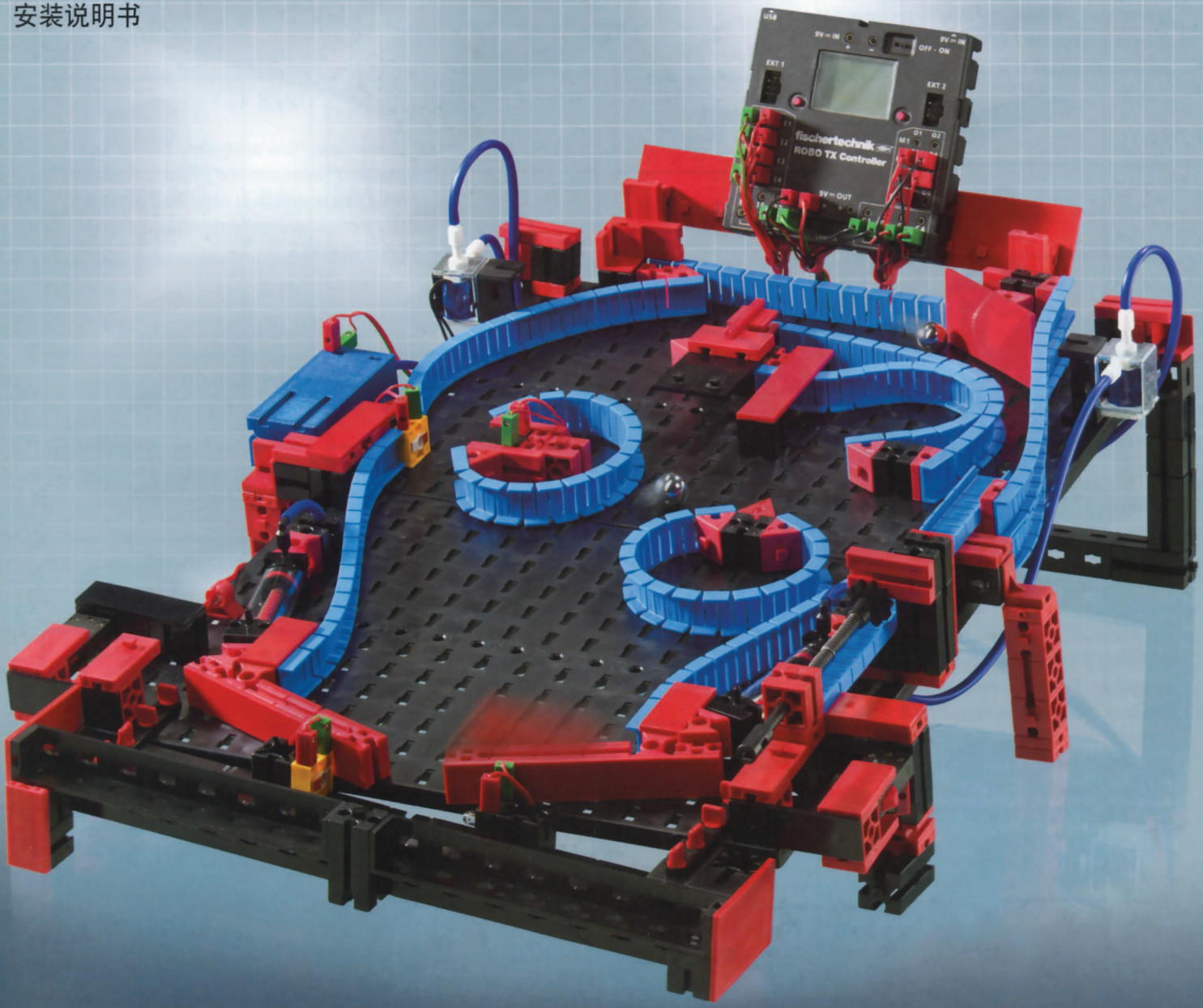
fischertechnik®

COMPUTING

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



ROBO TX ElectroPneumatic

4 MODELS

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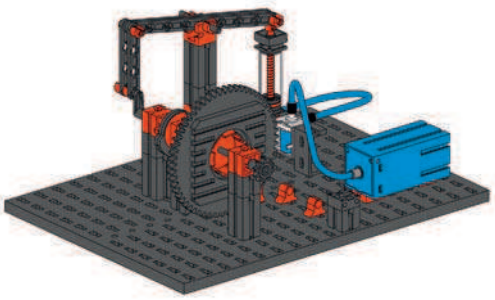
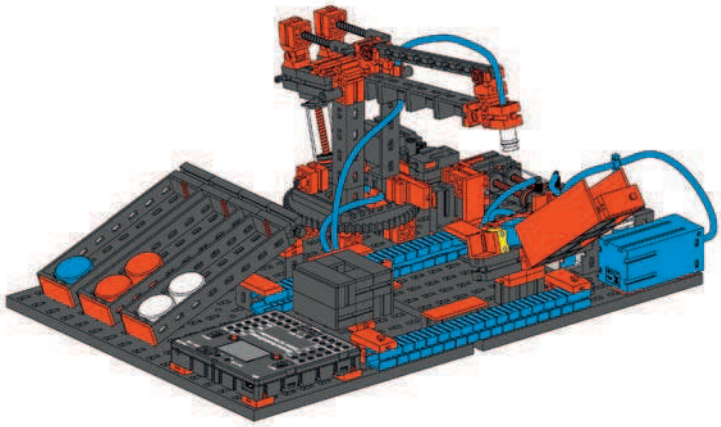
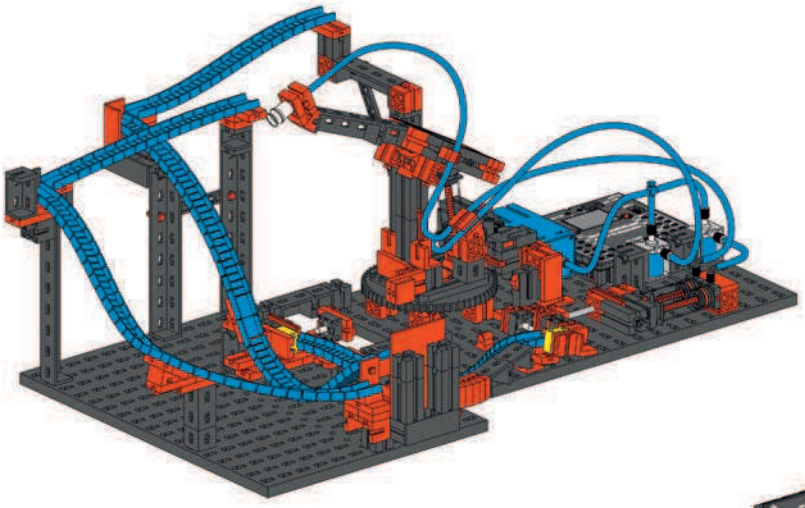


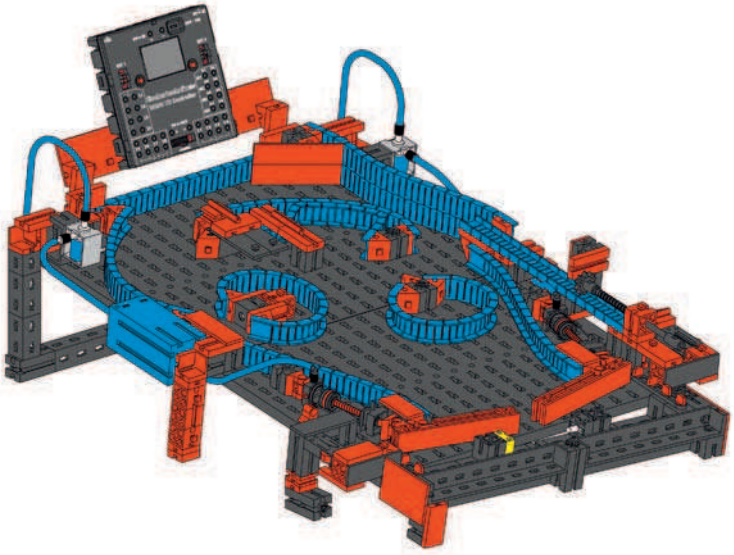
Druckluftmotor / Compressed air motor / Moteur pneumatique / Persluchtmotor / Motor de aire comprimido / Motor de ar comprimido / Motore ad aria compressa / пневмомотор / 压缩空气马达 5



Farbsortierroboter / Color sorting robot / Robot de triage des couleurs / Kleurensorteerrobot / Robot clasificador por colores / Robo selecionador de cores / Robot assortitore di colori / Робот-цветосортировщик / 辨色分选机器人 9



Kugelparcours mit Vakuumgreifer / Ball obstacle course with vacuum picker arm / Parcours à billes avec grappin pneumatique / Kogelparcour met vacuümgrijper / Pista de recorrido de bola con manipulador de vacío / Circuito de esferas com agarrador a vácuo / Percorso sfere con pinza a ventosa / Трасса для шарика с вакуумным захватом / 配分选机器人的滚珠弯道 21



Flipper / Pinball machine / Flipper / Flipper / Pinball / Flipper / Flipper / пинбол-машина / 弹球机 33

Einzelteilübersicht
Spare parts list
Liste des pièces détachées

60°	31 010 10 x
30°	31 011 4 x
90	31 040 1 x
	31 058 2 x
15	31 060 5 x
30	31 061 5 x
	31 078 1 x
	31 082 1 x
45	31 330 2 x
	31 336 19 x
	31 337 20 x
	31 390 1 x
	31 391 1 x
	31 422 1 x
	31 426 6 x
	31 436 6 x
	31 597 2 x

Onderdelenoverzicht
Lista da piezas
Resumo de peça individual

	31 642 2 x
	31 690 2 x
15°	31 981 4 x
	31 982 25 x
	32 064 17 x
7,5°	32 071 13 x
	32 293 1 x
	32 330 5 x
	32 850 7 x
	32 879 10 x
	32 880 2 x
	32 881 24 x
	32 882 6 x
	32 985 2 x
	35 031 2 x
	35 049 23 x
30	35 063 1 x

Singoli componenti
Перечень деталей
零件概览

60	35 065 5 x
90	35 066 1 x
	35 073 2 x
	35 088 1 x
	35 327 2 x
	35 328 5 x
	35 945 2 x
	35 969 3 x
	36 134 2 x
	36 227 2 x
	36 293 6 x
4	36 323 8 x
	36 334 2 x
	36 443 1 x
	36 532 1 x
	36 911 2 x
45	36 913 2 x

	36 915 3 x
	36 920 11 x
	36 921 2 x
	36 922 3 x
	36 950 4 x
60	36 952 1 x
	37 034 1 x
	37 157 1 x
	37 237 28 x
	37 238 3 x
	37 468 18 x
	37 636 2 x
	37 679 6 x
	37 727 2 x
	37 783 2 x
	37 875 2 x
	38 216 2 x

Einzelteilübersicht
Spare parts list
Liste des pièces détachées

38 240	7 x
38 241	7 x
38 242	3 x
38 245	2 x
38 246	3 x
38 248	2 x
38 251	2 x

Onderdelenoverzicht
Lista da piezas
Resumo de peça individual

38 261	6 x
38 414	1 x
38 423	3 x
38 428	3 x
38 464	2 x
38 546	2 x
121 470	1 x

121 640	1 x
121 641	11 x
122 363	1 x
122 409	1 x
128 599	1 x
132 875	2 x
133 027	3 x

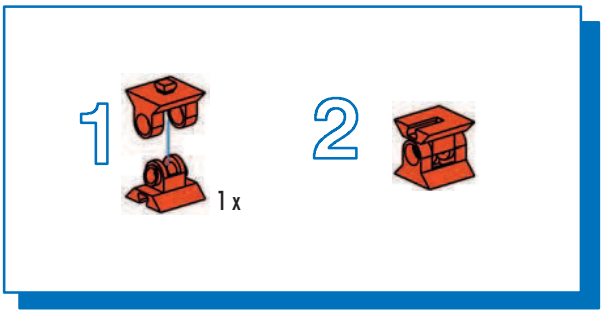
Singoli componenti
Перечень деталей
零件概览

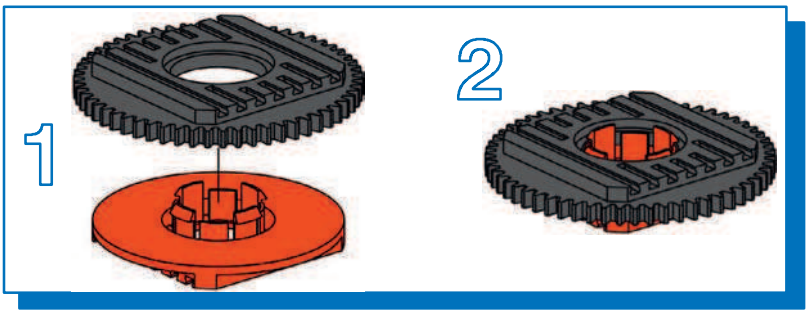
133 028	1 x
133 200	2 x
133 201	2 x
133 202	2 x
144 262	2 x

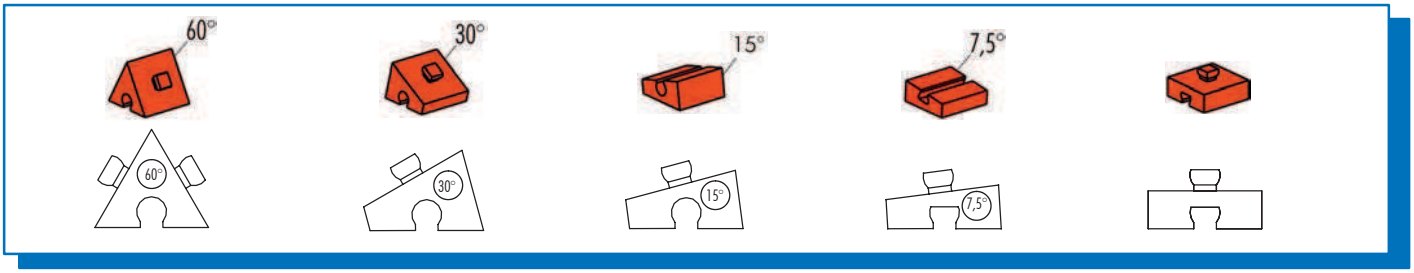
Montagetipps
Tips for assembly
Tuyaux pour le montage

Montagetips
Consejos para el montaje
"Dicas" para montagem

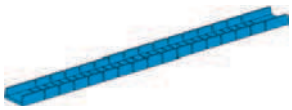
Consigli per il montaggio
Советы по сборке
装配建议







Erfinder Flexprofil Art.-Nr. 121 641:
Design und Konzeption Andreas Lehrberger



Montagetipps
Tips for assembly
Tuyaux pour le montage

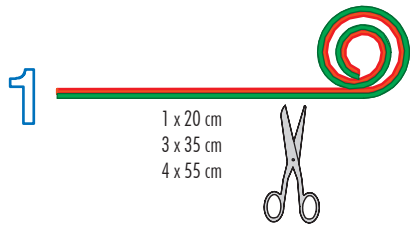
Montagetips
Consejos para el montaje
"Dicas" para montagem

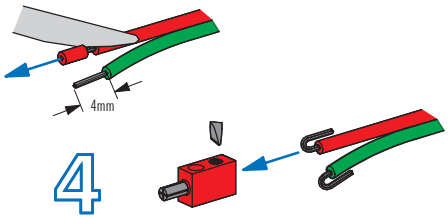
Consigli per il montaggio
Советы по сборке
装配建议

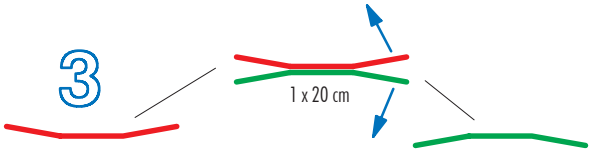
Kabel und Stecker
Plugs and cables
Fiches et des câbles

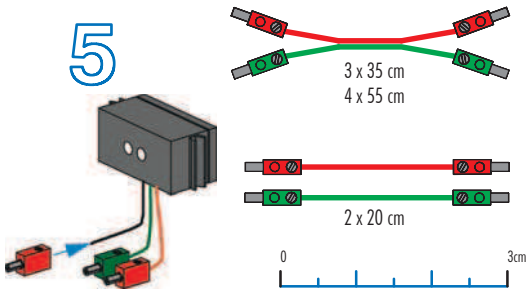
Stekkers en cables
Enchufes en cables
Cabos e contatos

Cavi e connettori
Провода и штекеры
电缆和插头

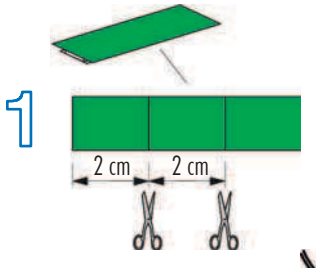




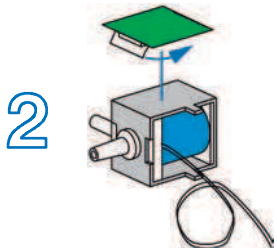




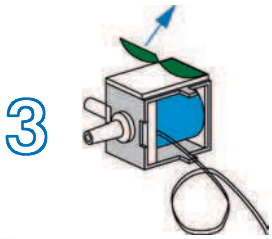
3/2-Wege-Magnetventil
3/2 Way Magnetic Valve
Distributeur électromagnétique à 3/2 voies

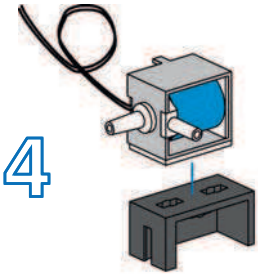


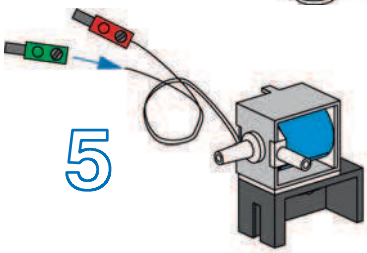
3/2-weg magneetklep
Válvula electromagnética de 3/2 vías
Válvula magnética de 3/2 vias



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



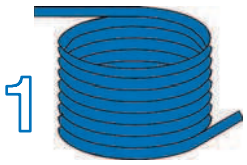




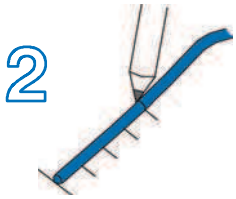
2 x

9-12 V DC / 130 mA

Schlauchzuschnitte
Hose cut to length
Découpes de tuyau



Slangdelen
Recortes de tubos flexibles
Recortes de mangueira



Spezzoni di tubo
Штуцеры
软管段

1 x 2 cm
2 x 7 cm
2 x 15 cm
2 x 30 cm
2 x 40 cm
1 x 50 cm

Sicherheitshinweise
Safety Information
Consignes de sécurité

- Die Anschlussklemmen dürfen nicht kurzgeschlossen werden.
- Drähte nicht in Steckdose einführen!
- Ladegerät regelmäßig auf Schäden überprüfen. Bei einem Schaden darf das Ladegerät bis zur vollständigen Reparatur nicht mehr verwendet werden.
- Alle elektrischen Bauteile (Motoren, Lampen, ROBO TX Controller) dürfen ausschließlich an Stromversorgungen von fischertechnik angeschlossen werden.

- Do not short circuit the connecting terminals!
- Do not insert the wires into an outlet!
- Regularly inspect battery charger for damage.If the battery charger has been damaged, it should not be used further until fully repaired.
- No electrical components (motors, lamps, ROBO TX Controller) are to be connected to any other power supply than that provided by fischertechnik.

- Il est interdit de court-circuiter les bornes de raccordement.
- Contrôlez régulièrement le chargeur en vue d'éventuelles détériorations
- En cas de détérioration, il est interdit d'utiliser le chargeur jusqu'à ce qu'il ait été intégralement réparé
- Tous les composants électriques (moteurs, lampes, ROBO TX Controller) ne doivent être branchés aux alimentations électriques uniquement que par la société Fischertechnik.

Veiligheidsrichtlijnen
Indicaciones de seguridad
Observações sobre segurança

- De aansluitklemmen mogen niet worden kortgesloten.
- Geen draden in de contactdoos steken!
- Laadtoestel regelmatig controleren op schade. Bij schade mag het laadtoestel niet meer gebruikt worden tot het volledig hersteld is.
- Alle elektrische componenten (motoren, lampen, ROBO TX Controller) mogen uitsluitend op stroomvoorzieningen van fischertechnik worden aangesloten.

- Los bornes de conexión no pueden ser puestos en cortocircuito.
- No introducir hilos en la toma de corriente!
- Comprobar con regularidad si el cargador presenta daños.En caso de presentar daños, el cargador no debe volver a ser utilizado hasta que esté completamente reparado.
- Todos los componentes eléctricos (motores, luces, ROBO TX Controller) deben conectarse a la alimentación de corriente de la técnica Fischer exclusivamente.

- Os terminais de conexão não devem ser curto-circuitados.
- Nunca introduzir fios na tomada!
- Verificar regularmente se o carregador apresenta danos.Em caso de dano, o carregador não deverá ser utilizado enquanto não estiver plenamente consertado.
- Todas as peças componentes elétricas (motores, lâmpadas, ROBO TX Controller) só podem ser exclusivamente conectadas em abastecimentos de corrente da Fischertechnik.

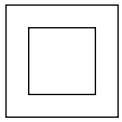
Informazioni per la sicurezza
Указания по технике безопасности
安全指南

- I morsetti di allacciamento non devono essere cortocircuitati.
- Non inserire i fili nella presa elettrica.
- Controllare periodicamente se il caricabatterie presenta dei danni.In caso di danni, il caricabatterie non deve più essere utilizzato fino alla riparazione.
- Tutti i componenti elettrici (motori, lampadine, ROBO TX Controller) devono essere collegati esclusivamente ad alimentatori fischertechnik.

- Не замыкайте накоротко соединительные клеммы.
- Не вставляйте в розетку провода!
- Регулярно проверяйте зарядное устройство на отсутствие повреждений.При налиРии повреждений использовать зарядное устройство до выполнения его полного ремонта не разрешается.
- Все электрические детали (электромоторы, лампочки.) можно подключать только к источникам электропитания от fischertechnik.

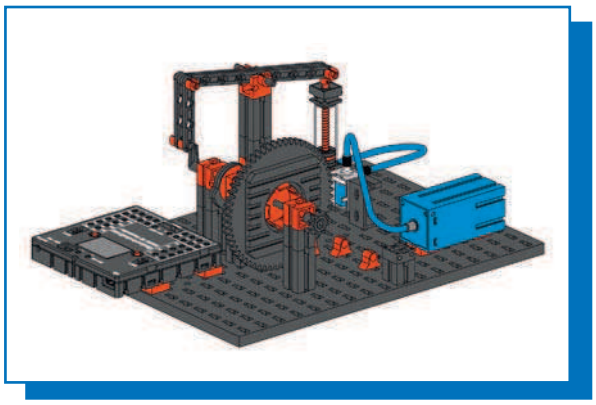
- 接线柱不允许被短路。
- 禁止将金属丝插入插座！
- 经常检查充电器是否有损坏情况。如果充电器有损，直到完全修好为止不 可以再使用。
- 只允许将所有电气部件 (传感器，电机) 与慧鱼技术产品的电源装置相连接

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



- 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 élements comportant des arêtes et o pointes vives indispensables au bon fonctionnement!
- Let op! U kunt zich bezeren aan bouwstenen met sherpe randen of punten!
- Attenzione! Esiste il pericolo di lesione con i pezzi di costruzione che hanno bordi e punte spigolosi necessari per la funzionalita del pezzo!
- 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！

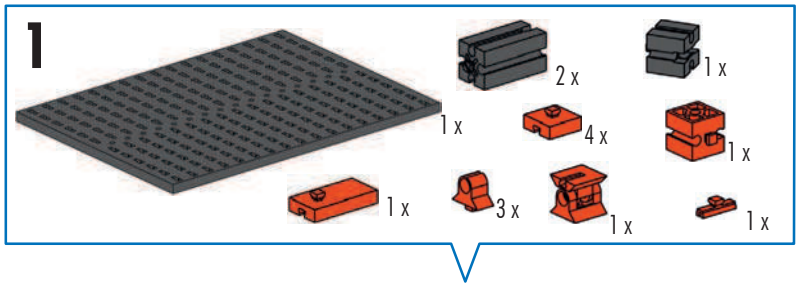
- Alle Einzelteile, insbesondere bewegliche Teile sind falls notwendig zu warten und zu reinigen.
- All components, especially moving parts, should be maintained and cleaned as necessary.
- Toutes les pièces détachées et en particulier les pièces mobiles, sont, si nécessaire, à entretenir et à nettoyer.
- 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 limpadas.
- 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。

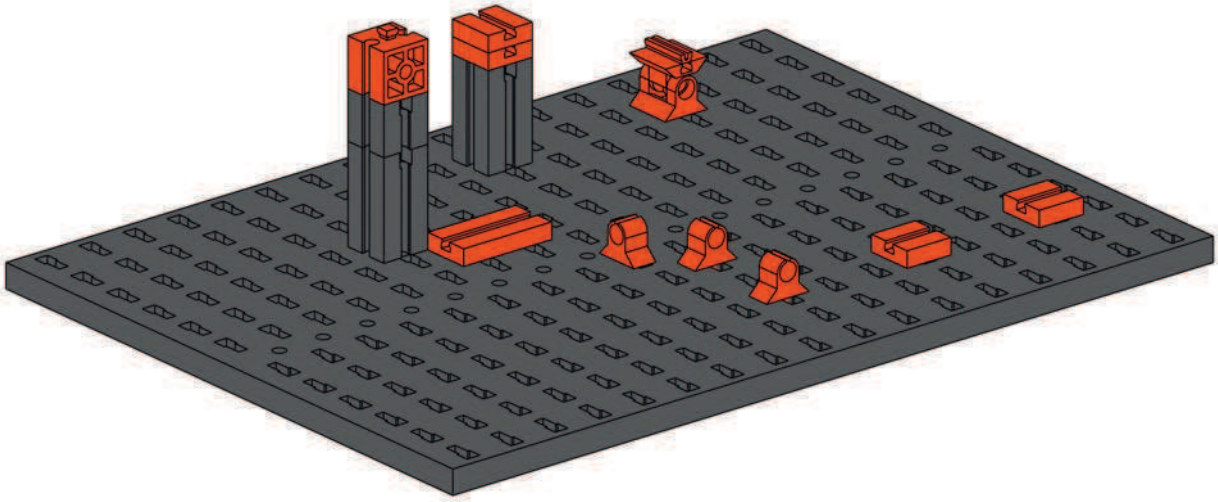


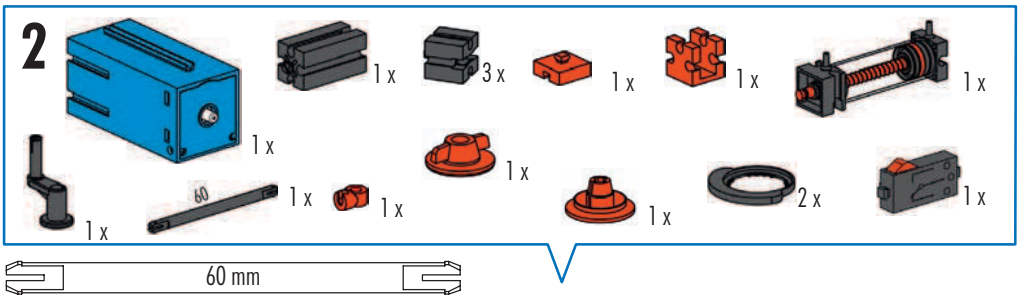
Druckluftmotor
Compressed air motor
Moteur pneumatique

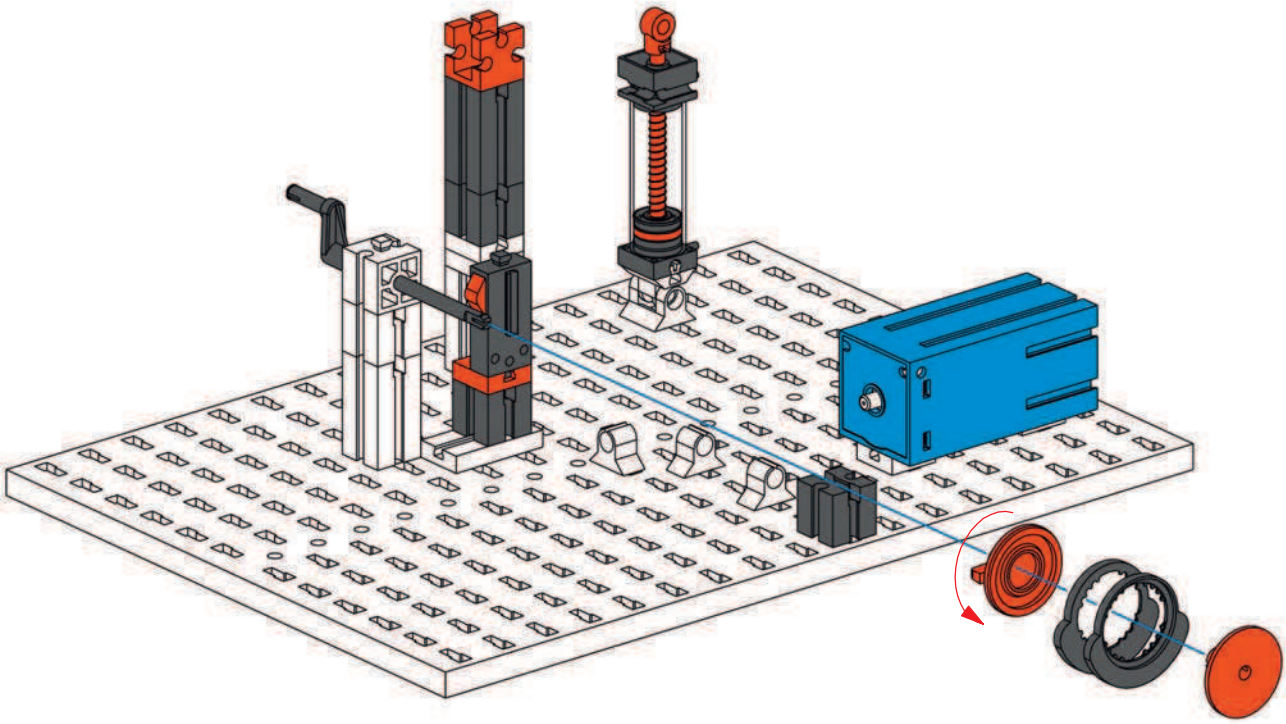
Persluchtmotor
Motor de aire comprimido
Motor de ar comprimido

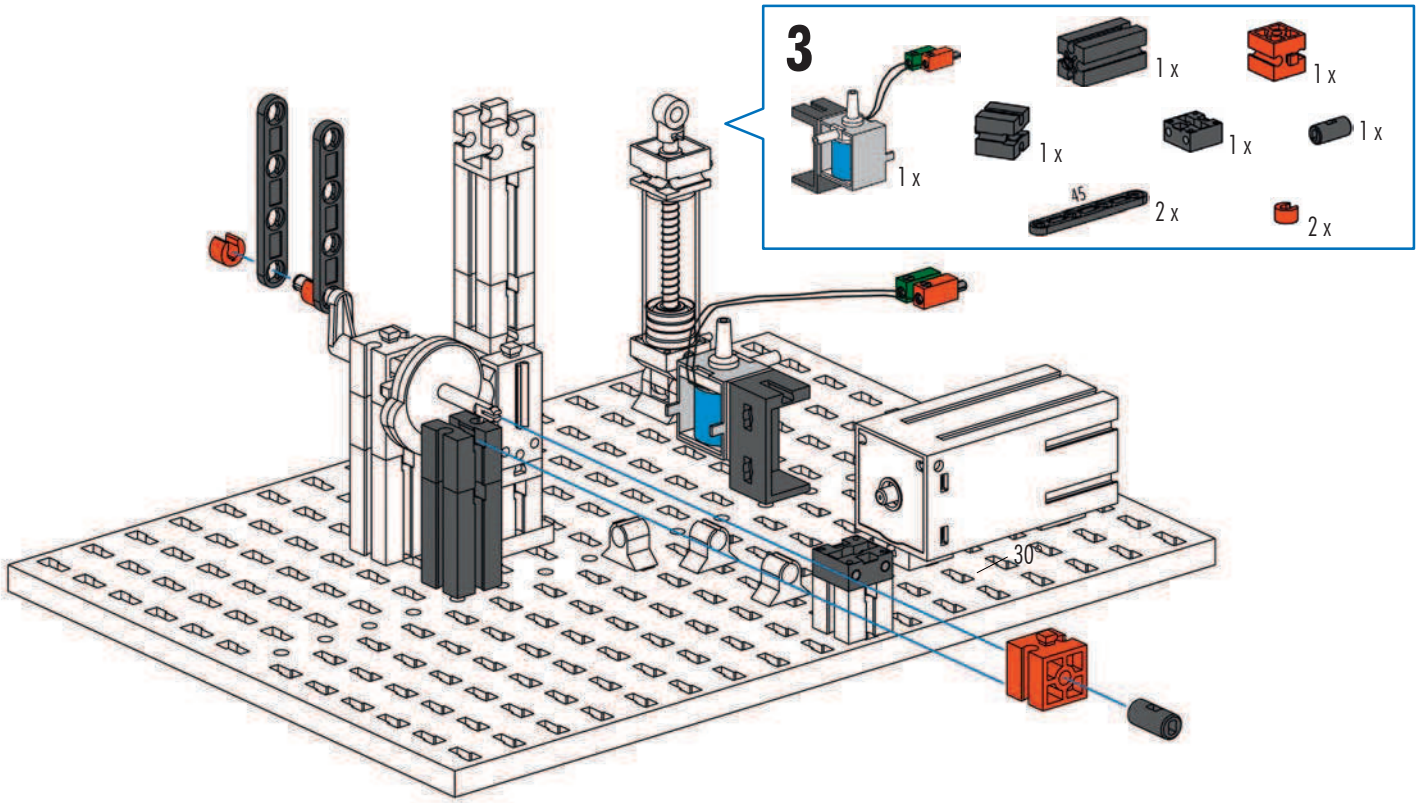
Motore ad aria compressa
пневмомотор
压缩空气马达

