

	SERAPID 5400 18 Mile Road Sterling Heights, MI 48314 (586) 274-0774 Info-us@serapid.com	LINKLIFT INSTALLATION AND MAINTENANCE NOTICE	Page 1/19
Document Ref : CD0 NOTICE 001	Issue : 01/06/07	Products : LinkLift 30, 50, 50R, 80, 100, 100R	

GENERAL INFORMATION

The Linklift system is a quality product which requires to be installed following the instructions contained herein. The product should not be used for applications not valid by the manufacturer or not conforming to the relevant documentation. Should the information provided not be respected, this would negate the manufacturer's warranty covering the product.

Due to the different installation possibilities, the fixings are not supplied with the product. Technical information is contained in the following tables.

The chains are delivered lubricated for 1000 cycles or 6 months, whichever is shorter. This is noted in the maintenance instructions which follow.

Any and all anomalies connected to the product, or the installation of the system, must be brought to the attention of the Serapid technical department before final commissioning of the installation.

The trade marks of the products relate to their manufacturers. Serapid reserves the right to modify their existing products.

The checklist (page 21) must be returned to us after installation.

HANDLING AND INSTALLATION

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GENERAL CONDITIONS OF USE

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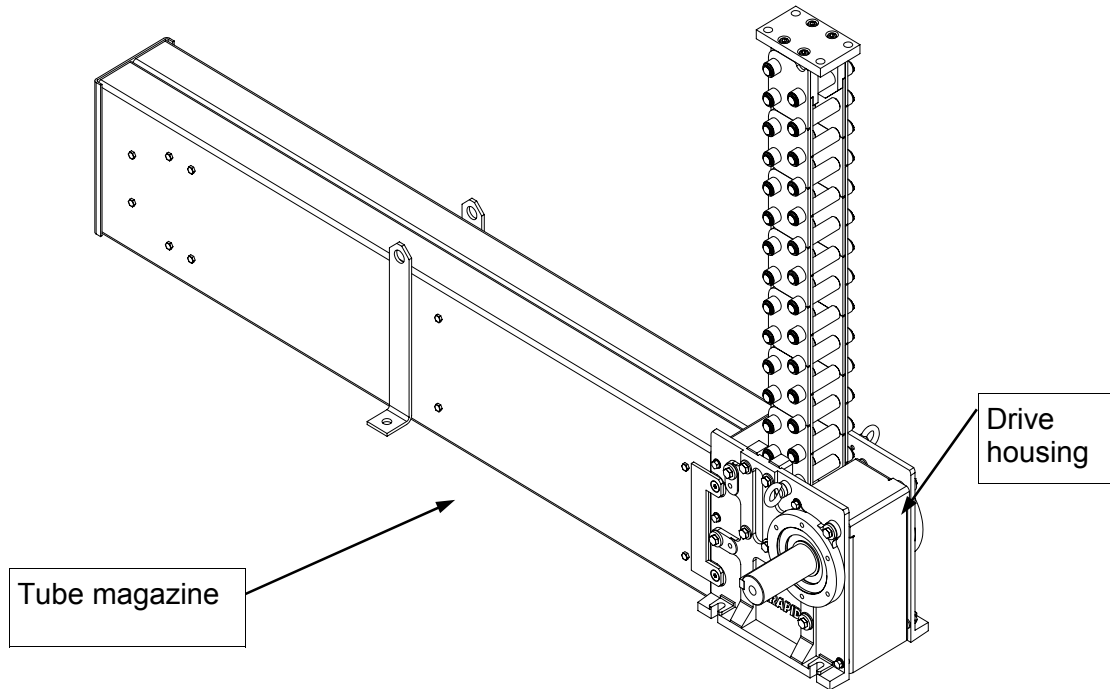
CHECK LIST

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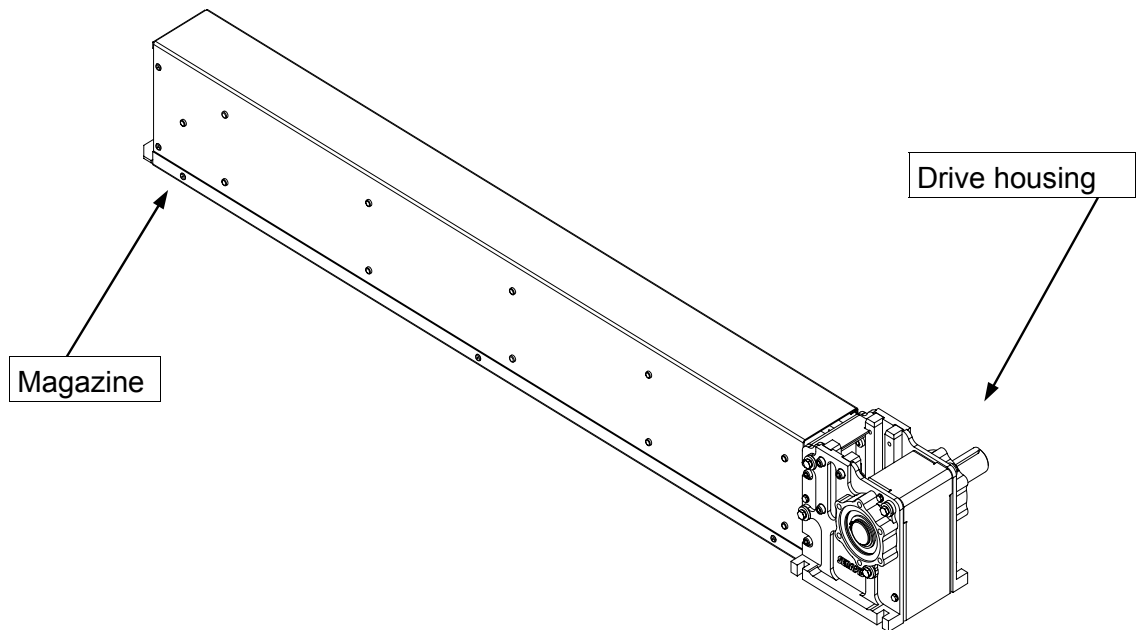
HANDLING AND INSTALLATION

1) TYPE OF MAGAZINE Linklift 50, 50R, 80, 100 and 100R)

Chain magazine detail



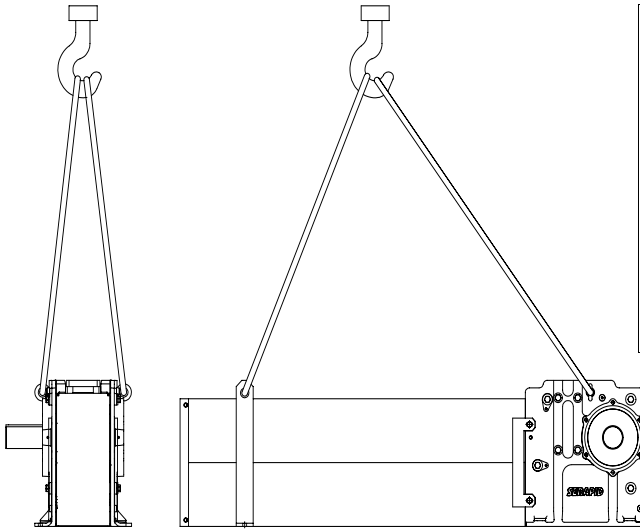
2) MAGAZINE TYPE: Linklift 30



See sheet 4 for handling technique for MAGAZINE TYPE: Linklift 50, 50R, 80, 100, 100R
See sheet 5 for handling technique for MAGAZINE TYPE: Linklift 30

3) MAGAZINE TYPE 2 (Linklift 50, 50R, 80, 100 and 100R)

