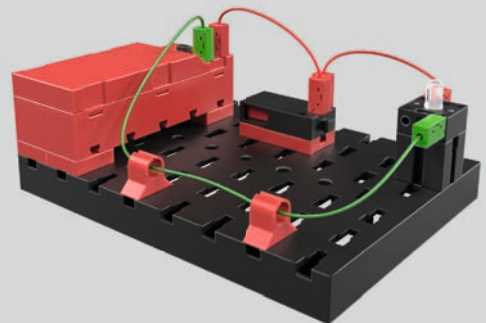
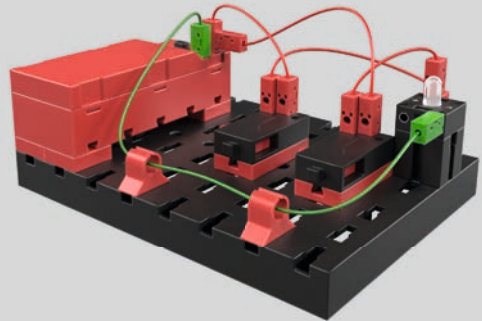


Class Set Electrical Control

Bauanleitung
Assembly instruction
Instructions de montage
Bouwhandleiding
Instrucciones de construcción
Manual de montagem
Istruzioni di montaggio
Инструкция по сборке
安装说明书





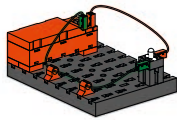
- Auf dem fischertechnik eLearning Portal bieten wir Ihnen die Möglichkeit, noch mehr Hintergrundwissen zum Thema des Baukastens zu erhalten und sich umfangreiche didaktische Begleitmaterialien für den Einsatz im Unterricht herunterzuladen. Über **www.fischertechnik-elearning.com** gelangen Sie direkt zum eLearning Portal.
- On the fischertechnik eLearning portal, we offer you the opportunity to obtain even more background knowledge on the subject of the construction kit and to download extensive didactic accompanying materials for use in the classroom. You can access the eLearning portal directly via **www.fischertechnik-elearning.com**.
- Avec le portail eLearning de fischertechnik, vous pouvez parfaire vos connaissances au sujet de la boîte de construction. Cliquez sur **www.fischertechnik-elearning.com** pour accéder directement à notre portail.
- Met het fischertechnik eLearning portaal geven wij u de mogelijkheid, nog meer achtergrondkennis over het thema van het modulaire systeem te verkrijgen. Via **www.fischertechnik-elearning.com** komt u direct bij het eLearning portaal.
- En el portal de eLearning de fischertechnik te ofrecemos la posibilidad de obtener aún más conocimientos de fondo sobre el tema del kit de construcción y de descargar amplios materiales didácticos de acompañamiento para utilizar en el aula. A través de **www.fischertechnik-elearning.com** podrá acceder directamente al portal de aprendizaje electrónico.
- Com o portal de eLearning da fischertechnik damos lhe a possibilidade de obter ainda mais conhecimentos aprofundados sobre os kits de construção. Em **www.fischertechnik-elearning.com** pode aceder diretamente ao portal de eLearning.
- Con il portale eLearning di fischertechnik vi diamo la possibilità di accumulare maggiori informazioni di base sul tema delle scatole di montaggio. Tramite **www.fischertechnik-elearning.com** potete raggiungere direttamente il portale eLearning.
- Обучающий Интернет-портал компании fischertechnik предлагает вам возможность получить больше базовых знаний по теме конструирования. По ссылке **www.fischertechnik-elearning.com** вы попадаете прямо на обучающий Интернет-портал.
- 通过 fischertechnik eLearning 电子学习门户网站，我们为您提供更多关于积木的背景知识。登陆 **www.fischertechnik-elearning.com** 访问我们的 elearning 门户网站。

Inhalt
Contents
Contenu

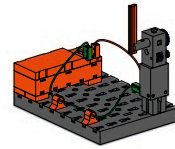
Inhoud
Contenido
Conteúdo

Contenuto
Содержание
目录

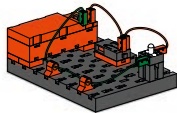
Einzelteilübersicht / Spare parts list / Liste des pièces détachées / Onderdelenoverzicht / Lista da piezas / Resumo de peça individual /
Singoli componenti / Перечень деталей / 零件概覽 2
Montagetips / Tips for assembly / Tuyaux pour le montage / Montagetips / Consejos para el montaje / "Dicas" para montagem /
Consigli per il montaggio / Советы по сборке / 装配建议 2



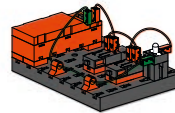
Einfacher Stromkreis mit Polwendeschalter mit LED / Simple circuit with pole-changing switch with LED / Eenvoudige schakeling met poolomschakelbare schakelaar met LED / Circuit simple avec interrupteur à inversion de polarité avec LED / Circuito simple con interruptor de cambio de polos con LED / Circuito simples com comutador de pólos com LED / Circuito semplice con interruttore a cambio di polarità con LED / Простая схема с полюсным переключателем со светодиодом / 带LED换极开关的简单电路。 .4



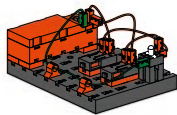
Gleichstrommotor mit Drehrichtungsänderung / DC motor with change of rotation direction / Moteur à courant continu avec changement de sens de rotation / Gelijkstroommotor met verandering van draairichting / Motor de corrente continua con cambio de sentido de giro / Motor de corrente continua com mudança de direcção de rotação / Motore a corrente continua con cambio del senso di rotazione / Двигатель постоянного тока со сменой направления вращения / 可改变旋转方向的直流电动机6



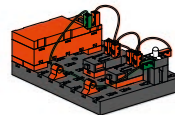
Ein- und Ausschalten mit Taster / Switching on and off with push-button / Mise en marche et arrêt à l'aide d'un bouton-poussoir / In- en uitschakelen met drukknop / Encendido y apagado con pulsador / Ligar e desligar com o botão de pressão / Accensione e spegnimento con pulsante / Включение и выключение с помощью кнопки / 按键式开关和关机9



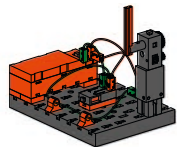
Reihenschaltung von Tastern / Table model / série de boutons poussoirs / drukknopserie / serie de pulsadores / série de botões de pressão / serie di pulsanti / кнопочная серия / 按钮系列12



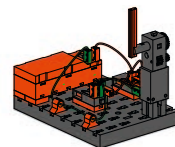
Parallelschaltung von Tastern / Parallel connection of push buttons / le parallélisme des boutons poussoirs / drukknopparallélisme / paralelismo de los pulsadores / paralelismo por botões / paralelismo dei pulsanti / настольная модель / 按钮平行度15



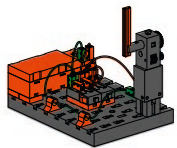
Wechselschaltung / Alternating circuit / Circuit alternatif / Wisselend circuit / Circuito alterno / Circuito alternado / Circuito alternato / НАЛЬТЕРНАТИВНАЯ схема / 交变电路 ..18



Kurzschlussbremse / Short-circuit brake / Frein de court-circuit / Kortsluitrem / Freno de cortocircuito / Freio de curto-circuito / Freno di cortocircuito / Тормоз с коротким замыканием / 短路制动21



Links-Rechts-Aus mit zwei Tastern / Left-right-off with two buttons / Gauche-droite avec deux boutons / Links-rechts-uit met twee knoppen / Izquierda-Derecha-Apagada con dos botones / Esquerda-Direita com dois botões / Left-Right-Off con due pulsanti / Лево-право-открытие с двумя кнопками / 左-右-关，有两个按钮24









Polwendeschalter mit zwei verbundenen Tastern / Pole-changing switch with two connected push-buttons / Interrupteur à inversion de polarité avec deux boutons poussoirs connectés / Poolomkeerschakelaar met twee aangesloten drukknoppen / Interruptor de inversión de polos con dos pulsadores conectados / Interruptor de inversão de polos com dois botões de pressão conectados / Interruttore di inversione di polarità con due pulsanti collegati / Переключатель обратного хода с двумя подключенными кнопками / 带两个连接按钮的杆式换向开关27

Einzelteilübersicht
Spare parts list
Liste des pièces détachées

	31 078 1 x
	31 082 1 x
	31 330 1 x
	32 881 1 x
	35 049 2 x
	35 608 2 x





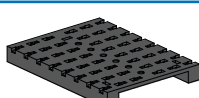
Montagetipps
Tips for assembly
Tuyaux pour le montage

Onderdelenoverzicht
Lista da piezas
Resumo de peça individual

	35 969 2 x
	36 227 1 x
	37 238 4 x
	37 783 2 x
	135 719 1 x
	137 096 1 x

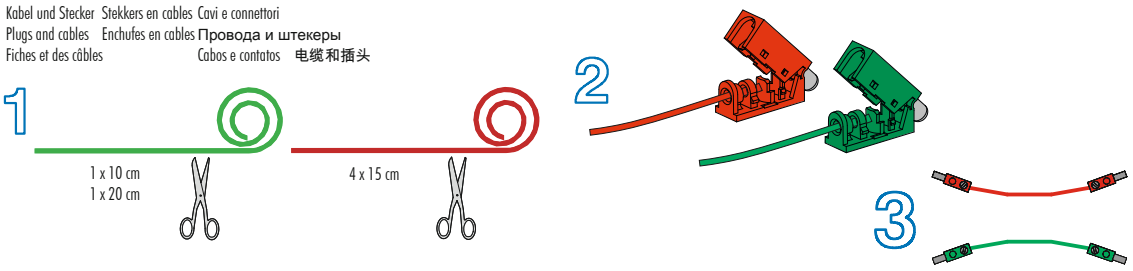
Montagetipps
Consejos para el montaje
"Dicas" para montagem

Singoli componenti
Перечень деталей
零件概览

	147 009 1 x
	162 134 1 x
	181 583 4 x
	181 584 8 x
	182 622 1 x

Consigli per il montaggio
Советы по сборке
装配建议

Kabel und Stecker Stekkers en cables Cavi e connettori
 Plugs and cables Enchufes en cables Провода и штекеры
 Fiches et des câbles Cabos e conatos 电缆和插头



1
1 x 10 cm
1 x 20 cm

4 x 15 cm

2


3

Sicherheitshinweise
Safety Information
Consignes de sécurité

Veiligheidsrichtlijnen
Indicaciones de seguridad
Observações sobre segurança

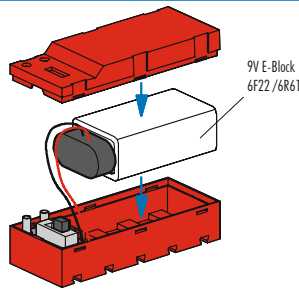
Informazioni per la sicurezza
Указания по технике безопасности
安全指南

LED
 LED
 LED
 LED
 LED
 LED
 LED
 LED
 LED



9V ... / 0,01 A

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。



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

1 Batterie 9Volt-Block Alkaline

- 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.
- Achtung! Durch (Schaltungs-)Fehler oder unzulässige Veränderungen können Temperaturerhöhungen an berührbaren Oberflächen die zulässigen Grenzwerte überschreiten.
- Durch eine zu hohe Spannung oder durch einen Kurzschluss können elektronische Bauteile zerstört werden.