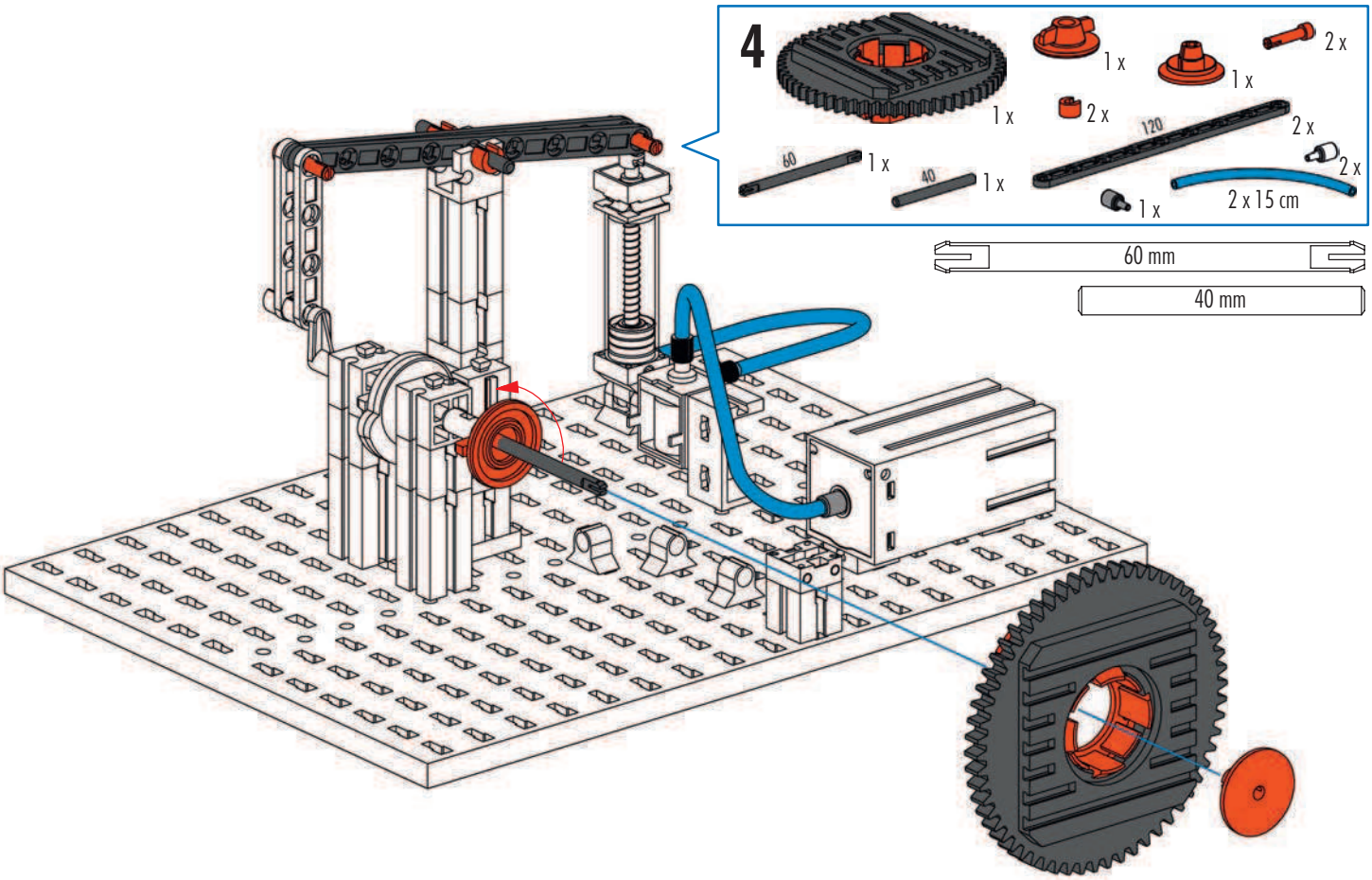


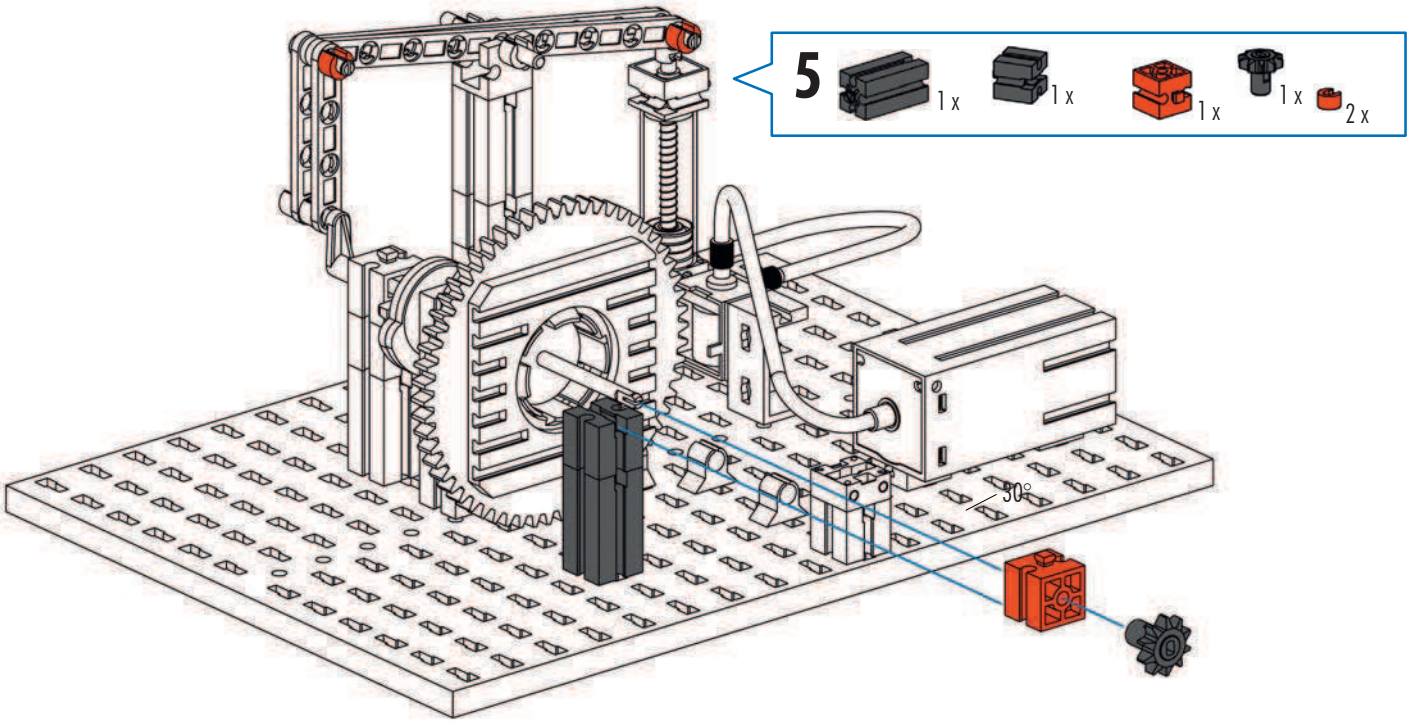


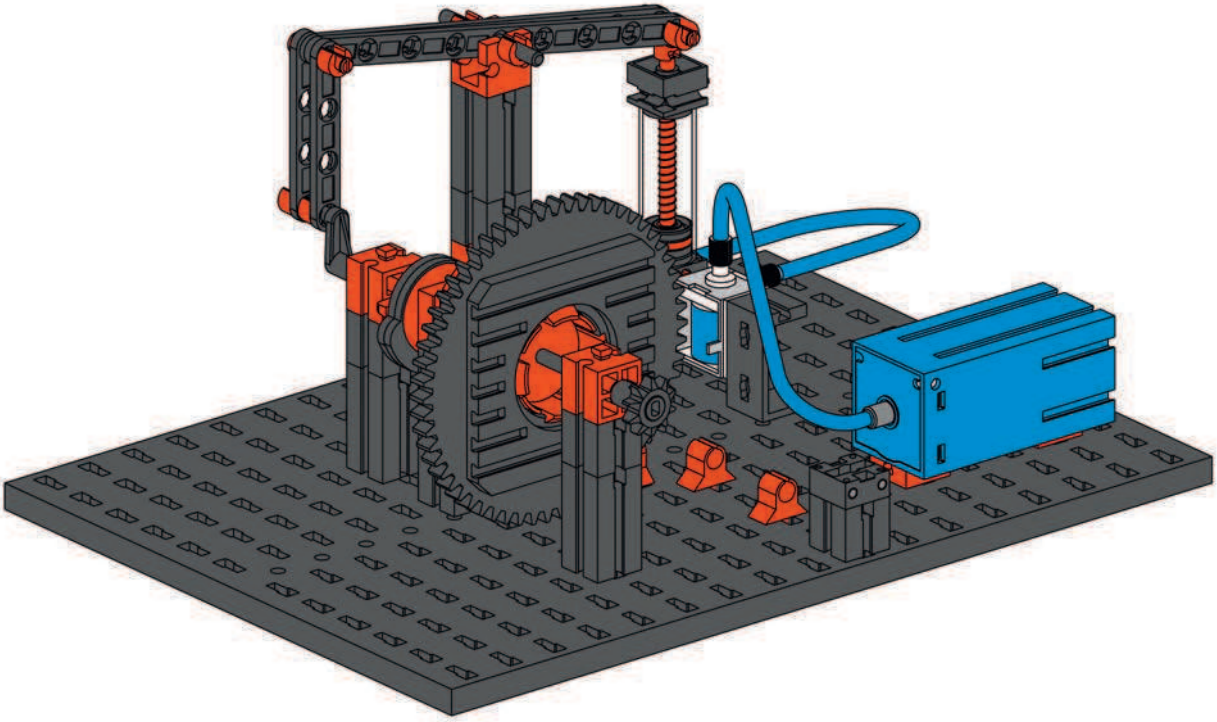





3
1 x
1 x
1 x
1 x
1 x
1 x
45
2 x
2 x
30°


4
1 x
1 x
2 x
1 x
2 x
120
2 x
60
1 x
40
1 x
2 x
1 x
2 x 15 cm
60 mm
40 mm

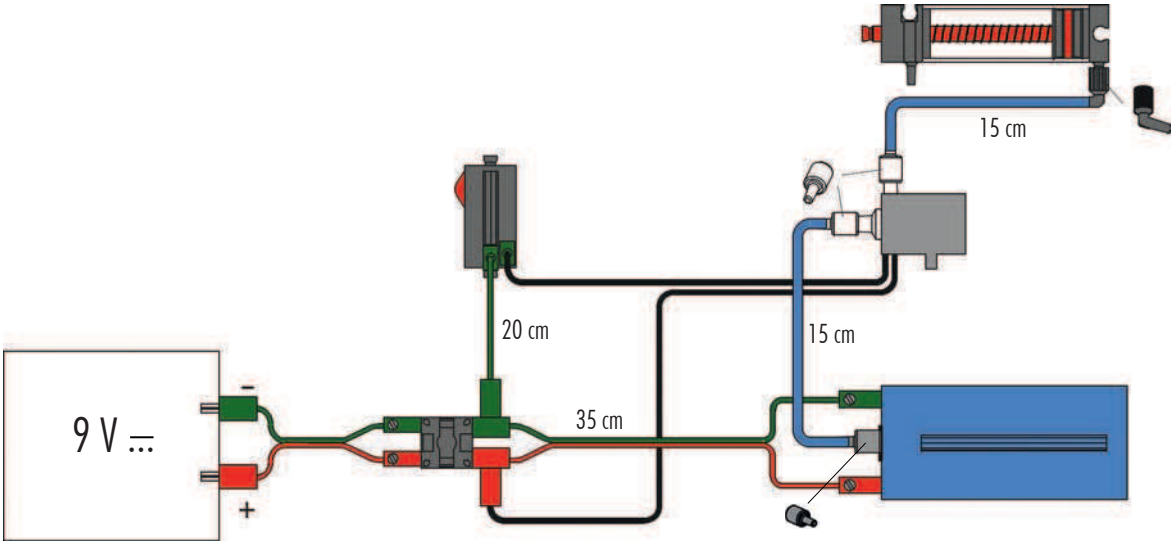


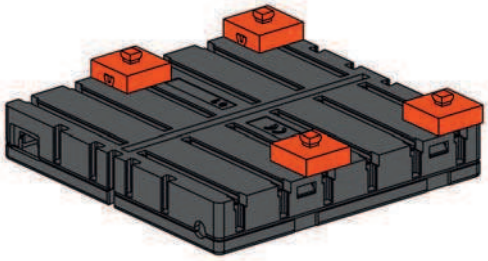


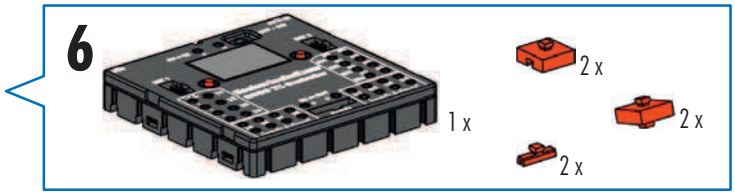
Schaltplan A
Circuit diagram A
Plan électrique A

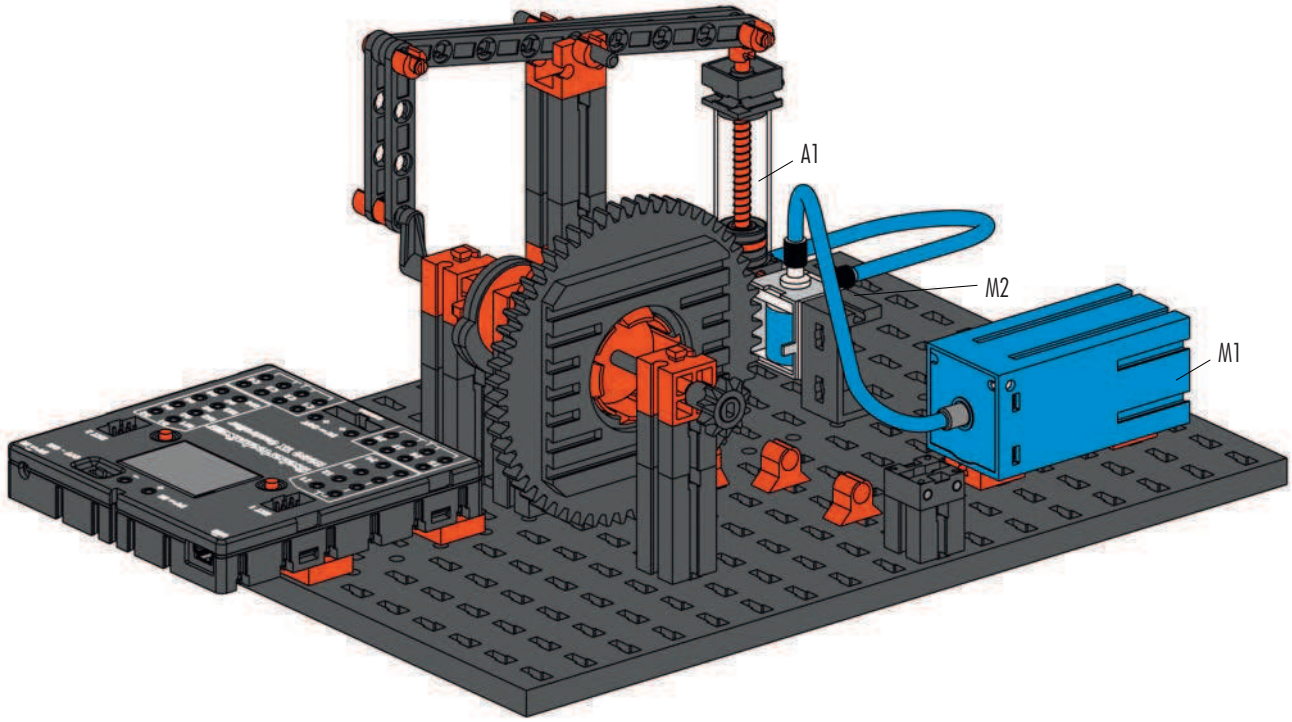
Schakelschema A
Diagrama de circuitos A
Plano elétrico de ligação A

Schema elettrico A
Схема подключения A
电路图 A





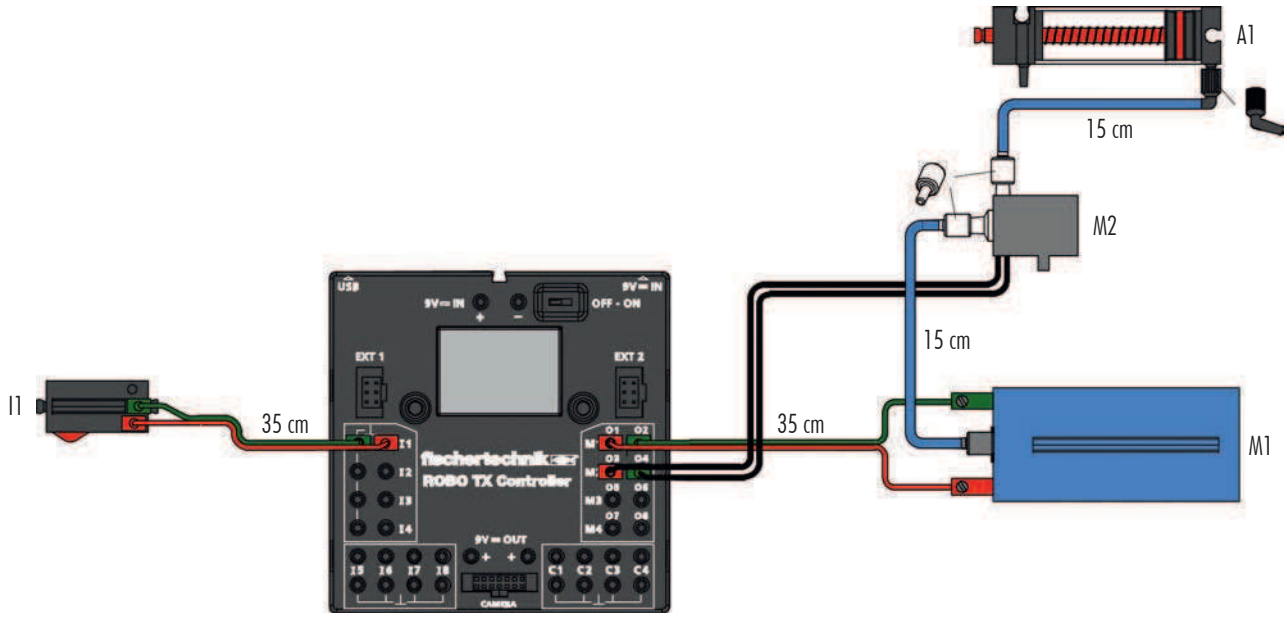




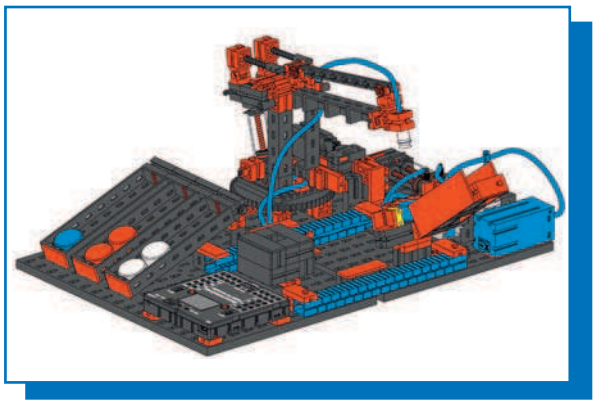
Schaltplan B
Circuit diagram B
Plan électrique B

Schakelschema B
Diagrama de circuitos B
Plano elétrico de ligação B

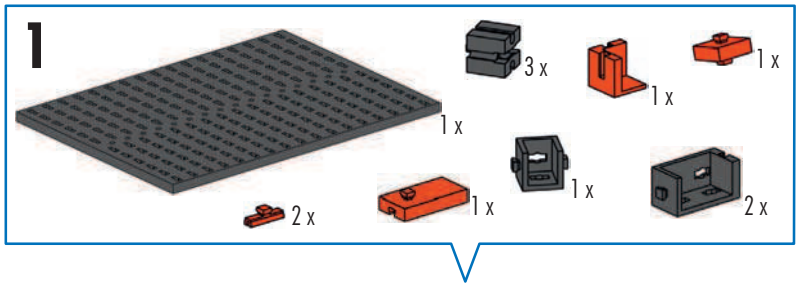
Schema elettrico B
Схема подключения B
电路图 B

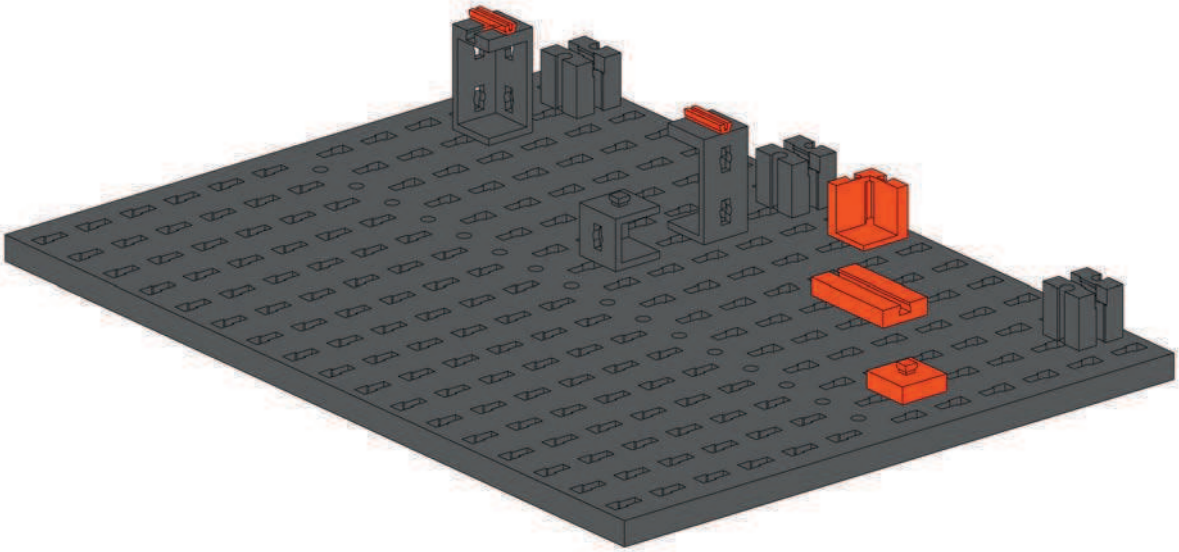


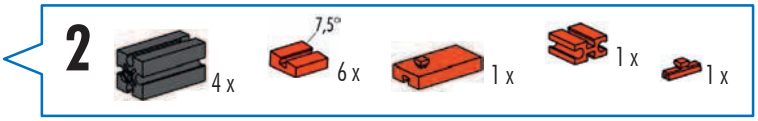
- Informationen zur Programmierung des Modells: Siehe didaktisches Begleitmaterial auf CD-ROM.
- Information on programming model: See related instructional material on CD-ROM.
- Informations concernant la programmation de la maquette : voir le matériel d'accompagnement didactique sur le CD-ROM.
- Informatie over de programmering van het model: Zie het didactisch begeleidend materiaal op CD-ROM.
- Informaciones sobre la programación del modelo: Véase material didáctico adjunto en el CD-ROM.
- Informações sobre a programação do modelo: ver o material didático de acompanhamento no CD-ROM.
- Informazioni sulla programmazione del modello: vedi materiale didattico su CD-ROM.
- Информация о программировании модели: смотрите обучающий сопроводительныйматериал на CD.
- 有关该模型编程的信息：见 CD 光盘上的指导性说明资料。

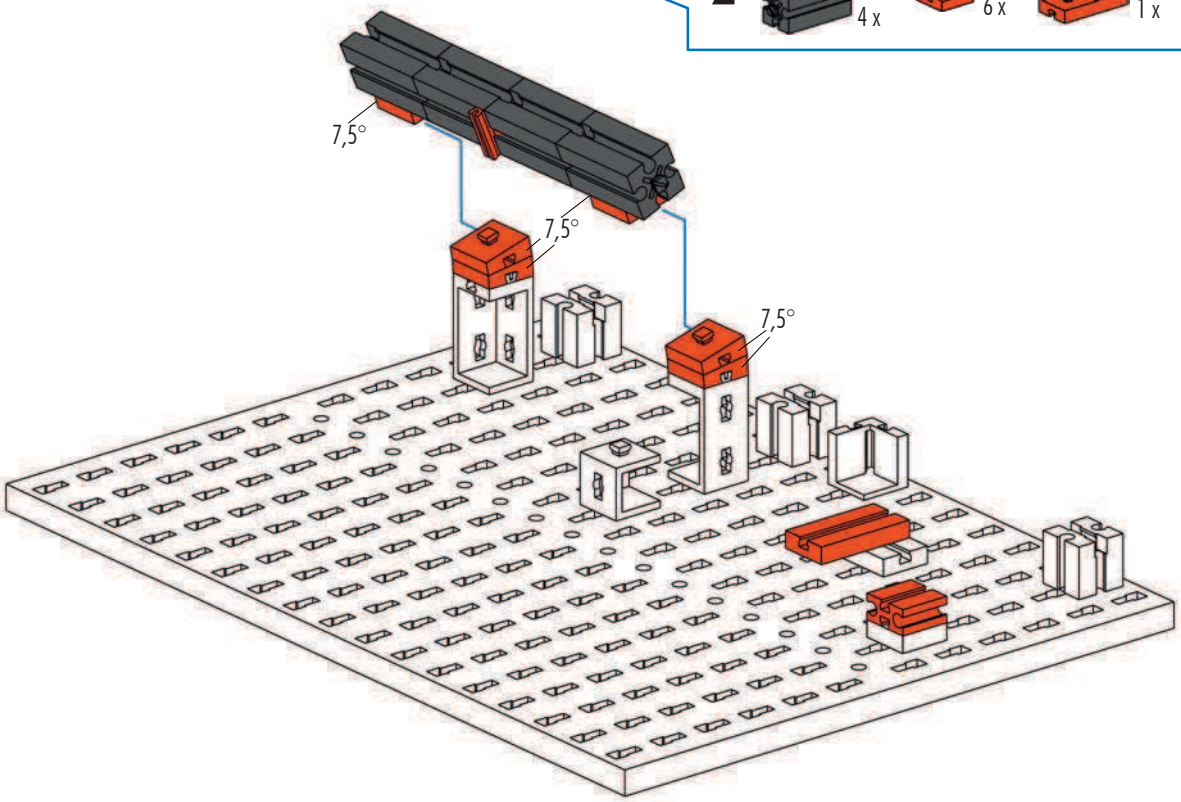


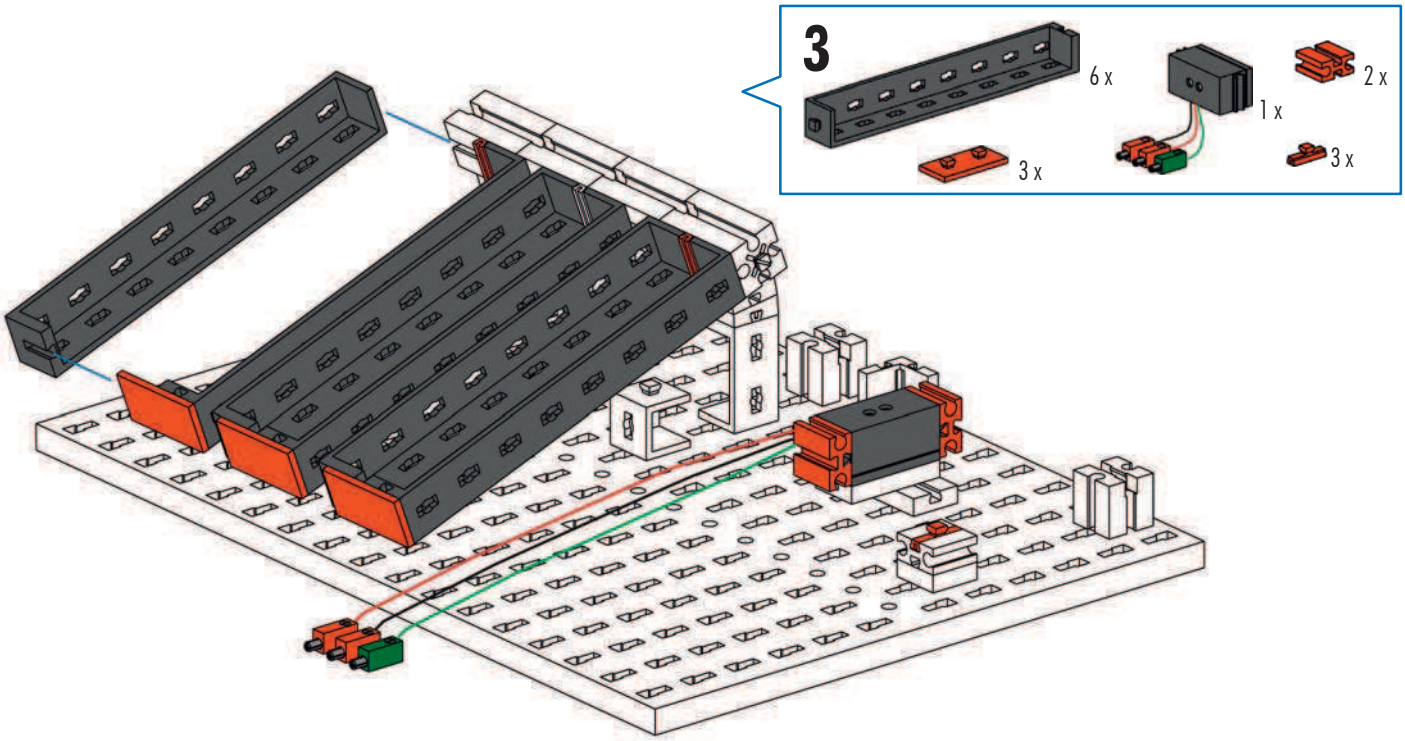
Farbsortierroboter
Color sorting robot
Robot de triage des couleurs
Kleurensorteerrobot
Robot clasificador por colores
Robo selecionador de cores
Robot assortitore di colori
Робот-цветосортировщик
辨色分选机器人

