



Grip Factory Munich

YOUR INNOVATIVE PARTNER FOR CAMERA SUPPORT

GF-14 Crane System Instruction Manual

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Instruction Manual

Contents :	Page :
Safety Guidelines	2
General assembly procedure	3 - 5
GF-14 Version 1 (Platform)	5 - 6
Parallelogram Supports.....	6
Rigging System.....	7 - 9
Balancing the crane	9
Operational conditions	10
Platform accessories weight list	10
Technical specifications	11 - 17
Accessories	18 - 19

The GF-14 Crane Set-up Instructions

Safety Guidelines :

The set-up instructions must be read and understood before set-up or operation.

The GF-14 Crane may only be set-up or operated by trained and experienced personnel. To avoid misuse by untrained personnel, the crane should be dismantled when not in use or under supervision.

The crane may only be set-up in accordance with the manufacturer's instruction manual.

The crane may not be set-up or operated under the influence of alcohol, drugs or any other intoxicating substances.

The manufacturer accepts no liability for damages or injuries for incidents or accidents occurring due to negligence or misuse by the crane operator.

Use of the crane on insert vehicles, camera cars or any motorised vehicle is not allowed. The manufacturer accepts no liability for damages or injuries for incidents or accidents occurring due to use of the crane on insert vehicles, camera cars or any other motorised vehicles.

Only original accessories manufactured by GFM may be used with the crane. Operation with pneumatic tires is not allowed. Solid wheels must be used.

Before assembling the crane ensure that the ground surface is stable and cannot give way. When operating the crane on track, ensure that the track is level, properly laid and constructed. The correct underlay must be used to ensure that the track and underlay are secured against moving, slipping and collapse. Ensure that the underlay provides the specified support and stability.

Whether operating or moving the crane on track or on a solid ground surface it is essential that the track or surface is completely level, stable and free from obstructions. Use the provided levelling legs. Operation on curved track is strictly forbidden.

At maximum working load capacity the ground surface must be stable enough to support at least 2300 kg/m² = 5060 lbs/ sq yard.

Changing weather conditions should be taken into consideration. The crane must be taken out of operation before the operational wind speed reaches 25km/h (15.6mph).

The complete lift and panning range of the GF-14 Crane must be kept clear of obstructions at all times.

The crane may not be used in the direct vicinity of high voltage power cables. 20m / 70feet clearance must be kept at all times.

Personnel on board the crane's platform must use safety belts at all times (pull tightly). No loose objects may be stored or placed on the crane platform.

Before the counterweights are removed from the bucket, ensure that the platform is resting on the ground or alternatively supported by an appropriate stable underlay. Gradually remove the counterweights before personnel leave the platform or before the remote head or camera are dismantled.

The manufacturers technical specifications and limits must be adhered to at all times and in no way exceeded.

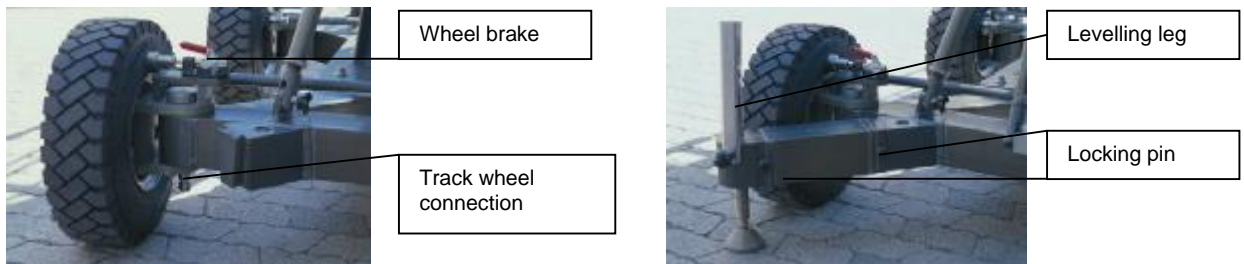
A safety clearance of 1m / 3' 3" must be observed on all sides of the crane during operation. For crane operational safety reasons abrupt, sudden movement of the crane should be avoided.

Assembly Procedure – GF-14

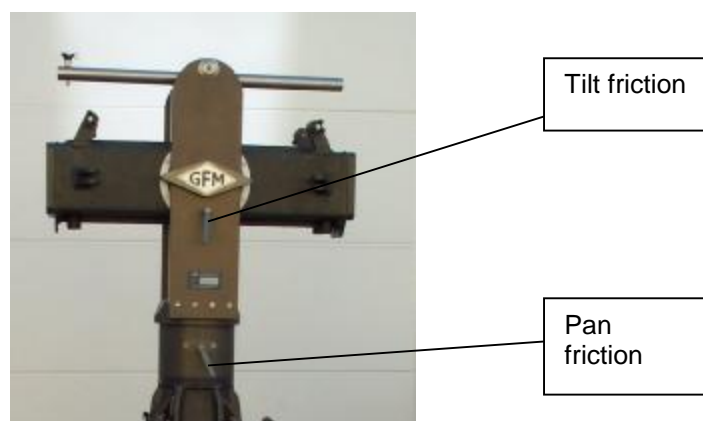
Before and during assembly observe the Safety Guidelines.

For all versions:

1. Secure the base dolly so that it cannot move or roll. Lock all wheel brakes. Move the steering rods towards the centre of the dolly or remove them so that the set-up personnel do not trip over it. The levelling legs should be used to level the base when stationary.

