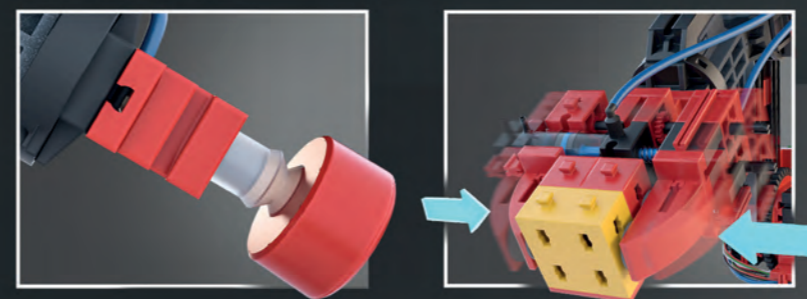
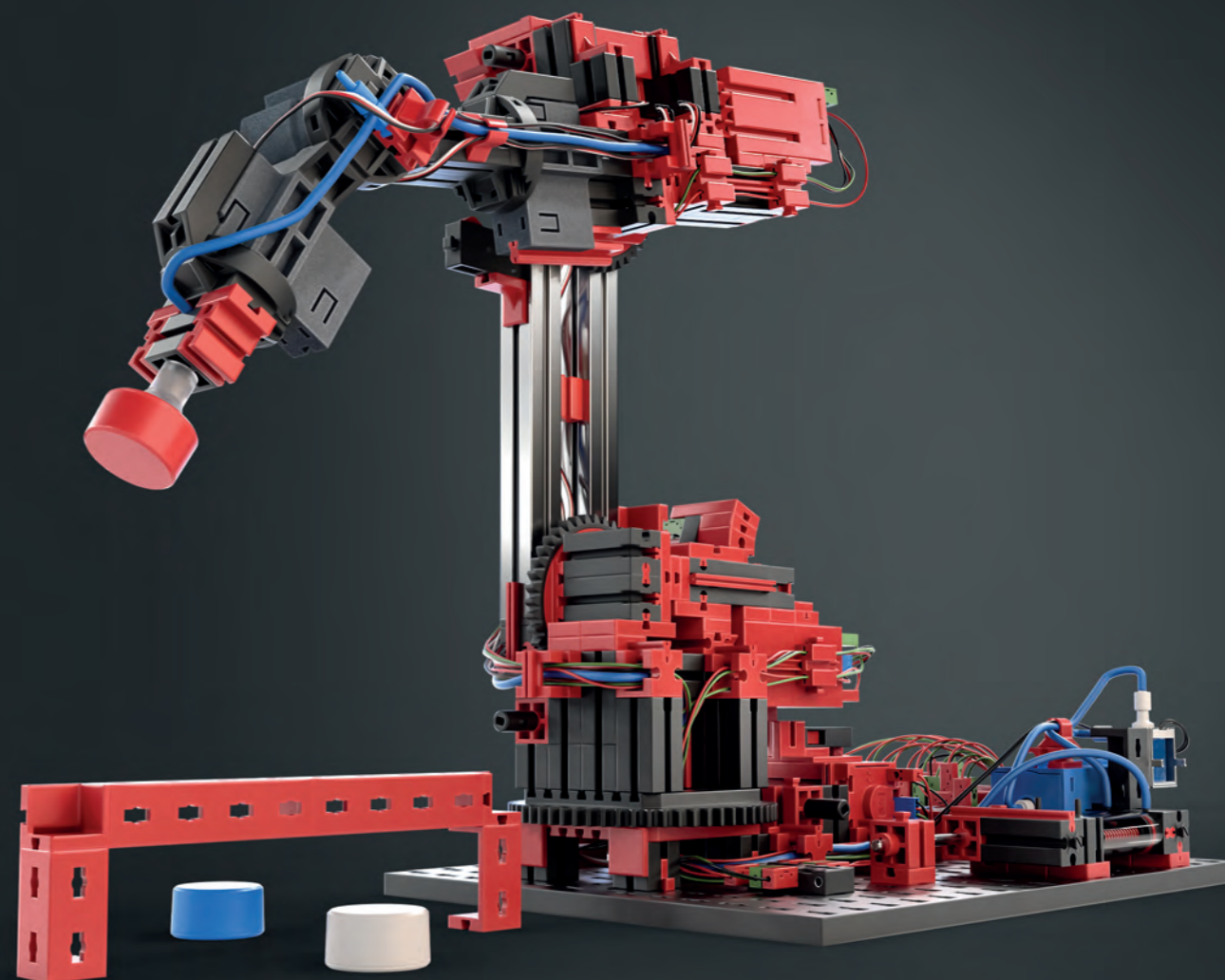


204160 · 11/23 · Co. · Printed in Germany · Technische Änderungen vorbehalten · Subject to technical modifications



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 ADD ON: **Industrial Robots**

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# ROBOTICS ADD ON: **Industrial Robots**

MODELS

**2**

**■ Software und didaktisches Begleitmaterial:**

Auf dem fischertechnik eLearning Portal finden Sie:

- Installationshinweise zur ROBOPRO Coding App (iOS, Android, Windows, MacOS, Linux)
- Informationen zum TXT 4.0 Controller
- didaktische Begleitmaterialien für den Einsatz im Unterricht

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

**■ Software and accompanying pedagogical materials:**

On the fischertechnik eLearning Portal, you will find:

- Installation instructions for ROBOPRO Coding App (iOS, Android, Windows, MacOS, Linux)
- Information on the TXT 4.0 Controller
- Accompanying pedagogical materials for instructional use

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

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

Dans le portail d'E-apprentissage de fischertechnik, vous trouverez:

- Des consignes d'installation de l'application ROBOPRO Coding (iOS, Android, Windows, MacOS, Linux)
- Des informations sur le contrôleur TXT 4.0
- Du matériel didactique d'accompagnement pour une utilisation pendant les cours

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

**■ Software En didactisch begeleidingsmateriaal:**

Op het fischertechnik eLearning-portaal vindt u:

- Installatieaanwijzingen voor ROBOPRO coding app (iOS, Android, Windows, MacOS, Linux)
- Informatie over TXT 4.0 controller
- didactisch begeleidingsmateriaal voor gebruik in het onderwijs

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

**■ Software y material didáctico:**

En el portal eLearning de fischertechnik encontrará:

- Instrucciones de instalación para la aplicación de codificación ROBOPRO (iOS, Android, Windows, MacOS, Linux)
- Información sobre los controladores TXT 4.0
- Materiales didácticos para usarlos en las clases

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

**■ 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 TXT 4.0
- materiais de acompanhamento didático para a aplicação em exercícios

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

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

Sul portale di eLearning di fischertechnik potete trovare:

- Istruzioni per l'installazione di ROBOPRO Coding App (iOS, Android, Windows, MacOS, Linux)
- Informazioni sul controller TXT 4.0
- materiale didattico di accompagnamento da usare in classe

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

**■ Программное обеспечение и дидактические сопроводительные материалы:**

На обучающем интернет-портале компании fischertechnik вы найдете:

- Инструкции по установке приложения для программирования ROBOPRO (iOS, Android, Windows, MacOS, Linux)
- Информацию о контроллере TXT 4.0
- Дидактические сопроводительные материалы для использования на занятиях

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

**■ 软件和教学辅助材料：**

在 fischertechnik eLearning 在线学习门户网站上您可以找到：

- ROBOPRO Coding App (iOS、Android、Windows、MacOS、Linux) 的安装提示
- 有关 TXT 4.0 控制器的信息
- 课堂用教学辅助材料

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

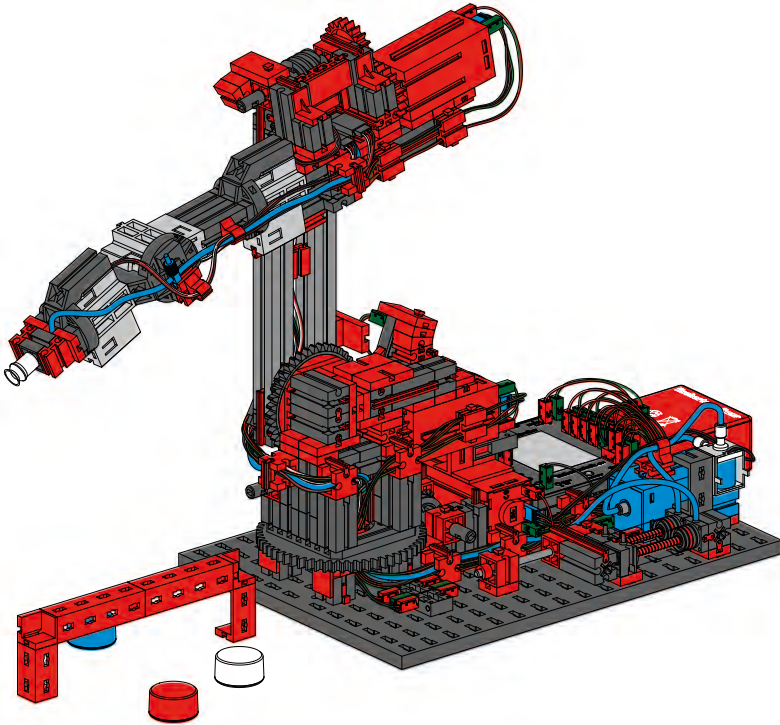
**Inhalt**  
**Contents**  
**Contenu**

**Inhoud**  
**Contenido**  
**Conteúdo**

**Contenuto**  
**Содержание**  
**目录**

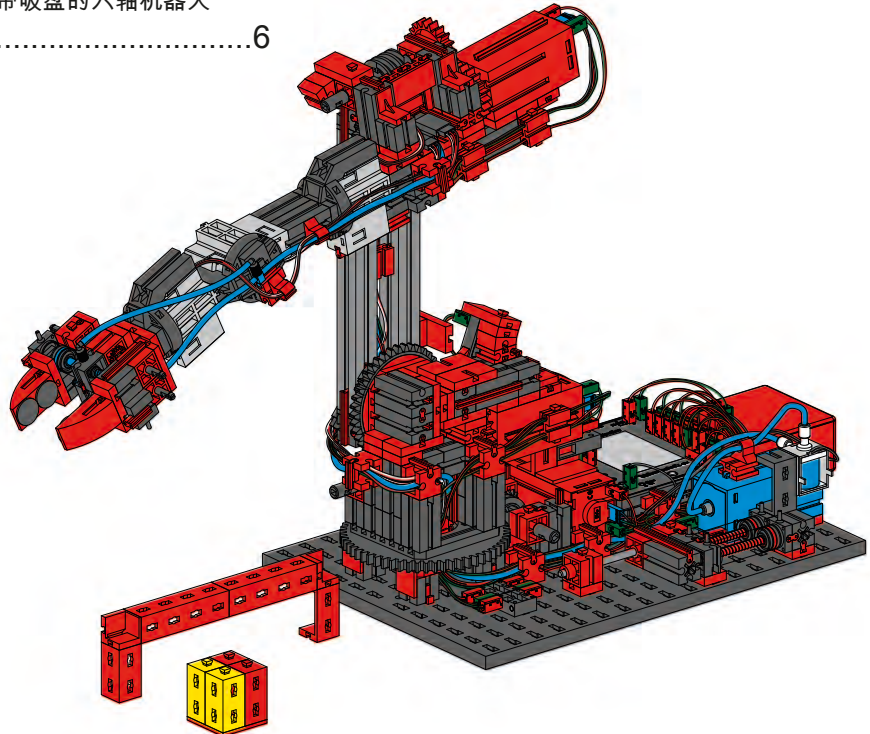
Einzelteilübersicht / Spare parts list / Liste des pièces détachées / Onderdelenoverzicht / Lista da piezas / Resumo de peça individual /  
Singoli componenti / Перечень деталей / 零件概览 ..... 2

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 ..... 3



**Sechssachsroboter mit Sauggreifer**  
**Six axis robot with vacuum gripper**  
**Robot six axes avec ventouse**  
**Robot met zes assen en zuignap**  
**Robot de seis ejes con ventosa**

**Robô de seis eixos com ventosa**  
**Robot a sei assi con ventosa**  
Шестиосевой робот с присоской  
带吸盘的六轴机器人  
..... 6



**Sechssachsroboter mit Greifzange**  
**Six axis robot with gripper**  
**Robot six axes avec pince de préhension**  
**Robot met zes assen en grijper**  
**Robot de seis ejes con pinza**

**Robô de seis eixos com pinça**  
**Robot a sei assi con pinza**  
Шестиосевой робот с захватным устройством  
带抓手的六轴机器人.....42

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

	31 040 1 x
	31 060 26 x
	31 061 21 x
	31 330 9 x
	31 390 1 x
	31 391 1 x
	31 642 1 x
	31 708 1 x
	31 982 70 x
	32 064 12 x
	32 071 3 x
	32 879 15 x
	32 881 18 x
	32 882 13 x
	33 582 4 x
	35 049 1 x
	35 061 1 x

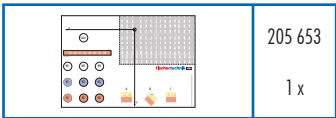
**Onderdelenoverzicht**  
**Lista da piezas**  
**Resumo de peça individual**

	35 063 5 x
	35 066 2 x
	35 072 3 x
	35 073 1 x
	35 327 1 x
	35 328 3 x
	36 299 2 x
	36 334 4 x
	36 915 3 x
	36 920 1 x
	37 034 1 x
	37 237 8 x
	37 238 15 x
	37 468 16 x
	37 636 8 x
	37 783 1 x
	38 216 2 x

	38 240 3 x
	38 241 3 x
	38 246 2 x
	38 259 1 x
	38 423 5 x
	38 428 14 x
	121 470 1 x
	121 640 1 x
	122 363 1 x
	122 641 2 x
	127 472 4 x
	132 875 2 x
	133 027 2 x
	133 028 1 x
	137 677 5 x
	153 422 1 x
	163 439 2 x

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

	168 961 2 x
	174 622 1 x
	174 623 1 x
	174 624 1 x
	174 625 1 x
	174 626 1 x
	174 627 1 x
	181 583 11 x
	181 584 13 x
	203 654 2 x
	203 655 2 x
	203 656 3 x
	203 657 3 x
	203 658 3 x
	203 659 3 x
	203 660 3 x
	203 863 2 x



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

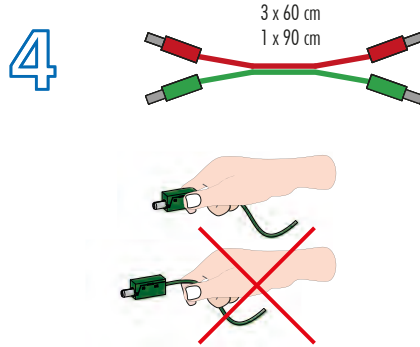
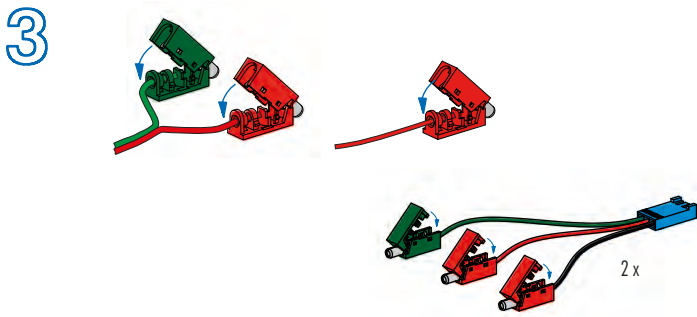
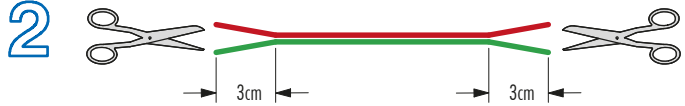
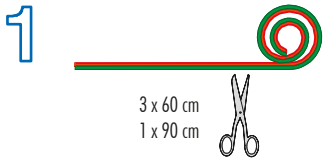
**Montagetipps**  
**Consejos para el montaje**  
**"Dicas" para montagem**

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

Kabel und Stecker  
 Plugs and cables  
 Fiches et des câbles

Stekkers en cables  
 Enchufes en cables  
 Cabos e contatos

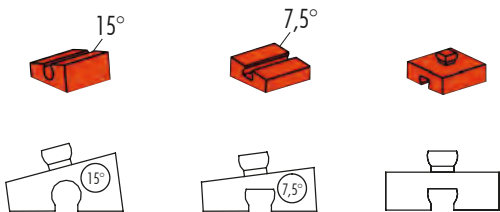
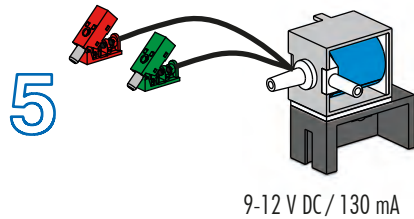
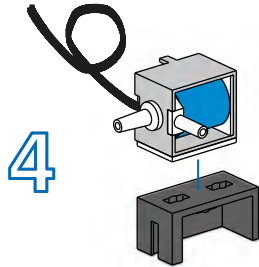
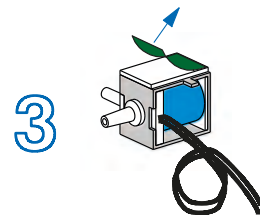
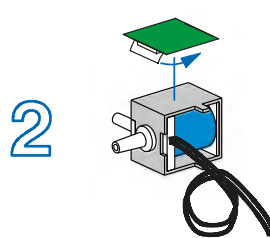
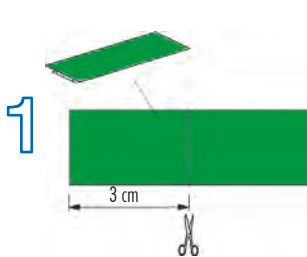
Cavi e connettori  
 Провода и штекеры  
 电缆和插头



3/2-Wege-Magnetventil  
 3/2 Way Magnetic Valve  
 Distributeur électromagnétique à 3/2 voies

3/2-weg magneetklep  
 Válvula electromagnética de 3/2 vías  
 Válvula magnética de 3/2 vias

Distributore elettromagnetico a 3/2 vie  
 3/2-ходовой электромагнитный клапан  
 两位三通电磁阀

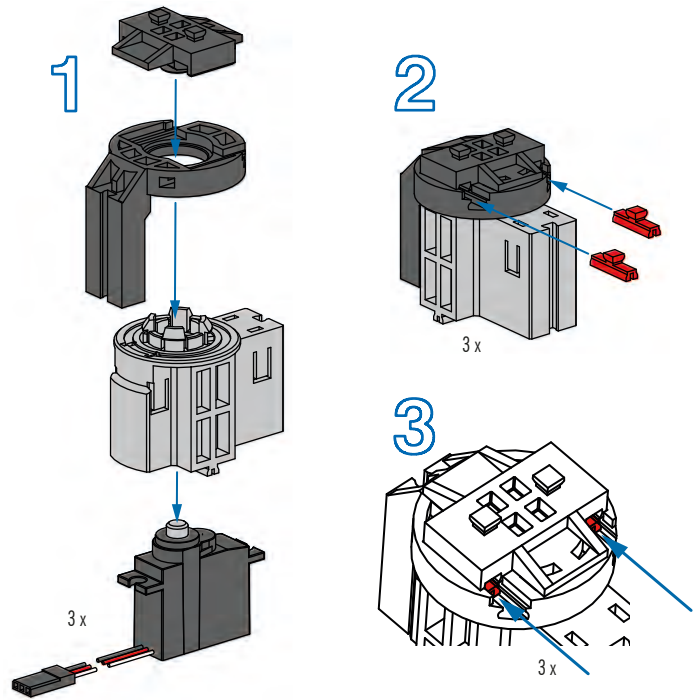


Digital servo 4,8 V / 6,0 V  
Digital servo 4,8 V / 6,0 V  
Servo digital 4,8 V / 6,0 V

Digitaal servo 4,8 V / 6,0 V  
Servo digital 4,8 V / 6,0 V  
Servo digital 4,8 V / 6,0 V

Servo digitale 4,8 V / 6,0 V  
Цифровые сервоприводы  
数字伺服

- TXT 4.0 Controller einschalten - Servo einstecken - Servo bewegt sich in Mittelstellung - Servo wie in Abbildung dargestellt einbauen.
- Switch on TXT 4.0 Controller - Plug in Servo - Servo moves to center position - Install servo as shown in illustration.
- Allumez le contrôleur TXT 4.0 - Branchez le servo - Le servo se déplace en position centrale - Installez le bras du servo comme indiqué sur l'illustration.
- Schakel de TXT 4.0 Controller in - Steek servo in - De servo gaat naar de middenpositie - Installeer de servo zoals afgebeeld.
- Encienda el controlador TXT 4.0 - Enchufar servo - El servo se mueve a la posición central - Instala el brazo del servo se muestra en la ilustración.
- Ligue o Controlador TXT 4.0 - Conecte o servo - O servo move-se para a posição central - Instale o servo braço mostrado na ilustração.
- Accendere il controller TXT 4.0 - Inserire il servo - Il servo si sposta in posizione centrale - Installare il braccio del servo mostrato nell'illustrazione.
- ТВключите контроллер TXT 4.0 - Подключите сервопривод - Сервопривод перемещается в среднее положение - Установите рычаг сервопривода, как показано на рисунке
- TXT 4.0 Controller 开启 - 插入伺服器 - 舵机移动到中间位置 - 按图示安装舵机杆。



## 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

- 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 Produkt 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.
- 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 product.
  - 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.
- 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 produit.
  - 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.

- 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.
  - Leg de batterijen uit het product 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.
- Las pilas no recargables no pueden ser cargadas
  - Las pilas recargables sólo pueden ser cargadas por un adulto
  - Las pilas recargables deben ser extraídas del compartimento de pilas antes de que sean cargadas.
  - Las pilas deben ser colocadas con la polaridad correcta.
  - Las pilas descargadas deben ser extraídas del producto
  - 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.
- 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 produto.
  - 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.

- 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 prodotto 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.
- Не пытайтесь заряжать перезаряжаемые батареи.
  - 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 коротко 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.
- 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。
  - 未充电的电池必须从模型中取出
  - 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。

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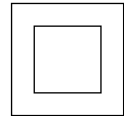
- Das Produkt darf nur mit einer der folgenden fischertechnik Energiequellen benutzt werden: Power Set oder Art.-Nr.: 35537 Accu Pack 8,4V.
- The product may only be used with one of the following fischertechnik energy sources: Power Set or Art No.: 35537 Accu Pack 8.4V. You are not allowed to use 9V NiMH accu packs in this product.
- L'utilisation de ce produit n'est permis qu'avec l'une des sources d'énergie fischertechnik suivantes: Power Set ou Art. n° : 35537 pack d'accumulateurs 8,4 volts.
- Het product mag uitsluitend met een van de volgende fischertechnik energiebronnen worden gebruikt: art.nr.: Power Set of art.nr.: 35537 accupack 8,4V
- El producto se debe utilizar únicamente con una de las siguientes fuentes de energía:

- Power Set o Art. No. 35537 paquete acumulador de 8,4V.
- O produto somente pode ser utilizado com uma das seguintes fontes de energia da fischertechnik: Power Set ou art. n°: 35537 Bloco de bateria de 8,4V.
- Questo prodotto può essere utilizzato solo con le seguenti fonti di energia fischertechnik: Power Set oppure cod. prod.: 35537 confezione batterie da 8,4V.
- Изделие можно использовать только с одним из следующих источников электропитания от fischertechnik: блок питания (арт. 505283) или улятор 8,4В (арт. 35537)
- 该商品只允许使用如下的慧鱼 (fischertechnik) 电源: 货号: 135719, 9V DC电池盒 货号: 35537, 8.4V 电池 (Accu Pack)

- Achtung! Verletzungsgefahr an Bauteilen mit funktionsbedingten scharfen Kanten und Spitzen!
- Caution! Be careful not to hurt yourself on components with sharp or pointed edges!
- Attention! Risque de blessure sur les éléments comportant des arêtes et o pointes vives indispensables au bon fonctionnement!
- Let op! U kunt zich bezeren aan bouwstenen met scherpe randen of punten!
- Atención! ¡Cuidado, no te hagas daño con los componentes con bordes afilados o puntiagudos!

- Atenção! Perigo de ferimentos em peças componentes com cantos vivos e pontas obrigatórios para o funcionamento!
- Attenzione! Pericolo di lesioni dovute a componenti con spigoli vivi e punte per motivi funzionali!
- Будьте осторожны! Об острые края деталей и и наконечники можно порезаться!
- 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!

