

MAURER X-Car Coaster



MAURER SÖHNE
Innovations in steel



Since 1876

Xtended – simply more

Many companies build roller coasters. Only Maurer Rides builds Xtended roller coasters. Xtended means: extraordinary, unique, innovative, technically outstanding, unrivaled.... in short: Xtended roller coasters.

The Xtended principle applies to all aspects of our roller coasters: our latest achievement on the Xtended track is the X-Car Coaster with the X-Seat and X-Car. Inverted figures without shoulder restraints, and with vertical seat forces of more than $-1g$ – this is a world first, as you would expect from Xtended.

Our track layouts are full of surprises, with ever tighter curves, spectacular elements and complex, convoluted track figures. Passengers are left breathless, onlookers are left with mouths agape, and you are left with this reassurance: the rides are fun and your visitors will return.

Xtended is the cutting edge of development at Maurer Rides: This is backed up by over 130 years of tradition and experience in constructional steelwork and all-round competence in roller coaster construction. Whatever you need for your roller coasters – from the concept and design, planning, stress analysis, construction, delivery and commissioning to the life-cycle service concept – MAURER SÖHNE is a competent partner you can rely on. Here again, the Xtended principle applies! We simply offer more than you would expect.

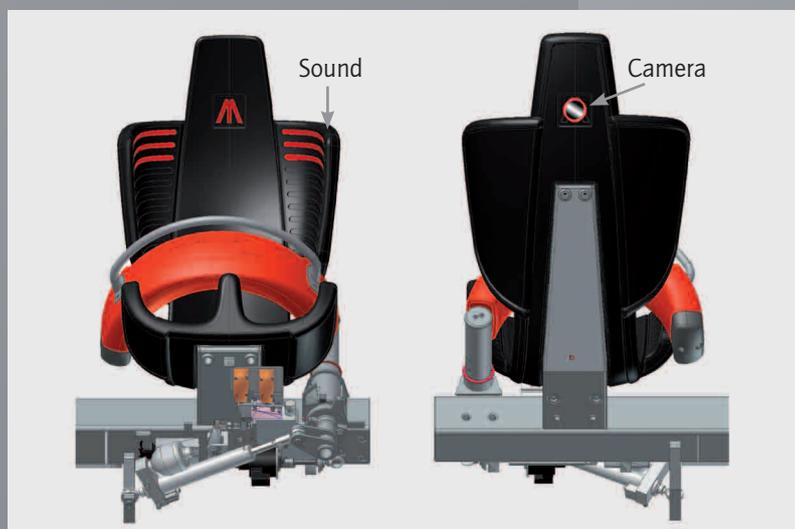
Read on and see for yourself!

Passengers will love the new X-Seat

- No shoulder restraints
- No pressure on your shoulders in figures where the forces try to pull you out of your seat
- Completely new ride sensation with pull on upper body
- Full freedom of motion for head and upper body
- Comfortable seated position and good lateral holding
- Maximum closure comfort due to infinitely adjustable hydraulic locking mechanism
- Great feeling of safety due to high-quality design and exceptional robustness
- Better visibility



Locking mechanism of the X-Seat: infinitely adjustable hydraulic locking system and redundant, mechanical, coarse-pitch retaining device.



Optional: Multimedia X-Seat

Multimedia X-Seat

The multi-media X-Seat's back rest has been extended to reach above the height of the shoulders and is equipped with stereo loudspeakers. The passengers may individually choose their favoured music piece and adjust the volume by using the control panel installed in the hip bar.

The video option of the multi-media X-Seat has a camera integrated into the reverse of the seat's back rest. It takes an on-ride video of the passenger. This high-value extra produces a special kick and creates an unforgettable experience. When built in together, the sound and the video system clearly increase the attraction of each and every X-Car Coaster.

The new X-Seat concept: Freedom on the tracks



Unrivalled freedom of motion without restrictive shoulder restraints.



Bucket seat shape for optimal lateral stability.



Great freedom of motion for their legs and arms makes the passengers ride experience more intense and allows them to get in and out quickly.



If doesn't matter what size or build - the X-Seat is the perfect fit for all passengers.



No more shoulder restraints

Speed and acceleration – the heart and soul of roller coasters. Every roller coaster enthusiast longs for a taste of freedom and the chance to defy gravity. Maurer Rides has succeeded in making this dream come true to a large extent with the development of the X-Seat. The underlying innovation: no more shoulder restraints – and that goes for all possible track figures: extreme curves, camelback with negative vertical seat forces, loop-the-loop...The X-Seat, which can accommodate passengers from 120 cm/47" (standard) or 110 cm/43" (optional) to 200 cm/79" in height, performs all these figures without shoulder restraints or other annoying attachments.

