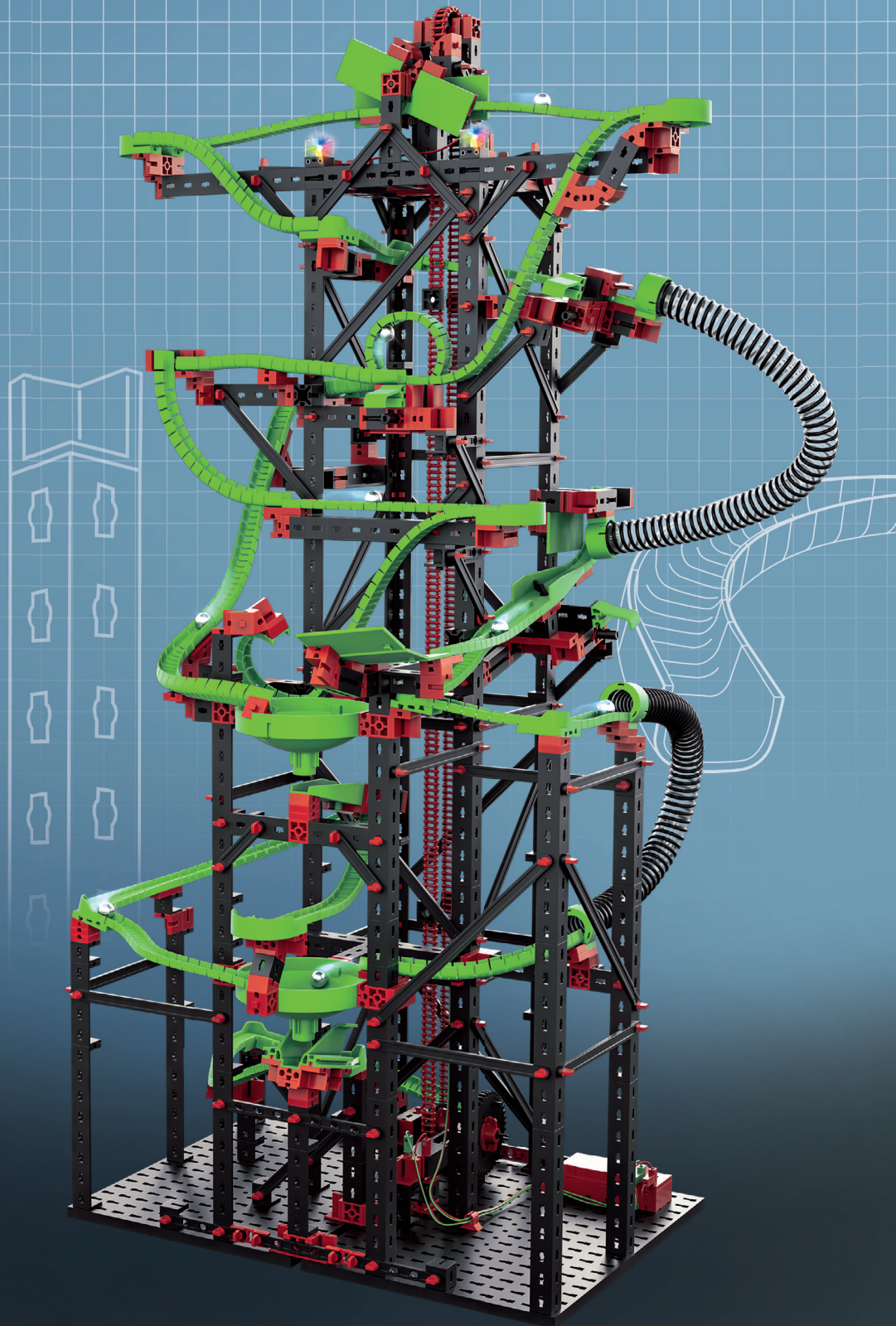




**fischertechnik** 

**PROFI**

Begleitheft  
Activity booklet  
Manual d'accompagnement  
Begeleidend boekje  
Cuaderno adjunto  
Folheto  
Libretto di istruzioni  
Сопроводительная инструкция  
附带说明书