- 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 symbol.
- 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。

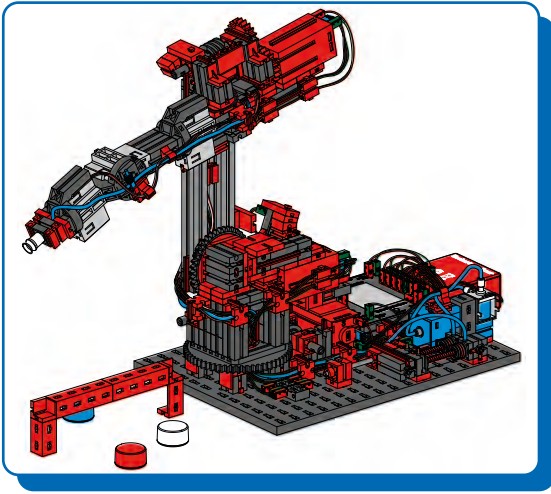


- Alle Einzelteile, insbesondere bewegliche Teile sind falls notwendig zu warten und zu reinigen.
- All components, especially moving parts, should be maintained and cleaned as necessary.
- Toutes les pièces détachées et en particulier les pièces mobiles, sont, si nécessaire, à entretenir et à nettoyer.
- Alle onderdelen, vooral de bewegende delen, kunnen, indien noodzakelijk, onderhouden en gereinigd worden.
- Es necesario limpiar y mantener en buen estado todas las diferentes piezas - especialmente las piezas móviles.
- Caso necessário, todas as peças individuais, especialmente peças móveis, tem que ser submetidas à manutenção e ser limpas.
- Se necessario, tutti i singoli componenti, soprattutto le parti mobili, si devono eventualmente sottoporre a manutenzione e pulizia.
- Все детали, особенно подвижные, требуют ухода и чистки.
- 必要时应保养和清洁所有零件，尤指运动部件。



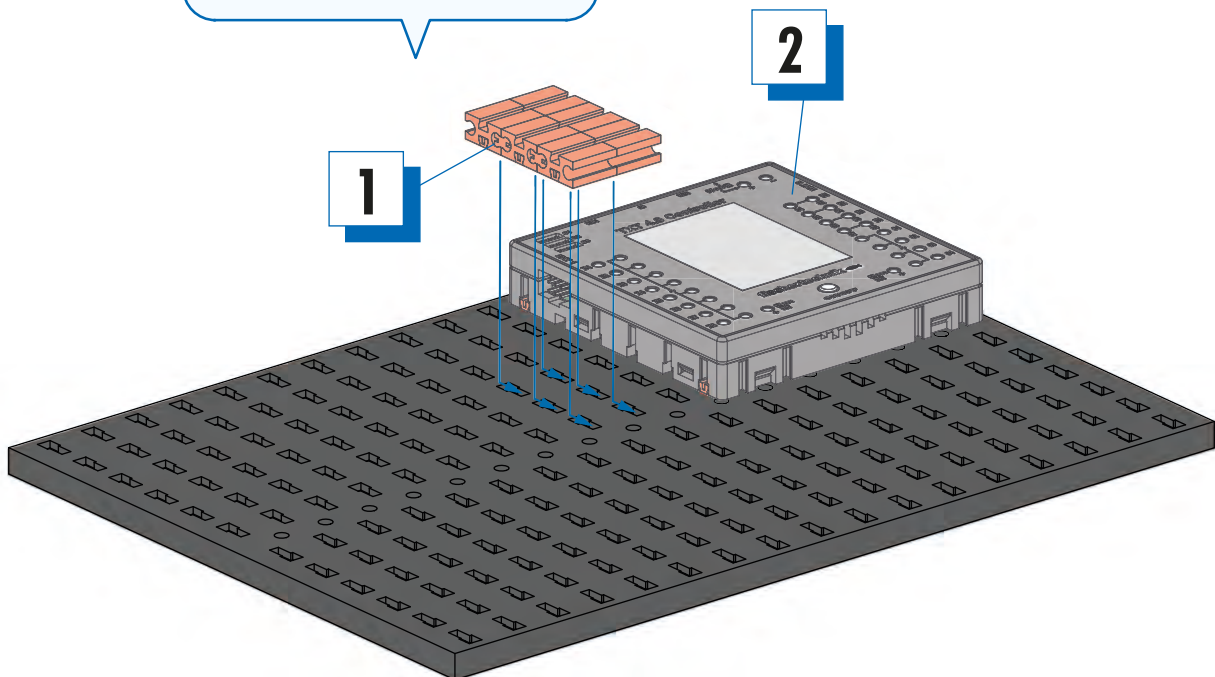
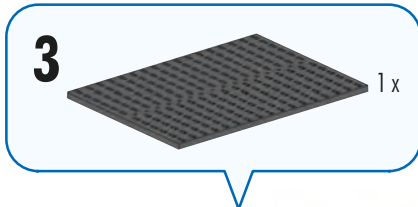
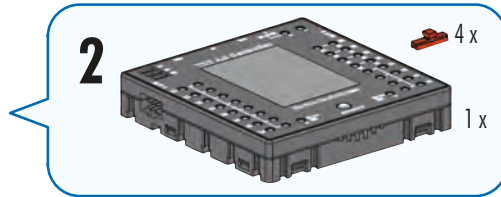
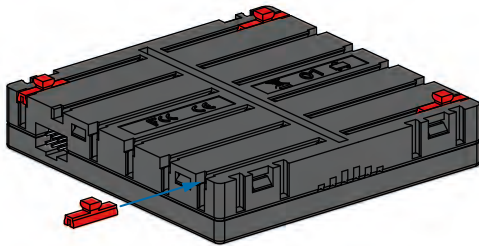
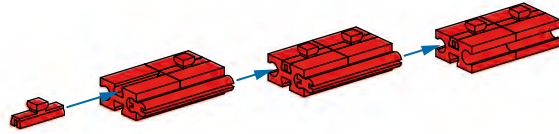
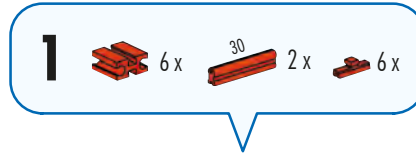
Hinweise zum Umweltschutz / Instructions for Environmental Protection / Remarques de protection de l'environnement / Bescherming van het milieu / Notas con respecto a la protección del medio ambiente / Instruções para a proteção do meio ambiente / Indicazioni sulla tutela ambientale / Указания по охране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

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

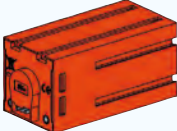



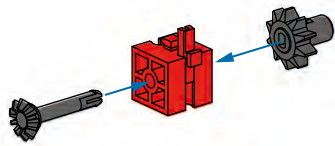
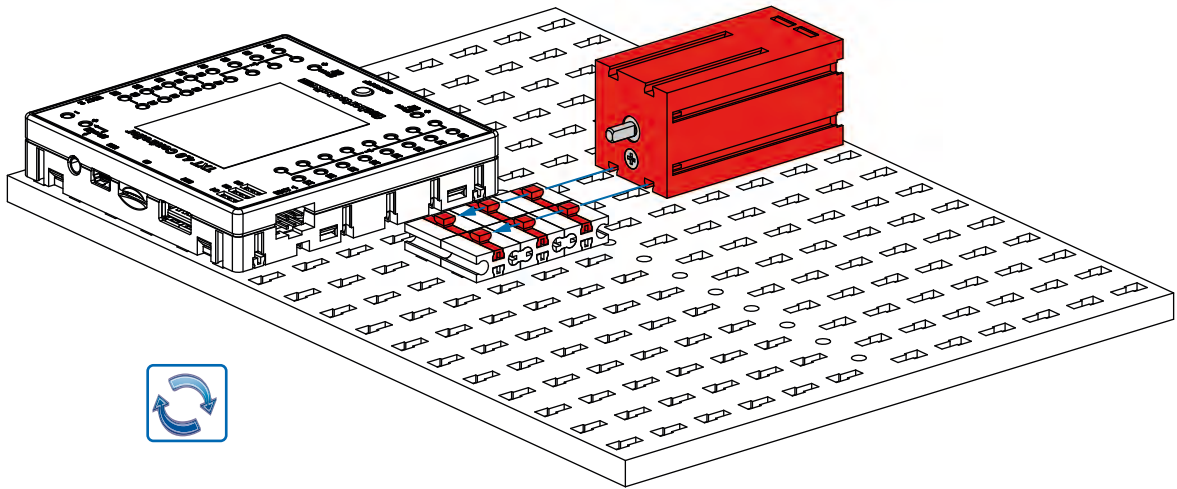
Sechssachsroboter mit Sauggreifer  
 Six axis robot with vacuum gripper  
 Robot six axes avec ventouse  
 Robot met zes assen en zuignap  
 Robot de seis ejes con ventosa

Robô de seis eixos com ventosa  
 Robot a sei assi con ventosa  
 Шестиосевой робот с присоской  
 带吸盘的六轴机器人




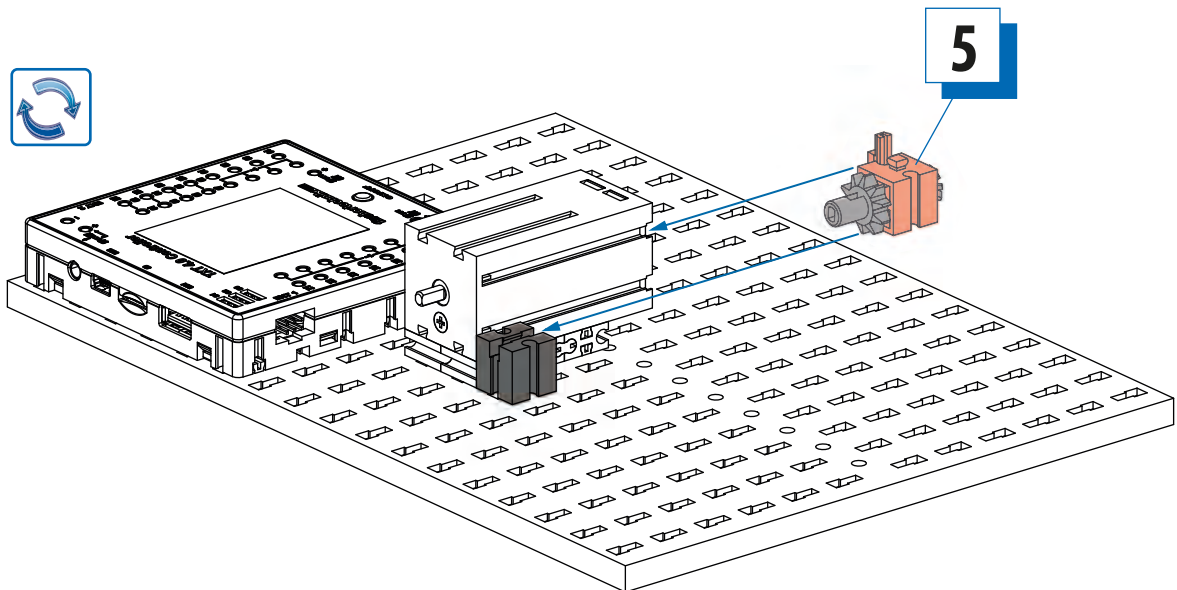


**4**  1x  6x



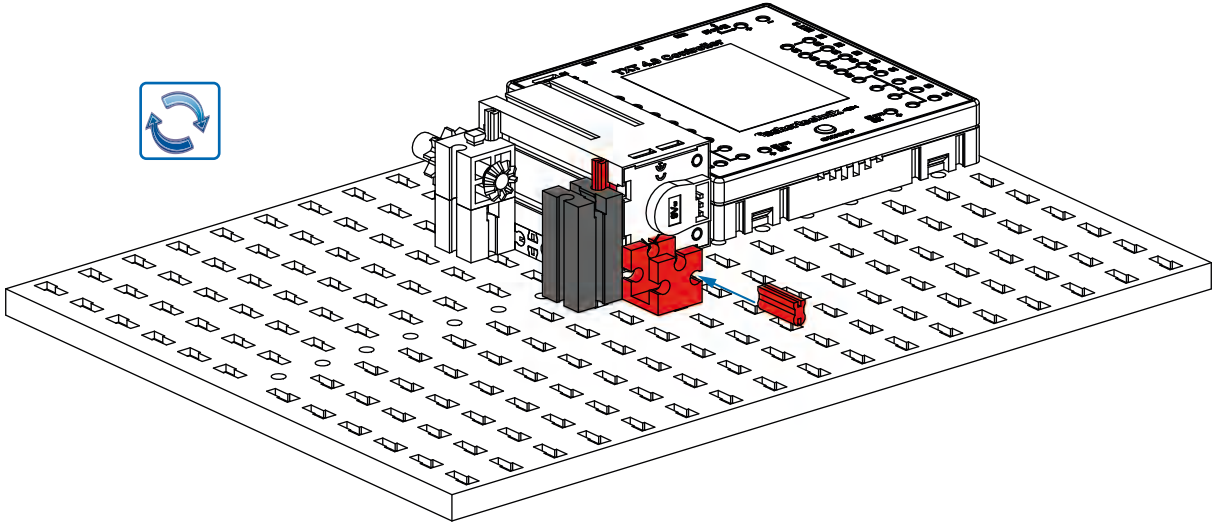
**5**  1x  1x  1x  1x

**6**  1x

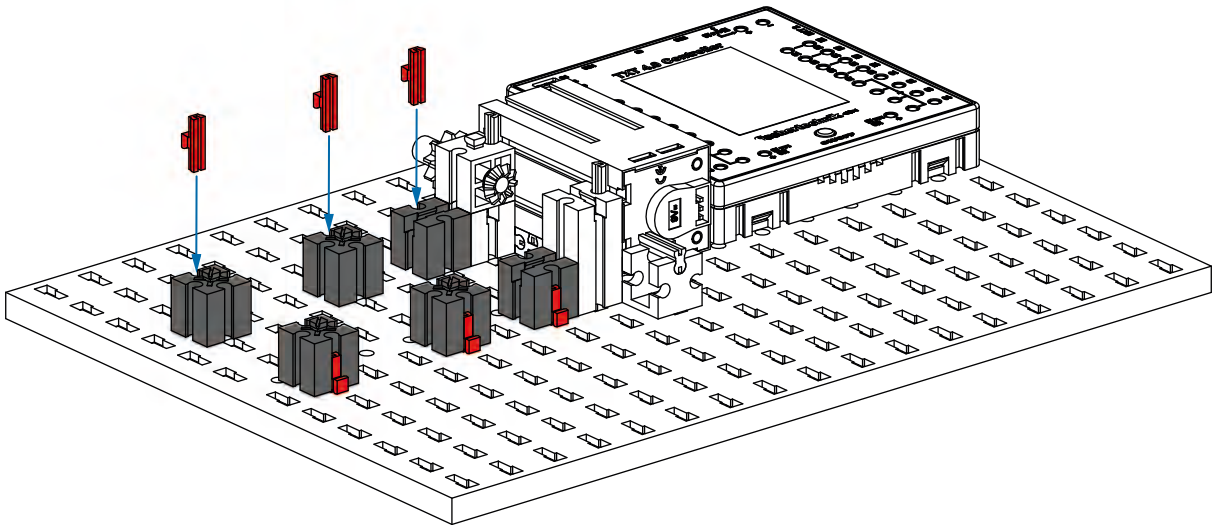


**5**

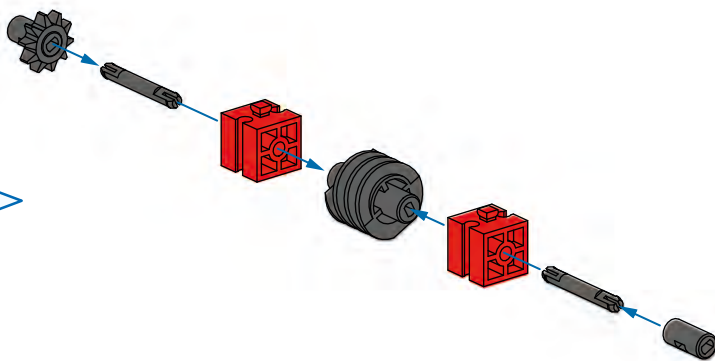
- 7**
- 15 1x
  - 1x
  - 1x
  - 1x



- 8**
- 6x
  - 4x
  - 2x

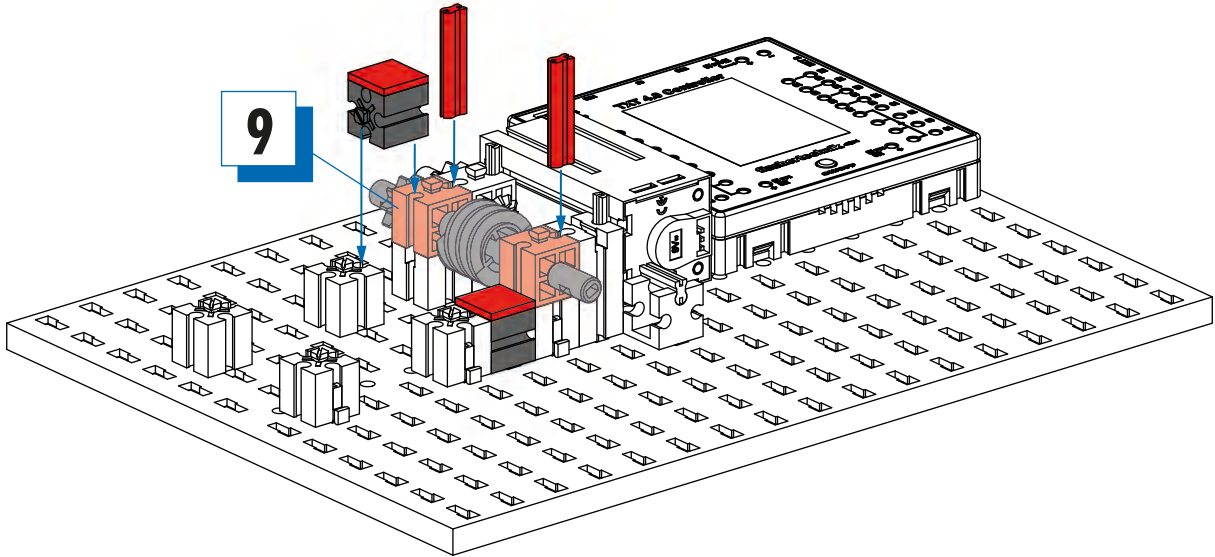


- 9**
- 30 mm
  - 1x
  - 30 2x
  - 2x
  - 1x
  - 1x



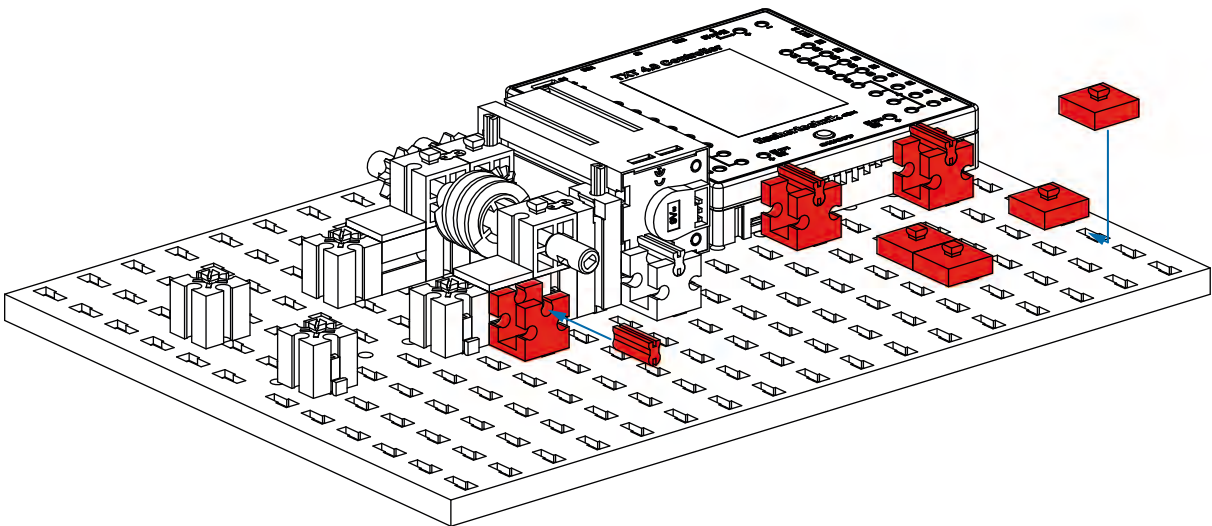
**10**

- 30 2 x
- 2 x
- 2 x



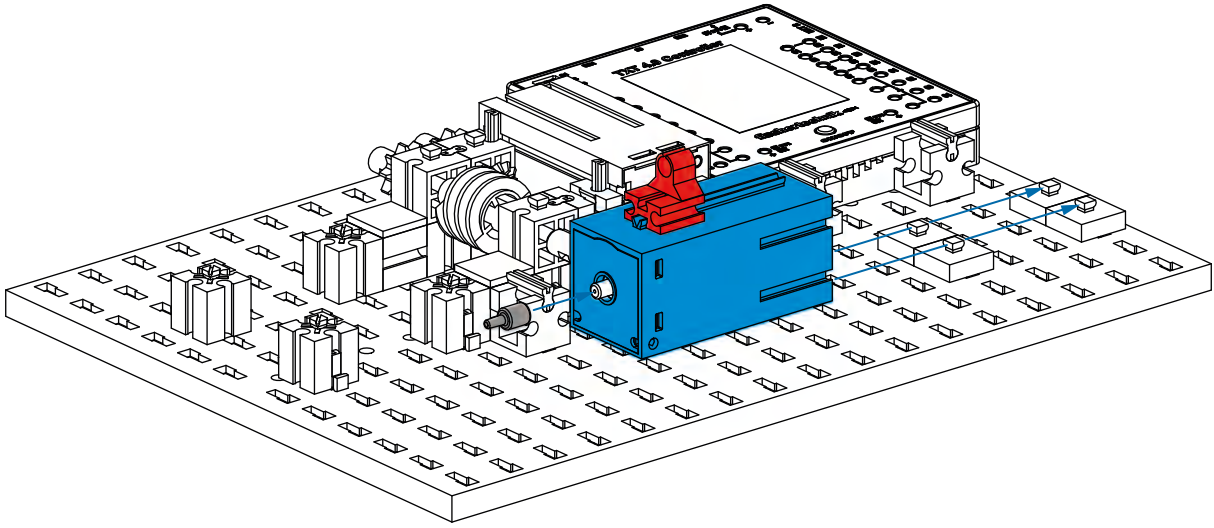
**11**

- 4 x
- 3 x
- 15 3 x



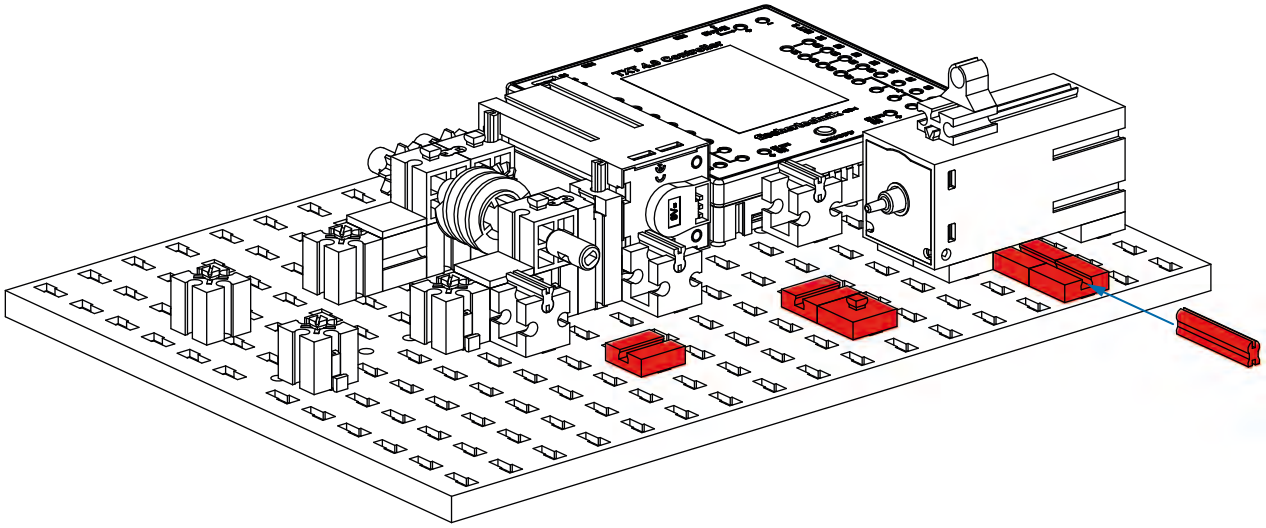
**12**

- 1x [Grey Pin]
- 1x [Blue Bracket]
- 1x [Red Pin]
- 1x [Red Pin]



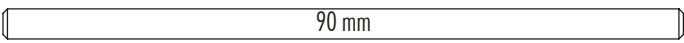
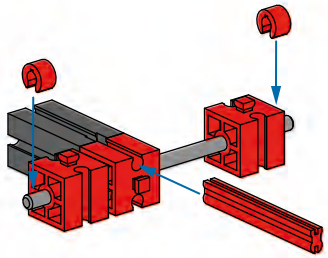
**13**

- 1x [Red Pin]
- 1x [Red Pin 30]
- 4x [Red Pin]

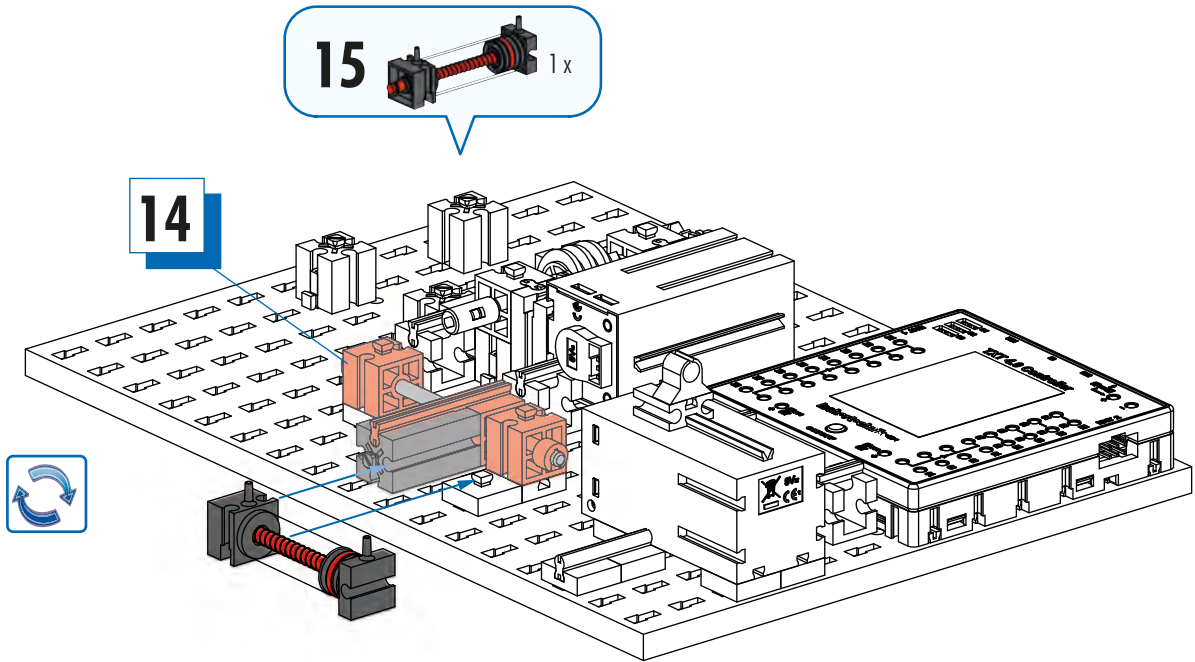


**14**

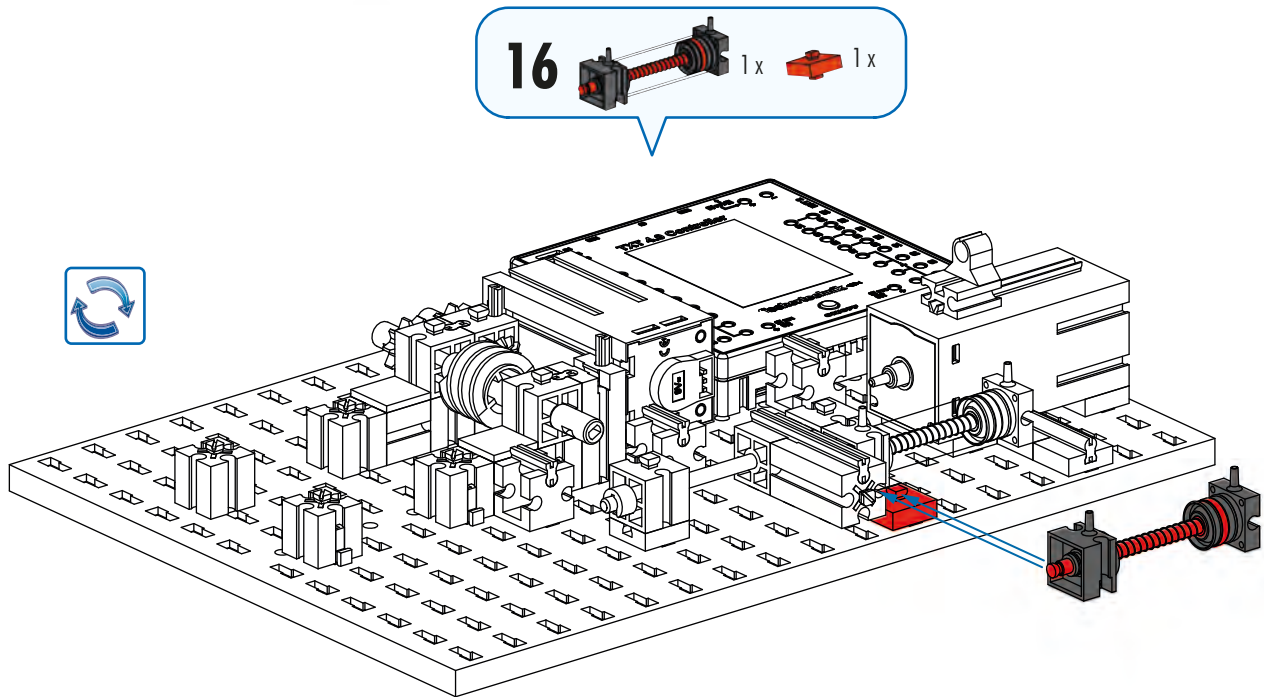
- 1x [Grey Pin]
- 1x [Red Pin 45]
- 3x [Red Pin]
- 2x [Red Pin]
- 1x [Grey Pin 90]