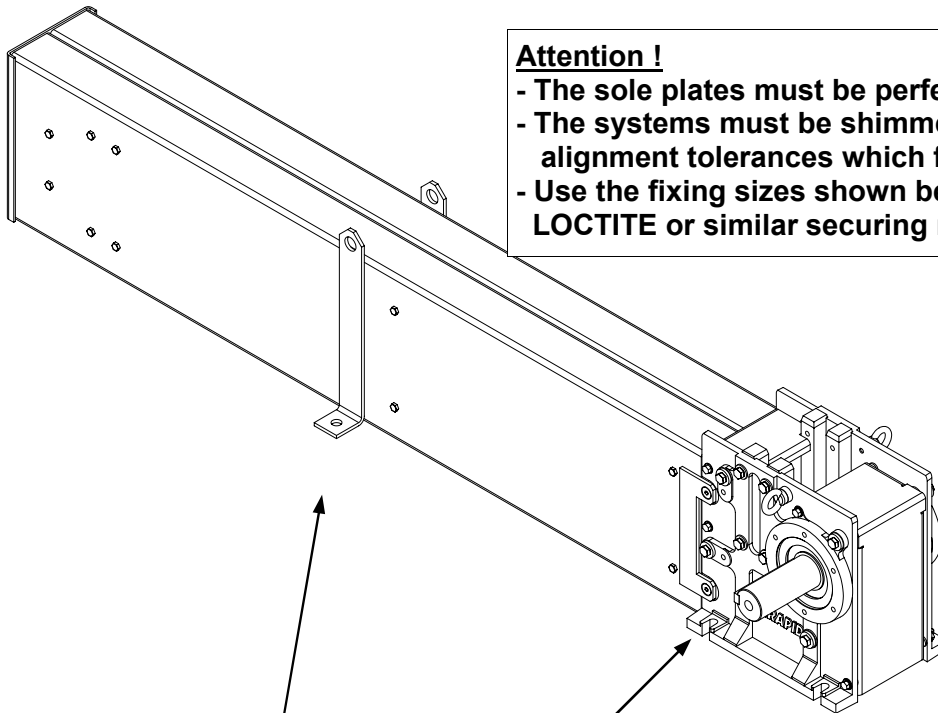
a) The Linklift is packaged in wood box and has to be handled according to the sketch below



Attention ! :

- Only use the lifting points provided
- Unload the systems only in a clean area free from the elements (rain etc)
- The chain has been oiled prior to dispatch and we do not advise removing the chain from the magazine. However, if this is necessary, the chain should be placed on a clean surface after removal.

b) Place the magazine on the sole plates positioned in the floor (sole plates to be supplied and fitted by the client)

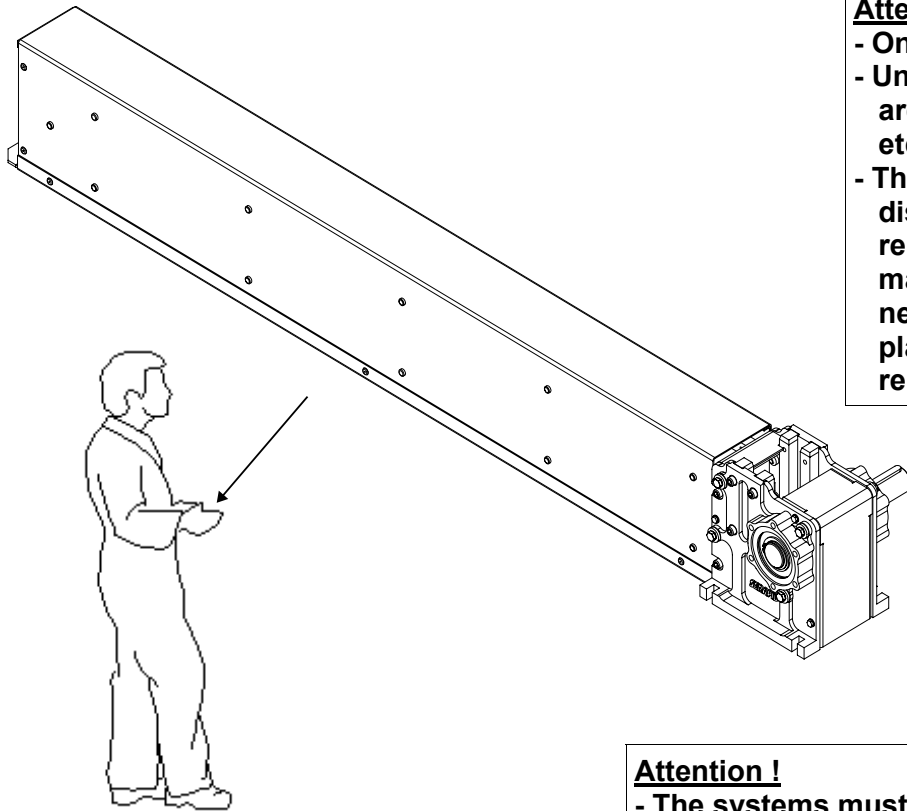


Attention !

- The sole plates must be perfectly level
- The systems must be shimmed to achieve the alignment tolerances which follow (see page 7)
- Use the fixing sizes shown below and apply LOCTITE or similar securing medium

Linklift	Magazine	Drive housing
50	2 x Ø 14 (M10)	4 x Ø 12 (M10)
80	2 x Ø 14 (M12)	4 x Ø 18 (M16)
100	2 x Ø 14 (M12)	6 x Ø 18 (M16)

5) MAGAZINE TYPE: Linklift 30

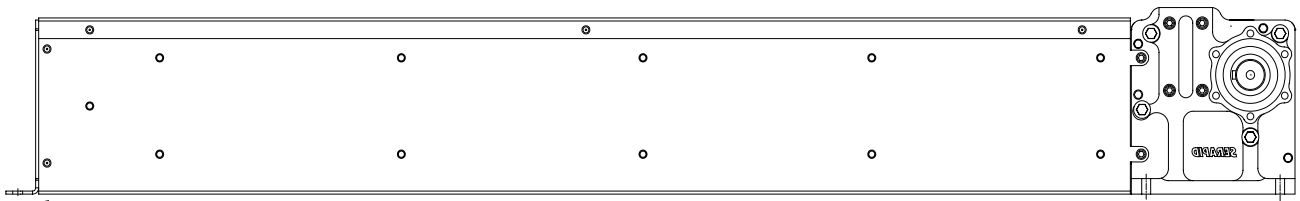


Attention ! :

- Only use the lifting points provided.
- Unload the systems only in a clean area free from the elements (rain etc.)
- The chain has been oiled prior to dispatch and we do not advise removing the chain from the magazine. However, if this is necessary, the chain should be placed on a clean surface after removal.

Attention !

- The systems must be shimmed to achieve the alignment tolerances which follow (see page 7)
- Use the fixing sizes shown below and apply LOCTITE or similar securing medium

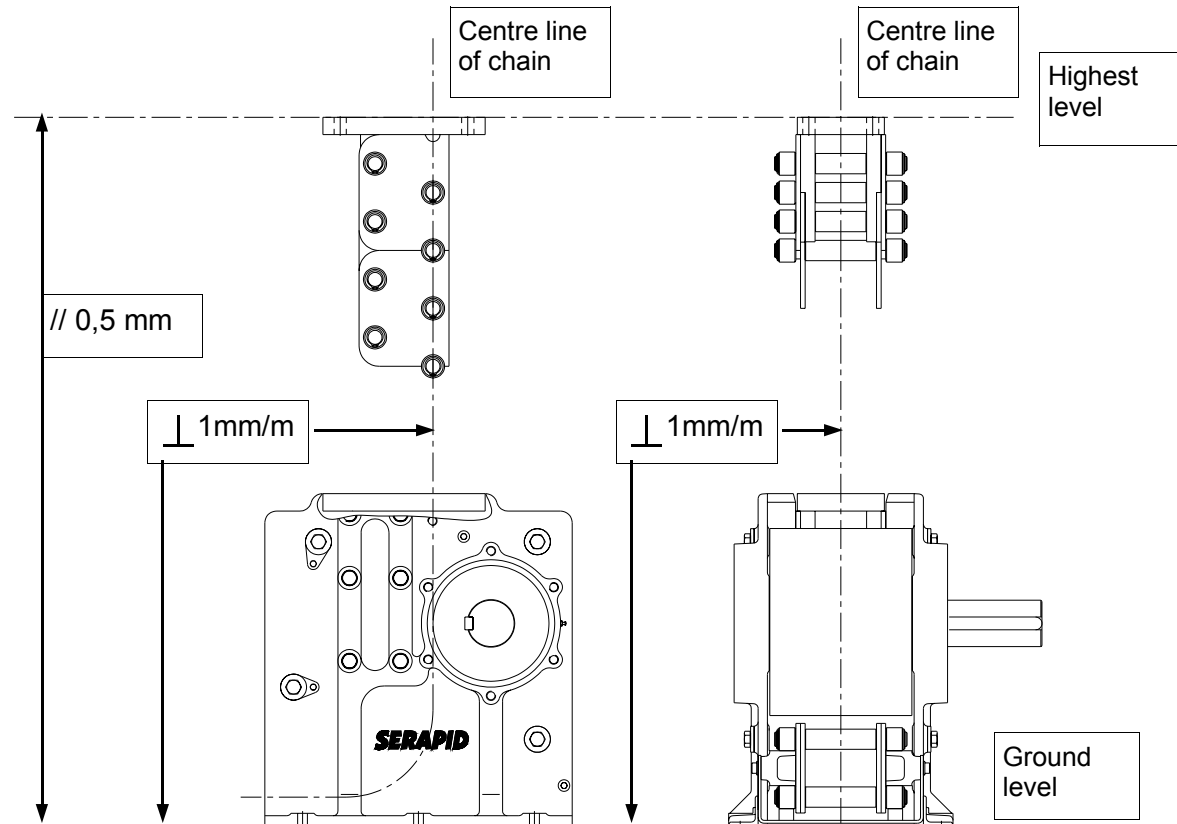


Linklift	Magasin	Carter
30	1 x Ø 10 (M8)	4 x 9 Ø (M8)

