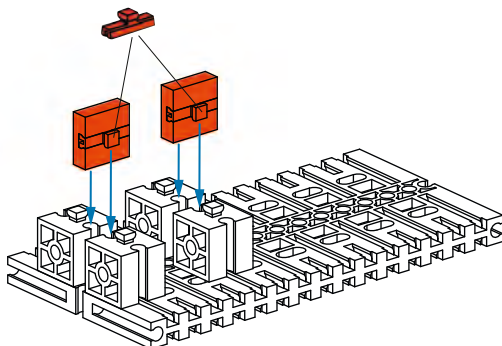
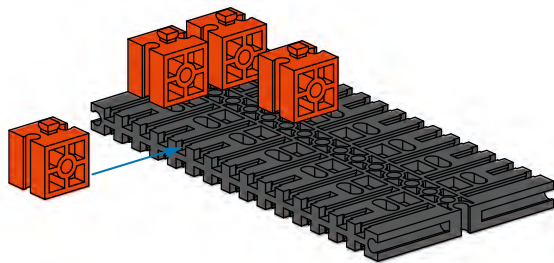
13 1x 1x 1x 60°






14 1x 1x

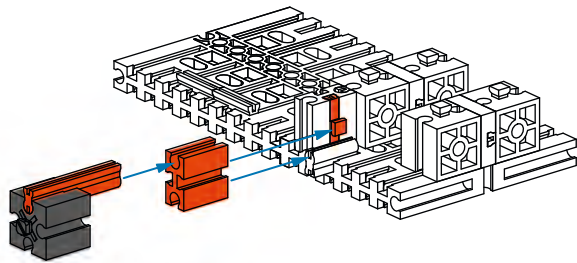
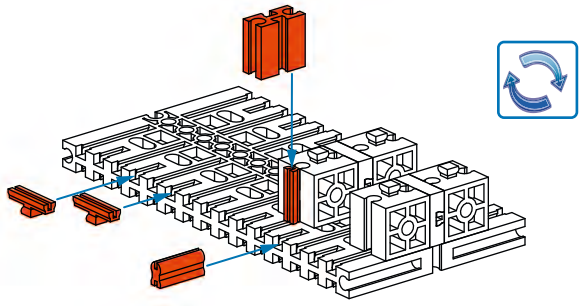






15 1x 4x



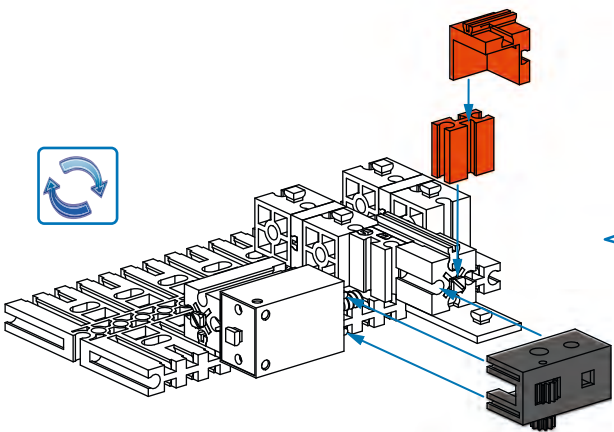
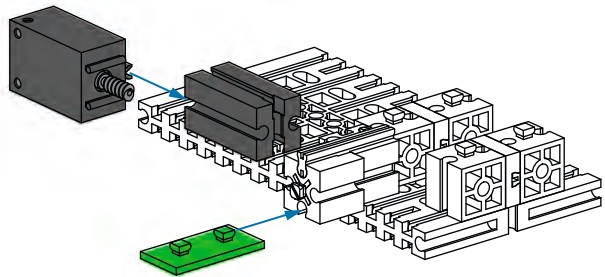
16 2x 2x