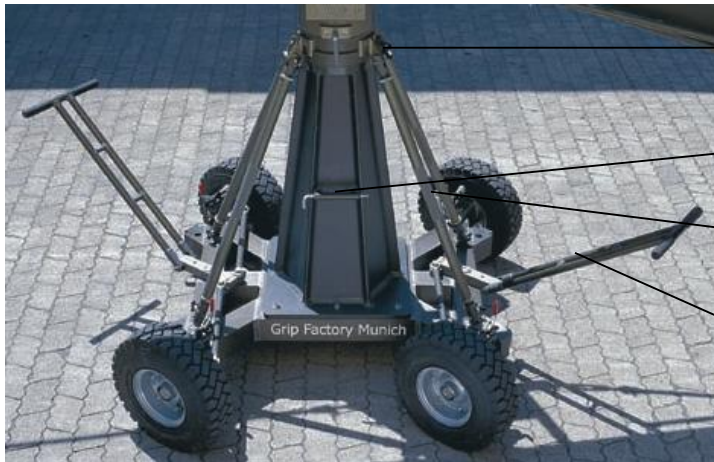


2. Bolt the crane mounting column to the base dolly. Make sure that the locking bolts are locked securely. (Tip: the carrying handles on the bazooka should point to the left and right of the dolly).
3. Located on the middle section are 2 tilt friction locks which may be used to lock the tilt during set-up. Set the pivot arm at 90° to the centre post and lock the friction locks which can be found on the left and right hand side of the middle section.



Middle section

4. Mount the middle section on the mounting column. Lock the locking screw tightly. Tip: A 12mm Allen key can be found in the mounting column's handle to be used as a lever.
5. Connect the 4 stabilizing rods with the righthand threaded end to the mounting column and the lefthand threaded end to the base dolly. Secure all rods with the provided safety pins. Adjust each stabilizing rod turning the integrated leveller anti-clockwise until all play is eliminated. Lock the 4 levellers.



- Safety pin
- Allen key
- Stabilizing rod
- Steering rod

Crane Base with double ended steering

6. Connect the 150cm/5' counterweight bucket extension to the middle section. Slip the connection flanges into each other and secure with the provided safety pin.

Tip: To avoid the sections jamming or getting stuck make sure that the sections are joined parallel. Using a small amount of lubricant also helps. We suggest rubbing the joints with an oiled rag prior to assembly.



7. Connect the 150cm / 5' parallelogram rod to the middle section and secure it with a safety pin.



Releasing the angle adjuster's safety pin



Angle adjuster connected to parallelogram rod

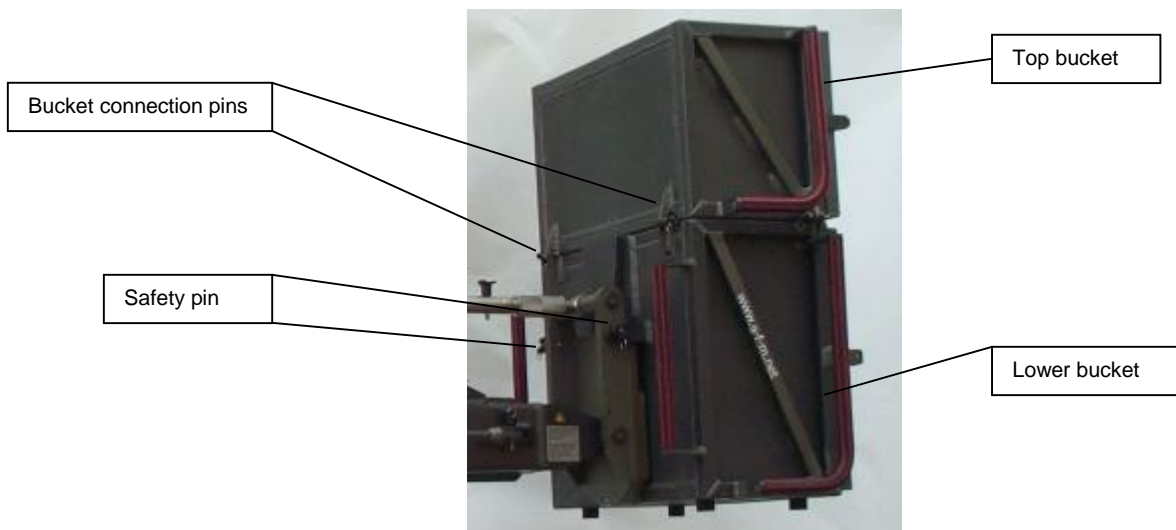
Leveller

8. Release the angle adjuster located at the end of the 150cm / 5' section by removing the safety pin from the side of the angle adjuster. Attention: Pinch point

9. Connect the parallelogram rod to the rod on the angle adjuster and secure it with the safety pin.

Tip: The angle adjuster parallelogram has an integrated leveller. By turning it, the vertical plate on the angle adjuster can be set to a perfect right angle. Correct setting of the angle adjuster enhances the crane's balance.

10. Support the mounted counterweight section with a suitable support stand.
11. Connect extension number 1 to the middle section. Slip the connection flanges into each other and secure with the provided safety pin.
Tip: To avoid the sections jamming or getting stuck make sure that the sections are joined parallel. Using a small amount of lubricant also helps. We suggest rubbing the joints with an oiled rag prior to assembly.
12. Connect the lower section of the 2 part counterweight bucket to the angle adjuster located on the rear of the counterweight bucket extension. Slip the connection flanges into each other and secure with the provided safety pins.
Tip : Do not load weights until the rigging system is mounted (see p. 7).



The assembly procedure up to this point is the same in all versions.

To assist the set-up procedure and to reduce the risk of accidents it is recommended to use set-up support stands or rostrums.