6) GENERAL TOLERANCES

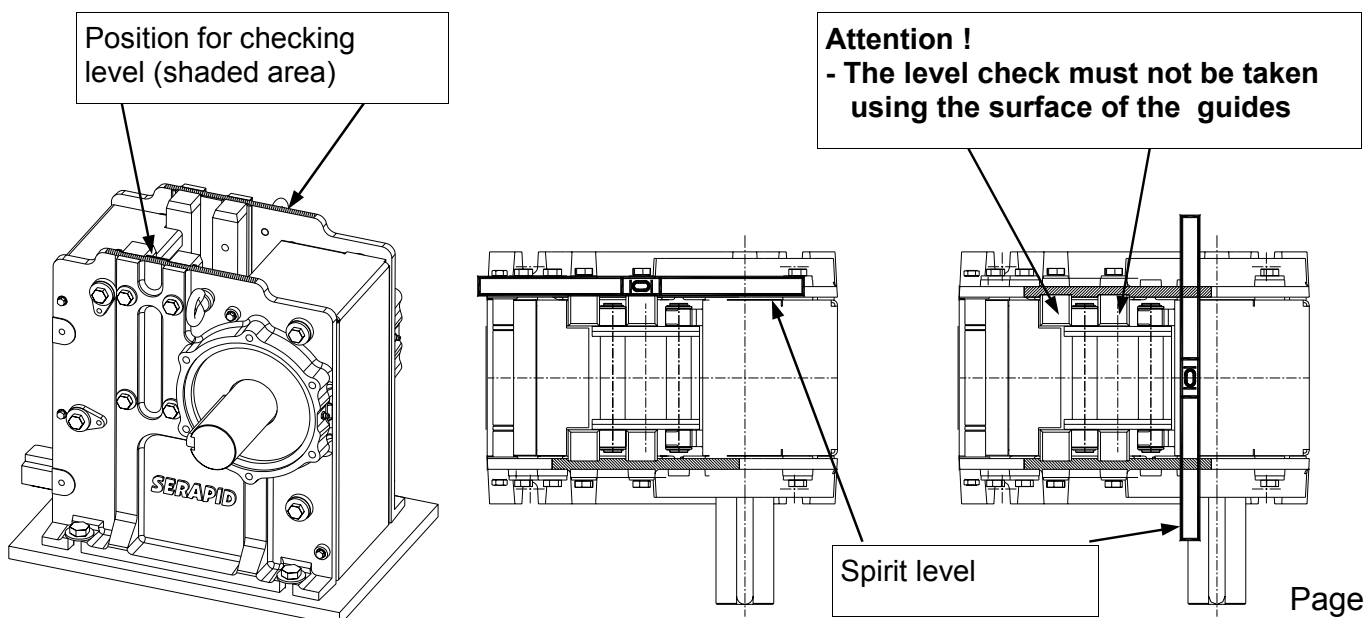
a) Parallelism and perpendicular positioning
Strictly adhere to the following positioning tolerances

- Parallelism between the floor and the highest level 0.5 mm max.
- Perpendicular position between the ground and the centre line of the chain 1 mm/meter



b) Level control

Verify the horizontal position of the drive housing using a spirit level.

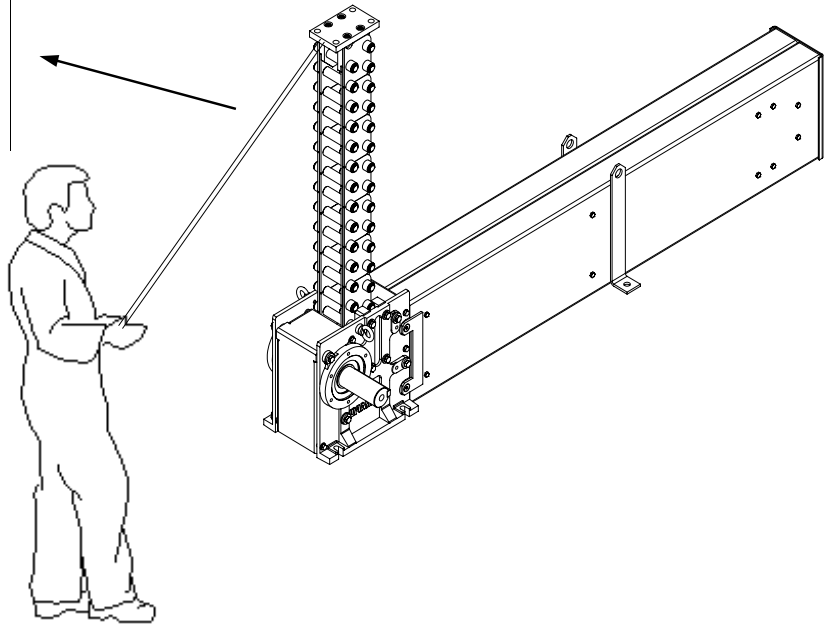


7) FIXING TO THE PLATFORM STRUCTURE

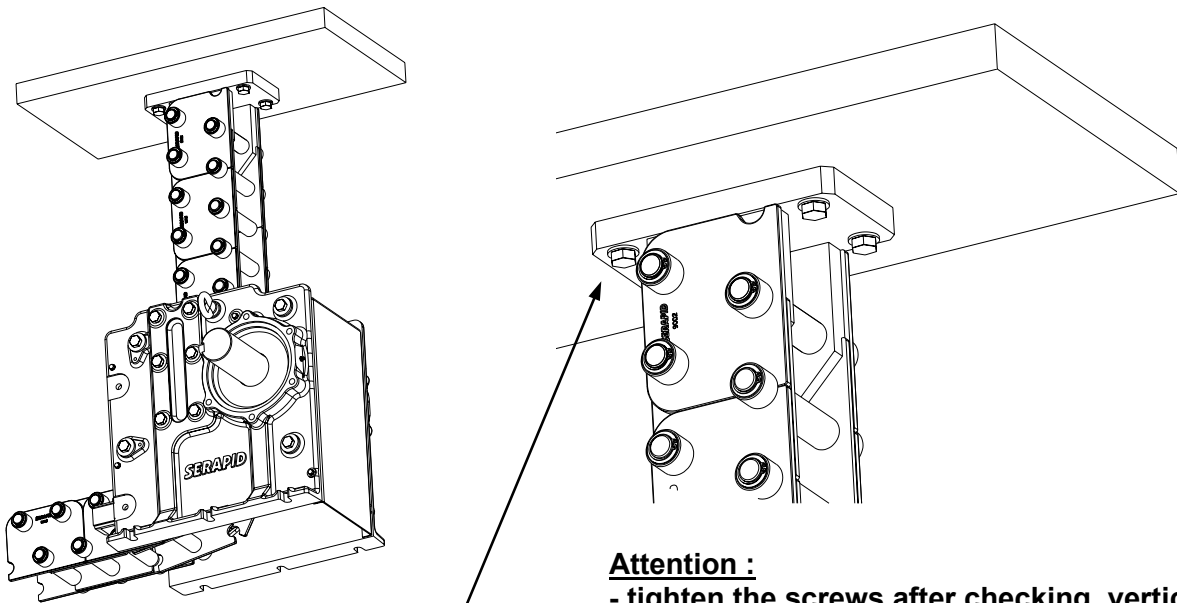
a) Handling

Attention !