**17**  1x  1x  3x




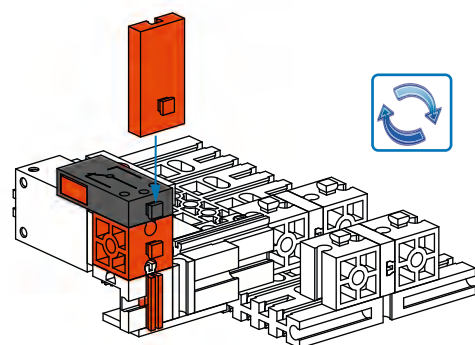
**18**  1x  1x  1x  1x

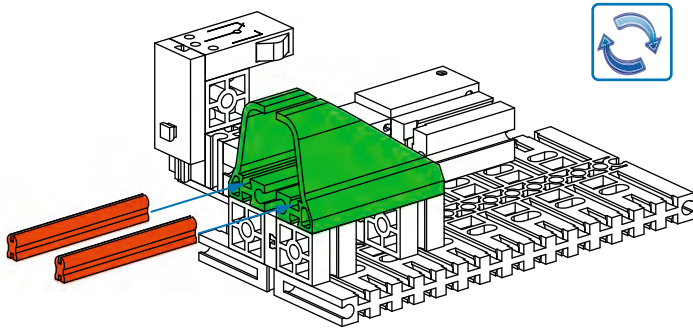
**19**  1x  1x  1x



**20**  1x  1x  1x  1x

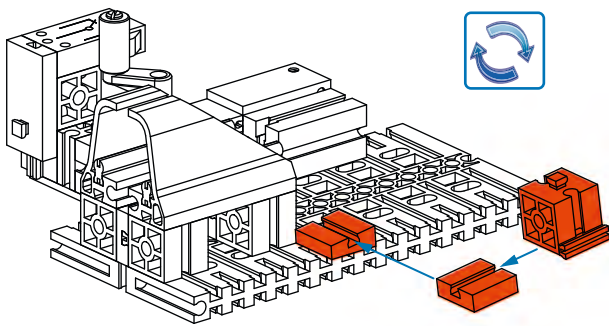
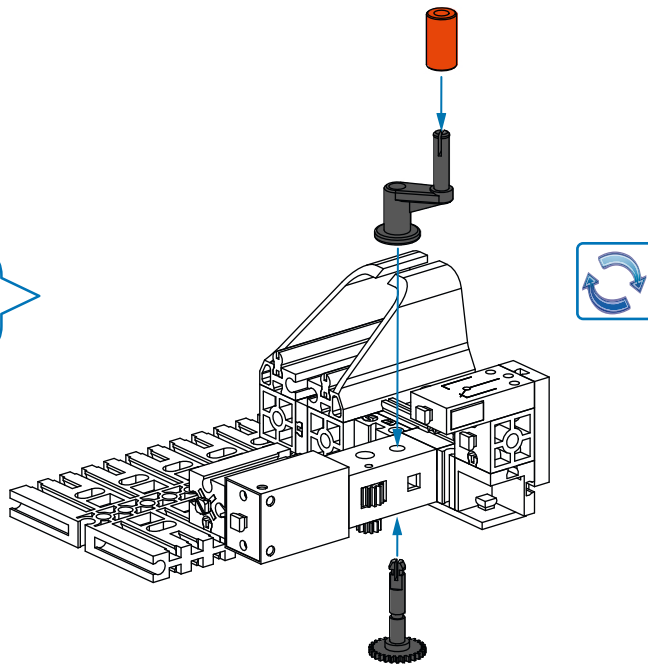
**21**  1x  1x  1x  1x














**22**  1x  1x  45 2x


**23**  1x  1x  1x

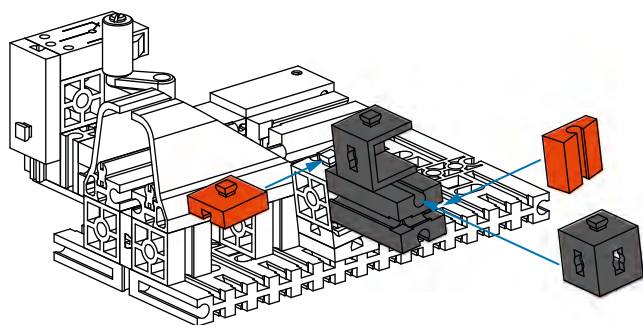


**24**  1x  1x  7,5° 1x  7,5° 1x

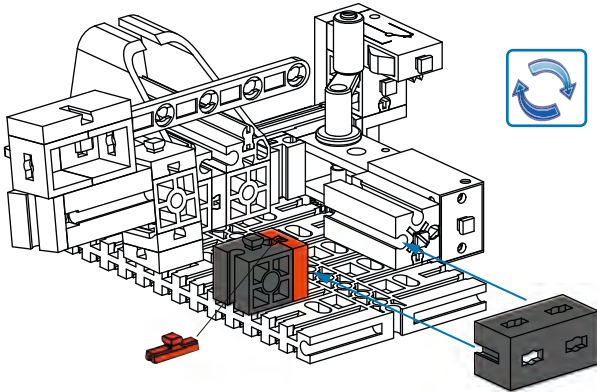
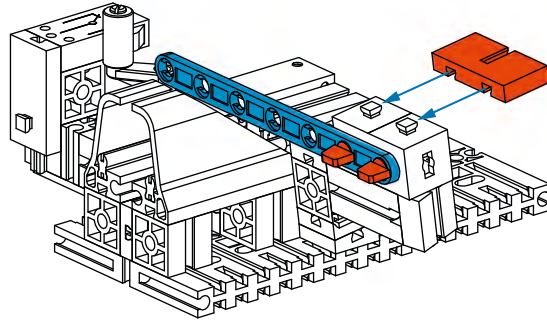
 7,5°

**25**  1x  2x  15° 1x  15° 1x

 15°

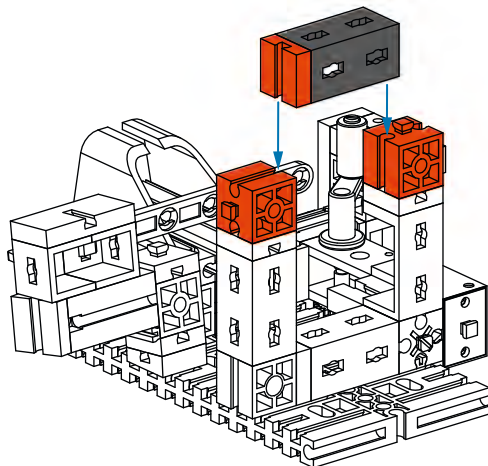
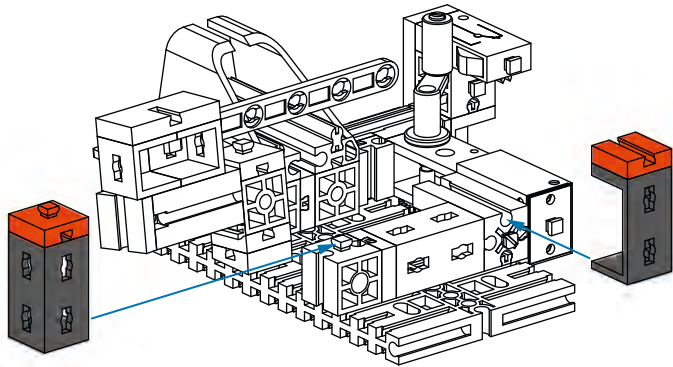