Version 1

Continue from point 12 on page 5



Mounting the angle adjuster



Safety pin

Securing the angle adjuster

13. Connect the angle adjuster to the end of extension number 1. Release the angle adjuster by removing the safety pin from the side of the angle adjuster. See page 4. Secure the angle adjuster to extension number 1 with the provided safety pin.

14. Connect one of the 200cm / 6' parallelogram rods to the rod connection located on the middle section and secure it with a safety pin.
15. Connect the parallelogram rod to the rod connection on the angle adjuster and secure it with the safety pin
Tip: The angle adjuster parallelogram has an integrated leveller. By turning it, the vertical plate on the angle adjuster can be set to a perfect right angle. Correct setting of the angle adjuster enhances the crane's balance.
16. Connect the platform to the angle adjuster and secure with the safety pin.

Parallelogram Supports:

Other versions of the GF-14 are assembled in the same manner. By adding extra extension sections in numerical order plus the respective parallelogram rods, 13 standard versions can be built. When sections number 2, 4 and 6 are used, support the respective parallelogram rods with the integrated parallelogram supports.



Rigging system:

To enhance the rigidity of the GF-14, a rigging system is used. The rigging system must be used for versions 3 through to 13.

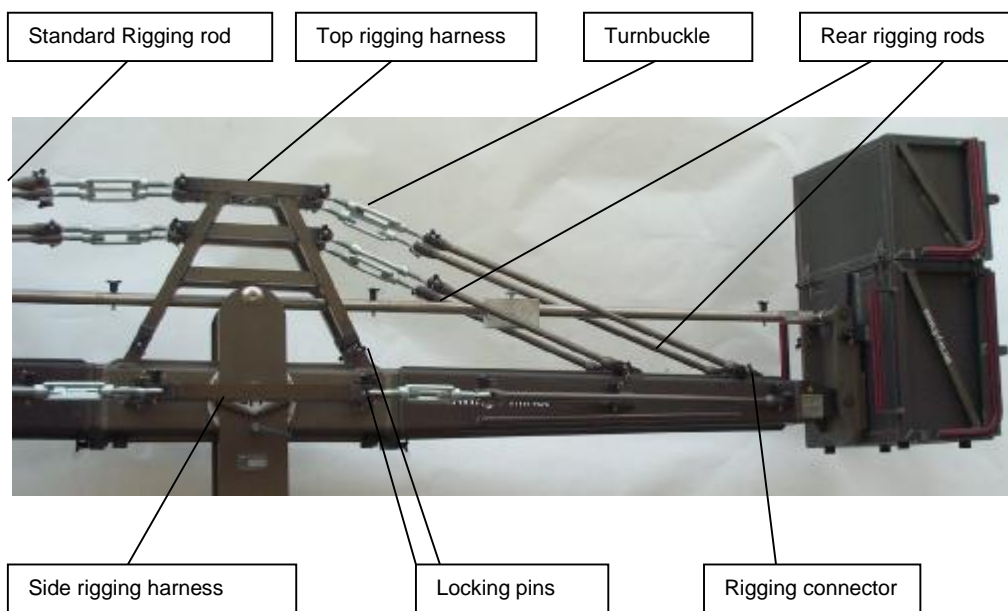
General: For versions using more than 3 x 200cm long sections (versions 7 to 13), a double top rigging system must be mounted. During assembly, to support the arm and ensure that it does not dip, mount the lower rigging system before more than 3 crane arm sections are joined together. When the lower rigging is mounted and adjusted, only then add on section 4, 5 and 6. As soon as section 6 is mounted, assemble the upper top rigging system.

Tip : Do not load weights until the lower rigging system is mounted.

Never have 2 more than 2 x 200cm sections mounted without the top rigging.

Rigging Harness Assembly

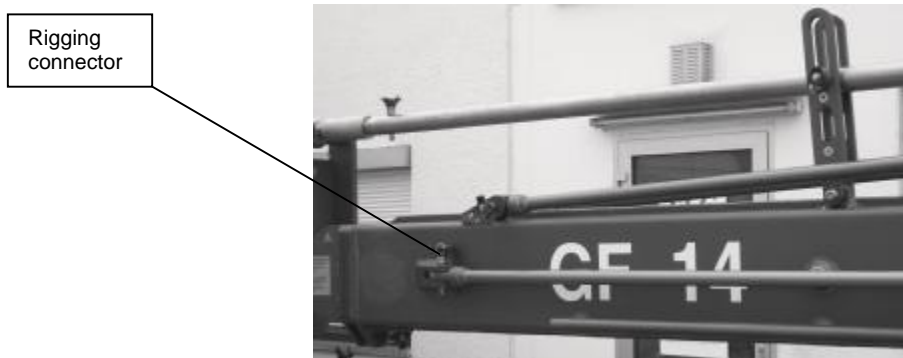
1. Upon completion of the respective arm assembly (first read General), connect the top and side sections of the rigging harness to the middle section. Ensure that the 8 locking pins are inserted fully.



2. Connect the turnbuckles to the rigging harness and in turn connect the 8 rear rigging rods to the 8 rigging connections on the counterweight bucket arm. On the top rigging harness, connect the 2 x 68cm rods to the lower turnbuckles and in turn to the inner connections on the rear section. Then connect the 2 x 116cm rods to the top turnbuckles and in turn to the outer connections on the rear section. Ensure that the locking pins are inserted fully. Hand tighten the rods by turning the turnbuckles until the 4 rods are taut.
3. On the side rigging, connect the 2 x 50cm rods to the inner turnbuckles and in turn to the inner connections on the rear section. Then connect the 2 x 116cm rods to the outer turnbuckles and in turn to the outer connections on the rear section. Ensure that the locking pins are inserted fully. Hand tighten the rods by turning the turnbuckles until the 4 rods are taut.