- depending on the length of the chain maintain the strand in a vertical plane, using a line, during the handling of the system before fixing under the platform



b) fixing under the platform structure

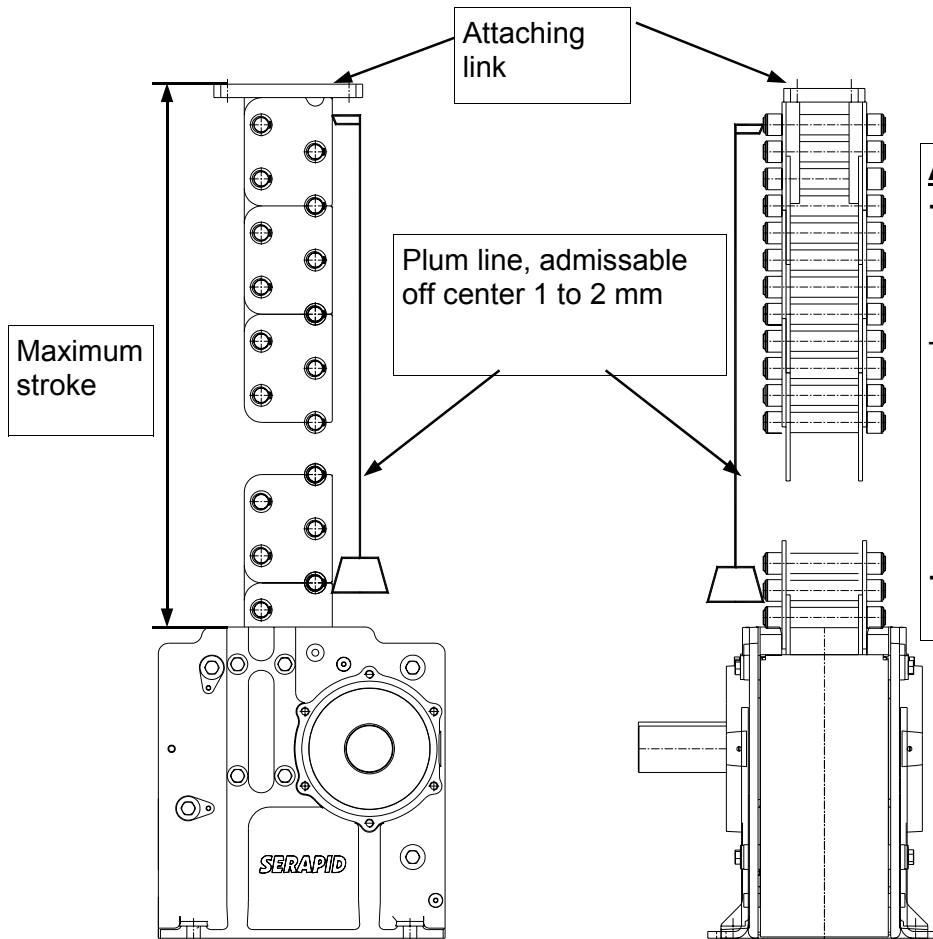


Attention :

- tighten the screws after checking vertical tolerance of the chain
- this mounting must be rigid under the platform
- it is forbidden to weld this attaching link in position
- the screws should be secured using Loctite or similar medium
- in the case of using bolts these should be secured using self locking nuts

Linklift	Attaching link
30	4 x Ø 9 (M 8)
50	4 x Ø 13 (M10)
80	4 x Ø 18 (M16)
100	4 x Ø 21 (M18)

c) Vertical control of chain:



Attention :

- After vertical control of the chains, tighten the attaching link screws, with the platform structure in its lowest position
- When the control has been carried out, protect the chains against ingress of foreign bodies (cement, screws & pieces of metal etc.) using a plastic film until the function tests are required to be done.
- The film should be removed before the tests commence.

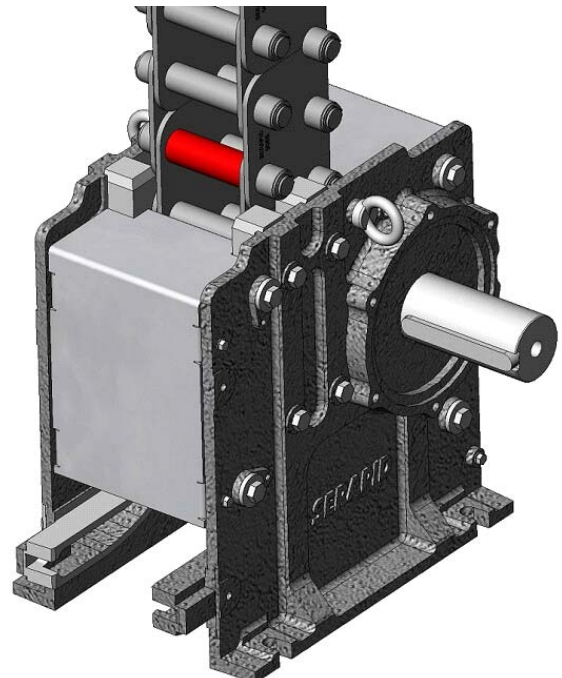
d) Limit of extended chain:



Warning :

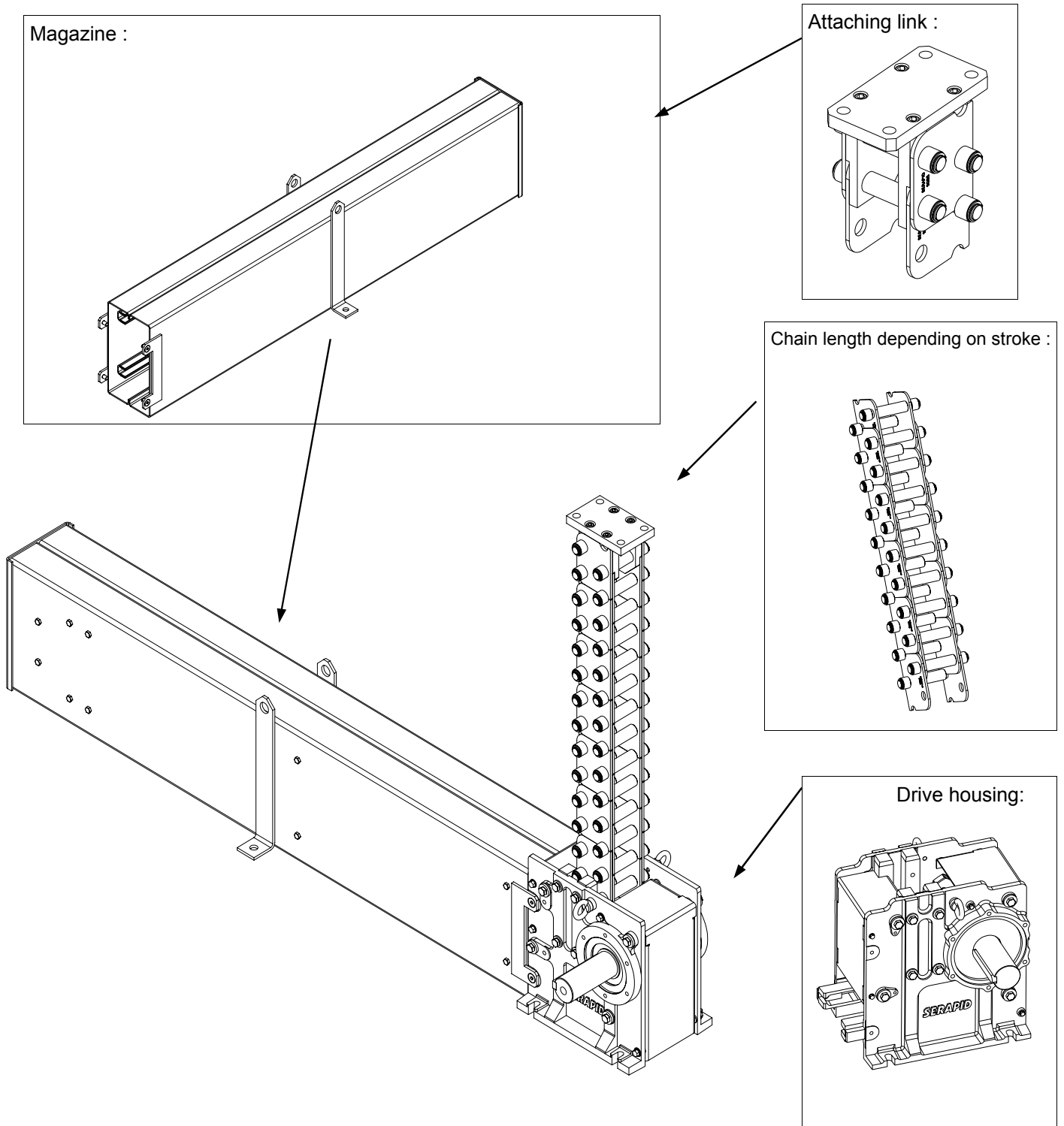
When the red mark is appearing, you reach the end stroke of the chain and must stop the elevation.