**26** 90 1x 4 1x 2x

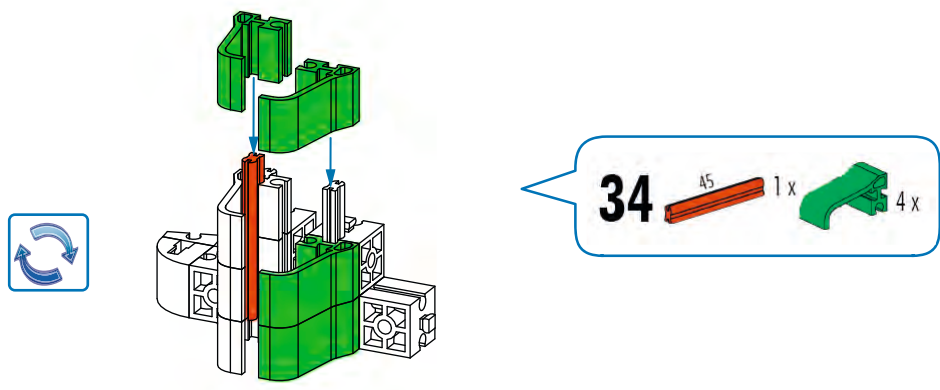
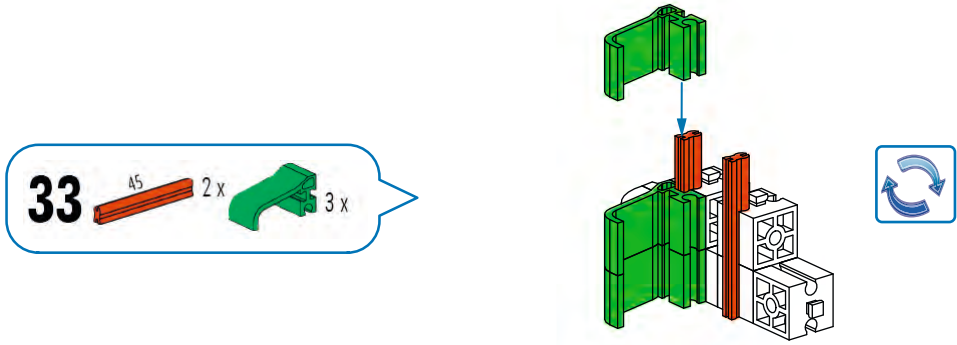
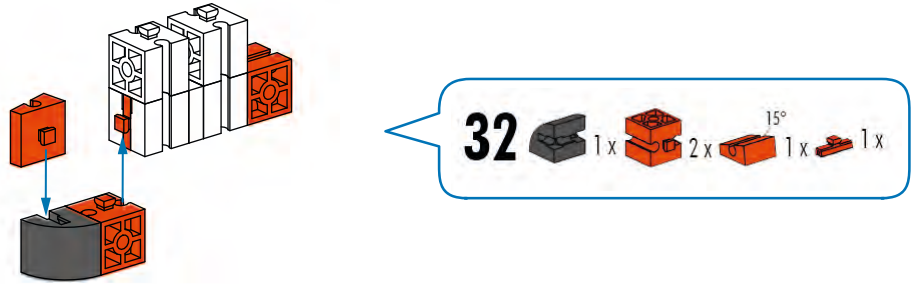
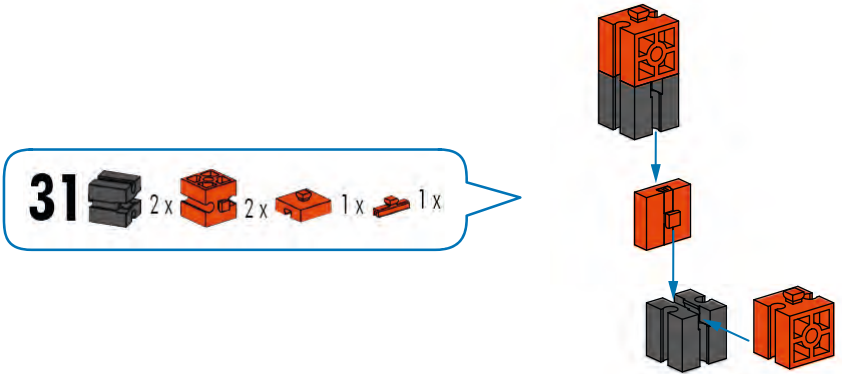
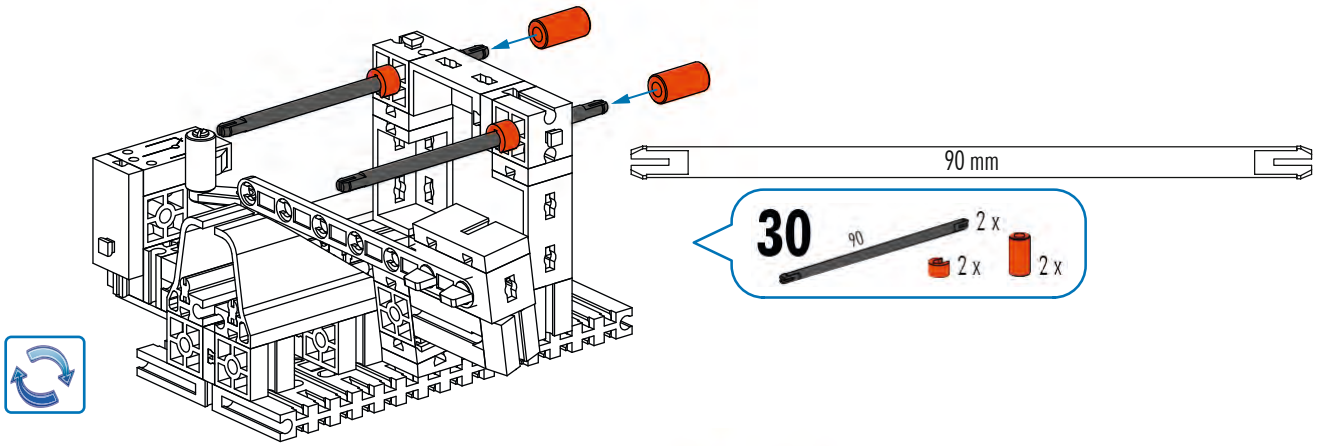