Vast development expertise

Behind the development of the X-Seat lies the combined expertise of Maurer Rides the renowned Institute for Ergonomics at the Technical University of Munich, and TÜV Süddeutschland (Technical Inspectorate, Southern Germany). The new X-Seat is the epitome of technical know-how, ergonomics, safety and design – and extensive planning and testing.

If doesn't matter what size or build

The outstanding new development in the X-Seat is the hip restraint, which has almost identical fixing properties for both very slim and very large people. It reduces the free space between lap bar and backrest, both longitudinally and laterally. Whatever the build of the passenger, tests show that everyone is seated comfortably and in absolute safety.

Anatomically optimized, high degree of mobility

The X-Seat is anatomically optimized and offers perfect seating, whatever the orientation of the car is. Full freedom of motion for the legs, head and upper body.

Self-contained unit: flexible and versatile

The X-Seat has been developed as a self-contained unit, which is connected to the car by means of just a few bolts and an electric plug. This ensures highly flexible seat positioning, allows the use of different car types and increases the availability of the cars, as individual seats can be exchanged quickly and easily in the event of a breakdown.

X-Car - Hot curves, endless opportunities

Six seats

As standard, the X-Car comes with six seats. The seats are arranged in rows of two, with each row positioned higher than the one in front, so that even passengers in the rear two rows have a good view of the tracks. On request, the X-Car can also be four seats and two rows. It is also possible to couple two or three X-Cars to form a 12 seater tandem or a 18 seater train.

Ample legroom

The X-Car has remarkably generous legroom and copious elbow space, provides maximum ride comfort, opens up an excellent view of the thematic elements and story line and allows it quicker boarding and exiting.

Fun in all seats

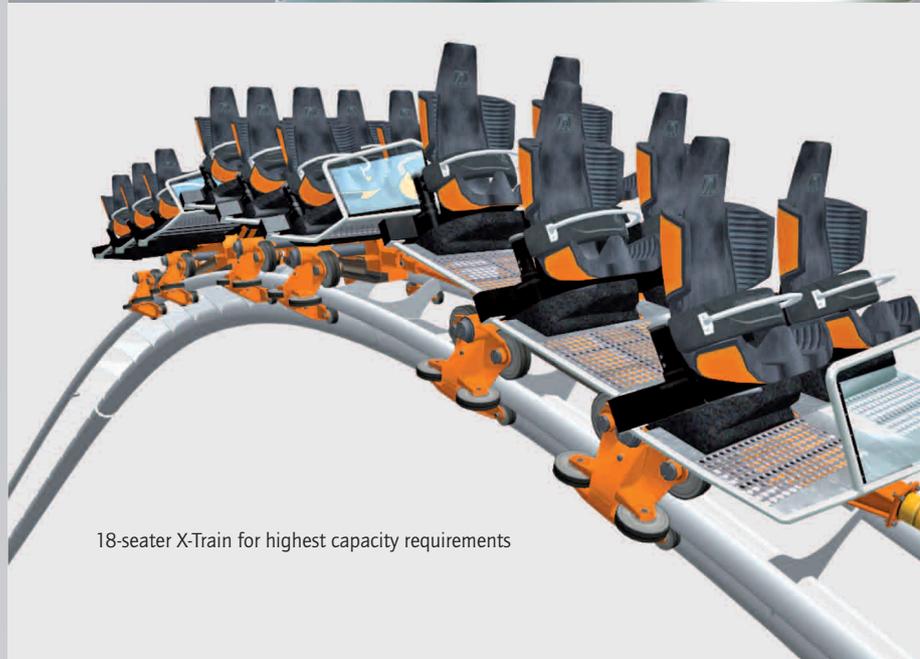
The fun found on a roller coaster depends primarily on the position of the seat and the length of the train. Inside, outside, front or back, the position of the seat is no longer relevant in the new MAURER X-Car Coaster. Here, everyone has a front-row seat. As six-seater single cars, or coupled to form a max. 18-seater train, the X-Cars race through the roller coaster: no delays, no more unattractive curves just because the passenger has ended up sitting in the wrong seat.

Enclosed – open – floorless

The X-Car is available either enclosed or open. The modular structure of the enclosure allows you to integrate thematic elements of any kind. The open version of the X-Car offers unrestricted freedom in all directions for even greater thrills – surpassed only by the floorless variant.

Modular = versatile

The appealing basic concept of the X-Car opens up new potential, and not just in terms of the track layout: the well thought-out modular design allows you to choose between different X-Car variants or even run more than one type on the same track. It also keeps your options open for subsequent upgrading with newly developed elements.