If this condition isn't respected, you will damage the chain and drive housing



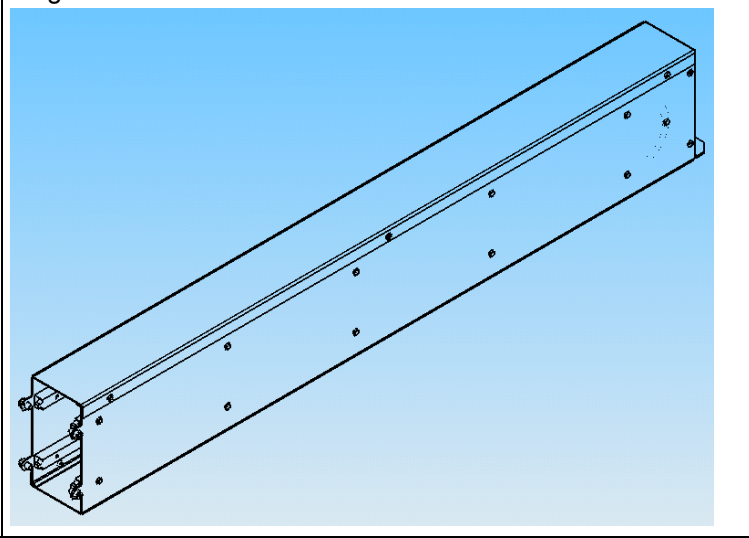
TECHNICAL DATA

1) Composition of product with magazine type (Linklift 50, 50R, 80, 100 and 100R)

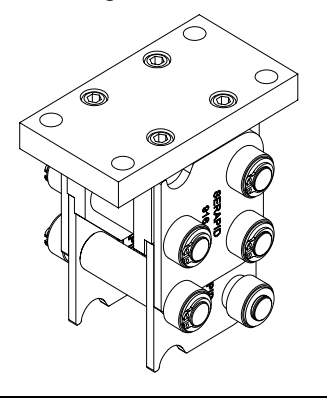


2) Composition of product with magazine type (Linklift 30)

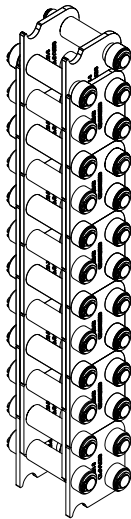
Magazine :



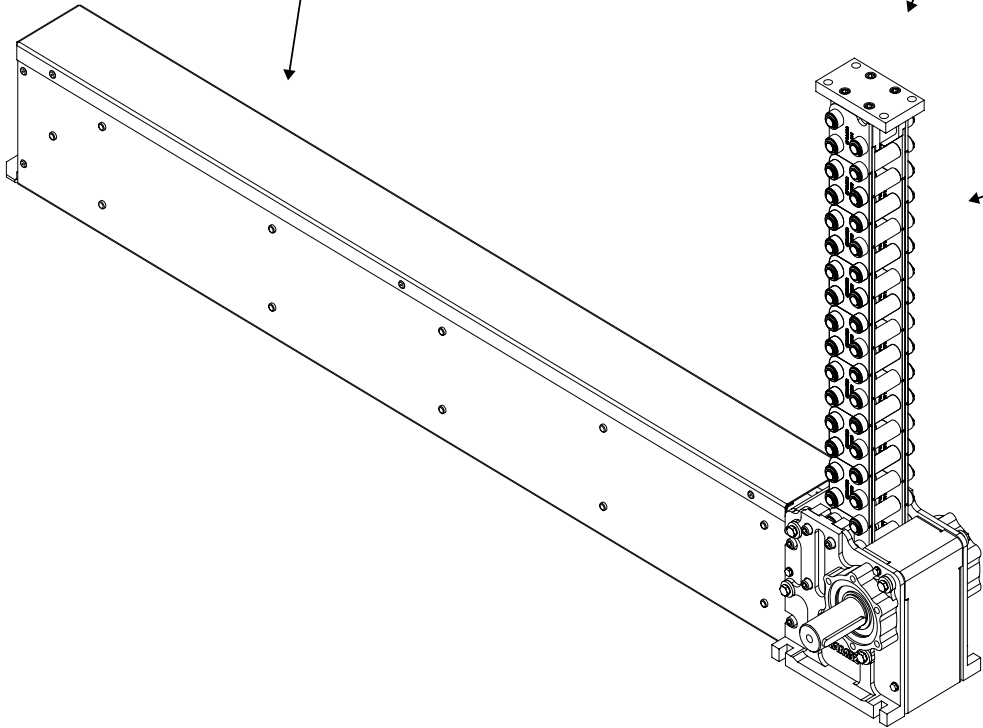
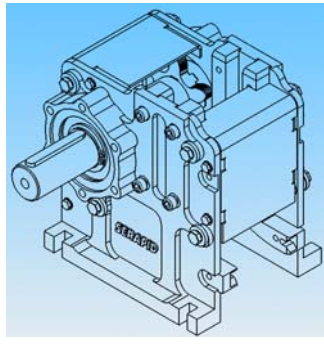
Attaching link:



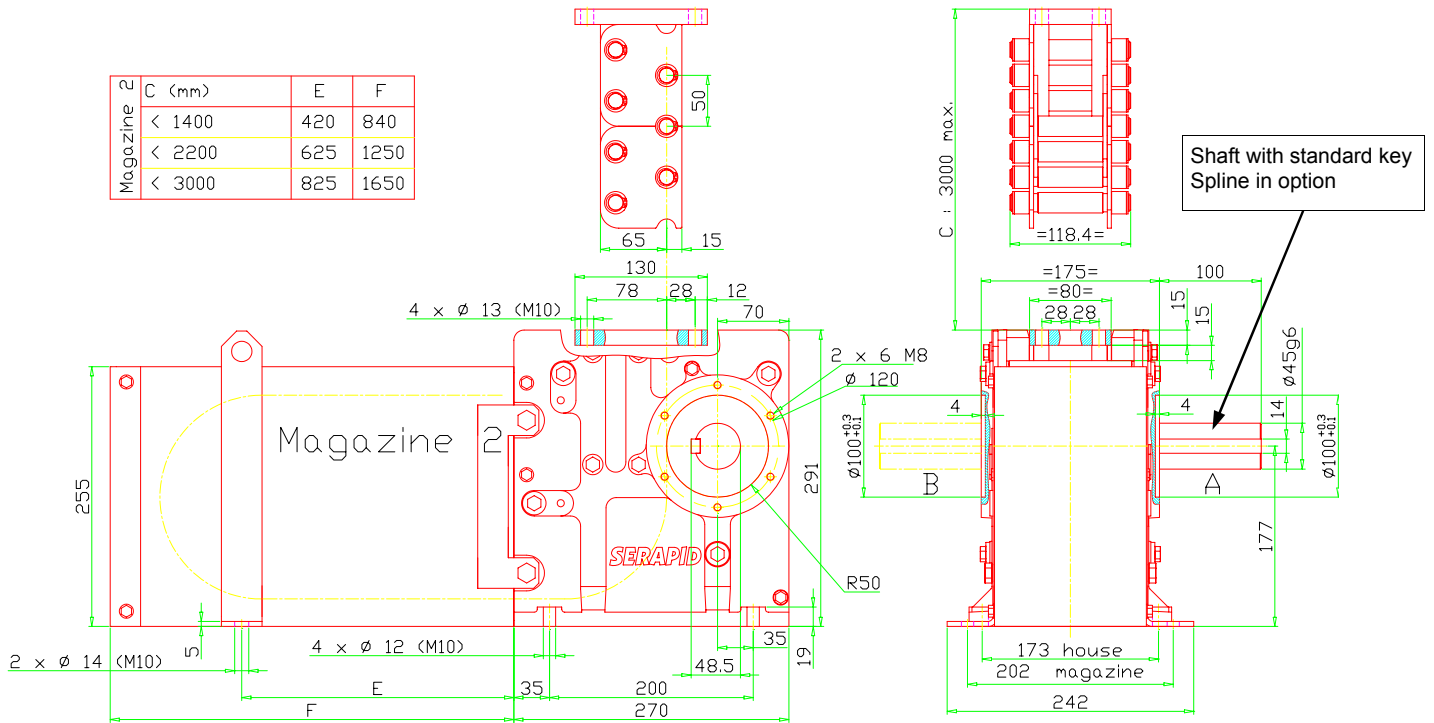
Length of chain depending on stroke :