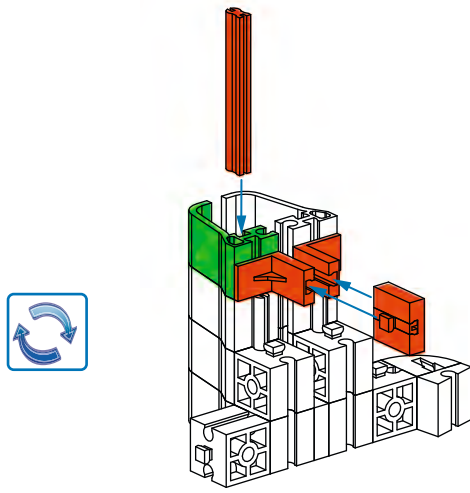
**27** 1x 1x 1x 1x

**28** 2x 2x



**29** 1x 2x 1x



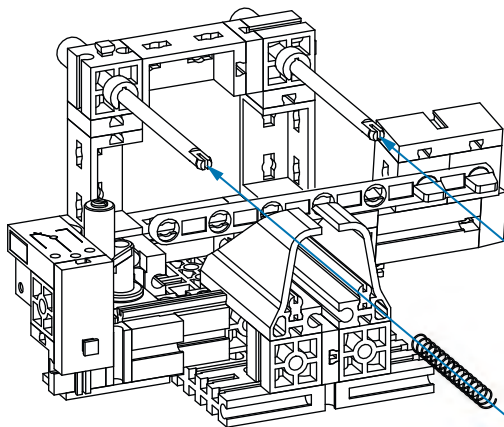
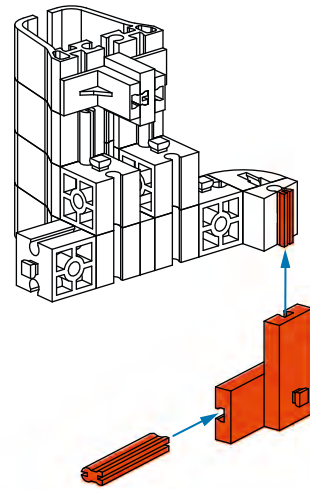


**35**

- 45 1x
- 1x
- 1x
- 1x
- 2x

**36**

- 2x
- 30 1x
- 1x

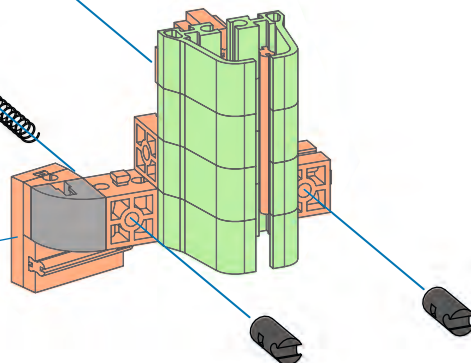



**37**

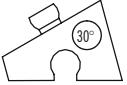
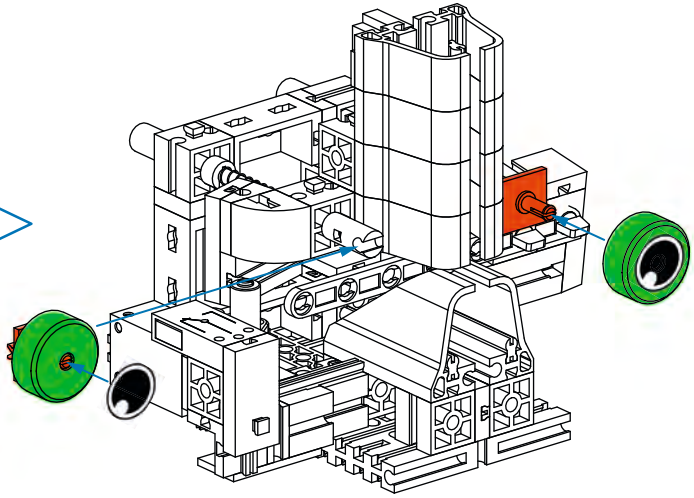
- 2x
- 1x