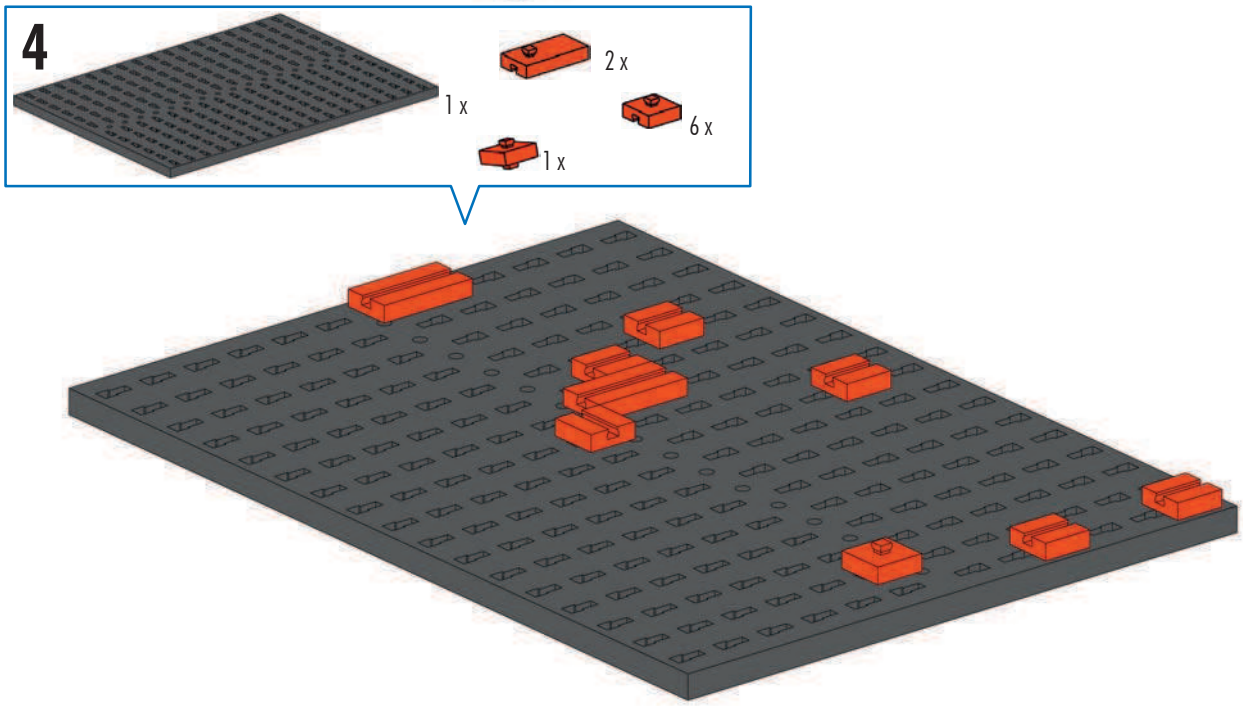


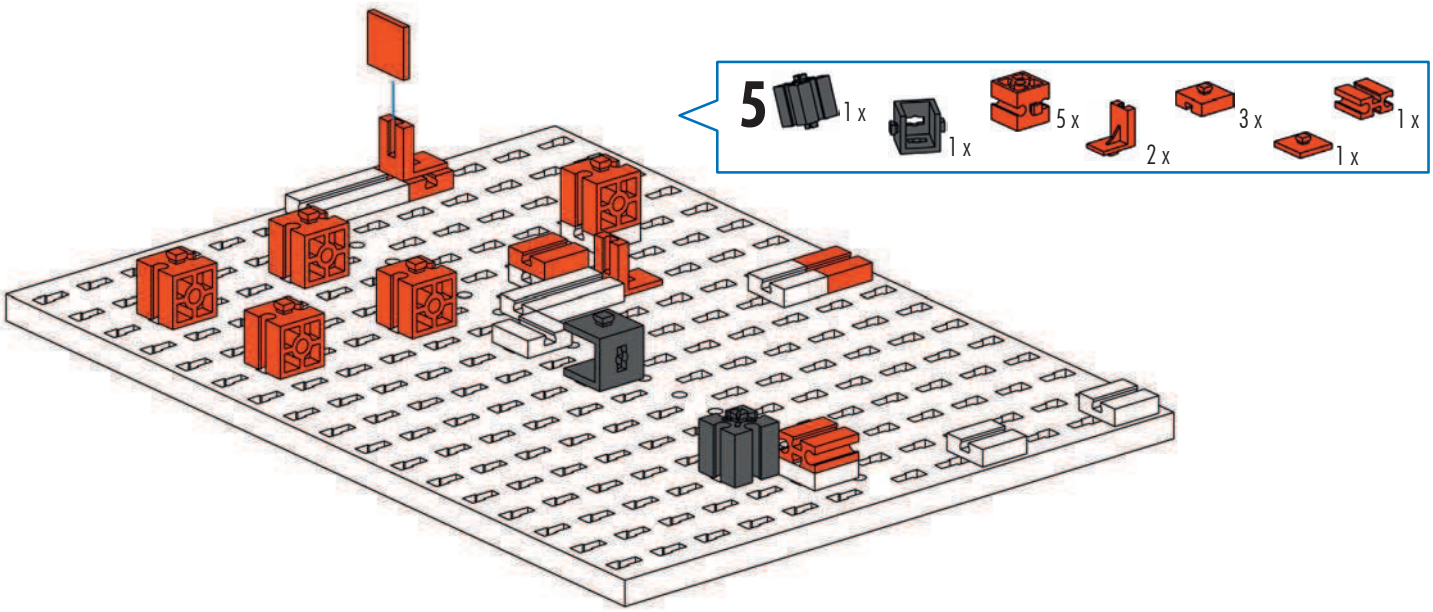


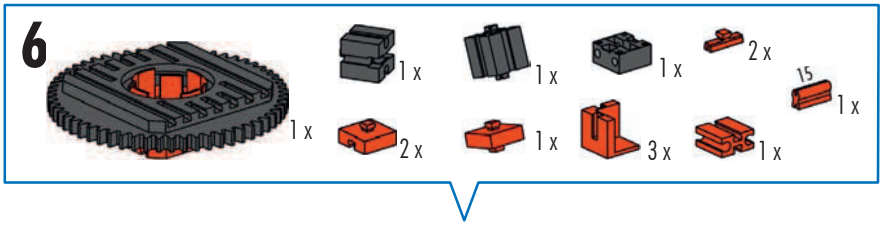


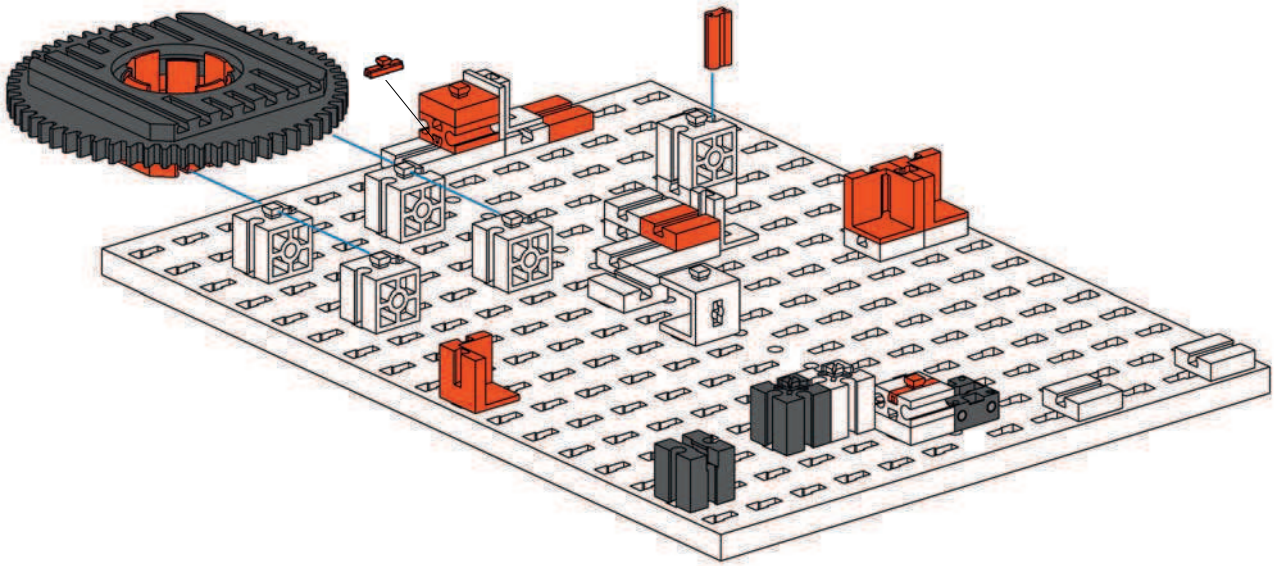


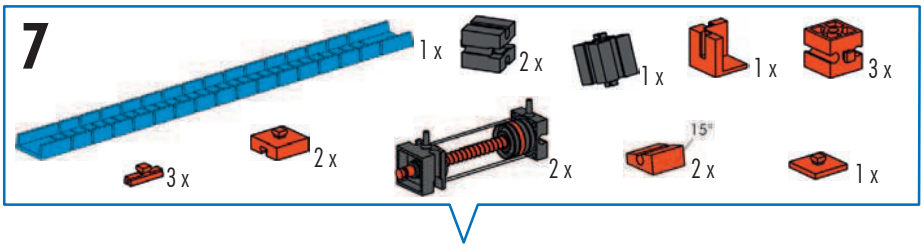

3
6 x
1 x
2 x
3 x
3 x

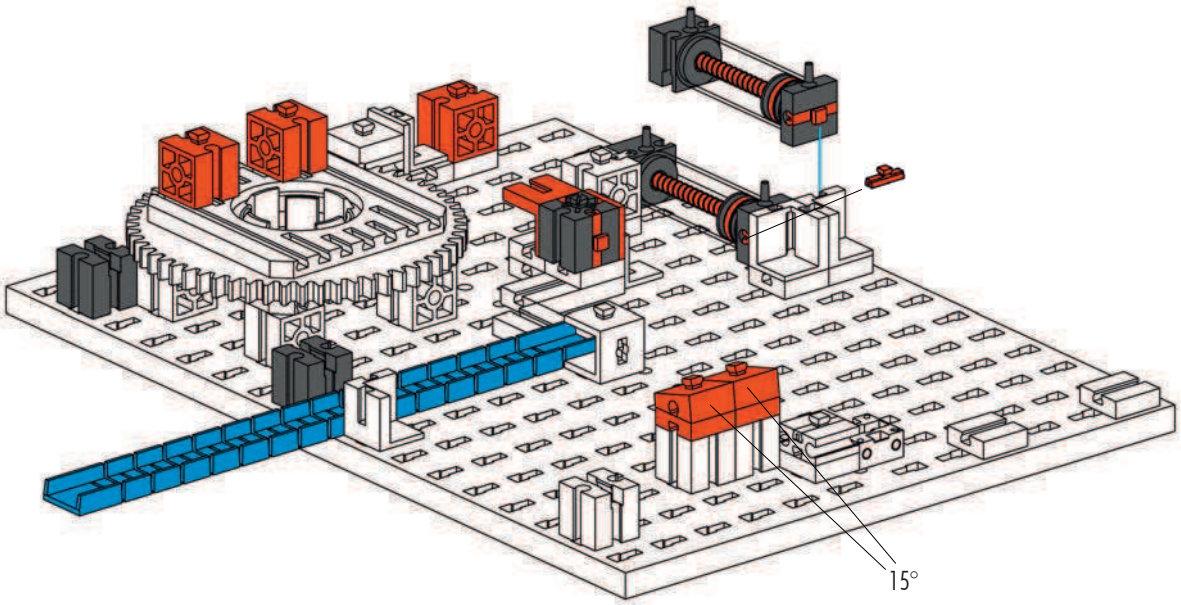

4
1 x
2 x
6 x
1 x

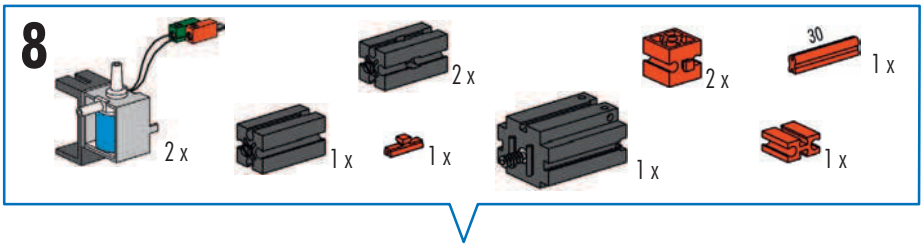

5
1 x
1 x
5 x
2 x
3 x
1 x
1 x

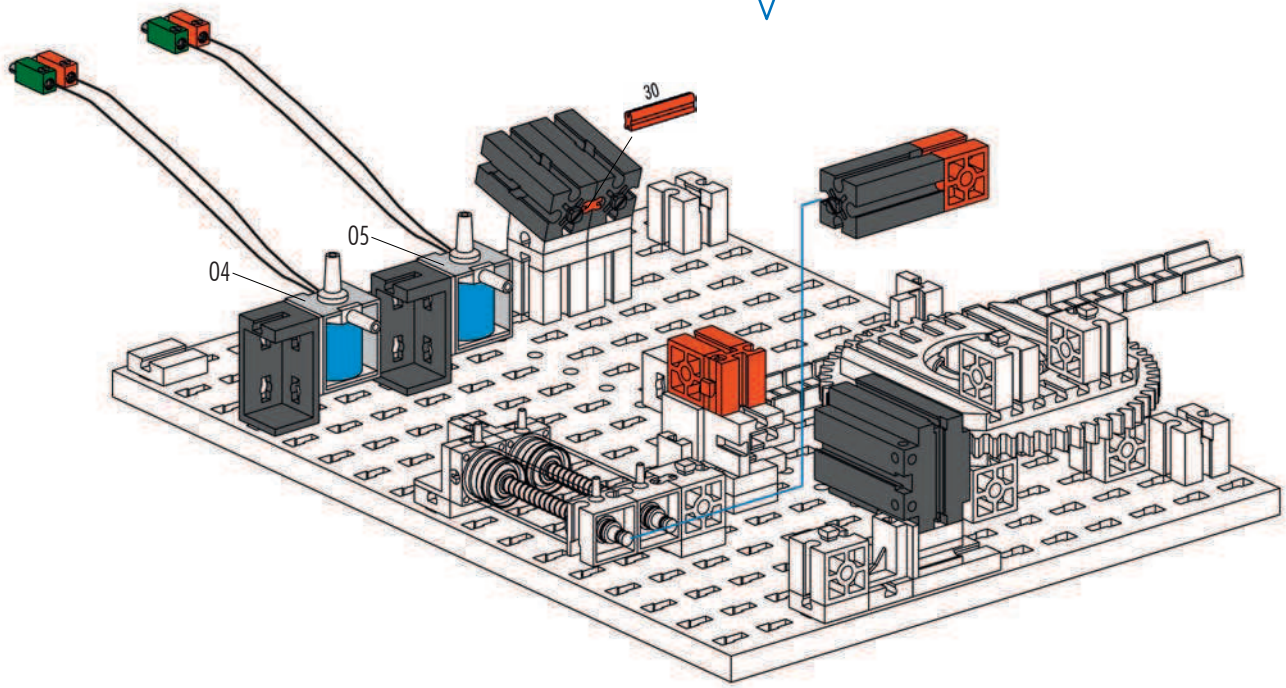

6
1 x
1 x
1 x
1 x
2 x
15
1 x
2 x
1 x
3 x
1 x

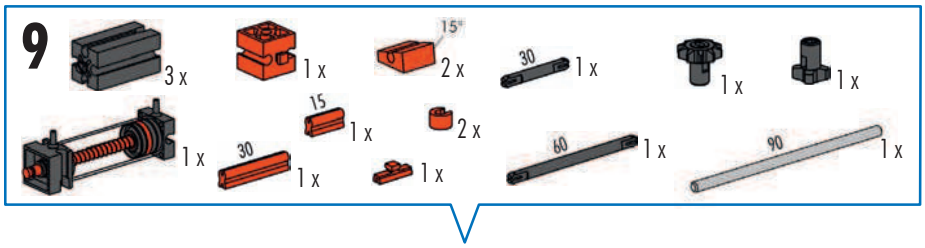


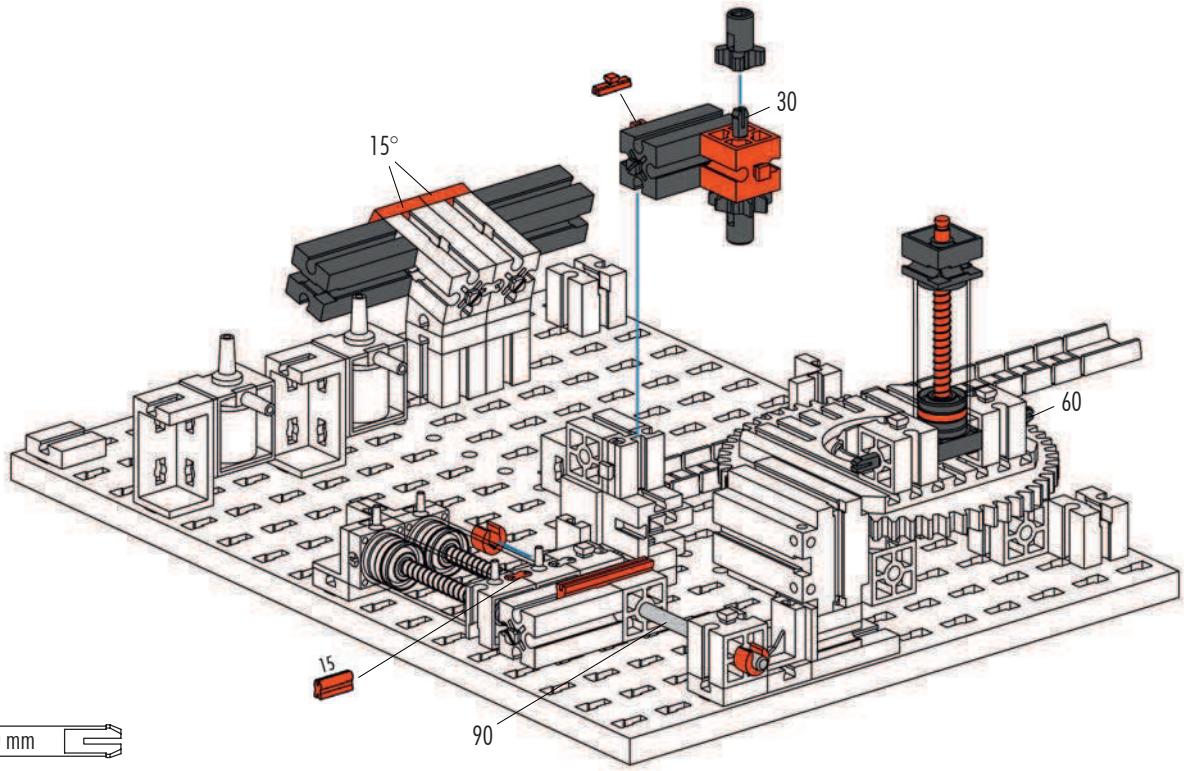

7
1 x
2 x
1 x
1 x
3 x
3 x
2 x
2 x
15°
2 x
1 x

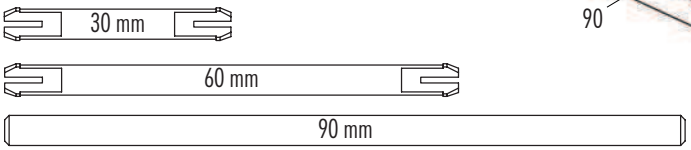

15°

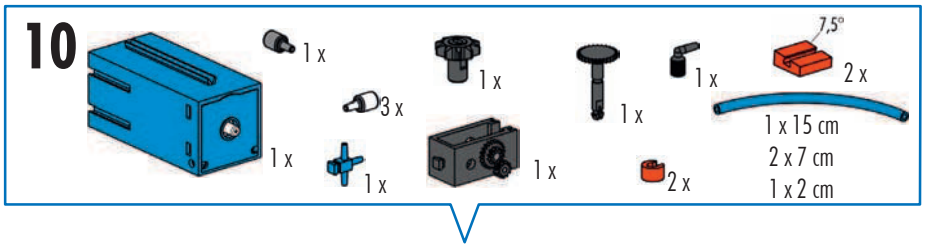

8
2 x
2 x
1 x
1 x
2 x
30
1 x
1 x
1 x

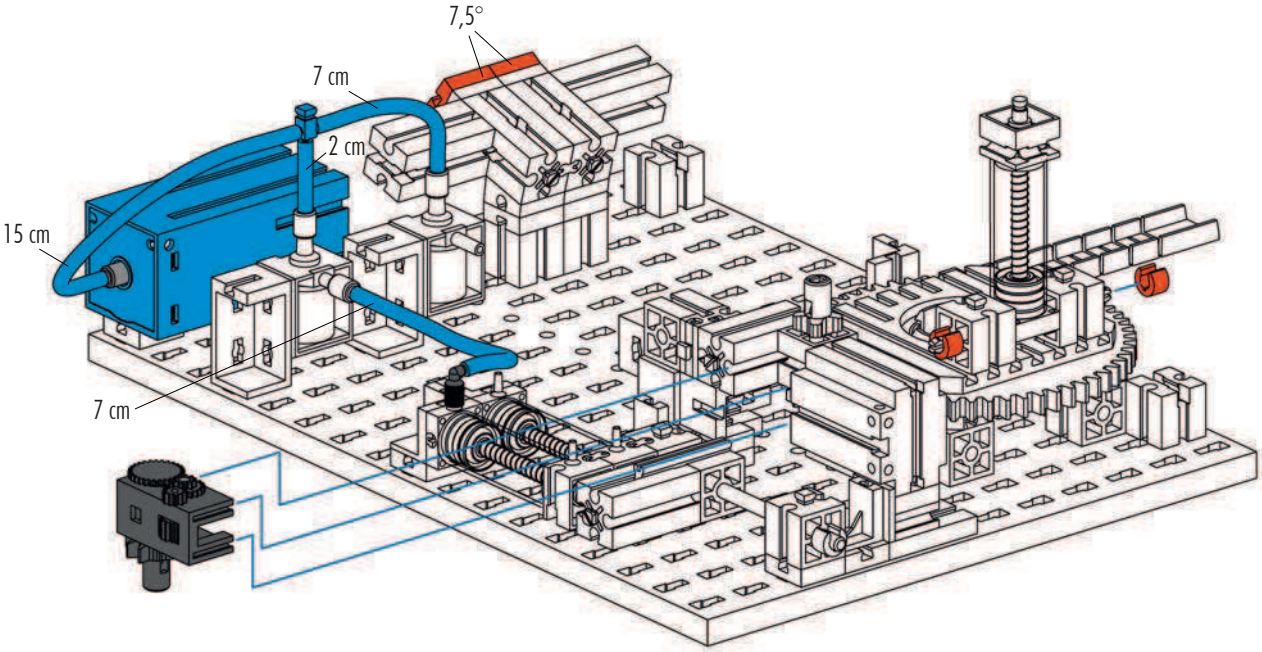

30
05
04

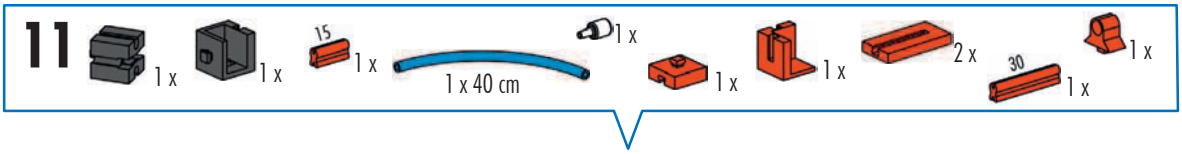

9
3 x
1 x
15°
2 x
30
1 x
1 x
1 x
15
1 x
2 x
1 x
30
1 x
1 x
60
1 x
90
1 x

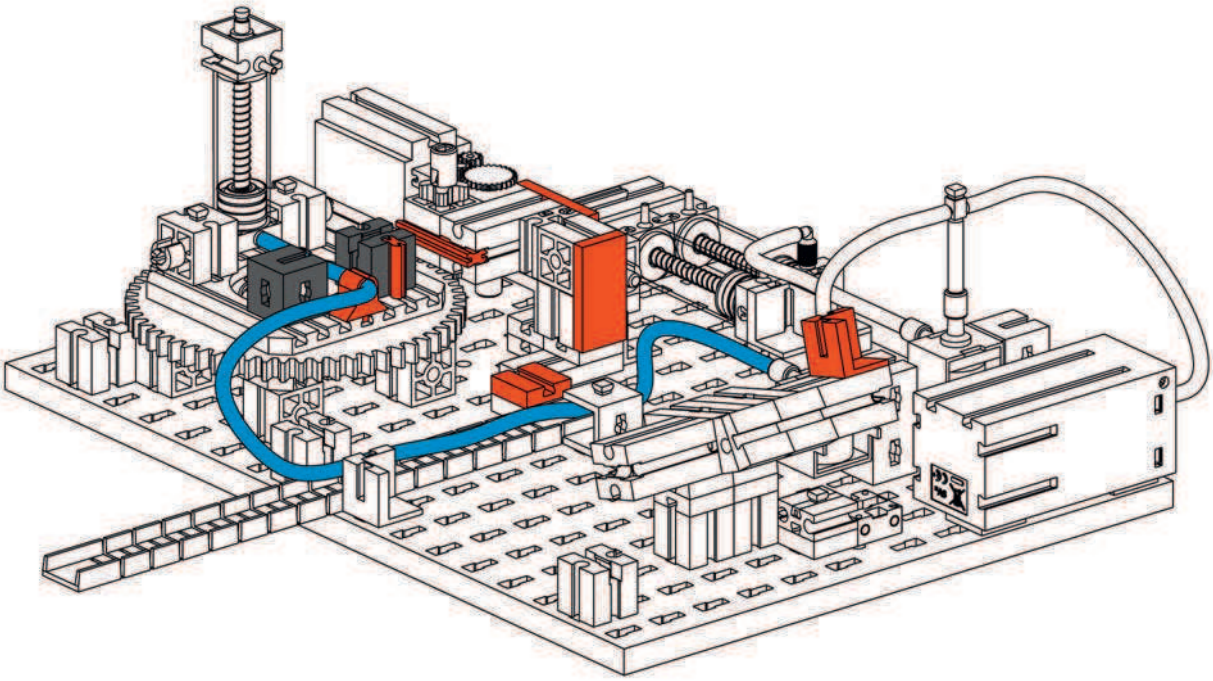

30
15°
60
15
90

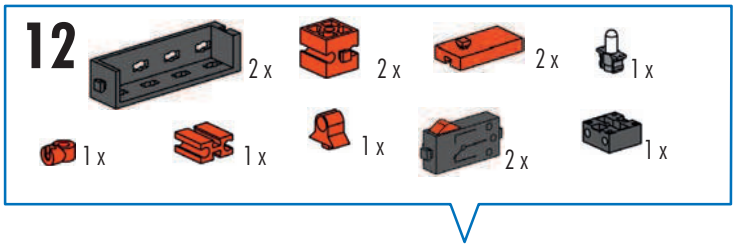

30 mm
60 mm
90 mm

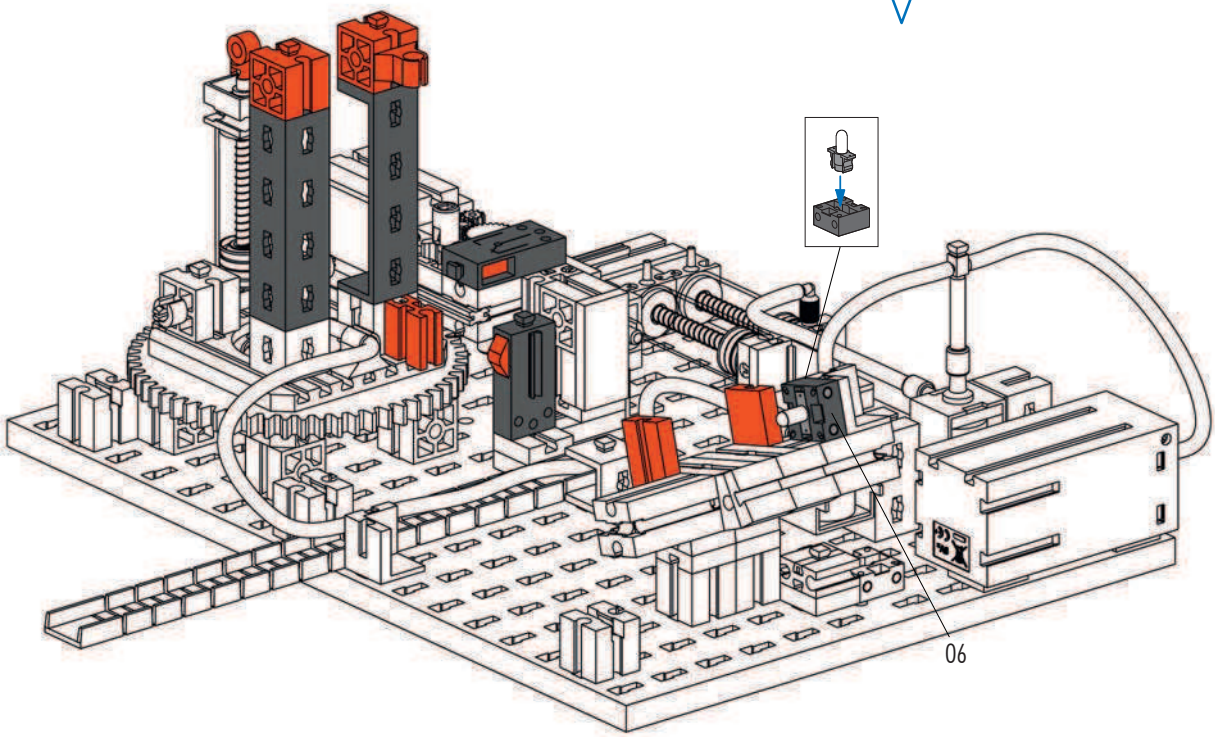

10
1 x
1 x
3 x
1 x
1 x
1 x
1 x
1 x
2 x
7,5°
2 x
1 x 15 cm
2 x 7 cm
1 x 2 cm

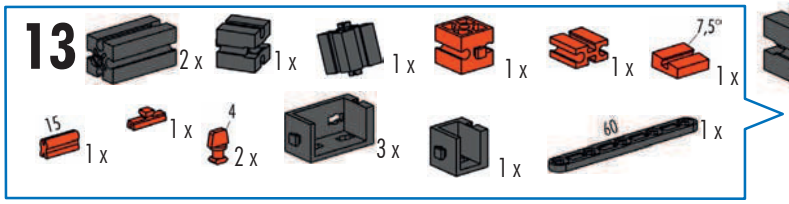

7,5°
7 cm
2 cm
15 cm
7 cm

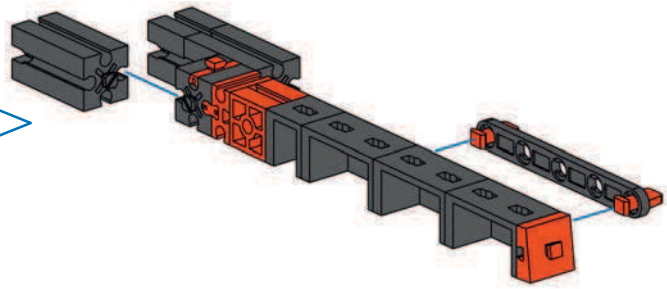

11
1 x
1 x
15
1 x
1 x 40 cm
1 x
1 x
1 x
2 x
30
1 x
1 x

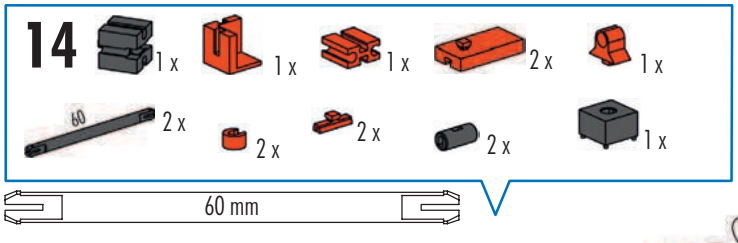


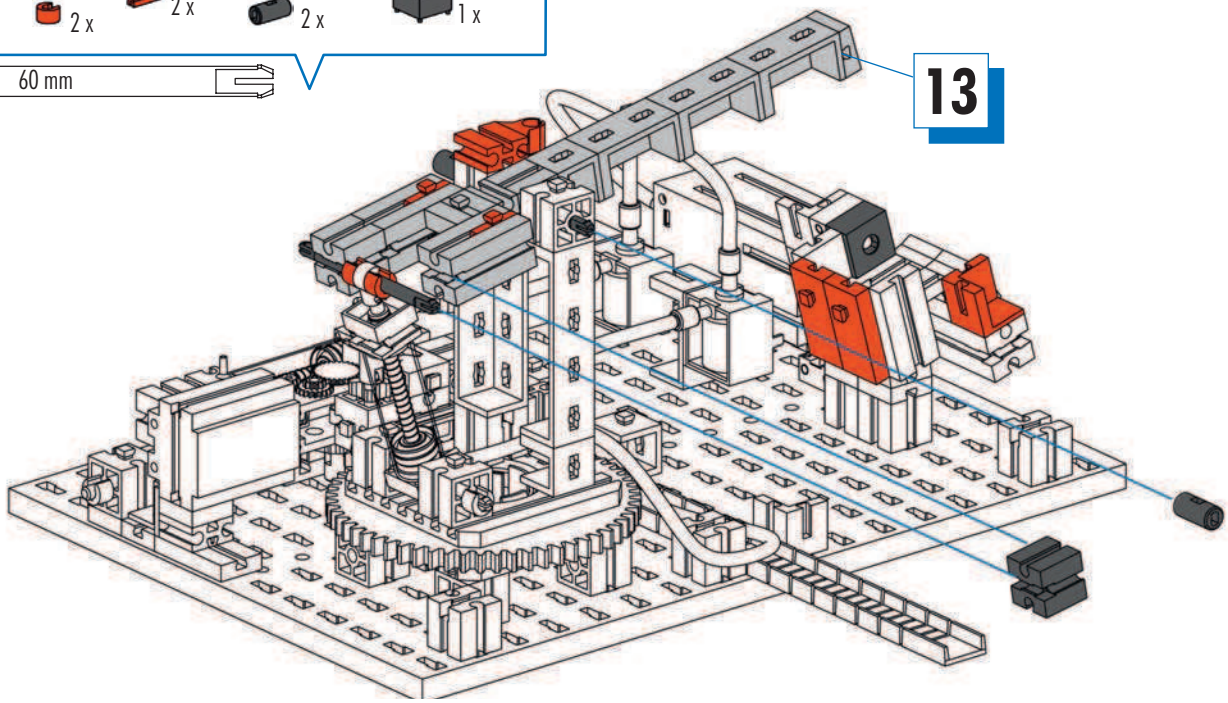

12
2 x
2 x
2 x
1 x
1 x
1 x
1 x
2 x
1 x

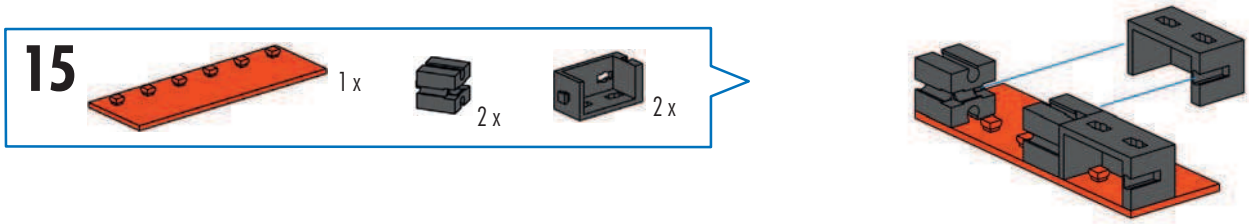

06

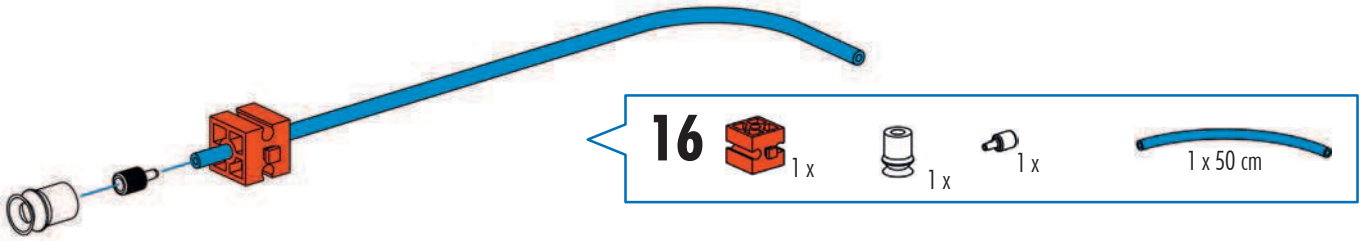

13
2 x
1 x
1 x
1 x
1 x
7,5°
1 x
15
1 x
1 x
4
2 x
3 x
1 x
60
1 x

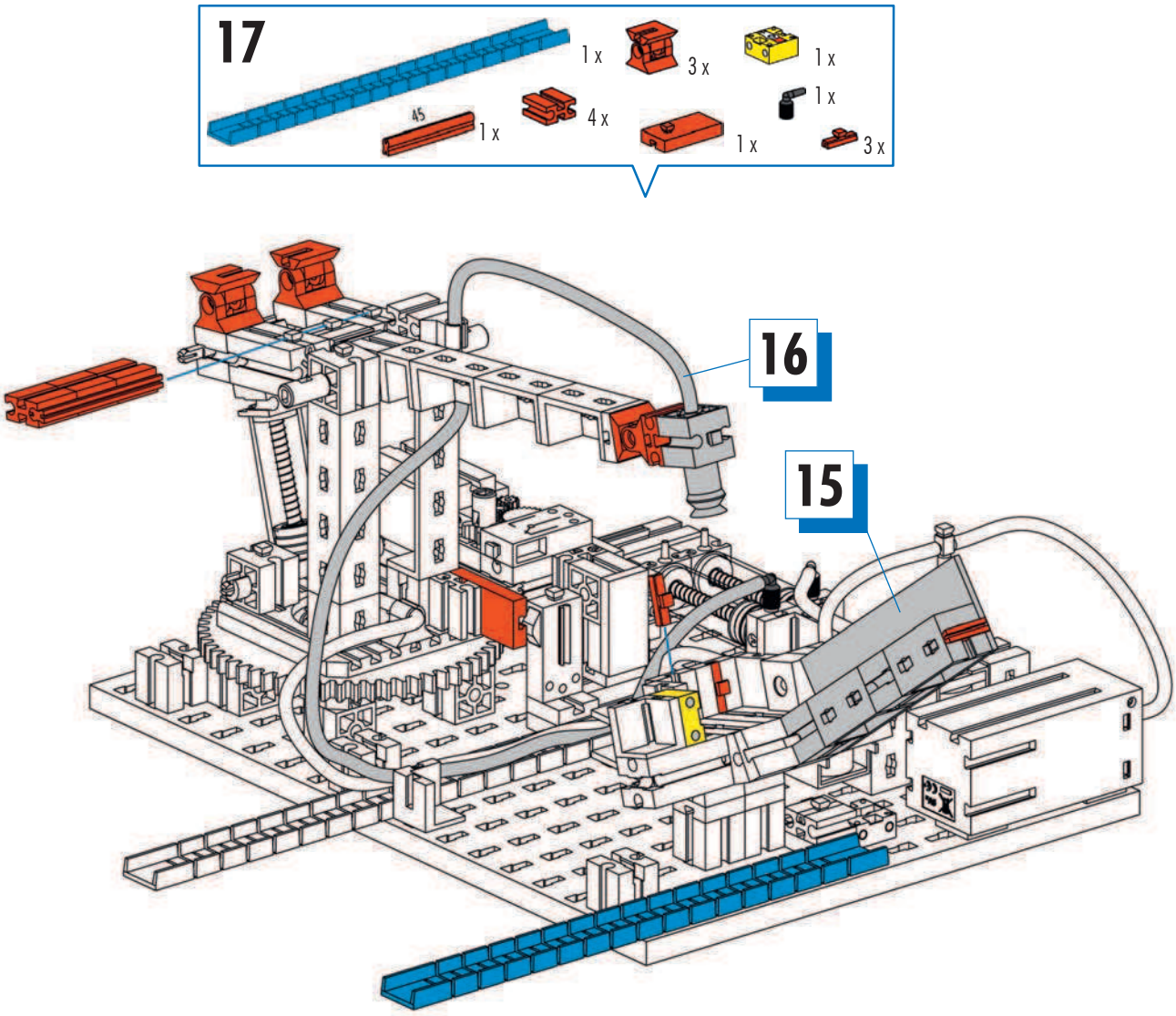


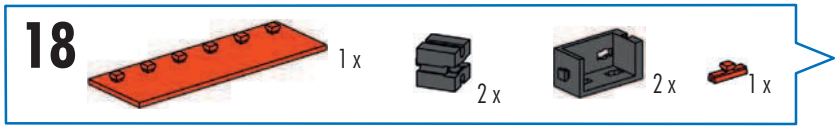

14
1 x
1 x
1 x
2 x
1 x
60
2 x
2 x
2 x
2 x
1 x
60 mm

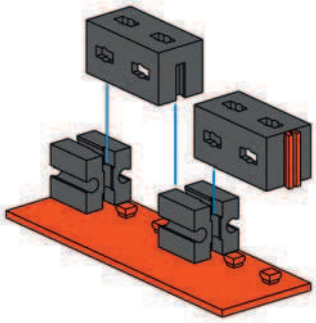

13

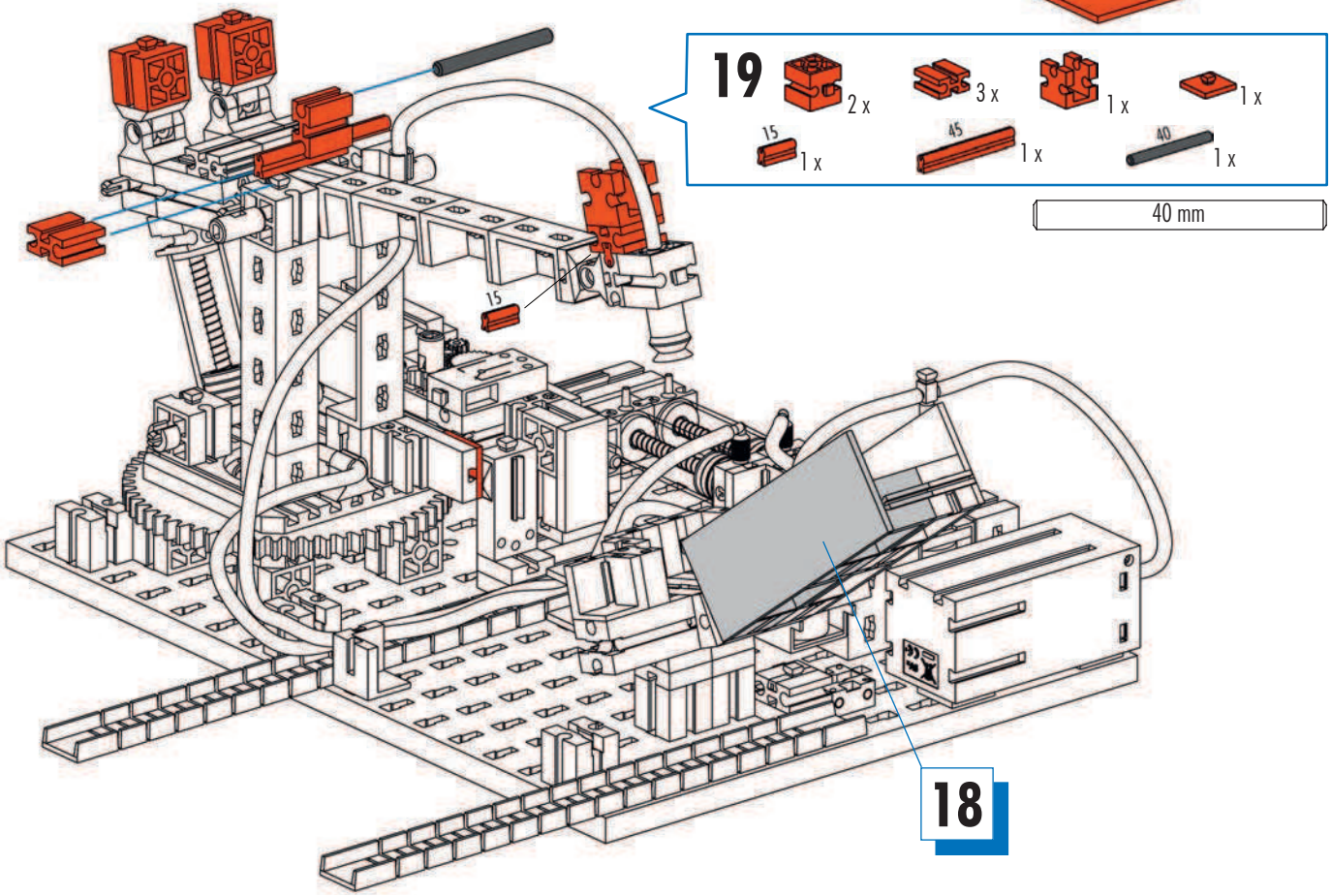

15
1 x
2 x
2 x

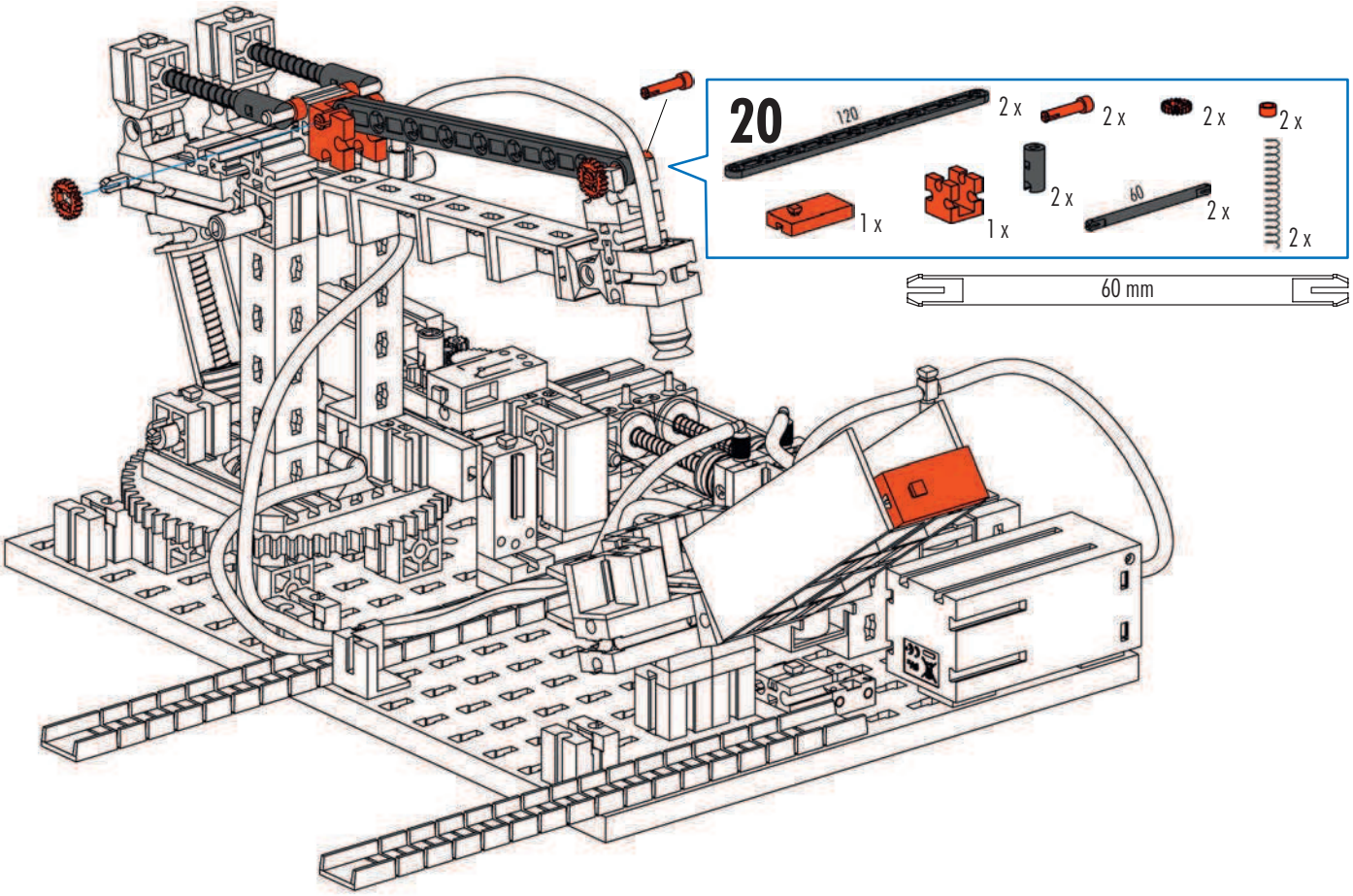

16
1 x
1 x
1 x
1 x 50 cm

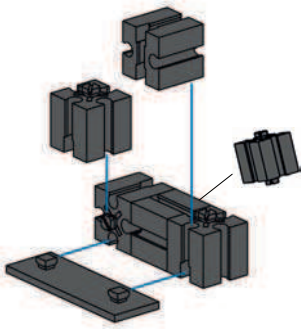

17
1 x
3 x
1 x
1 x
45
1 x
4 x
1 x
3 x
16
15


18
1 x
2 x
2 x
1 x

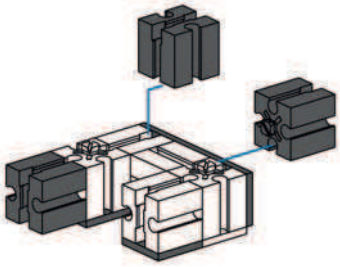



19
2 x
3 x
1 x
1 x
15
1 x
45
1 x
40
1 x
40 mm
15
18