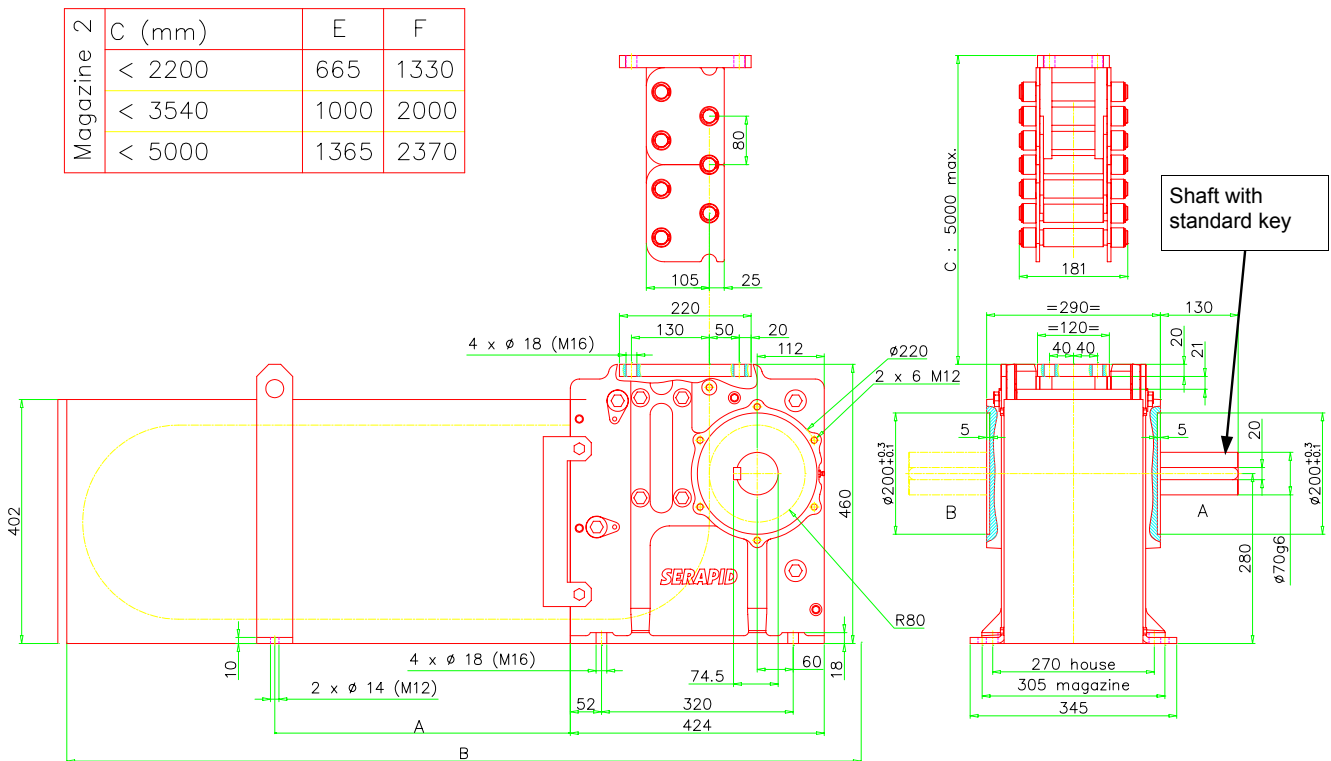
Drive housing :



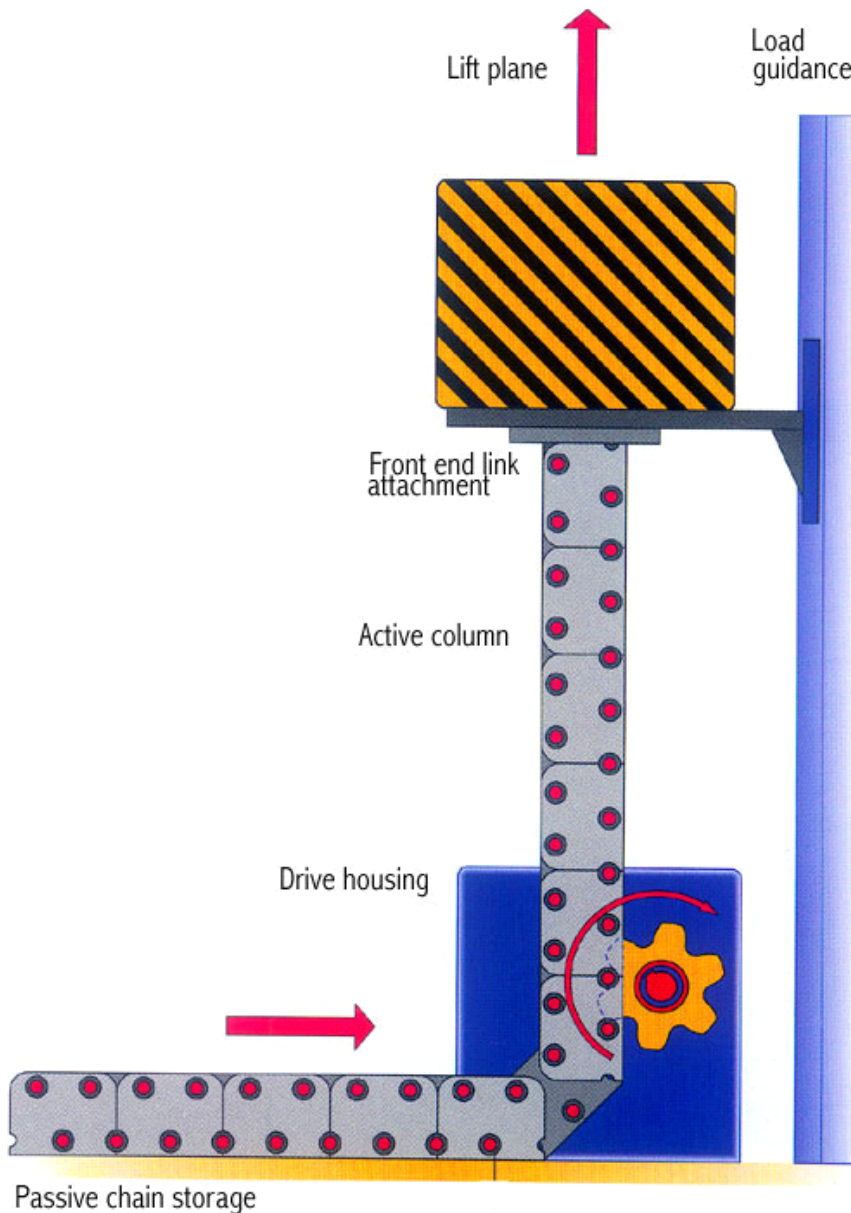
3) Linklift 50 data sheet



4) Linklift 80 data sheet



7) Working principle



In order to ensure a correct functioning of the Linklift system, it will need to be installed following certain general settings :

1- The platform must be guided over its full elevation stroke in order to retain the locking of the chain links

2- The platform must be perpendicular to the chain and fixed rigidly on the active column without any freedom of movement

3- The drive housing must be fixed rigidly to the floor, parallel to the platform and perpendicular to the load guide system

4- The active column must be perfectly vertical and the passive chain return strand perfectly horizontal

The working principle of Linklift rests in the fact that the chain is blocked in rotation within the drive housing and at the level of the platform by the front end link attachment and the guide. The chain then operates like a rigid bar and is unlockable. The vertical movement is then achieved by the rotation of the drive sprockets mounted onto the drive shaft. The Linklift system has been specifically designed for the vertical movement of loads.

MAINTENANCE INSTRUCTIONS

1) Precautions to be followed prior to maintenance

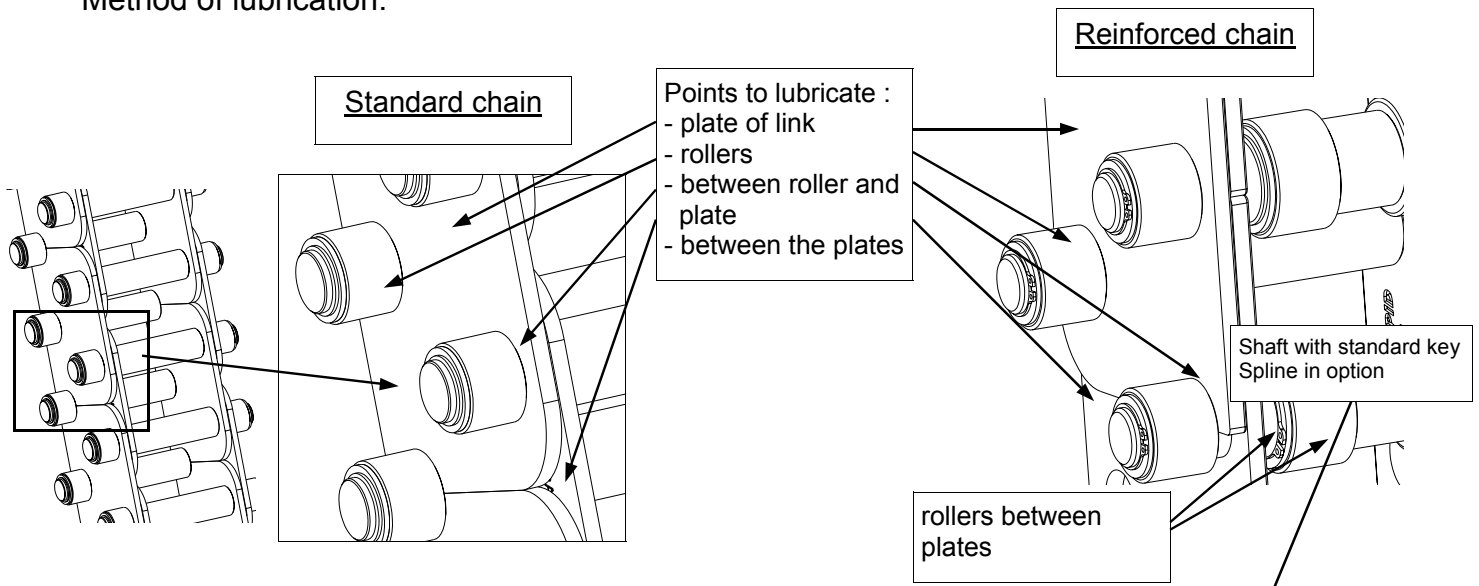
Before any maintenance work, it is imperative to ensure that installation is stopped and whatever action needed is taken to ensure the safety of all operatives.