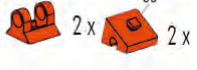


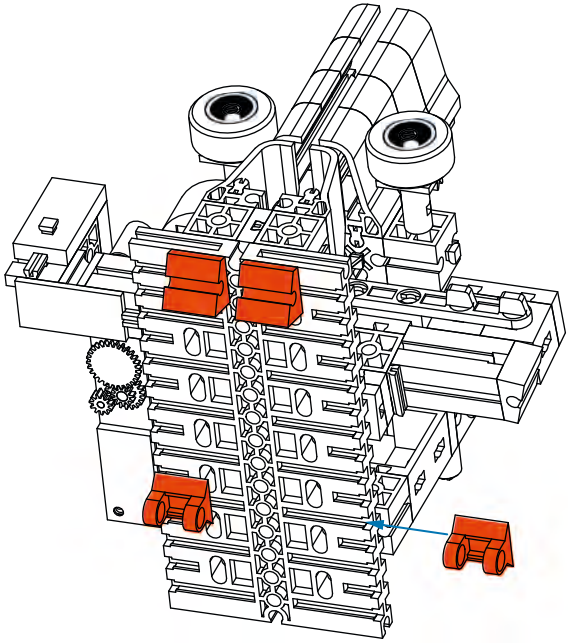
**36**



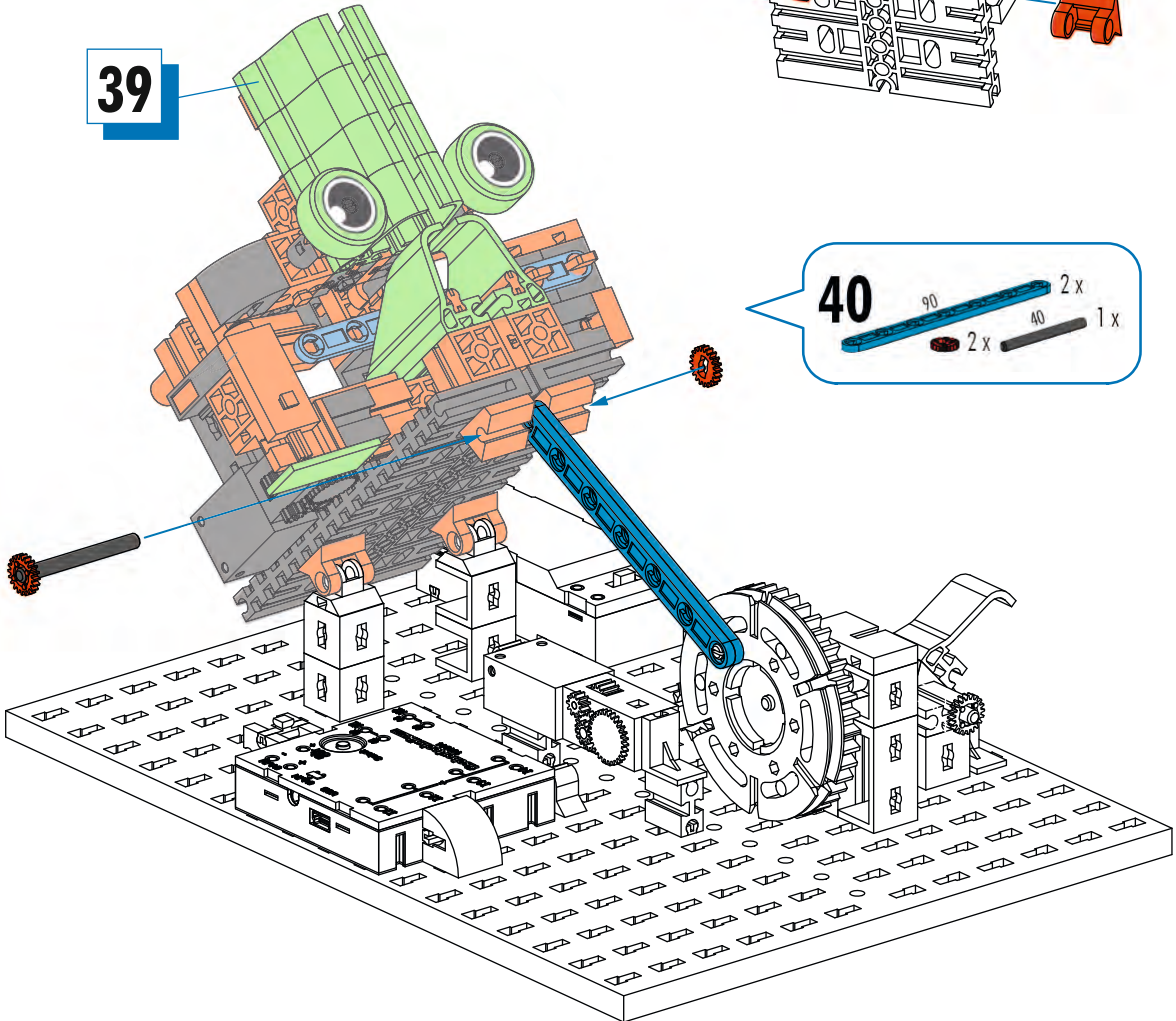
**38**  2x 2x 2x 2x