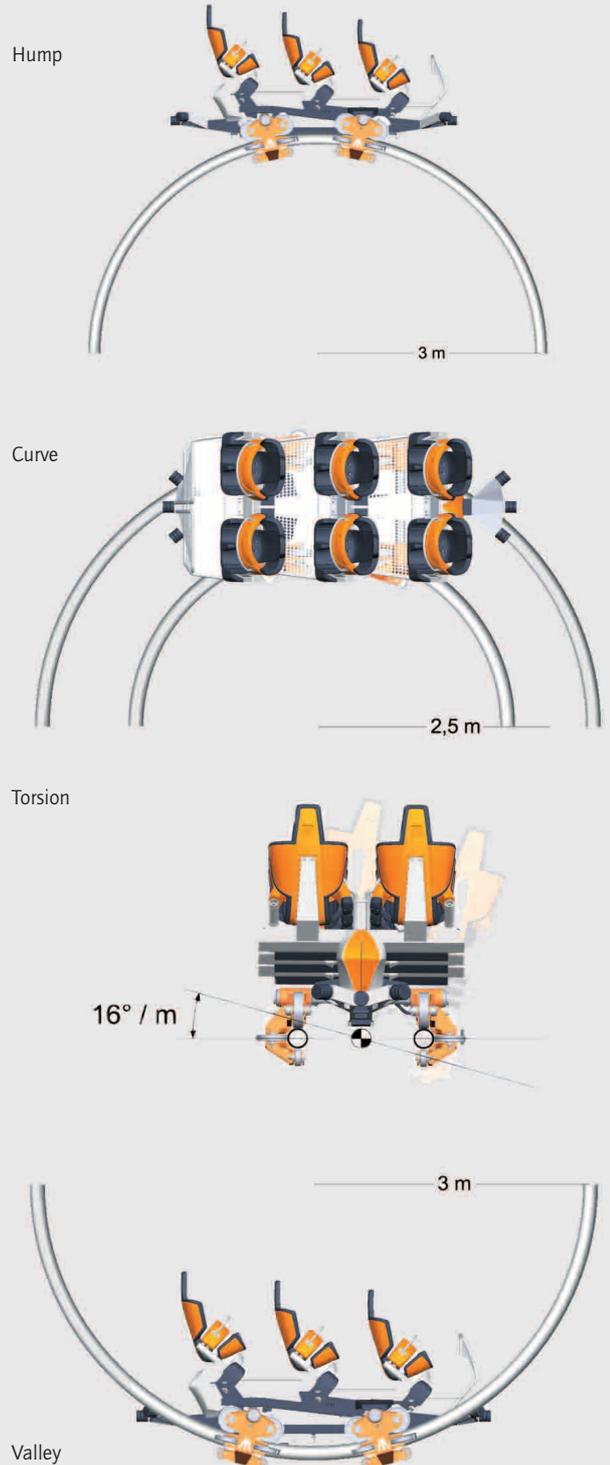


18-seater X-Train for highest capacity requirements



Spectacular track layouts

The X-Car, with its compact design, allows revolutionary, spectacular, tight-radius track layouts. No more boring track elements due to excessive train length; instead, one highlight after another. Conversely, this also allows exciting track layouts, in which the passenger is subjected to fascinating ride sensations, even with relatively small roller coasters or very limited floor space.



X-Car facts and figures

- The Maurer X-Car has been designed for extreme loads in order to give designers and park operators maximum freedom in terms of track design:
- The limit values:

| | |
|-----------------------------|--------|
| Vertical positive | 5.5 g |
| Vertical negative more than | -1.2 g |
| Lateral | 1.8 g |
| Longitudinal | 1.5 g |



X-Car Launch Coaster

With the state-of-the-art LSM drive, the X-Car ensures a fascinating riding experience in an unequalled Launch Coaster. Wear and tear is reduced to an absolute minimum and thanks to the most modern energy storage systems, this coaster system distinguishes itself by its unexpectedly low connected loads, you'll be amazed.





