



## Company Profile Oct 2015

*E.M.S. Rotorua , New Zealand*



*Owner & Managing Director ; Chris Hancock*





- *E.M.S. ( Electrical & Machinery Services Ltd ) was founded in 1995 by Managing Director ; Chris Hancock. Chris having a vast experience in Cable Logging systems and a strong back ground in Electric over Hydraulic control systems.*
- *Located in Rotorua, New Zealand and employs a total of 32 employees. E.M.S has a drawing & design office and have a team who have a long and respected history in the New Zealand forest industry.*
- *Well known & respected for the introduction of new and innovative ideas in both forestry guarding on excavator based products and cable logging systems including the EMS Harvestline and now the EMS Tractionline winch assist system.*

Forestry Cabins



E.M.S Forestry Guarding



**H**ARVESTLINE



**TR**ACTIONLINE





### ***Some History on Electrical & machinery Services***

- Focus on the development, design and manufacture of cable systems for the forest industry. The design team utilizes the Inventor 3D design program with F.E.A capability for stress analyses of the products they manufacture.
- Controls all facets of manufacturing with their own large plasma cutting bed, 400 metric tonne brake press for folding and a team of qualified fabricators, technicians and welders to assemble the products.
- Designs and developed their own electronic control systems and software for the various products and employ two full time developers in this department.
- There are now more than 20 Harvestline cable logging units installed and working on various brands of hydraulic excavators 15 Tractionline winch assist machines now working in various forest plantations.
- Demand is exceeding all expectations due to the reliability of a twin rope system, the 5 : 1 safety factor and the background design engineering shown in these products.

# TRACTIONLINE





# FEATURES

- ✓ DUAL REAL-TIME DISPLAYS
- ✓ TWO INDIVIDUAL MACHINES
  - ✓ TWINLINE CABLE ASSIST
  - ✓ LOAD RATED COMPONENTS
- ✓ SAFE SHIFTING AND DISCONNECTING PROCESSES
  - ✓ SWIVELLING LOWER BLOCKS
  - ✓ ACCURATE ROPE SPOOLING
  - ✓ DUAL SHACKLE ATTACHMENT
    - ✓ MACHINE SUSTAINABILITY
- ✓ BREAK-AWAY (MOVEMENT) SWITCH

## DUAL REAL-TIME INTERCHANGEABLE DISPLAYS

- ✓ Quick 5 minute interchange for multi machine applications
- ✓ Real-time monitoring of:
  - Rope tension
  - Rope remaining
  - Winch machine movement
  - Engine oil pressure
  - Engine water temperature
  - Engine hydraulic level
  - System status and faults



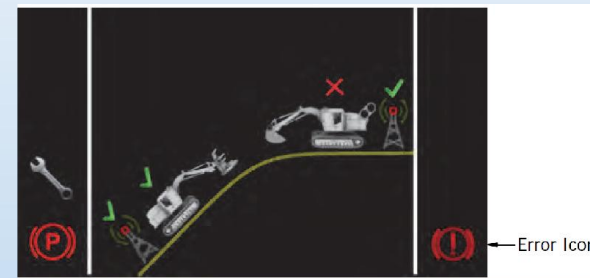
# DUAL REAL-TIME INTERCHANGEABLE DISPLAYS

## ✓ Real-time monitoring

Anchor Mach Status		↑
Tether Mach Status		↑
Tether Wireless Speed	106 %	↓
Lever CanBus Speed	100 %	↓
Power Supply	24.0 v	

Upper Inhaul	0 %	↑
Upper Outhaul	40 %	↑
Lower Inhaul	0 %	↓
Lower Outhaul	40 %	↓
Upper In Press Comp	0 %	
Upper Out Press Comp	44 %	
Lower In Press Comp	0 %	
Lower Out Press Comp	44 %	

mA



The rope tension gauge displays the current line pull value on an operator defined scale, from min and max tension settings reresented by a 1-5 sweep.

"(X)m Remaining" displays the current rope capacity on the drum with the least rope remaining.

The winch icon displays the real time tension load of individual ropes, and the arrows indicate the direction of travel. Showing the winch in either pay-out or in-haul functions.