**39**  2x 2x 30° 2x

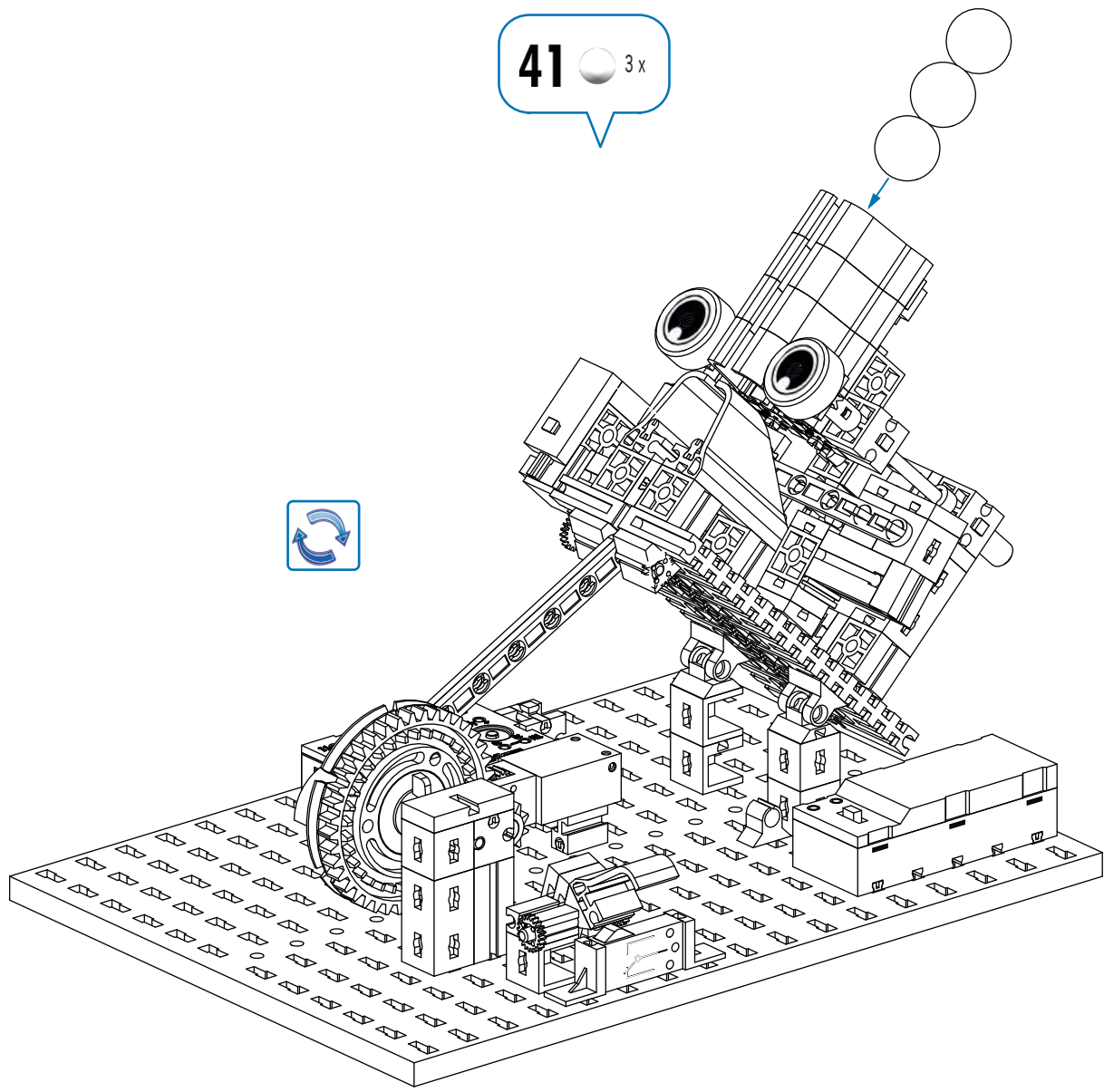





**39**

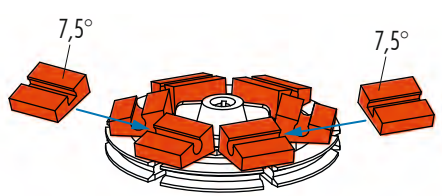
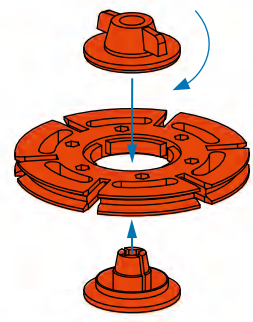




