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The 2011 JIG lift range

Be prepared to the new
EN1493:2010 norm



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JIG Automotive Lift 2011 Product Range Presentation

2010 was a pivotal year for the designing and CE approval of vehicle lift.

In a few month's time span, the new 2006/42/CE machinery Directive was enforced and the new EN1493:2010 lift norm was published.

This created a lot of confusion in the market because it required a strong technical background to fully understand the changes involved and react properly.

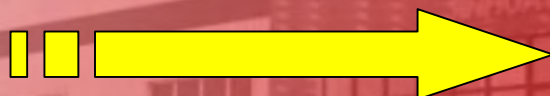


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Normative changes during the last years

06/2006

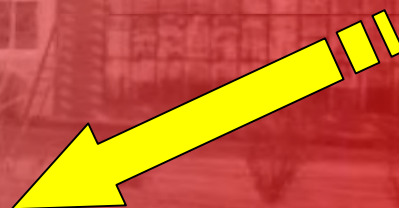


The New 2006/42/EC Machinery Directive is published

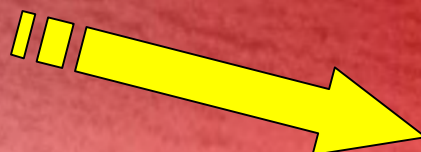
12/2009



The New 2006/42/EC Machinery Directive is enforced



Many Norms, reporting references to the old 98/37/CE Machinery Directive have to be updated



EN1493:2009, also known as EN1493:1998+A1 is published



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Since 2008 the Lift Technical Committee had been working on a real re-writing of the 1493 Lift norm.

But, beside few very minor improvements, EN1493:2009 was not really a new norm.

EN1493:1998+A1 is rather the old EN1493:1998 rewritten to include the references to the new Machinery Directive

08/2010



The New EN1493:2010 Lift Norm is finally published



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The EN1493:2010 Norm was expected to become mandatory for all the lifts manufactured after 02/2011.

At today however it has not been officially ratified by the European Parliament and so it has not become "harmonized". This means that at today the "Official" norm to CE approve the lifts is still the old EN1493:1998+A1



Un-official rumors estimate that the EN1493:2010 should become mandatory for all the lifts manufactured after August 2011



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The introduction of the 2006/42/EC machinery Directive at the end of 2010 required all the lifts to undergo a new CE approval in compliance with the EN1493:1998+A1 norm.

Even if the EN1493:1998+A1 is still the harmonized norm and even if the CE approval process was passed less than one year ago, once the EN1493:2010 will be enforced all the lifts will have to be compliant to it.



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The EN1493:2010 applies to stationary, mobile and movable vehicle lifts, which are not intended to lift persons but which are designed to raise vehicles totally. The new standard range of application is basically unchanged.



The Norm is applicable not only if the purpose of the lift is to check and working on or under a vehicles whilst in a raised position.

This norm is applicable also for lifts intended for parking purposes if it is forecasted the possibility for the user to stay under the raised vehicle.



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NEW
EN1493:2010

It will still be assumed that only trained (authorized) persons operate the vehicle lifts and that the working area is sufficiently lit, but is given the possibility to run the lift even if persons are standing under the vehicle.

The consequences from a safety point of view behind such possibility are very important.



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NEW

EN1493:2010

Additional requirements for lifts where is permitted to stay under the load while it is raised/lowered:

- Operator must have a full visual control of the area under the vehicle
- If a remote control can be used in a hazardous area, then a release switch outside such area must be provided
- Max lifting/lowering speed of 5mm/sec (300mm/min, standard limit speed is 150mm/sec)
- Max vertical fall in the event of a load bearing device failure is 20mm (standard is 100mm).



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NEW
EN1493:2010

The new norm has a different approach in the prevention of Crushing Hazards, while completing the Risk Analysis and the Residual Hazards should be evaluated following a different procedure.

Safety locks and synchronization devices will need to be redesigned on the vast majority of the lifts currently on the market.



