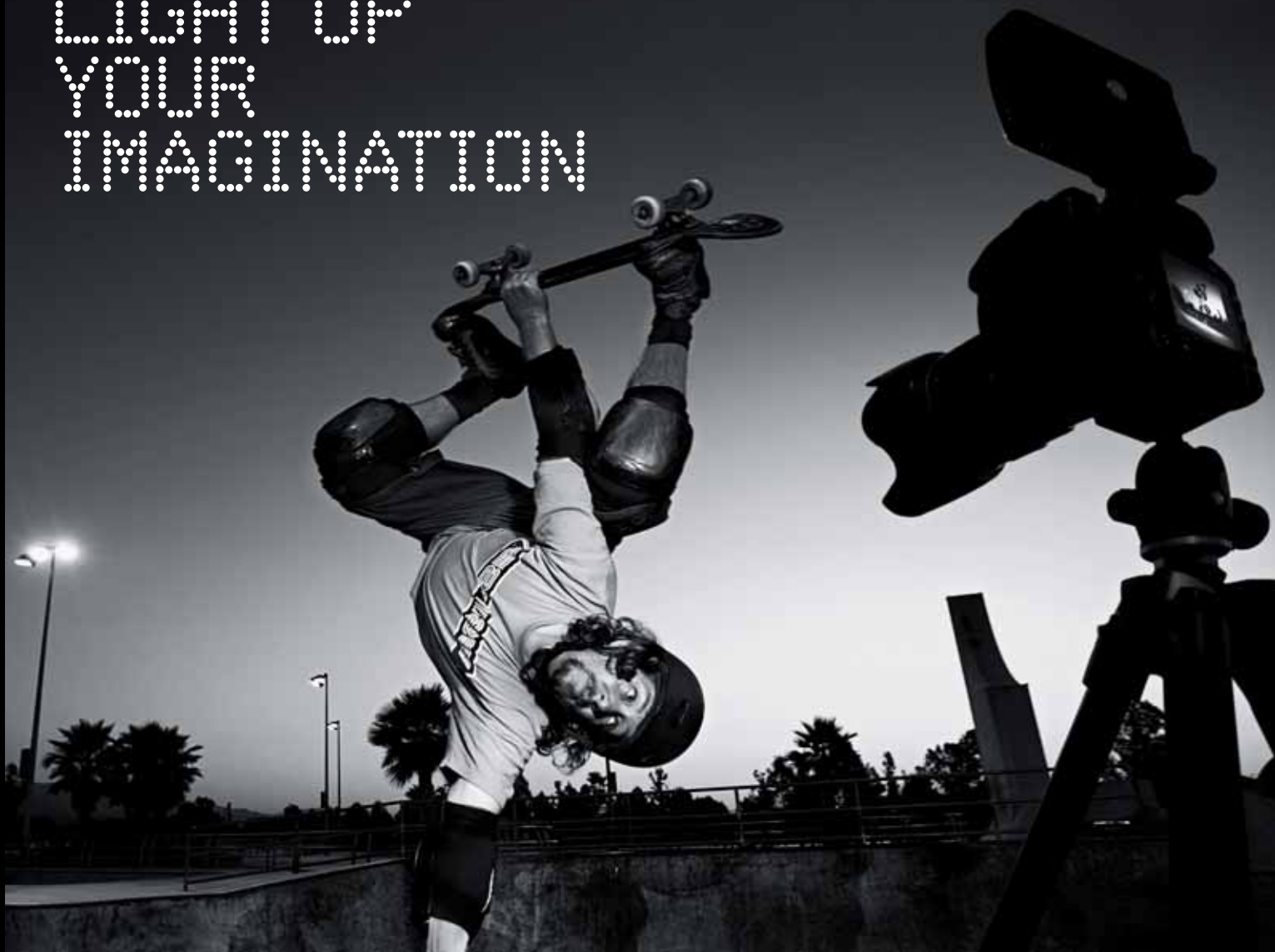


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# Sky Track System





Ideal for all photo and video studios where the floor needs to be kept totally clear of power cables and lighting stands, the Sky Track System permits rapid manoeuvre and setting of suspended large lights or lights with awkwardly sized accessories like soft boxes.