**40**  2x 2x 90 40 2x 1x

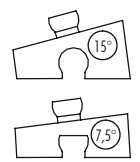


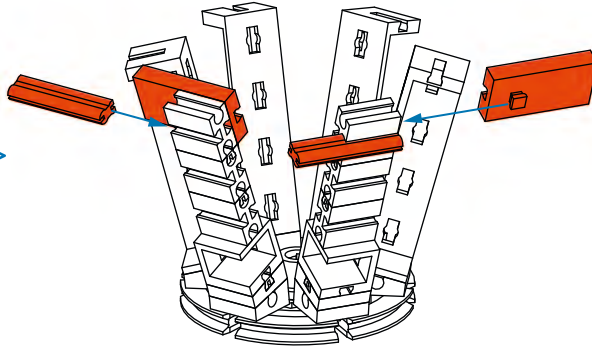
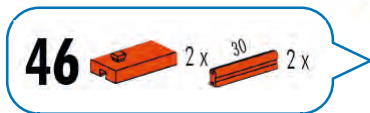
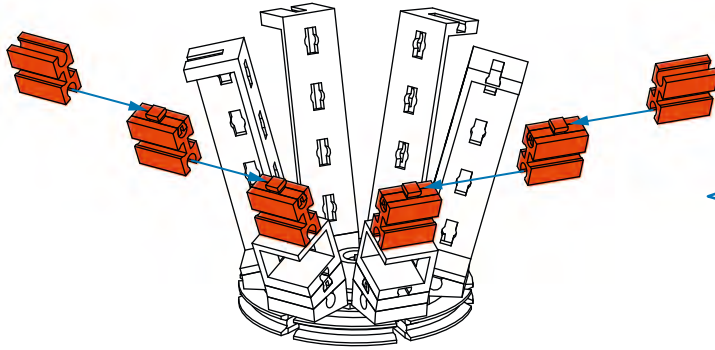
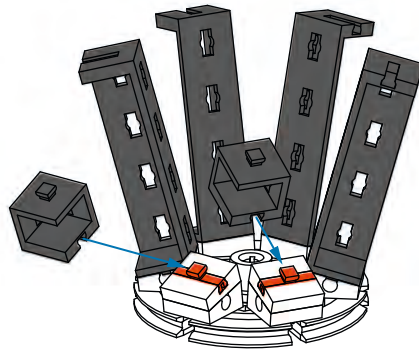
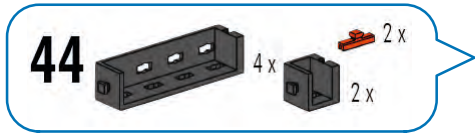