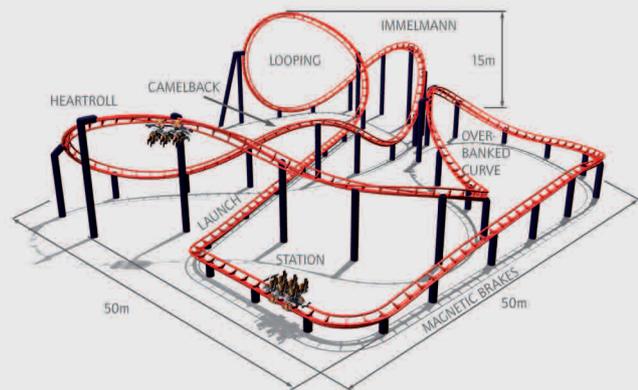
Example

XL1000

| | | |
|--------------------|---------------------|-----------------|
| Track length: | 316 m | (1036 ft.) |
| Height: | 15 m | (50 ft.) |
| Base area: | 50 x 50 m | (164 x 164 ft.) |
| Speed v_{max} : | 70 km/h | (45 mph) |
| Capacity: | 650 pph | |
| Cars: | 2 x 6-seater X-Car | |
| Launch a_{max} : | 10 m/s ² | (1 g) |
| Connected load: | 125 kVA | |

LSM - Technology

- same connected load like a chain lift thanks energy storage system
- high reliability and availability of the installation
- contact-free LSM technology - saving maintenance costs.
- LSM technology enables extreme acceleration and travel speed.
- most up-to-date and efficient drive technology for roller coasters.



X-Car Vertical Coaster

The vertical lift offers sheer excitement right at the start of the ride. Given its extreme manoeuvrability, here the X-Car is predestined for use in two great riding situations. Either, the vehicle makes its way up in a vertical ascent, tilts forwards, before racing down on the other side in a plummeting vertical drop. Or, as a worldwide unique figure, the X-Car is carried up in the Humpty Bump Lift. Having reached the top of the lift, riders experience an electrifying backward roll in an inverted position and enjoy -1 g without shoulder harnesses, before plunging down a steep loop figure, a truly memorable experience.

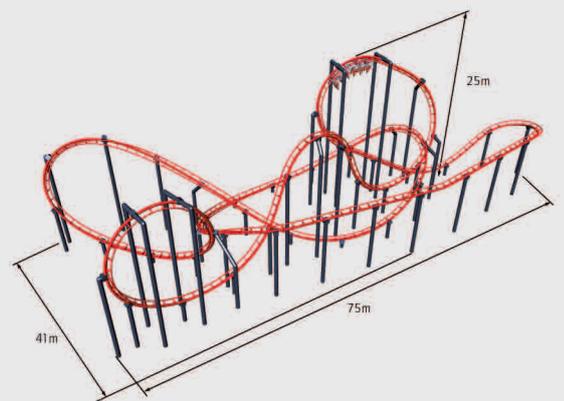




Example

XV 2000

| | | |
|-------------------|----------------------------|-----------------|
| Track length: | 385 m | (1263 ft.) |
| Height: | 25 m | (82 ft.) |
| Base area: | 75 x 41 m | (246 x 134 ft.) |
| Speed v_{max} : | 70 km/h | (45 mph) |
| Capacity: | 1100 pph | |
| Cars: | 2 x 12-seater X-Car tandem | |



X-Car SkyLoop

SkyLoop offers the highest inversion worldwide. Its unique feature consists of a vertical lift, which takes the passengers into a breathtaking height of 50 m (164 ft), where they are drawn into a gut-wrenchingly slow quarter loop backwards. This is followed instantly by a 360° corkscrew and a plummeting vertical drop at 105 km/h (65 mph). This attraction guarantees extreme thrill in a compact package, a ride to remember.





SkyLoop

- world's highest inversion
- spectacular design
- very compact layout
- extendable to a total track length of more than 1000 m (3280 ft.)

Example **SkyLoop XT 450**

| | | |
|--------------------------|------------------------|-----------------|
| track length: | 410 m | (1345 ft.) |
| height: | 52 m | (170 ft.) |
| base area: | 110 x 33 m | (361 x 108 ft.) |
| Speed v _{max} : | 105 km/h | (65 mph) |
| capacity: | 550 pph | |
| Cars: | 12-seater X-Car tandem | |



Xtended

X-Car

- Allows totally new track layouts
- Generous legroom, lots of space between the seats
- Stadium seating for optimal view from all seats
- Designed for maximum dynamic forces and the tightest of curves
- High-quality and maintenance-friendly design

X-Seat

- No shoulder restraints, and thus full freedom of motion for head and upper body
- Unrivalled seat comfort meets the highest quality expectations
- Completely new ride sensation with pull on upper body instead of pressure

Technical data **X-Car**

Maximum acceleration

| | |
|-------------------|--------|
| Vertical positive | 5.5 g |
| Vertical negative | -1.2 g |
| Lateral | 1.8 g |
| Longitudinal | 1.5 g |

Top speed 110 km/h (68mph)

Maximum capacity >1300 pph (single)
>2000 pph (train)

Passengers height

from 120 cm (47") to 200 cm (79"),
optionally from 110 cm (43")

Certification

TÜV Süddeutschland (Technical Inspectorate,
Southern Germany)



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