It solves positioning problems even on complex sets or in studios of the most unusual dimensions, and offers considerable advantages and ease of use compared to traditional floor stands.

Manfrotto Sky Track System has a broad range of accessories to adapt your space to the ideal studio and to provide perfect compatibility with all types of lights, whether photographic, video or film.

The Sky Track System is a comprehensive range of lighting suspension for all situations from small studios to the largest ones. Manfrotto line includes the versatile ceiling mounted, rails, manual and motorised pantographs and a wide range of brackets and support.



### BLACK ANODISED 3M RAIL **FF6003B**

These rails are made in section of black anodised aluminium in standard lengths as listed. For fixed rails, longer sizes are obtainable by fitting two or more rails together. Sliding rails cannot be joined. To connect two fixed rails use code FF3208. You must always support the junction of two rails with a ceiling attachment placed on the junction itself. Moving rails longer than 3m must be supported with more than two fixed rails. The maximum distance (B) between any of these fixed rails is 2m (see drawing).

#### ANCHORAGE POINT

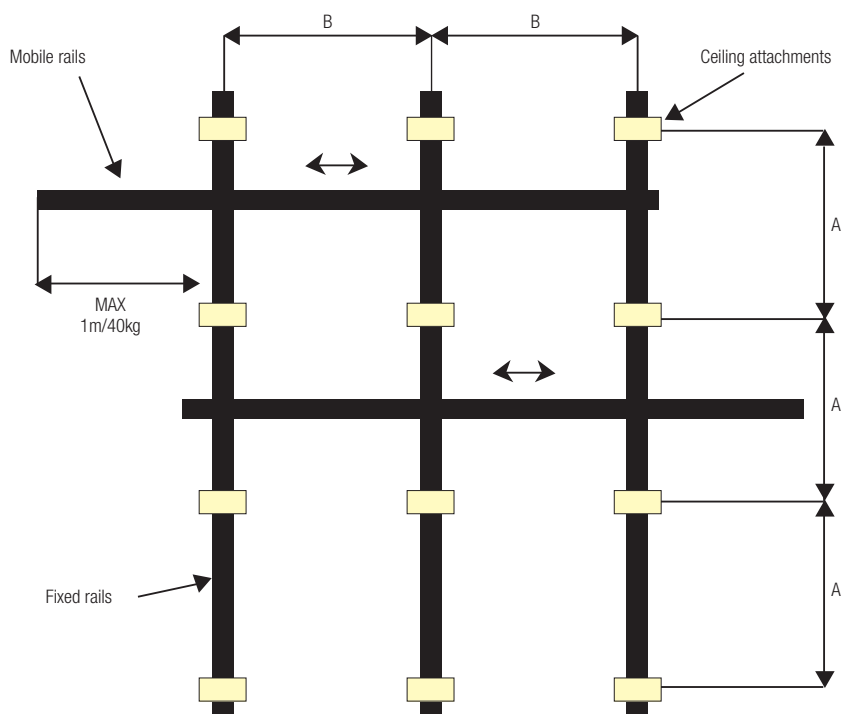
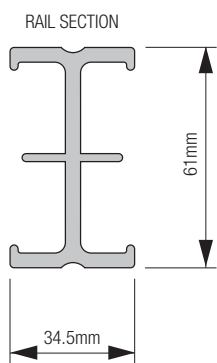
The spacing of the rail support brackets depends on the load anticipated on the rail itself, but should generally be in accordance with the table below, "A" indicates the distance between two anchorage points. However we advise that fixing brackets should not be spaced more than 2m apart.