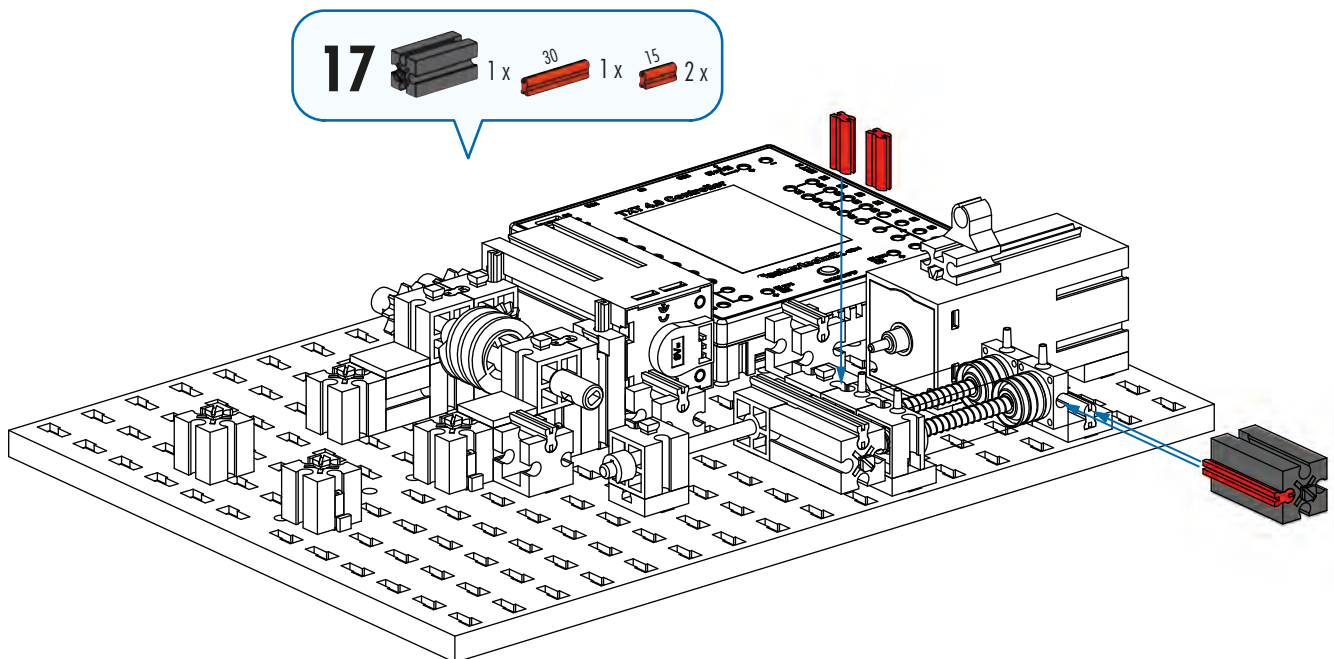
15 1x

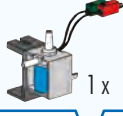



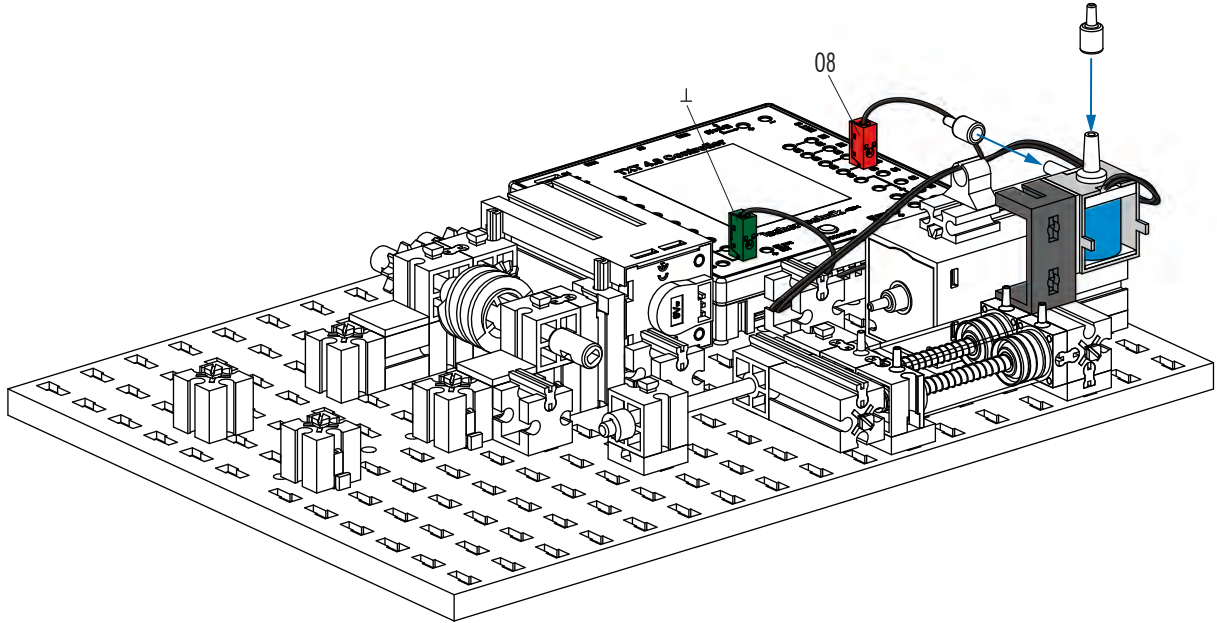
16 1x 1x






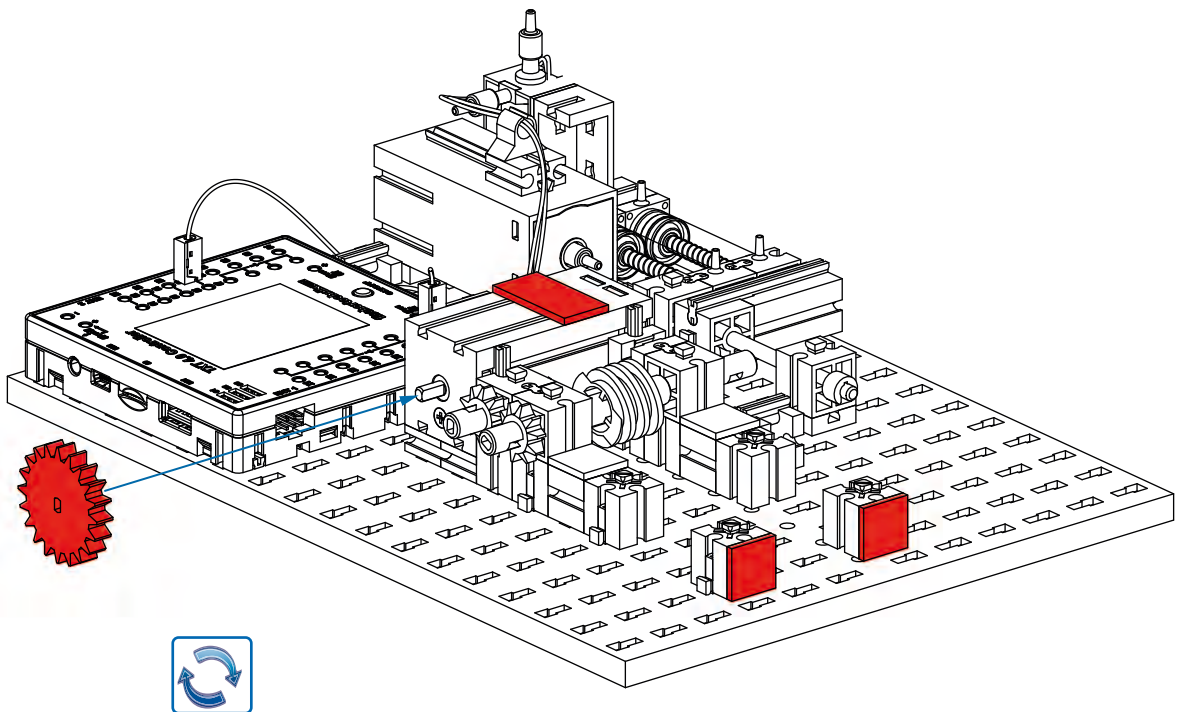
17 1x 30 1x 15 2x

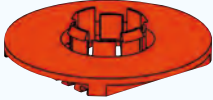




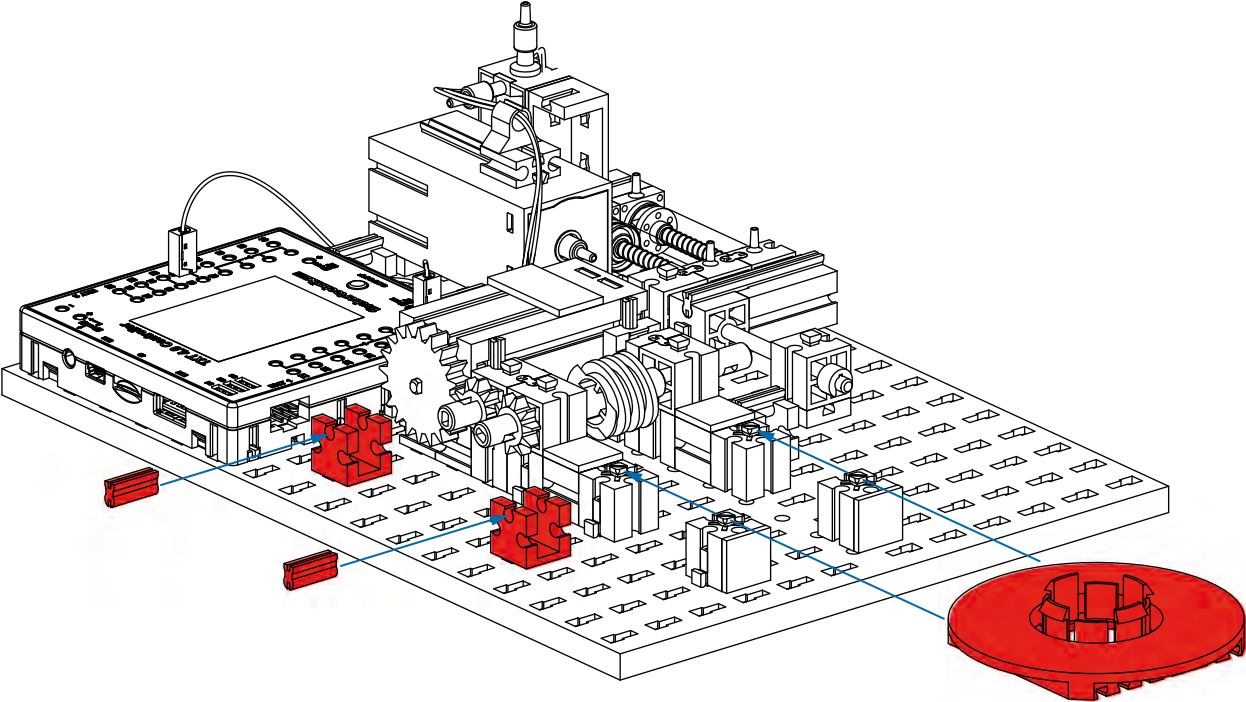
**18**  1x  2x

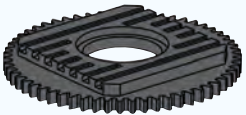



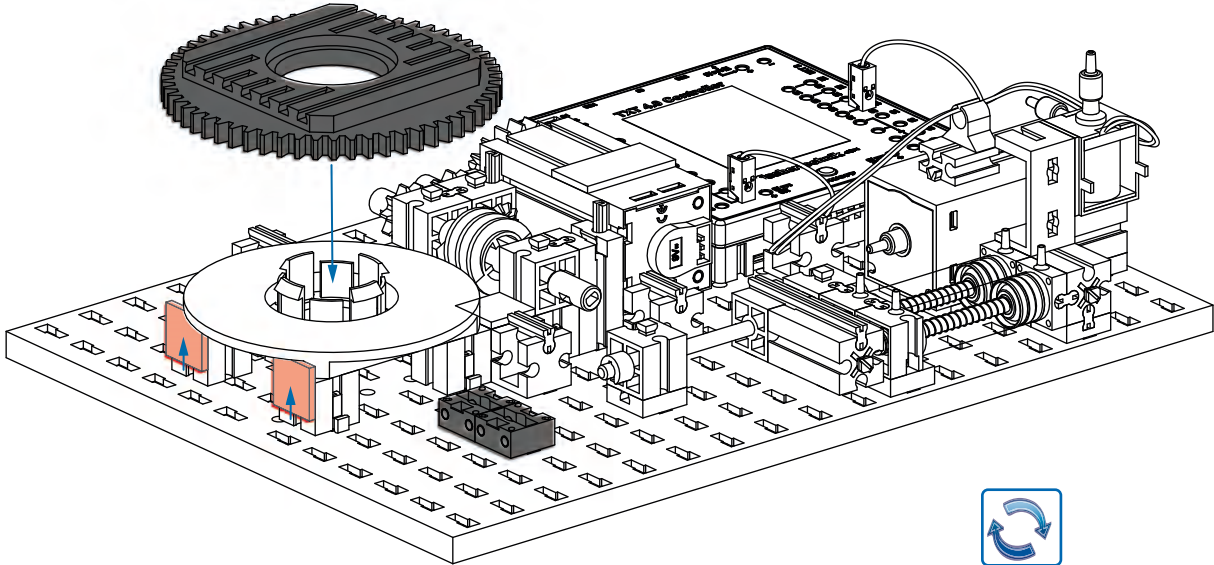
**19**  1x  2x  1x



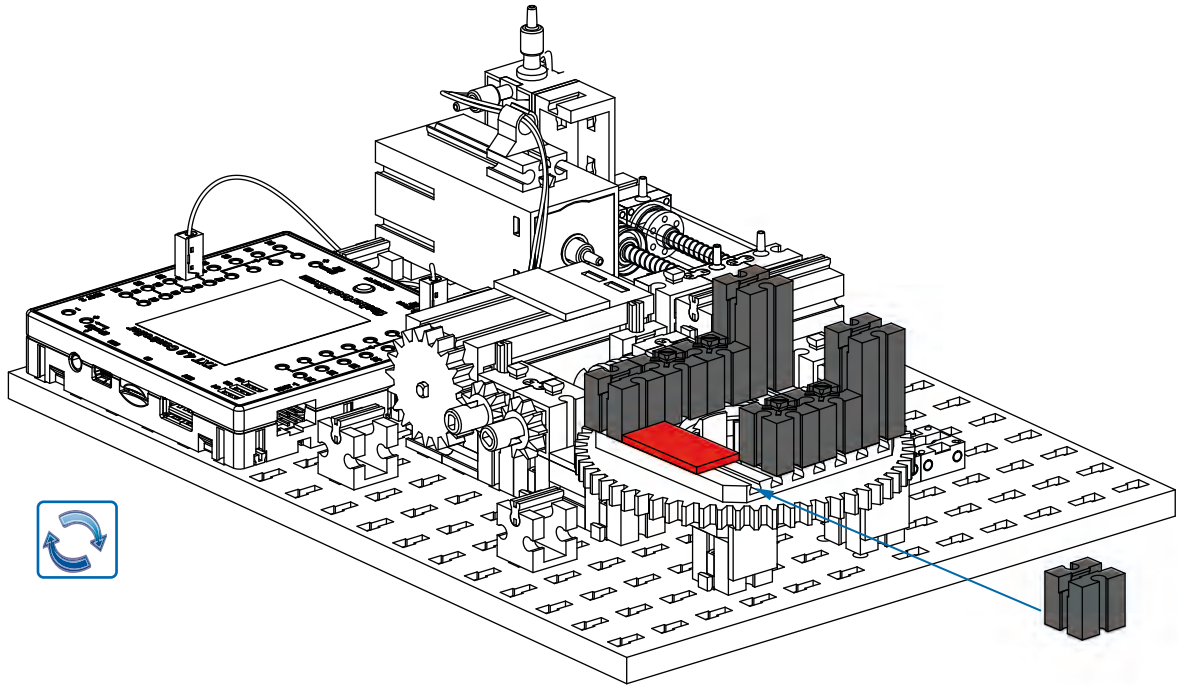
**20**  1x  2x  2x



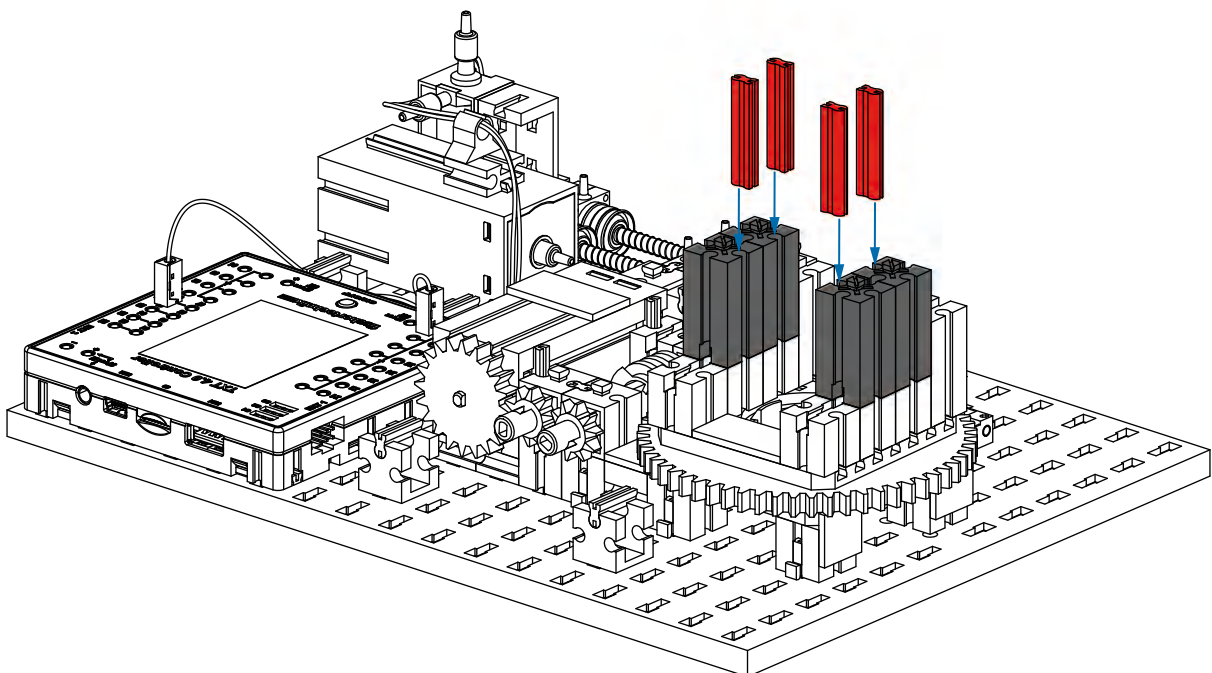
**21**  1x  2x



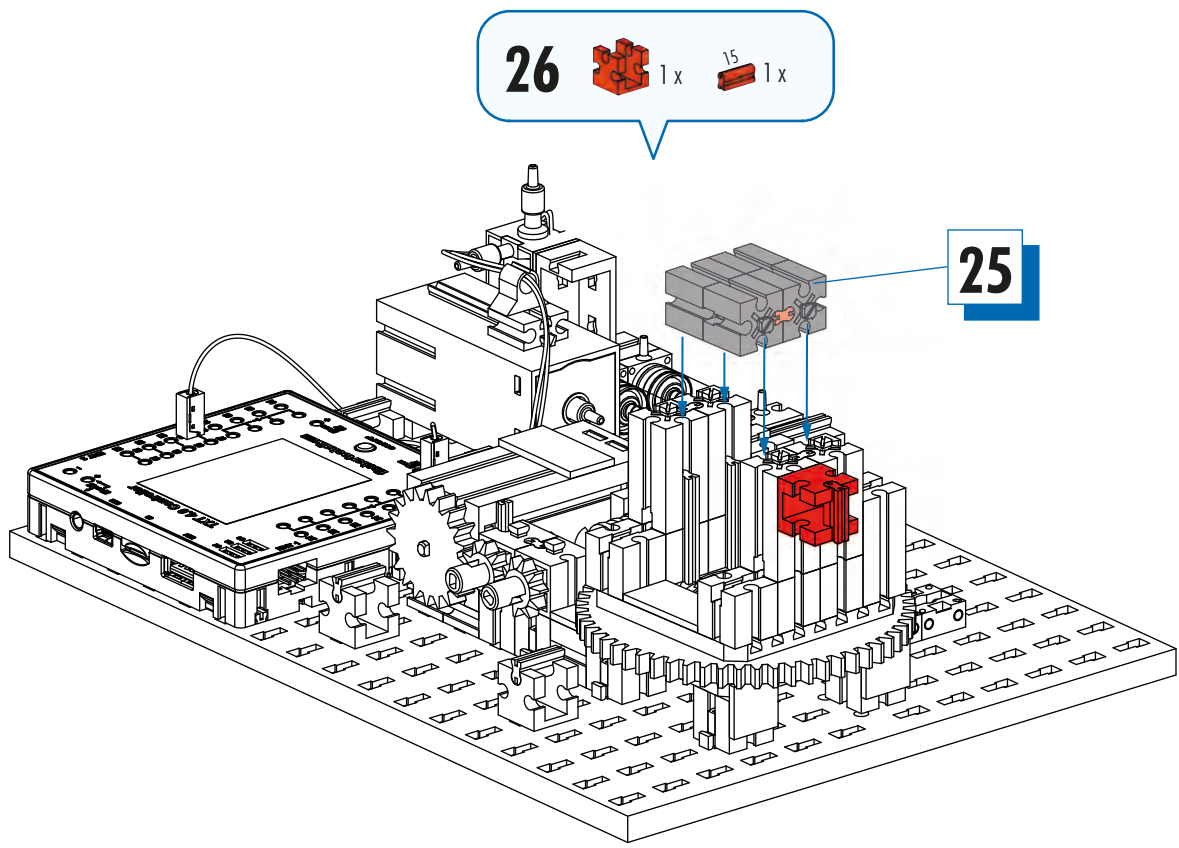
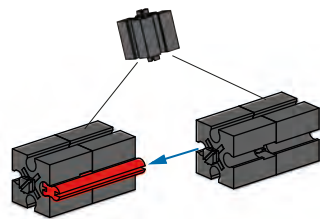
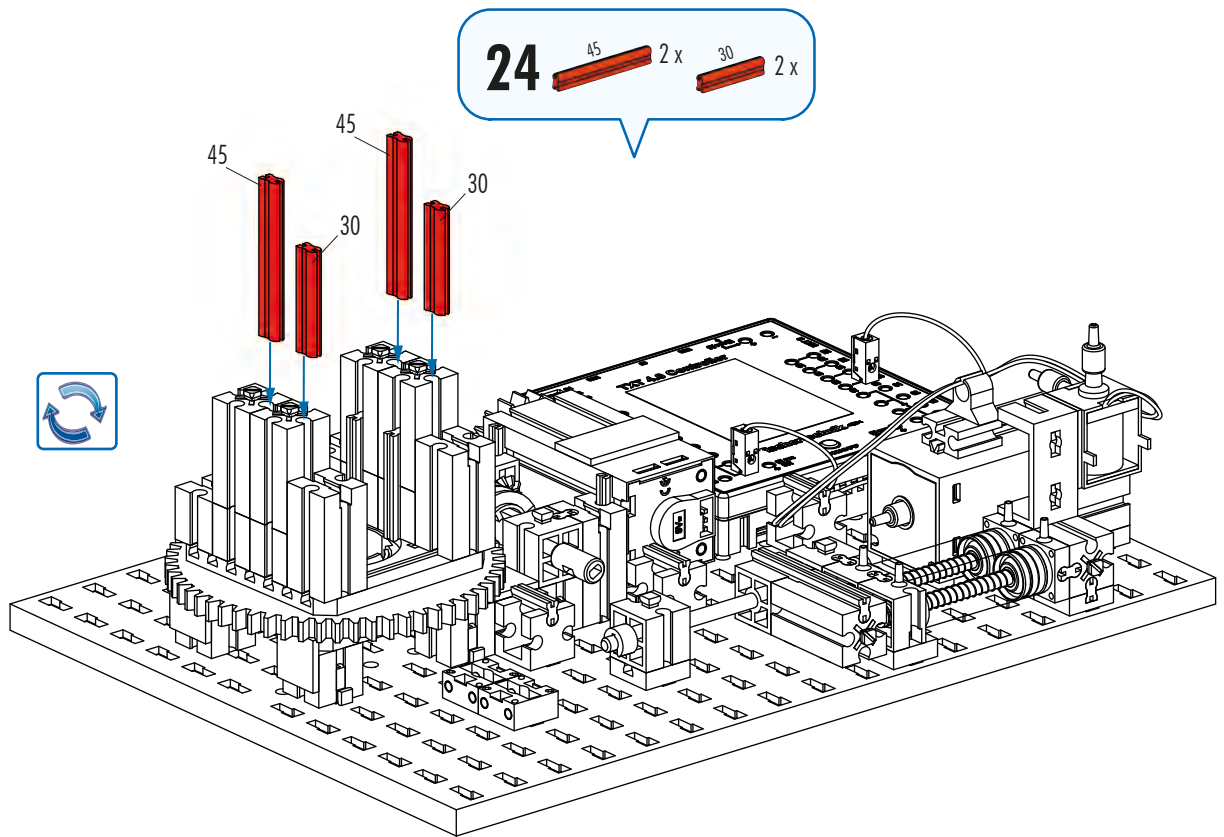
22 2x 1x 4x 2x