9V rechargeable battery

- 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.
- Caution! (Connection) errors or unauthorized changes can cause temperature increases on exposed surfaces that can exceed allowable limits.
- Impermissibly high voltage or a short circuit can destroy electronic components.

pile 9V

- 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
- Attention ! Les erreurs (de commutation) ou les modifications inadmissibles peuvent avoir pour effet d'augmenter la température des surfaces, qu'on peut toucher, au-delà des valeurs limites admissibles.
- Une tension trop élevée ou un court-circuit risque de détériorer les éléments de construction électroniques.

alkaline batterije

- Niet-oplaadbare batterijen mogen niet worden opgeladen.
- Opladbare batterijen mogen uitsluitend door volwassenen worden opgeladen.
- Opladbare 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.
- Attention! Door (schakel-)fouten of ontoelaatbare veranderingen kunnen temperatuuroverhittingen ontstaan op aanraakbare oppervlakken die de toegestane grenswaarden overschrijden.
- Door een te hoge spanning of door kortsluiting kunnen elektronische componenten onherstelbaar worden beschadigd.

pila alcalina bloque de 9 Voltios

- 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 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.
- ¡Atención! Debido a errores (de circuito) o modificaciones inadmisibles, los incrementos de temperatura en superficies de contacto pueden sobrepasar los valores límite admisibles.
- Debido a una tensión demasiado elevada o por un cortocircuito se pueden destruir componentes electrónicos.

Bateria alcalina de bloco de 9 V

- 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.
- Atenção! Através de erros (de conexão) ou alterações inadmissíveis, os aumentos de temperatura podem exceder os valores limite admissíveis em superfícies expostas a contato.
- Devido a uma tensão muito alta ou devido a um curto-circuito, os componentes podem ser destruídos.

1 batteria alcalina da 9 V

- 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 ricaricabili 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.
- Attenzione! Errori (di cablaggio) o modifiche non consentite possono fare aumentare oltre i limiti ammessi la temperatura delle superfici che si possono toccare.
- Una tensione troppo elevata o un cortocircuito possono distruggere i componenti elettronici.

1 алкалиновая батарейка на 9 В

- Не пытайтесь заряжать неперезаряжаемые 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.
- Ипользованные 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.
- Внимание! Из-за ошибок (в соединениях) или неразрешённых изменений возможен нагрев касаемых поверхностей выше допустимых значений.
- Из-за высокого напряжения или короткого замыкания может произойти разрушение электронных деталей.

1 个 9V 的碱性电池或

- 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。
- 注意！由（接线）故障或未经允许的改装可能会使可接触表面的温度超过允许的极限值。
- 过高的电压或者短路可能会损坏电子部件。

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.

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. 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.

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

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 brinquedo somente pode ser utilizado com uma das seguintes fontes de energia da fischertechnik: art. n.º: 135719 Suporte de bateria de 9 V ou art. n.º: 35537 Bloco de bateria de 8,4V.

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.

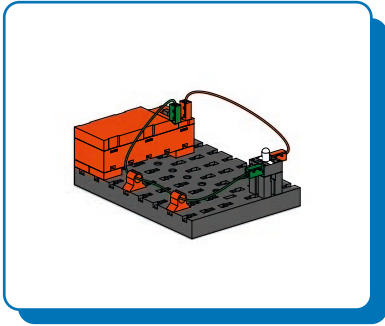
Игрушку можно использовать только с одним из следующих источников энергии от fischertechnik: арт. №: 135719 держатель батарейки 9В или арт. №: 35537 Accu Pack 8,4В

该玩具只允许使用如下的慧鱼 (fischertechnik) 能量源：商品号：135719，9V 电池夹，或者商品号：35537，8,4V 电池套件 (Accu Pack)



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：

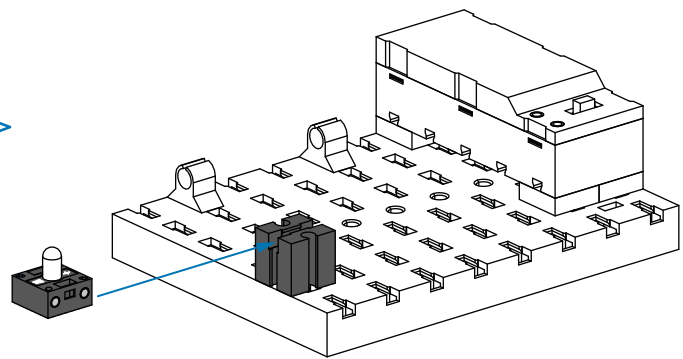
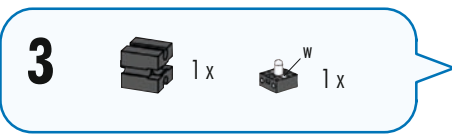
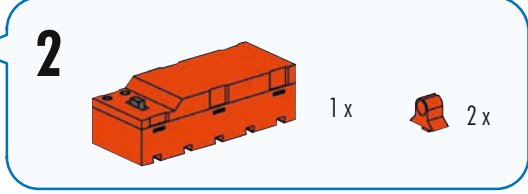
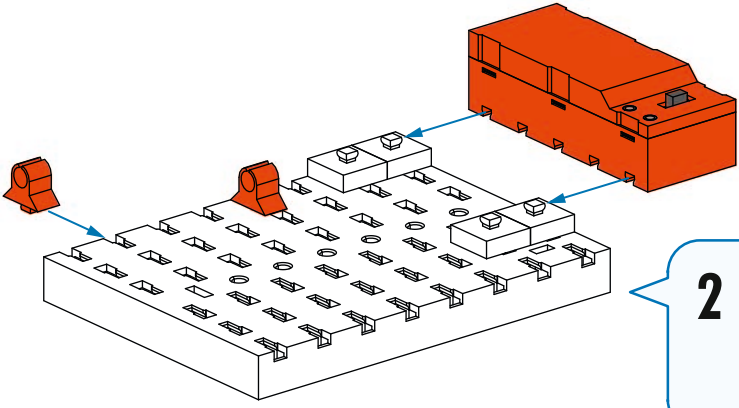
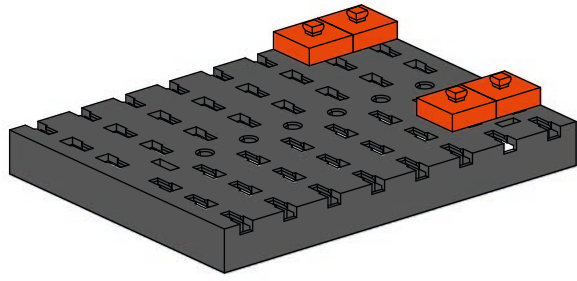
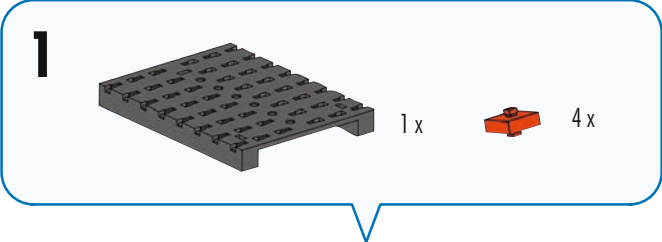
www.fischertechnik.de/environment

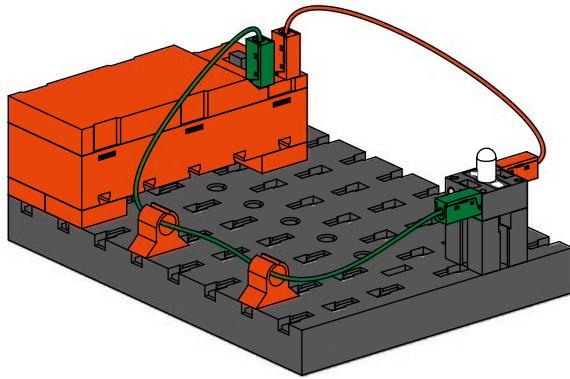
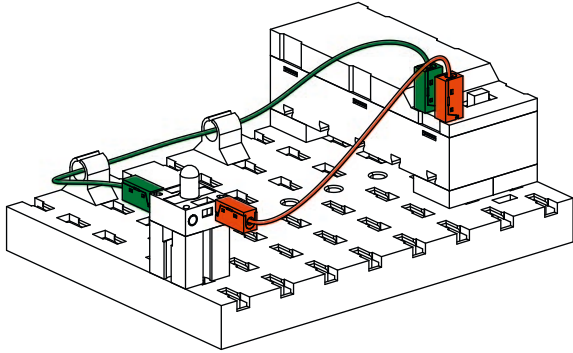
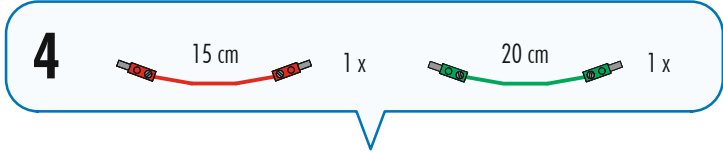


Einfacher Stromkreis mit Polwendschalter mit LED
 Simple circuit with pole-changing switch with LED
 Eenvoudige schakeling met poolomschakelbare
 schakelaar met LED
 Circuit simple avec interrupteur à inversion de

polarité avec LED
 Circuito simple con interruptor de cambio de
 polos con LED
 Circuito simples com comutador de pólos com LED
 Circuito semplice con interruttore a cambio di

polarità con LED
 Простая схема с полюсным
 переключателем со
 светодиодом
 带LED换极开关的简单电路。

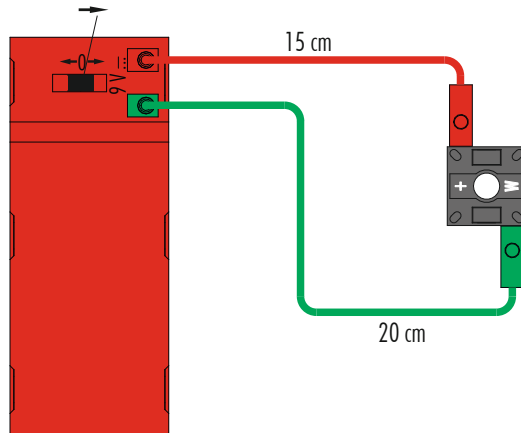


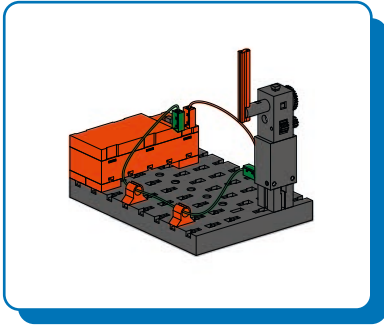


Schaltplan
Circuit diagram
Plan électrique

Schakelschema
Diagrama de circuitos
Plano elétrico de ligação

Schema elettrico
Схема подключения
电路图







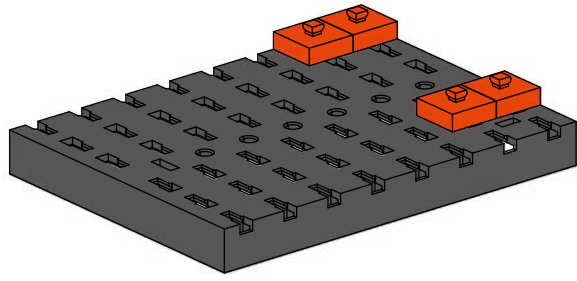
Gleichstrommotor mit Drehrichtungsänderung
 DC motor with change of rotation direction
 Moteur à courant continu avec changement de sens de rotation
 Gelijkstroommotor met verandering van

draairichting
 Motor de corriente continua con cambio de sentido de giro
 Motor de corrente contínua com mudança de direcção de rotação