**Dynamic XXL**

**3 MODELS**

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## PROFI DYNAMIC XXL

■ The new Dynamic XXL obstacle course construction set is guaranteed to be even faster, higher and more action-packed than ever. At just under one meter high with a track up to 5.60 meters long, plenty of new functions, new components and switches, this construction set guarantees unlimited hours of entertainment. You can build new, fast courses thanks to the new flex tubes. The balls race across a mechanical teeter-totter into different track circuits. They then speed through a loop on their way down before going over the quarter pipe, through the spring loop and other obstacles. New: even more interaction is possible thanks to the ability to influence the ball's route. A mechanical switch can be used to adjust the course of the flex-rails, and an additional switch with switch lever determines the direction of the course. The balls can also be stopped at a stopping point and then released. The balls are then brought back up to the top by the chain lift which is operated by an XS motor. Three different ball obstacle courses can be built, providing a wide variety of construction alternatives.

Expanding the construction set with the PLUS set: the Bluetooth Control Set and Motor Set XS (up to two) make it possible to control obstacles such as the switches or stopping point using a Bluetooth controller or smartphone/tablet.

Includes XS motor, 2x Rainbow LEDs, 2x flex tubes 360, 7x 90° curves, 5x 180° curves, 7x high-speed flex-rails, 8x flex-rails 90, 16x flex-rails 180, 8x balls, 2x cross-overs, 2x rotary funnels, 9V battery tray (battery not included). Ideal additions: all construction sets from the Dynamic Line, Motor Set XS, Bluetooth Control Set, Sound+Lights, LED Set, Accu Set or Power Set.

## What does dynamics mean?

■ We encounter dynamics everywhere in our daily life and perhaps no longer even recognize it because we are so used to it! We speak of dynamics everywhere anything moves.

We experience this in the morning when we get up. We move from our bed to the bathroom or the breakfast table. We drive or walk to school or to work. We experience the effects of dynamics in nearly all hobby sports or see them when we simply watch other people move.



## Fun with Physics

Dynamics provides us with awesome experiences and fun, such as riding your bike, skiing, skateboarding, playing ball or riding a roller coaster. Dynamics therefore enriches our lives, as expressed in the motto - Fun with Physics!

Try to think where you encounter dynamics in your everyday life!

- Riding in a car
- running, jogging, jumping
- ...

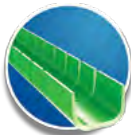


## Dynamic XXL

### Dynamic XXL components



The **flex-rails** are flexible in all directions. When building an obstacle course you can be as creative as you like and build special, crazy curves, loops and jumps. The flex-rails are available in **90 mm** and **180 mm** lengths.



The **high speed flex-rails** with a length of **180 mm** and with higher side edge allow the balls to reach maximum speed in curves.



A lever is attached in the middle of the **cross-over** to guide the balls alternately to the flex-rail attached on the right or left.



The **cross-over locking lever** is installed in the sub-frame of the cross-over. It is driven by a rack and pinion with locking mechanism, enabling manual adjustment of the cross-over.



Once caught in the **rotary funnel**, the balls whirl to the center and fall through the hole on to the next rail.



**Tip:** If the flex-rails are bent after disassembly, they can be straightened by clamping them on one of the base plates for a short time. This straightens the bend.



The **flex tube** is **360 mm** long. The two ends can rotate in their holders, allowing you to be creative in the design of your courses.



The **90° curve** allows you to change direction quickly and build tight curves simply.



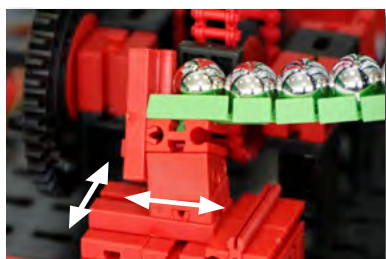
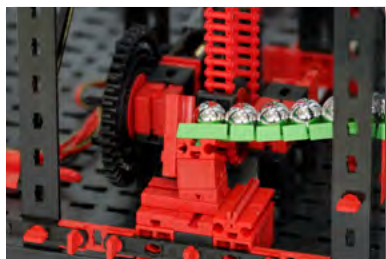
The **180° curve** lets young architects change the direction of the ball in a tiny space.

The **magnetic ball holder** is attached to the chain and transports the steel balls back up.



## The three Dynamic XXL obstacle courses

### Elevator



**Tip:**

If the balls are not picked up and transported by the elevator correctly, you can readjust the position of the ball magazine.