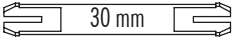
23 4x 30 4x

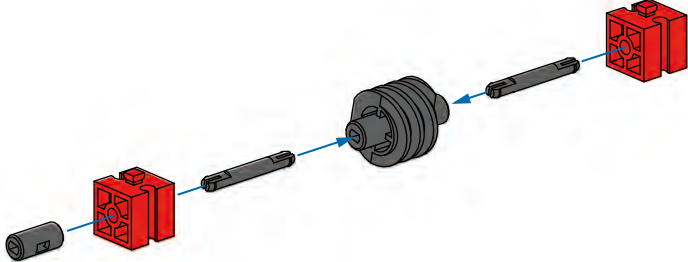






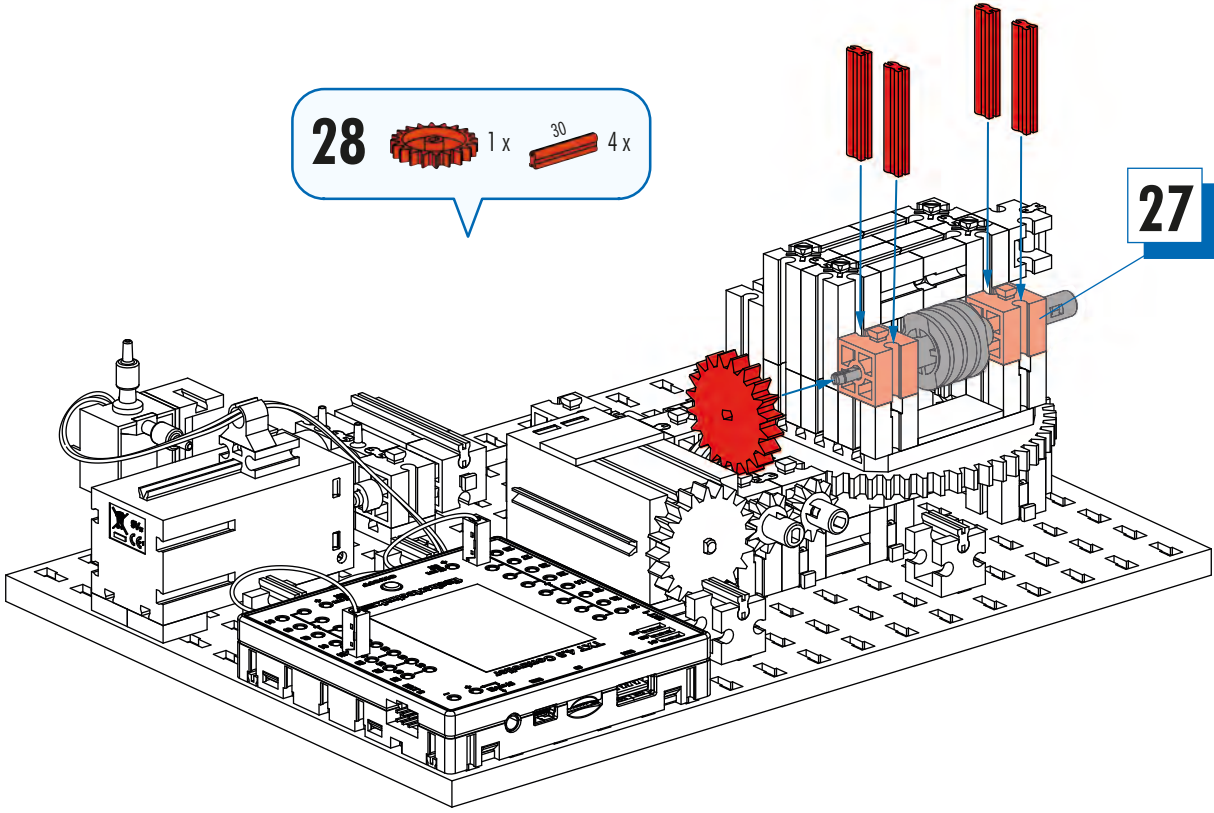






**27**  1x  2x  2x  1x

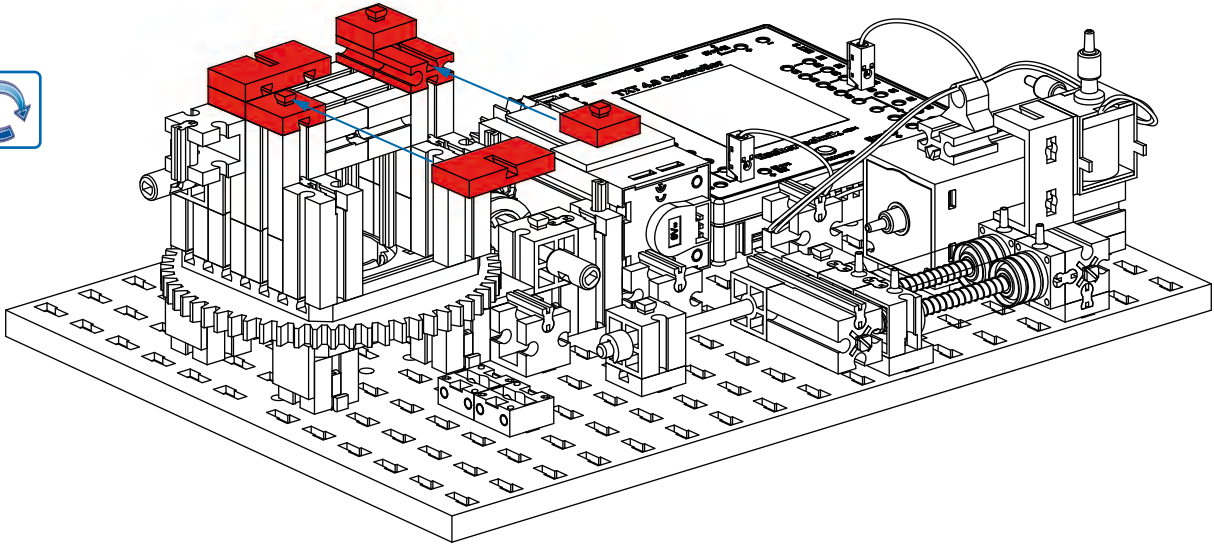
 30 mm







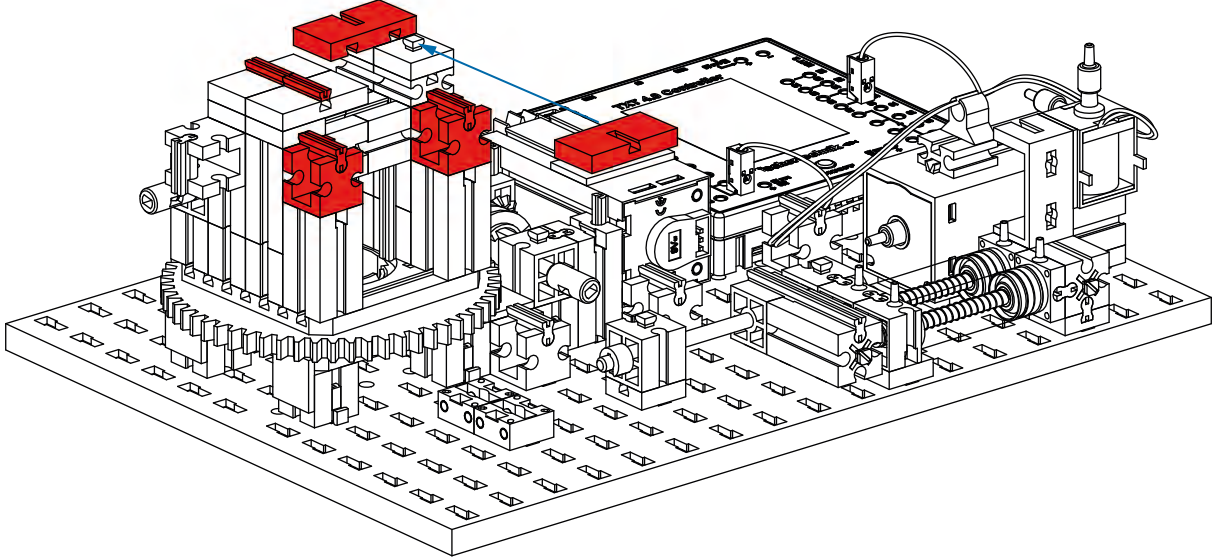
**28**  1x  4x






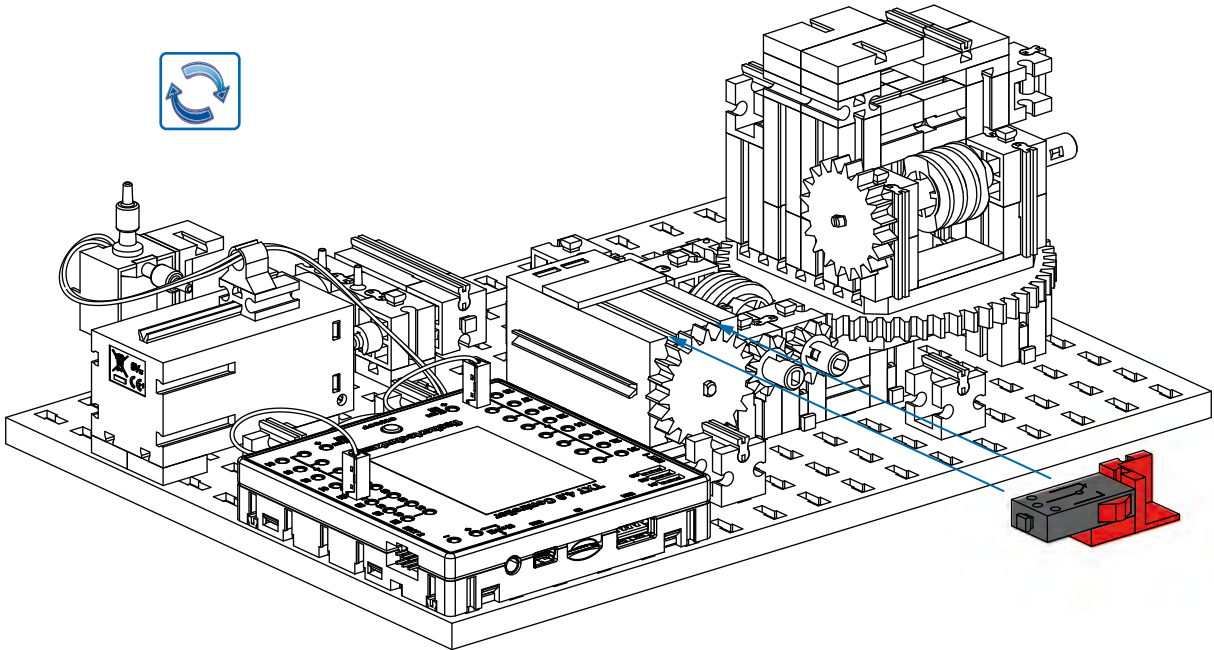
**29**  2x  2x  2x  2x







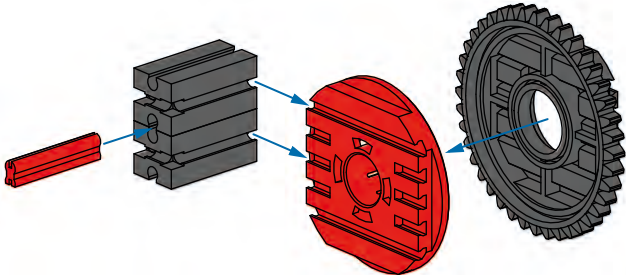
**30**  2x  2x  2x  2x

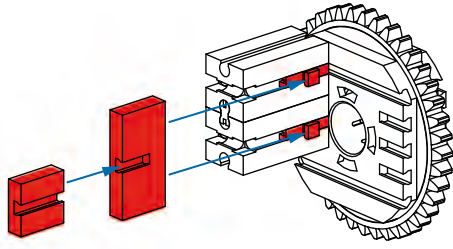





**31**  1x  1x  1x







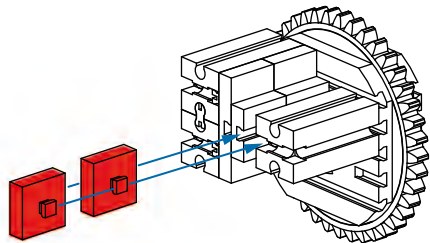
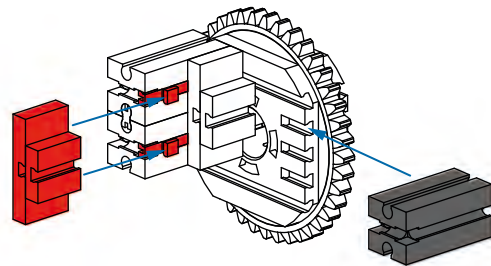
**32**  1x  2x  1x  1x





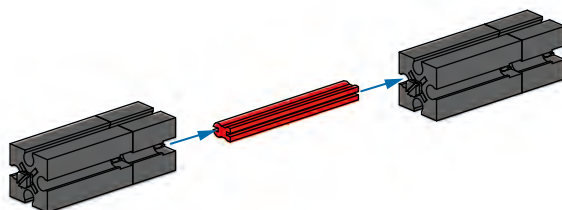
**33**  1x  1x  2x

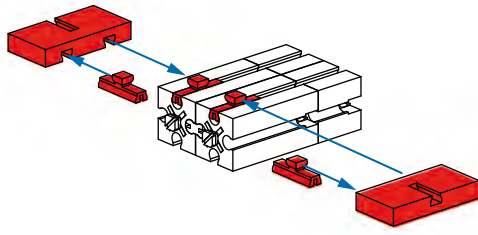
**34**  1x  1x  1x  2x





**35**  2x



**36**  2x  2x  45 1x

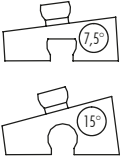
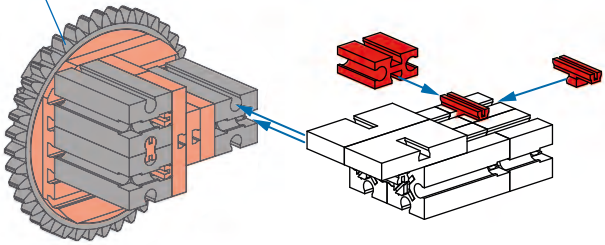










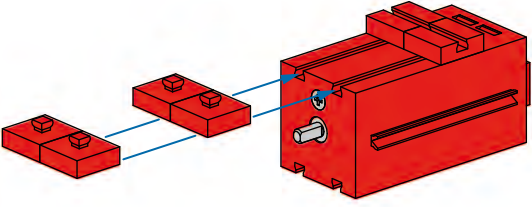
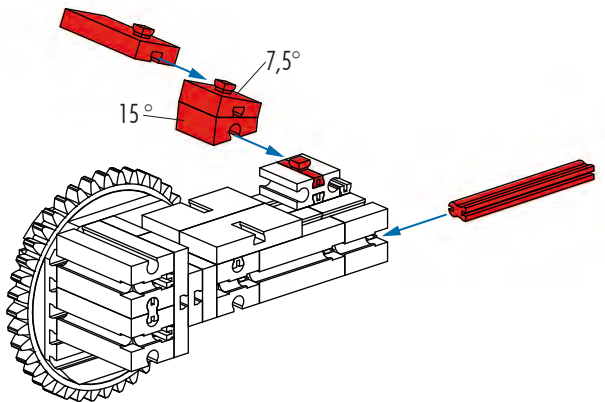
**37**  2x  4x

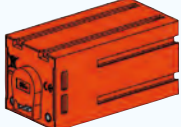


**35**




**38**  1x  2x

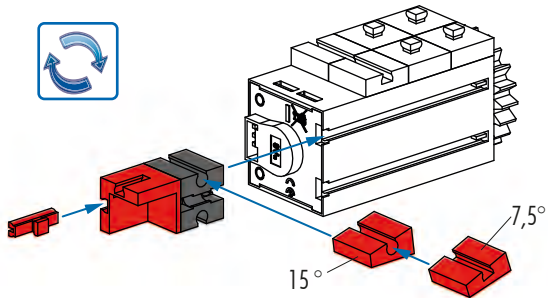
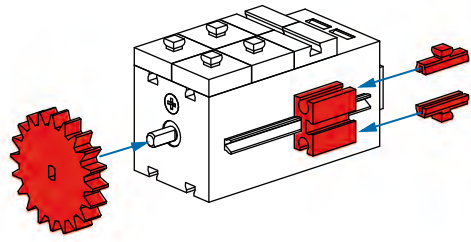







**39**  1x  1x  7.5° 1x  1x  15° 1x  45° 1x

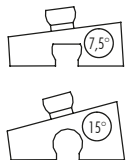





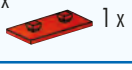

**40**  1x  4x  2x

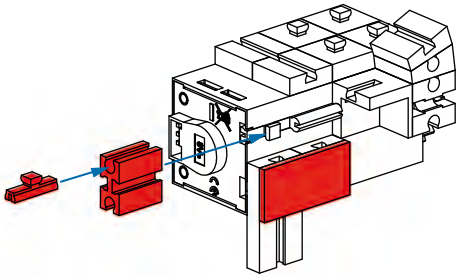
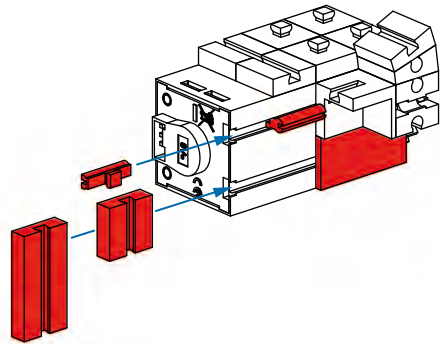
**41**  1x  1x  2x






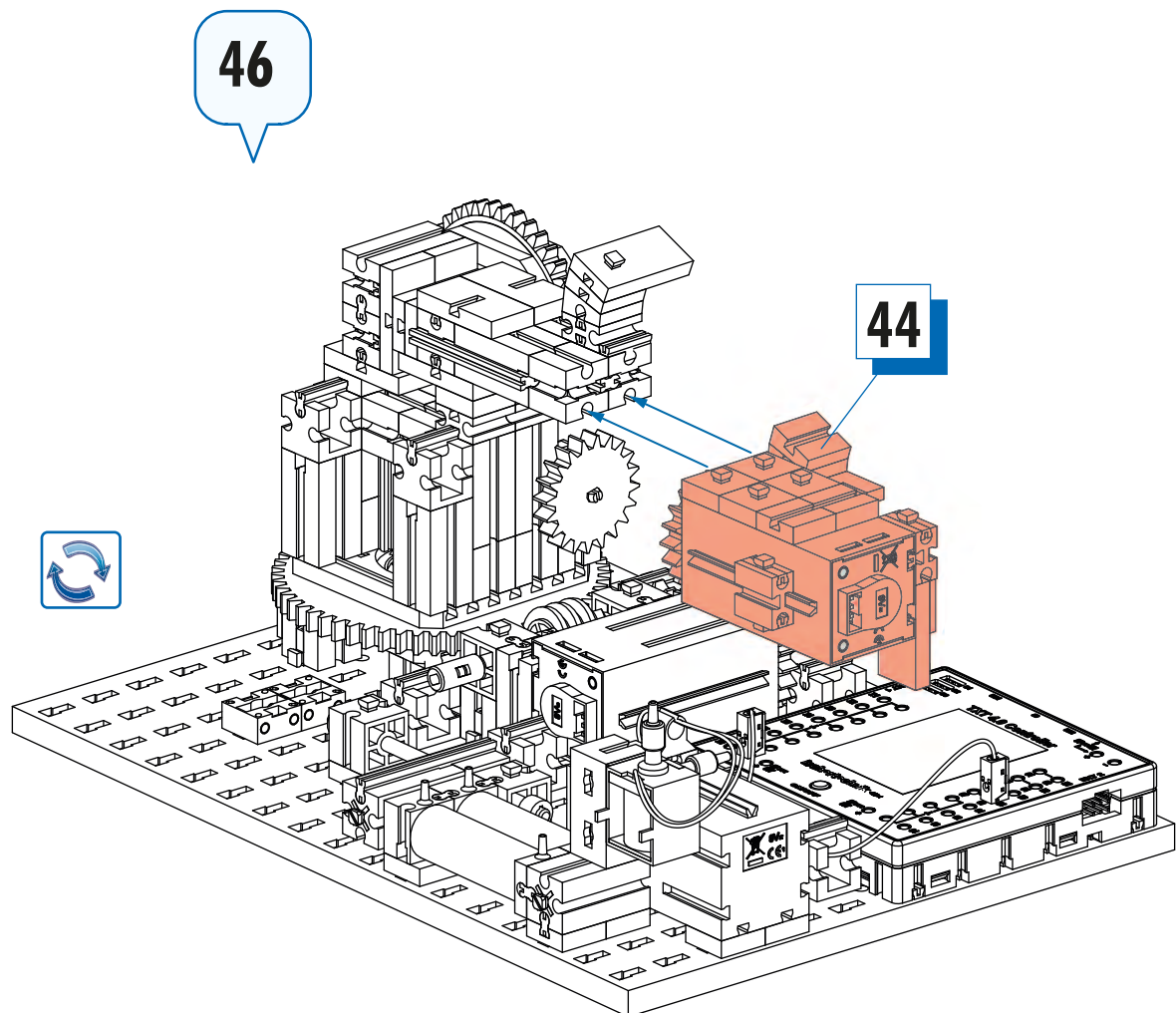
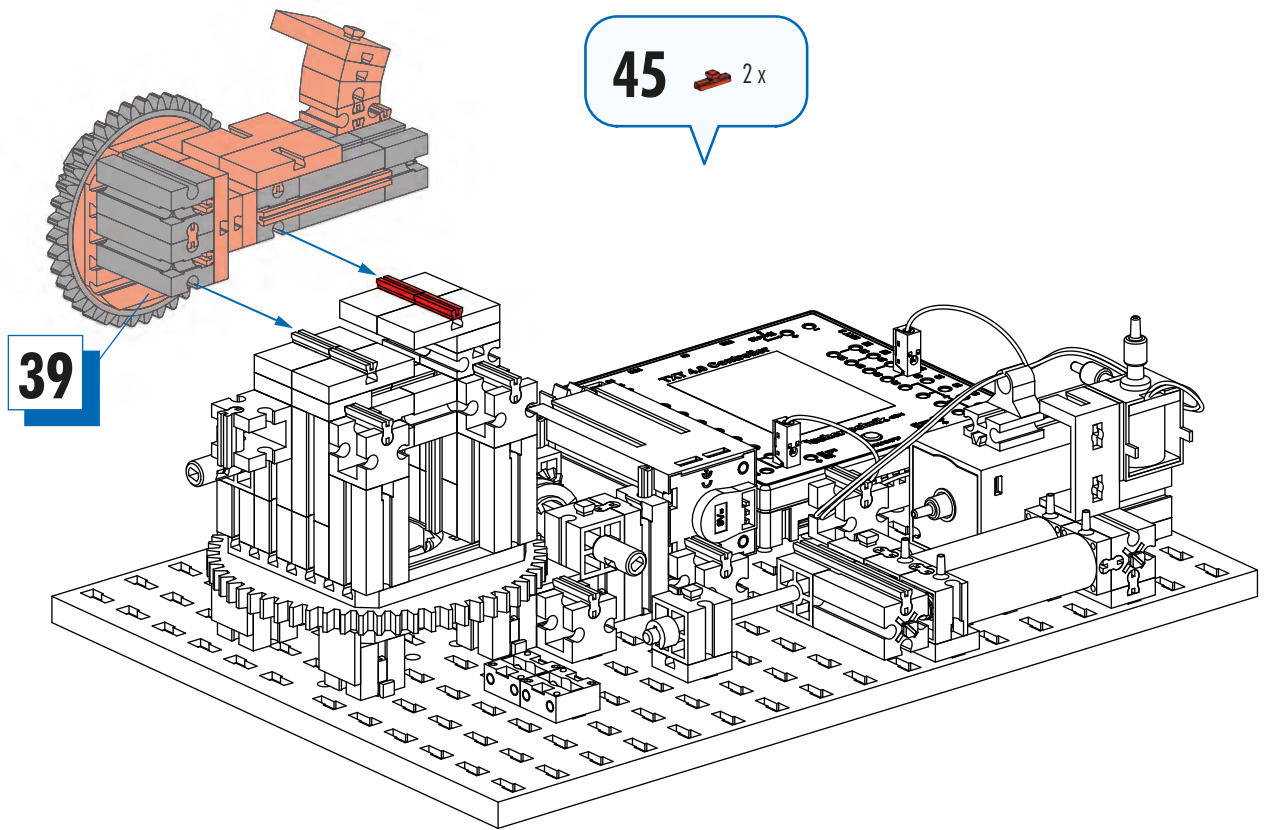
**42**  1x  1x  1x  1x  1x






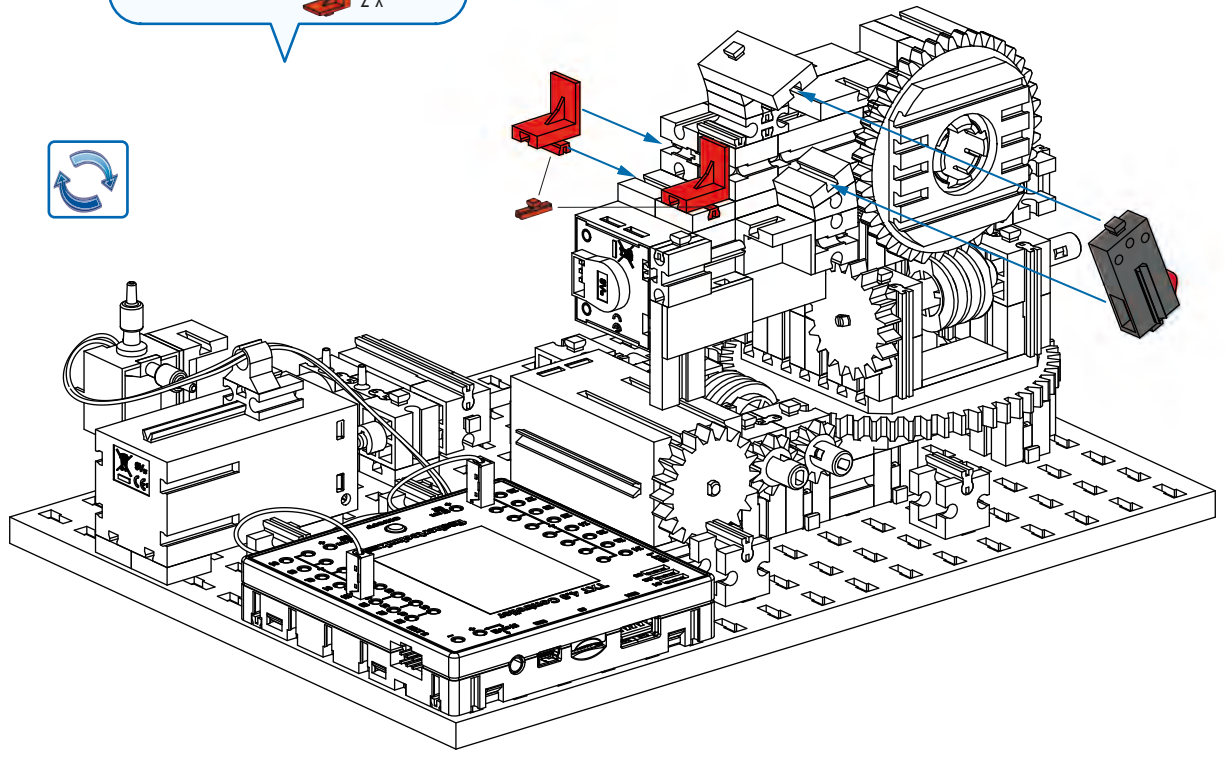
**43**  1x  1x  1x  1x  1x





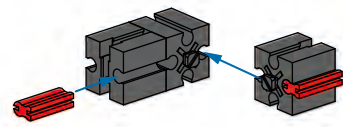
**44**  1x  1x  1x






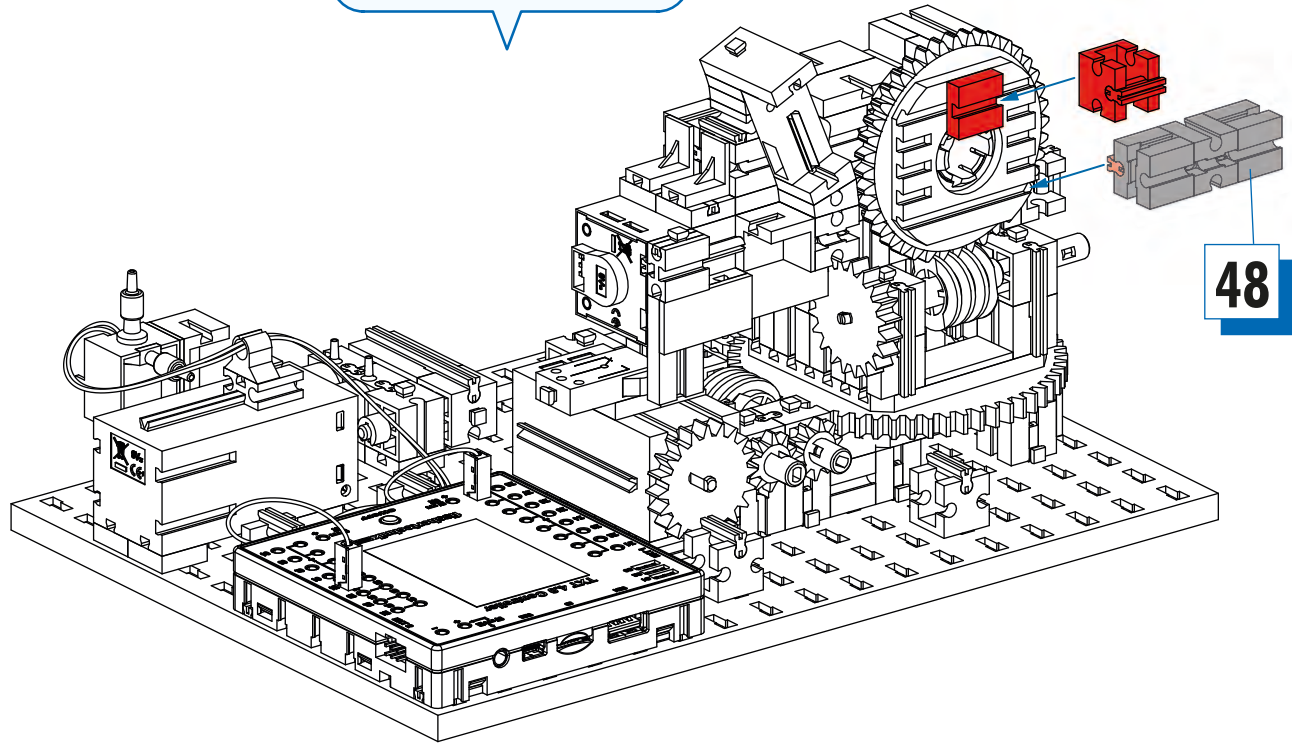
**47**  1x  2x  2x



**48**  3x  2x



**49**  1x  1x  1x

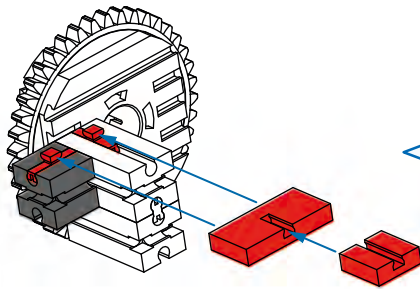
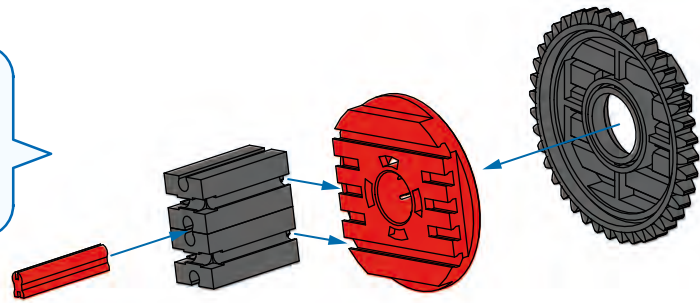