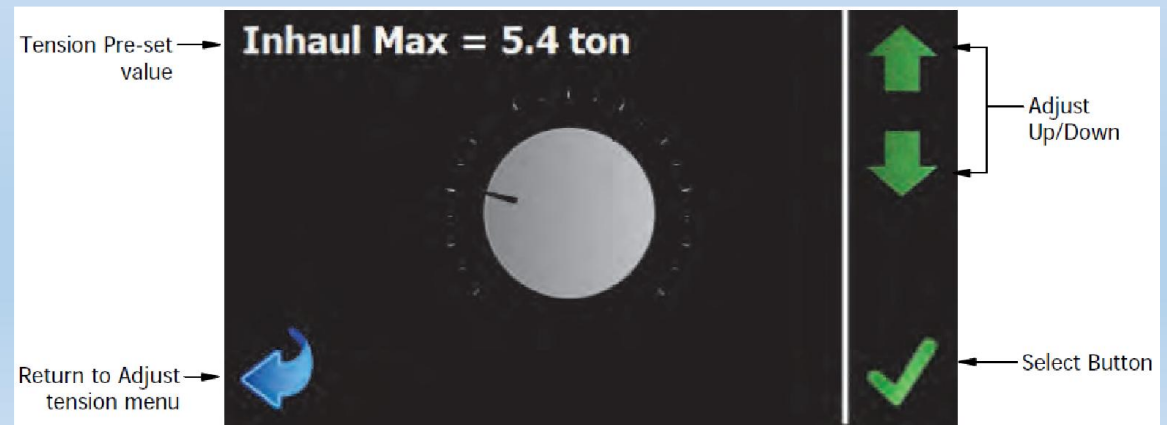
## DUAL REAL-TIME INTERCHANGEABLE DISPLAYS

- ✓ Real time control:
  - Brake
  - Inhaul & outhaul speed
  - Tension adjustment
    - Engine stop



# DUAL REAL-TIME INTERCHANGEABLE DISPLAYS

✓ Real-time control



## INDEPENDENT WINCHING MACHINE

Capable of interfacing with multiple machines for multiple applications i.e. felling, shovelling.



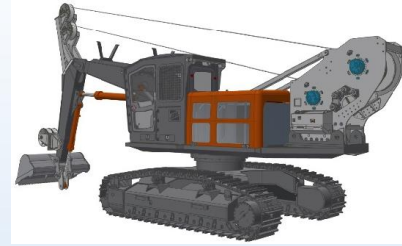
# TWINLINE CABLE ASSIST

**2 INDEPENDENT DRUMS**

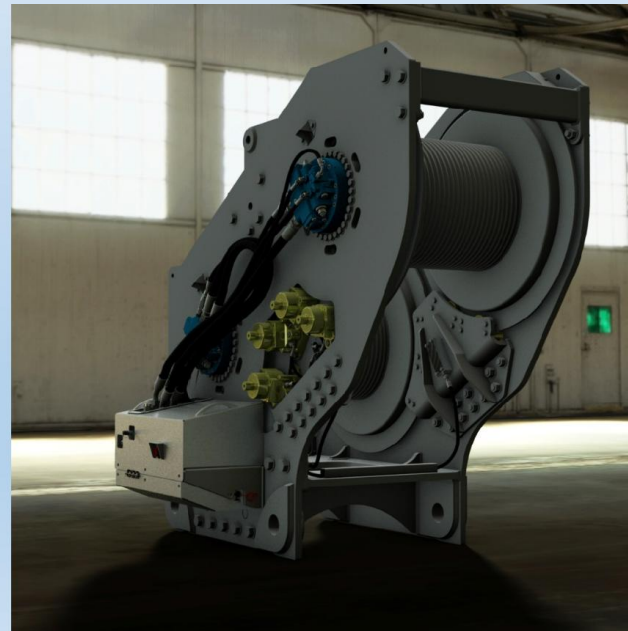
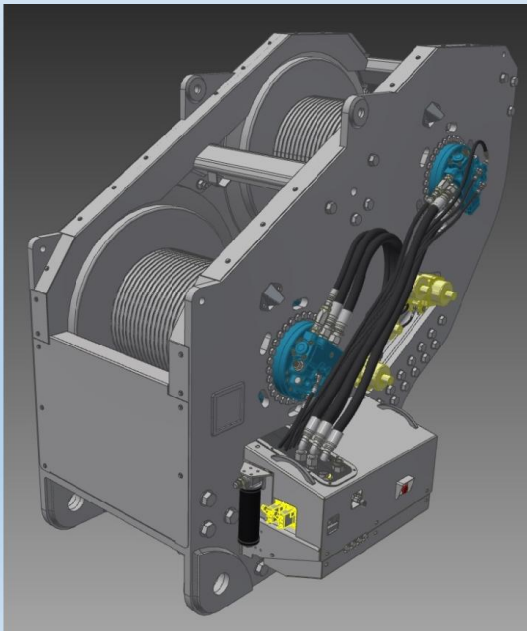




## TWINLINE CABLE ASSIST



- Twin independent winches sharing the load equally with individual connection points for added safety redundancy.