**42**  1x  1x  1x

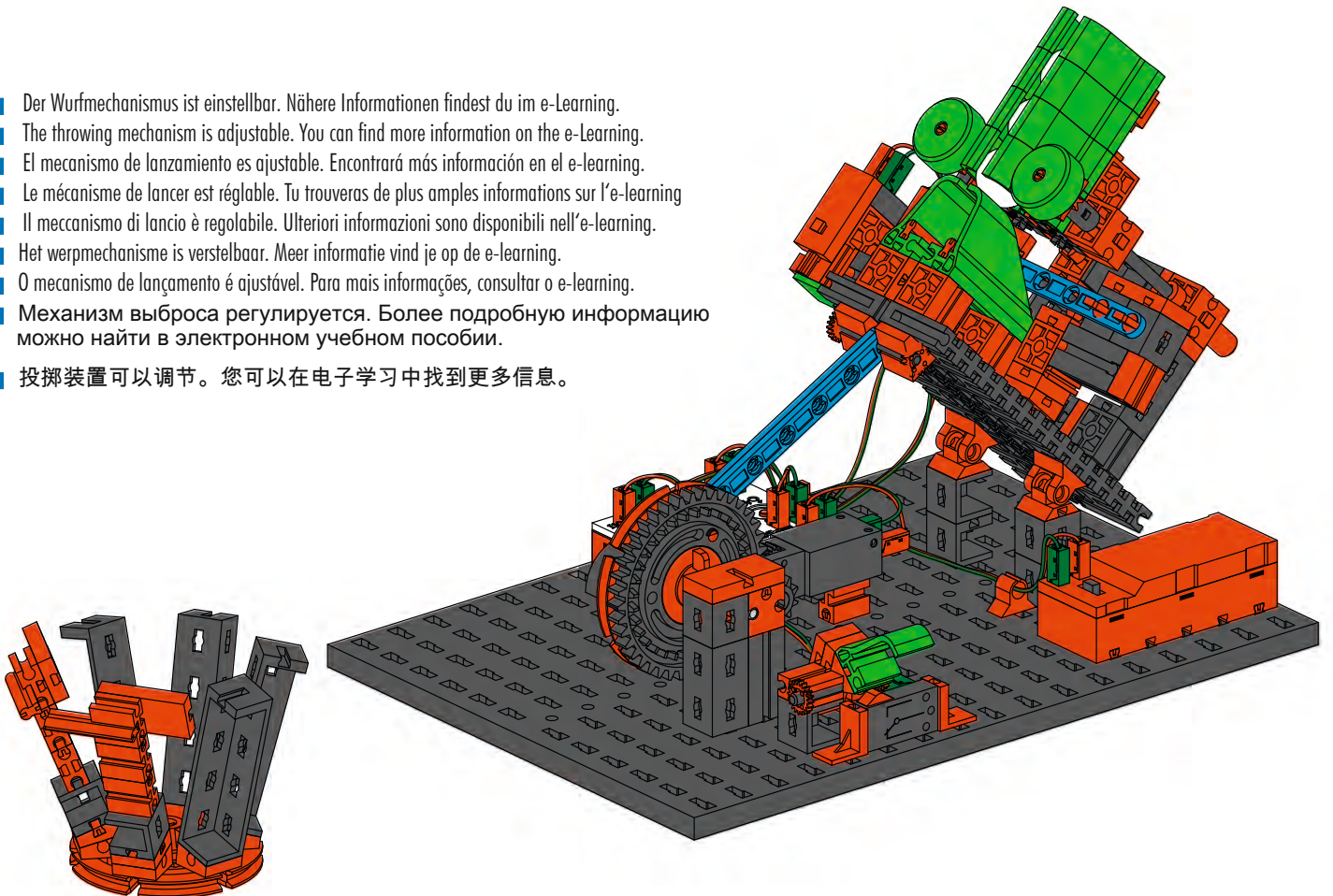


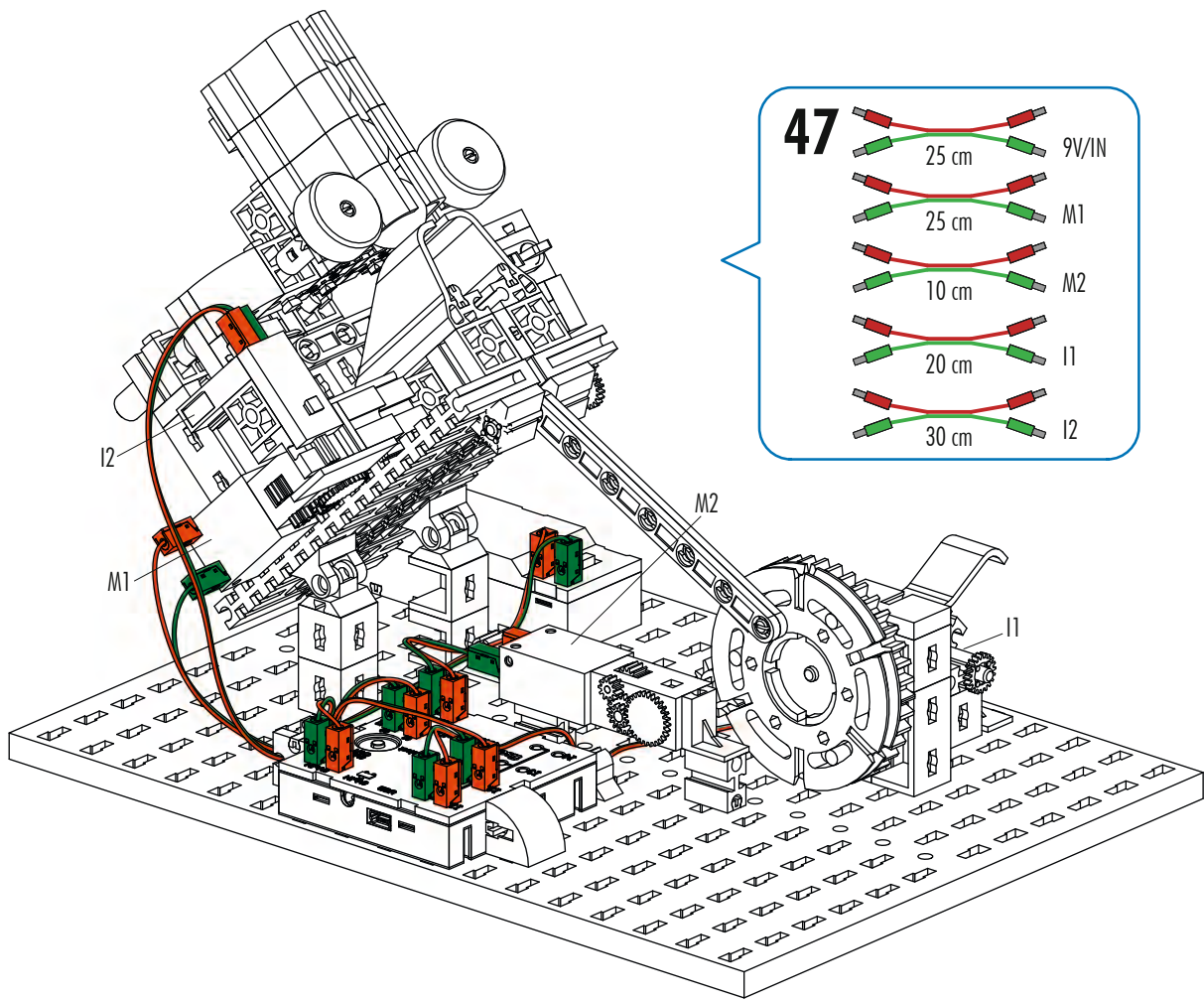
**43**  6x  2x





- Der Wurfmechanismus ist einstellbar. Nähere Informationen findest du im e-Learning.
- The throwing mechanism is adjustable. You can find more information on the e-Learning.
- El mecanismo de lanzamiento es ajustable. Encontrará más información en el e-learning.
- Le mécanisme de lancer est réglable. Tu trouveras de plus amples informations sur l'e-learning.
- Il meccanismo di lancio è regolabile. Ulteriori informazioni sono disponibili nell'e-learning.
- Het werpmechanisme is verstelbaar. Meer informatie vind je op de e-learning.
- O mecanismo de lançamento é ajustável. Para mais informações, consultar o e-learning.
- Механизм выброса регулируется. Более подробную информацию можно найти в электронном учебном пособии.
- 投掷装置可以调节。您可以在电子学习中找到更多信息。





- 47**
- 25 cm 9V/IN
  - 25 cm M1
  - 10 cm M2
  - 20 cm I1
  - 30 cm I2

Schaltplan  
Circuit diagram  
Plan électrique

Schakelschema  
Diagrama de circuitos  
Plano elétrico de ligação

Schema elettrico  
Схема подключения  
电路图