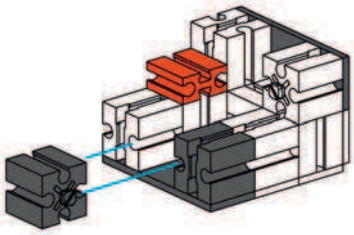

20
120
2 x
2 x
2 x
2 x
1 x
1 x
2 x
60
2 x
2 x
60 mm



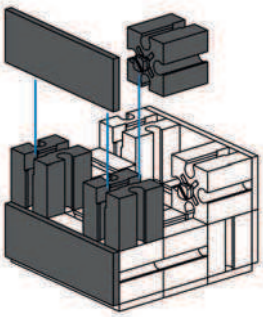
21 4 x 1 x 1 x



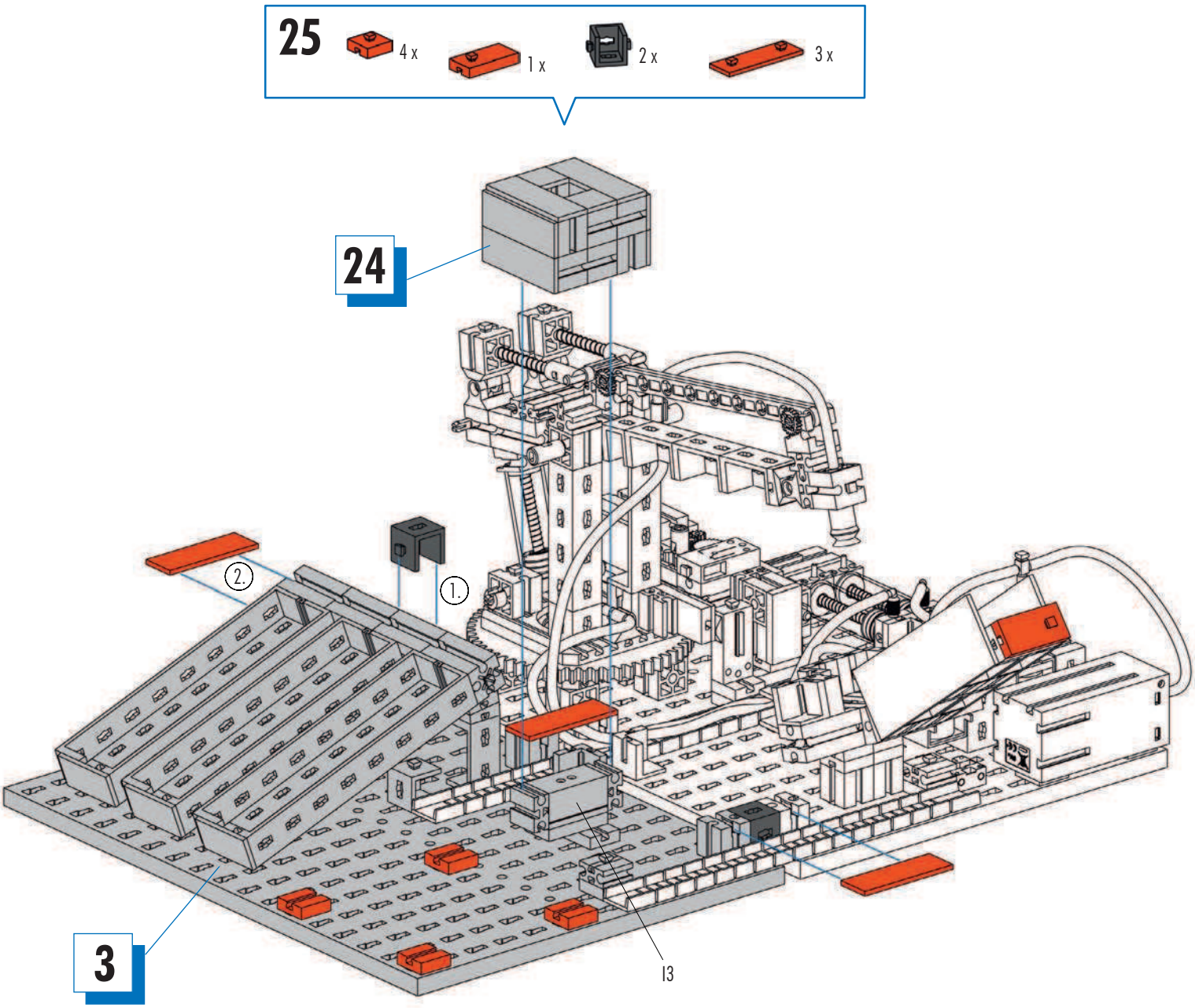
22 3 x 1 x 2 x



23 1 x 1 x 2 x 1 x



24 3 x 2 x



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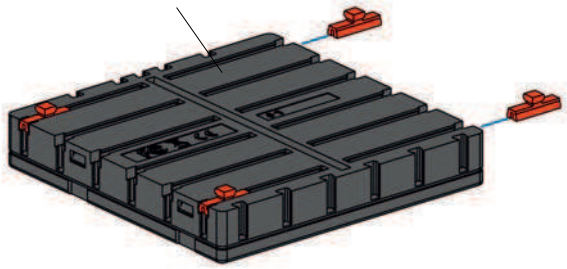
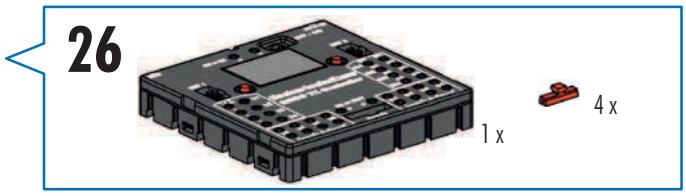
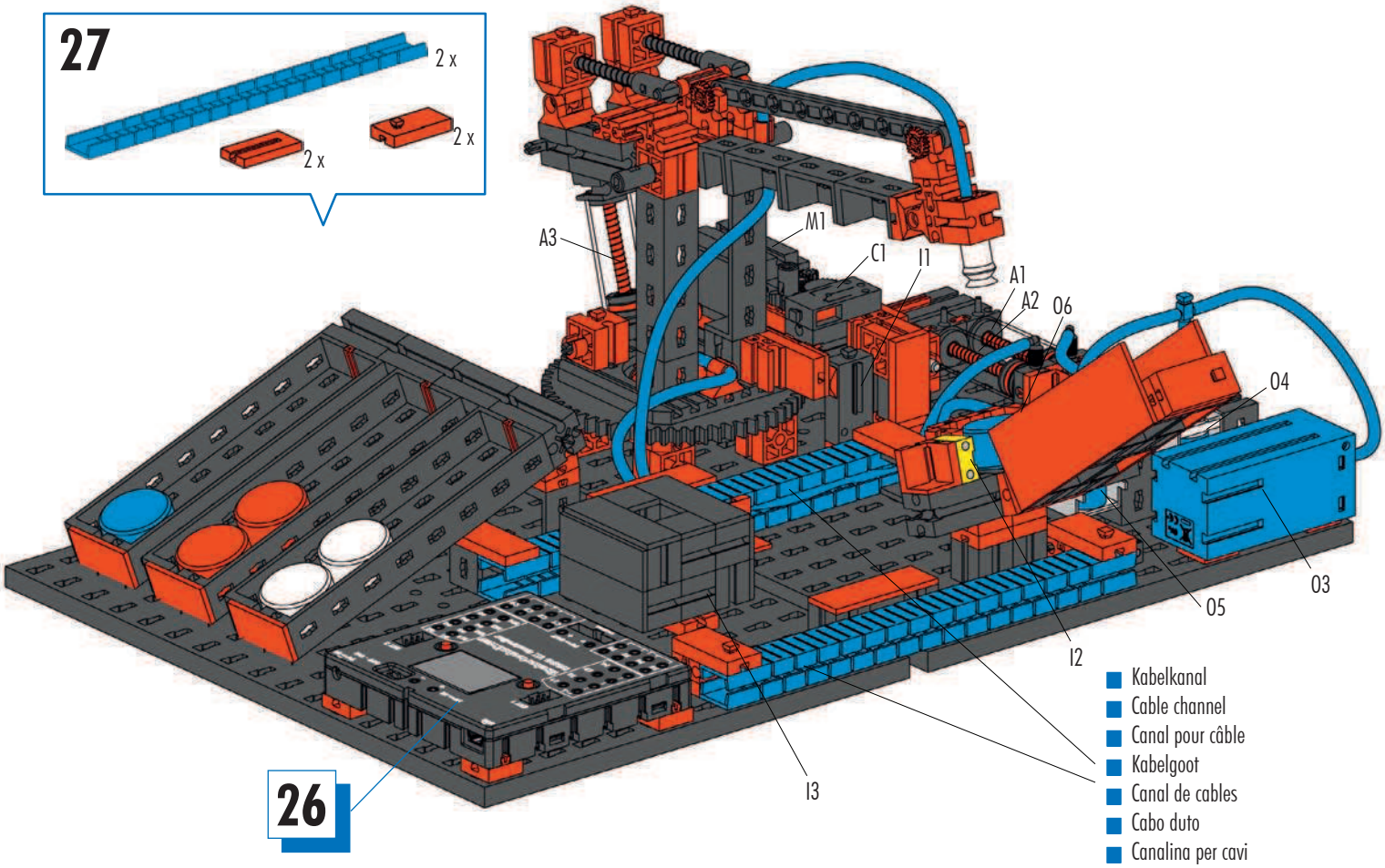


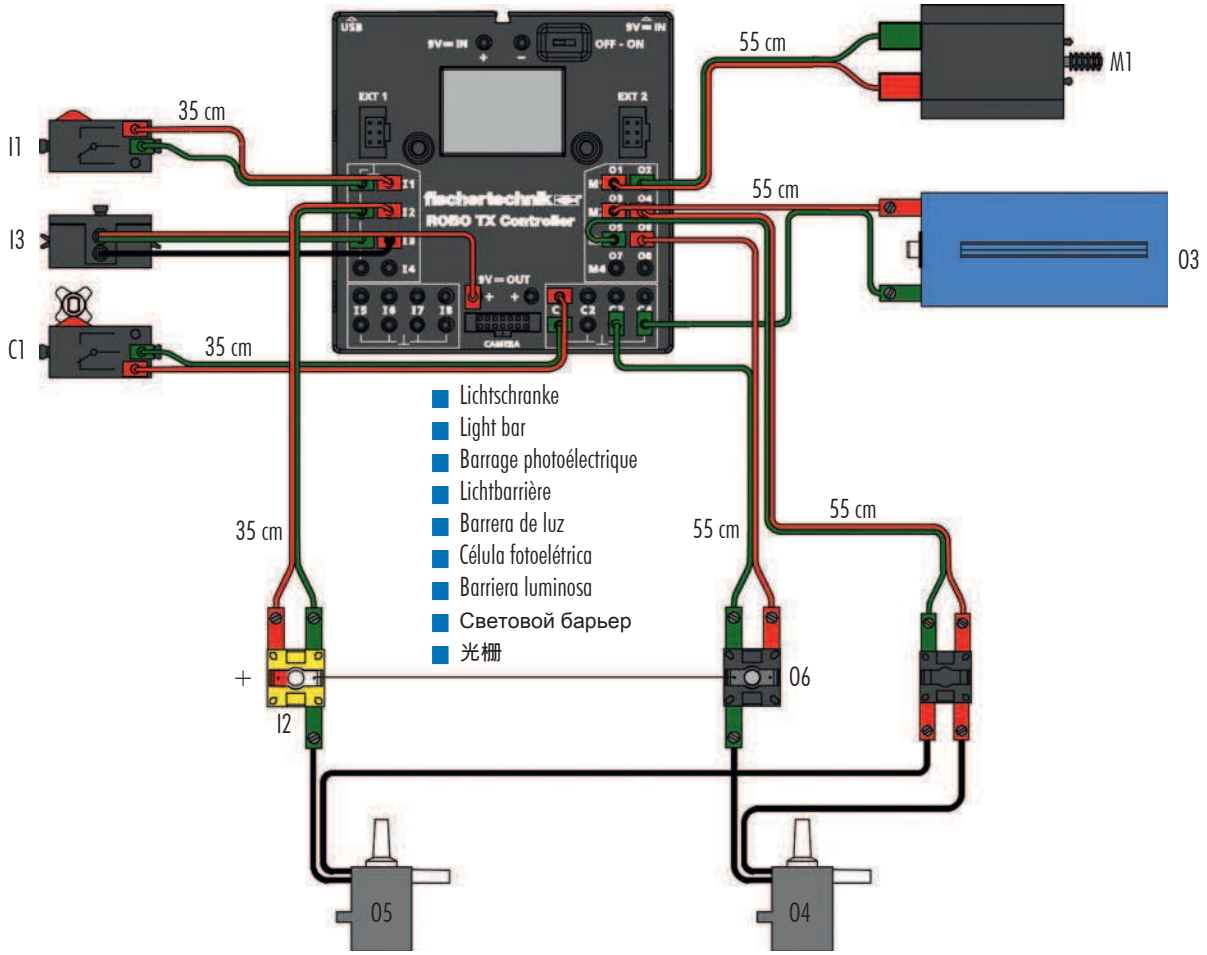




Schaltplan
Circuit diagram
Plan électrique

Schakelschema
Diagrama de circuitos
Plano elétrico de ligação

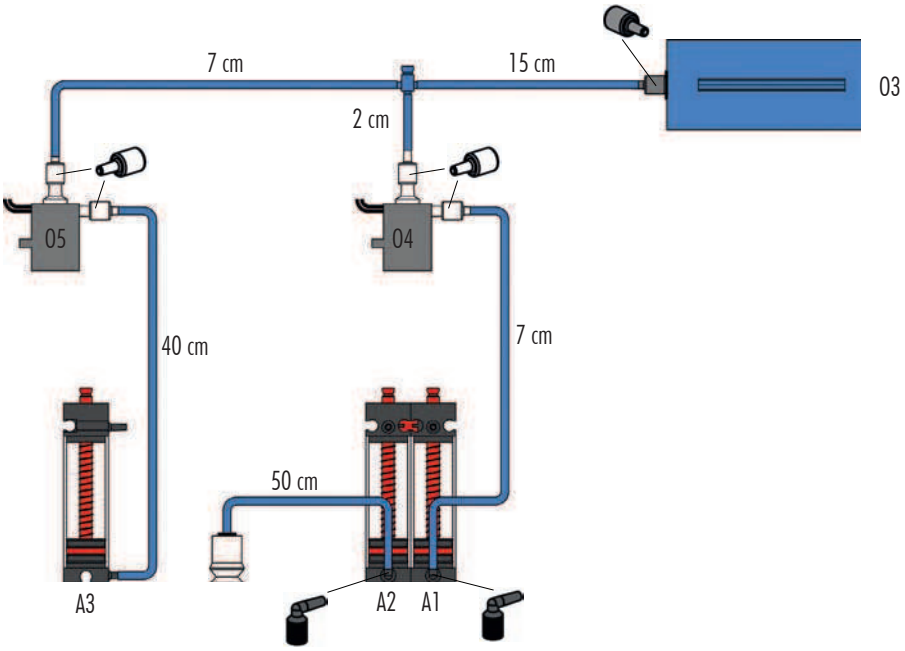
Schema elettrico
Схема подключения
电路图

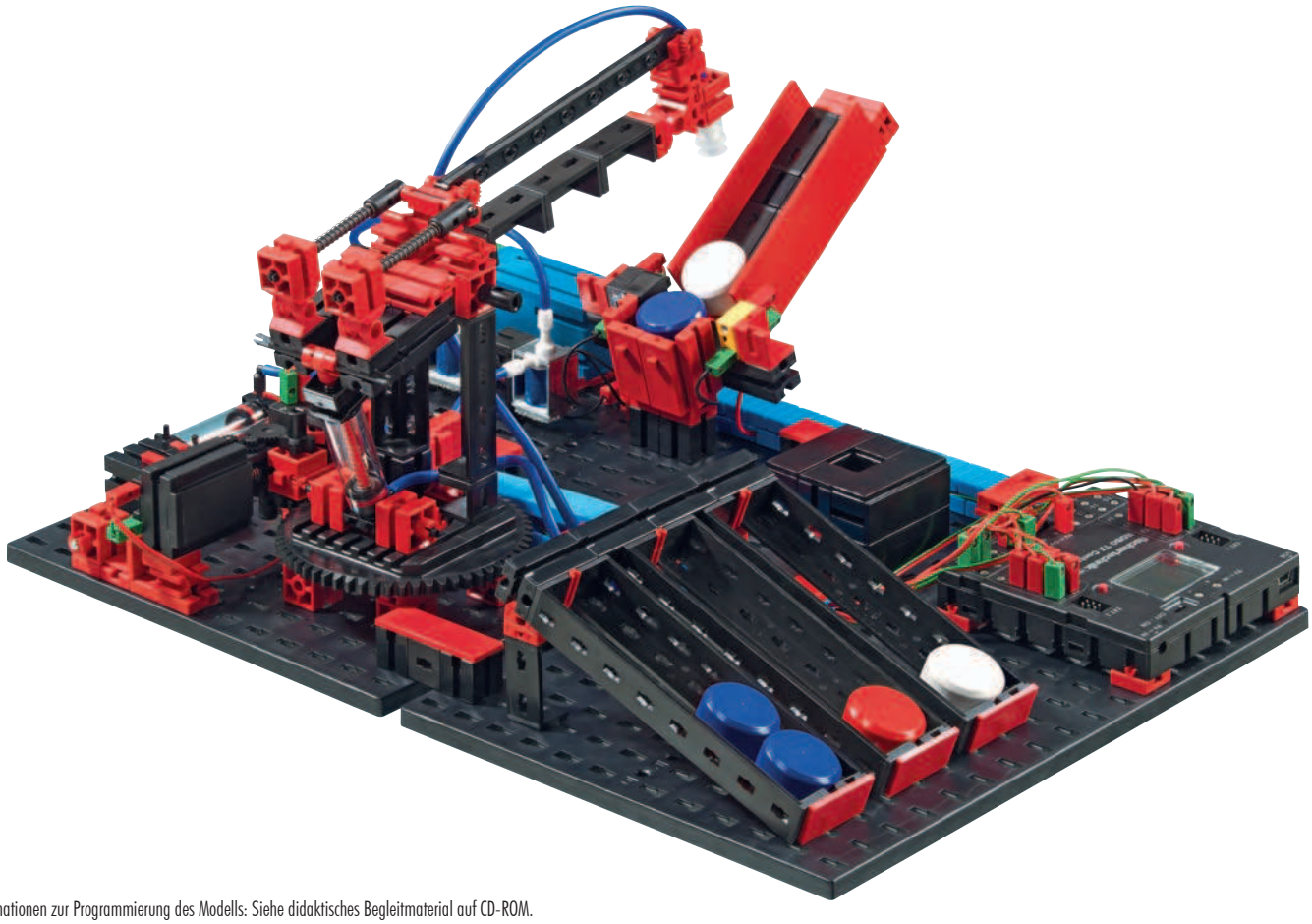


Schlauchanschlussplan
Air line layout plan
Plan de raccordement de conduits

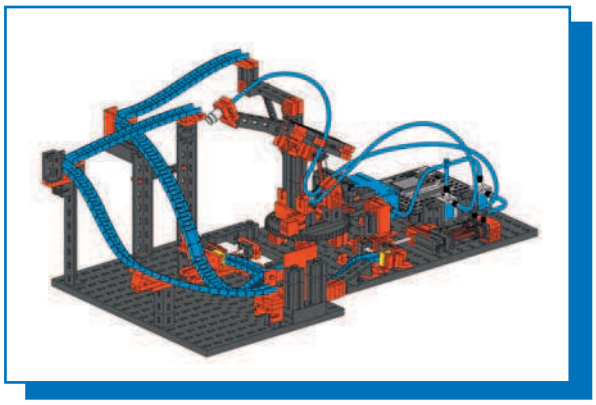
Aansluitschema van slang
Racor de empalme
Plano de conexão de mangueira

Schema di allacciamento tubi
Схема подключения шлангов
软管连接图





- Informationen zur Programmierung des Modells: Siehe didaktisches Begleitmaterial auf CD-ROM.
- Information on programming model: See related instructional material on CD-ROM.
- Informations concernant la programmation de la maquette : voir le matériel d'accompagnement didactique sur le CD-ROM.
- Informatie over de programmering van het model: Zie het didactisch begeleidend materiaal op CD-ROM.
- Informaciones sobre la programación del modelo: Véase material didáctico adjunto en el CD-ROM.
- Informações sobre a programação do modelo: ver o material didático de acompanhamento no CD-ROM.
- Informazioni sulla programmazione del modello: vedi materiale didattico su CD-ROM.
- Информация о программировании модели: смотрите обучающий сопроводительныйматериал на CD.
- 有关该模型编程的信息：见 CD 光盘上的指导性说明资料。



Kugelparcours mit Vakuumgreifer

Ball obstacle course with vacuum picker arm

Parcours à billes avec grappin pneumatique

Kogelparcour met vacuümgrijper

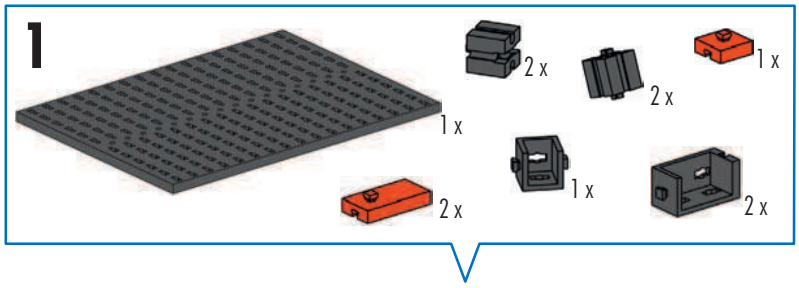
Pista de recorrido de bola con manipulador de vacío

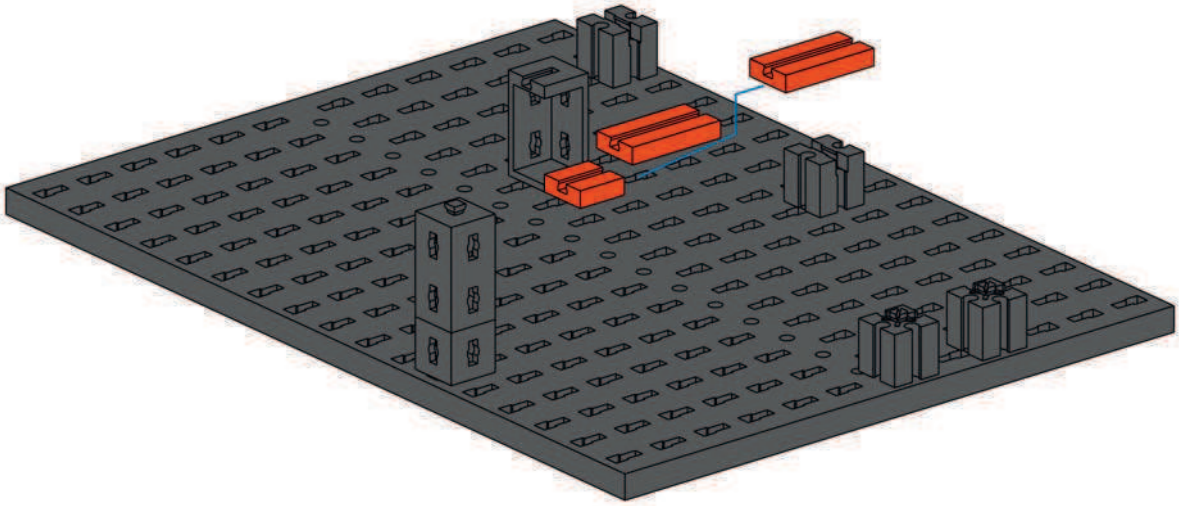
Circuito de esferas com agarrador a vácuo