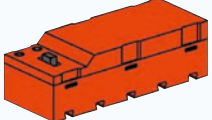

Motore a corrente continua con cambio del senso di rotazione
 Двигатель постоянного тока со сменой направления вращения
 可改变旋转方向的直流电动机

1




1 x  4 x 



2

1 x  2 x 

3

1 x  1 x  1 x 

4



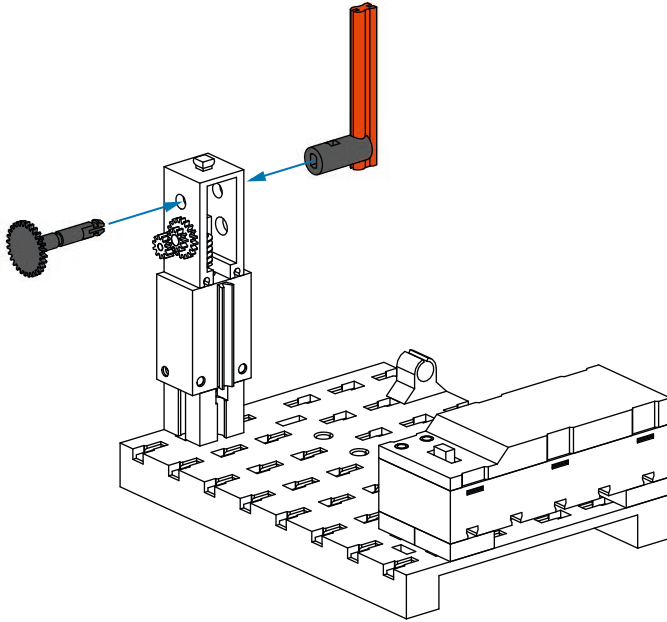
1 x



1 x



1 x



5



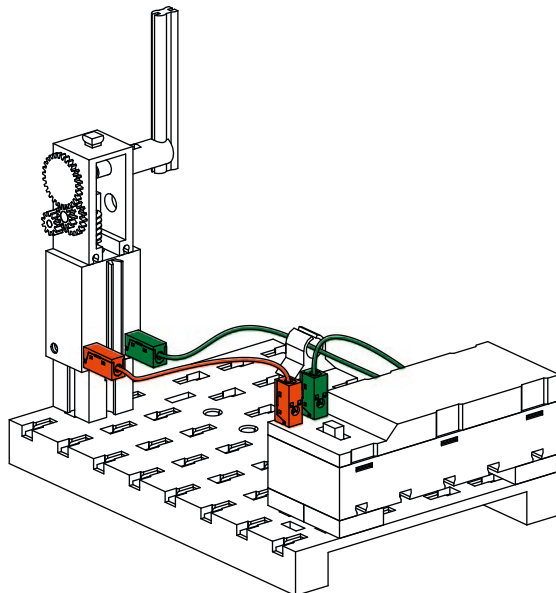
15 cm

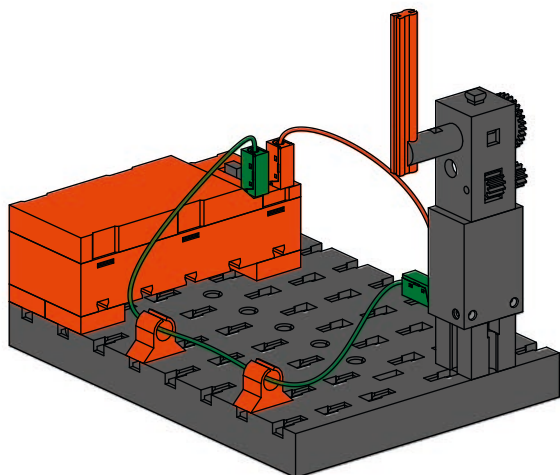
1 x



20 cm

1 x

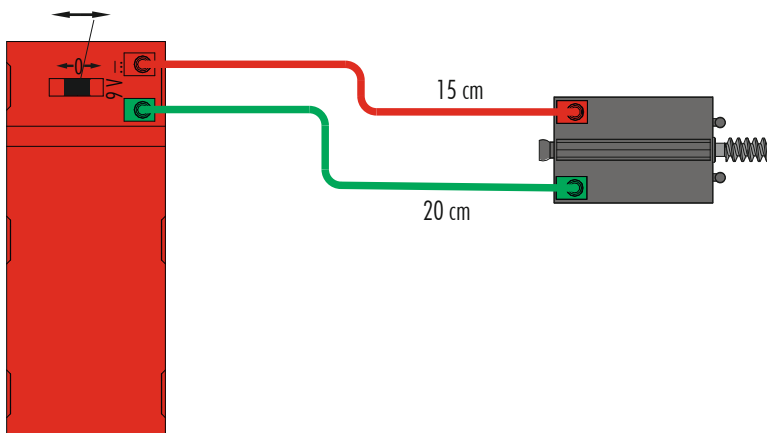


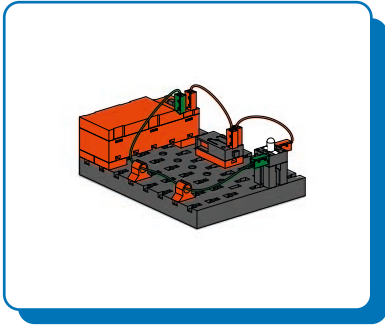


Schaltplan
Circuit diagram
Plan électrique

Schakelschema
Diagrama de circuitos
Plano elétrico de ligação

Schema elettrico
Схема подключения
电路图





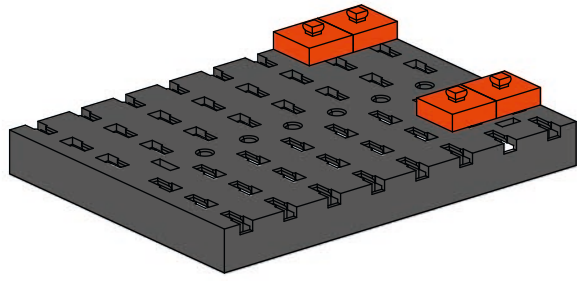
Ein- und Ausschalten mit Taster
Switching on and off with push-button
Mise en marche et arrêt à l'aide d'un bouton-poussoir

In- en uitschakelen met drukknop
Encendido y apagado con pulsador
Ligar e desligar com o botão de pressão
Accensione e spegnimento con pulsante

Включение и выключение с помощью кнопки
按键式开机和关机

1

1 x 4 x

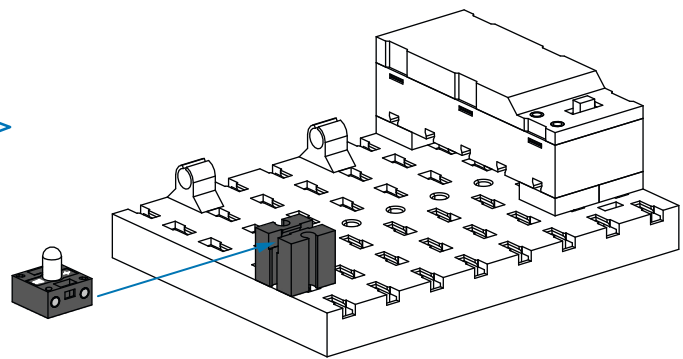




2

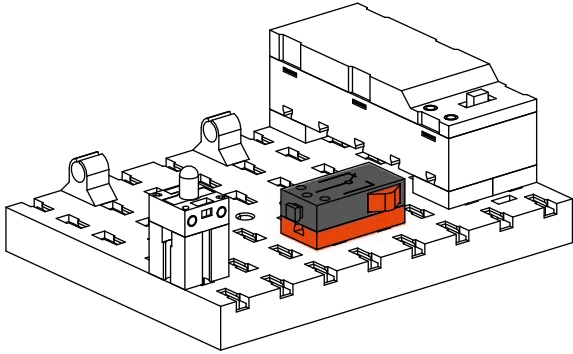
1 x 2 x

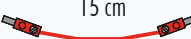
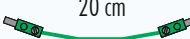
3