**48**



**50**

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

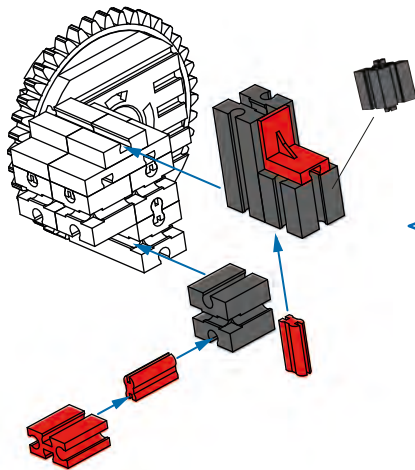
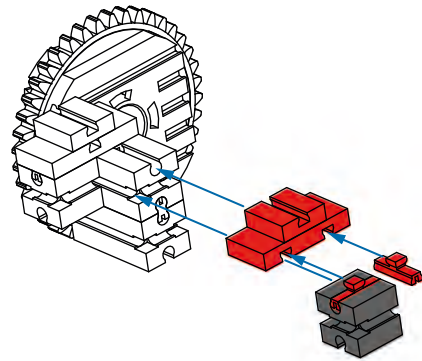


**51**

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

**52**

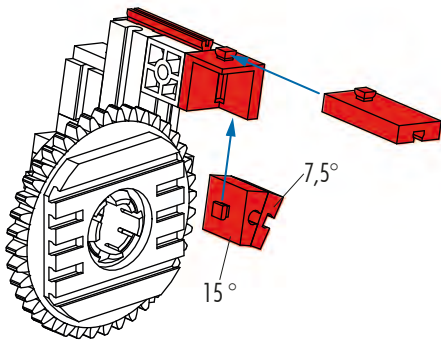
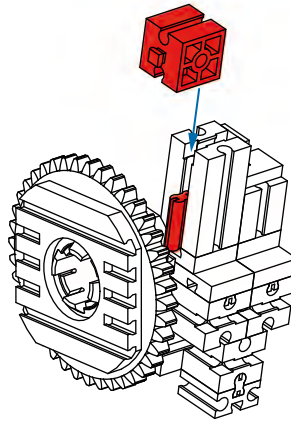
- 1x
- 1x
- 2x
- 1x








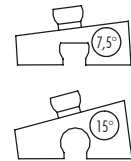
**53**

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

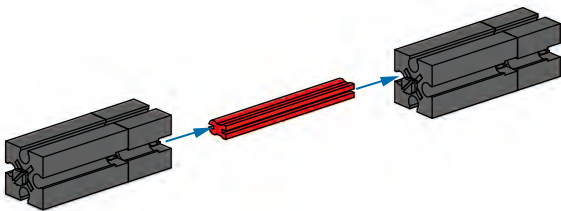
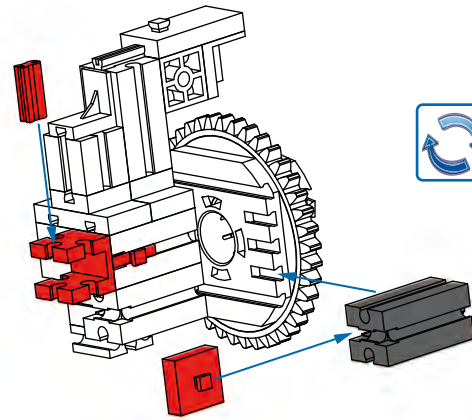
**54**  1x  15 1x



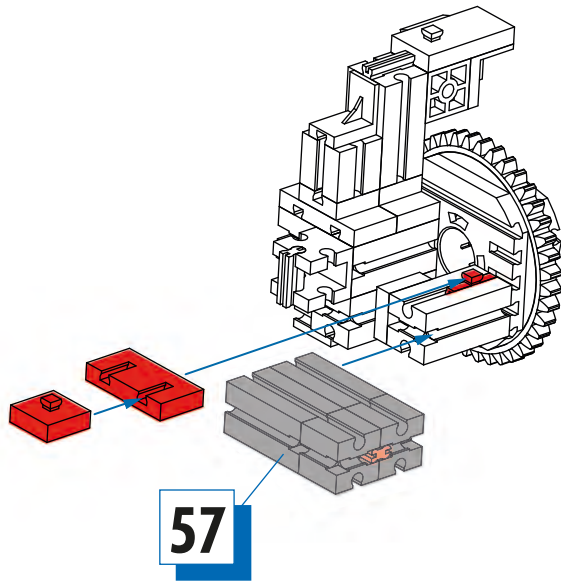
**55**  1x  7.5° 1x  
 1x  15° 1x  30 1x



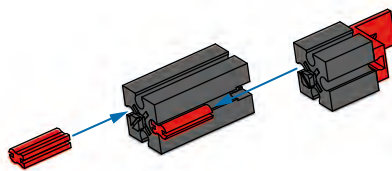
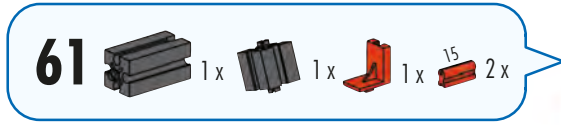
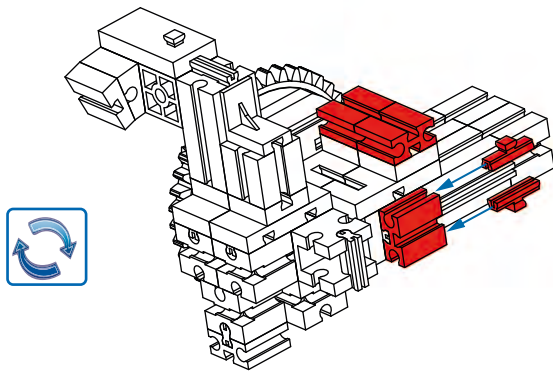
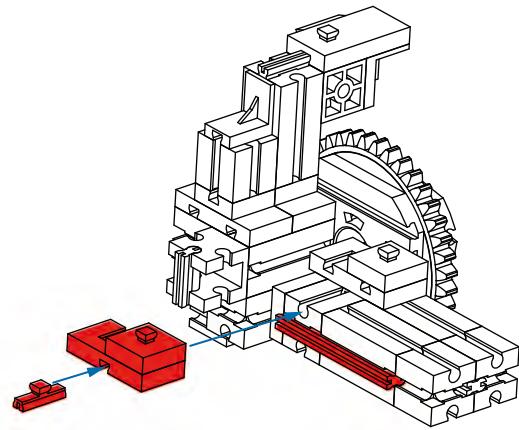
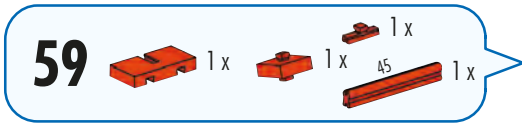
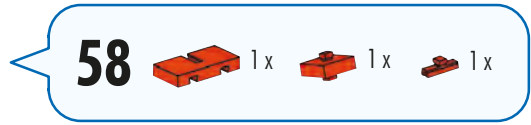
**56**  1x  1x  1x  
 1x  15 1x

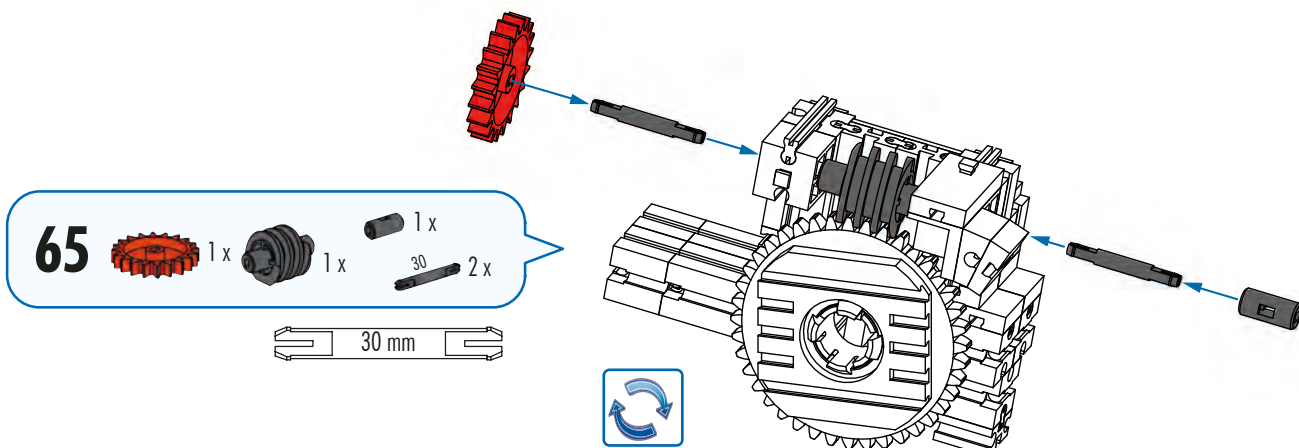
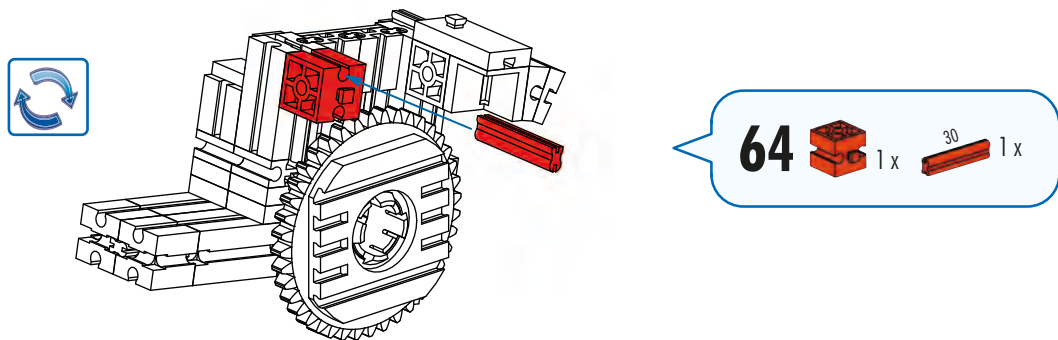
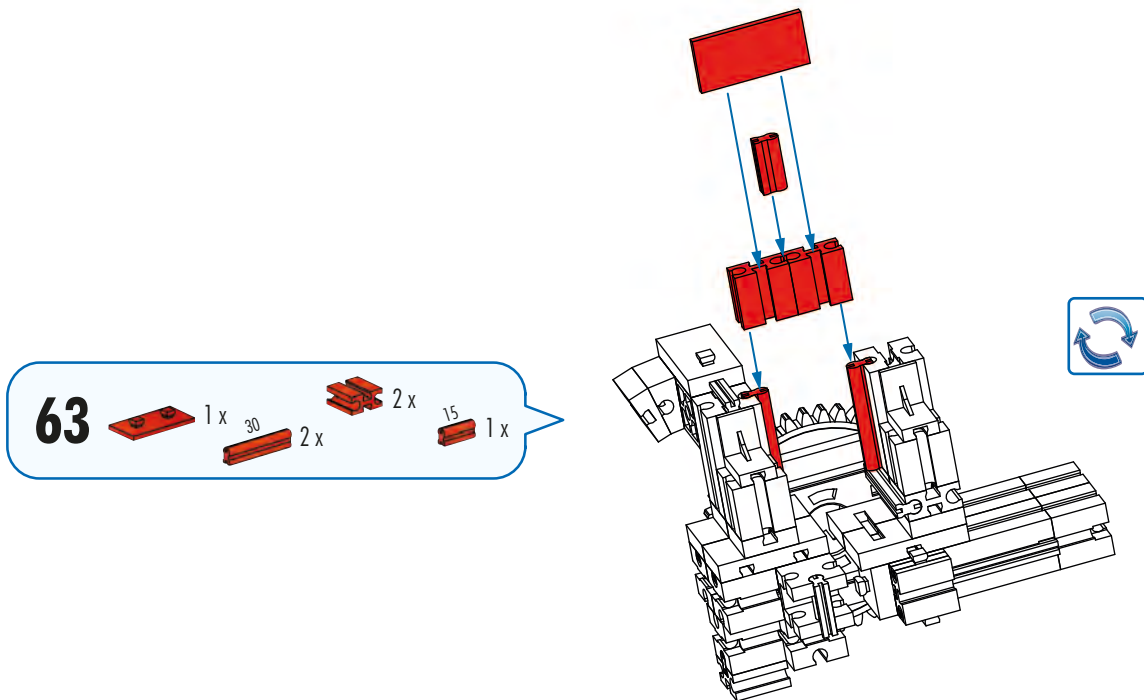
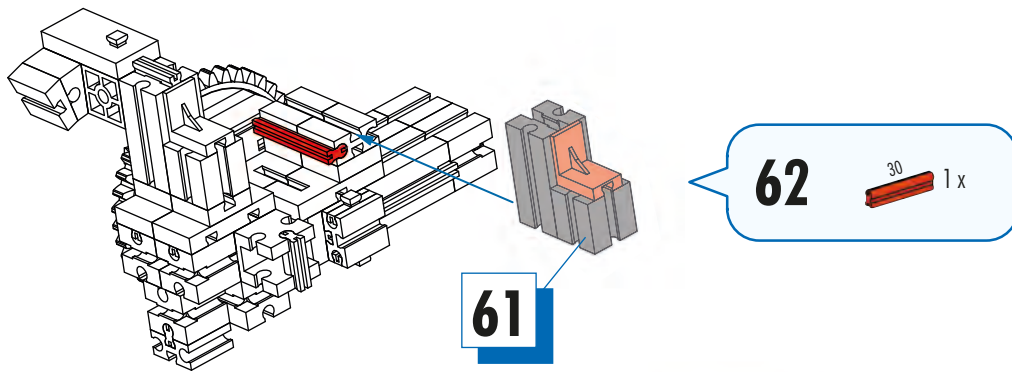


**57**  2x  2x  45 1x



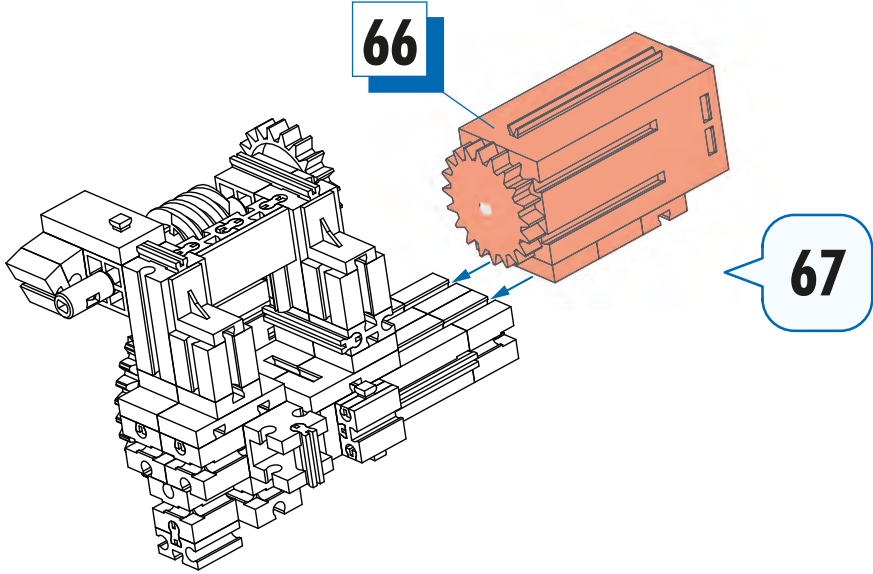
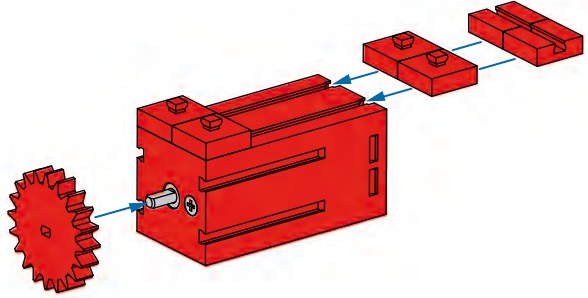
**57**





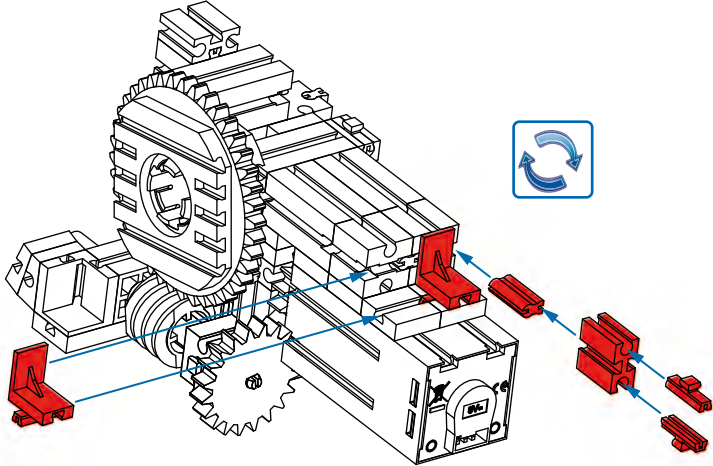
**66**

- 4 x [Red 1x2 Technic Brick]
- 2 x [Red 1x2 Technic Brick with Pin Hole]
- 1 x [Red 24-Tooth Gear]
- 1 x [Red 1x4 Technic Beam]



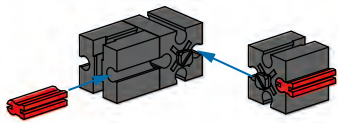
**68**

- 2 x [Red 1x2 Technic Brick]
- 1 x [Red 1x2 Technic Brick]
- 4 x [Red 1x2 Technic Brick]
- 15 [Red 1x2 Technic Brick]
- 1 x [Red 1x2 Technic Brick]

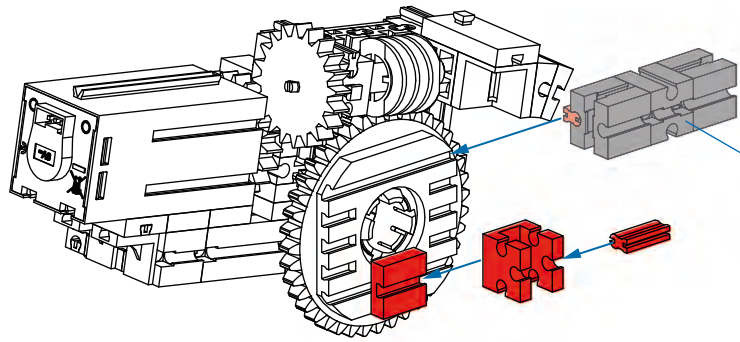


**69**

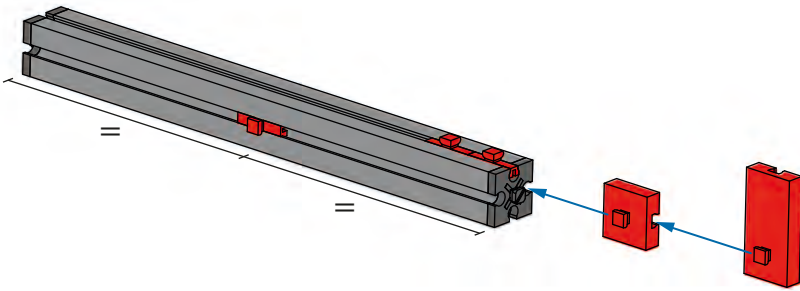
- 3 x [Grey 1x2 Technic Brick]
- 15 [Grey 1x2 Technic Brick]
- 2 x [Red 1x2 Technic Brick]



**70** 1x 1x 15 1x



**69**

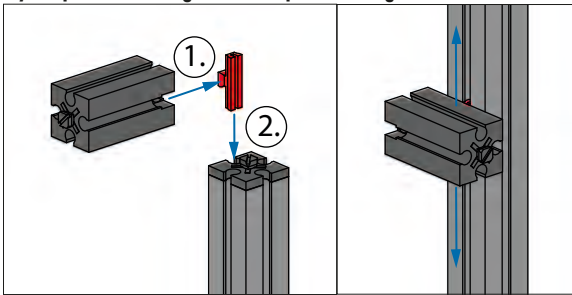


**71** 3x 1x 1x

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

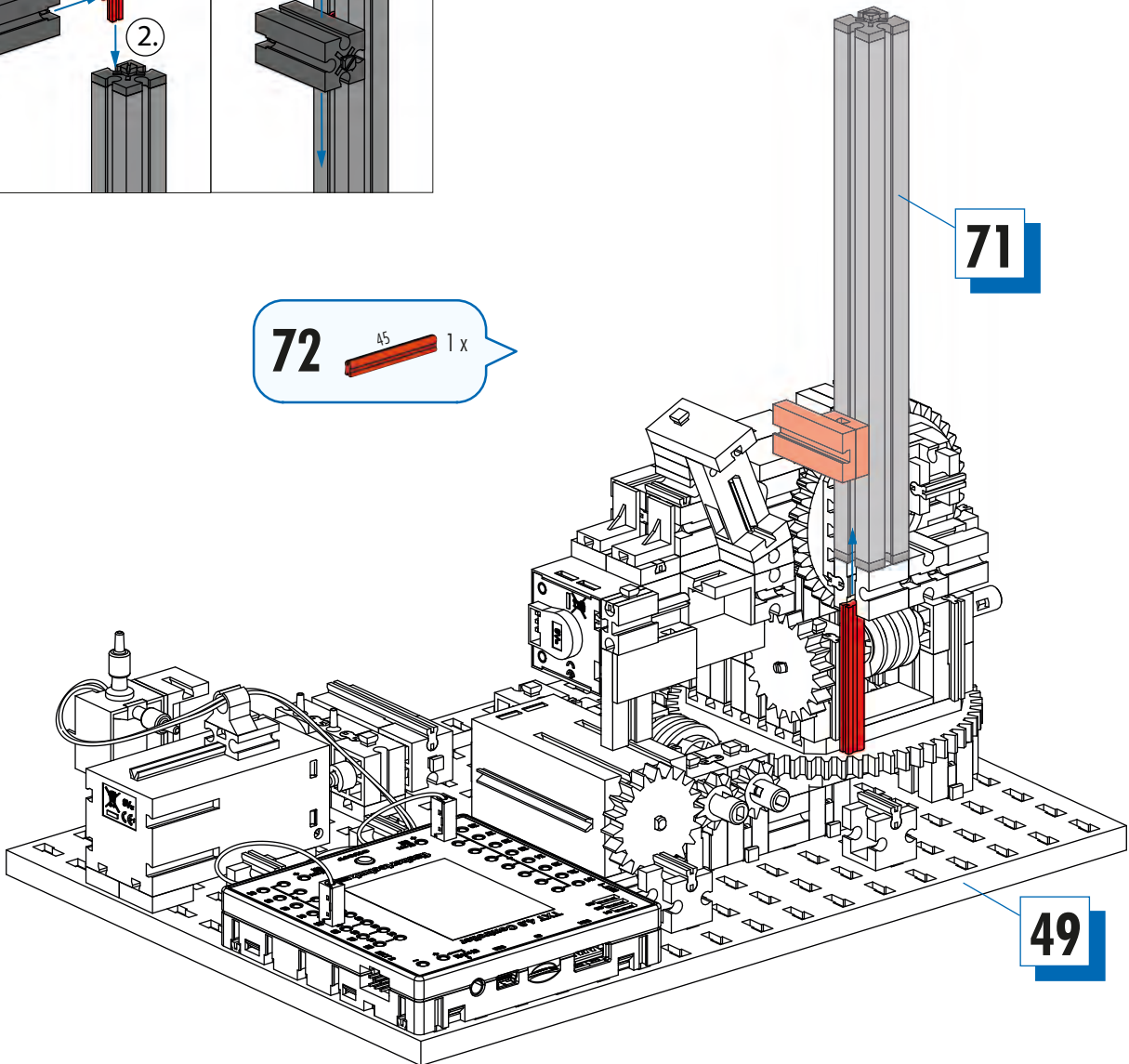
**Montagetipps**  
**Consejos para el montaje**  
**"Dicas" para montagem**