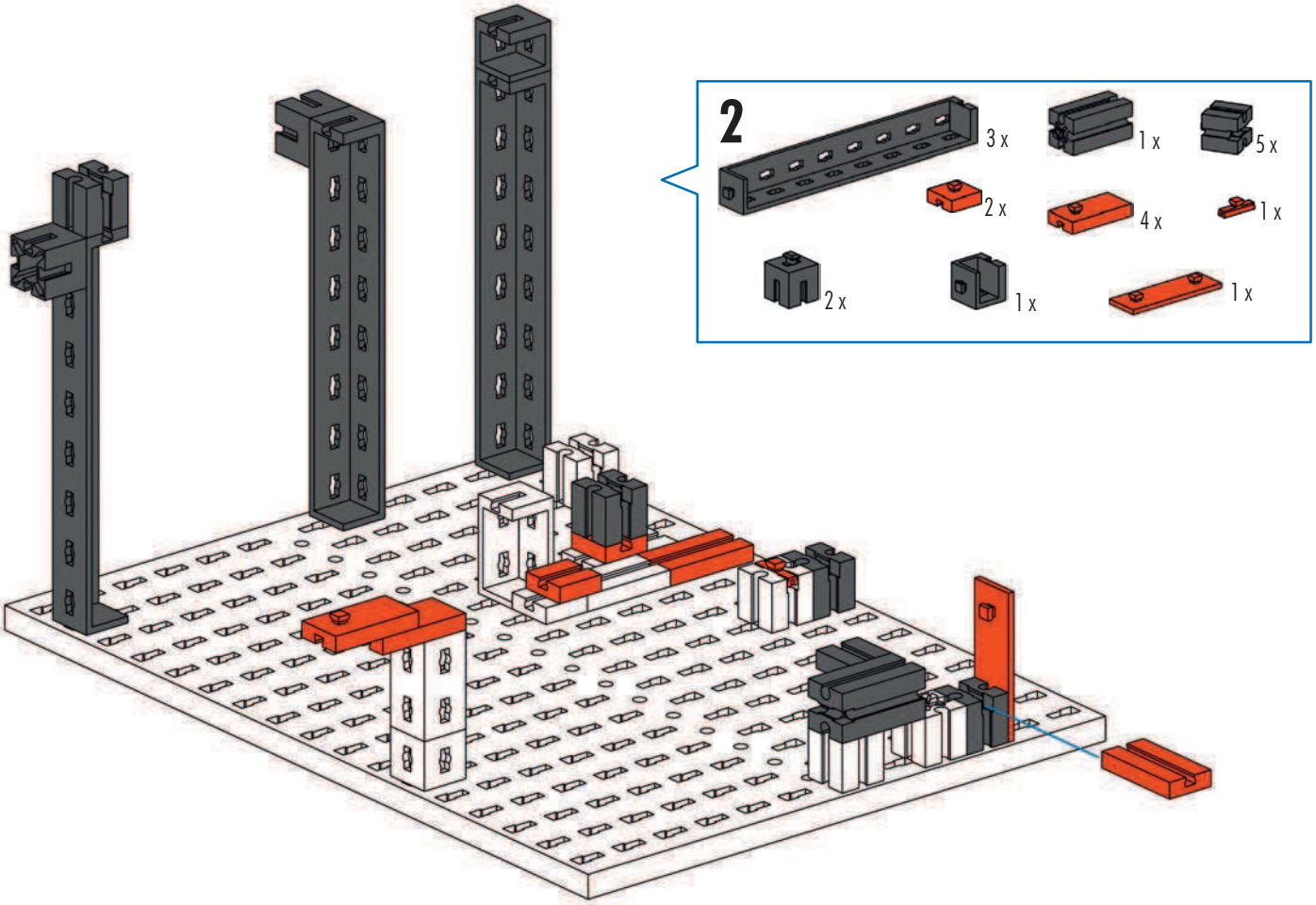
Percorso sfere con pinza a ventosa

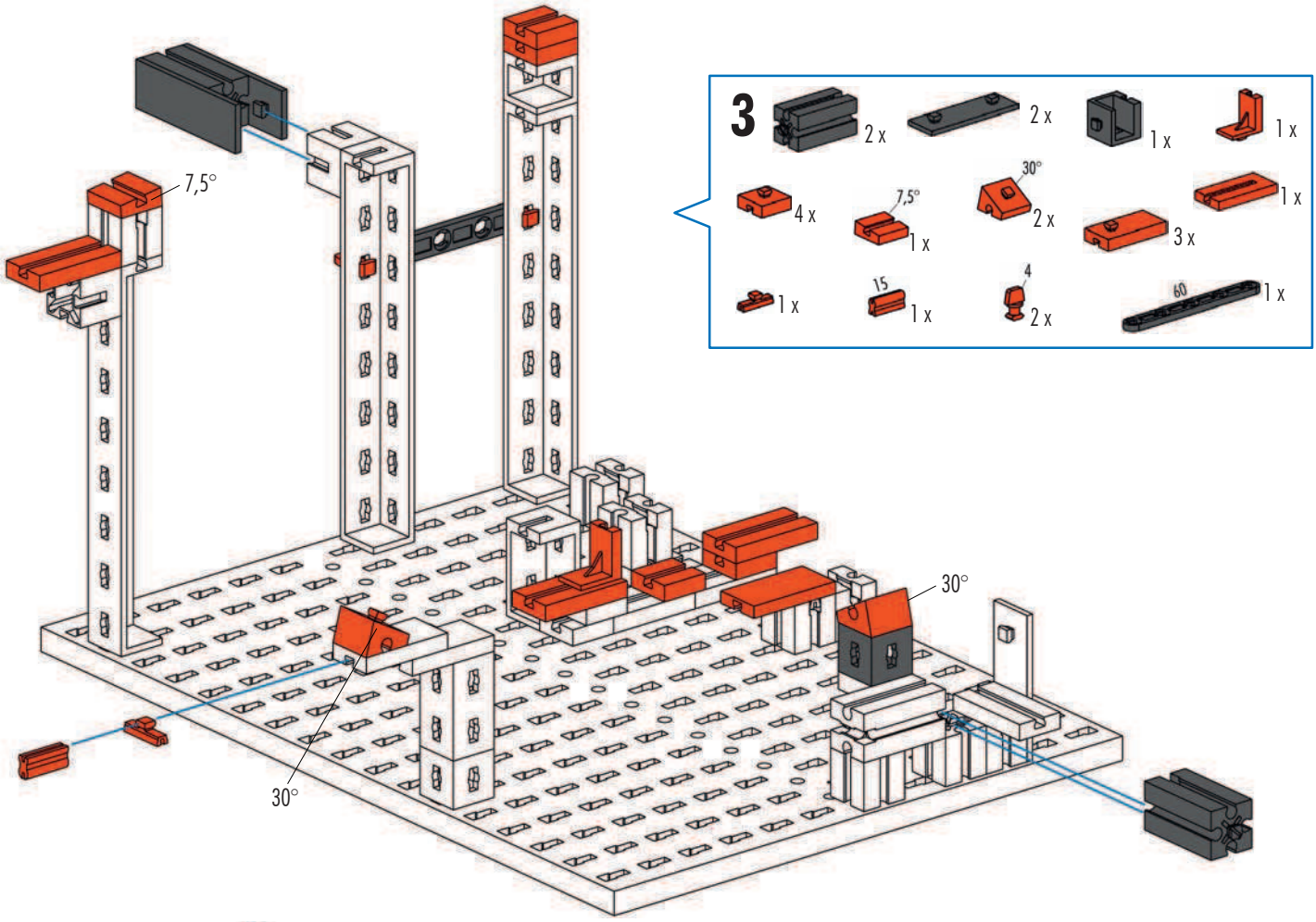
Трасса для шарика с вакуумным захватом

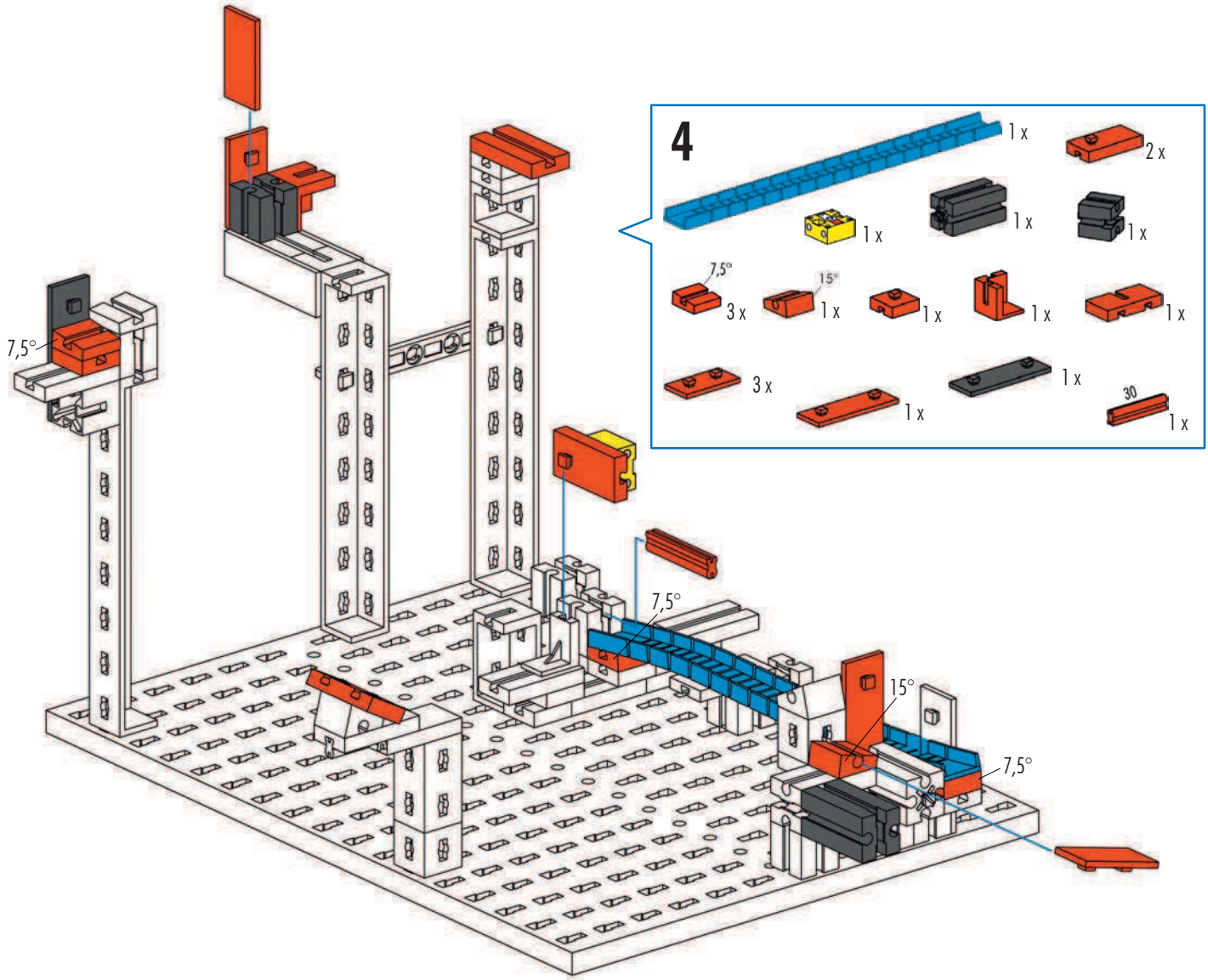
配分选机器人的滚珠弯道

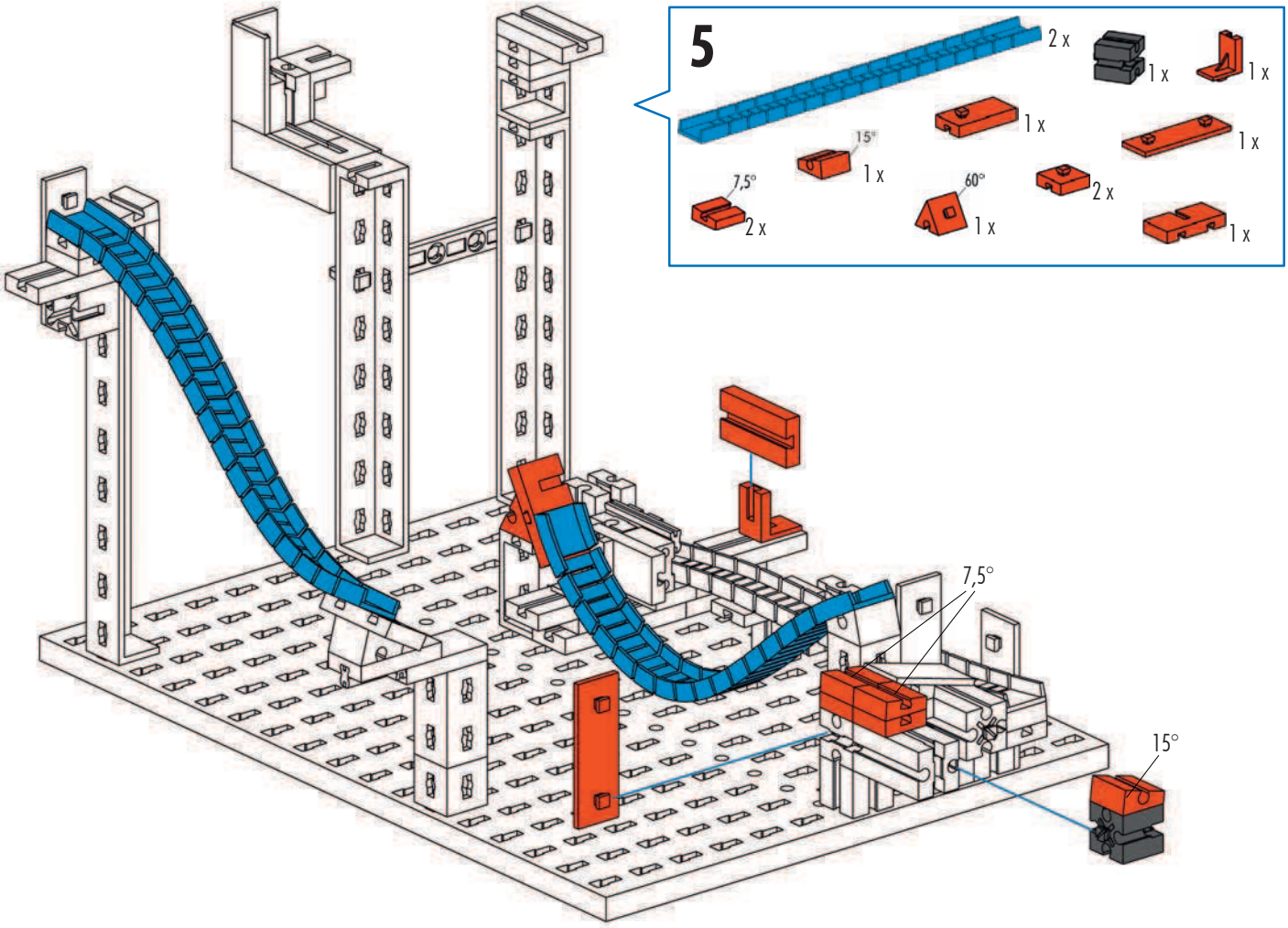


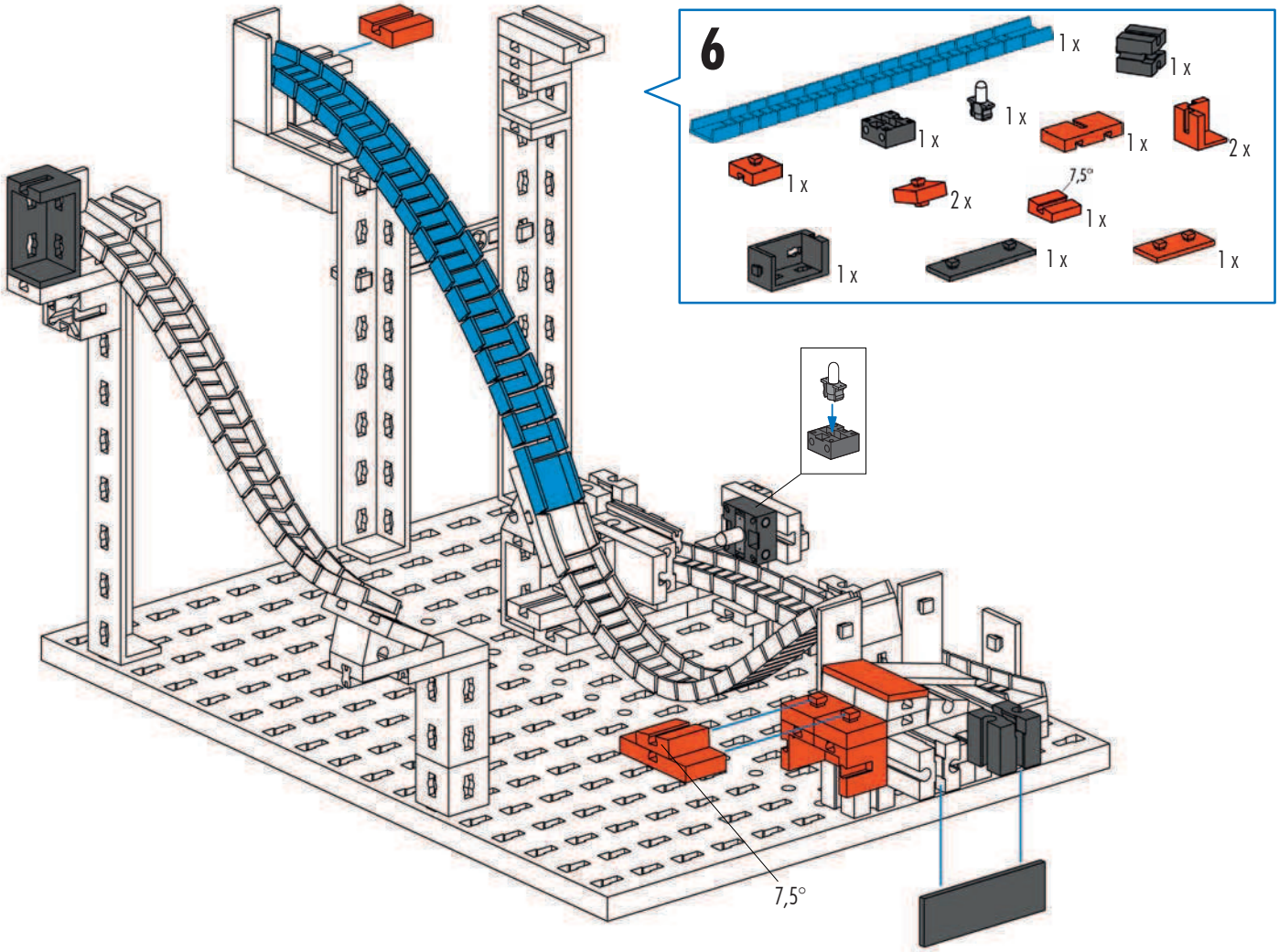


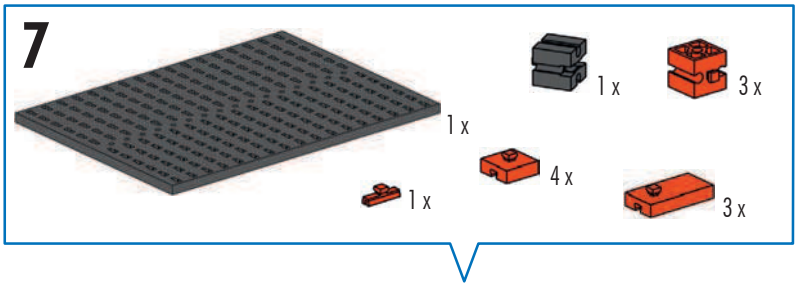


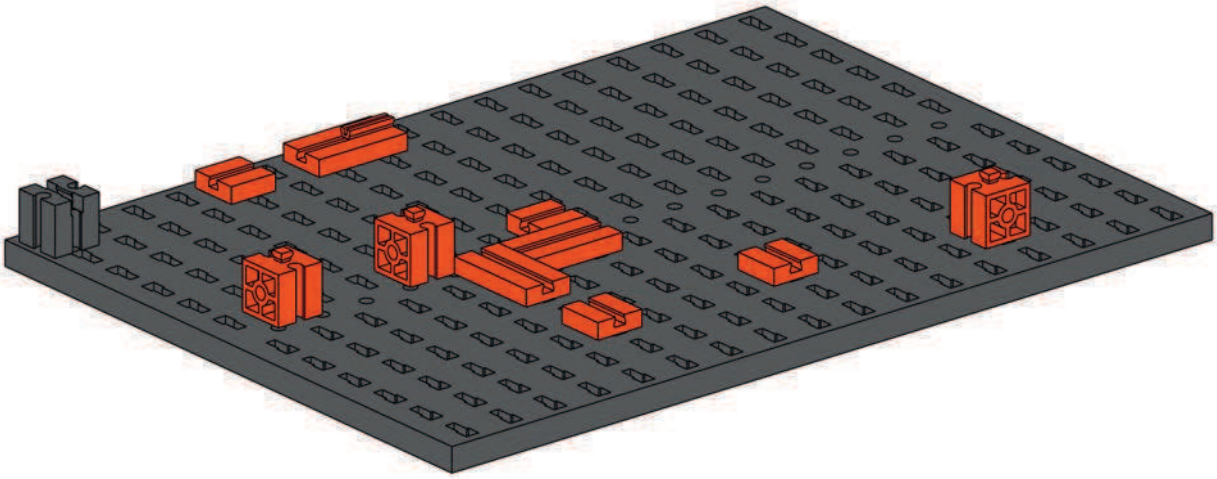

3
2 x
2 x
1 x
1 x
4 x
7,5°
1 x
30°
2 x
1 x
3 x
1 x
15
1 x
4
2 x
60
1 x
7,5°
30°
30°

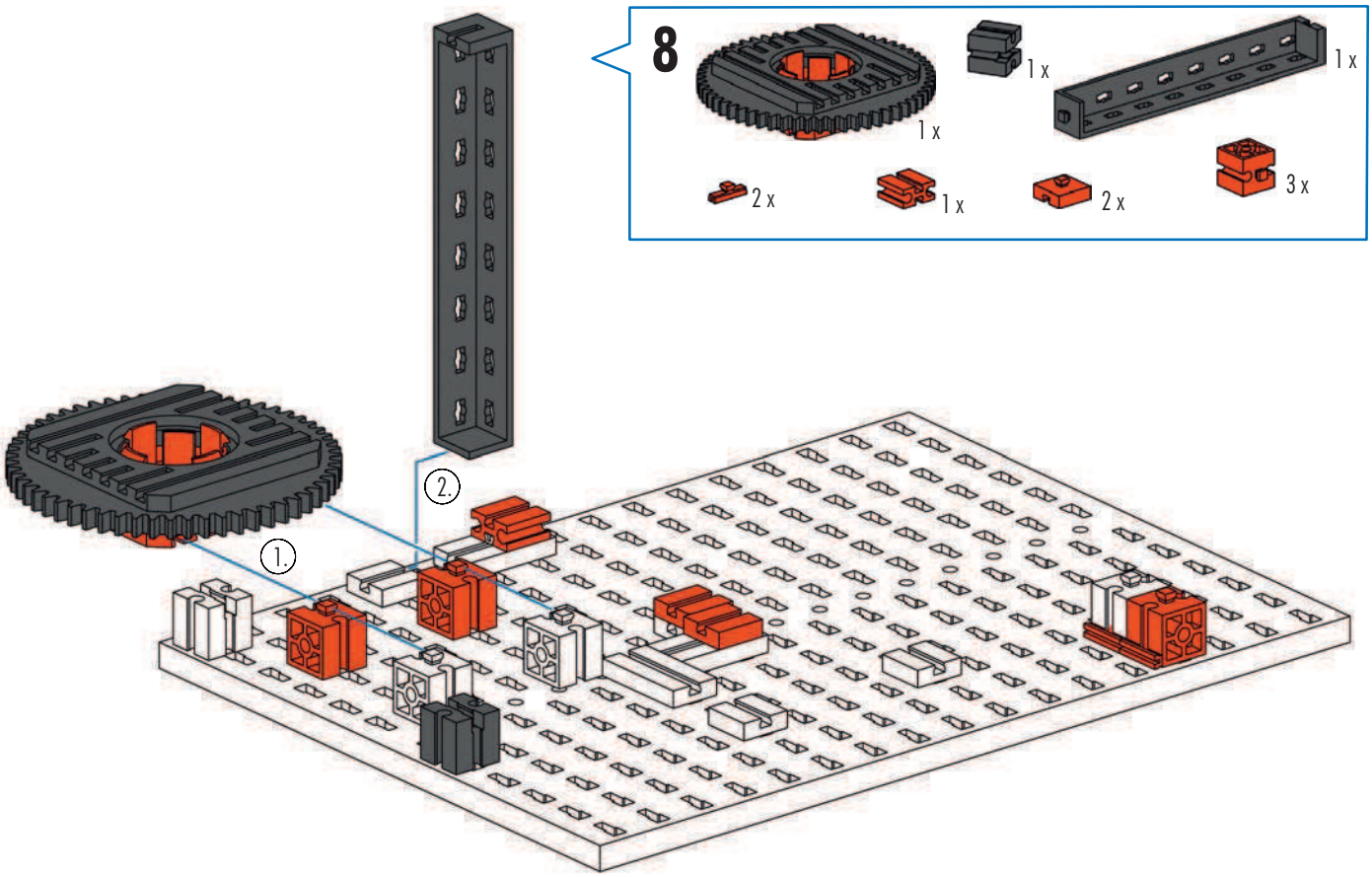

4
1 x
2 x
1 x
1 x
1 x
7,5°
3 x
15°
1 x
1 x
1 x
1 x
3 x
1 x
1 x
30
1 x
7,5°
7,5°
15°
7,5°

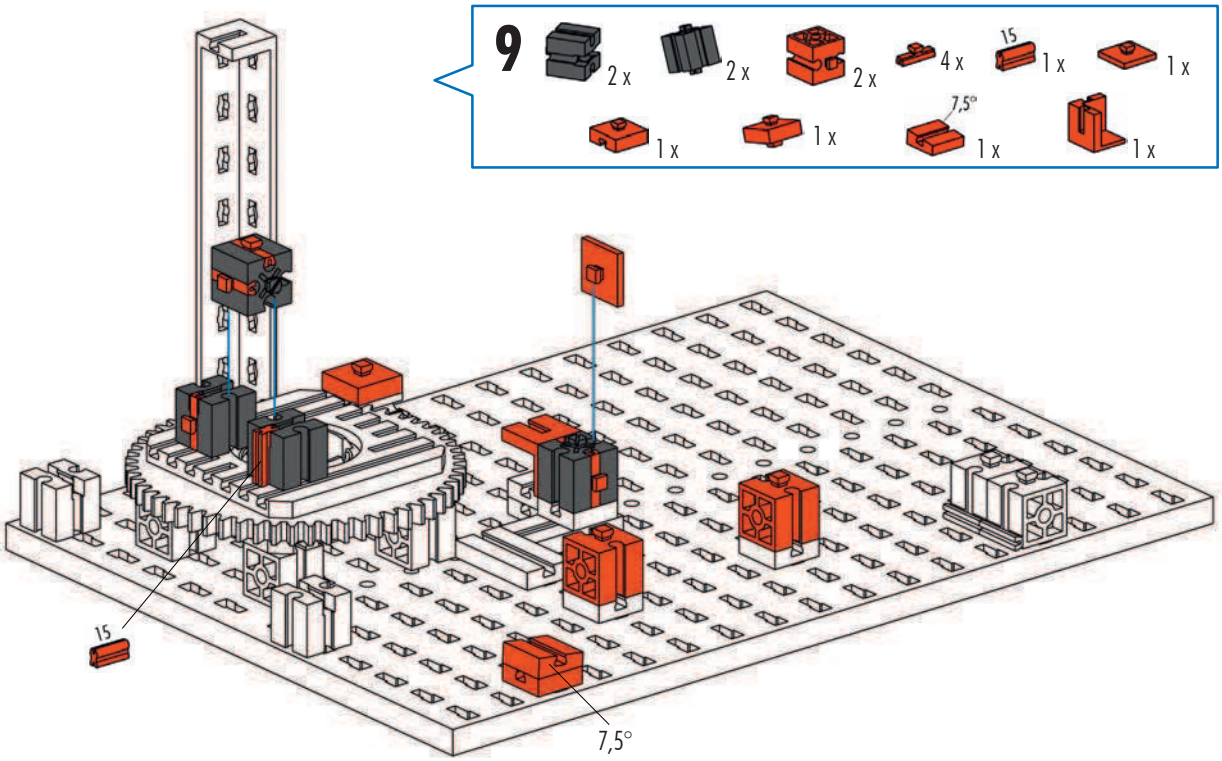

5
2 x
1 x
1 x
1 x
1 x
15°
1 x
7,5°
2 x
60°
1 x
2 x
1 x
7,5°
15°

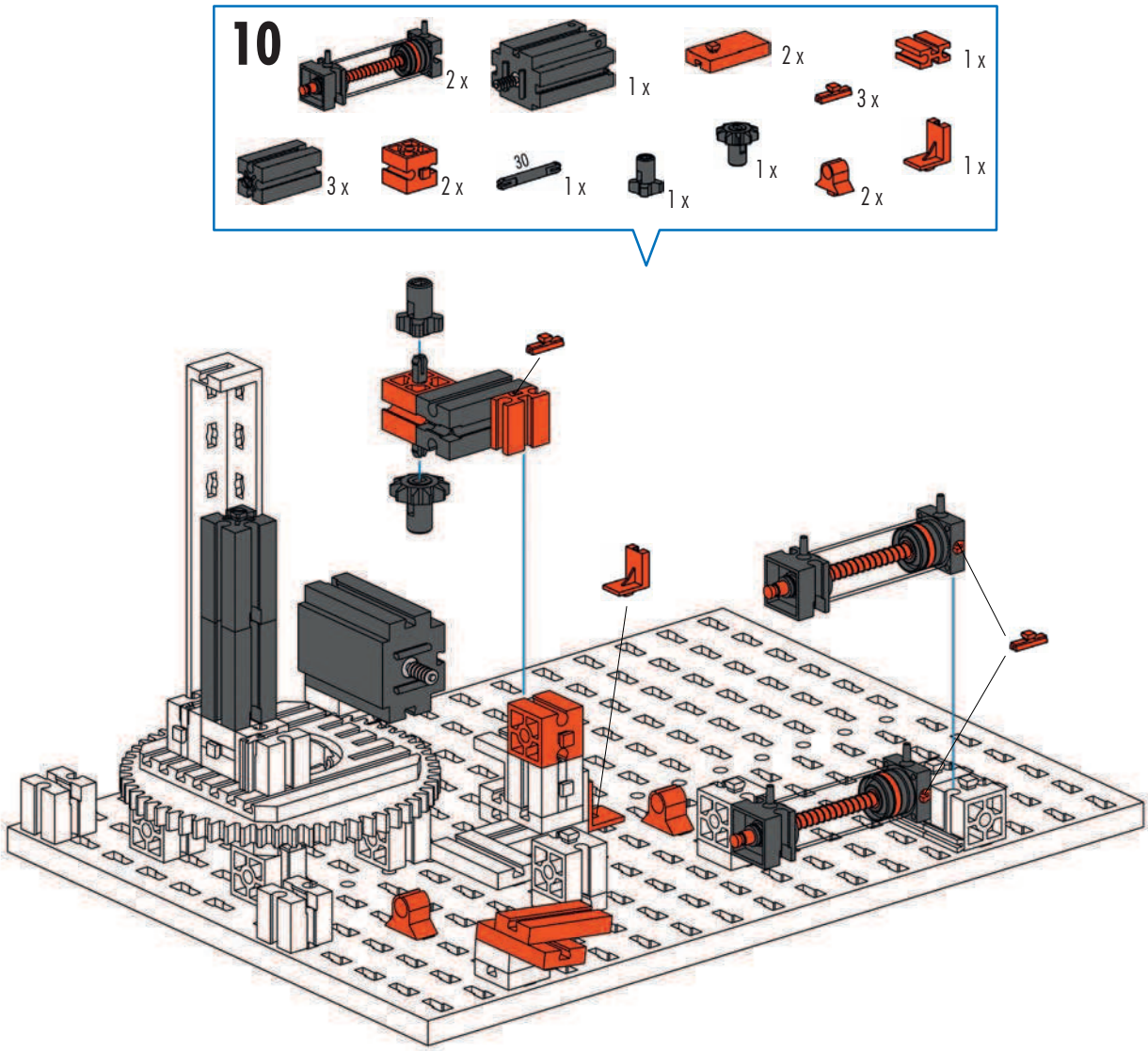

6
1 x
1 x
1 x
1 x
1 x
1 x
2 x
1 x
2 x
7,5°
1 x
1 x
1 x
1 x
7,5°

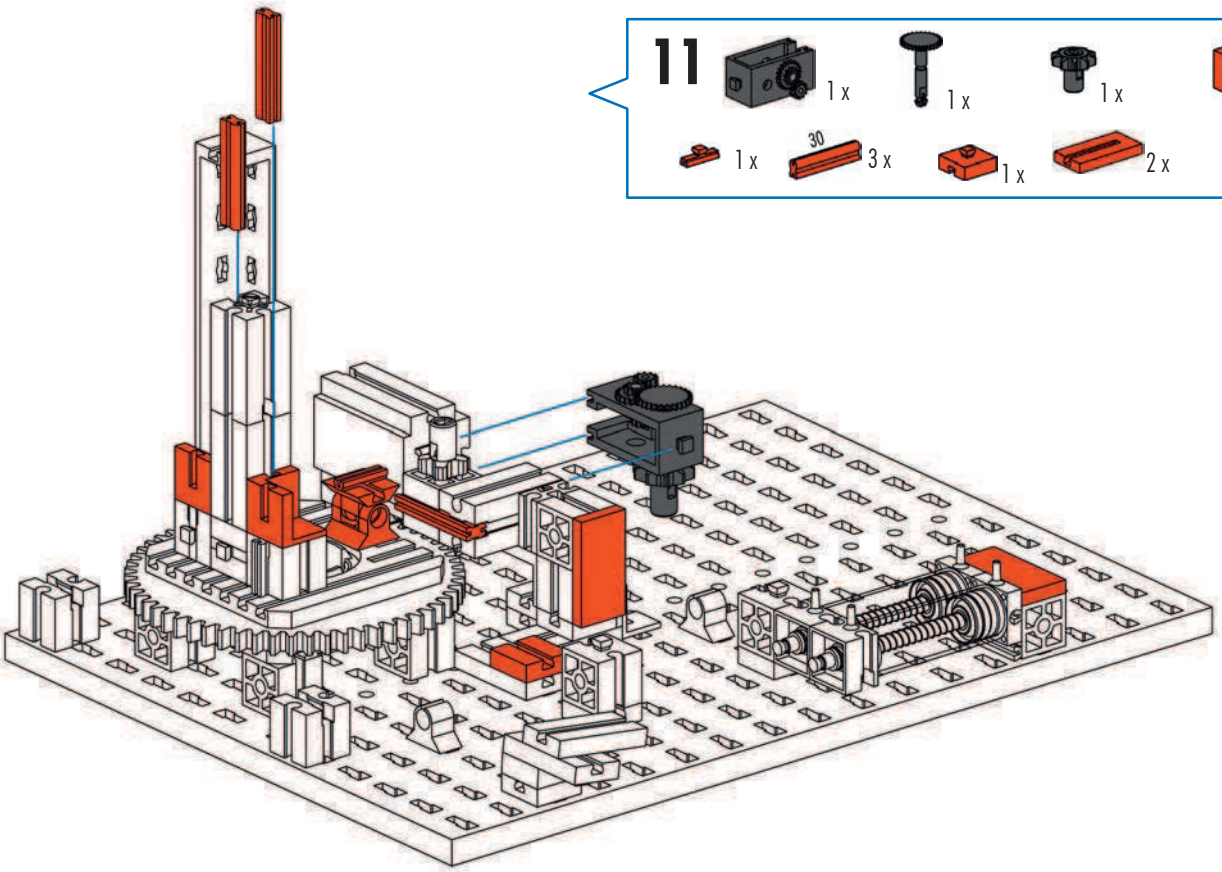

7
1 x
1 x
3 x
4 x
1 x
3 x

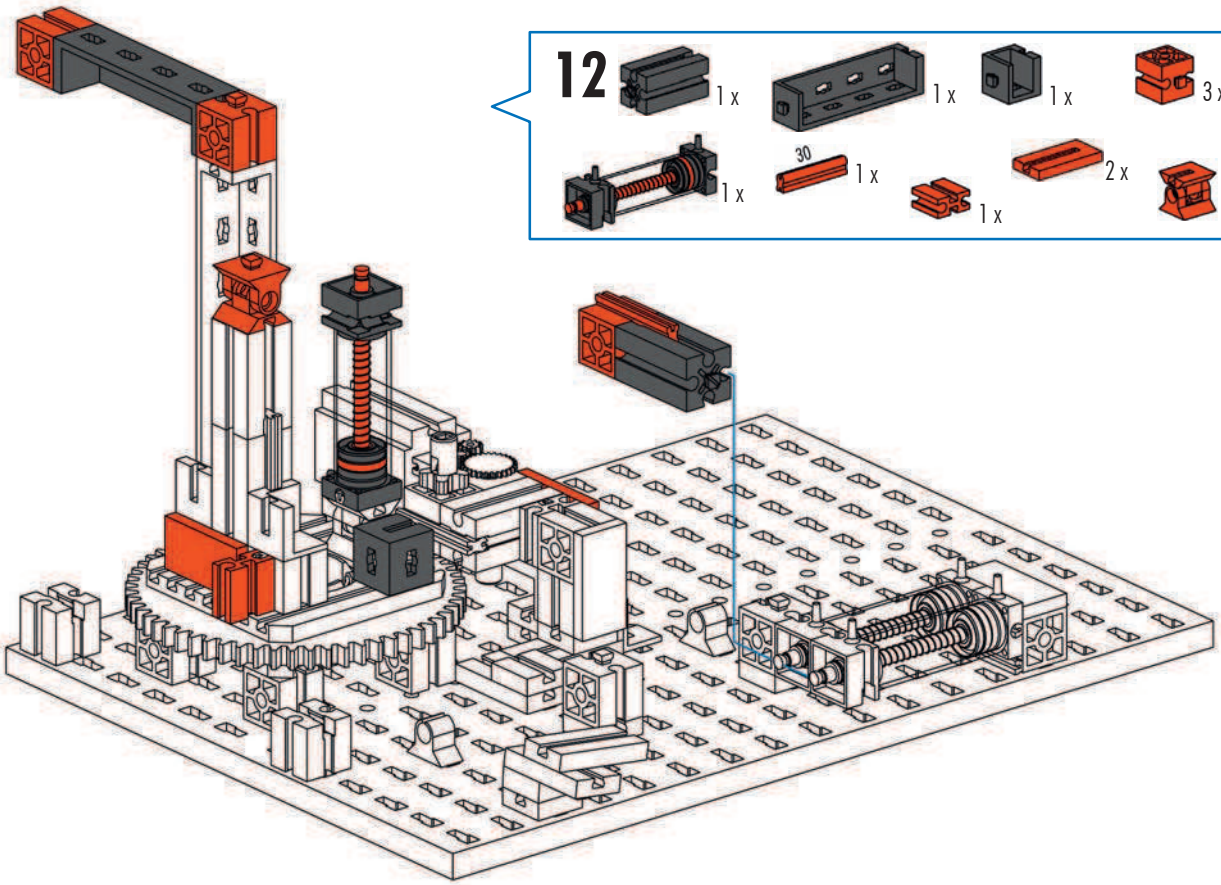


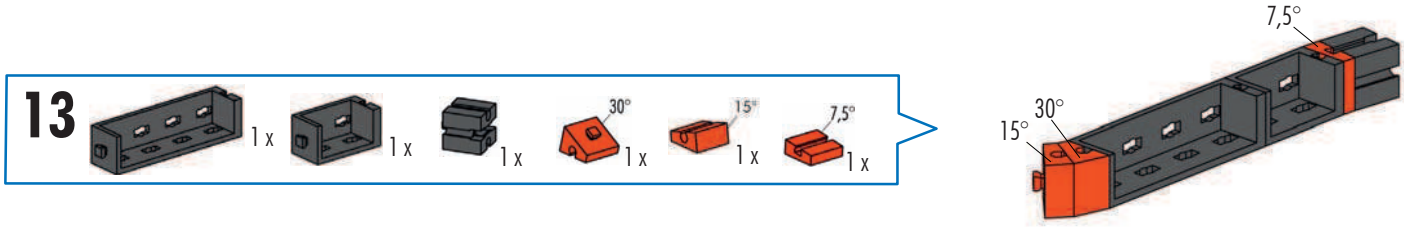

8
1 x
1 x
1 x
2 x
1 x
2 x
3 x
1.
2.