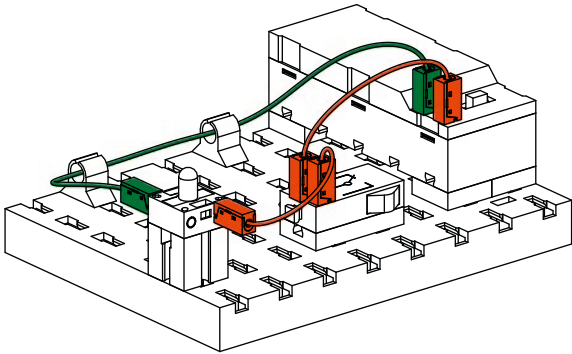
1 x 1 x

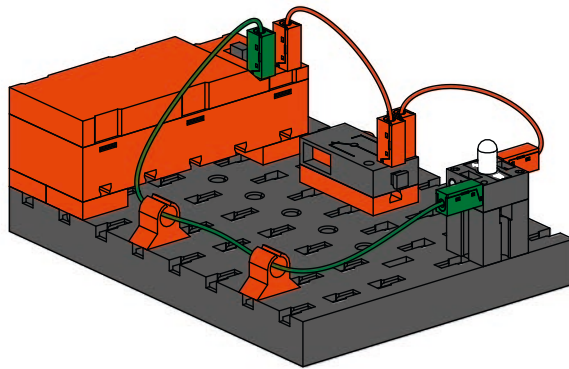


4  1 x  1 x



5  15 cm 2 x  20 cm 1 x

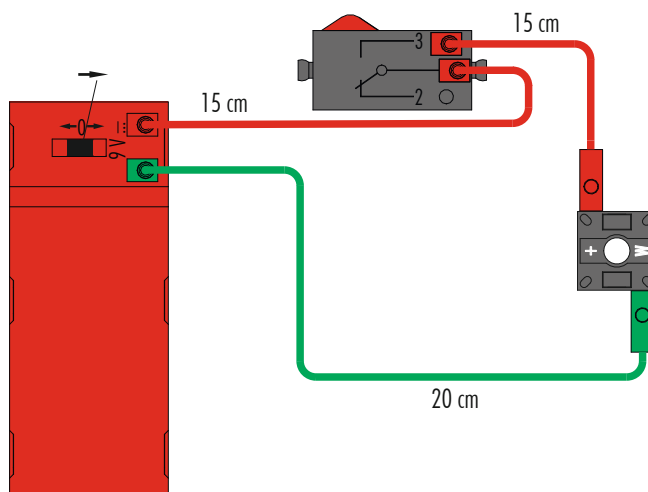


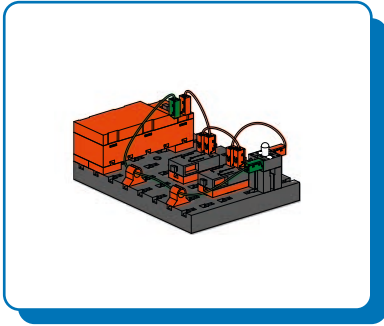


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Plan électrique

Schakelschema
Diagrama de circuitos
Plano elétrico de ligação

Schema elettrico
Схема подключения
电路图

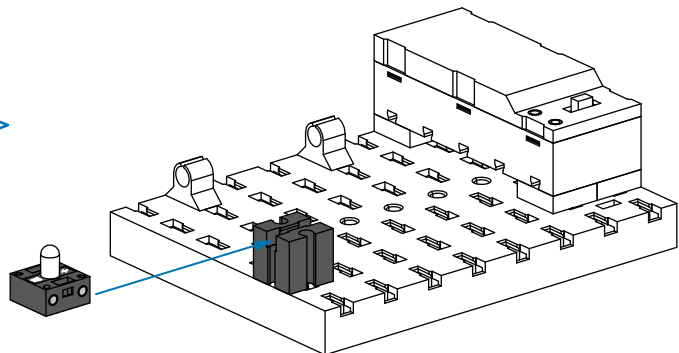
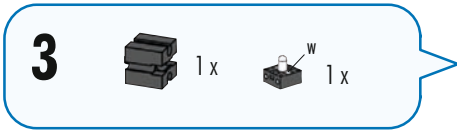
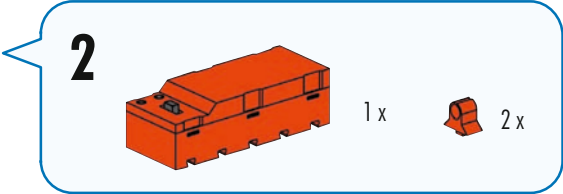
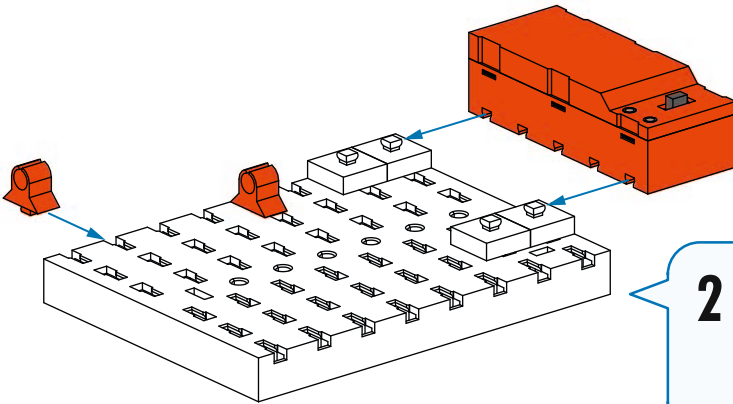
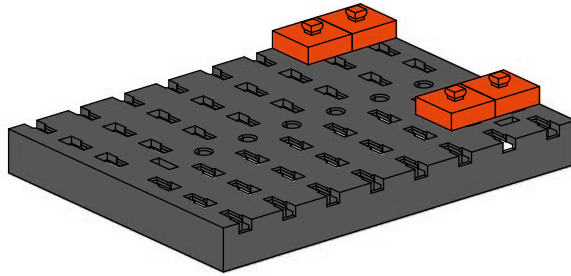
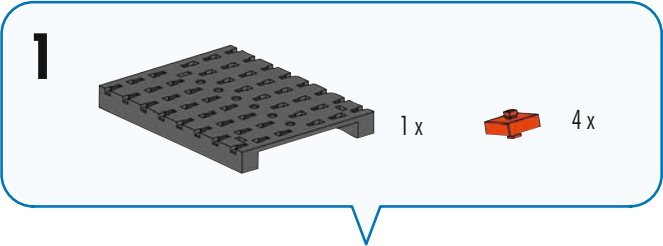




Reihenschaltung von Tastern
 Series connection of push buttons
 série de boutons poussoirs

drukknopserie
 serie de pulsadores
 série de botões de pressão

serie di pulsanti
 кнопочная серия
 按钮系列



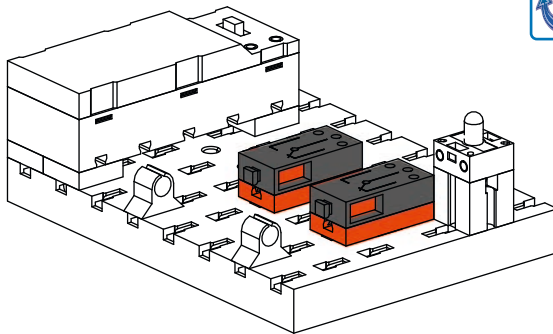
4



2 x



2 x



5



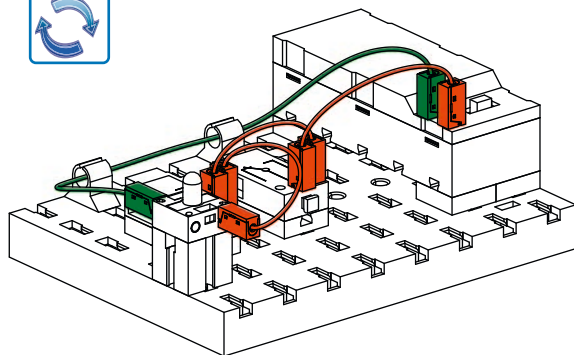
15 cm

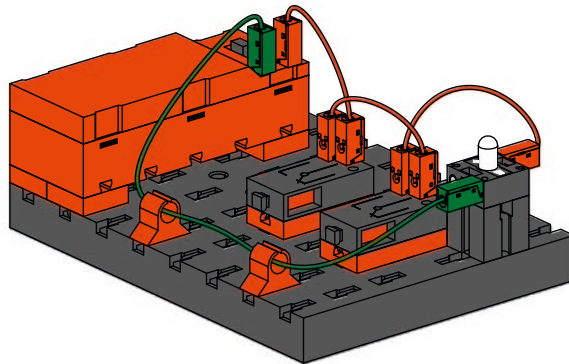
3 x



20 cm

1 x

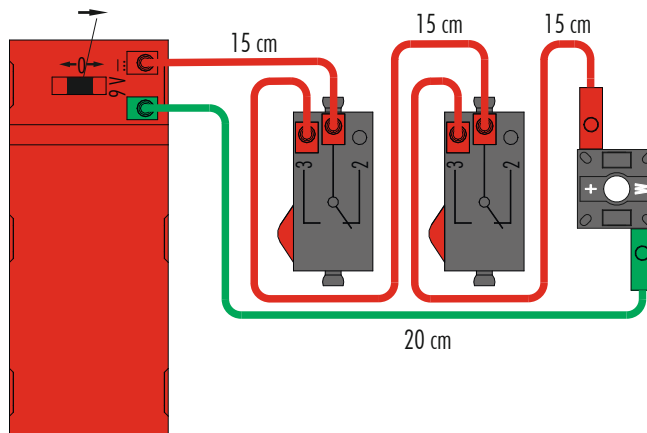


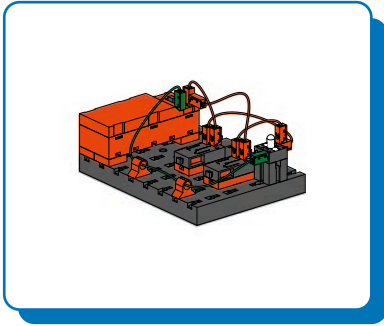


Schaltplan
Circuit diagram
Plan électrique

Schakelschema
Diagrama de circuitos
Plano elétrico de ligação

Schema elettrico
Схема подключения
电路图

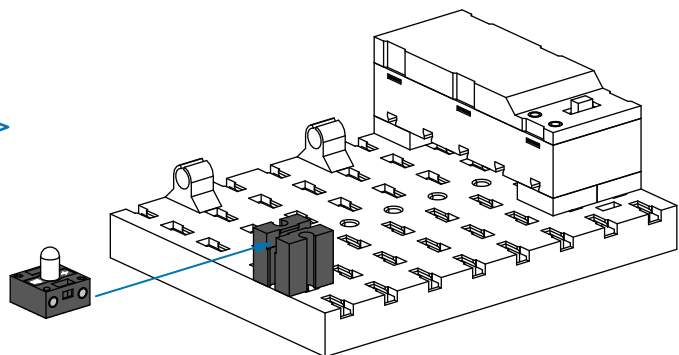
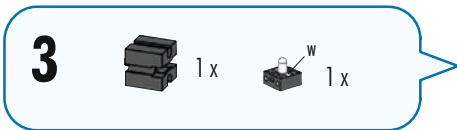
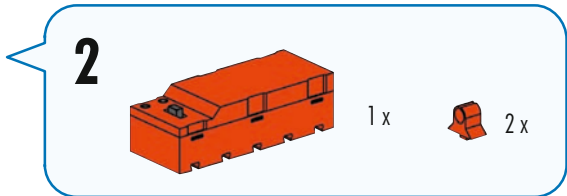
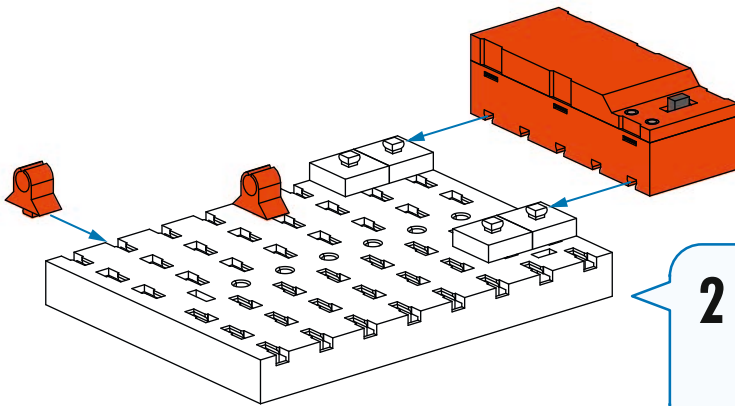
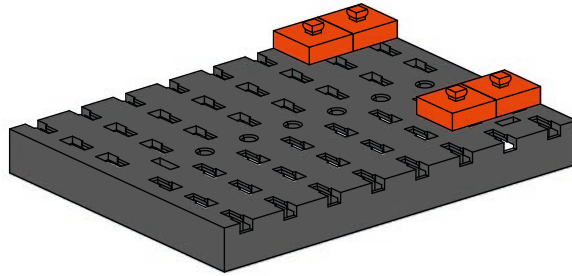
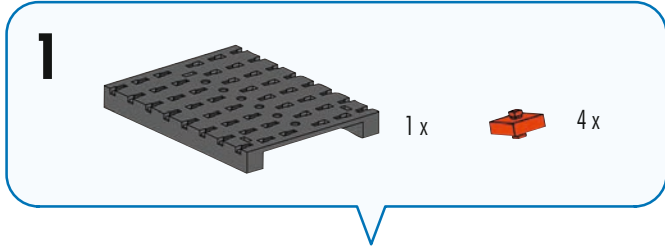