### BLACK ANODISED 4M RAIL **FF6004B**

Not illustrated

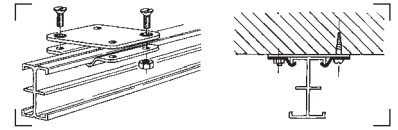
### BLACK ANODISED 5M RAIL **FF6005B**

Not illustrated



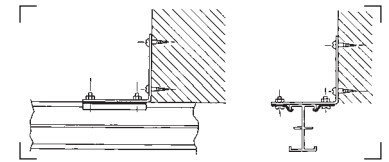
Rail working Max load chart

A (mm)	Weight (kg)
1000	200
1500	100
2000	50



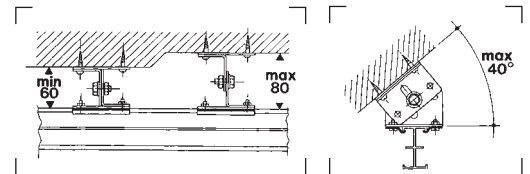
**BRACKET FOR CEILING ATTACHMENT FF3210**

Bracket for ceiling attachment of the rail.  
It is advisable to pre-assemble these brackets on the rails at ground level to ensure correct alignment before screwing to a ceiling.



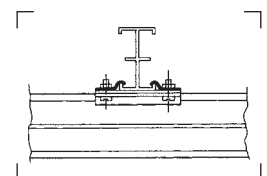
**ANGLE BRACKET ("L"-SHAPED) FOR FIXING TO BEAMS FF3212**

Bracket for wall attachment of the rail.



**ADJUSTABLE BRACKET FOR IRREGULAR CEILINGS FF3215**

Allows height differences in ceilings of maximum 2cm; combining two brackets you can compensate for differences of maximum 4cm.



**DOUBLE BRACKET FOR RAIL CROSSINGS FF3211**

This is used to permanently attach two rails at a right angle or parallel.



**CEILING BRACKET WITH 50CM EXTENSION FF3218**

Used alone or in combination these brackets allow the attachment of the rails at the desired height.

**CEILING BRACKET WITH 100CM EXTENSION FF3220**

Not illustrated



**EXTENSION BRACKET FOR VARIOUS HEIGHTS FF3215A**

Its length is adjustable from 10cm to 15.5cm. Using the clamp screw, you can obtain all intermediate sizes. Provided with a security lock, in case the regulating screw loosens, blocks the bracket at maximum extension. It's used to compensate for height differences in ceilings of 5.5cm or more, with combinations of other brackets. It's also used for obtaining intermediate sizes in combination with the extendable ceiling brackets.



**KIT OF 4 END STOPS WITH 4 CABLE CARRIAGES FF3207**

These fit to the holes on the ends of a rail to prevent carriages leaving the rail and to prevent moving rails leaving their carriages.

**IMPORTANT:** must be fitted to upper and lower holes on moving rails but only to lower holes on fixed rails.



**ALIGNING CONNECTORS FOR FIXED RAILS FF3208**

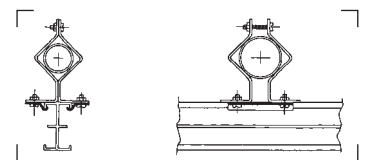
A pair of clamp plates with screws to join two fixed rails together by clamping across the junction on the upper guide, using holes provided in the rail.

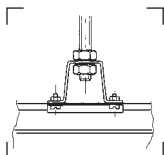
**IMPORTANT:** the junction must always be supported by a rail-mounting bracket placed astride



**BRACKET FOR TUBE ATTACHMENT FF3214**

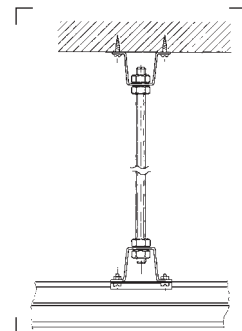
This can be fastened to tubes with diameters from 35mm to 50mm inclusive. It's used to directly support the rail that can be fixed in place either longitudinally or transversely. This bracket can be used as a brace for fixed supports, as well.