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NEW
EN1493:2010

§5.7.5.6 says that if a mechanical synchronization device is used to control the height of the lifting elements, this device, including the mechanical elements, shall be able to withstand the worst load

difference that can or will be possible between the lifting elements including a failure of a lifting elements, hydraulic failure...

This requirement alone will require major reengineering on 75÷80% of the hydraulic lifts currently on the market.



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NEW
EN1493:2010

In the old norm there was no requirements stating the minimum design load for the synchronization cables used in the biggest part of the hydraulic two post lifts.

In this moment cables are usually dimensioned referring to a maximum load of 25% of the nominal lifting capacity.

Synchronization cables (and their pulleys) will have to be designed to withstand a load at least twice that much.

Synchronization cables (and their pulleys) will have to be so big that their use will be basically impossible.



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NEW
EN1493:2010

The new §5.7.5.6 requirement also affects platform lifts where a mechanical device (e.g. torsion bar) is used.

In this moment also torsion bars are usually dimensioned referring to a maximum load of 25% of the nominal lifting capacity.

Torsion bars should now be designed to withstand a load at least twice that much.

Torsion bars will have to be so big that their use will be basically impossible.



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TPL407 SLS407 SLA309

UNIQUE FEATURES

When JIG started designing the new line of product, focused on finding an alternative solution to the old and “unsafe” cable synchronization. JIG is the first manufacturer to use hydraulic synchronization on all its products.

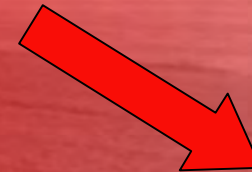
MHS²



TPL407
Hydraulic
2 post



SLA 309
Hydraulic
platform



SLS407
Hydraulic
Low raise
Double scissor



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NEW
EN1493:2010

The new also changes heavily the loading conditions to be considered.

Talking about chassis supporting vehicle lifts, in the old norm we had two alternatives:

- Lifts with a nominal capacity of up to 3000 kg
- Lifts with a nominal capacity of above 3000 kg



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NEW
EN1493:2010

In both cases, always considering the EN1493:1998+A1 norm, the load had to be distributed on the four corners of a rectangle with dimensions 1700mm (L) x 1200mm (W).

Unbalancing (front/rear) factor for lifts with a nominal capacity ≤ 3000 kg was 2:3.

Unbalancing (front/rear) factor for lifts with a nominal capacity > 3000 kg was 1:2.



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NEW
EN1493:2010

In the new EN1493:2010 norm the load classes changed:

- Lifts with a nominal capacity of up to 3500 kg
- Lifts with a nominal capacity of above 3500 kg



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NEW
EN1493:2010

Unbalancing (front/rear) factor for lifts with a nominal capacity ≤ 3500 kg is 2:3.

Unbalancing (front/rear) factor for lifts with a nominal capacity > 3500 kg is 1:3.

This alone shifts almost 15% more of the load on the heavier side with obvious consequences on the structural load acting on the lift.



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NEW
EN1493:2010

In lifts with a nominal capacity ≤ 3500 kg the load has to be distributed on the four corners of a rectangle with dimensions 1400mm (L) x 1000/1700mm (W).