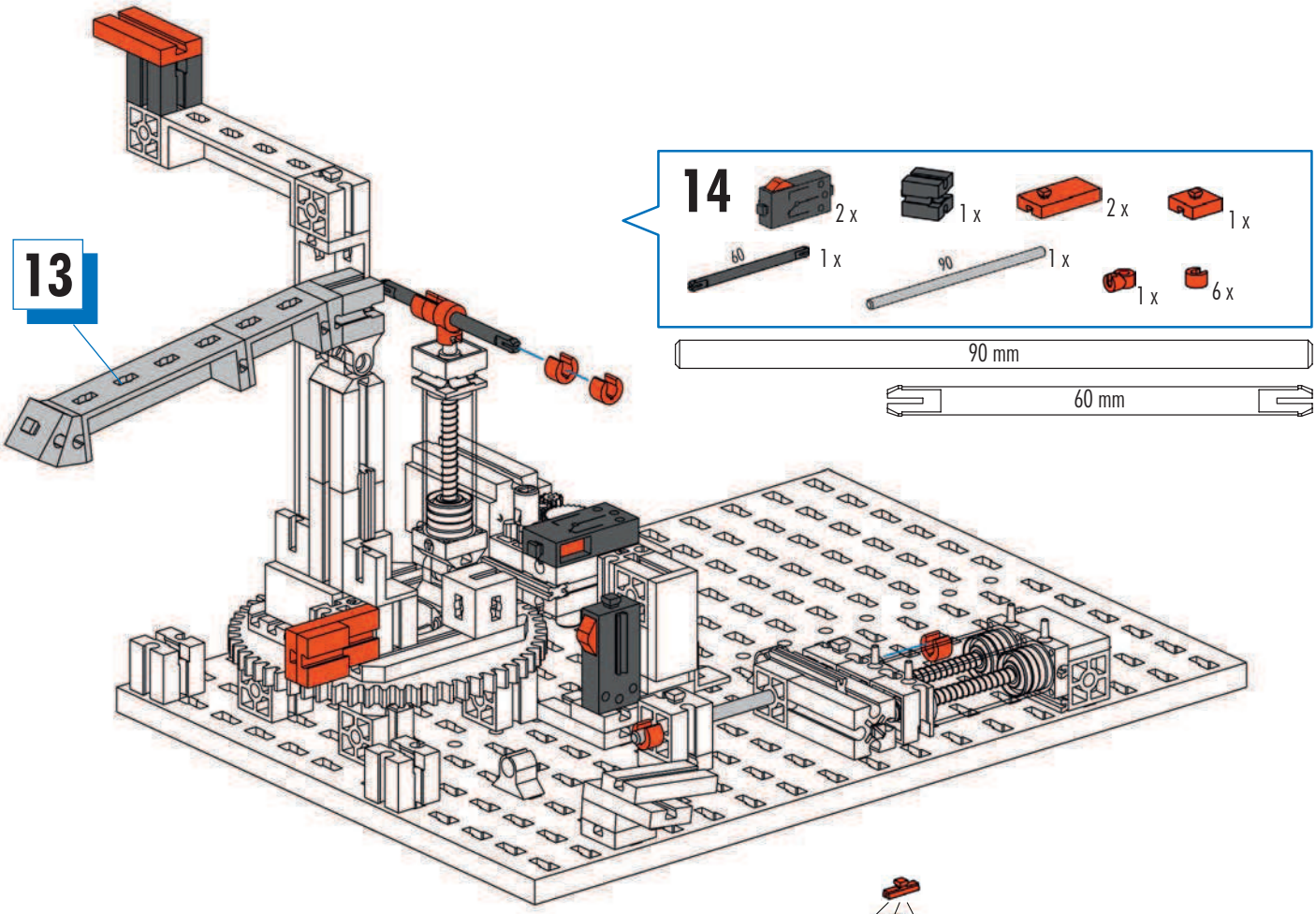

9
2 x
2 x
2 x
4 x
15
1 x
1 x
7,5°
1 x
1 x
1 x
1 x
15
7,5°

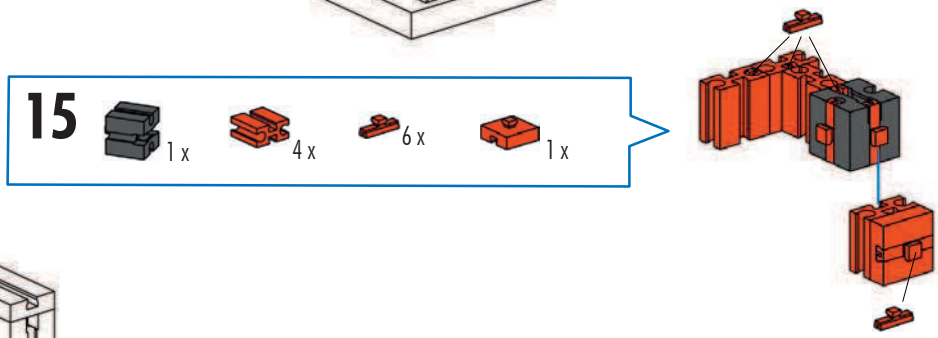

10
2 x
1 x
2 x
1 x
3 x
3 x
2 x
30
1 x
1 x
1 x
2 x
1 x

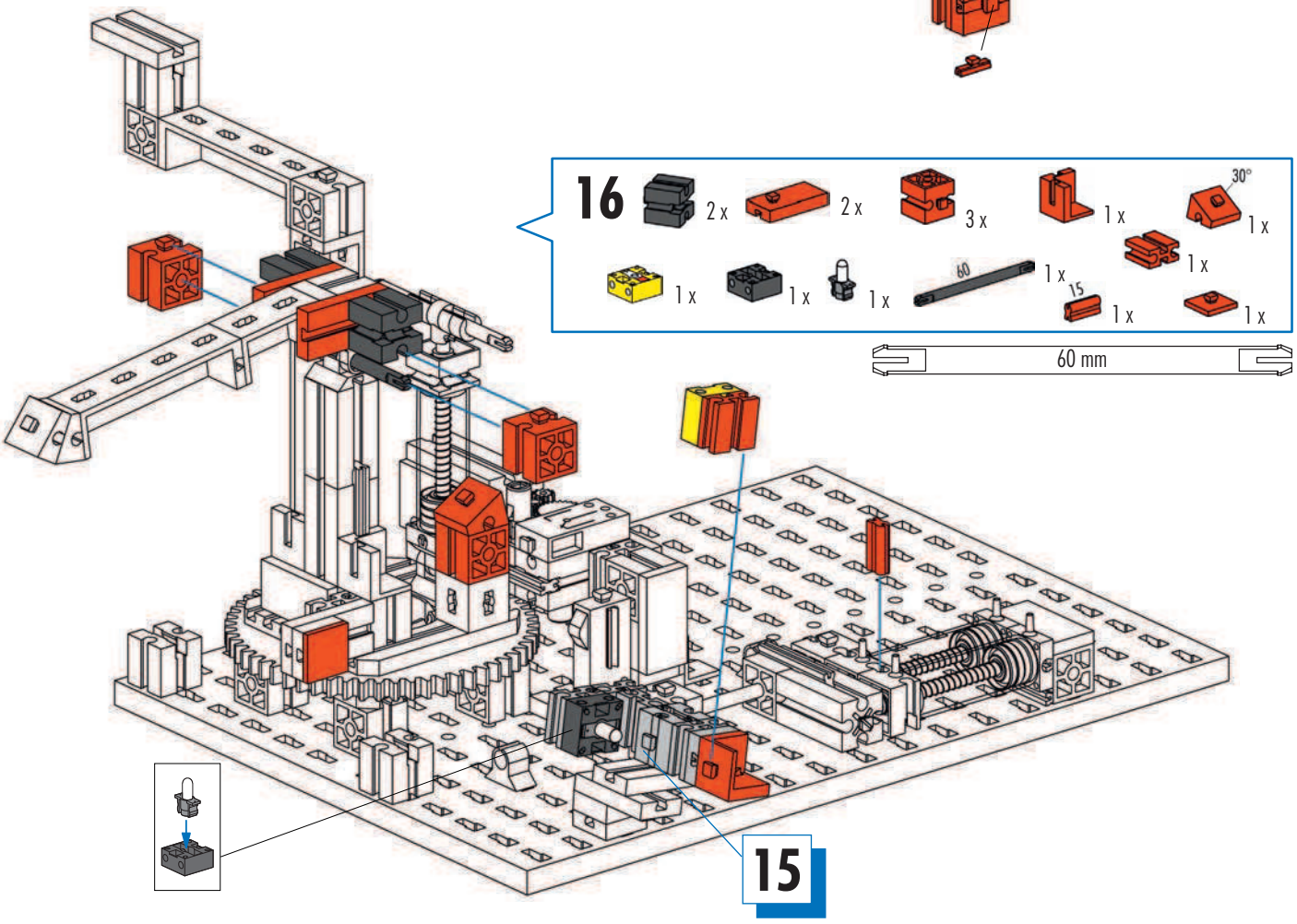

11
1 x
1 x
1 x
2 x
1 x
30
3 x
1 x
2 x
1 x

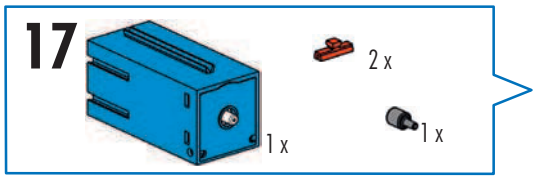

12
1 x
1 x
1 x
3 x
1 x
30
1 x
1 x
2 x
1 x

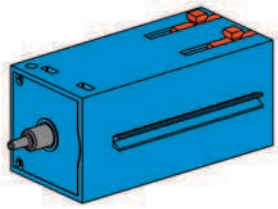

13
1 x
1 x
1 x
30°
1 x
15°
1 x
7,5°
1 x
7,5°
30°
15°

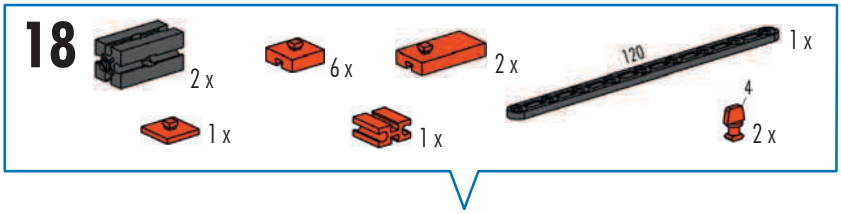

13
14
2 x
1 x
2 x
1 x
60
1 x
90
1 x
1 x
6 x
90 mm
60 mm

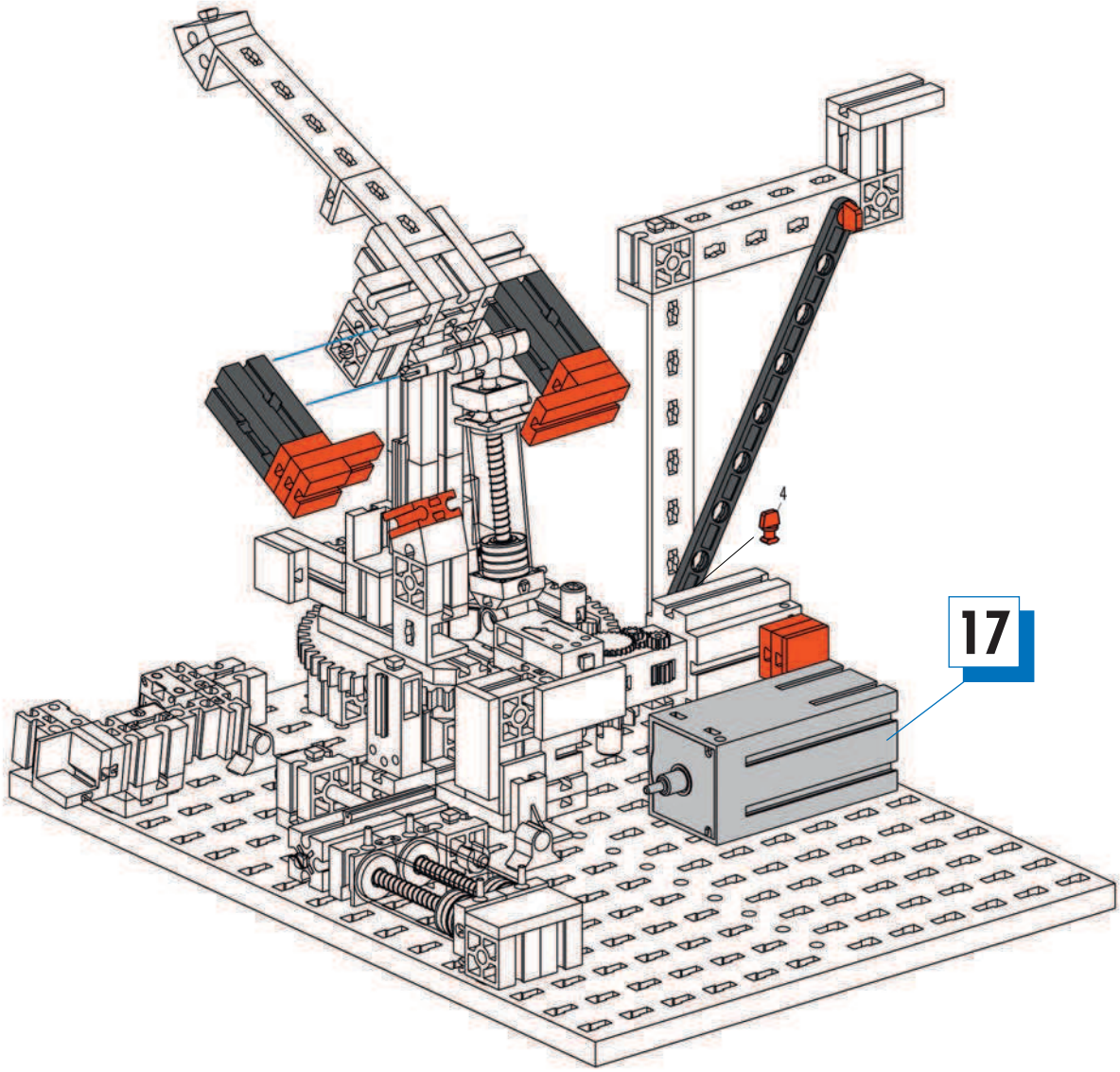

15
1 x
4 x
6 x
1 x

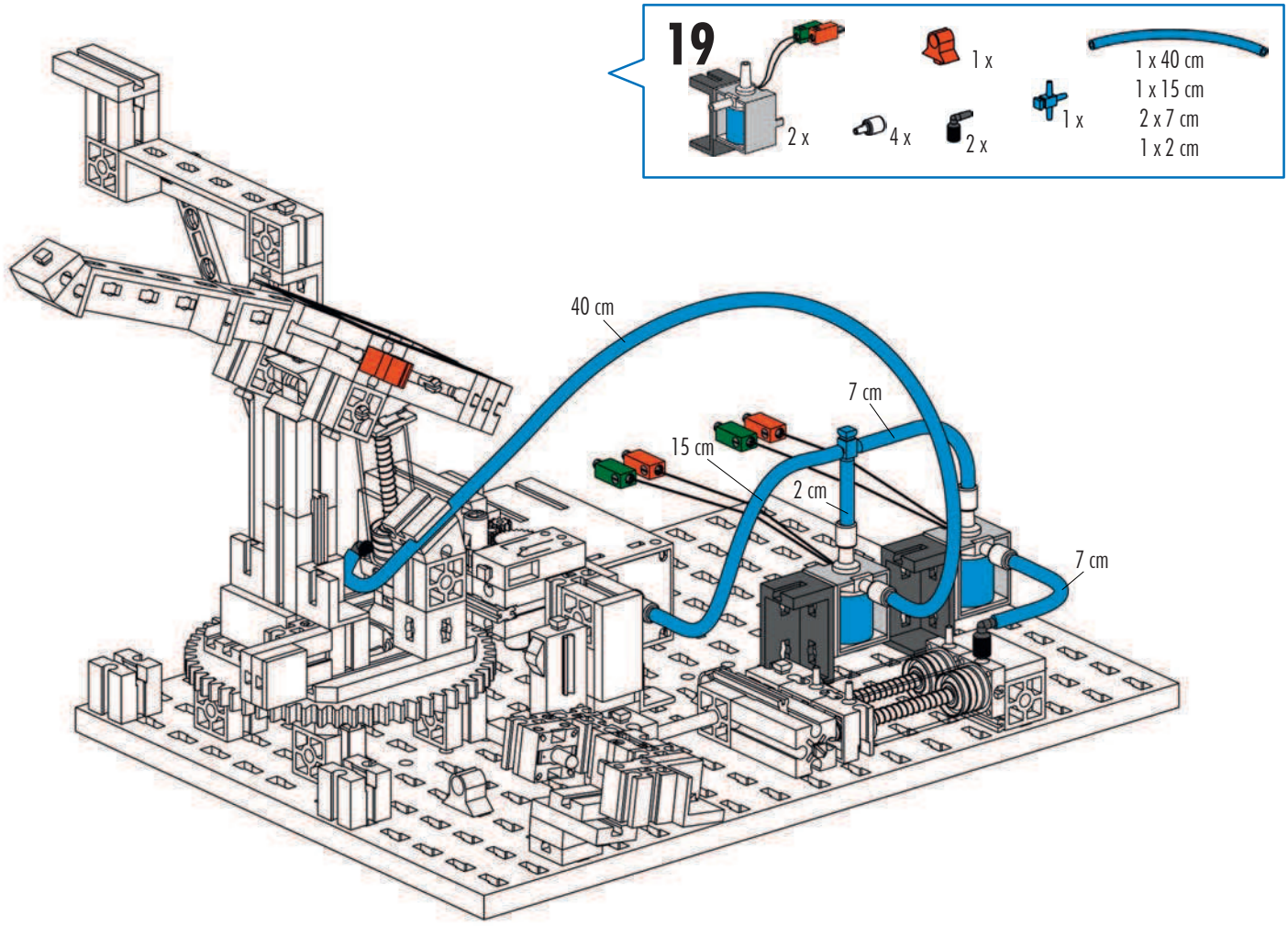

16
2 x
2 x
3 x
1 x
30°
1 x
1 x
1 x
1 x
1 x
60
1 x
15
1 x
1 x
60 mm
15

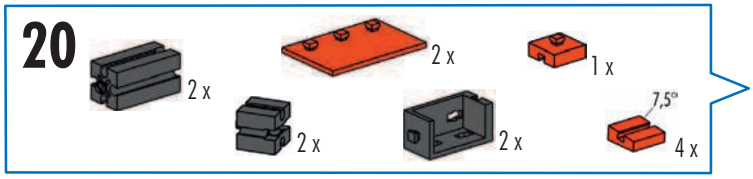

17
2 x
1 x
1 x

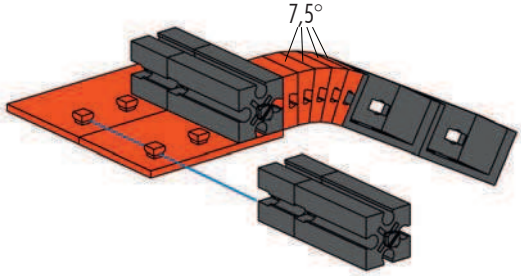


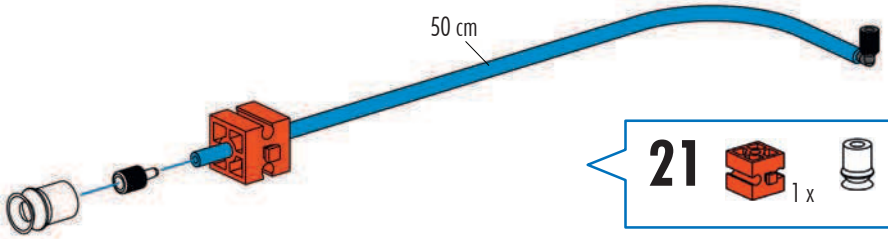

18
2 x
6 x
2 x
120
1 x
4
1 x
1 x
2 x

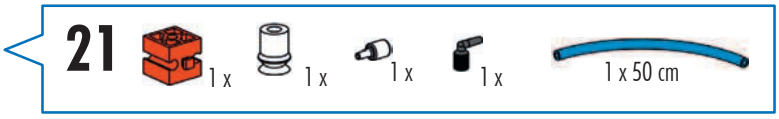

4
17

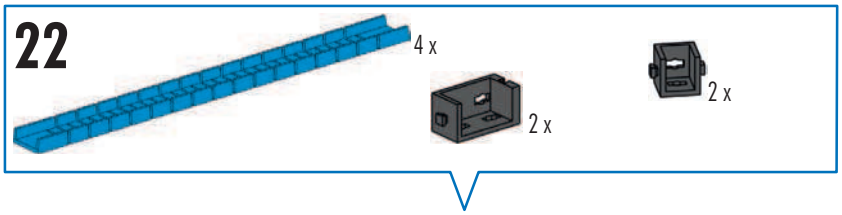

19
2 x
1 x
4 x
2 x
1 x
1 x 40 cm
1 x 15 cm
2 x 7 cm
1 x 2 cm
40 cm
7 cm
15 cm
2 cm
7 cm

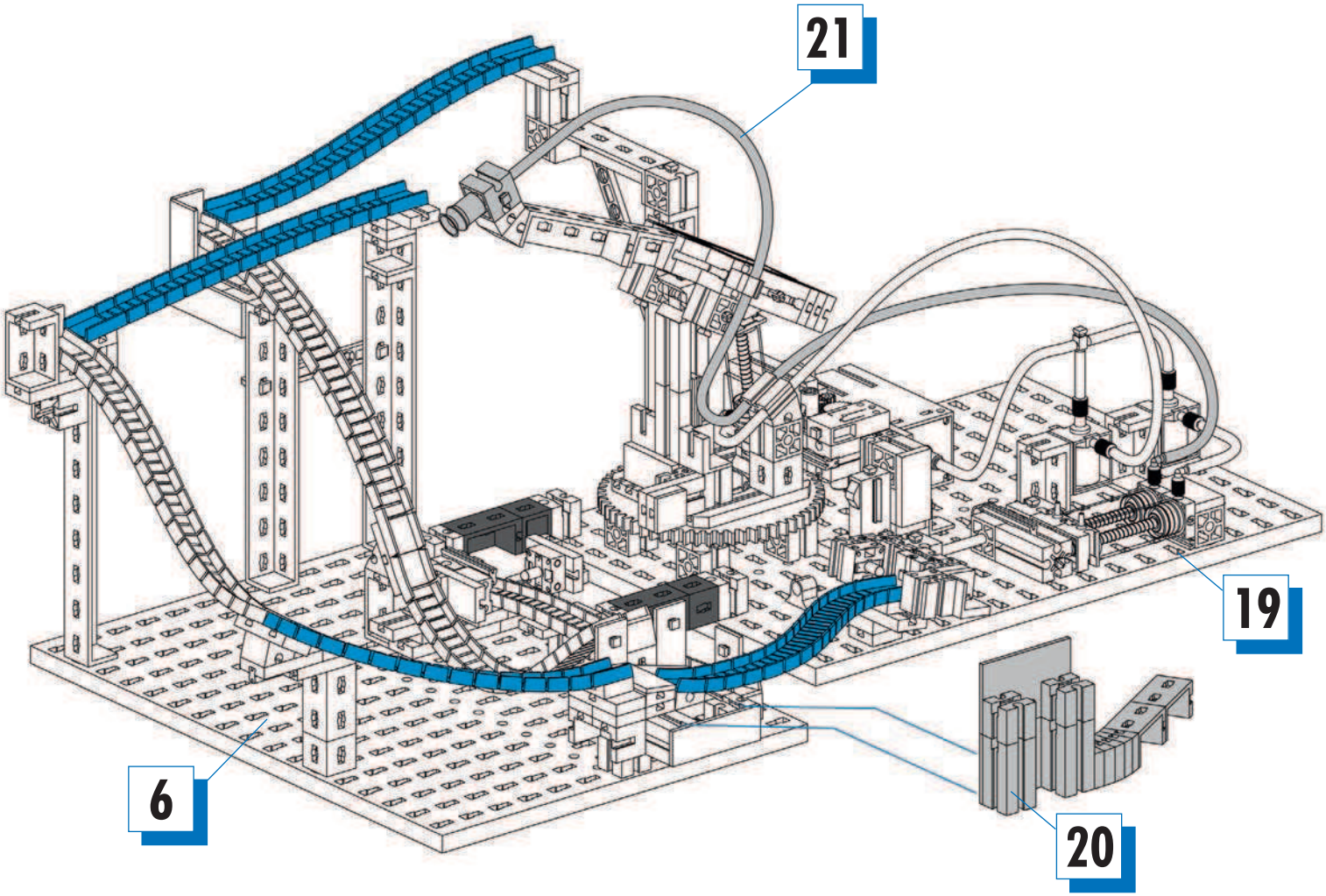

20
2 x
2 x
1 x
2 x
2 x
7,5°
4 x


7,5°


50 cm


21
1 x
1 x
1 x
1 x
1 x 50 cm





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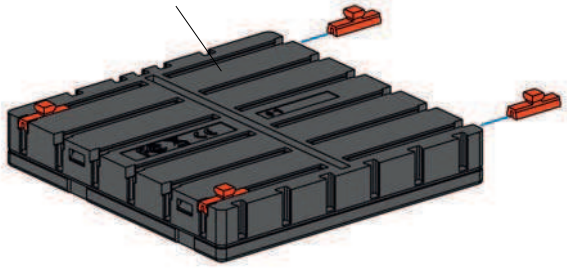

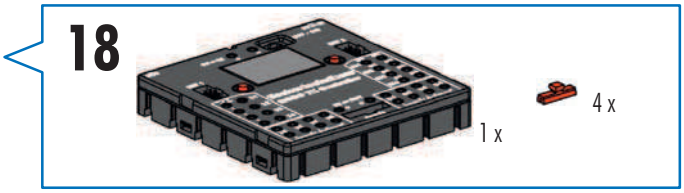

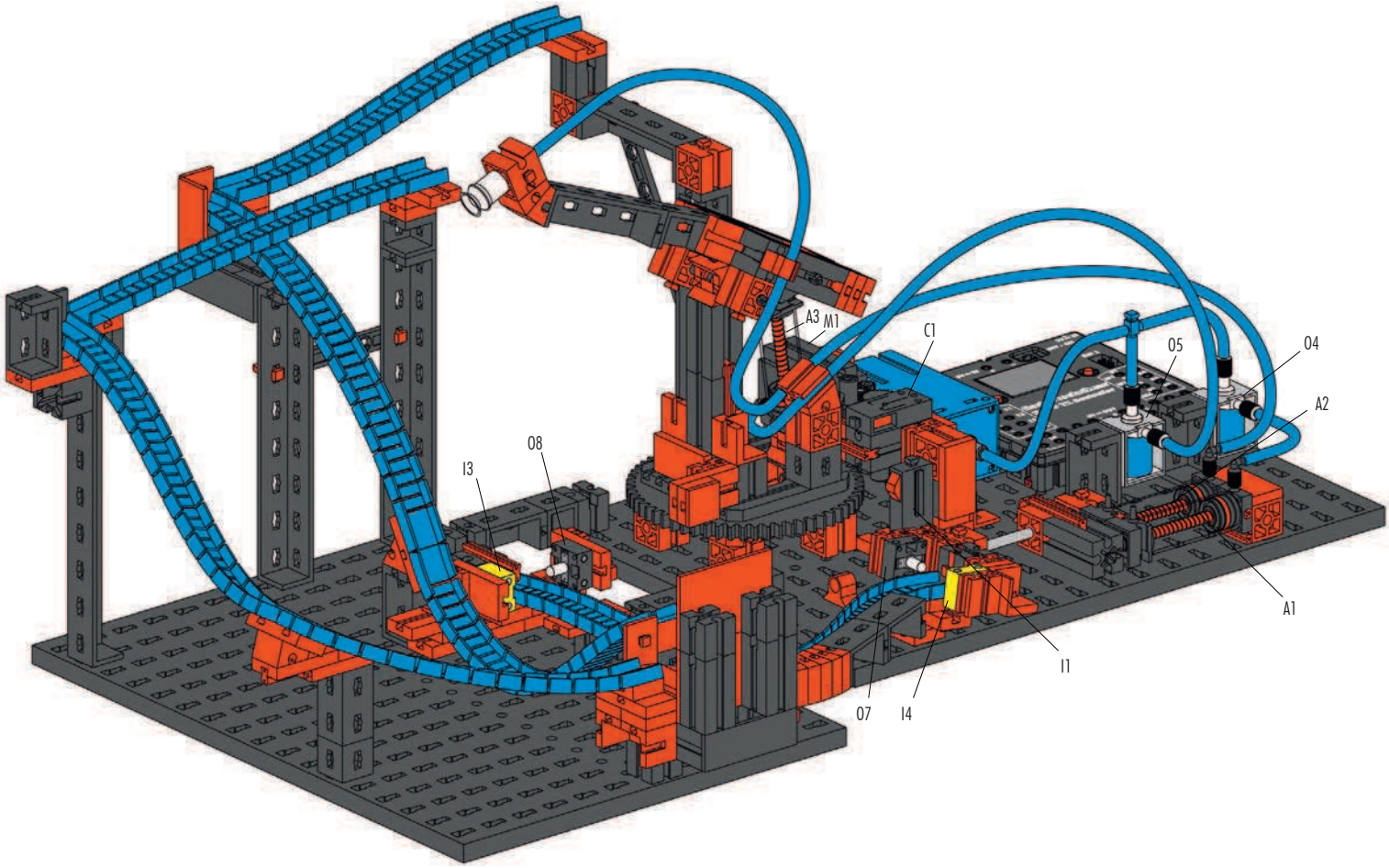

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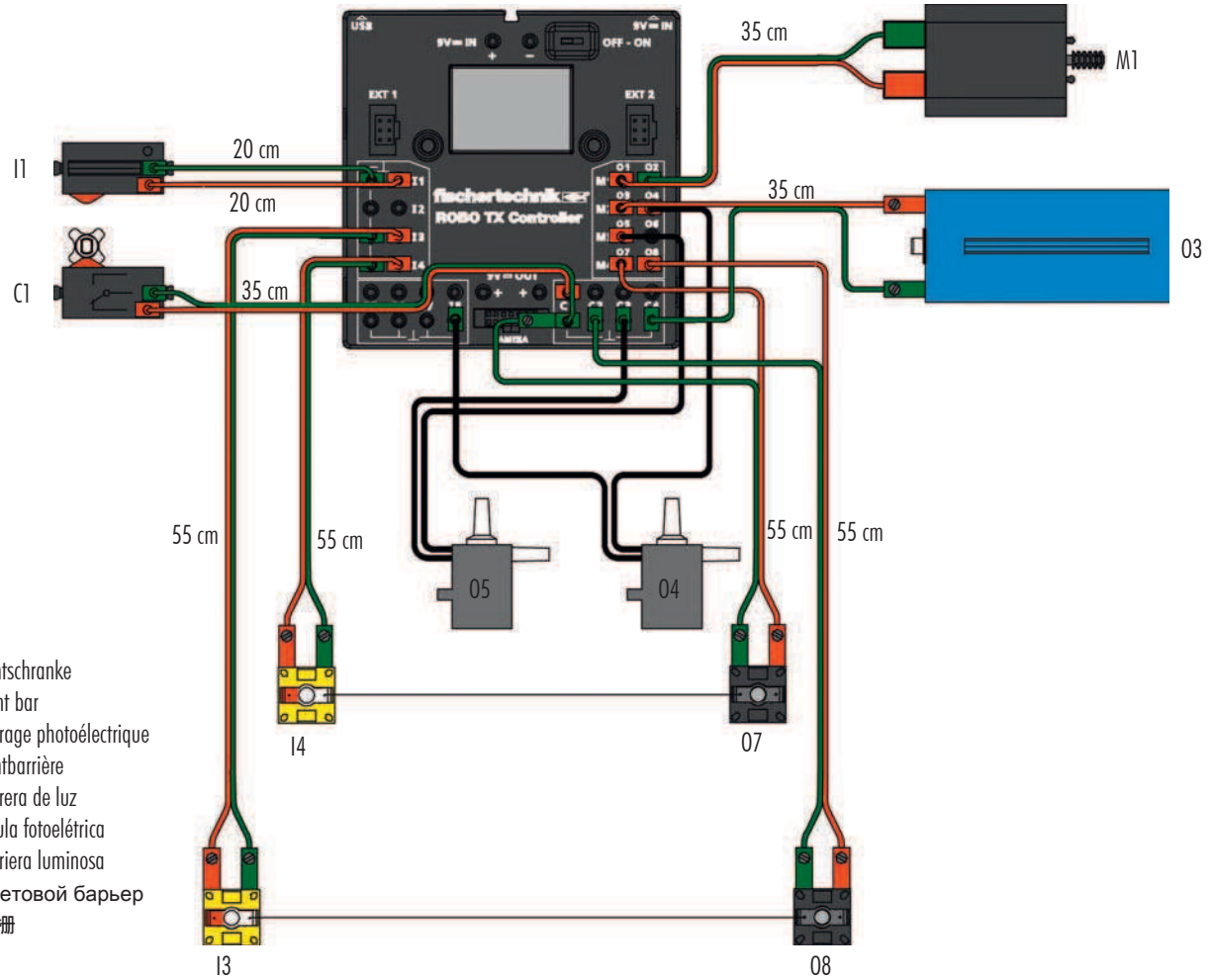
Схема подключения
电路图



Schlauchanschlussplan
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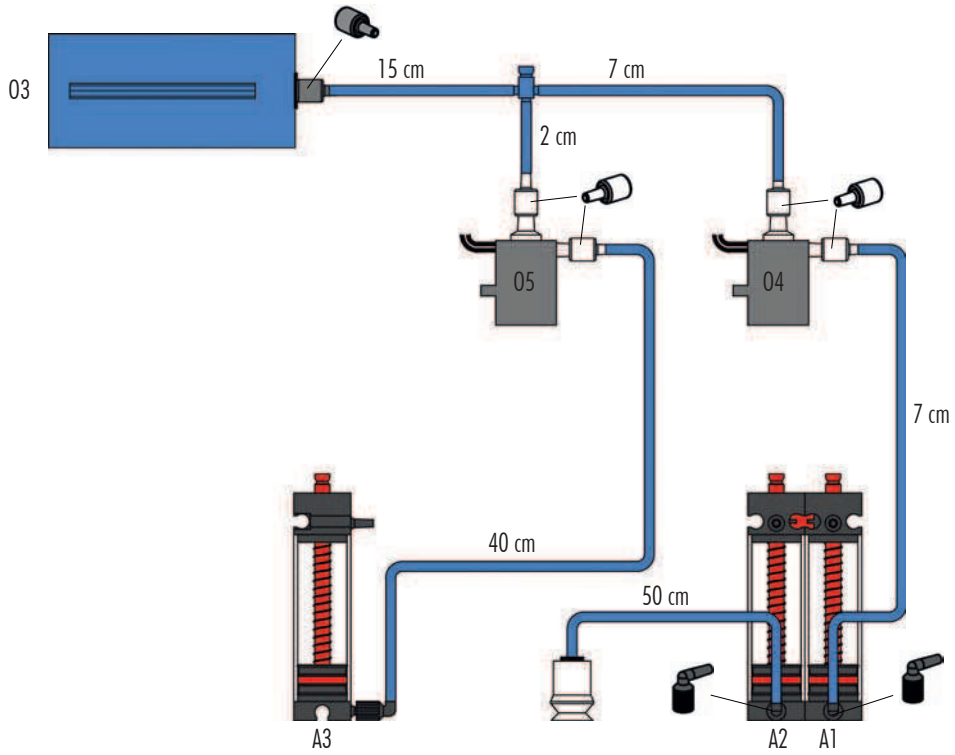
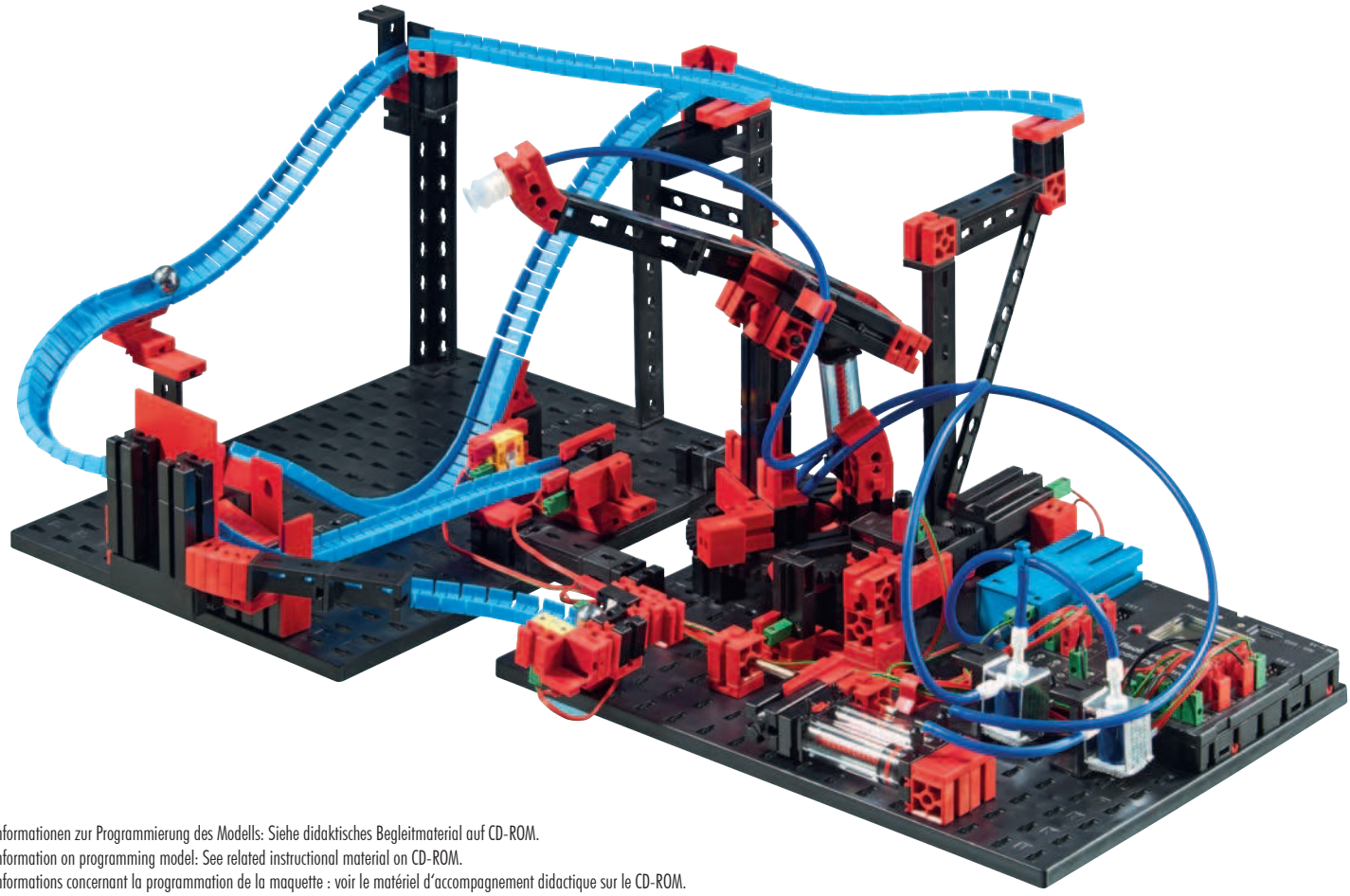
Plan de raccordement de conduits