**BRACKET FOR CEILING ATTACHMENT FF3214A**

Can be attached directly by screws or rods with a maximum diameter of 1/2". Before mounting the bracket it is advisable to standardize the length of both the rods and screws. Fix the bracket between a nut allowing the screw on the inside of the bracket to protrude about 1.5cm. When fixture is completed, it is then possible to regulate a perfect rail levelness by adjusting the nuts which fasten the brackets.



**RAIL MOUNTING KIT WITH M12 STUD FF3214B**

Comprised of a bracket to be attached to the ceiling with 4 screws, a 1m long M12 rod completely threaded, 4 M12 nuts, and a bracket for the rail fixture. The rod can be cut to the desired size and then attached to the bracket by way of the nuts supplied. The rod must protrude approx 1cm on the inside of the bracket. When fixture is completed, it is then possible to regulate a perfect rail levelness by adjusting the nuts which fasten the brackets.



**DISMOUNTABLE SLIDING CARRIAGE WITH 4 WHEELS AND 16MM SPIGOT FF3228**

This carriage can be inserted directly at any point on the rail by unscrewing the wheel plate. This is used when it becomes necessary to add a supplementary carriage to an already assembled RAIL SYSTEM installation. It is free-sliding and is suitable for normal loads.



**SLIDING CARRIAGE WITH 4 WHEELS AND 16MM SPIGOT FF3230**

It is free-sliding carriage. It is suitable for normal weight loads up to 60kg.



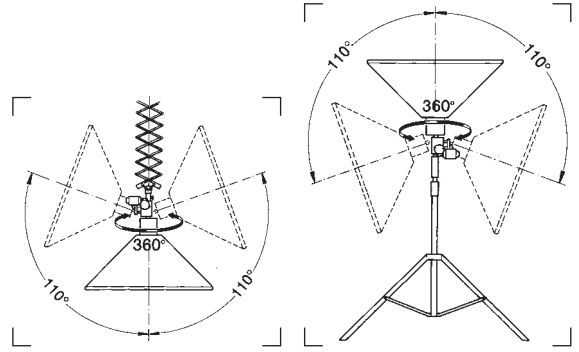
**MOTORISED CARRIAGE WITH 16MM SPIGOT FF3340**

It is powered with a 24 Vdc motor and must be fed and operated by an electronic power supply, code FF3288M/FF3286M.



**SLIDING CARRIAGE WITH 4 WHEELS, BRAKE AND 16MM SPIGOT FF3229**

This is provided with a brake which keeps it locked in the position where it is placed. It is suitable for normal loads up to 60kg. To release brake pull down on wire with operating pole.



**MOTORISED HEAD FF3450**

Motorised head with 2 motors for the rotation made up of a small bank, flash or television camera. It has a 16mm spigot on both sides. It can be positioned between a pantograph and utilisation (illuminator, small bank, flash, video camera, etc.) or it can also be mounted onto a stand. It allows a combined rotation of 360° on axis X and 110° on axis Y. It is powered by two 24 Vdc motors that must be fed and operated by an electronic power supply FF3288M/FF3286M1; motor powers the rotation on axis X and the other on the axis Y.



**DOUBLE SLIDING CARRIAGE FF3232**

Both the upper carriage and the lower one are free-sliding.



**DOUBLE SLIDING CARRIAGE WITH DOUBLE BRAKE FF3235**

This is equipped with brakes on both upper and lower carriages. The upper brake blocks the carriage on the fixed rail, while the lower carriage's brake blocks the sliding of the moving rail.