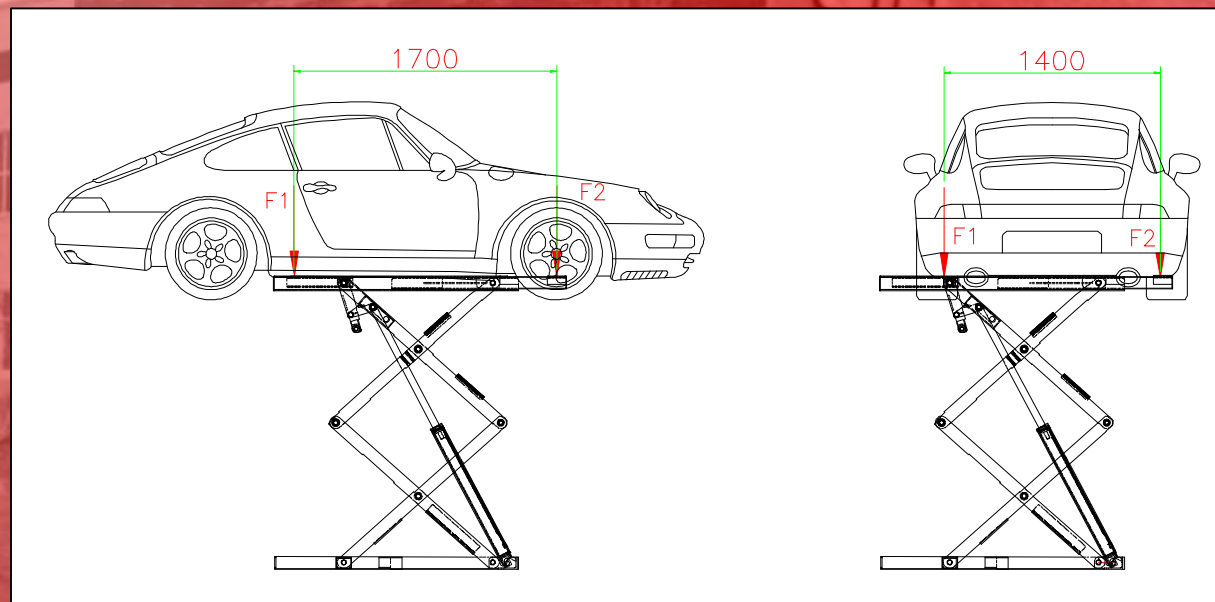
This shifts an additional ~20% more of the load on the heavier side with obvious consequences on the structural load acting on the lift.



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NEW
EN1493:2010



EN 1493:1998+A1



EN1493:2010

>20% unbalance effect



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NEW
EN1493:2010

In lifts with a nominal capacity >3500 kg the load has to be distributed on the four corners of a rectangle with dimensions 1800mm (L) x 1000/1700mm (W).

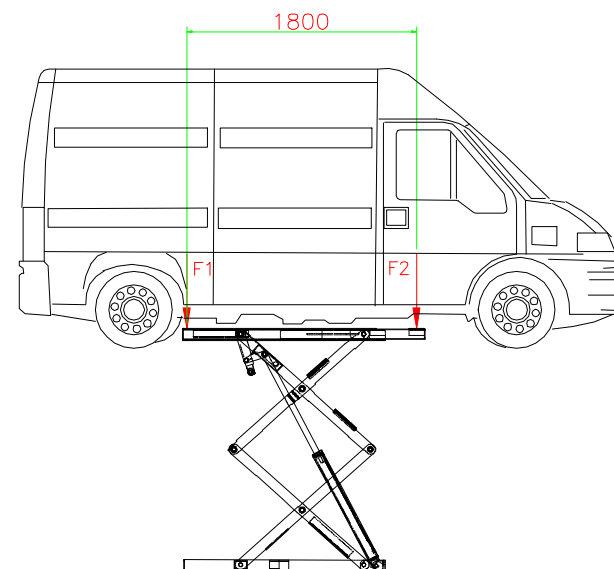
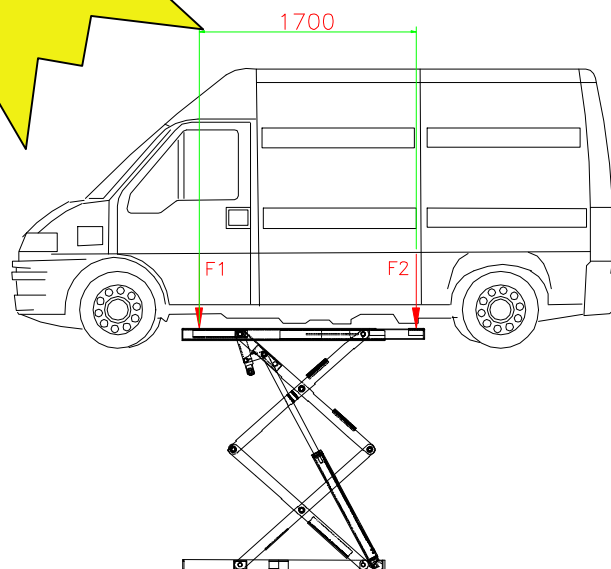
This shifts an additional ~8% more of the load on the heavier side with obvious consequences on the structural load acting on the lift.