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

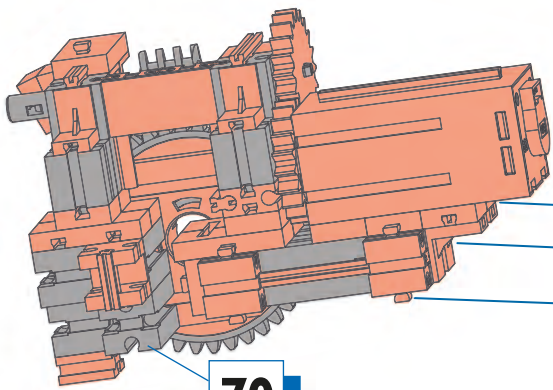


**71**

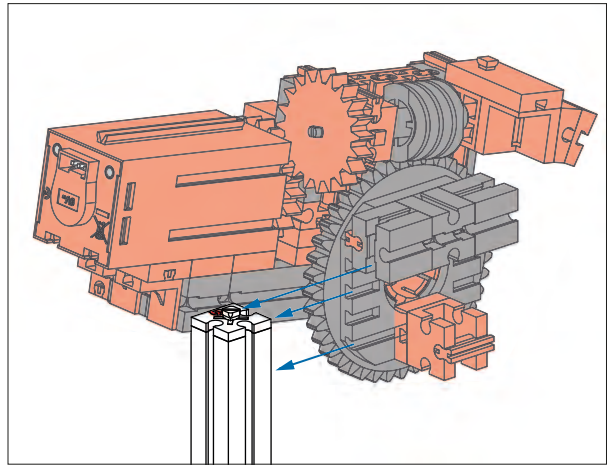
**72** 45 1x




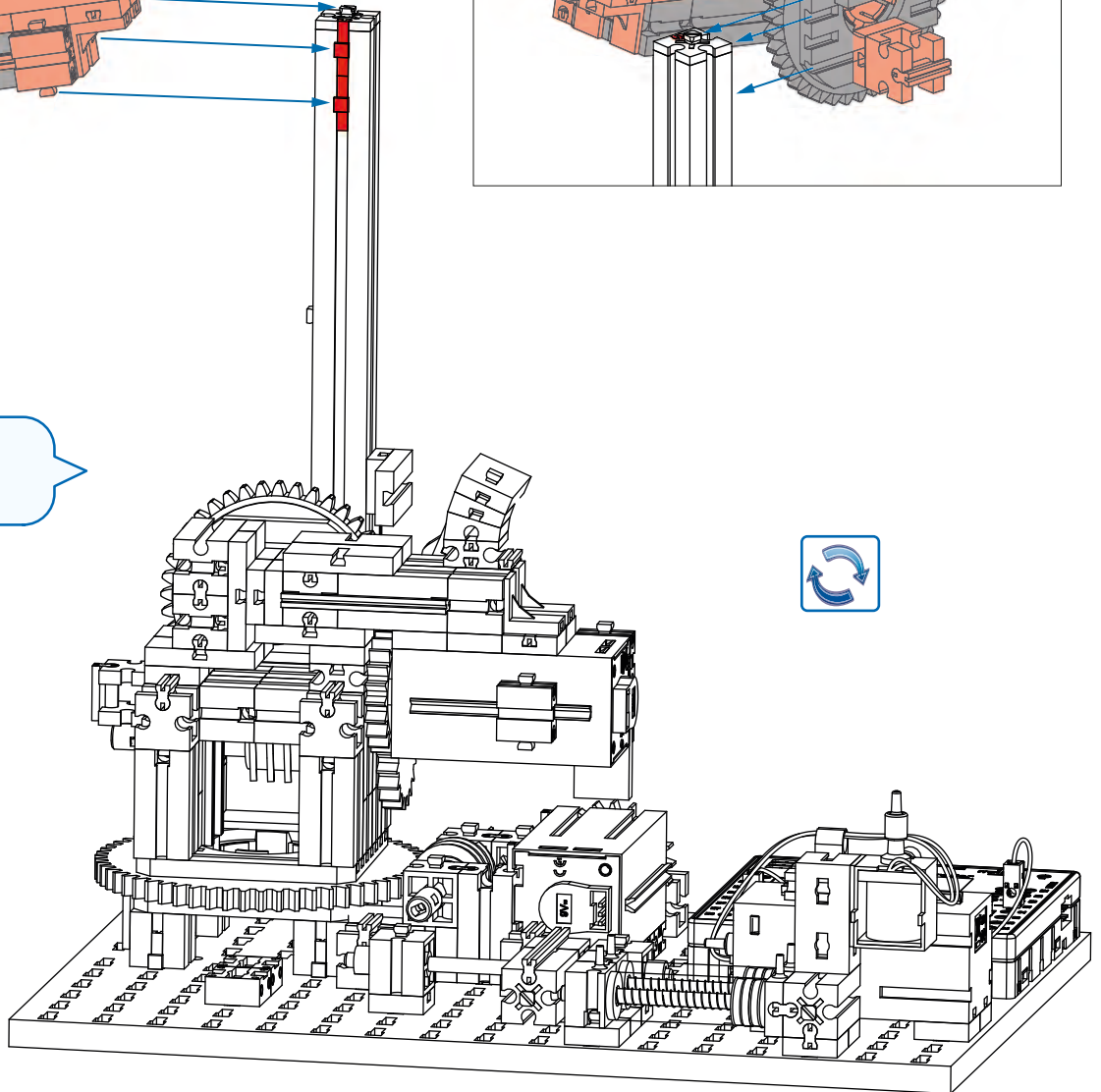
**49**



**70**



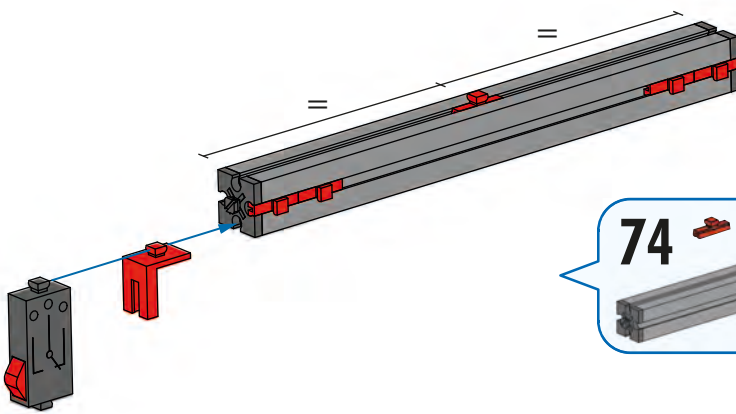
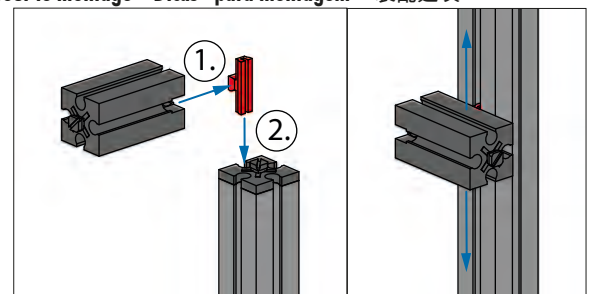
**73**  2x


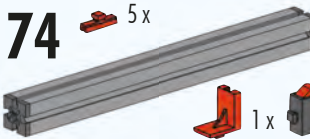




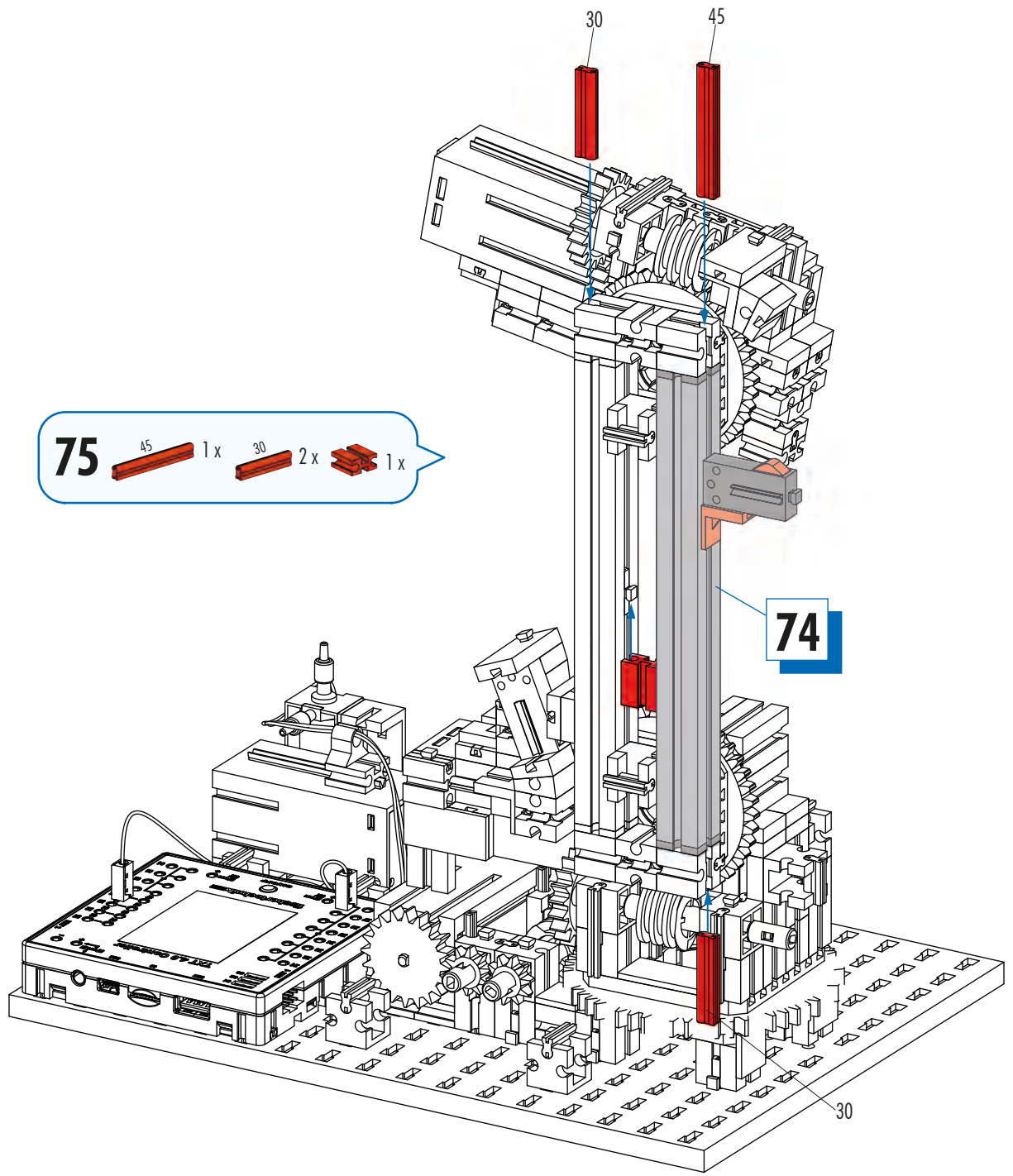
**Montagetipps**  
**Tips for assembly**  
**Tuyaux pour le montage**

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

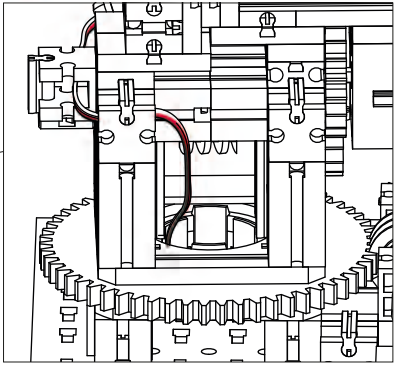
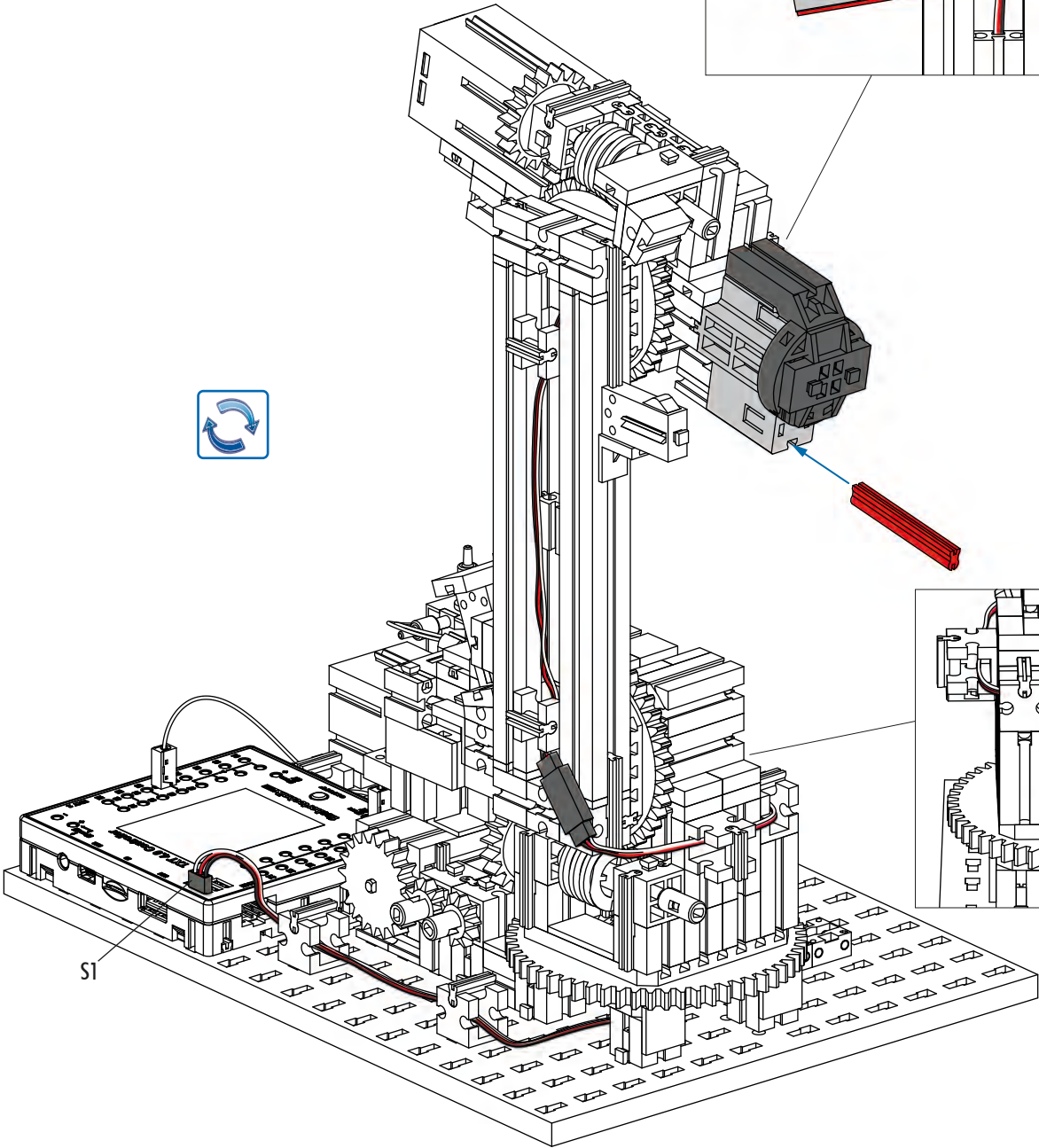
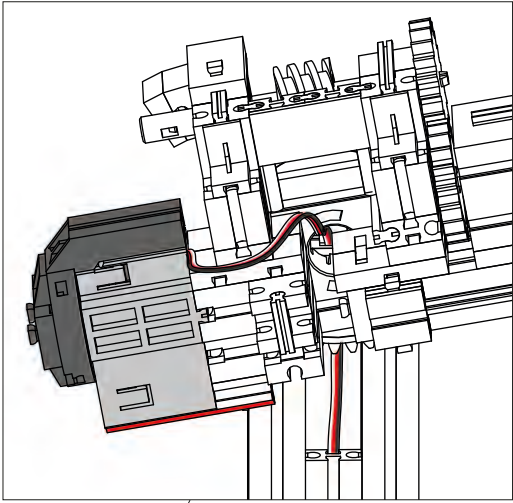
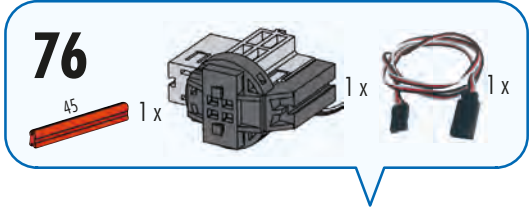
**Consigli per il montaggio**  
**Советы по сборке**  
**装配建议**

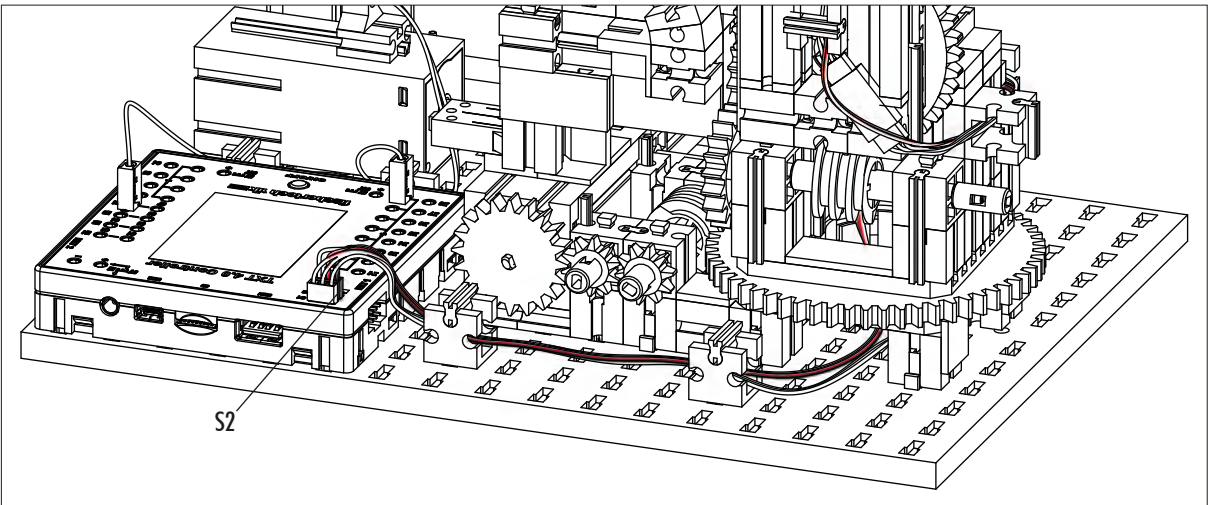
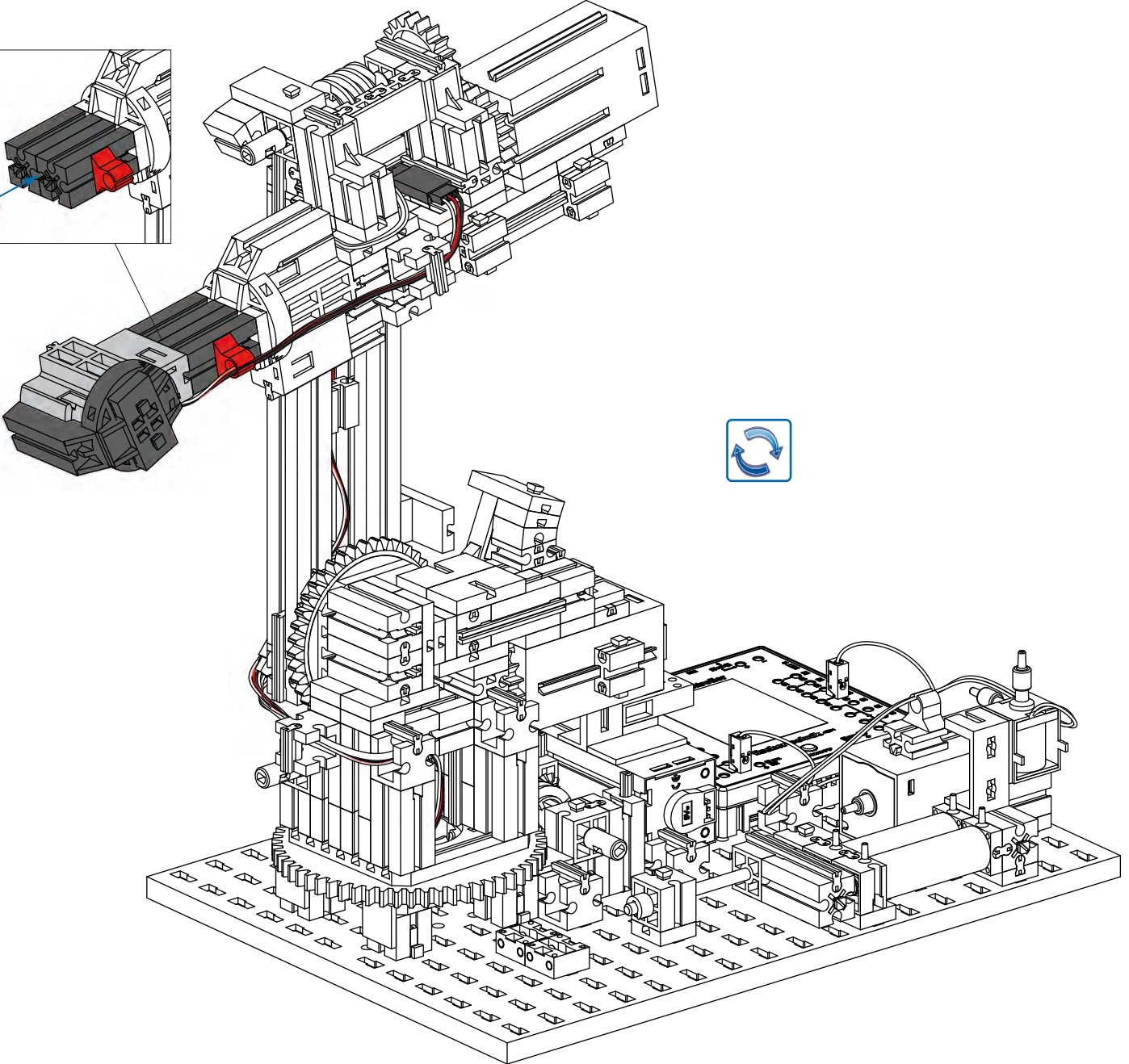
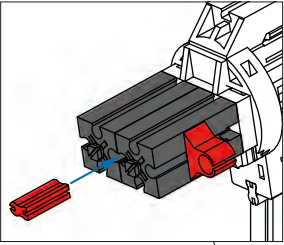
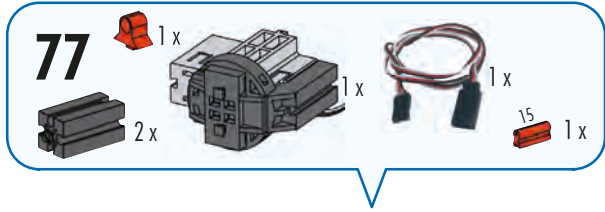


**74**  5x  1x  1x  1x



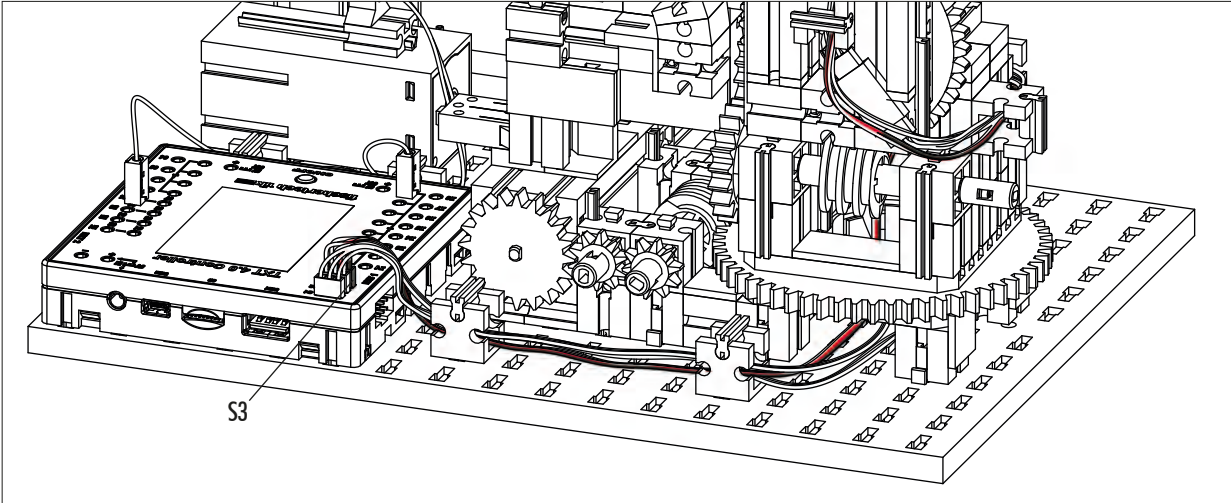
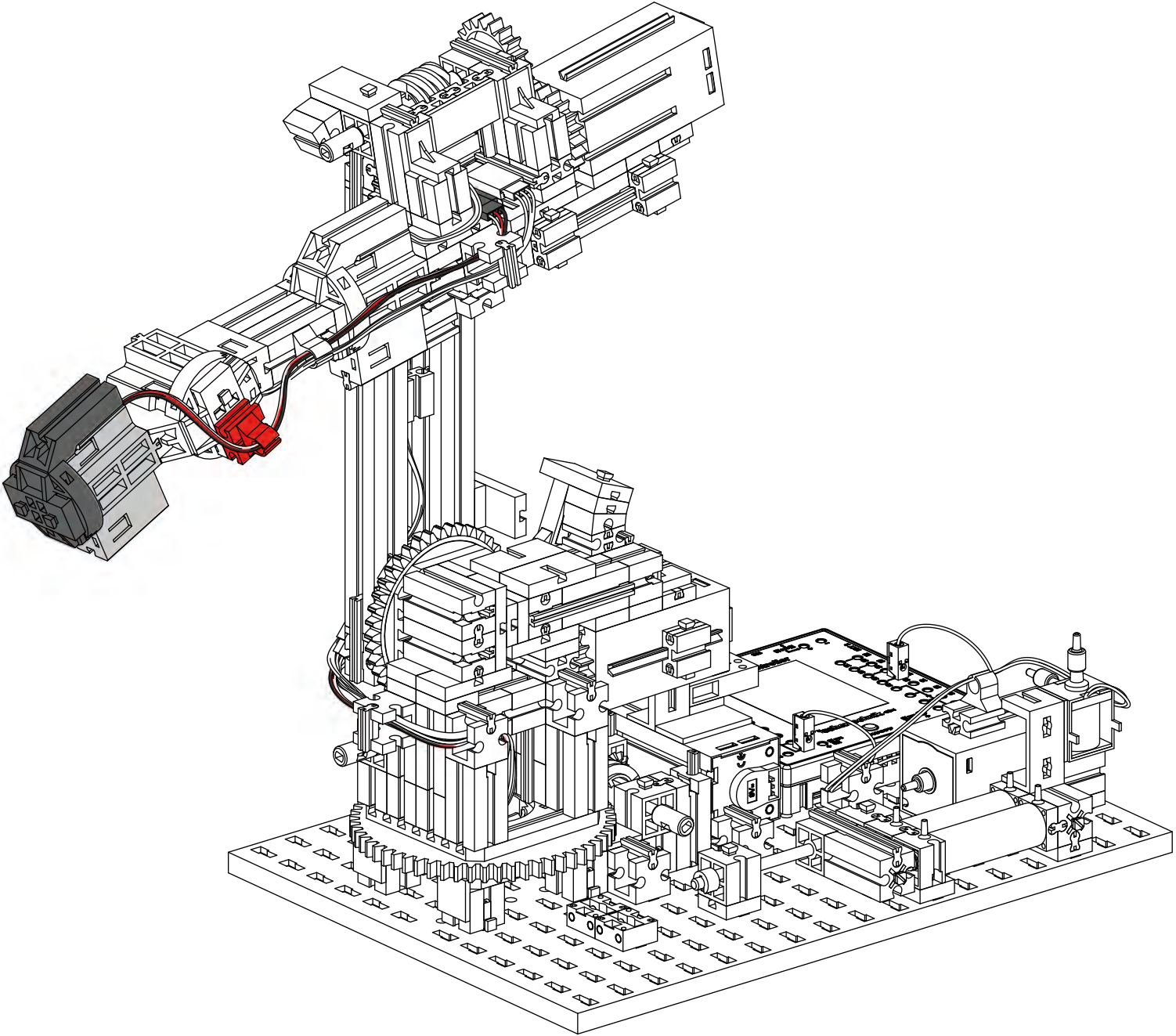