**DOUBLE SLIDING CARRIAGE WITH ONE BRAKE FF3236**

This is provided with a brake on only one carriage. Normally, the carriage with brake is mounted on the fixed rail so that it is locked into place enabling the mobile rail to slide. If the carriage with brake is mounted onto the mobile rail, you obtain the opposite effect, that is, the sliding of the mobile rail gets blocked, while the carriage can freely slide on the fixed rail.



**MOTORISED DOUBLE CARRIAGE FF3350**

The upper carriage is powered by a 24 Vdc motor which must be fed and operated by an electronic power supply code FF3288M/FF3286M. The lower carriage is equipped with a brake which blocks the mobile rail from sliding.





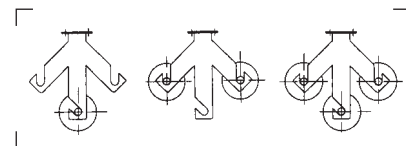
**DOUBLE SLIDING CARRIAGE WITH AN EXTRA HEIGHT FF3325**

It is used together with the motorised carriage code FF3350. The upper carriage, is as high as the motorised carriage. Both the upper carriages and the lower one are free-sliding.



**FIXED BRACKET ON RAIL WITH 16MM SPIGOT FF3856**

The 16mm spigot allow the mounting of lights or accessories with 16mm female attachment.



**SET OF 2 SUPPORTS WITH TRIPLE BACKGROUND HOOKS FF3224**

These can be fixed directly onto the rails in order to have the backgrounds in a fixed position, or they can be fixed to simple carriages with the help of the fixed brackets code FF3221, in order to have a background in a movable position.



**KIT OF 5 CABLE CARRIAGES WITH BEARING FF3226C**

These are from the end of the rail and run on ball-bearings. They are suitable for heavy cables.



**KIT OF 5 CABLE CARRIAGES FF3226**

These are inserted from the end of the rail. They do not need wheels as they slide along the rail and are suitable for normal cables.



**KIT OF 5 DISMOUNTABLE CABLE CARRIAGES FF3226S**

By slightly opening them, they can be inserted at any point on the rail. They are suitable for light weight cables.



**OPERATING POLE 427B-4.0**

4 sections, 3 risers. Ø: 28, 24, 20, 16mm.  
Minimum extension: 160cm. Maximum extension: 400cm.  
Closed length: 142cm.

**OPERATING POLE 427B-6.5**

4 sections, 3 risers. Ø: 28, 24, 20, 16mm.  
Minimum extension: 220cm. Maximum extension: 650cm.  
Closed length: 200cm.

Not illustrated



### 16MM MALE / 28MM FEMALE SPIGOT ADAPTER **FF3260**

This adapter has a 16mm spigot on one side and a 28mm female attachment on the other. It is used to connect accessories with 28mm spigot to the RAIL SYSTEM. It comes complete with safety pins.



### SPIGOT ADAPTER **013**

Both sides have 16mm spigot. Used to connect two units with 16mm female attachment or to obtain 16mm spigot from a 16mm female attachment.



### 16MM FEMALE ADAPTER **158**

Both sides have a 16mm attachment. Used to connect two units with 16mm spigot, or to obtain a 16mm female attachment from 16mm spigot.



### BALANCE ADJUSTMENT BRACKET **FF3261**

It has 16mm female attachment, to be fitted between pantograph and unbalanced lighting fixtures or other appliances. Easy adjustment, by means of a single lever, allows the pantographs to work properly.



**POLE OPERATED TELESCOPIC BAR 362**

Designed to support heavy light fittings, and provide pole operated pan plus tilt.  
 Closed length: 35.5cm.  
 Maximum height: 49cm.  
 Male attachment Ø 28mm and 16mm.



**OVERHEAD OUTLET-BOX WITH 3 UNIVERSAL SOCKETS FF3272**

It has a 16mm female attachment with shear pin and locking screw.  
 Comes complete with 5m of three-pole cable (3 x 1,5 Sq.mm) without plug.  
 Max load 2000 Watts.