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NEW
EN1493:2010



EN 1493:1998+A1



EN1493:2010

>8% unbalance effect



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NEW
EN1493:2010

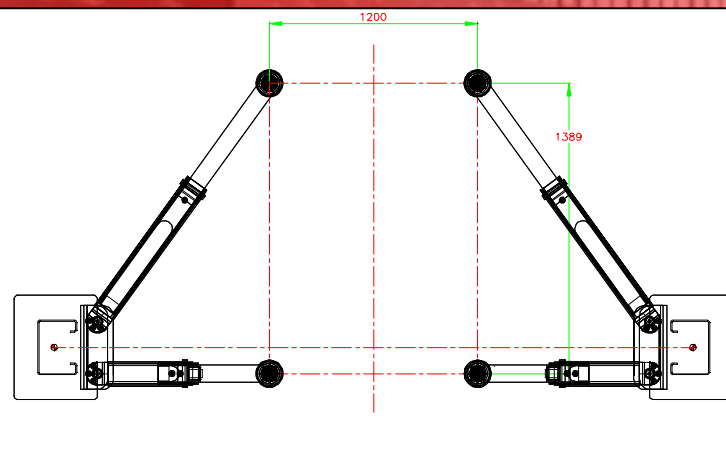
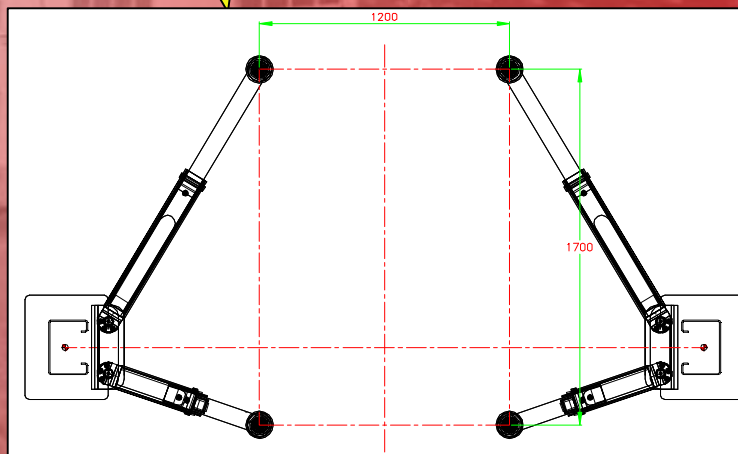
In lifts with carrying arms (e.g. two post lifts) the load has to be distributed on the four corners of a rectangle 1000mm wide, with the long arms completely extended and with the short arms in the position that gives the worst possible load.



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NEW
EN1493:2010



EN 1493:1998+A1



EN1493:2010

?% unbalance effect

Difficult to give a precise answer, but load increase on structure and on floor is considerable



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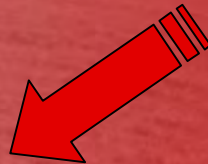


NEW
EN1493:2010

The new load distribution together with the new unbalancing factor, will make virtually impossible for most of the existing two post lifts (especially with a nominal capacity >3500 kg) to pass the CE test under the new regulation without undergoing major redesigning.



Considerably
stronger arms



Considerably stronger
lift's structure (post)



Increased base plate
dimensions and/or stronger
anchors



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NEW
EN1493:2010

§5 refers to the new procedures to follow to evaluate the safety category of a Control device.

The reference norms changed, now the control devices have to meet the conditions of performance level C of EN ISO 13849-1:2006, which replaced Norm EN954-1.

In the shift from old to new standards group, main news are the probabilistic approach. In order to comply with new standards, to all sector operators will be required a higher skill and training level. Now a frequent and difficult to avoid slight accident risk it is considered equal to (as severe as) an infrequent and avoidable permanent accident risk