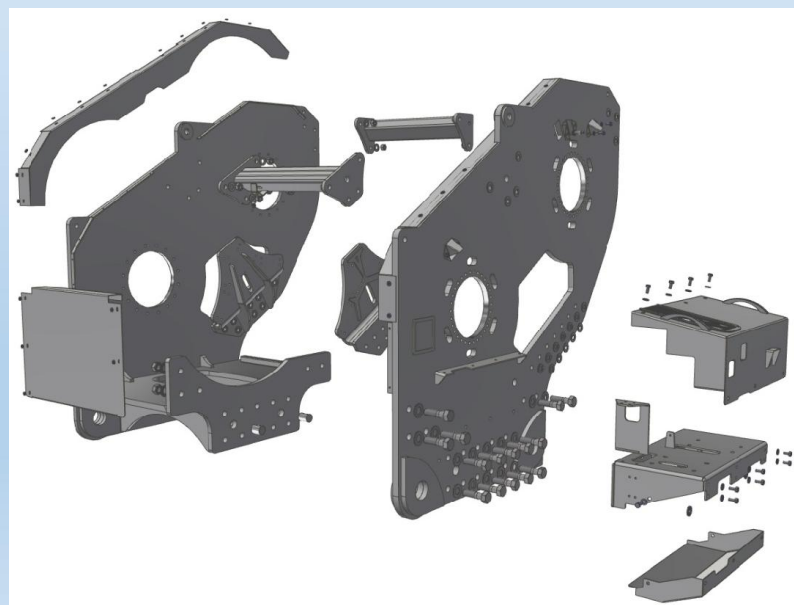


# Multi line safety while moving up slope

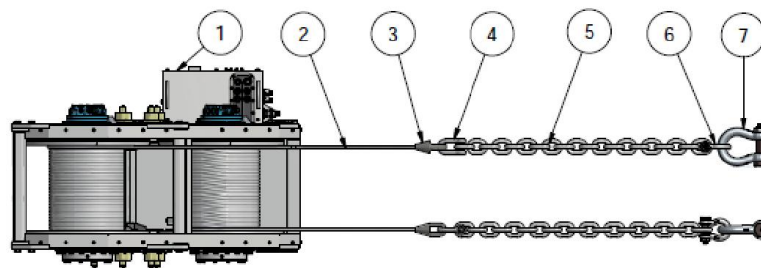


## TWINLINE CABLE ASSIST

- The unit complies to AS1418-1 materials handling winching standard
- 5:1 safety factor for all components within the system



### 4.1 Rigging Schematic



PARTS LIST			
ITEM	QTY	PART NUMBER	DESCRIPTION
1	1	TRACTIONLINE-WINCH	TractionLine Winch Assembly
2	2	W22025KPS	7/8" 6x25 Power Swaged rope 2x 350m lengths
3	2	SKGCS022	Closed Spelter Socket 20-22mm (line ender)
4	2	SBD280FPR	Shackle Flush Pin 110 16t FB
5	2	G8CH26S	Chain 26mm GRADE 80 SHORT LINK (2x 3-6m lengths)
6	2	SGB380HLS	Shackle Galv Bow Safety 13.5t
7	2	SGB650HLS	Shackle Galv Bow Safety 42.5t

NOTE; The components supplied/detailed in the TractionLine rigging schematic, have been selected specifically for the traction assist operation. All components have certified safe working load parameters designated to comply with the *Approved Code of Practice for Safety and Health in Forestry Operations*, in accordance with section 6.4 "WINCH-ASSISTED HARVESTING ON STEEP SLOPES". Replacing rigging components with un-certified parts or failure to maintain components as detailed in this manual, could compromise the safety of the system, Voiding warranty and possibly resulting in damage, injury or death.

NOTE; The following testing and compliance certificates are indicative examples only as manufacturing batch numbers will vary. Winch specific versions are available on request, for rigging components as delivered. If a specific certificate is required contact Electrical & Machinery services with the winch serial number and the component stamping code.



## SAFE SHIFTING AND DISCONNECTING PROCESS

- ✓ Chains retrievable through the wide sheaves which allows the tethered machine to be assisted to the top of the hill so that shifting and disconnecting can be done safely.