The following procedure describes the rigging assembly for Version 5:

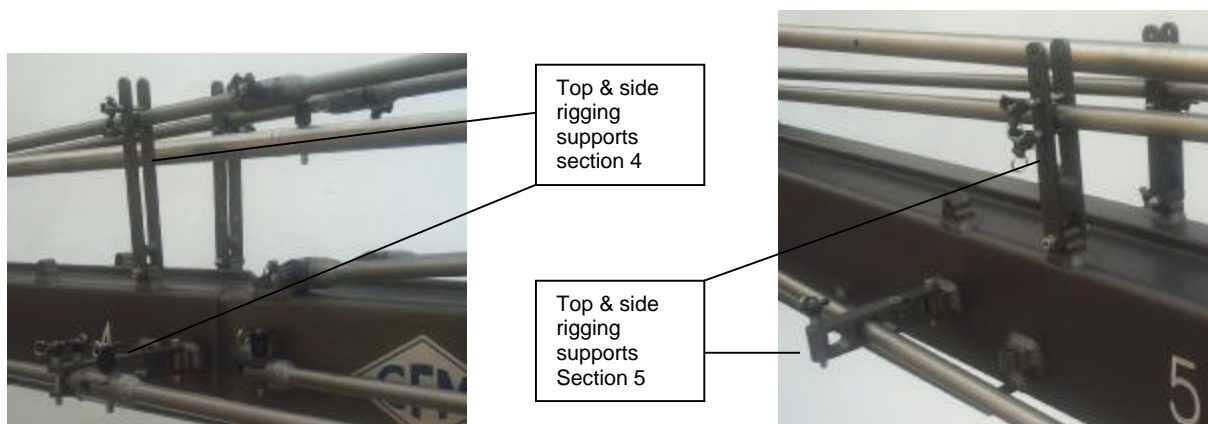
4. Connect 4 standard rigging rods to the lower turnbuckles on the front side of the rigging harness. Ensure that the locking pins are inserted fully.
5. Connect another 4 standard rigging rods to the first 4 standard rigging rods. Ensure that the locking pins are inserted fully.
6. Connect another 4 standard rigging rods to the first 4 standard rigging rods and in turn to the rigging connector on arm extension number 3. Ensure that the locking pins are inserted fully.
7. Hand tighten the rods by turning the turnbuckles until the 4 rods are taut.

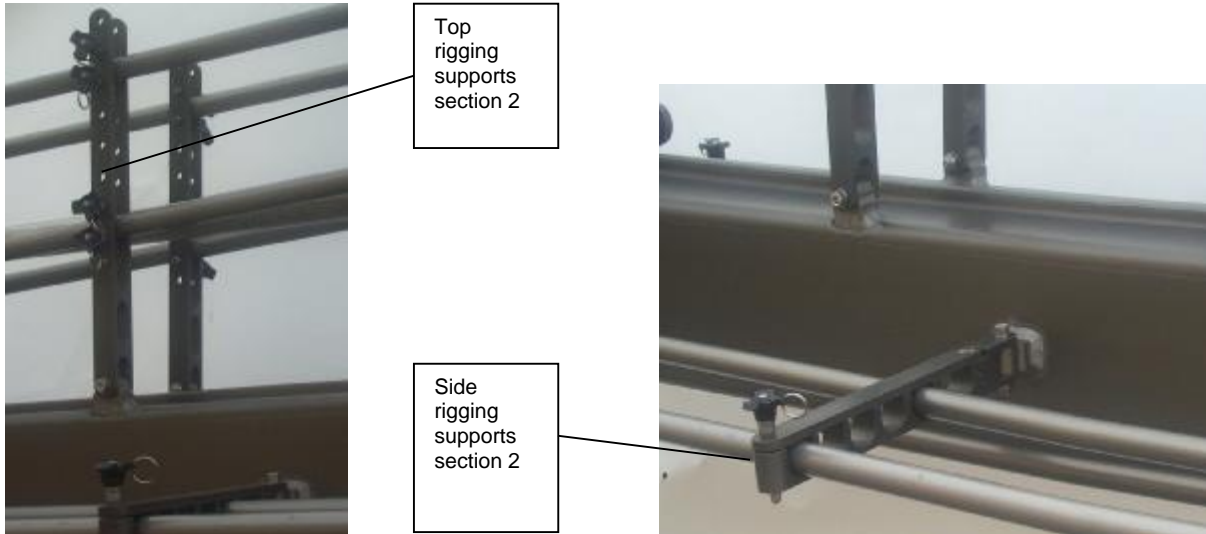


In general ,the length of the rigging system depends on the number of extension arms assembled. For each extension arm, 1 rigging rod length consisting of 4 rods, is required. From Version 7 onward a double, top rigging sytem is required.

The top rigging system is assembled in the same manner as the lower but starts off at the top connection on the harness and finishes at the last extension. The side rigging systems run from the side harness to section 3 and to the final extension in the same manner.

The rigging system should be supported with the rigging supports found on sections 2, 4 and 5. It is important that the rigging system when taut, should run in a straight line and not bend or dip.





Balancing the crane arm

Attention : When loading the crane the maximum working load capacities must never be exceeded.

Tip : Do not load weights until the rigging system is mounted.

After the assembly procedure has been completed, the seat arms, seats, risers, camera etc may now be assembled on the platform or the remote head system may be mounted. An itemized weight list for GFM accessories may be found on page 10. Place the correct amount of counterweight in the weight bucket to balance the load. Depending on the version that has been set-up, the camera operator / operators can then take their position on the platform.