Aansluitschema van slang
Racor de empalme
Plano de conexão de mangueira

Schema di allacciamento tubi
Схема подключения шлангов
软管连接图





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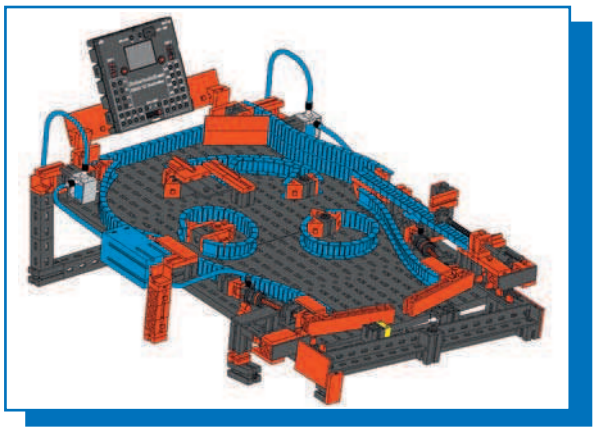
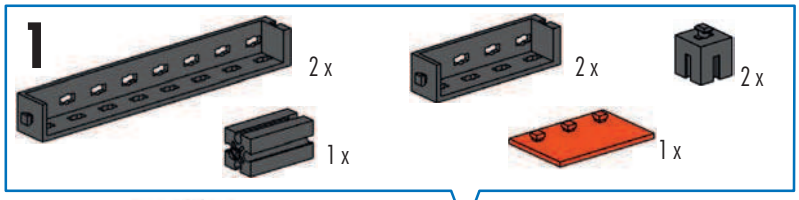
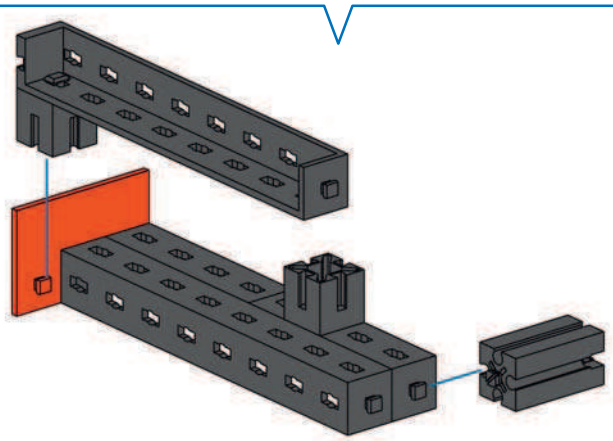


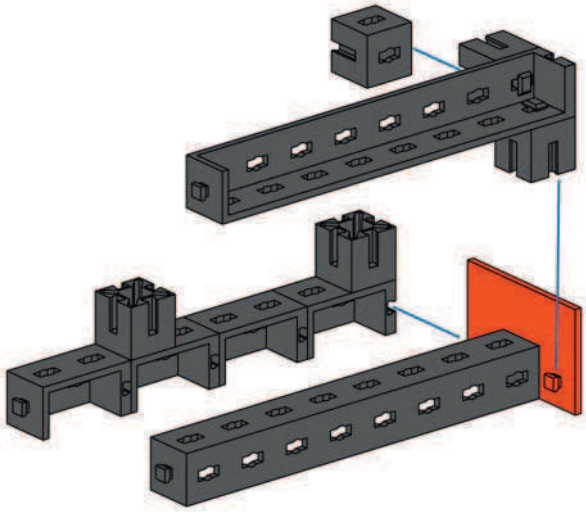
Flipper
Pinball machine
Flipper

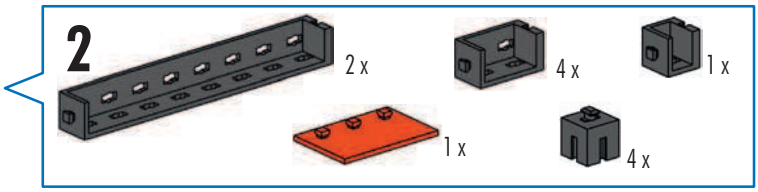
Flipper
Pinball
Flipper

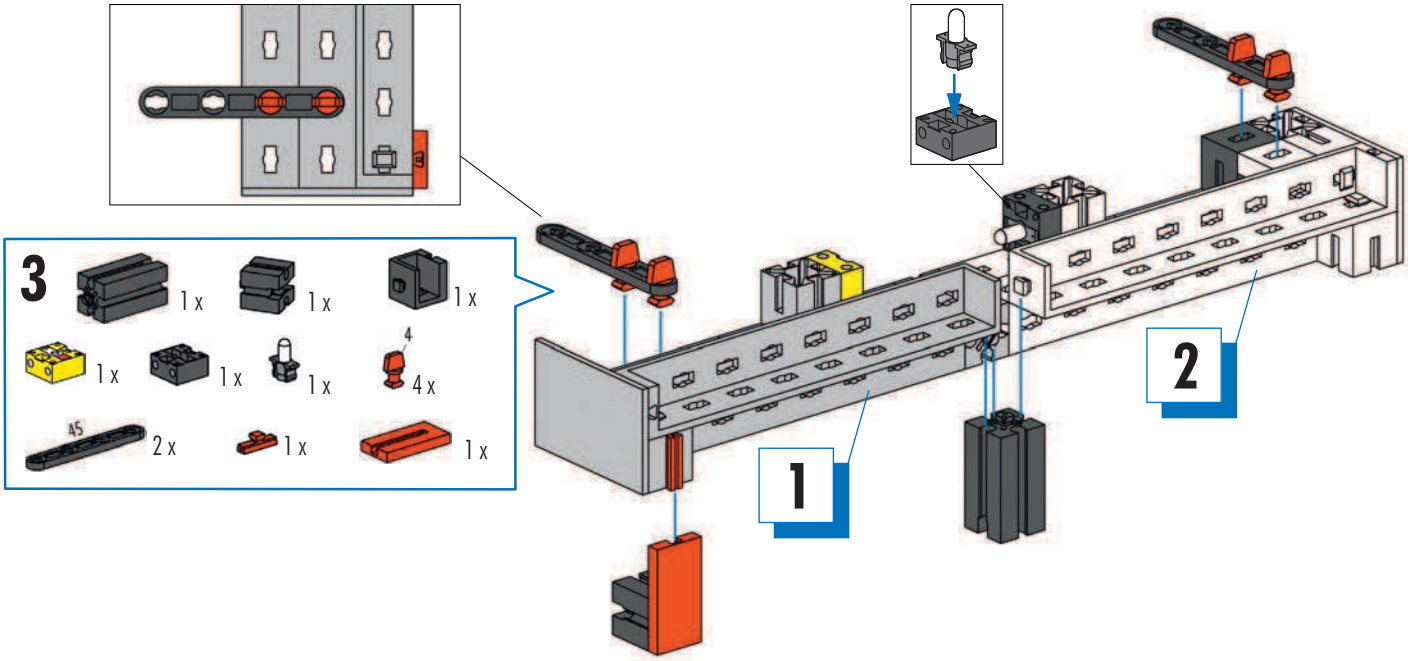
Flipper
пинбол-машина
弹球机

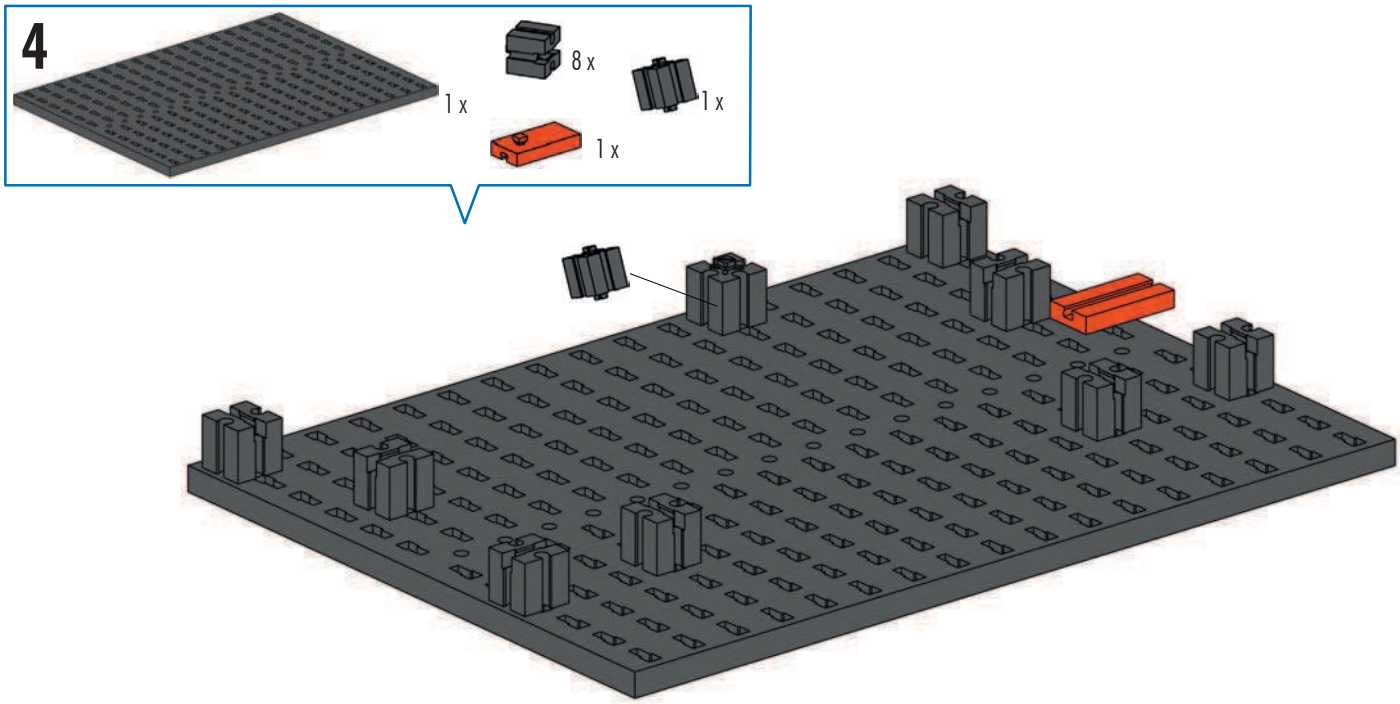








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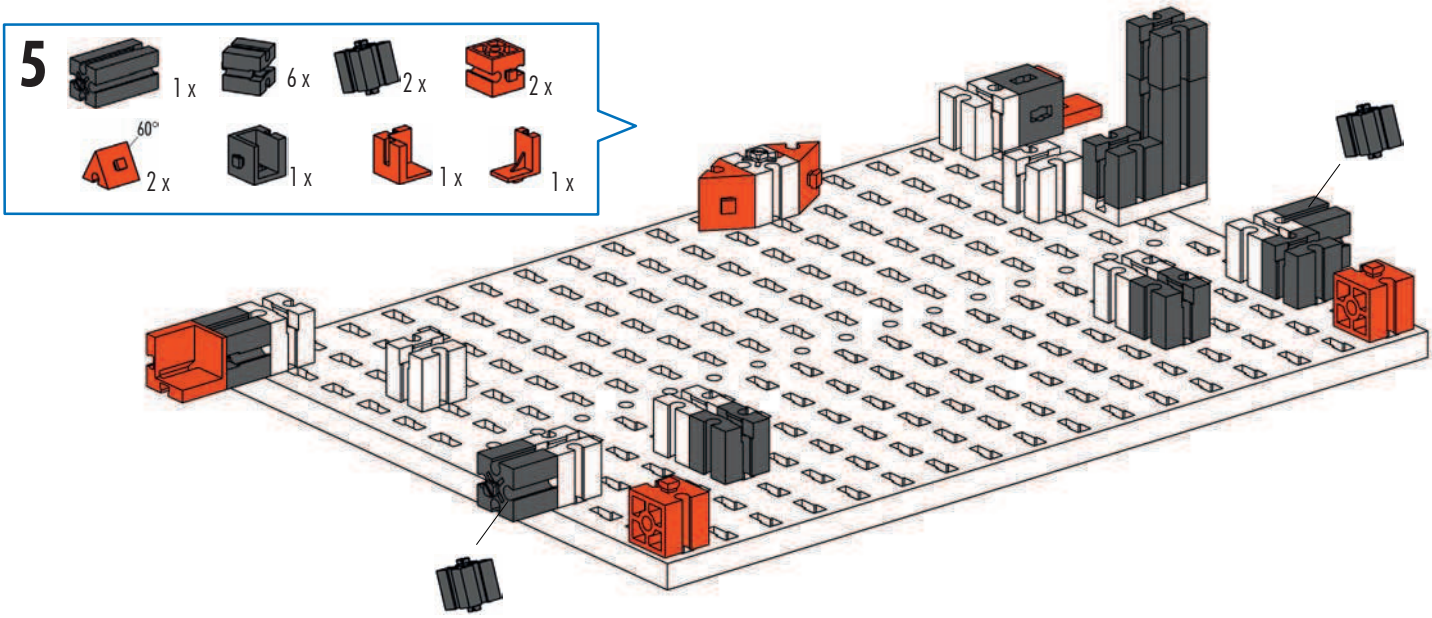
1 x
8 x
1 x
1 x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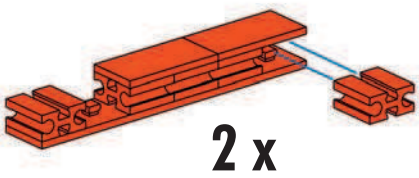
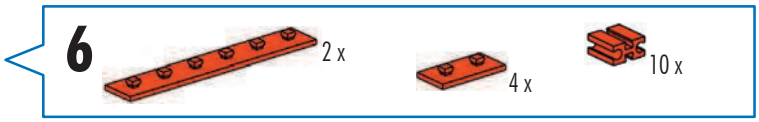
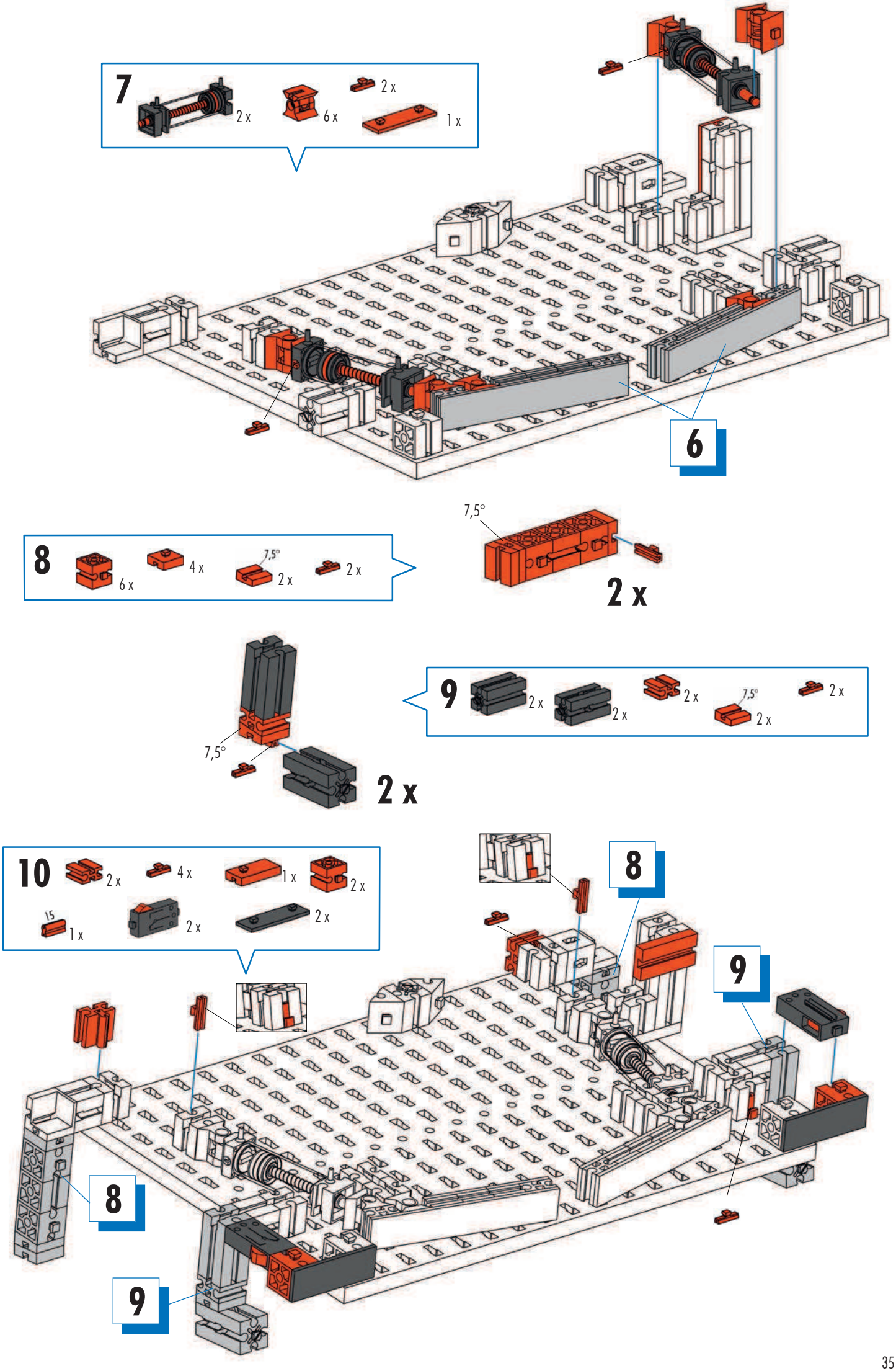
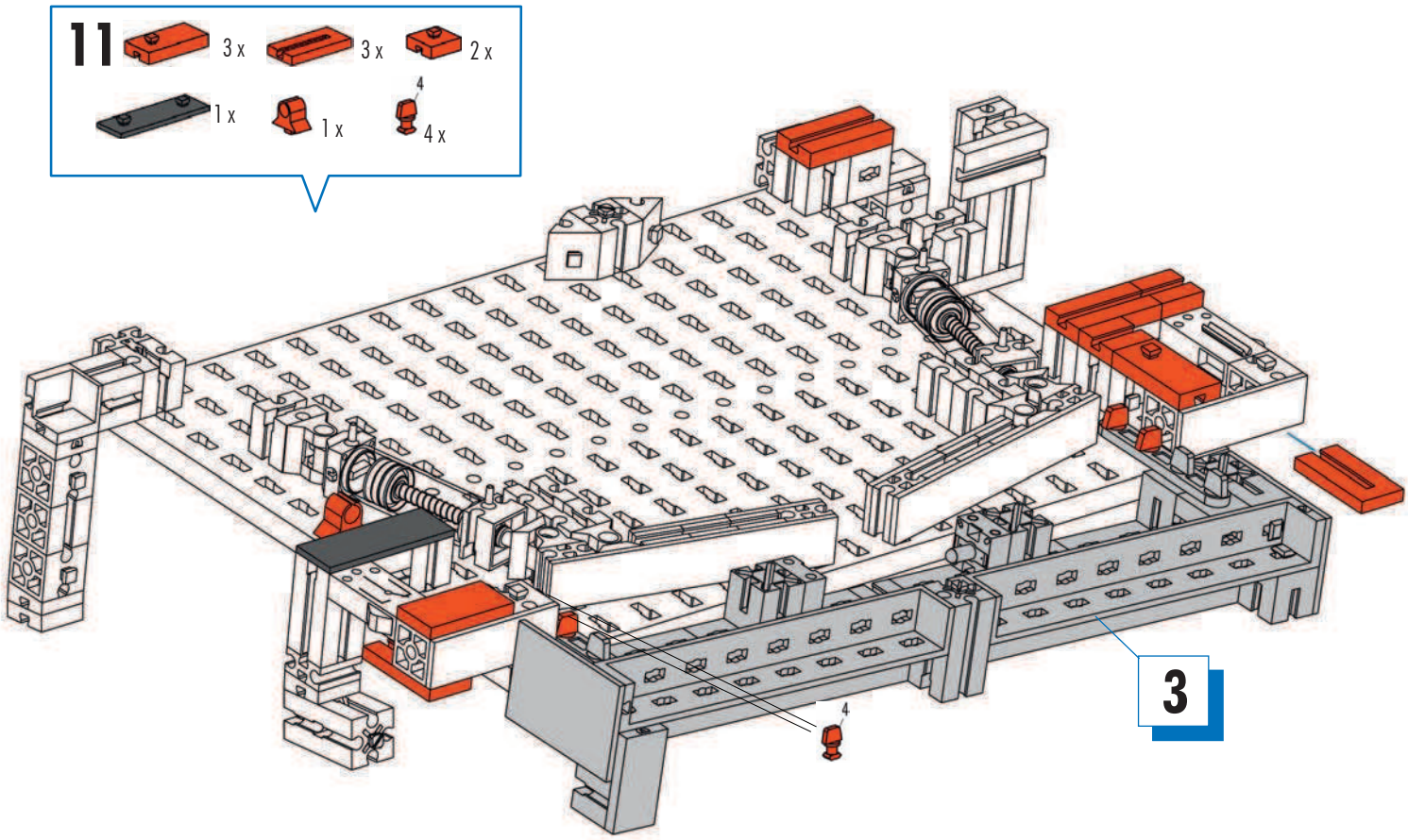
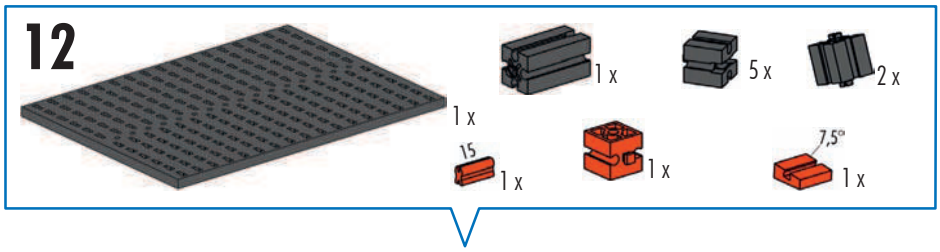
1 x
6 x
2 x
2 x
60°
2 x
1 x
1 x
1 x

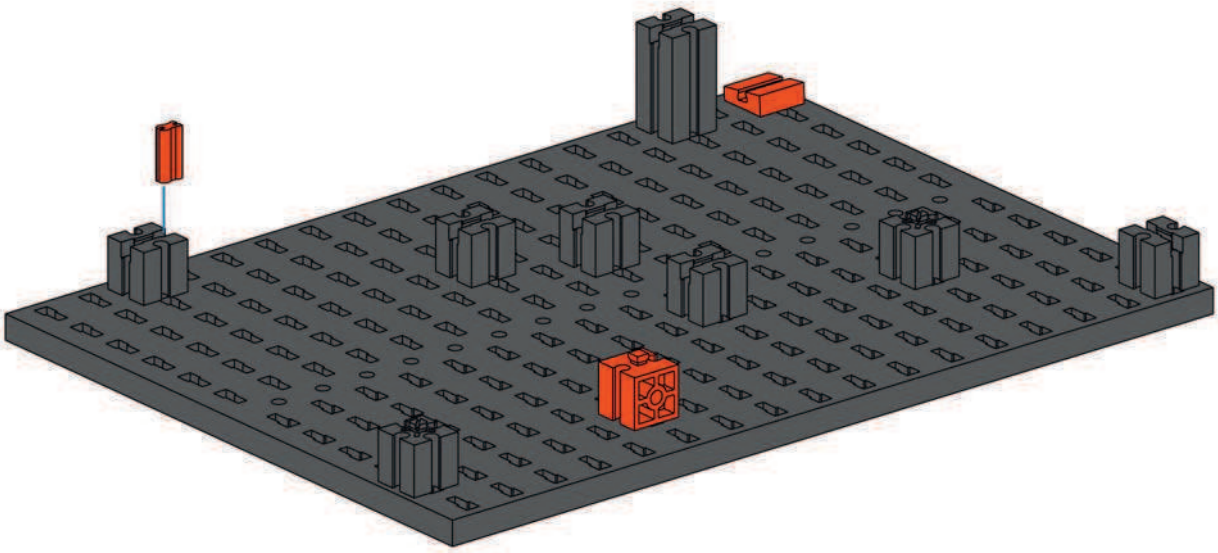

2 x


6
2 x
4 x
10 x


7
2 x
6 x
2 x
1 x
6
8
6 x
4 x
7,5°
2 x
2 x
7,5°
2 x
9
2 x
2 x
2 x
7,5°
2 x
2 x
7,5°
2 x
10
2 x
4 x
1 x
2 x
15
1 x
2 x
2 x
8
9
8
9


11
3 x
3 x
2 x
1 x
1 x
4
4 x
4
3


12
1 x
1 x
5 x
2 x
15
1 x
1 x
7,5°
1 x



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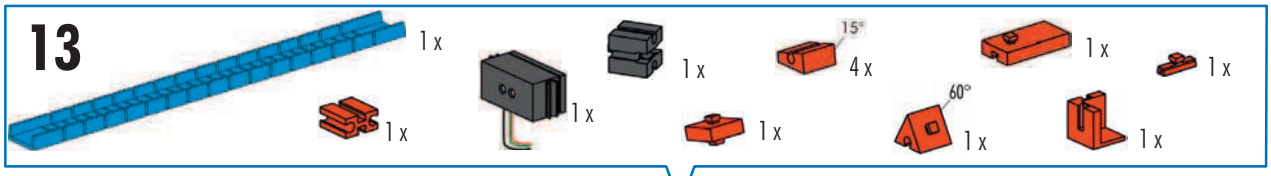
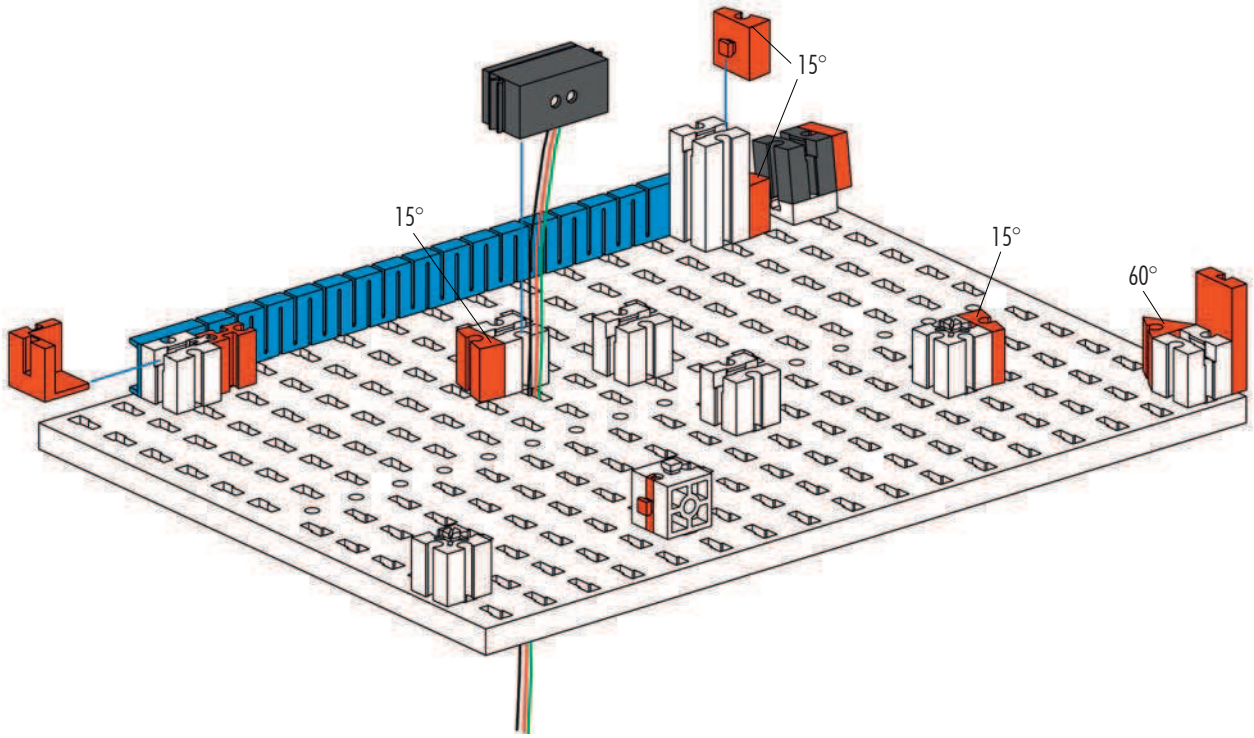
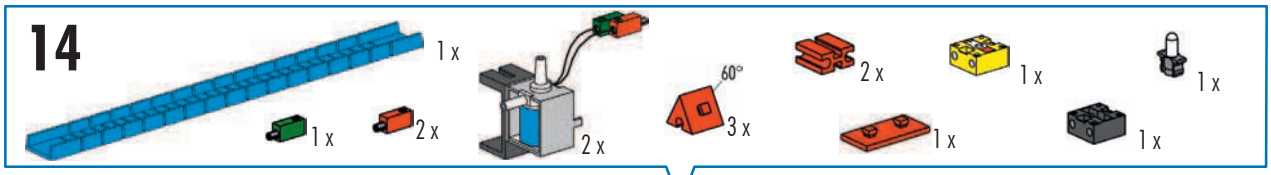
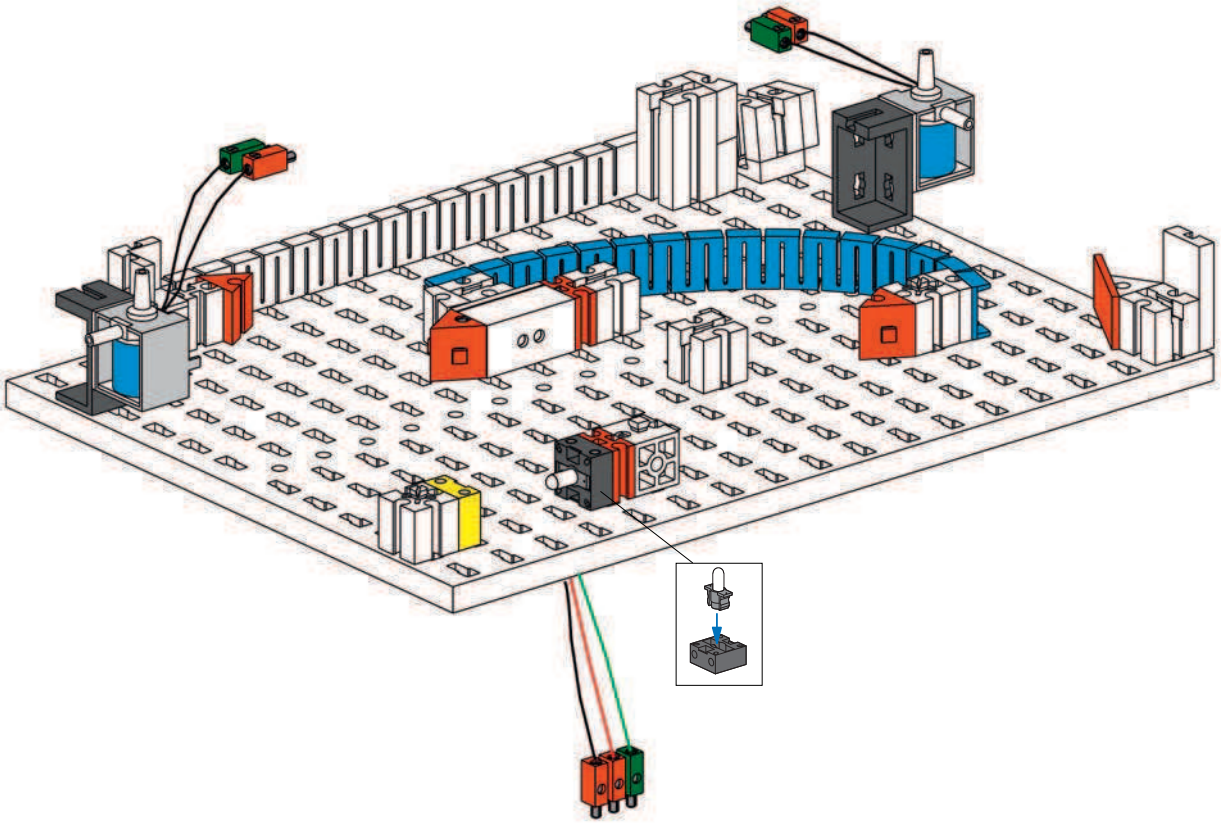
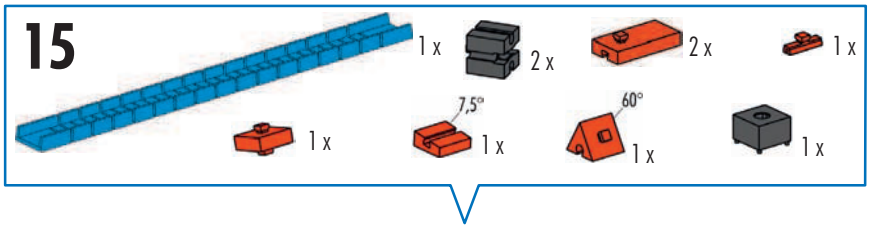