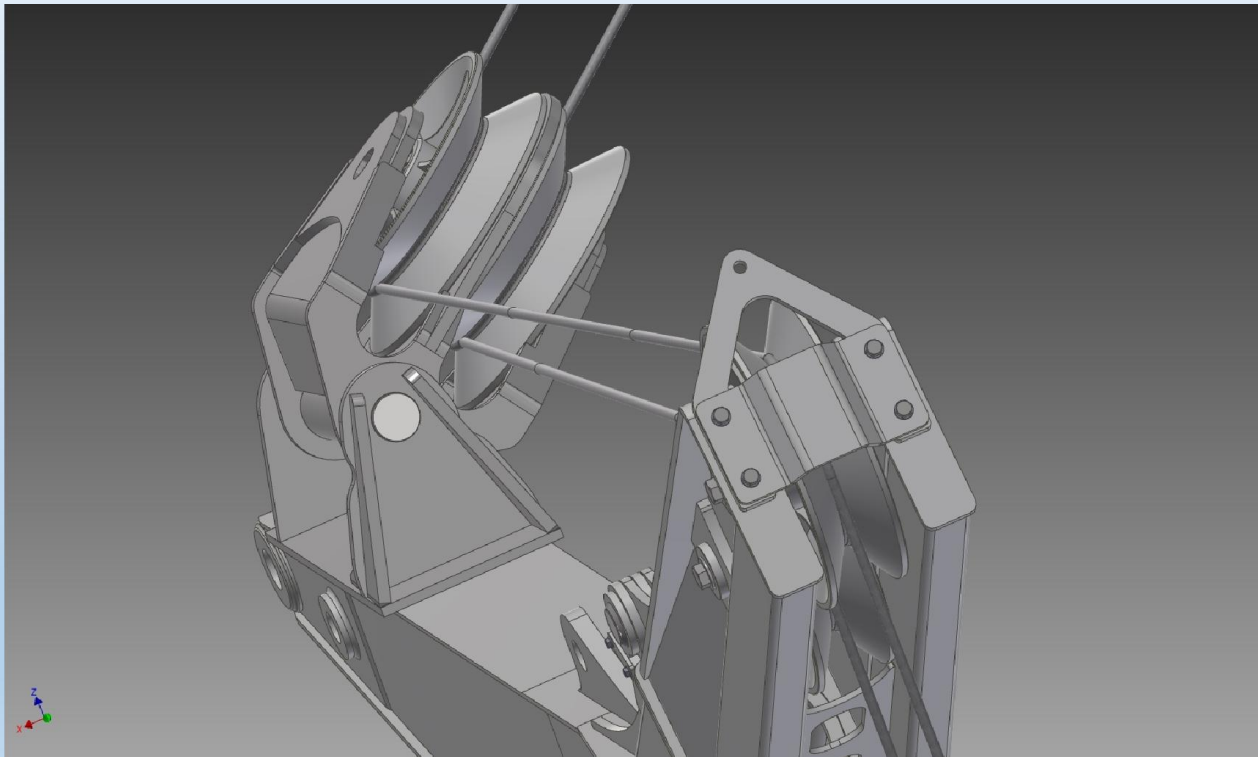


## SWIVELLING LOWER BLOCKS

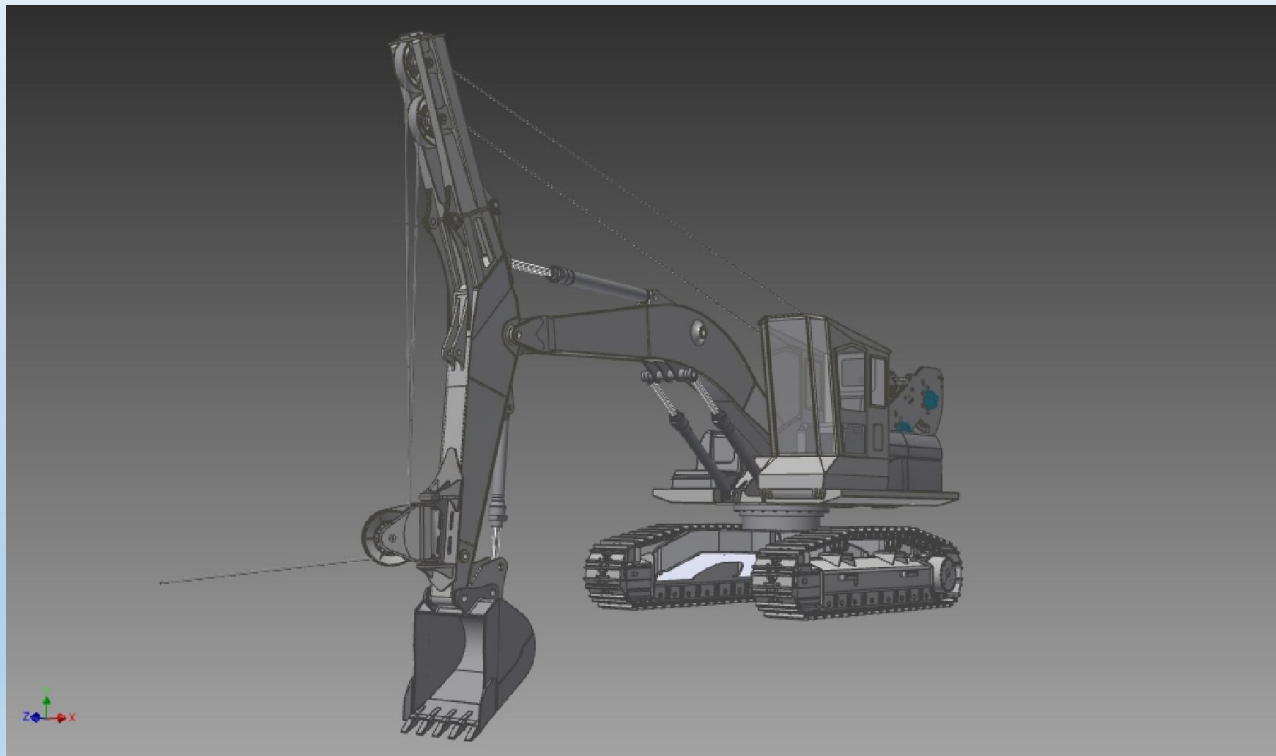
- ✓ Swivelling lower blocks which when required allow the winch machine to sit on tight roads and landings.



