

**niftylift**

**HR21**  
**HYBRID**

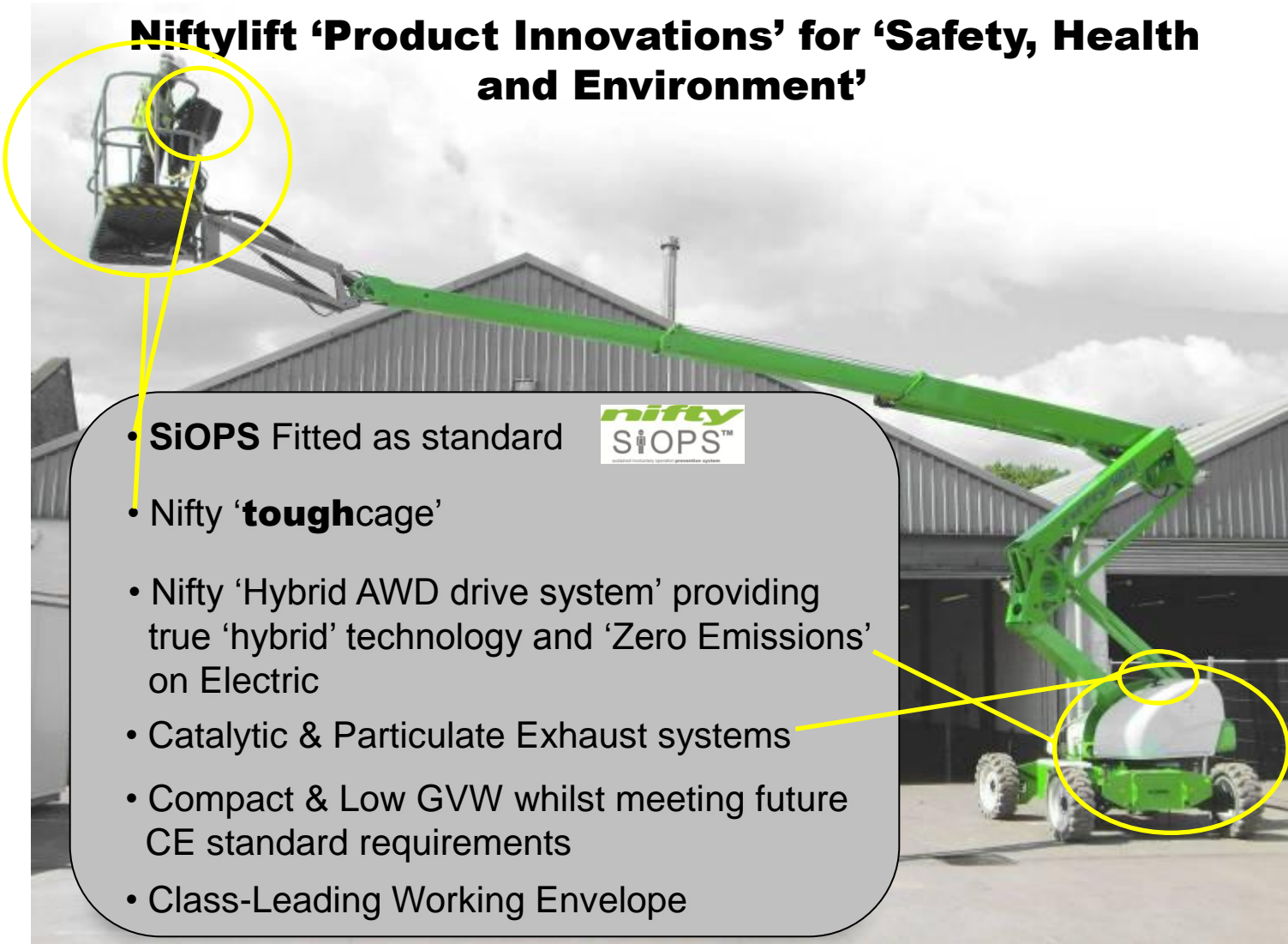


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## Niftylift 'Product Innovations' for 'Safety, Health and Environment'