2) Chain

a) Lubrication/maintenance

- The Linklift chain is a mechanical system and needs to be lubricated to ensure correct functioning. It is not necessary to disassemble the chain to carry out the maintenance.
- The chain is lubricated prior to delivery, therefore it must be protected during the installation program against contamination (notably in the cases of any abrasive dust, solvents or any body incompatible with the lubricants).
- If the chain has been handled a lot during the installation, it is recommended that lubrication is applied again prior to running.
- The environment should be clean before start up of operation.
- Periodic lubrication is recommended every 1000 cycles or 6 months whichever is sooner.

Method of lubrication:



- the chain must be lubricated over the full vertical section
- the method of application can be either spray or brush
- the active elements of the chain requiring lubrication are the plates of the link and the rollers
- to lubricate the rollers, apply the lubricant between the roller and the plate and rotate the roller
- all the rollers must be totally free on the axle

Type of lubricant
Recommended:

Tri-Flow Lubricant (aerosol)

Tri-Flow Lubricant is a high viscosity synthetic lubricant. The solvent property allows optimum penetration of the lubricant fraction in the articulation of the chain. The residual film ensures optimum lubrication.

After evaporation of the solvent carrier, the lubricant film affords the following properties :

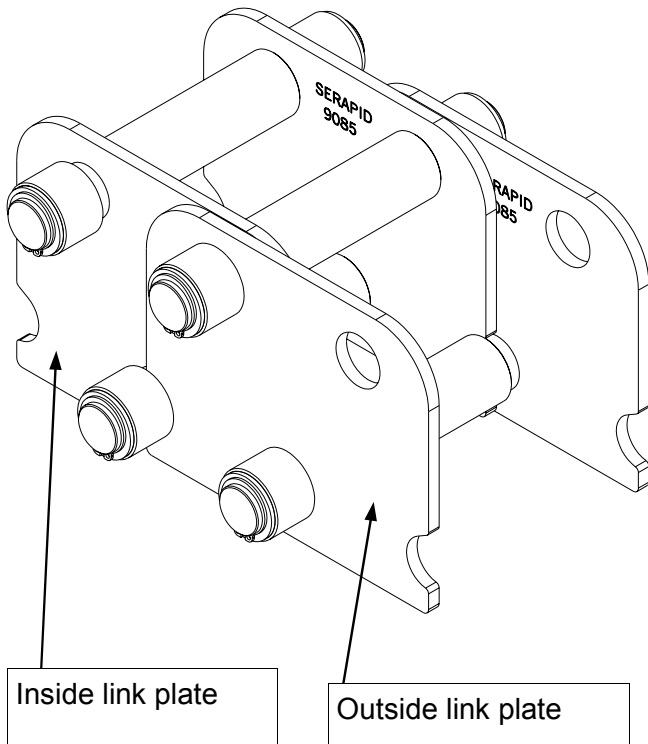
- very good stability relative to the variations of temperature and oxidization
- very good anti-wear property and reinforced adherence
- excellent protection in the presence of water and other aggressive products.

Depending on the working environment, the evaporation is achieved after 30 to 60 minutes.

Principle characteristics:

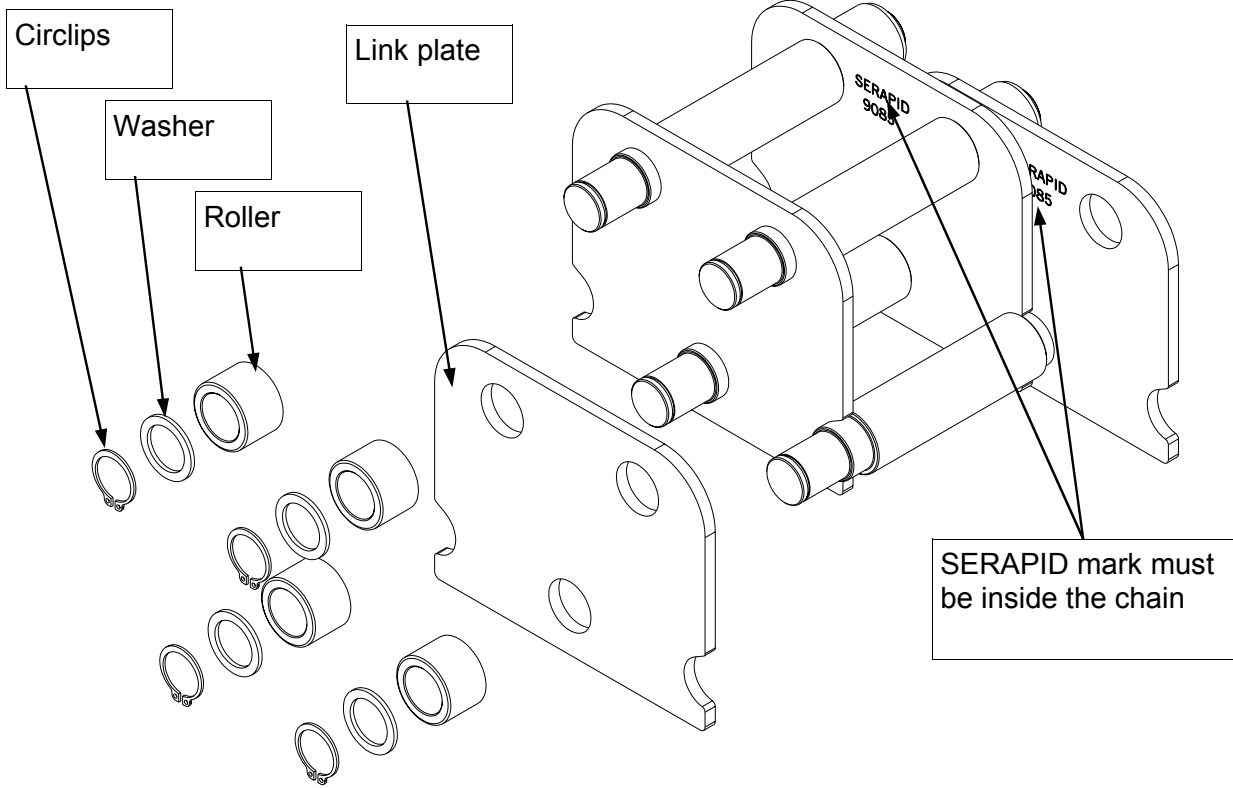
	Values		units
	Lubricant part	Solvent part	
Visual	Clear yellow		
Density (20°C)	0.92		
Cinematic viscosity @ 40°C (ASTM D 445)	5000		mm ² /s
Viscosity index (ASTM D2270)	145		
Flow point (ASTM D 97)	<-10		°C
Flash point (COC)	>280	40	°C
Extreme pressure capability (4 balls weld test)	>315		kg