# Single pin dual sheave pivot

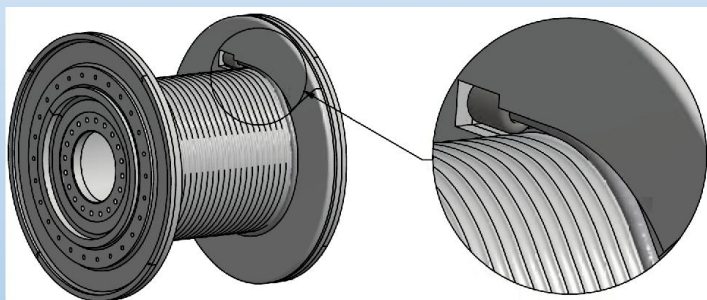


# Bucket reversed for added ground engagement



## ACCURATE ROPE SPOOLING

- ✓ Grooved drums for accurate rope spooling.





## DUAL SHACKLE ATTACHMENT

- ✓ Dual shackle attachment to the tethered machine.



# HITCH ASSEMBLY





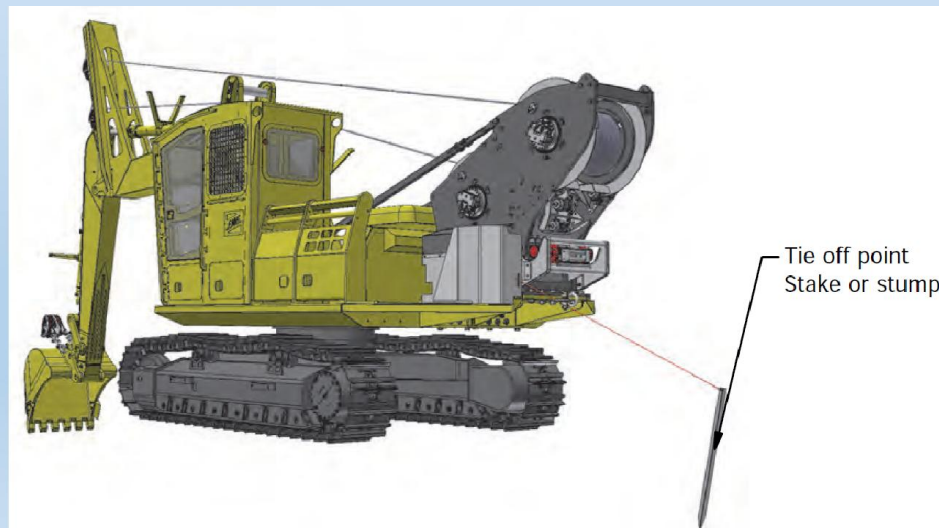
## MACHINE SUSTAINABILITY

- ✓ Any new or used excavator of size 24 ton and greater, other attachments can be retained if the machine is not required for consistent use as a winch assist unit.



## BREAK-AWAY (MOVEMENT) SWITCH

- The Break-away system functions by pulling and triggering an on board switch if the winch machine creeps forward while in operation.
- This is achieved by anchoring one end of the break-away line to a stump or stake firmly placed in the ground behind the winch machine.
- In the event the break-away switch is triggered, an alarm will sound in the SSM machine and park brakes will be dynamically applied.









# THANK YOU

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