Attention : The safety belts provided must be fastened upon sitting down and kept fastened at all times when on the platform.

Only original GFM seats, seat arms, risers etc may be used.

Working load capacity = Camera operator / operators + accessories

Place the required amount of counterweights in the weight bucket so that the crane arm balances and remains easily in position. If necessary, the crane can be fine balanced by adjusting the sliding weight on the rear parallelogram at the weight bucket. Do not forget to lock the sliding weight in position before tilting the arm. The counterweight bucket door must be locked when operating the crane.

Deloading:

Attention : The counterweights must always be gradually removed from the counterweight bucket before personnel leave the platform. When the weights are removed, the platform personnel should dismount one at a time but only after being instructed to do so by the crane operator. Extreme caution must be given to the shifting payload at all times. When dismantling the crane it is essential that the whole platform is supported fully by a stable underlay i.e. rostrum or ground surface. In any case the platform should not be in the air without support.

Attention : all necessary precautions should be taken so that unauthorized third parties cannot use the crane.

General Safety:

Operational conditions :

At a wind speed of 26km/h crane operation must be stopped and the crane secured, dismounted and the necessary safety precautions taken.

If, for example, it takes 2 mins. to unload the counterweights and take the necessary precautions to secure the crane, one must commence with the procedure at a wind speed of 20km/h. DIN15019, part 1, section 6.13.

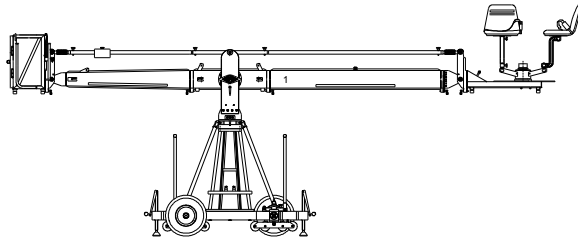
The crane may not be used in a lightening storm as there is the danger of electrocution.

Weight List for GF-14 Platform Accessories

Qty.	Description		Weight kg	Weight lbs
1	Seat arm combined 10cm / 4" AL-2210		0,75 kg	1,65 lbs
1	Seat arm combined 20cm / 8" AL-2220		1,15 kg	2,53 lbs
1	Seat arm combined 30cm / 12" AL-2230		1,60 kg	3,52 lbs
1	Seat arm vertical 10cm / 4" AL-2211		1,25 kg	2,75 lbs
1	Seat arm vertical 20cm / 8" AL-2212		1,75 kg	3,85 lbs
1	Seat arm vertical 30cm / 12" AL-2213		2,20 kg	4,84 lbs
1	Crane seat with seat belt AL-1030		7,20 kg	15,84 lbs
1	Riser 10 cm / 4" AL-2310		2,80 kg	6,16 lbs
1	Riser 20cm / 8" AL-2320		2,95 kg	6,49 lbs
1	Riser 30cm / 12" AL-2330		3,40 kg	7,48 lbs
1	Riser 40cm / 16" AL-2340		3,80 kg	8,36 lbs
1	Riser 50cm / 20" AL-2350		4,25 kg	9,35 lbs
1	Connection pin AL-2240		0,40 kg	0,88 lbs
1	Ball Adapter AL-2150		2,17 kg	4,77 lbs

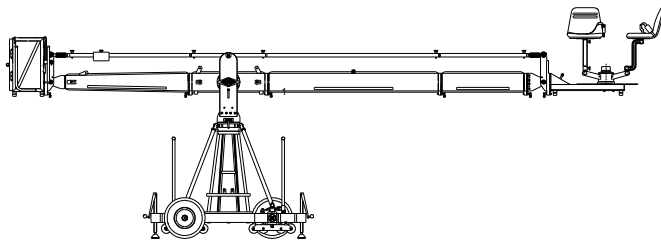
Technical Specifications GF-14 Crane System

Version 1



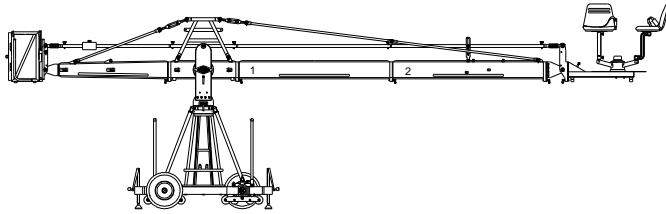
Front extension arms required	1 x 200cm / 6' 8"
Rear extension arm required	1 x 150cm / 5'
Maximum platform height (Euro-adapter)	403cm / 13' 2"
Maximum lift capacity = 2 pers. + accessories	250 kg / 550 lbs
Total lift range	420cm / 13' 9"
Counterweight required for max. load	292 kg / 642 lbs
Counterweight required to balance empty arm	0
Arm reach (pivot to camera head mount)	336cm / 11'
Length of rear end (pivot to outside of bucket)	250cm / 8' 4"
Pivot point height	178cm / 6'
Transport height of pivot section, assembled	212cm / 7'
Transport weight excluding counterweight	421 kg / 926 lbs