- **SiOPS** Fitted as standard
- Nifty '**tough**cage'
- Nifty 'Hybrid AWD drive system' providing true 'hybrid' technology and 'Zero Emissions' on Electric
- Catalytic & Particulate Exhaust systems
- Compact & Low GVW whilst meeting future CE standard requirements
- Class-Leading Working Envelope



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# Safety



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# Existing Safety Systems



## Introduction of composite console (2006 on)

### Added Features:

- Increased shrouding around joystick. Added protection from elements
- Internal hand grips for operator/ passenger
- Tactile handrail manufactured from tough, UV resistance material
- Improved labelling, all moved to central location
- Hose burst protection



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# Problem

## ***‘Sustained involuntary operation of controls’ Leading to operator entrapment’***

- MEWP Operator crushing incidents on the up!
- Pressure from HSE/Major contractors to fit safety systems, remove footswitches and fit unsafe control shrouds!
- Major call on manufacturers to resolve the issue.
- Future standards will require guarding against ‘Sustained involuntary operation of controls’!
- Niftylift are the only manufacturer to take this issue seriously!



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# Analysis Summary – Key Risks

- Greater use of MEWPs in high risk environments and where complex and confined overhead obstacles require negotiation.
- Close proximity to working environment reduces reaction time of the operator.
- Not a natural reaction for operator to lift foot from footswitch if trapped – machine continues to operate!
- Adequate safety systems exist, however it is impossible to eliminate all risk and we need to reduce the consequence of a badly made decision!

**Nifty's Sustained Involuntary Operation Prevention System (SiOPS)  
gives the operator a 'SECOND CHANCE'**



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# S i O P S <sup>TM</sup>

sustained involuntary operation **prevention system**



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**SiOPS™**

sustained involuntary operation **prevention system**

- The load sensing console, cuts-off drive and boom functions if overloaded by operator contact.
- System is fully enclosed within control panel – Covert to the operator. Does not encourage risk taking and is less susceptible to misuse.
- When triggered it cuts Green Button & Footswitch power stopping all machine movement.
- Safe override of controls possible from cage, allowing operator to reverse controls and release themselves.
- System & control logic fully TUV certified.
- Reliable spring actuation - gives compliance on contact.
- Optimal design – mitigates nuisance tripping.



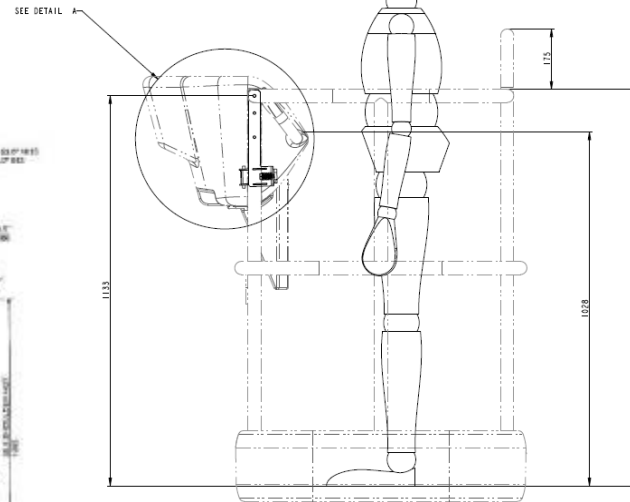
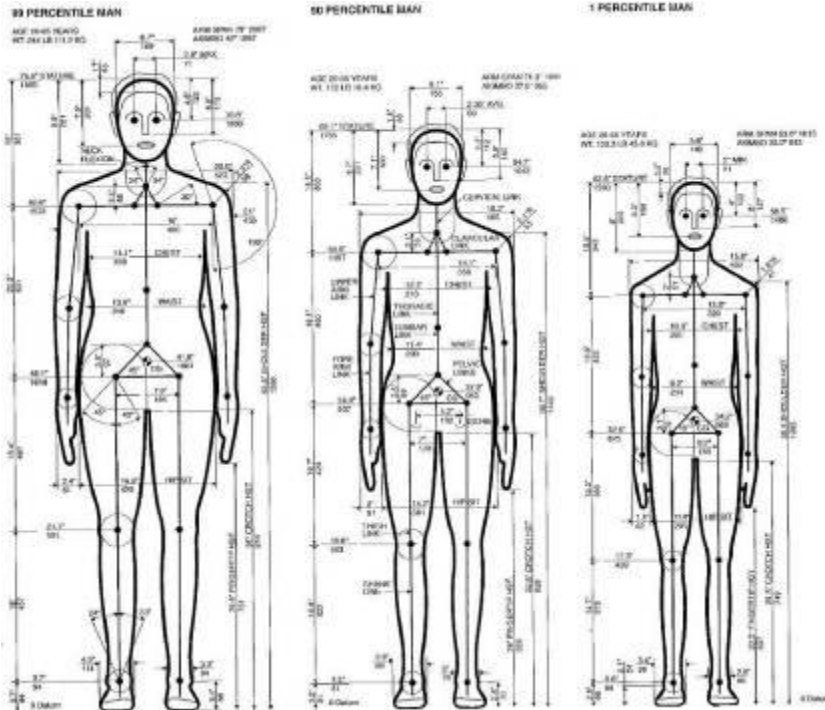
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# Ergonomic and Anthropometric Data