All obstacle courses shown in the assembly instructions include an elevator. This consists of a driven chain fastened to a magnetic ball holder.



As soon as a ball holder passes by a steel ball in the model's magazine, it is attracted by the magnet and transported to the top. At the top the ball is pushed off and rolls through the obstacle course.

### Flex tube 360



All obstacle courses shown in the assembly instructions include two flex tubes.

The flex tube is 360 mm long. The two ends can rotate in their holders, allowing you to be creative in the design of your courses. The assembly instruction assembly tips show how to mount the end piece on the flex tube and how to attach the end piece in the holder.

**Assembly steps:**

**Tip:**

After initial assembly, engage the flex tube end piece into the holder. If you then want to remove the flex tube from the holder or reattach it, you can do this using a spring launcher. The components are in the construction set.



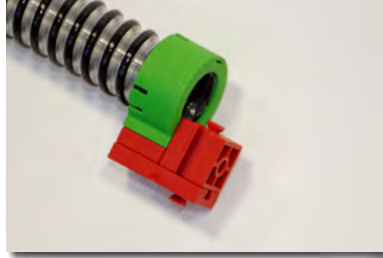
1. Assemble the spring launcher according to the picture and parts list as shown in the following pictures. The spring launcher consists of the following components:

- 1x 32 064
- 1x 35 049
- 1x 37 237
- 1x 38 415

## Dynamic XXL

**Tip:**

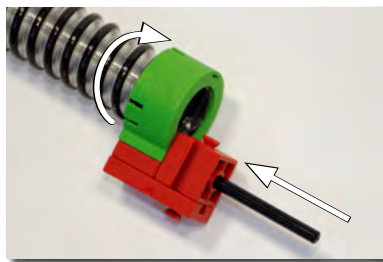
Thread the flex tube into the end piece as far as possible so that no gap is visible between the flex tube end and the end piece.



2. Slide the holder of the flex tube onto the spring launcher.

**Tip:**

The end piece allows the flex tube to rotate in the holder. Due to the geometry of the flex tube end, it is possible that a small gap may be present or a small part of flex tube may protrude at the end despite assembling the pieces correctly. In this case you can twist the flex tube in the holder so that it no longer affects the balls as they roll by.



3. Attach the plastic shaft through the building block and turn the flex tube or the flex tube end piece until the plastic shaft can be inserted into the recess of the end piece.

4. Now the end piece can no longer rotate in the holder. This lets you either unscrew and remove the flex tube from the end piece or thread the flex tube into the end piece.

## Obstacle course 1

■ This action-packed obstacle course includes many dynamic obstacles as well as two switches and a stopping point. Below are a few tips on how to ensure that the individual obstacles work correctly.

### Automatic cross-over

**Tip:**

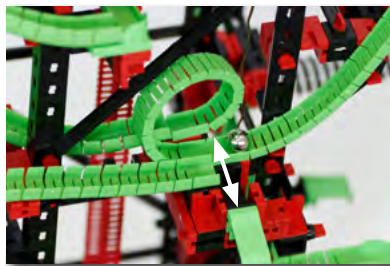
Ensure that all components in the automatic cross-over are installed and aligned correctly and that the cross-over moves easily. Otherwise it may not operate correctly.



After the ball has been knocked off the magnetic ball holder it rolls into the automatic cross-over which routes all incoming balls alternately to the left and right.



### Switch

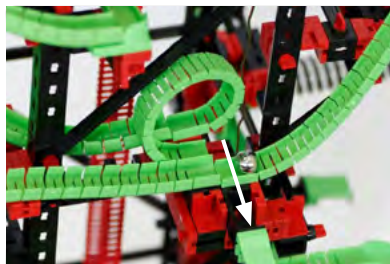
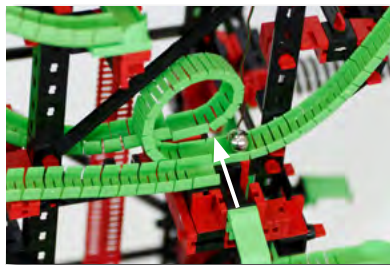


The mechanical switch can be used to adjust the route of the flex-rails.

The separate PLUS XS Motor Set can be used to extend and power the switch. The assembly instructions provide information on how to install this set in obstacle course 1.