**BRACKET FOR MULTIPLE MOUNTING FF3262**

Has seven 16mm spigot and can be mounted, either in a horizontal or a vertical position, to pantograph or extensions.  
 Can carry up to six appliances.



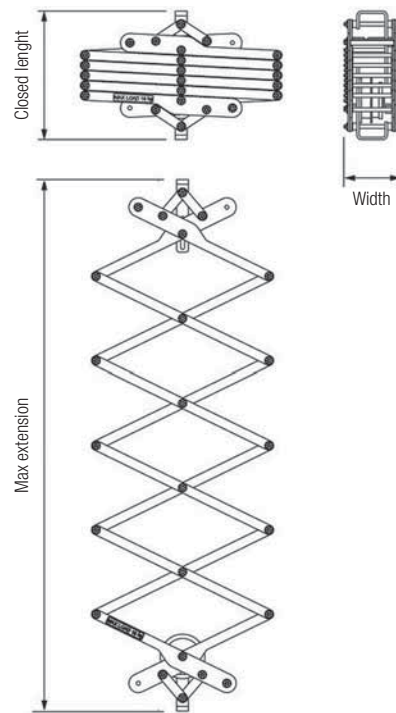
**UNIVERSAL SUPPORT FOR FLASH GENERATORS AND BALLAST FF3265**

Maximum width is 52cm and max height 22cm.  
 A 16mm spigot mounted on the bracket allows fitting to RAIL SYSTEM.



**POWER SUPPLY CABLE FF3278**

15m of three-core cable (3 x 1.5 Sqmm) with special sockets for lighting fixture.



### PANTOGRAPH TOP 4C FF3514N86

The pantograph is made of aluminium (P-Al MgSi UNI 3569) and manufactured according to DIN 15560-46. The attachments at both ends of the pantograph are 16mm, male on the bottom and female on the top. The load is supported by a steel cable of 2mm. diameter (safety factor 12). Loads up to 12kg can be suspended using only the patented friction device, while loads up to a maximum of 18kg require the use of the optional springs. The pantograph can be regulated to keep suspended loads from 1 to 18kg perfectly balanced. By turning the colored notched ring you can adjust the pantograph's friction; this will ensure that the load remains stable when set in position, but that it will move smoothly up and down when necessary. In any case, it is always advisable to use the springs to aid raising your pantograph. When choosing the additional spring(s) for your pantograph, you will first need to know exactly which model of pantograph you have, in order that you can select the spring of the correct length. If you have one of the new compact pantographs (with grey-painted "scissors"), look at the colour of notched ring the 2m version has a red notched ring, while the 3.8m version has a blue notched ring. After having identified the length of the pantograph, choose the appropriate spring(s) by referring to the table below.

Model	FF3514N86
Lifting rope	2mm wire rope
Safety factor rope	12
Self weight	7.3kg
Max working load	18kg
Closed length	38cm
Max extension	380cm
Width	15cm



<b>Model</b>	<b>FF3512N86</b>
Lifting rope	2mm wire rope
Safety factor rope	12
Self weight	4.7kg
Max working load	18kg
Closed length	27cm
Max extension	200cm
Width	15cm

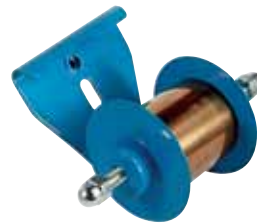
**PANTOGRAPH TOP 2C FF3512N86**

Same as FF3514N86 but shorter.



**SPRING TYPE 4 RED FF3531**

Additional Spring for pantograph top 2C.



**SPRING TYPE 4 BLUE FF3533**

Additional Spring for pantograph top 4C.

**SPRING TYPE 12 RED FF3532**

Not illustrated

Additional Spring for pantograph top 2C.

**SPRING TYPE 12 BLUE FF3534**

Not illustrated

Additional Spring for pantograph top 4C.