Version 2



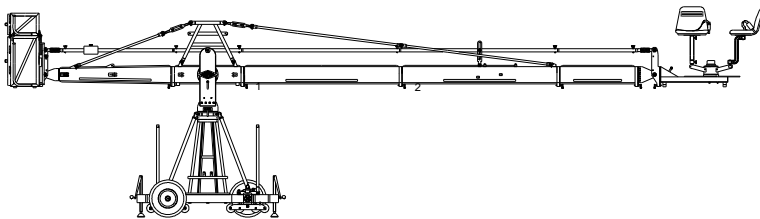
Front extension arms required	1 x 200cm / 6' 8" + 1 x 100cm / 3' 4"
Rear extension arm required	1 x 150cm / 5'
Maximum platform height (Euro-adapter)	480cm / 15' 8"
Maximum lift capacity = 2 pers. + accessories	250 kg / 550 lbs
Total lift range	575cm / 18' 10"
Counterweight required for max. load	452 kg / 994 lbs
Counterweight required to balance empty arm	14 kg / 30 lbs
Arm reach (pivot to camera head mount)	434cm / 14' 2"
Length of rear end (pivot to outside of bucket)	250cm / 8' 4"
Pivot point height	178cm / 6'
Transport height of pivot section, assembled	212cm / 7'
Transport weight excluding counterweight	436 kg / 959 lbs

Version 3



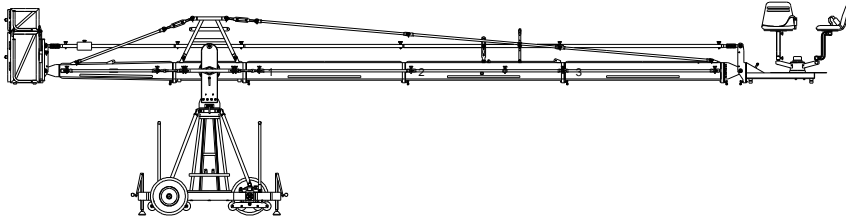
Front extension arms required	2 x 200cm / 6' 8"
Rear extension arm required	1 x 150cm / 5'
Maximum platform height (Euro-adapter)	560cm / 18' 4 "
Maximum lift capacity = 2 pers. + accessories	250 kg / 550 lbs
Total lift range	734cm / 24'
Counterweight required for max. load	634 kg / 1394 lbs
Counterweight required to balance empty arm	74 kg / 162 lbs
Arm reach (pivot to camera head mount)	534cm / 17' 6"
Length of rear end (pivot to outside of bucket)	250cm / 8' 4"
Pivot point height	178cm / 6'
Transport height of pivot section, assembled	212cm / 7'
Transport weight excluding counterweight	454 kg / 998 lbs

Version 4



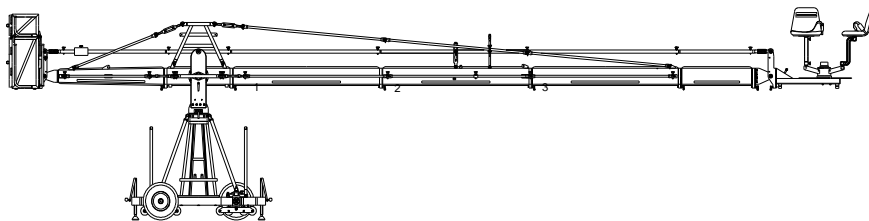
Front extension arms required	2 x 200cm / 6' 8" + 1 x 100cm / 3' 4"
Rear extension arm required	1 x 150 cm / 5'
Maximum platform height (Euro-adapter)	638cm / 21' 11"
Maximum lift capacity = 2 pers. + accessories	250 kg / 550 lbs
Total lift range	890cm / 29' 2"
Counterweight required for max. load	816 kg / 1795 lbs
Counterweight required to balance empty arm	134 kg / 294 lbs
Arm reach (pivot to camera head mount)	631cm / 20' 8"
Length of rear end (pivot to outside of bucket)	250cm / 8' 4"
Pivot point height	178cm / 6'
Transport height of pivot section assembled	212cm / 7'
Transport weight excluding counterweight	520 kg / 1144 lbs

Version 5



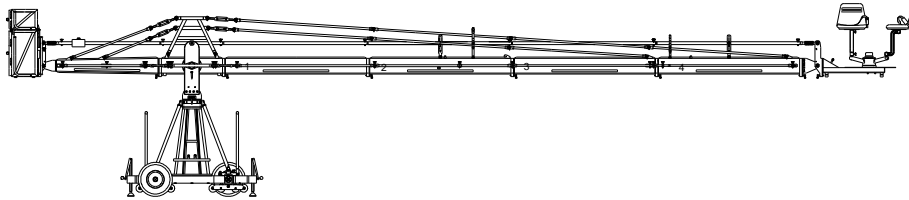
Front extension arms required	3 x 200cm / 6' 8"
Rear extension arm required	1 x 150 cm / 5'
Maximum platform height (Euro-adapter)	717cm / 23' 6"
Maximum lift capacity = 2 pers. + accessories	250 kg / 550 lbs
Total lift range	1046cm / 34' 4"
Counterweight required for max. load	1030 kg / 2266 lbs
Counterweight required to balance empty arm	232 kg / 510 lbs
Arm reach (pivot to camera head mount)	731cm / 23' 11"
Length of rear end (pivot to outside of bucket)	250cm / 8' 4"
Pivot point height	178cm / 6'
Transport height of pivot section assembled	212cm / 7'
Transport weight excluding counterweight	570 kg / 1254 lbs
Front extension arms required	2 x 200cm / 6' 8"