**Tip:**

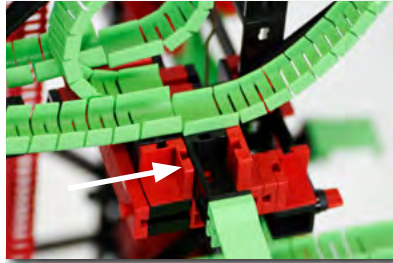
Make sure that the flex-rail profile or slider is always pushed up against the end stop.



## Dynamic XXL

### Tip:

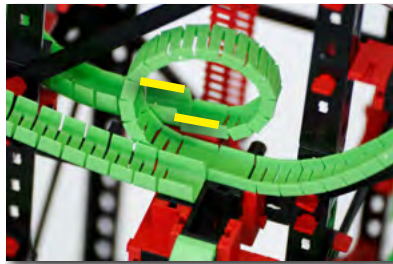
If the slider moves on its own, you can increase the friction by sliding the V15 corner building block toward the angle girder.



### Loop

#### Tip:

The flex-rail profile must be assembled as shown in the picture to ensure that balls roll correctly through the loop. The position of the long edge at the beginning of the flex-rail profile and the position of the high speed flex-rail profile are important. The long edge is indicated by yellow marks in the picture.

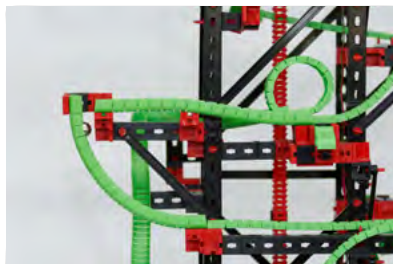


After the automatic cross-over, the route is very steep, ensuring that the ball will accelerate to the speed required to fly through the loop.

### Drop with change of direction

#### Tip:

The next flex-rail must be correctly aligned with the previous flex-rail so that the ball is caught after it falls and can continue to roll.



The ball rolls through the obstacle course - but then the flex-rail stops suddenly and the ball falls downward. The next rail catches the ball and immediately lets it continue to roll down in the opposite direction.

### Jump loop



The ball rolls through the loop, which suddenly ends. The ball flies through the air and drops into the rotary funnel.



## Dynamic XXL

### Rotary funnel

**Tip:**

Ensure that all components for the rotary funnel mount as well as the subsequent cross-over and flex-rail are aligned correctly so that the ball falls through the hole directly onto the next members.



The rotary funnel is installed in two places in obstacle course 1. In the rotary funnel the balls from the routes again merge on the subsequent cross-over and flex-rail.

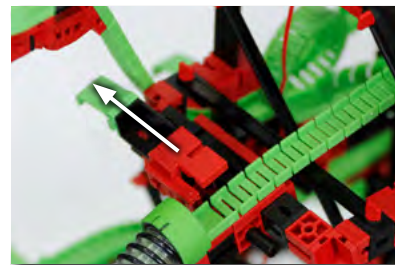
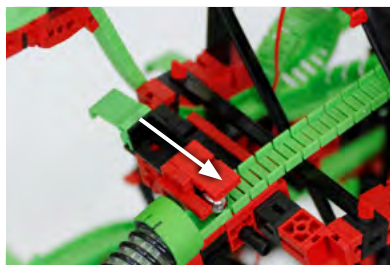
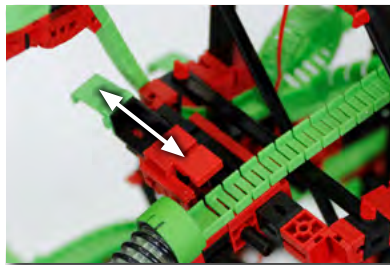
### Stopping point

The balls can be stopped at the stopping point and then released.

The separate PLUS BT Control Set accessory can be used to extend and control the stopping point remotely. The assembly instructions provide information on how to install this set in obstacle course 1.

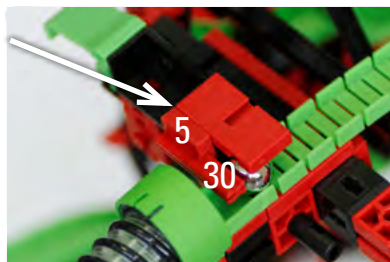
**Tip:**

Make sure that the flex-rail profile or slider is always pushed up against the end stop.