Spring type	Counterbalanced weight
Without spring	From 0kg to 4kg
Type 4	From 3kg to 8kg
Type 4 + Type 4	From 8kg to 14kg
Type 12	From 9kg to 16kg
Type 4 + Type 12	From 13kg to 18kg



**TELESCOPIC POST EXTENDIBLE  
FROM 85CM TO 203CM FF3248**

A telescopic system for the balanced suspension of loads. Adjustable in height with automatic positioning at the desired position. A female attachment with safety plug and locking lever is fitted at each end. The safety plug has a latch with push-button release. To adjust the balance of the load, rotate the handle clockwise or counterclockwise. It sustains loads from 1.5kg up to 12kg max.

**SMALL TELESCOPIC POST EXTENDIBLE  
FROM 60CM TO 128CM FF3249**

Not illustrated

Same as FF3248, extendable from 60cm to 128cm.



**EXTENSION TUBE 50CM LONG FF3240**

These are fixed extenders which have a female 16mm attachment at each end. You fix them directly on the spigot of single carriages or to the fixed support FF3222.

**EXTENSION TUBE 100CM LONG FF3242**

Not illustrated

Same as FF3240, 100cm long.



**SAFETY STEEL CABLE FF3276**

Complete with spring catch and hook-up slot. Recommended for TELESCOPIC POST and TOP PANTOGRAPH in order to avoid accidental falling of equipment.  
Ø 2mm - Length 350mm.



## TOP TWIST **FF3290**

Large lighting banks can be hung from the ceiling and manoeuvred using the Top Twist, thanks to its combination of tracks/rails, carriages and remotely-controlled motor groups.

- Two parallel rails, mounted on double carriages that run on the ceiling rails, carry the bank suspension group and allow it to be manually moved backwards and forwards.
- The central plate allows 360° motorised rotation (around the axis) and permits manual movement side to side on the rails.
- The bank supported on the rail/central support can be raised & lowered at three points, each of which is controlled by an independent motor.
- Manual movements are made easier by the supplied cables (with handles).
- Motorised movements are bi-directional and run by an electronic control box with remote control unit.

The kit is composed of:

- 3 Rails 3m long - FF6003B.
- 1 Rotation kit composed of complete 360° rotation plate, rail spacers and string complete with handgrips - FF3285.
- 8 Endstops - FF3207.
- 1 Motor group complete with sliding carriage - FF3282.
- 1 Double motor group complete with sliding carriage - FF3283.
- 1 4-channels electronic power supply - FF3286M.

Attention: please note that the following parts are not included in the kit here pictured, and they should be ordered separately:

- Rail fixing brackets.
- 4 end stops.
- 4 double carriages.
- Cable carriages.
- Remote control.

For soft box with max size: 2.5 x 1.3-1.5mt  
Max load: 22kg





## TOP TWIST/S FF3400

Large lighting banks can be hung from the ceiling and manoeuvred using the Top Twist, thanks to its combination of tracks/rails, carriages and remotely-controlled motor groups.

- Two parallel rails, mounted on double carriages that run on the ceiling rails, carry the bank suspension group and allow it to be moved backwards and forwards.
- The central plate allows 360° motorised rotation (around the axis) and permits manual movement side to side on the rails.
- The bank supported on the rail/central support can be raised & lowered at three points, each of which is controlled by an independent motor.
- All movements are motorised & bi-directional, run by an electronic control box with remote control unit.

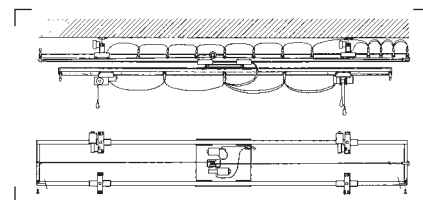
The kit is composed of:

- 3 Rails 3m long - FF6003B.
- 1 Motorised rotation kit with 2 TOP COPTER/S, motors, composed of 360° rotation plate, rail spacers and string complete with handgrips - FF3408.
- 8 Endstops - FF3207.
- 1 Motor group complete with sliding carriage - FF3282.
- 1 Double motor group complete with sliding carriage - FF3283.
- 1 8-channels electronic power supply - FF3288M.