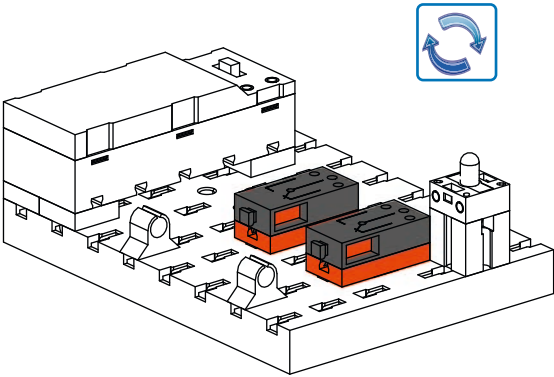
Parallelschaltung von Tastern
 Parallel connection of push buttons
 le parallélisme des boutons

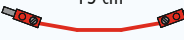
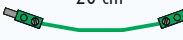
poussoirs
 drukknooppaarlisme
 paralelismo de los pulsadores

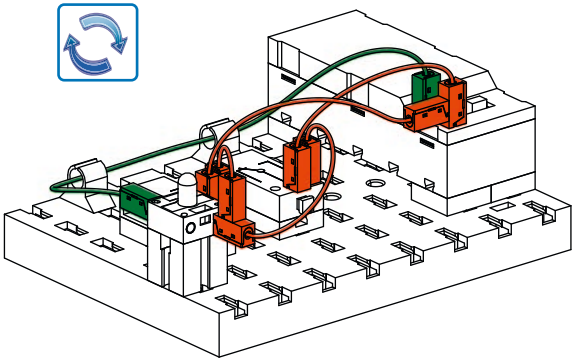
paralelismo por botões
 parallelismo dei pulsanti
 настольная модель
 按钮平行度

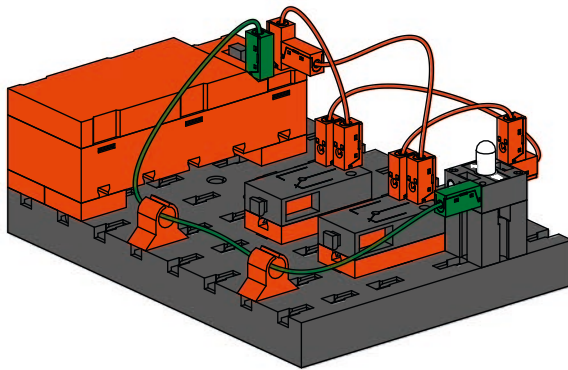


4  2 x  2 x



5  15 cm 4 x  20 cm 1 x

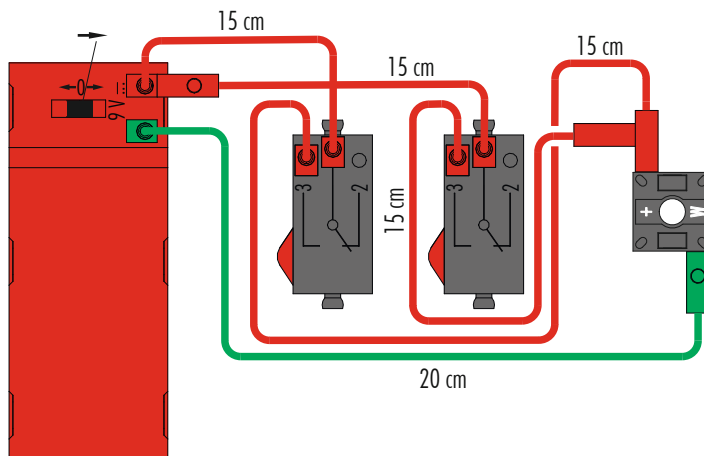


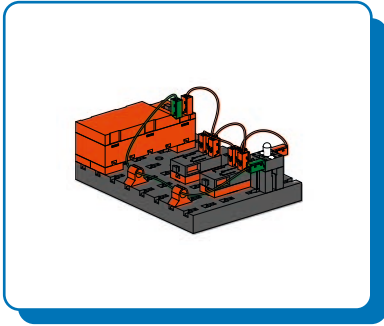


Schaltplan
Circuit diagram
Plan électrique

Schakelschema
Diagrama de circuitos
Plano elétrico de ligação

Schema elettrico
Схема подключения
电路图

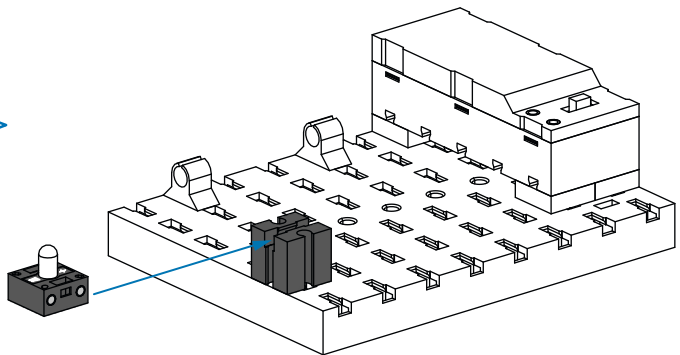
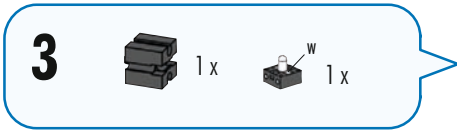
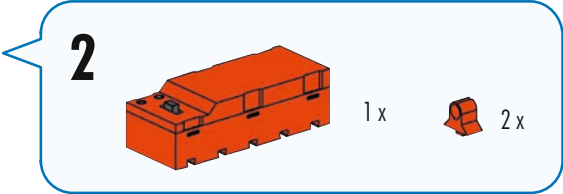
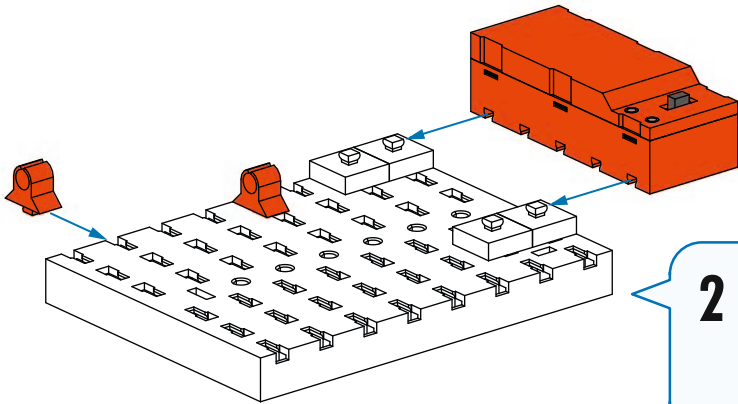
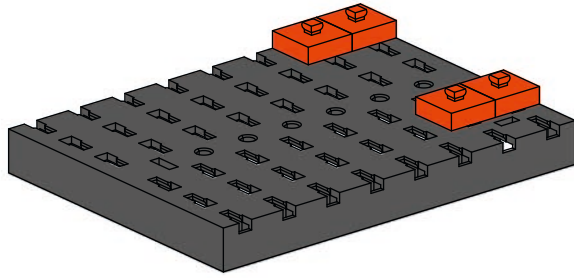
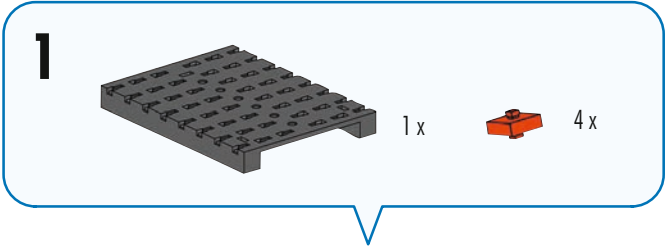