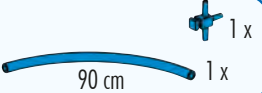


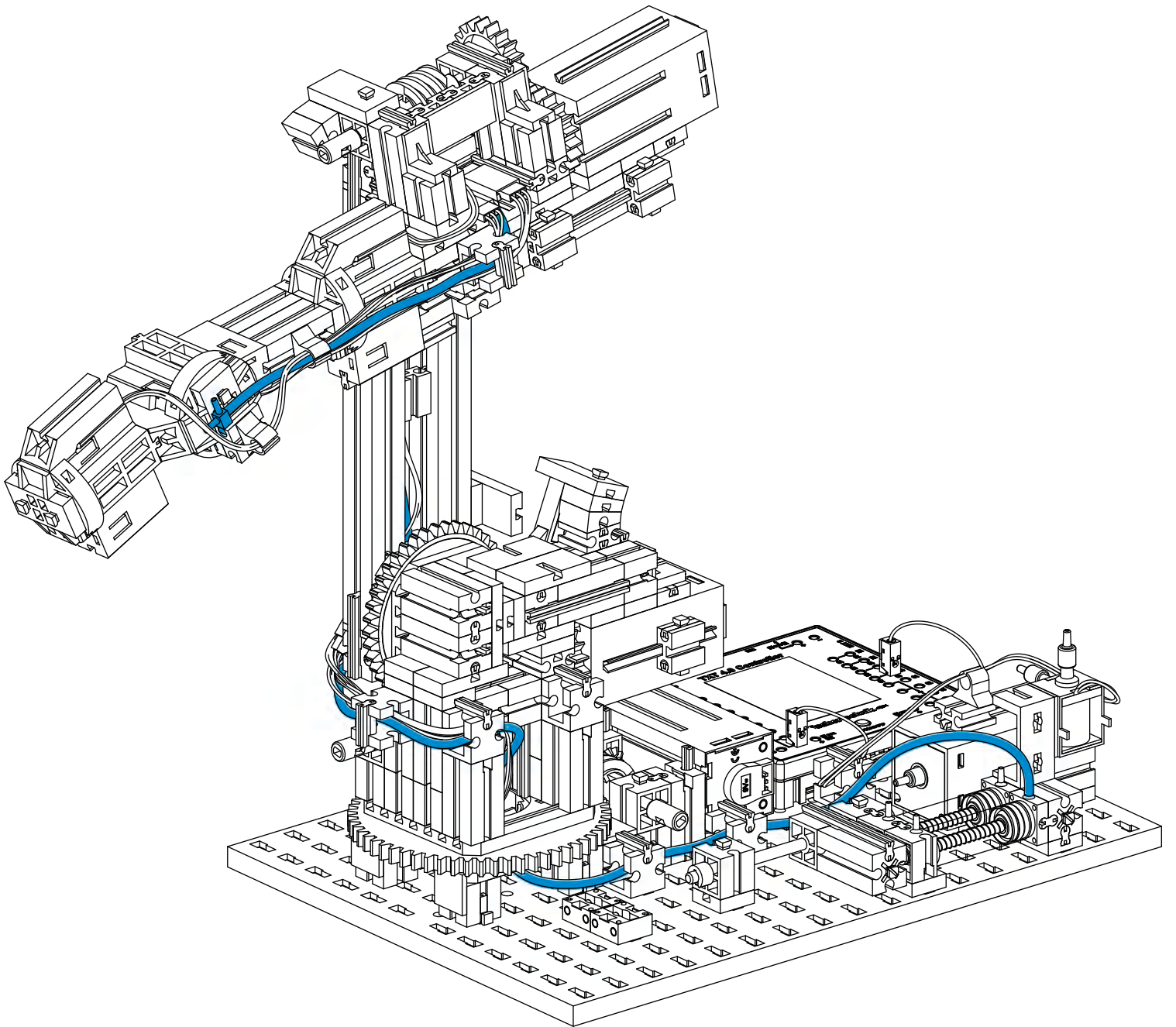


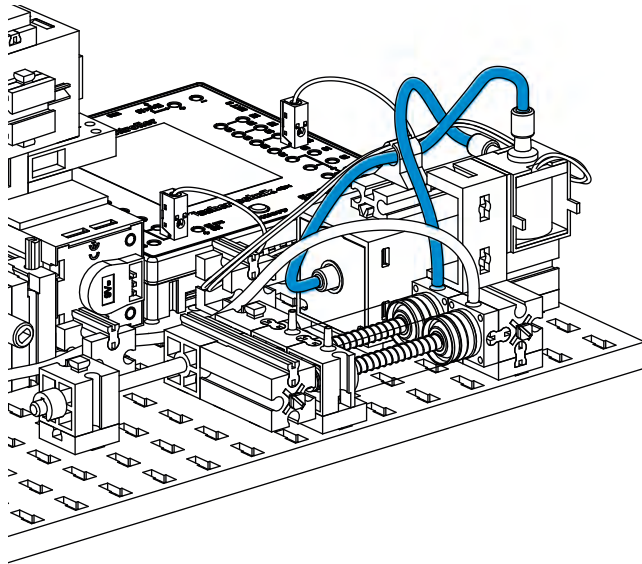
**78**


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




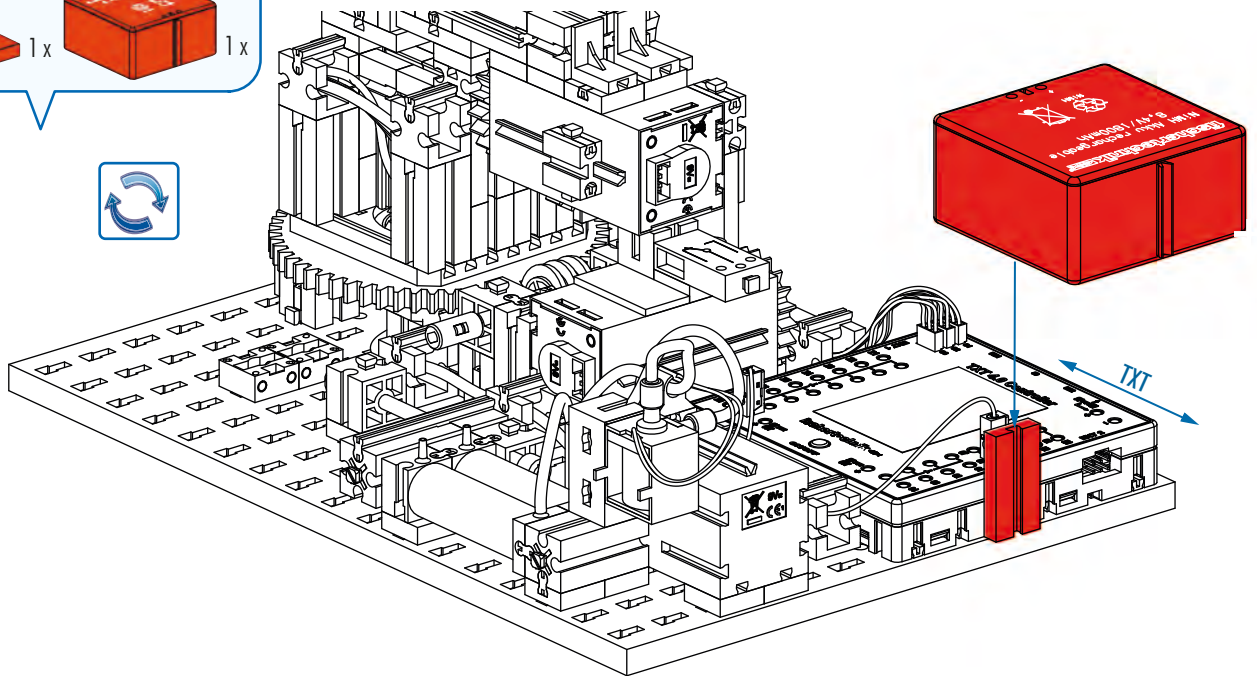
**79**  1x  
90 cm 1x




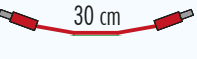







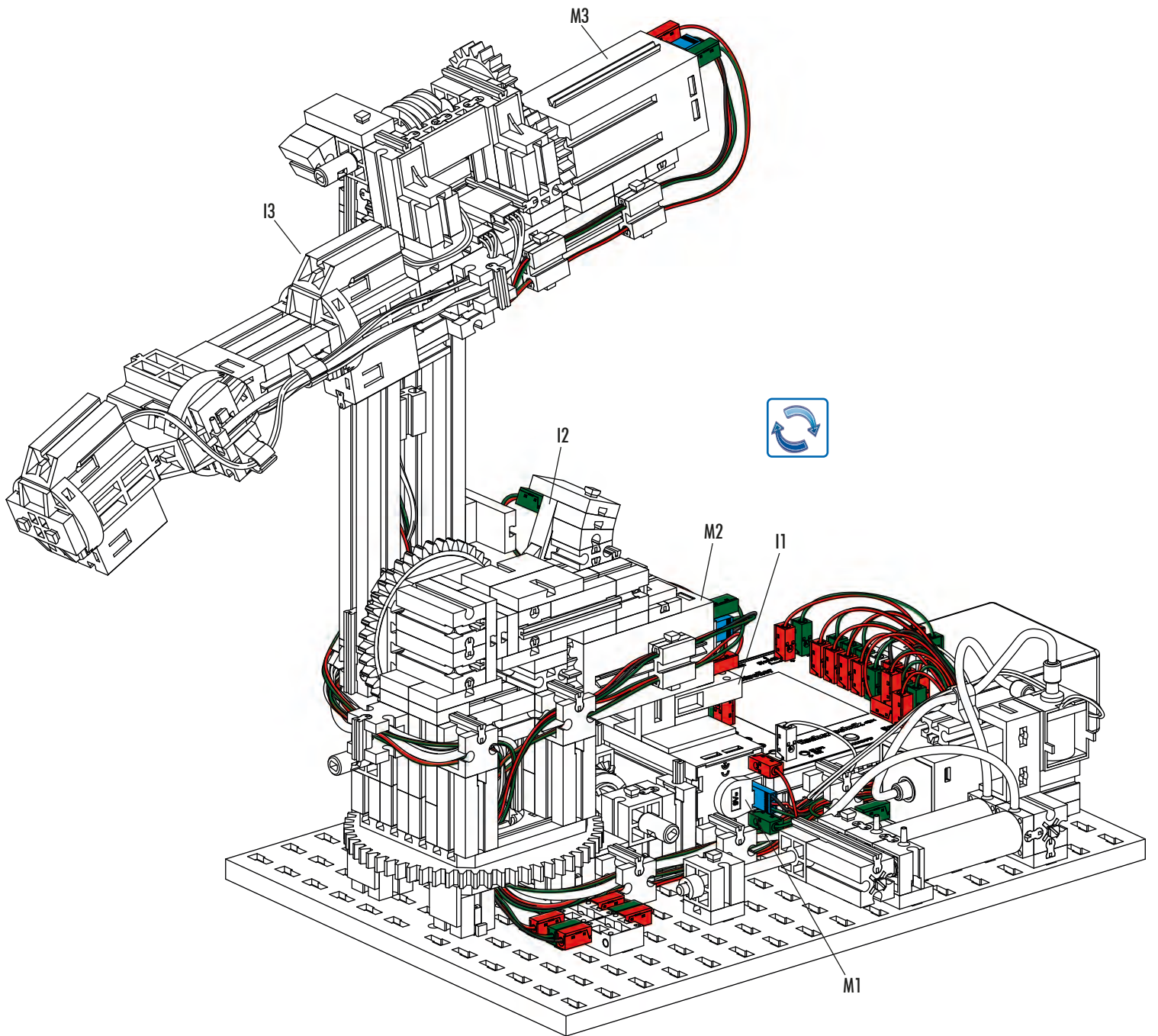
**80**  15 cm 2 x

**81**  1x 1x



**82**

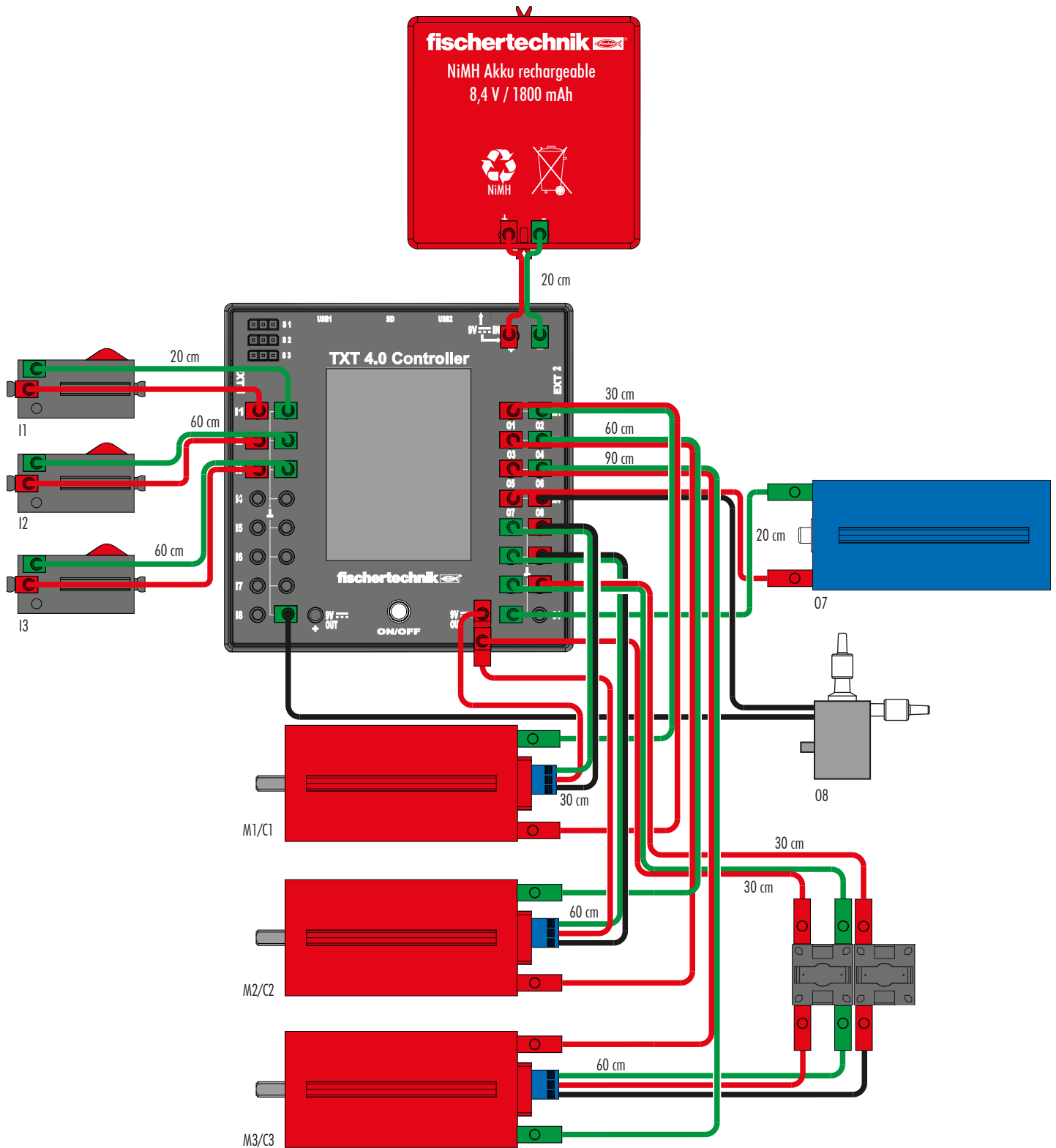
	20 cm	3 x		30 cm	1 x
	30 cm	2 x		30 cm	1 x
	60 cm	3 x		60 cm	2 x
	90 cm	1 x			






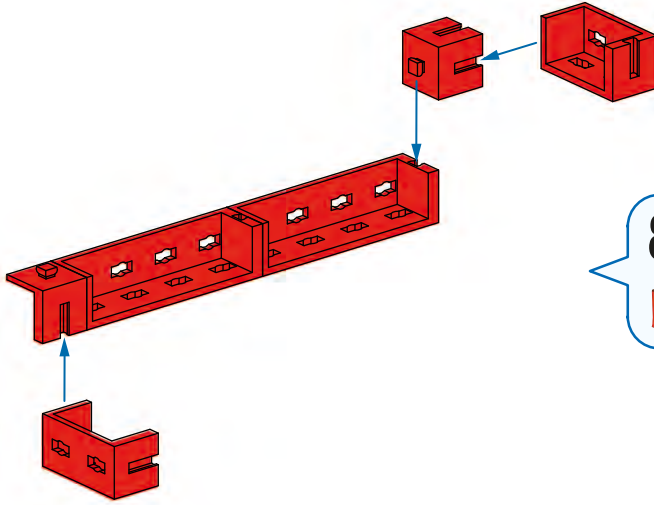
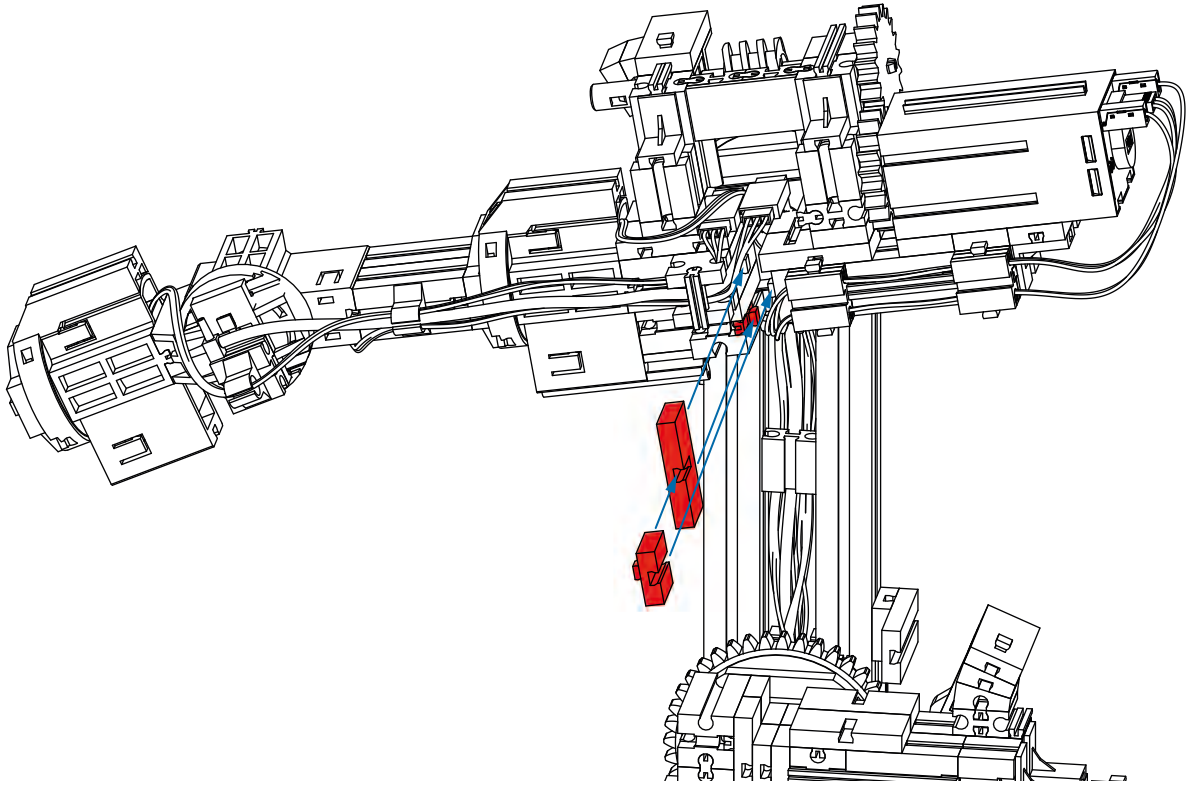
Schaltplan  
Circuit diagram  
Plan électrique




Schakelschema  
Diagrama de circuitos  
Plano elétrico de ligação

Schema elettrico  
Схема подключения  
电路图

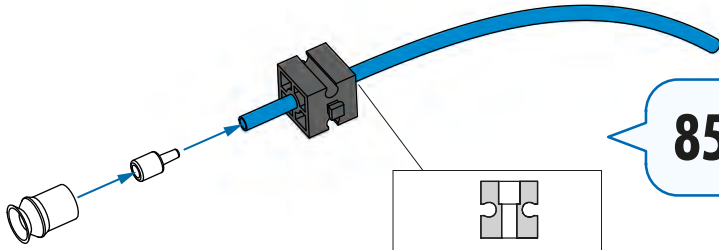



**83**  1x  1x  
 1x










**84**  2x  2x  
 2x

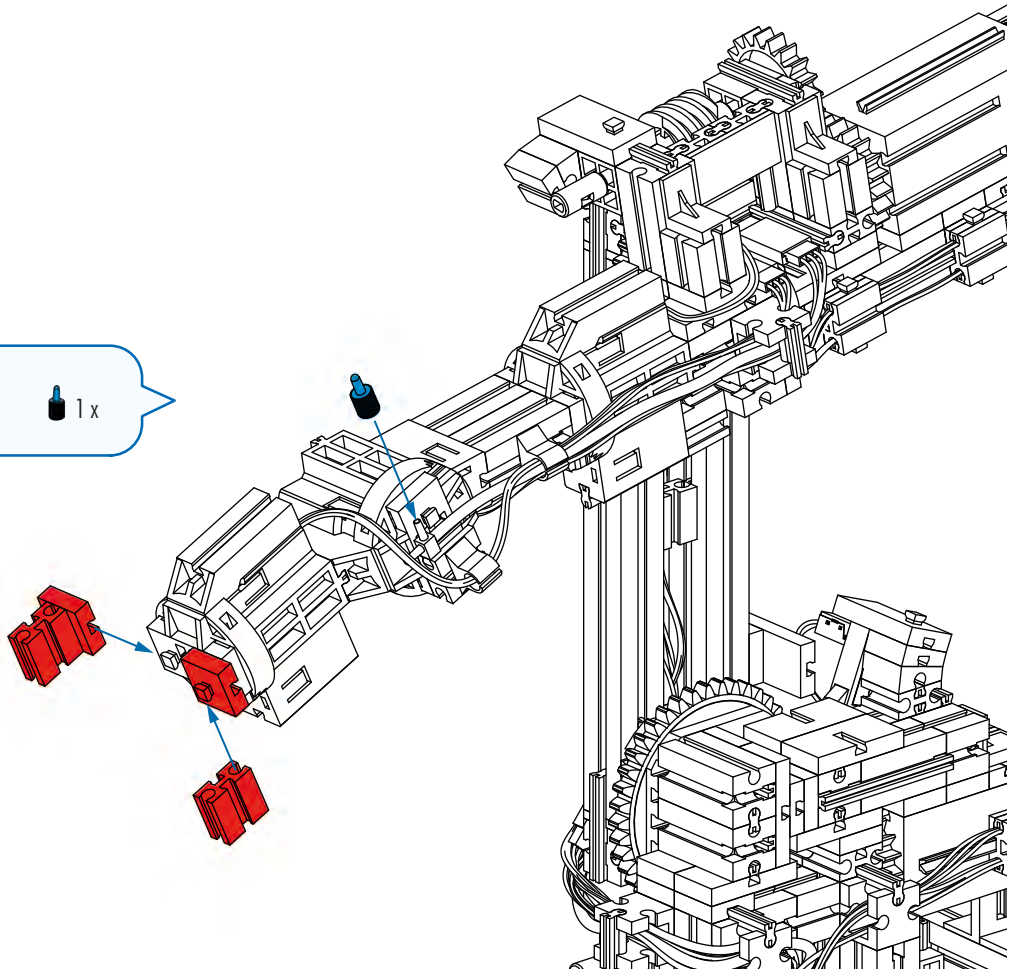




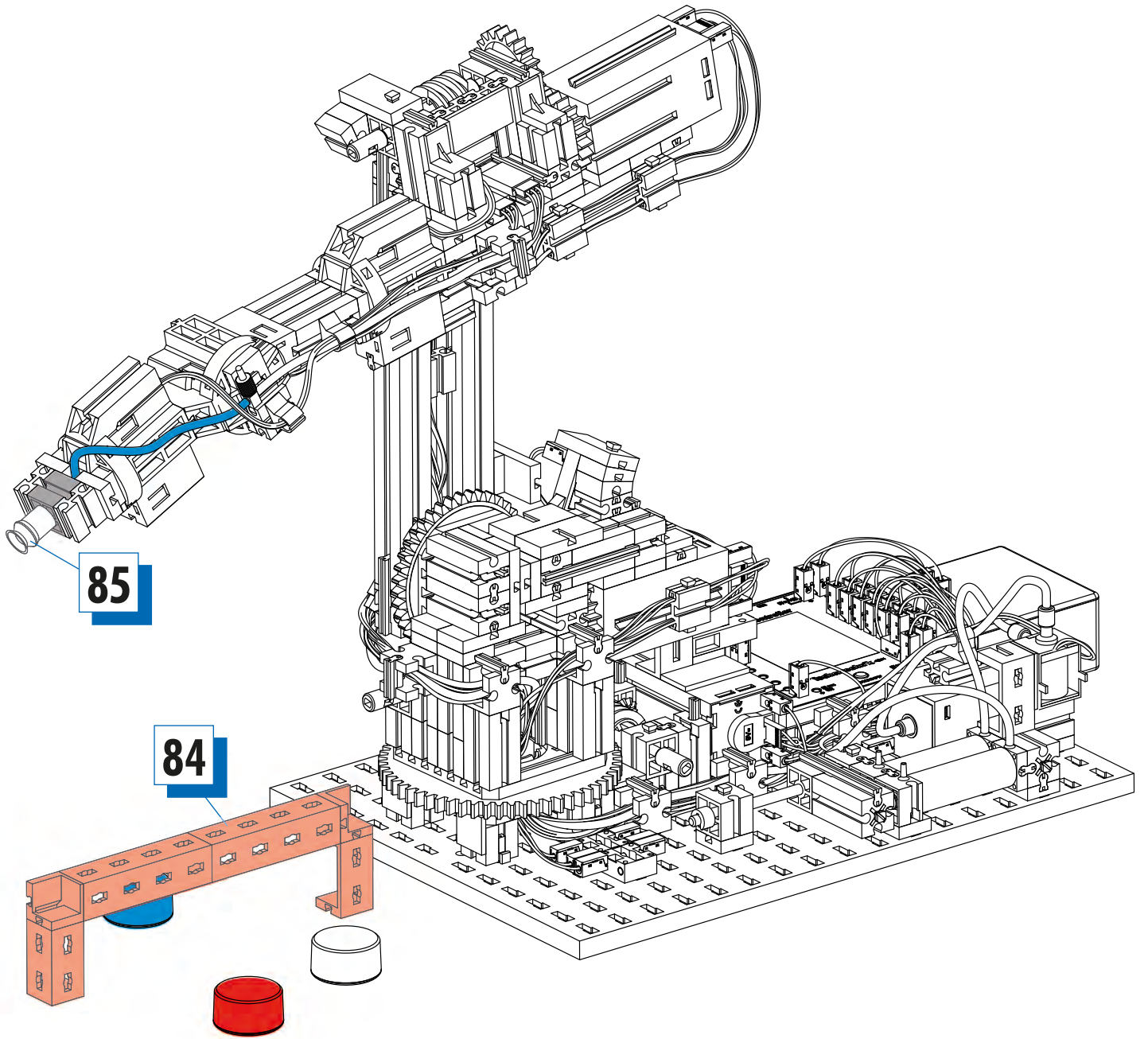
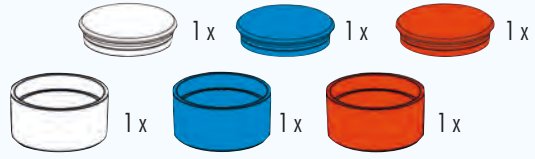
  
 Große Bohrung  
 Large drilling  
 Alésage large  
 Grote boring  
 Perforación grande  
 Orificio grande  
 Grande foro  
 Большое отверстие  
 大孔