**Tip:**

Make sure that building block 5 with connector 30 is connected flush at the top with the 15x30x5 construction plate with three slots. This will ensure that the stopping point functions correctly.



## Dynamic XXL

### Switch with switch lever

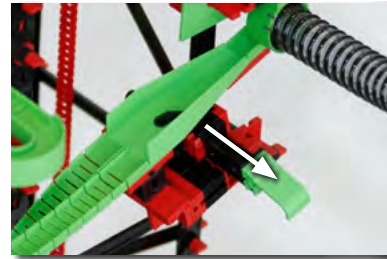


The switch with switch lever are used to determine the direction of the course.

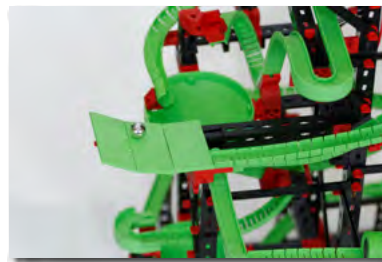
The separate PLUS XS Motor Set can be used to extend and power the switch. The assembly instructions provide information on how to install this set in obstacle course 1.

**Tip:**

Make sure that the switch lever or slider is always pushed up against the end stop.



### Quarter pipe



The balls roll from the flex-rail onto the quarter pipe, which consists of three construction plates. It is inclined slightly upward and to the side so that the balls drop into the rotary funnel after changing direction.

## Obstacle course 2

■ This model particularly suited for those who are new to using the ball obstacle course.

The balls are transported up by the elevator and after passing through the cross-over roll down two different routes to the rotary funnel. Here the balls collect and roll back on a flex-rail to the ball magazine.

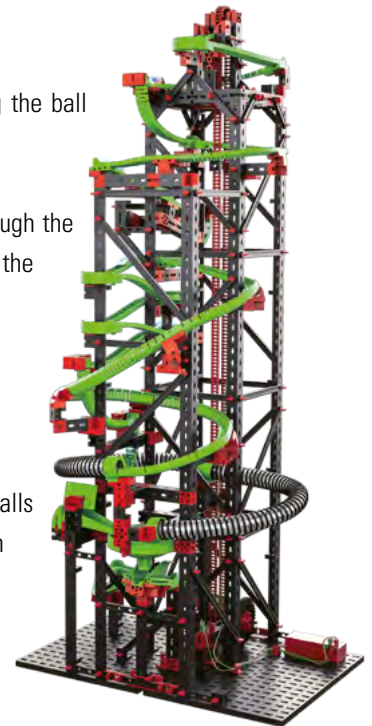
### Rotary funnel

**Tip:**

Ensure that all components for the rotary funnel mount as well as the subsequent flex-rail are aligned correctly, so that the ball falls through the hole directly onto the next flex-rail.



In the rotary funnel the balls from both routes again merge on the subsequent flex-rail.



## Obstacle course 3

■ This action-packed obstacle course includes many dynamic obstacles as well as a switch and a stopping point. Here are a few tips about the individual obstacles to ensure they work correctly.

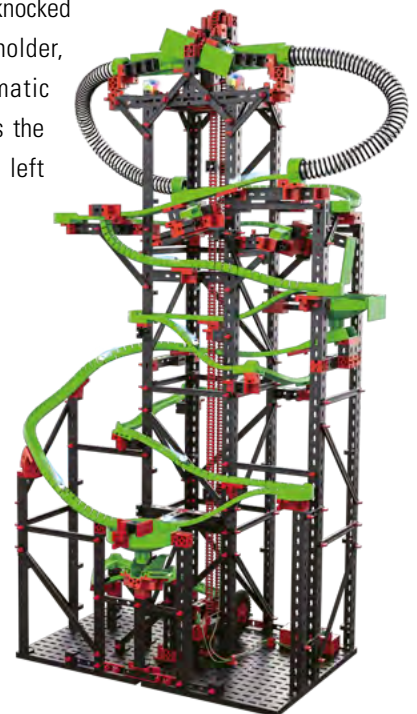
### Automatic cross-over

**Tip:**

Ensure that all components in the automatic cross-over are installed and aligned correctly and that the cross-over moves easily. Otherwise it may not operate correctly.



After the ball has been knocked off the magnetic ball holder, it rolls into the automatic cross-over, which routes the balls alternately to the left and right.