Version 6



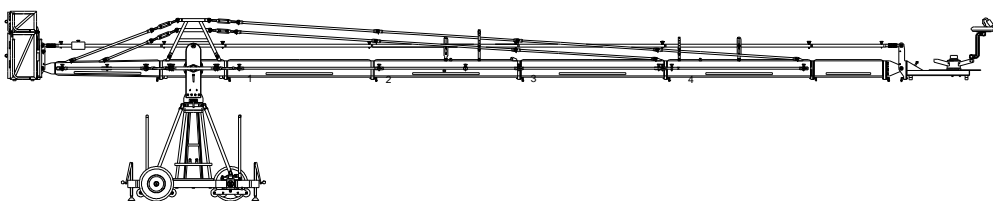
Front extension arms required	3 x 200 cm / 6' 8" + 1 x 100 cm / 3' 4"
Rear extension arm required	1 x 150 cm / 5'
Maximum platform height (Euro-adapter)	795 cm / 26'
Maximum lift capacity = 2 pers. and accessories	250 kg / 550 lbs
Total lift range	1205cm / 39' 6"
Counterweight required for max. load	1222 kg / 2688 lbs
Counterweight required to balance empty arm	302 kg / 664 lbs
Arm reach (pivot to camera head mount)	829 cm / 27' 2"
Length of rear end (pivot to outside of bucket)	250 cm / 8' 4"
Pivot point height	178 cm / 6'
Transport height of pivot section, assembled	212 cm / 7'
Transport height of rigging harness, assembled	246 cm / 8' 2"
Transport weight excluding counterweight	585 kg / 1287 lbs

Version 7



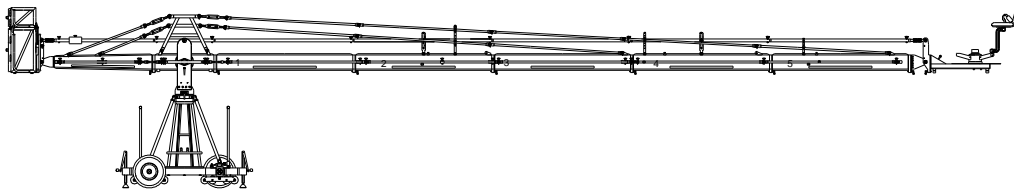
Front extension arms required	4 x 200 cm / 6' 8"
Rear extension arm required	1 x 150 cm / 5'
Maximum platform height (Euro-adapter)	875 cm / 28' 8"
Maximum lift capacity = 2 pers. and accessories	220 kg / 484 lbs
Total lift range	1364cm / 44' 9"
Counterweight required for max. load	1324 kg / 2912 lbs
Counterweight required to balance empty arm	414 kg / 910lbs
Arm reach (pivot to camera head mount)	929 cm / 30' 5"
Length of rear end (pivot to outside of bucket)	250 cm / 8' 4"
Pivot point height	178 cm / 6'
Transport height of pivot section, assembled	212 cm / 7'
Transport height of rigging harness, assembled	246 cm / 8' 2"
Transport weight excluding counterweight	640 kg / 1408 lbs

Version 8



Front extension arms required	4 x 200 cm / 6' 8" + 1 x 100 cm / 3' 4"
Rear extension arm required	1 x 150 cm / 5'
Maximum platform height (Euro-adapter)	953 cm / 31' 3"
Maximum lift capacity = 1 pers. and accessories	140 kg / 308 lbs
Total lift range	1519cm / 49' 10"
Counterweight required for max. load	1148 kg / 2525 lbs
Counterweight required to balance empty arm	498 kg / 1095 lbs
Arm reach (pivot to camera head mount)	1027 cm / 33' 8"
Length of rear end (pivot to outside of bucket)	250 cm / 8' 4"
Pivot point height	178 cm / 6'
Transport height of pivot section, assembled	212 cm / 7'
Transport height of rigging harness, assembled	246 cm / 8' 2"
Transport weight excluding counterweight	655 kg / 1441 lbs

Version 9



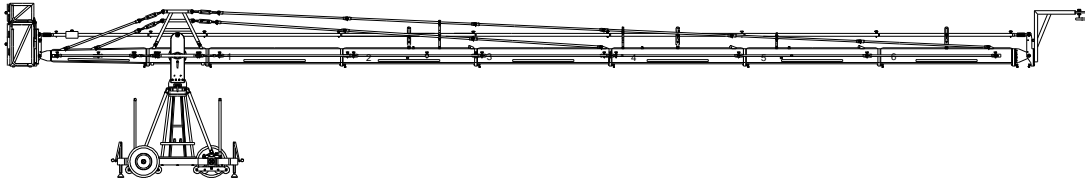
Front extension arms required	5 x 200 cm / 6' 8"
Rear extension arm required	1 x 150 cm / 5'
Maximum platform height (Euro-adapter)	1032 cm / 33' 10"
Maximum lift capacity = 1 pers. and camera	140 kg / 308 lbs
Total lift range	1519cm / 49' 10"
Counterweight required for max. load	1366 kg / 3005 lbs
Counterweight required to balance empty arm	648 kg / 1425 lbs
Arm reach (pivot to camera head mount)	1127 cm / 36' 11"
Length of rear end (pivot to outside of bucket)	250 cm / 8' 4"
Pivot point height	178 cm / 6'
Transport height of pivot section, assembled	212 cm / 7'
Transport height of rigging harness, assembled	246 cm / 8' 2"
Transport weight excluding counterweight	677 kg / 1489 lbs

Version 10



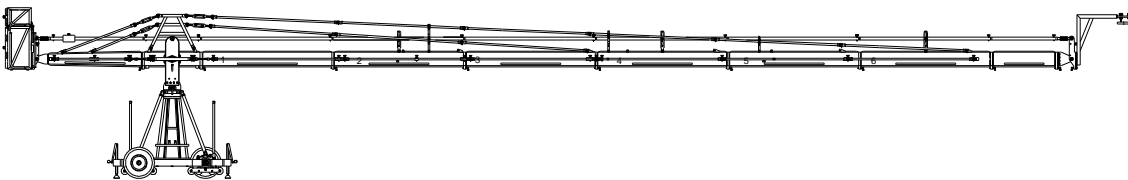
Front extension arms required	5 x 200 cm / 6' 8" + 1 x 100 cm / 3' 4"
Rear extension arm required	1 x 150 cm / 5'
Maximum remote bracket height (Mitchell plate)	1148 cm / 37' 7"
Maximum lift capacity = remote head and camera	100 kg / 220 lbs
Total lift range	1834cm / 60' 2"
Counterweight required for max. load	1250 kg / 2750 lbs
Counterweight required to balance empty arm	690 kg / 1518 lbs
Arm reach (pivot to camera head mount)	1231 cm / 40' 4"
Length of rear end (pivot to outside of bucket)	250 cm / 8' 4"
Pivot point height	178 cm / 6'
Transport height of pivot section, assembled	212 cm / 7'
Transport height of rigging harness, assembled	246 cm / 8' 2"
Transport weight excluding counterweight	682 kg / 1500 lbs