- Optimum position for pivot, handrail & device
- Optimum spring rate
- Cycle testing/ test rig



- Low spring rate (0.25kg/mm) – Always triggers when required
- High pre-load (12.5kg/ 50mm) – Mitigates nuisance tripping



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# Environment



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# Nifty 'toughcage'



- Patented design
- TUV assessed
- Easy to assemble
- No rust and no painting
- Robust impact resistant design
- Anti-slip floor
- 1800mm x 850mm
- High grade 38mm steel tubing
- Lighter
- Recyclable
- Modular, replaceable top tubing



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# Nifty 'toughcage'



- Load Cell cage overload system as standard







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# HYBRID

True 'Hybrid' Intelligent power plant –

## Benefits

- 'ZERO' emissions on Electric
- Lower Engine Emissions – Tier IV compliant engines 
- Low Fuel Consumption  3.6ltr/day
- Lower Noise Output (< 80 dBA) 
- 24 hr operation – Diesel By Day (Regen)  
Silent Battery By Night 
- Bi – Energy power choice – Diesel or DC



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# Battery Re-gen technology

## High Current Battery Recharge on Diesel Function

- DC charge from Hybrid power plant
- Up to 60 amps available at 'tick-over'  
(2 x standard battery charger)
- Tests – Full Charge 4 hours on 'tick-over'  
1.3 litre fuel per hour charge
- 24 hr operation – Diesel By Day (Regen)  
Silent Battery By Night



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# Catalytic Flow Through Soot Filter

**Exhaust filter as standard – The Filter Converts  $\leq 90\%$  Carbon Monoxide (CO) into Carbon Dioxide (CO<sub>2</sub>) which is then converted into Oxygen (O<sub>2</sub>) by green plants.**



**The Filter converts  $\leq 80\%$  Hydrocarbons (HC) into Carbon Dioxide (CO<sub>2</sub>) & Water (H<sub>2</sub>O).**

**The Filter traps most Ultrafine Particulates (Nanoparticles) and 20% - 30% of PM<sub>10</sub>**

**Reducing the above toxic emissions greatly supports carbon footprint reduction, a cleaner working environment, and a safer environment for operators and site employees!**



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# Compact - Class Leading Specification



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# ***Compact – Reduced Transport Cost***



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# Summary

- Niftylift are committed to improving 'Operator Safety' and helping the industry reduce 'Carbon Emissions'.
- Operator entrapment is an important issue in the powered access industry, SiOPS will reduce the consequence of poor project planning and machine selection.
- Nifty's 'Hybrid' technology provides a clean, safe, and cost effective solution to working at height in any environment.

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***'the green choice'***



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