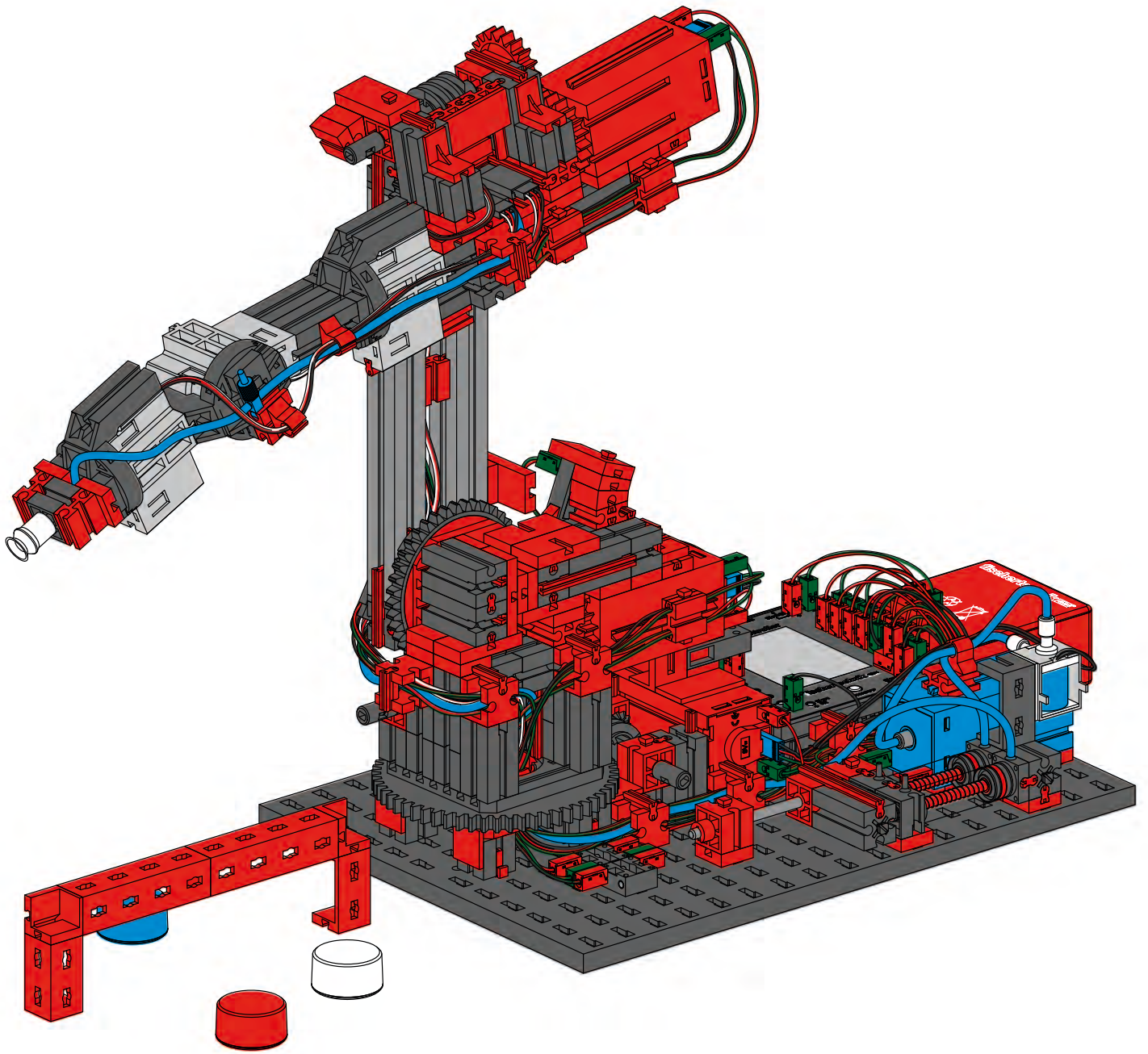
**85**  1x  1x  1x  15 cm 1x

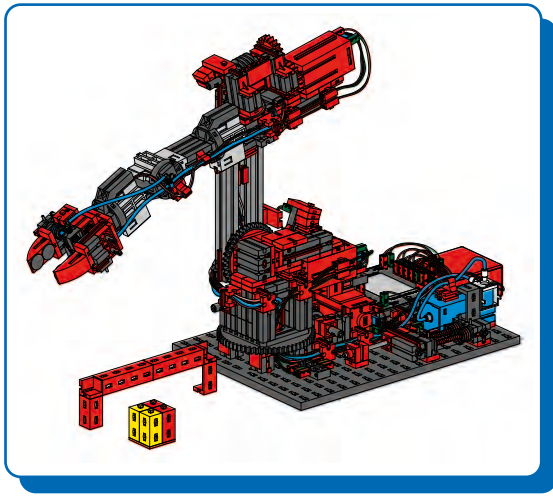
**86**  2x  2x  1x



**87**





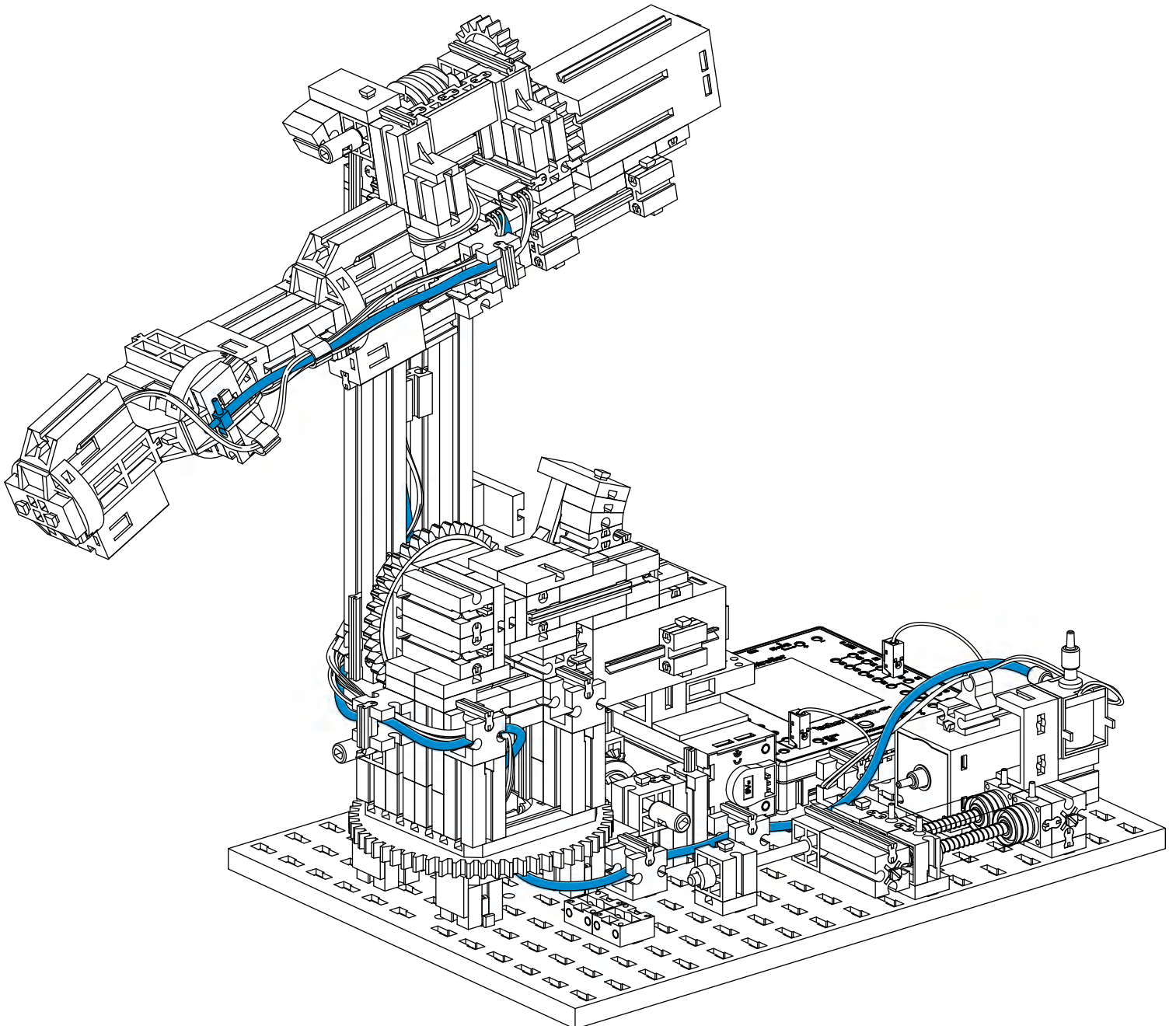
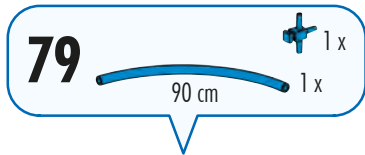
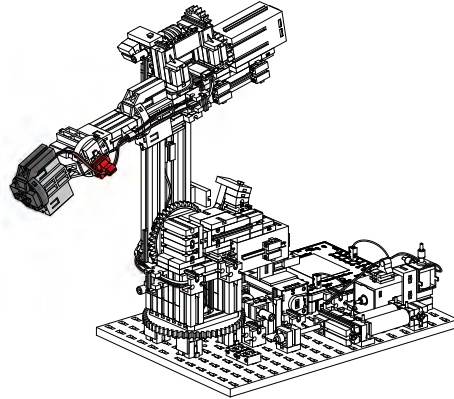


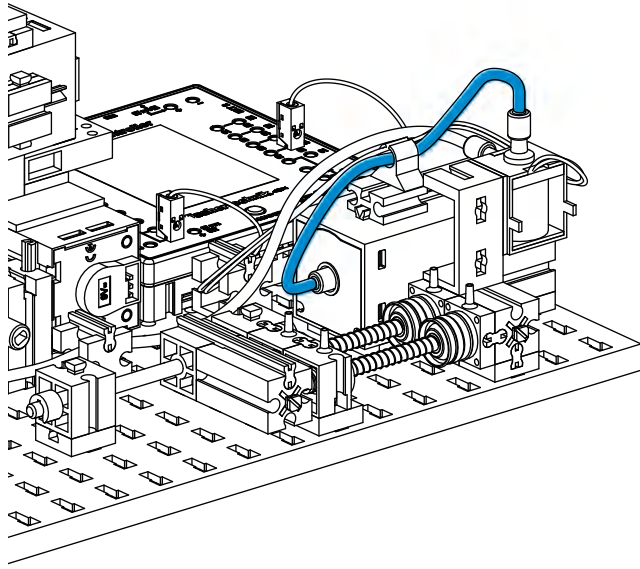
**Sechachsroboter mit Greifzange**  
**Six axis robot with gripper**  
**Robot six axes avec pince de préhension**  
**Robot met zes assen en gripper**  
**Robot de seis ejes con pinza**


**Robò de seis eixos com pinça**  
**Robot a sei assi con pinza**  
 Шестиосевой робот с захватным устройством  
 带抓手的六轴机器人



**1-78**

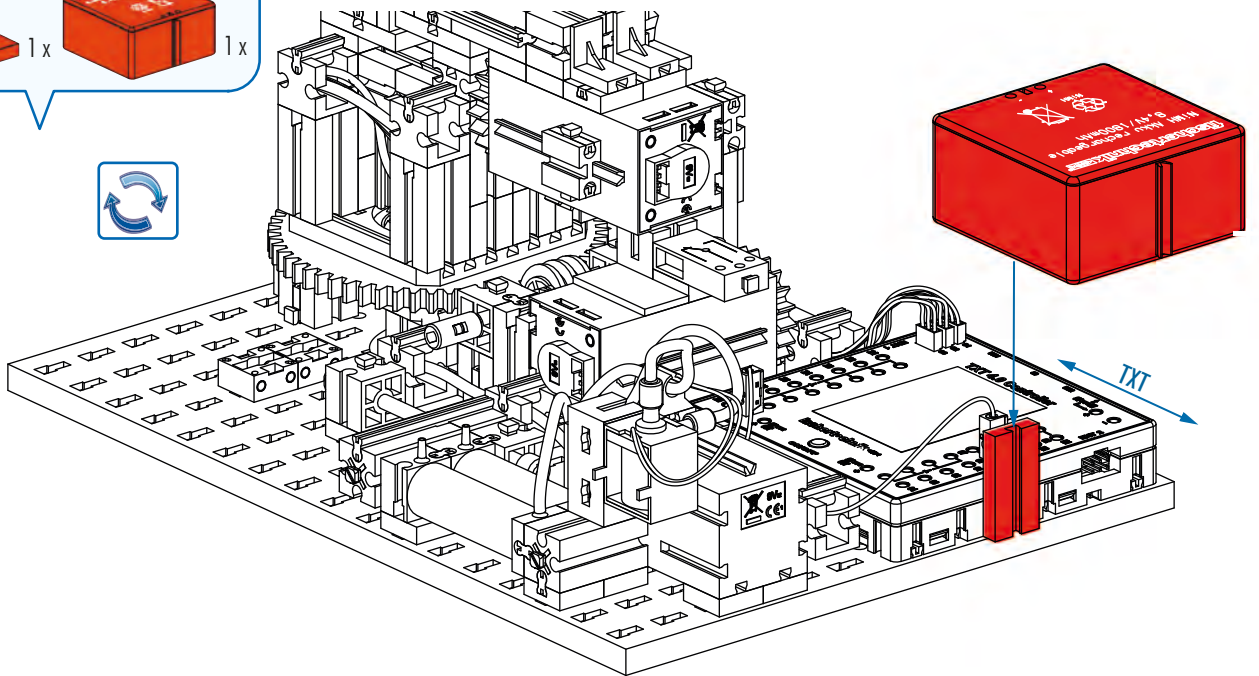
Seite 6  
 Page 6  
 Page 6  
 Bladzijde 6  
 Pàgina 6  
 Pagina 6  
 Pagina 6  
 Страница 6  
 页次 6

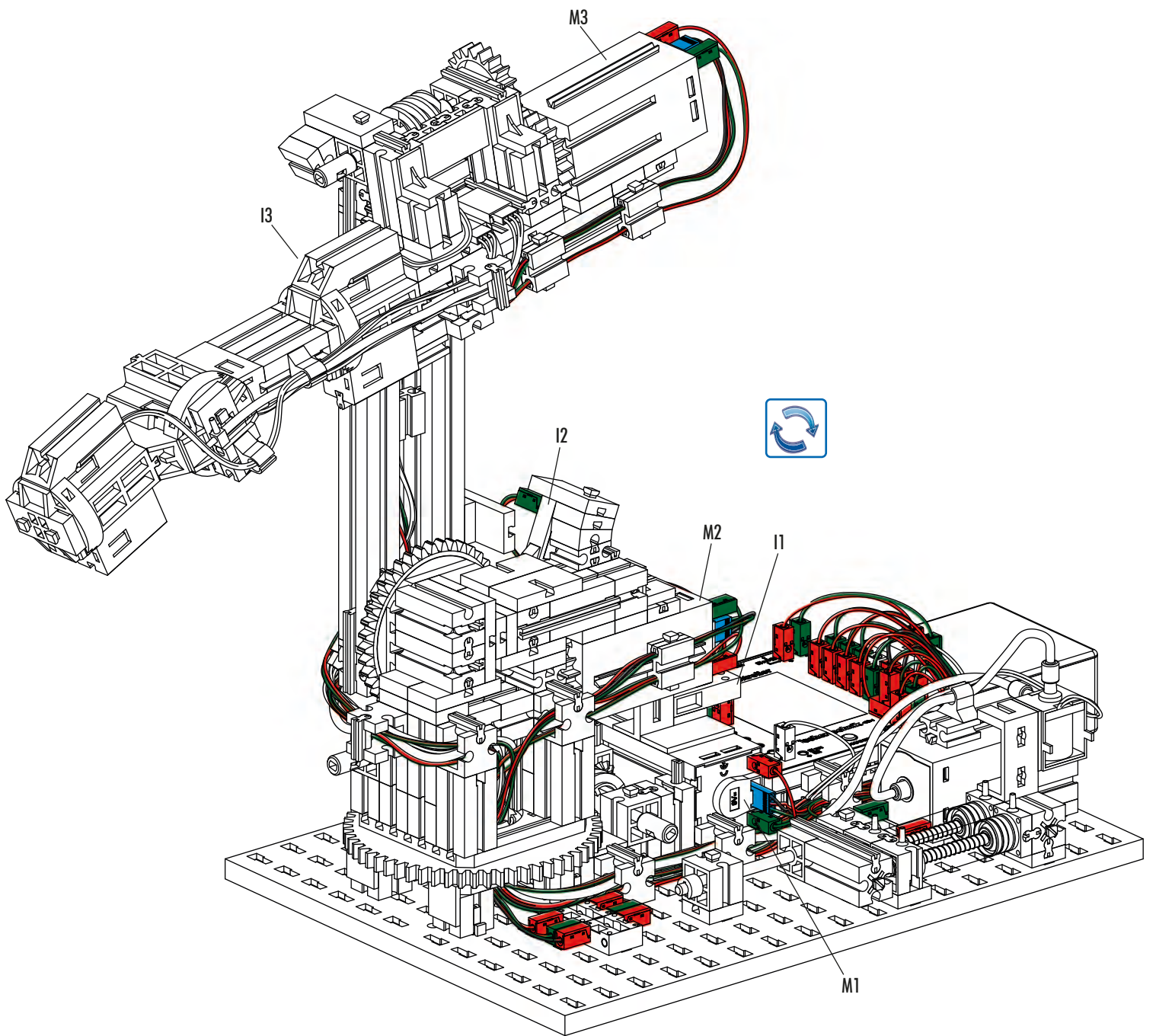
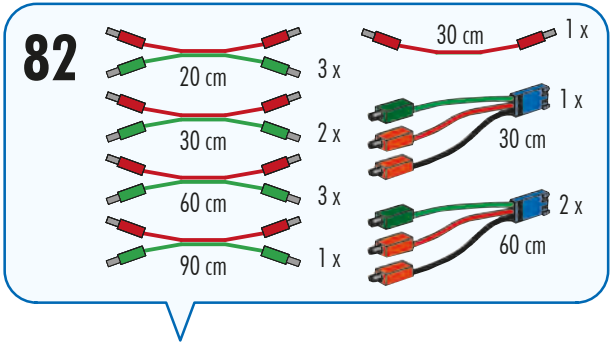




**80**  15 cm 1 x

**81**  1 x  1 x

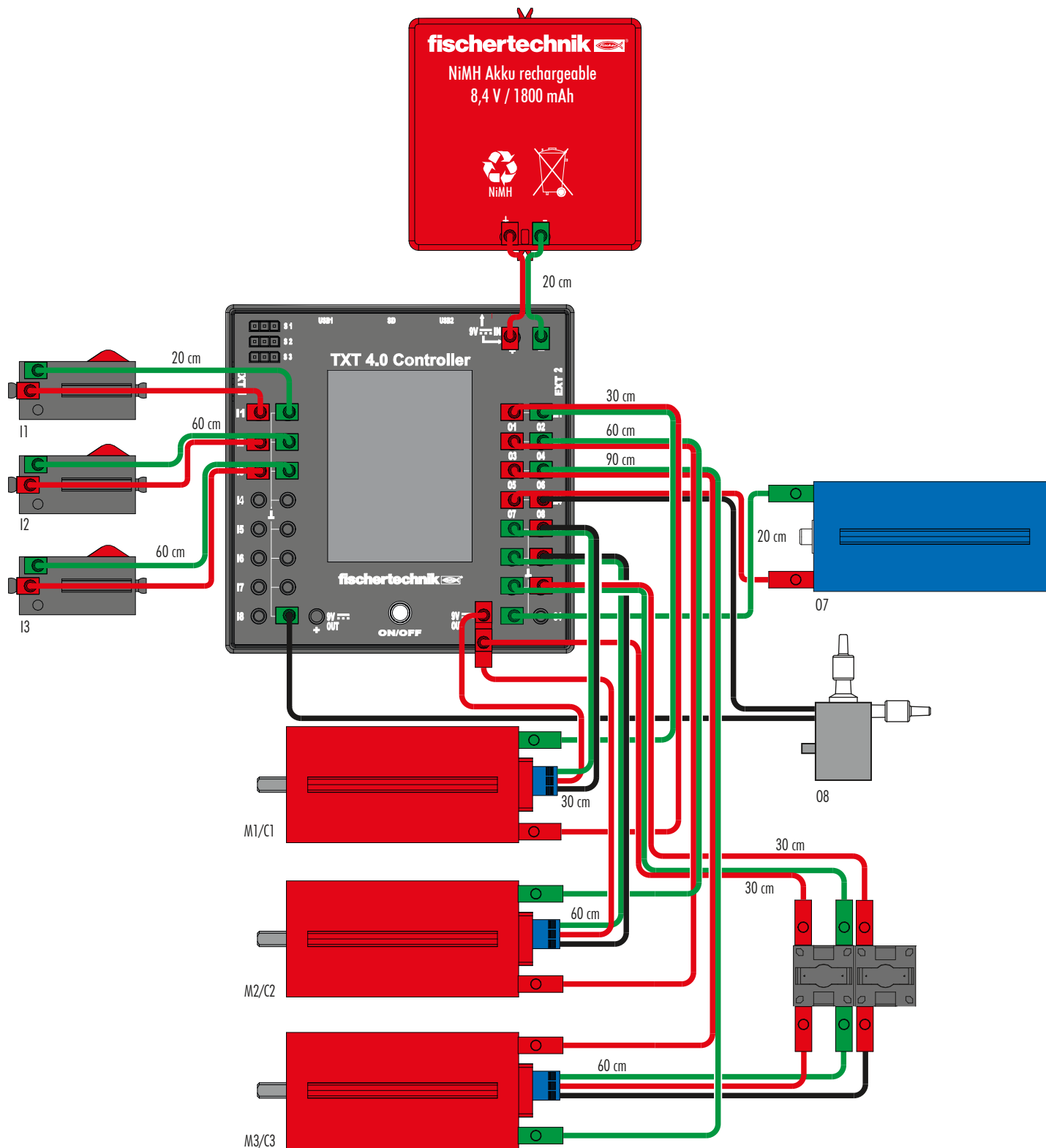







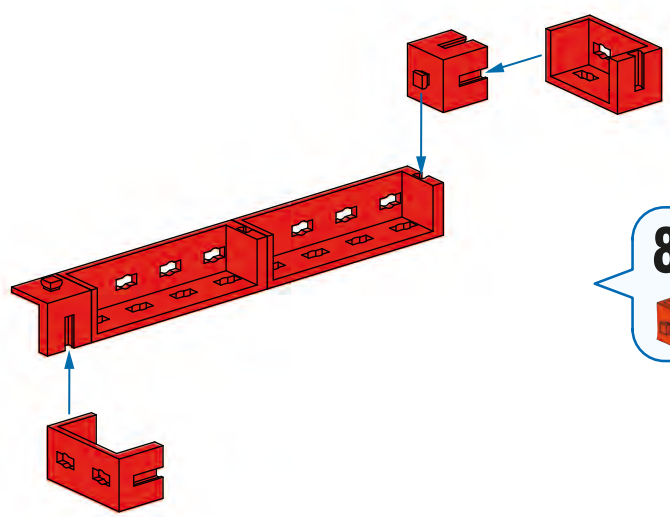
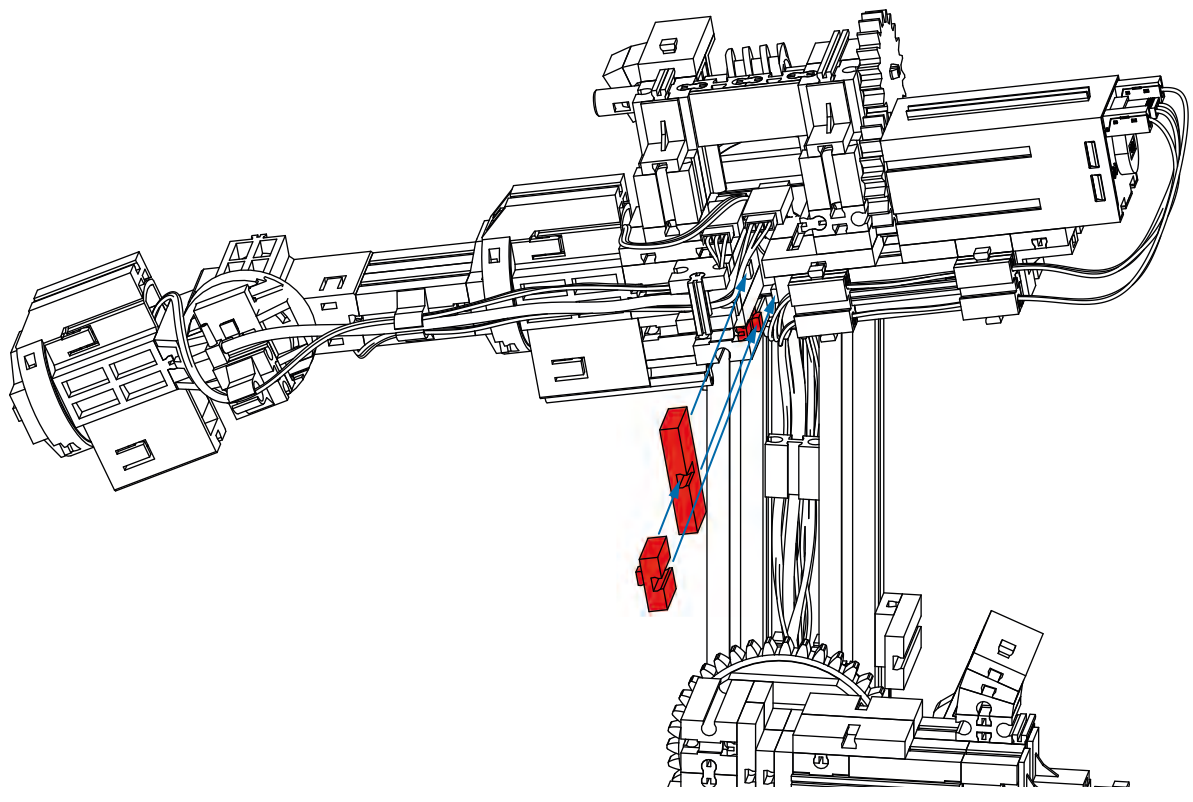
Schaltplan  
Circuit diagram  
Plan électrique

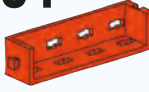


Schakelschema  
Diagrama de circuitos  
Plano elétrico de ligação

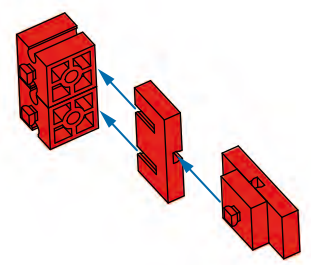
Schema elettrico  
Схема подключения  
电路图






**83**  1x  1x  
 1x

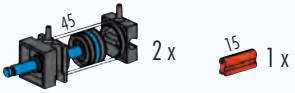


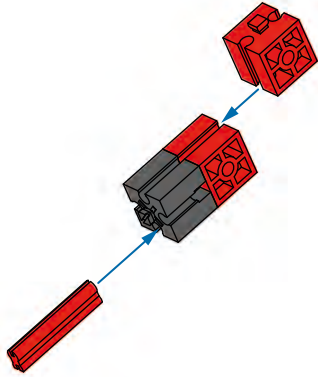
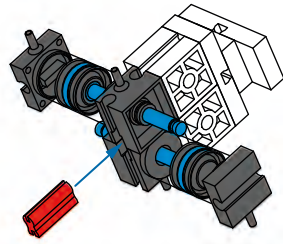
**84**  2x  2x  
 2x





**85**  2x  2x  1x

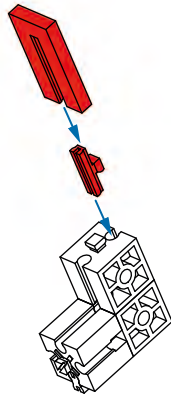


**86**  2x 1x

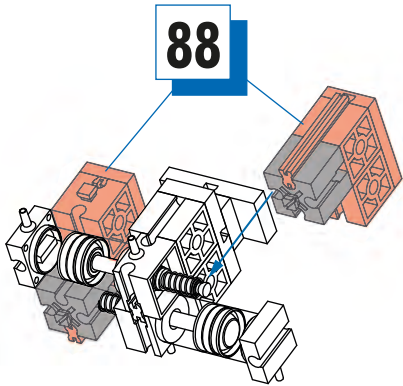


**87**  4x 2x 2x

**88**  2x 2x




**2 x**



**88**

**89**  2x

**90**  2x 2x 2x 4x