Wechselschaltung
 Alternating circuit
 Circuit alternatif

Wisselend circuit
 Circuito alterno
 Circuito alternado

Circuito alternato
 нАльтернативная
 схема
 交变电路



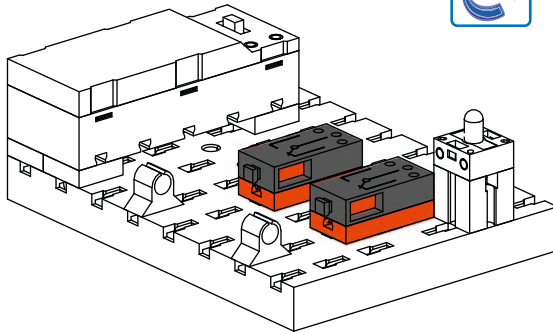
4



2 x



2 x



5



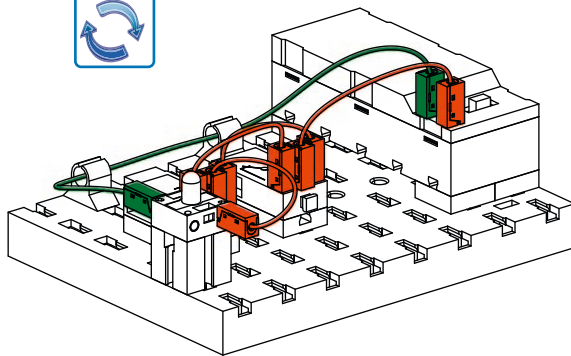
15 cm

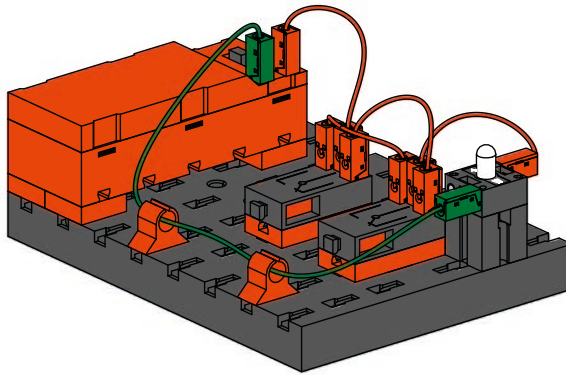
4 x



20 cm

1 x

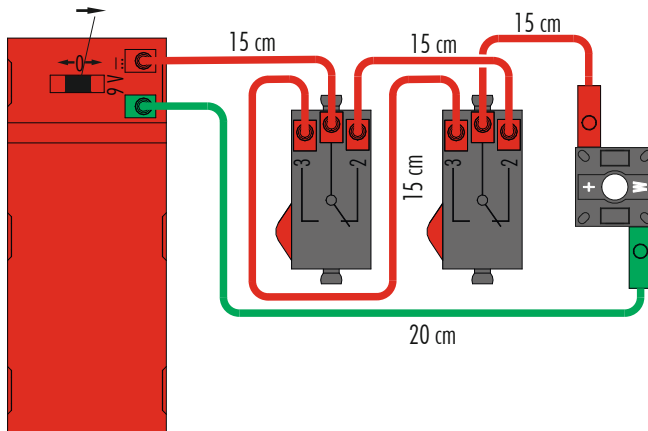


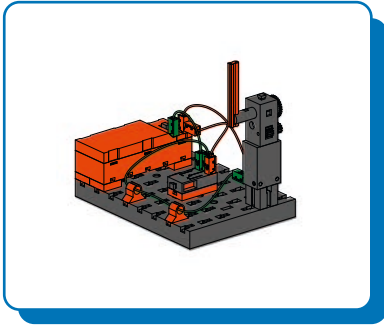


Schaltplan
Circuit diagram
Plan électrique

Schakelschema
Diagrama de circuitos
Plano elétrico de ligação

Schema elettrico
Схема подключения
电路图

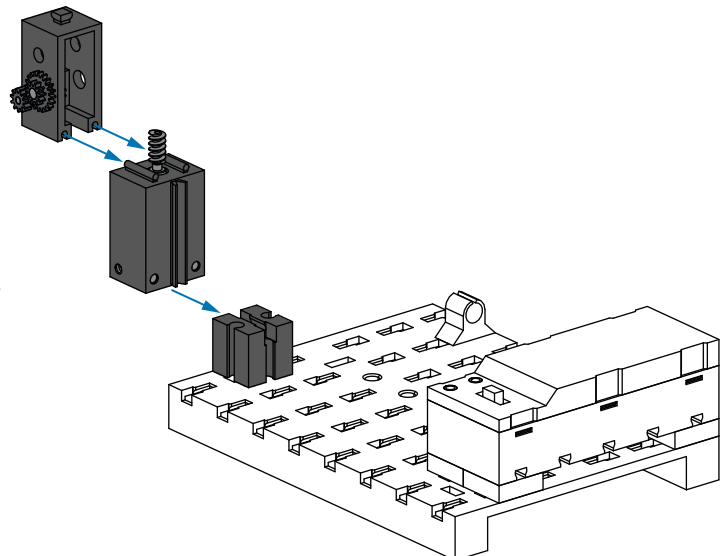
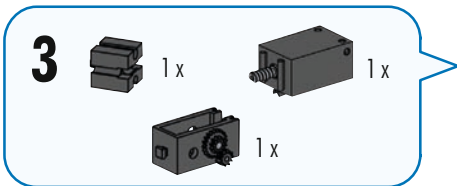
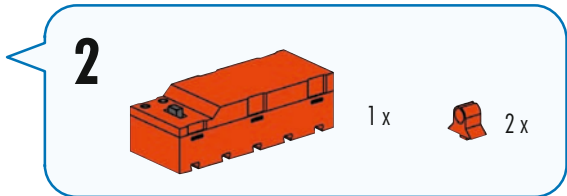
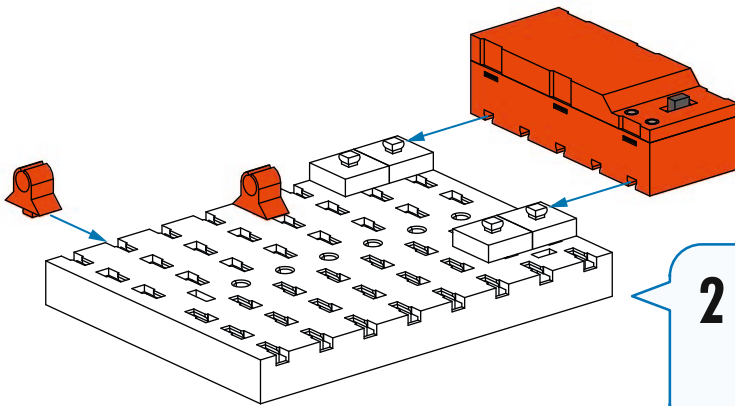
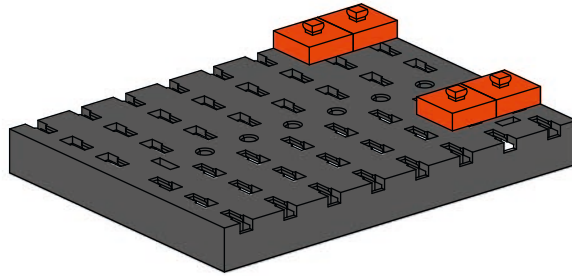
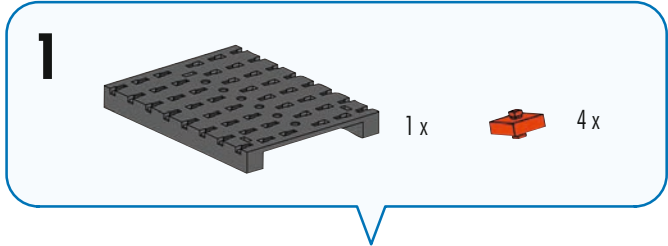







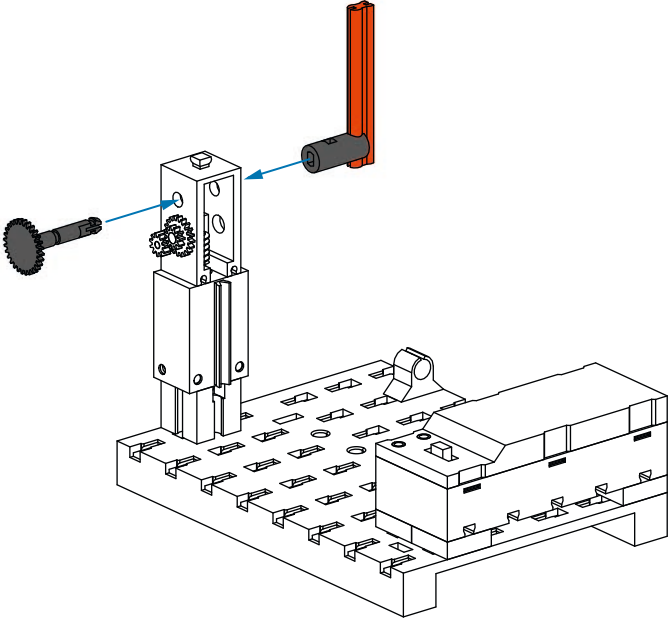
Kurzschlussbremse
Short-circuit brake
Frein de court-circuit



Kortsluitrem
Freno de cortocircuito
Freio de curto-circuito

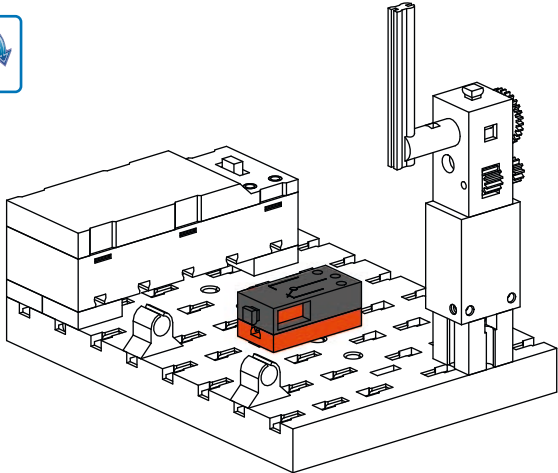
Freno di cortocircuito
Тормоз с коротким замыканием
短路制动



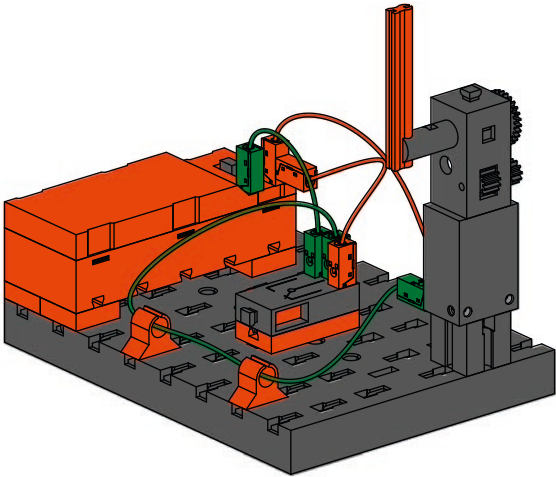
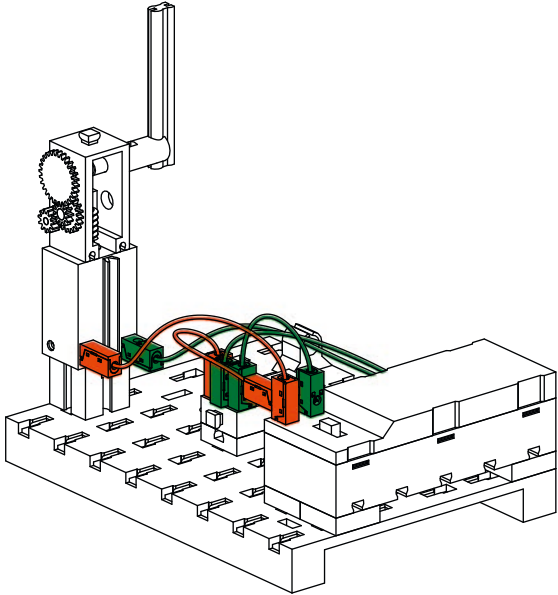
4  1x  1x  1x



5  1x  1x



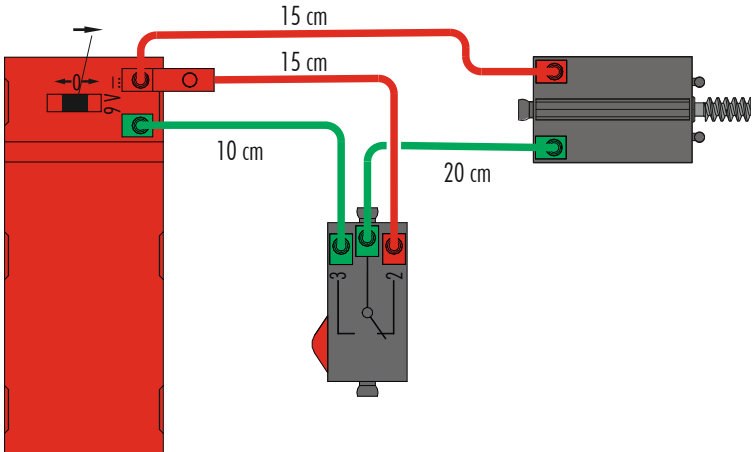
- 6**
- 15 cm 2 x
 - 20 cm 1 x
 - 10 cm 1 x

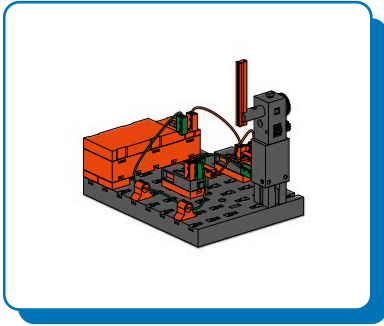


Schaltplan
Circuit diagram
Plan électrique

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Schema elettrico
Схема подключения
电路图