b) Breakdown of links

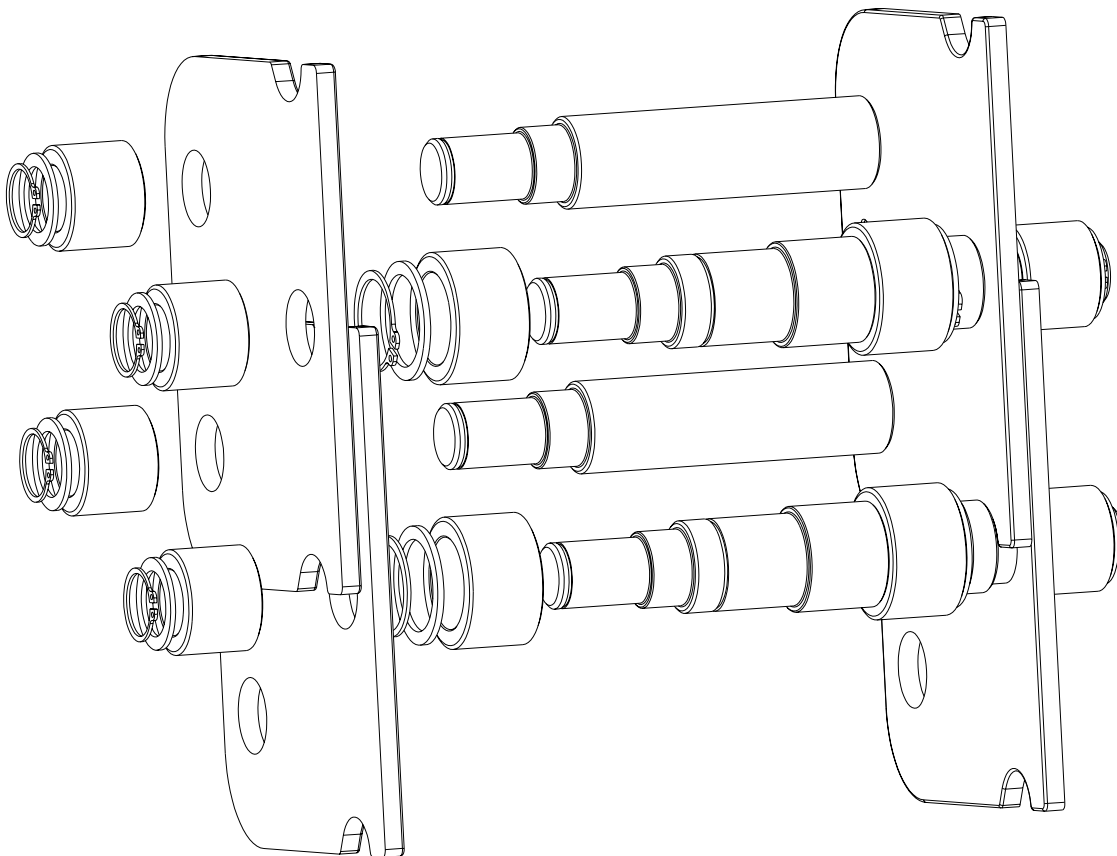


- A chain is composed of inside and outside link plates
- Each link is composed of :
 - 2 plates
 - 4 rollers
 - 4 washers
 - 4 circlips
 - 2 axles
- It is preferable to carry out the assembly when the chain is flat
- the elements of the chain should be oiled
- the fixation surface has to be cleaned
- the plates should be fitted onto the axles with the SERAPID mark on the inside face
- the fitting should not be forced. The alignment of the elements must be precise
- take care not to trap the hands during handling of the assembled parts of the chain
- follow the assembly instructions which follow
- the interior link plates must be fitted before the exterior link plates
- the rollers are fitted after the link plates

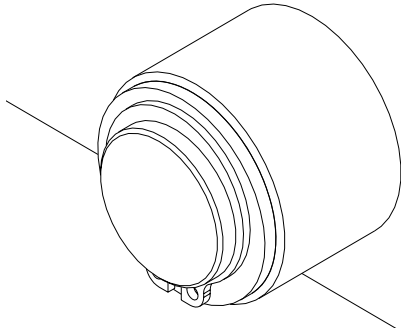
Standard chain



Reinforced chain



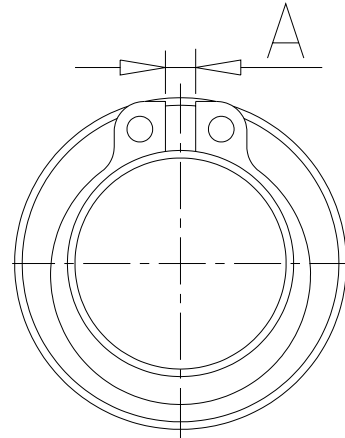
Roller after fitting



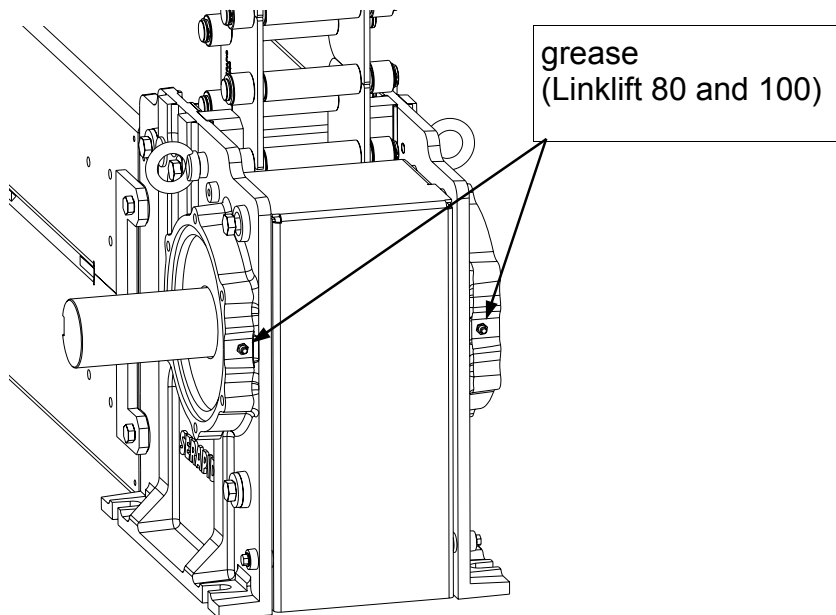
- the roller is fitted against the plates of the exterior link. It must be free to rotate after fitting
- the washer fits between the roller and the circlip
- the circlips must be correctly installed in their groove

Attention ! Check the fitting of the circlips :

- The correct tool should be used to fit the circlips
- If the circlip is in any way damaged during fitting, it is imperative it is replaced
- Carefully ensure the circlip is fitted into its groove
- Control the following A dimensions after fitting :
 - Linklift 30 : 1.5 mm
 - Linklift 50 : 2 mm
 - Linklift 80 : 2 mm
 - Linklift 100 : 3 mm



2) Drive housing



- The Linklift 30 & 50 are fitted with sealed for life type bearings
- The Linklift 80 & 100 must be greased with a standard bearing grease every year. The drive housings are fitted with grease points for use with a grease gun.

GENERAL CONDITIONS OF USE

- Drive housing and chain are delivered in appropriate packing materials for the method of transportation used.
- The installation of the systems should be carried out by qualified personnel who are used to this type of mechanical installation work.
- The interface between the active column and the platform structure should be realized by the attaching of the front end link and must guarantee a rigid liaison without any degree of movement
- The installation team must abide by the installation instructions and parameters laid down by Serapid
- The mounting of the drive housing onto the floor should be rigid and not allow any freedom of movement
- The parameters : load stroke and speed must not exceed the maximum parameters laid down by Serapid
- There should be no personnel under the load during operation
- The stroke of the platform should not exceed the working stroke of the chain contained in the magazine and noted in the technical data for the product
- All cleaning and/or maintenance operations should be carried out by qualified personnel and the system should not be powered
- The mobile platform should be supported by a mechanical structure to block any accidental fall of the platform when there are persons working underneath the platform for whatever reason
- The drive housing should not be dismantled. Serapid refuses to accept responsibility if this is ignored.

CHECK LIST TO BE COMPLETED PRIOR TO RUNNING TRIALS
(complete and return to Serapid)

Company :	Name of project manager : Signature:	Theatre : Date :
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Number of LinkLifts installed on site : <input style="width:50px; height:20px;" type="text"/>	Tick if correct
<u>Points to verify/Linklift column :</u>	
1) Cleanliness of chain (e.g. absence of cement powder)	<input type="checkbox"/>
2) Remove any protective covering from the chain and confirm the presence of the lubricant (see page 14)	<input type="checkbox"/>
3) No foreign bodies in the drive housing (e.g. pieces of metal, screws)	<input type="checkbox"/>
4) Position and level of drive housing (see page 6)	<input type="checkbox"/>
5) Alignment of the chain (see page 8)	<input type="checkbox"/>
6) Confirm all fixings have been fully tightened on interface plate and drive housing	<input type="checkbox"/>
7) Control of lifting stroke : - Working stroke of platform - Working stroke of chain relative to drive housing data sheet The two strokes must correspond absolutely	<input type="checkbox"/>
8) If the chain has been stripped down and reassembled, check all circlips have been refitted correctly (see page 17)	<input type="checkbox"/>
9) Check all positioning, fixings and lubrication of mechanical liaison components (e.g. couplings, universal joints etc)	<input type="checkbox"/>
10) Absence of unusual noises during initial running trials	<input type="checkbox"/>

The controls listed above will ensure a trouble free installation for the future

IMPORTANT

The Serapid warranty will apply providing the conditions shown below have been respected :

- **Installation of the systems following the advice shown on this notice**
- **The check list is complete and returned to the address shown below at the commissioning stage**

Serapid reserve the right to withdraw their product and installation guarantee should these conditions not be met by the installer.



Serapid 5400 18 Mile Road Sterling Heights, MI 48314	Email : info-us@serapid.com Tel : (586) 274-0774 Fax : (586) 274-0775
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