Version 11



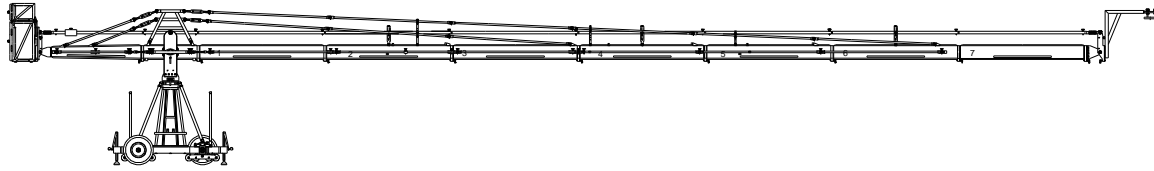
Front extension arms required	6 x 200 cm / 6' 8"
Rear extension arm required	1 x 150 cm / 5'
Maximum remote bracket height (Mitchell plate)	1228 cm / 40' 3"
Maximum lift capacity = remote head and camera	85 kg / 187 lbs
Total lift range	1993cm / 65' 4"
Counterweight required for max. load	1324 kg / 2912 lbs
Counterweight required to balance empty arm	770 kg / 1694 lbs
Arm reach (pivot to camera head mount)	1331 cm / 44' 8"
Length of rear end (pivot to outside of bucket)	250 cm / 8' 4"
Pivot point height	178 cm / 6'
Transport height of pivot section, assembled	212 cm / 7'
Transport height of rigging harness, assembled	246 cm / 8' 2"
Transport weight excluding counterweight	700 kg / 1540 lbs

Version 12



Front extension arms required	6 x 200 cm / 6' 8" + 1 x 100 cm / 3' 4"
Rear extension arm required	1 x 150 cm / 5'
Maximum remote bracket height (Mitchell plate)	1305 cm / 42' 7"
Maximum lift capacity = remote head and camera	60 kg / 132 lbs
Total lift range	2149cm / 71' 6"
Counterweight required for max. load	1320 kg / 2904 lbs
Counterweight required to balance empty arm	910 kg / 2002 lbs
Arm reach (pivot to camera head mount)	1429 cm / 46' 10"
Length of rear end (pivot to outside of bucket)	250 cm / 8' 4"
Pivot point height	178 cm / 6'
Transport height of pivot section, assembled	212 cm / 7'
Transport height of rigging harness, assembled	246 cm / 8' 2"
Transport weight excluding counterweight	715 kg / 1573 lbs

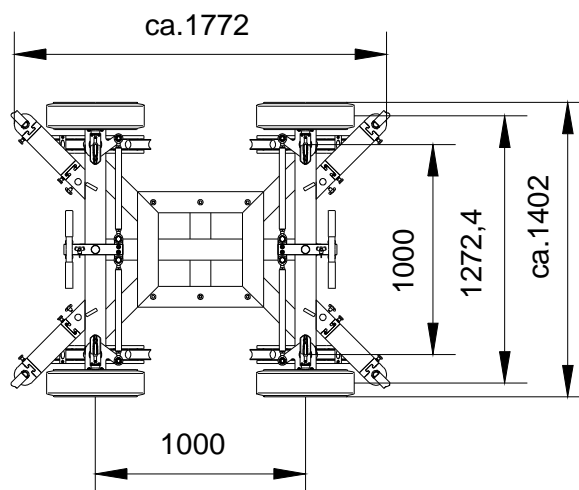
Version 13



Front extension arms required	7 x 200 cm / 6' 8"
Rear extension arm required	1 x 150 cm / 5'
Maximum remote height (Mitchell plate)	1385 cm / 45' 5"
Maximum lift capacity = remote head and camera	40 kg / 88 lbs
Total lift range	2308cm / 75' 8"
Counterweight required for max. load	1288 kg / 2833 lbs
Counterweight required to balance empty arm	988 kg / 2173 lbs
Arm reach (pivot to camera head mount)	1529 cm / 50' 1"
Length of rear end (pivot to outside of bucket)	250 cm / 8' 4"
Pivot point height	178 cm / 6'
Transport height of pivot section, assembled	212 cm / 7'
Transport height of rigging harness, assembled	246 cm / 8' 2"
Transport weight excluding counterweight	724 kg / 1592 lbs

To convert any platform height to remote bracket height add 70cm / 2' 4"

GF-14 Base Dolly



Technical specifications are subject to change without notice.

Accessories for the GF- 14 Crane System



Track wheel / wheel lock



Levelling leg



Utensil tray



Push bar

Notice:

When operating the crane with the push bar mounted on the dolly, pay attention that the crane arm at no time collides with the push bar.

Always use the levelling legs to level the crane when on uneven surfaces.

Transport trolleys for the GF-14 Crane System



The photo's depict the correct transportation of the GF-14 in versions 1 to 13. Only the base, mounting column and pivot are separate.