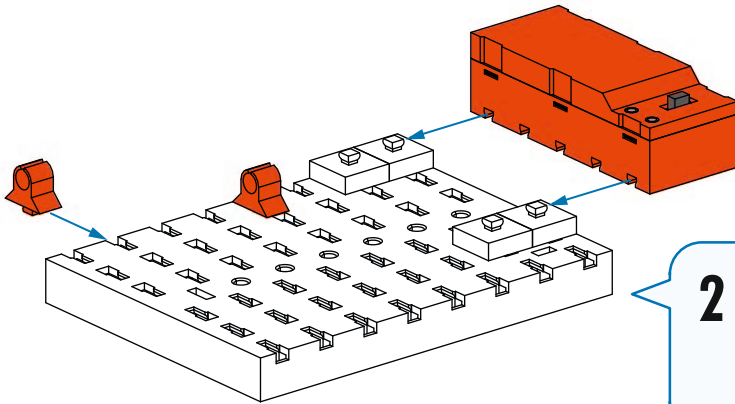
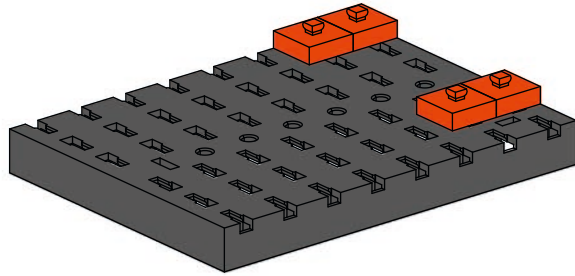
Links-Rechts-Aus mit zwei Tasten
 Left-right-off with two buttons
 Gauche-droite avec deux boutons
 Links-rechts-uit met twee knoppen

Izquierda-Derecha-Apagada con dos botones
 Esquerda-Direita com dois botões
 Left-Right-Off con due pulsanti

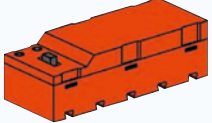

Лево-право-открытие с двумя кнопками
 左-右-关，有两个按钮

1


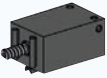

1 x  4 x 

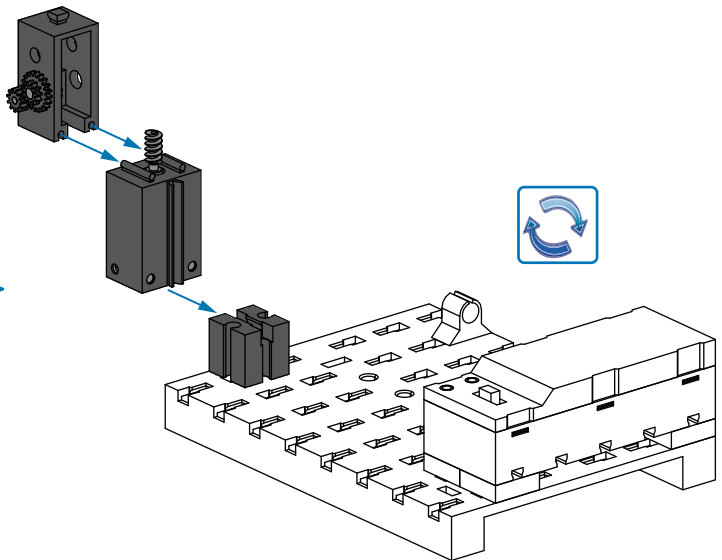





2

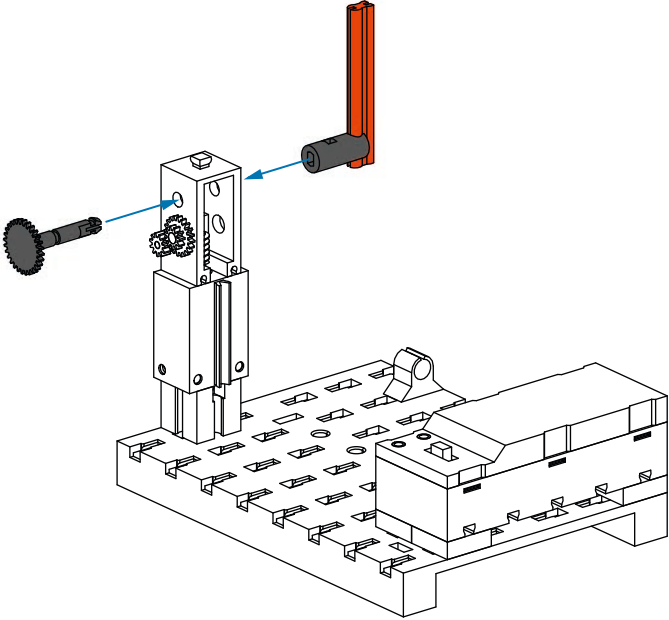
1 x  2 x 



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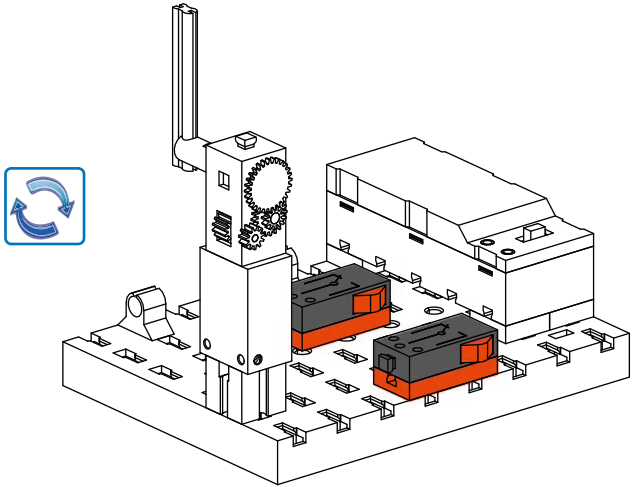
1 x  1 x  1 x 



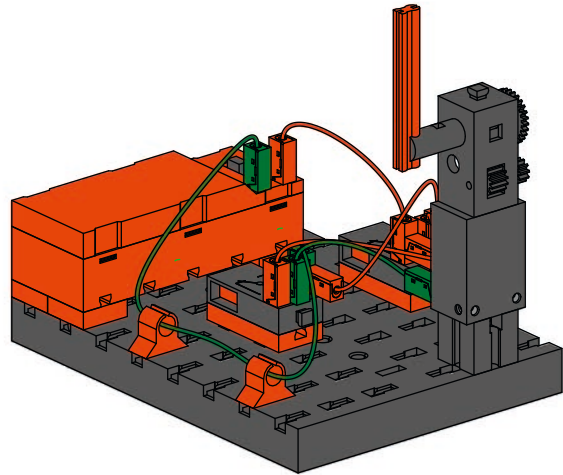
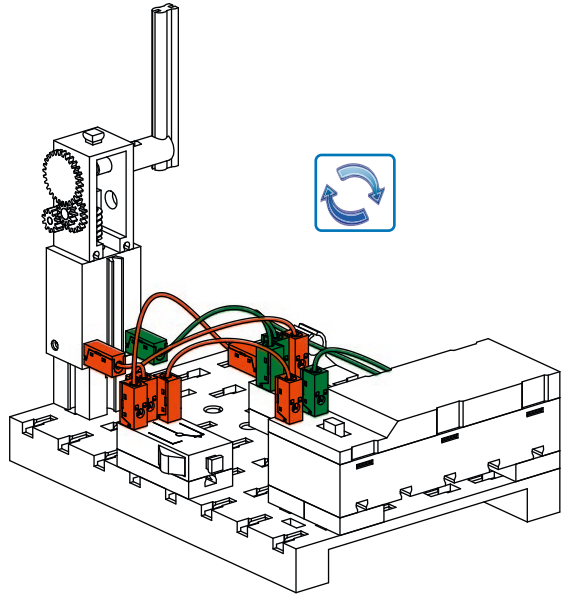
4  1x  1x  1x



5  2x  2x



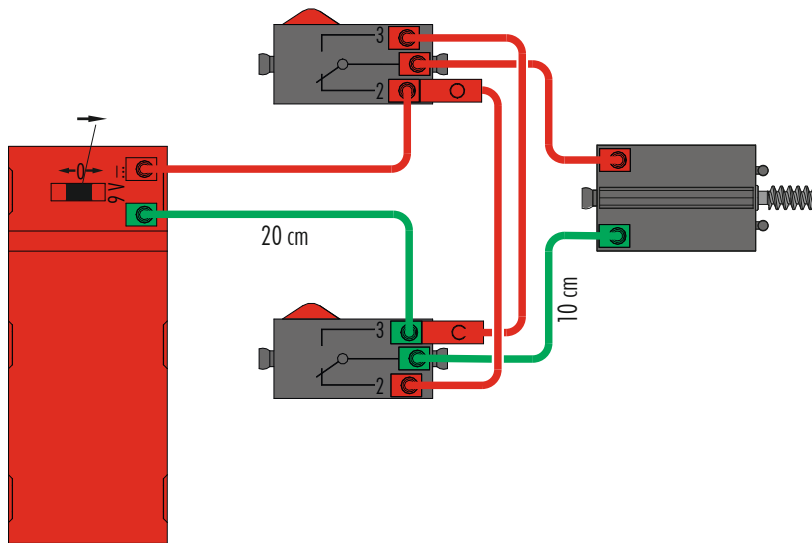
- 6**
- 15 cm 4 x
 - 20 cm 1 x
 - 10 cm 1 x