Attention: please note that the following parts are not included in the kit here pictured, and they should be ordered separately:

- Rail fixing brackets.
- 4 end stops.
- 2 double motorised carriages, FF3350.
- 2 double sliding carriages, FF3325.
- Cable carriages.
- Remote control.

For soft box with max size: 2.5 x 1.3-1.5mt  
Max load: 22kg



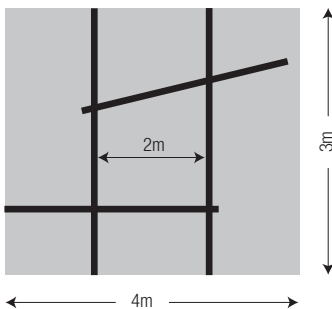


### TOP SYSTEM 33 **FF3033**

Complete kit for small studios composed of 2 fixed rails 3m long, 2 mobilerails 3m long and supports for 3 light sources (1 Top Pantograph and 2 Telescopic Post).

The kit is composed of:

- 4 Rails 3m long- FF6003B.
- 3 Kits of 4 endstops - FF3207.
- 6 Brackets for ceiling fixture - FF3210.
- 3 Kits of 5 cable carriages - FF3226.
- 3 4-wheeled sliding carriages with 16mm spigot - FF3230.
- 2 Double sliding carriages - FF3232.
- 2 Double sliding carriages with single brake - FF3236.
- 2 Telescopic Post extendable from 85cm to 203cm - FF3248.
- 1 Top Pantograph extendable from 40cm to 200cm - FF3512N86.
- 2 Universal spigot adapters 16mm - 013.
- 3 Safety steel cable - FF3276.

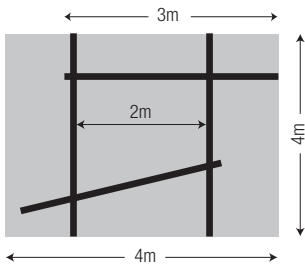


## TOP SYSTEM 43 **FF3043**

Complete kit for medium-sized studios composed of 2 fixed rails 4m long, 2 mobile rails 3m long and supports for 3 light sources (3 Top Pantographs).

The kit is composed of:

- 2 Rails 3m long - FF6003B.
- 2 Rails 4m long - FF6004B.
- 3 Kits of 4 endstops - FF3207.
- 6 Brackets for ceiling fixture - FF3210.
- 3 Kits of 5 cable carriages - FF3226.
- 3 4-wheeled sliding carriages with 16mm spigot - FF3230.
- 2 Double sliding carriages - FF3232.
- 2 Double sliding carriages with single brake - FF3236.
- 3 Top Pantograph extendable from 40cm to 200cm - FF3512N86.
- 3 Safety steel cable - FF3276.



## TOP SYSTEM 54 **FF3054**

Complete kit for large studios composed of 2 fixed rails 5m long, 3 mobile rails 3m long and supports for 5 light sources (4 Top Pantographs).

The kit is composed of:

- 2 Rails 5m long - FF6005B.
- 3 Rails 3m long - FF6003B.
- 4 Kits of 4 endstops - FF3207.
- 8 Brackets for ceiling fixture - FF3210.
- 4 Kits of 5 cable carriages - FF3226.
- 4 4-wheeled sliding carriages with 16mm spigot - FF3230.
- 3 Double sliding carriages - FF3232.
- 3 Double sliding carriages with single brake - FF3236.
- 4 Top Pantograph extendable from 40cm to 200cm - FF3512N86.
- 4 Safety steel cable - FF3276.