1 x
1 x
1 x
1 x
15°
4 x
1 x
1 x
60°
1 x
1 x
1 x

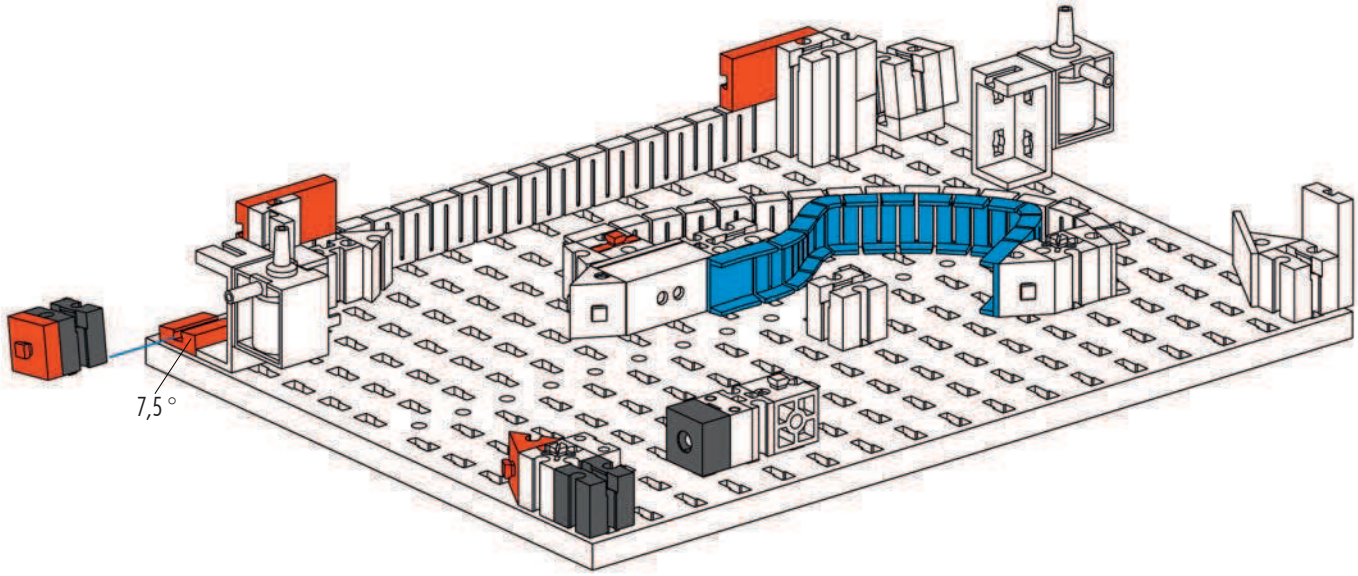

15°
15°
15°
60°

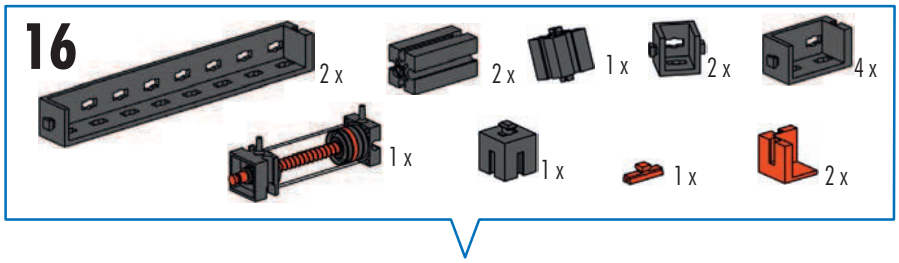
14

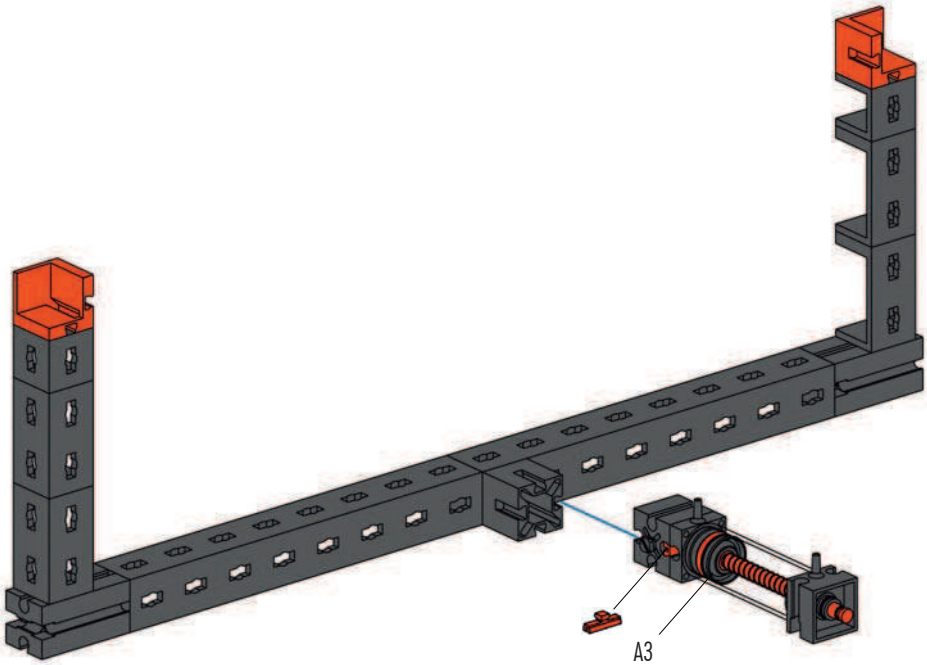

1 x
1 x
2 x
2 x
60°
3 x
2 x
1 x
1 x
1 x
1 x

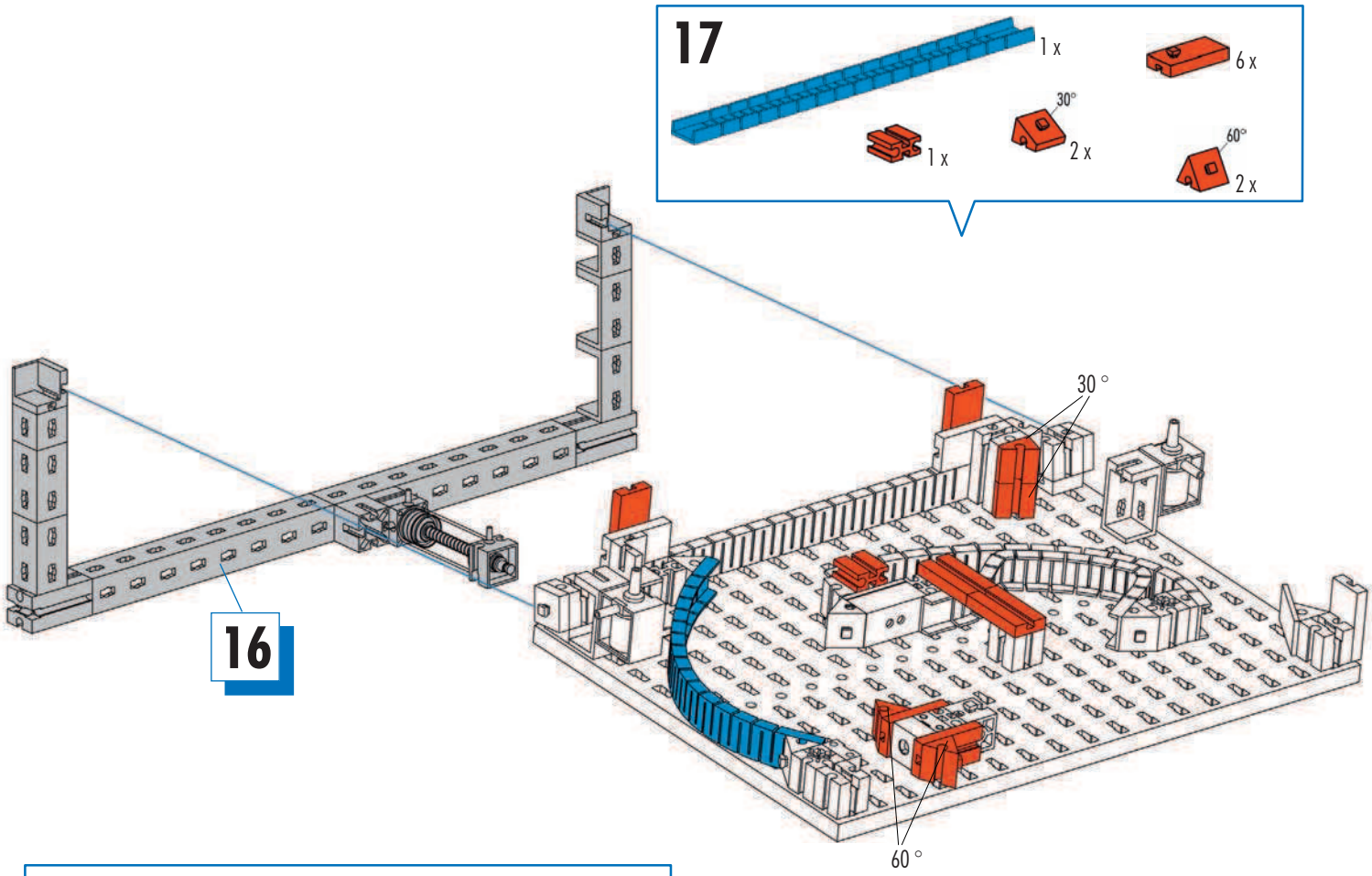


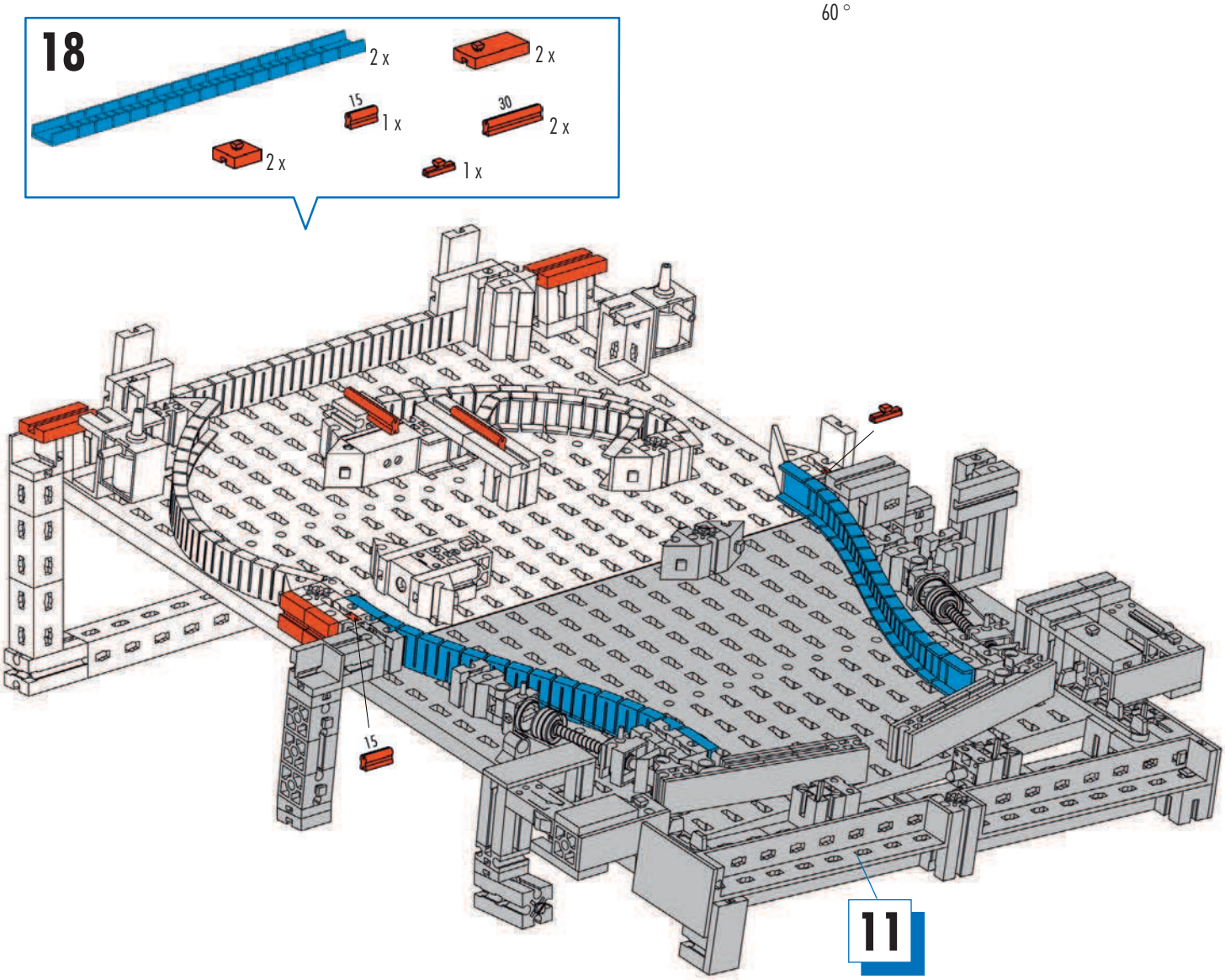

15
1 x
2 x
2 x
1 x
1 x
7,5°
1 x
60°
1 x
1 x

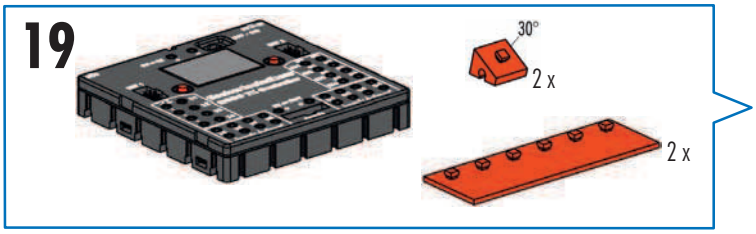

7,5 °

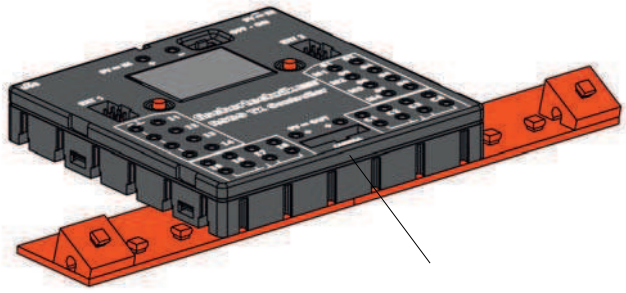

16
2 x
2 x
1 x
2 x
4 x
1 x
1 x
1 x
2 x


A3

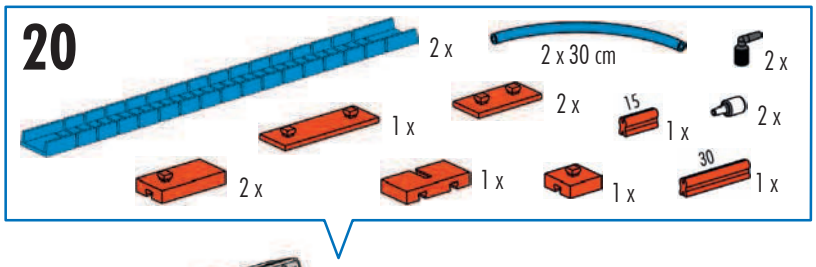

17
1 x
6 x
30°
2 x
1 x
60°
2 x
30 °
60 °
16

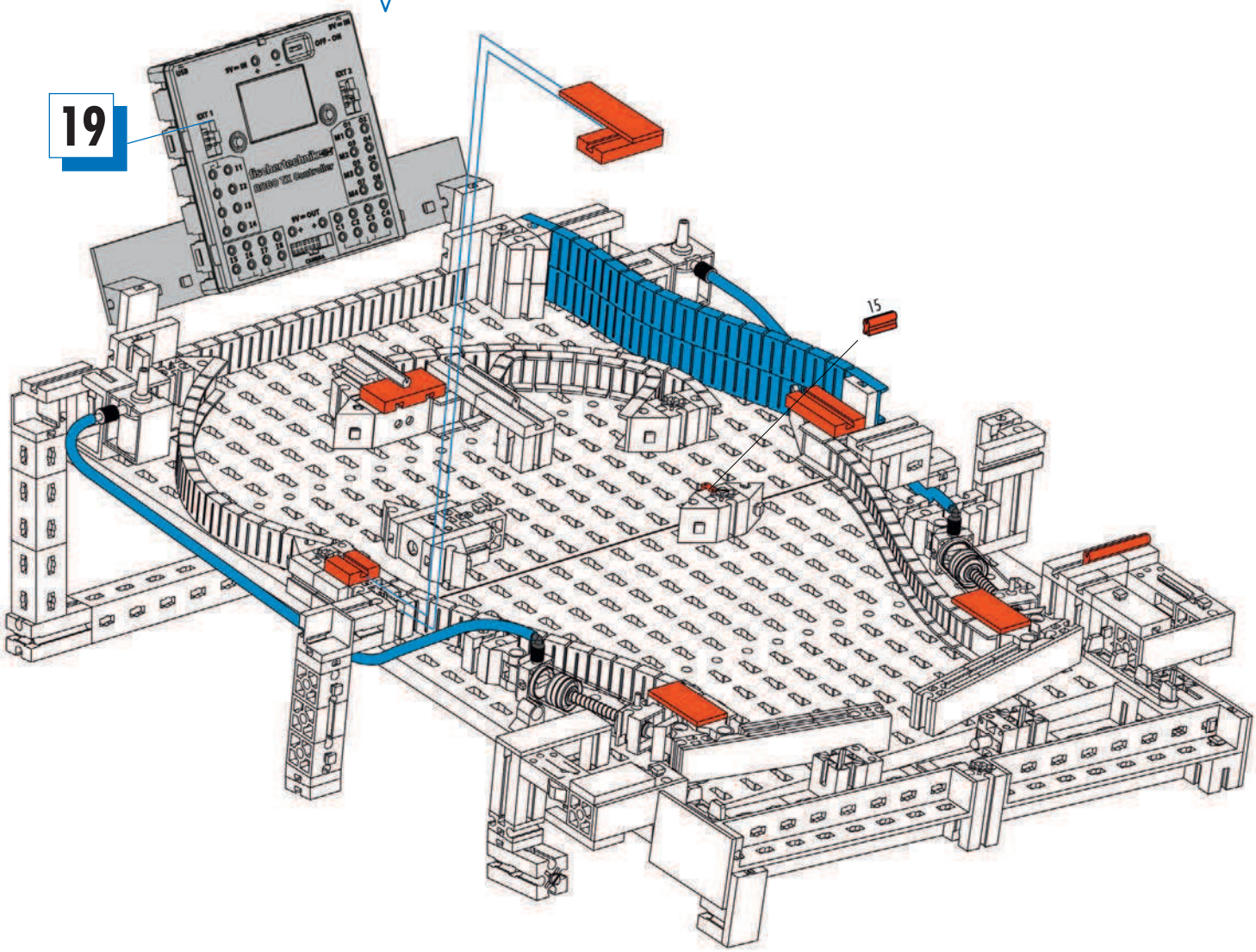

18
2 x
2 x
15
1 x
30
2 x
2 x
1 x
15
11

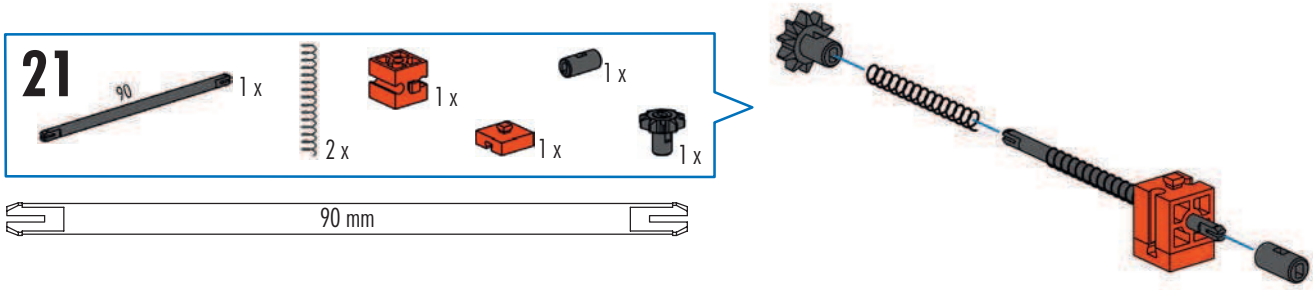


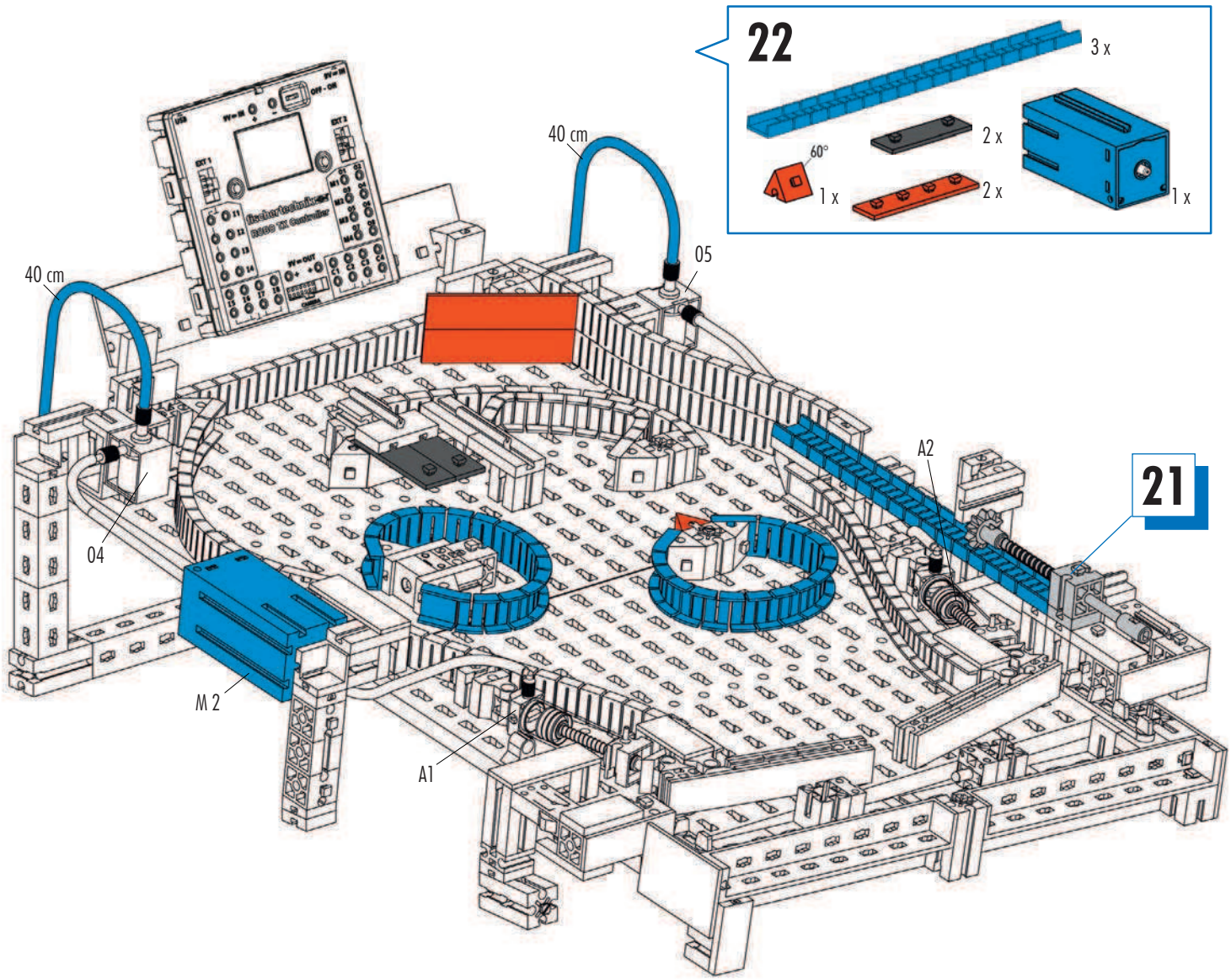


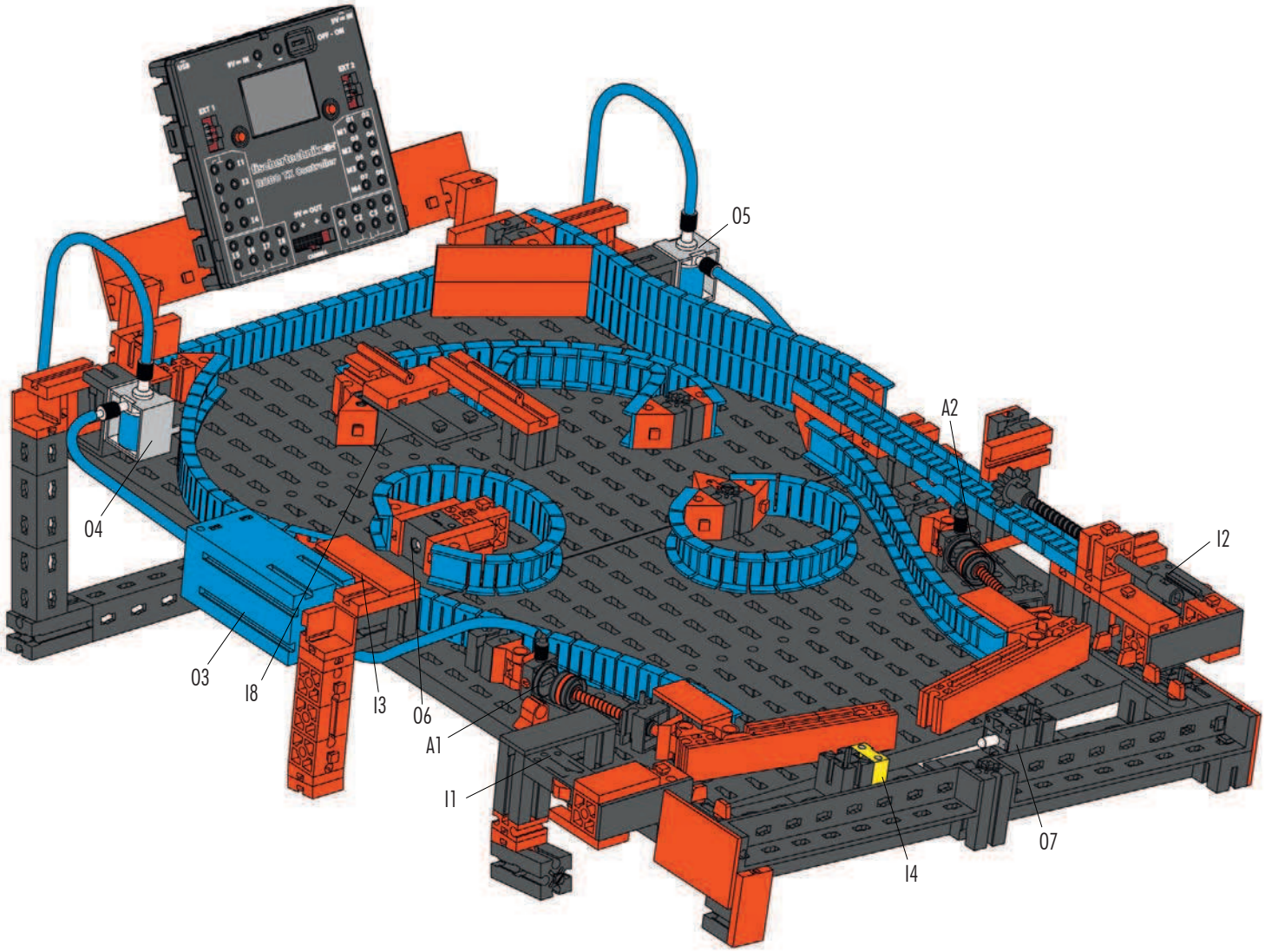
- ROBO TX Controller (Art.-Nr. 500 995) nicht im Baukasten enthalten
- ROBO TX Controller (Art.-Nr. 500 995) not included in the modular kit
- ROBO TX Controller (Art.-Nr. 500 995) n'est pas contenue dans le kit
- ROBO TX Controller (Art.-Nr. 500 995) niet in de bouwdoos opgenomen
- ROBO TX Controller (Art.-Nr. 500 995) no está incluido en el conjunto
- ROBO TX Controller (Art.-Nr. 500 995) não contido no sistema de construção por blocos
- ROBO TX Controller (Art.-Nr. 500 995) non incluso nella scatola di montaggio
- ROBO TX Controller (Art.-Nr. 500 995) не входит в комплект конструктора
- ROBO TX Controller (Art.-Nr. 500 995)不包含在组件






21
90
1 x
2 x
1 x
1 x
1 x
1 x
90 mm

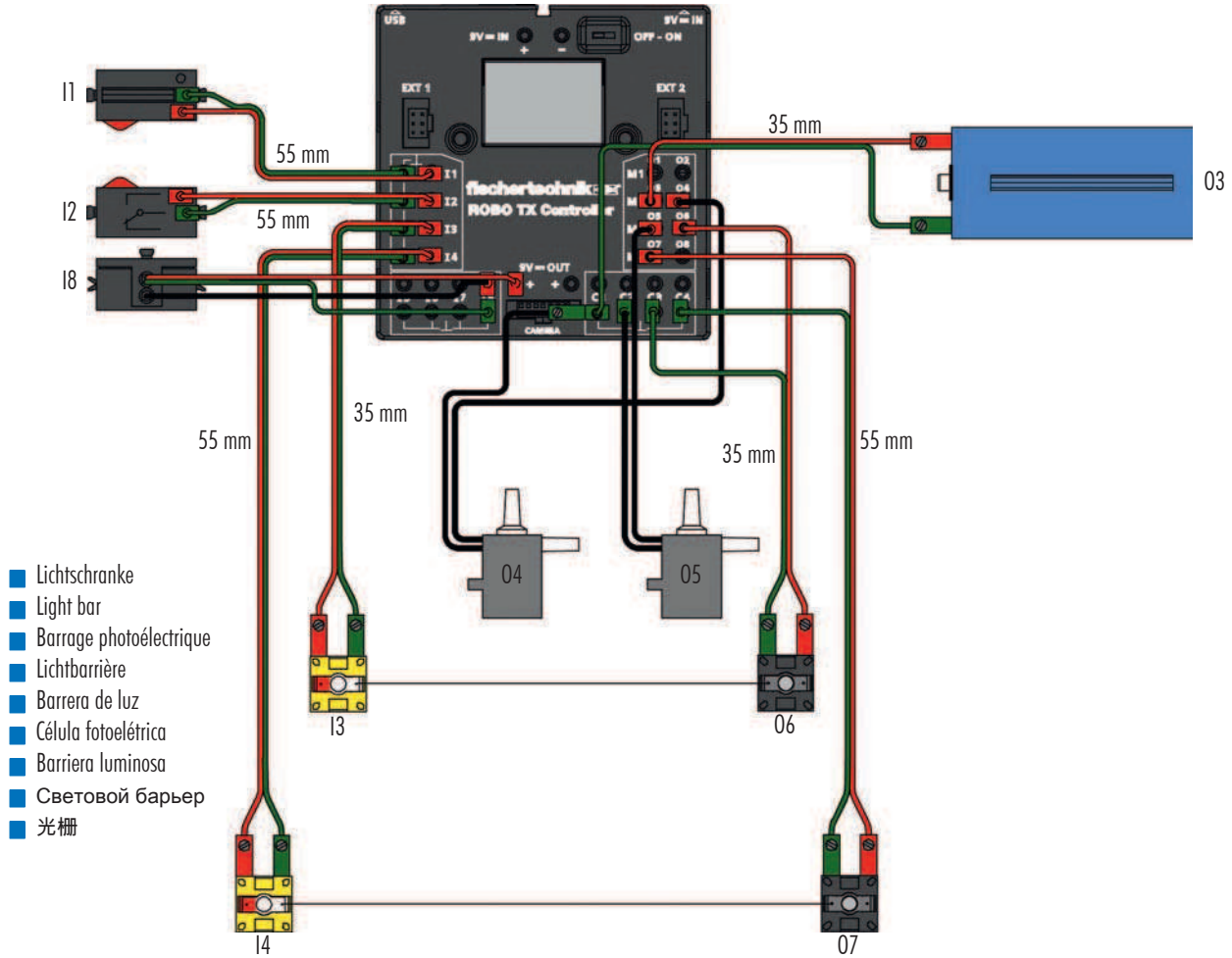

22
3 x
60°
1 x
2 x
2 x
1 x
40 cm
40 cm
05
04
A2
21
M 2
A1



Schaltplan
Circuit diagram
Plan électrique

Schakelschema
Diagrama de circuitos
Plano elétrico de ligação

Schema elettrico
Схема подключения
电路图



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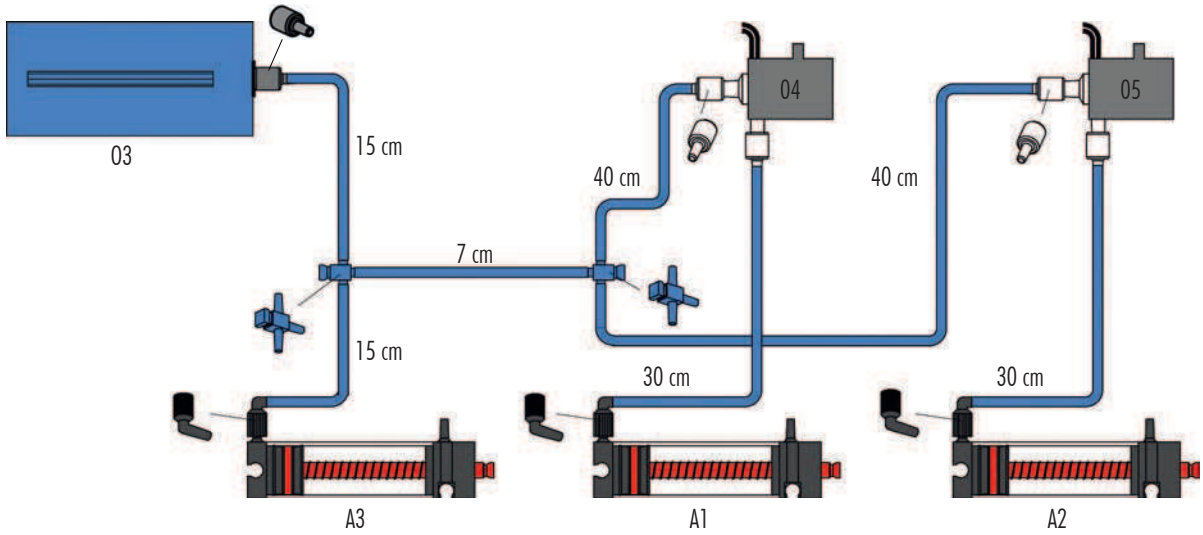

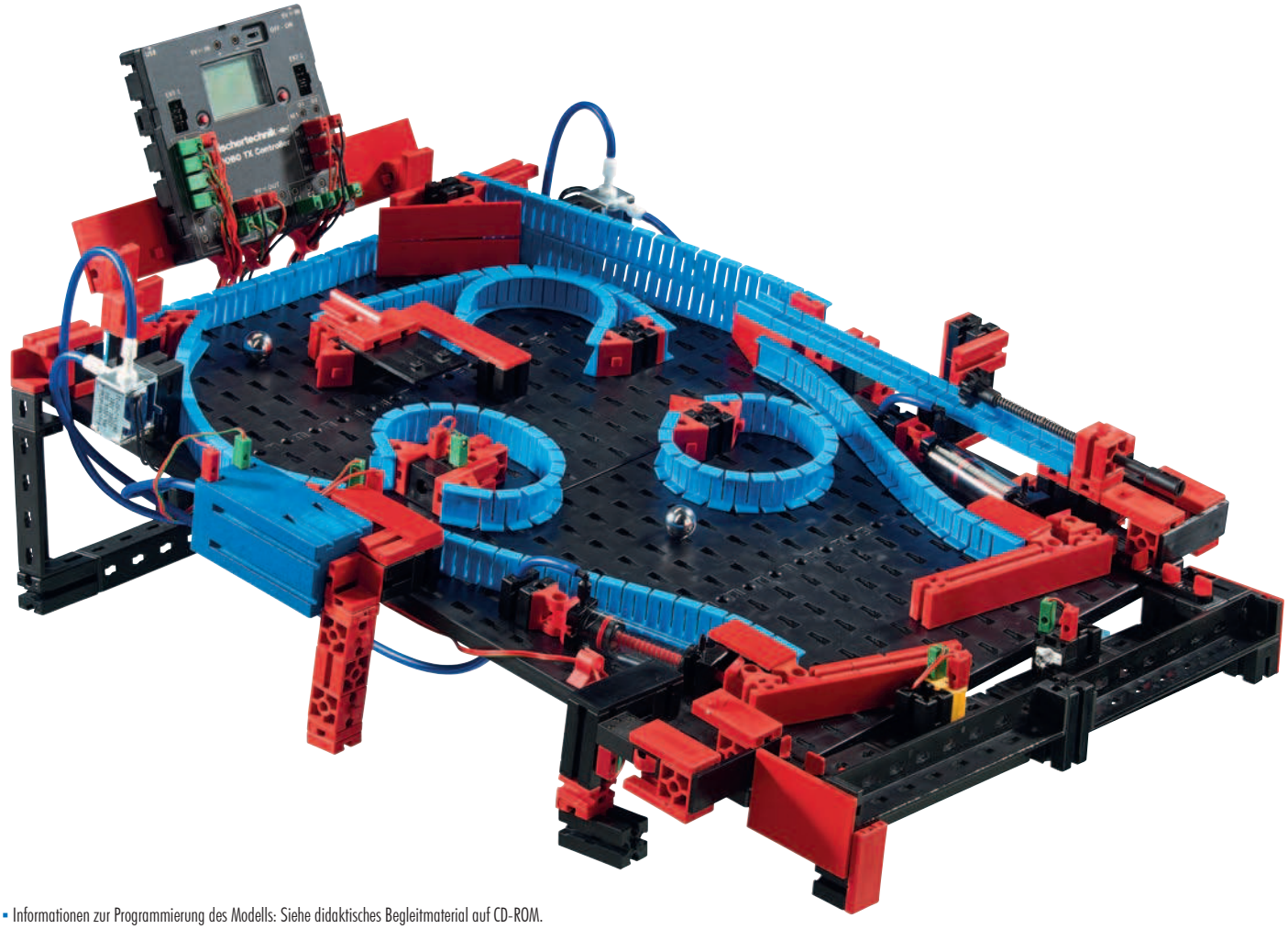

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