## Dynamic XXL

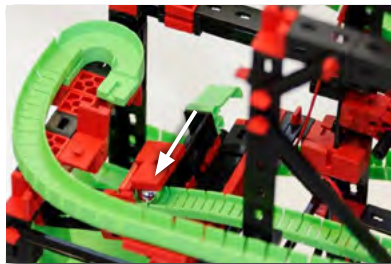
### Stopping point



The balls can be stopped at the stopping point and then released.

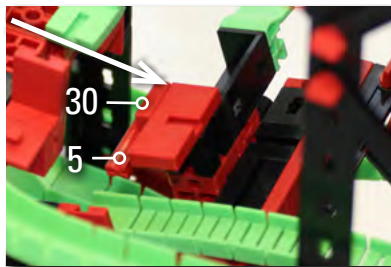
**Tip:**

Make sure that the flex-rail profile or slider is always pushed up against the end stop.

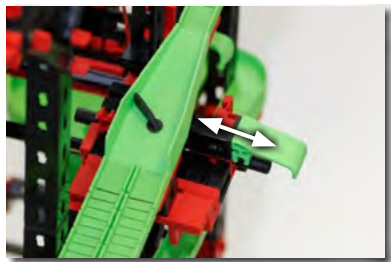


**Tip:**

Make sure that building block 5 with connector 30 is connected flush at the top with the 15x30x5 construction plate with three slots. This will ensure that the stopping point functions correctly.



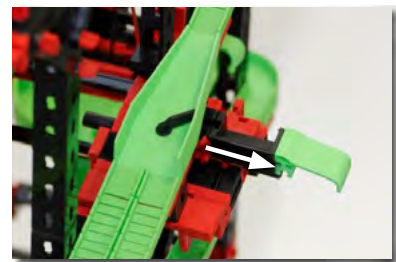
### Switch with switch lever



The switch with switch lever are used to determine the direction of the course.

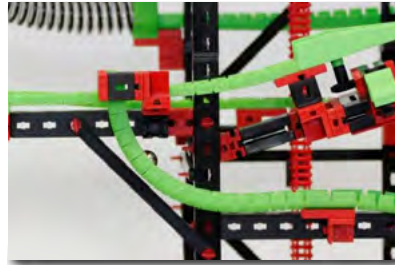
**Tip:**

Make sure that the switch lever or slider is always pushed up against the end stop.



## Dynamic XXL

### Drop with change of direction



The ball rolls through the obstacle course - but then the flex-rail stops suddenly and the ball falls downward. The next rail catches the ball and immediately lets it continue to roll down in the opposite direction.

**Tip:**

The next flex-rail must be correctly aligned with the previous flex-rail so that the ball is caught after it falls and can continue to roll.

### Rotary funnel



The rotary funnel is installed in two places in obstacle course 3.

**Tip:**

Make sure that all components for the rotary funnel mount as well as the subsequent cross-over sub-frame and flex-rail are aligned correctly so that the ball can drop through the hole directly onto the next members.



In the rotary funnel the balls from the routes again merge on the subsequent cross-over sub-frame and the flex-rail.

**Tip:**

Make sure that the cross-over sub-frame is correctly aligned to the funnel installed above. If a ball becomes stuck in the funnel tube and does not continue rolling, the cross-over sub-frame may have shifted. In this case, move the cross-over sub-frame outward in the direction of the arrow.



## Further tips:

- All Dynamic XXL obstacle course models work best when used on a stable, even and level surface.
- If assembled models no longer work properly after transport it is usually necessary to readjust only individual components or sections. Also see the tips for the individual obstacle course.
- If the flex-rails are bent too much after disassembling the model, they can be straightened by clamping them on the base plate for a short time. This reduces the bending.
- Naturally you can design your own obstacle course with the Dynamic XXL Construction Set. Certainly you can work out other ingenious designs and other fascinating obstacles and effects.
- Other construction sets from the PROFI Dynamic line are available online at [www.fischertechnik.de/en/products/playing/profi-dynamic-marble-runs](http://www.fischertechnik.de/en/products/playing/profi-dynamic-marble-runs)
- For even more action, you can download free assembly instructions for this construction set with Dynamic XM from the fischertechnik homepage: [www.fischertechnik.de/en/service/downloads/dynamic](http://www.fischertechnik.de/en/service/downloads/dynamic)