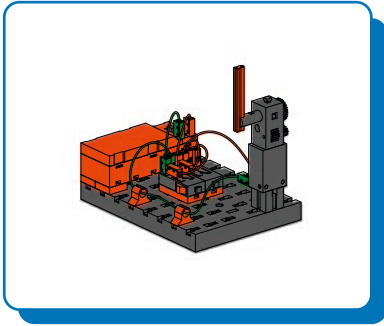


Schaltplan
Circuit diagram
Plan électrique

Schakelschema
Diagrama de circuitos
Plano elétrico de ligação

Schema elettrico
Схема подключения
电路图

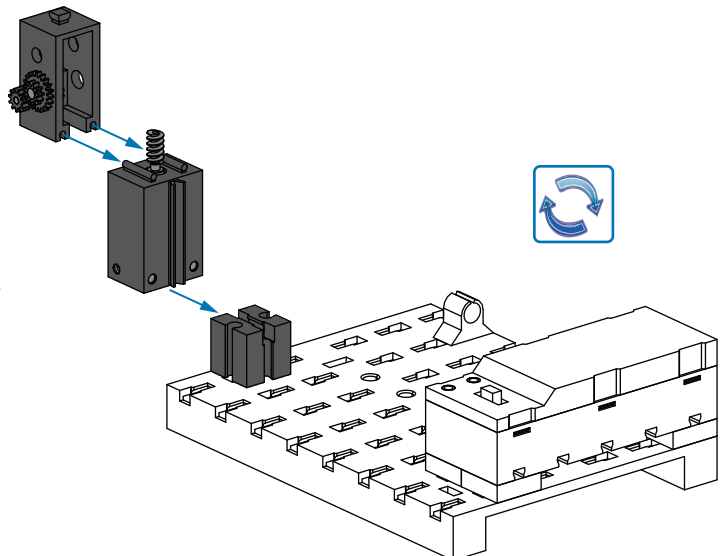
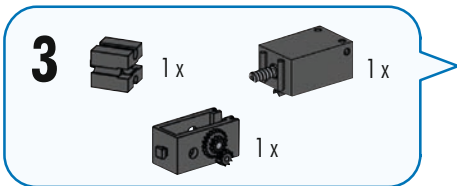
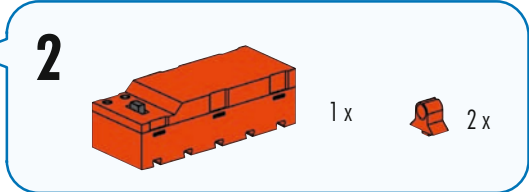
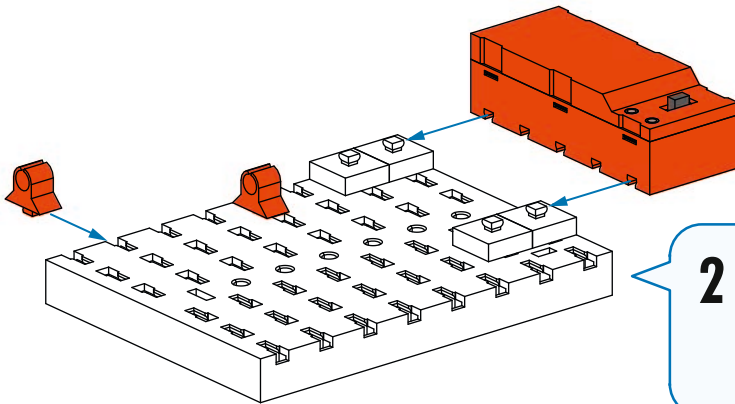
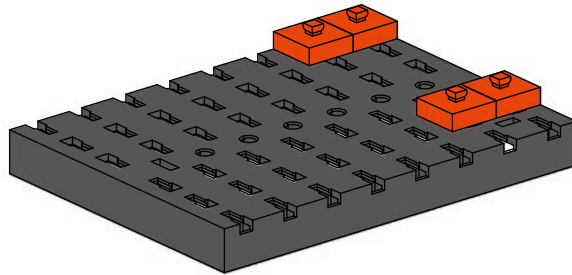
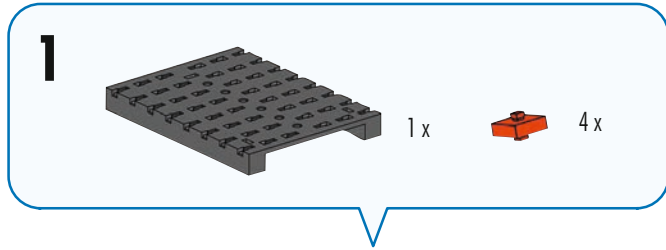







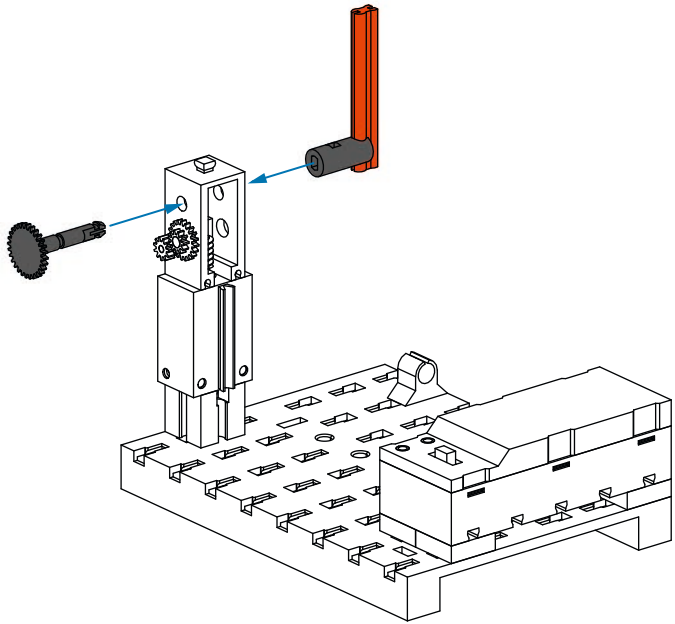
Polwendesalter mit zwei verbundenen Tastern
 Pole-changing switch with two connected push-buttons
 Interrupteur à inversion de polarité avec deux boutons poussoirs connectés



Poolomkeerschakelaar met twee aangesloten drukknoppen
 Interruptor de inversión de polos con dos pulsadores conectados
 Interruptor de inversão de pólos com dois botões de pressão conectados

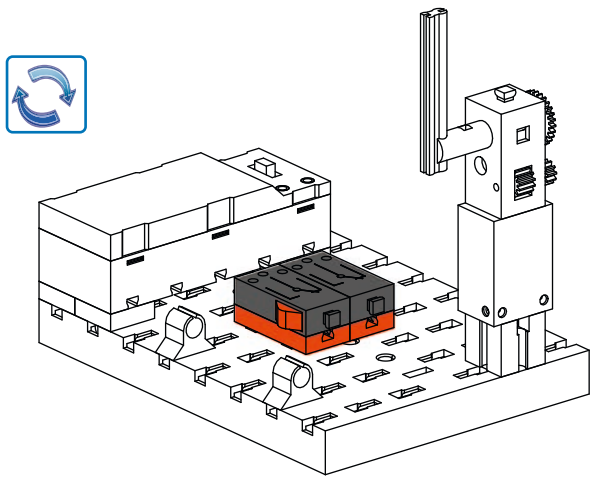
Interruttore di inversione di polarità con due pulsanti collegati
 Переключатель обратного хода с двумя подключенными кнопками
 帶兩個連接按鈕的杆式換向開關

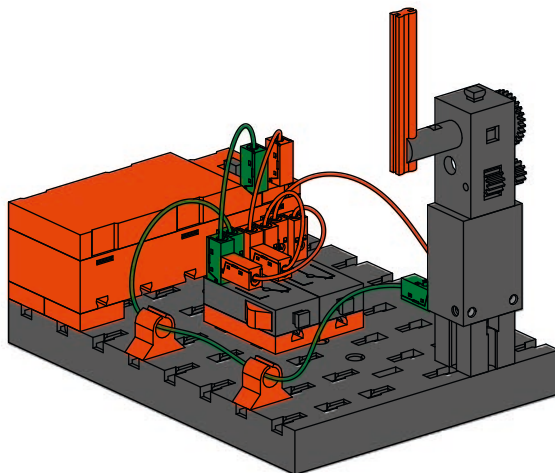
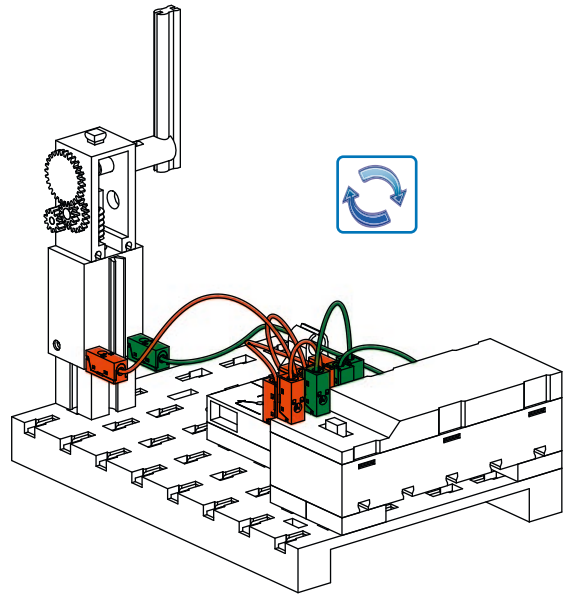
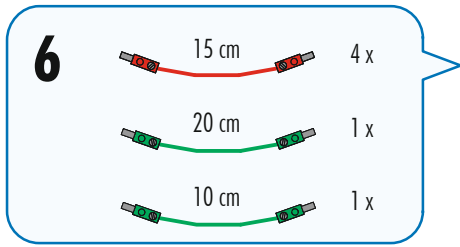


4  45 1x  1x  1x



5  2x  2x

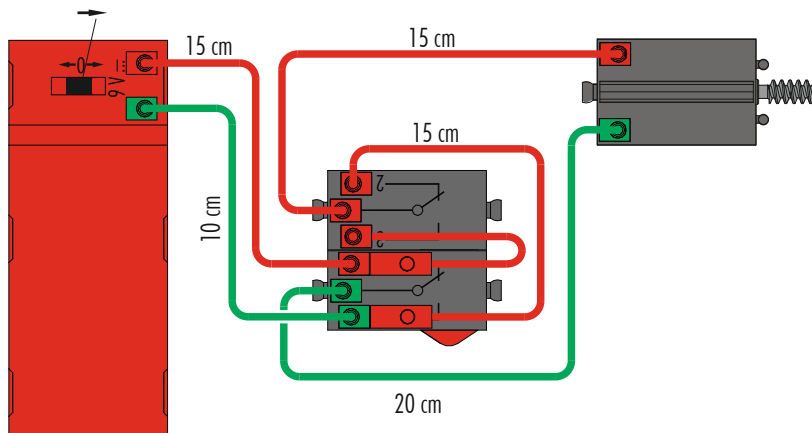




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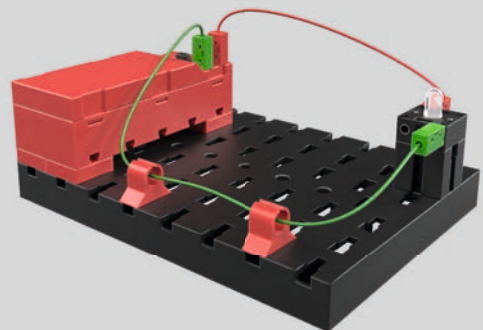
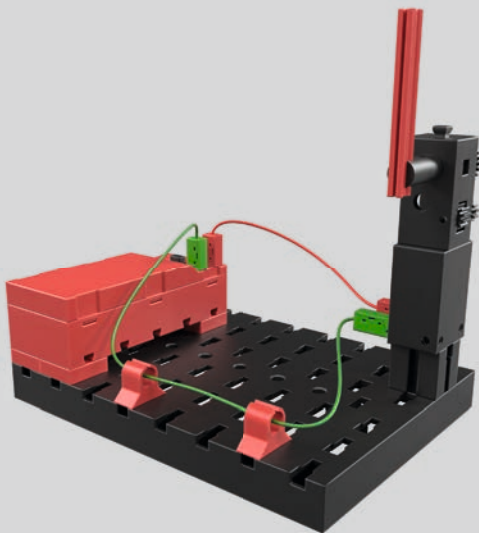
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电路图



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9 Models