

Elbroc XT 150

**ELBROC XT 150
EQUIPMENT / PART BASED RISK ASSESSMENT**

Component © Function (F)	Failure	Cause	Consequence	Risk Ranking - No Controls in Place			Manufacturers Controls	Recommended Controls by User	Risk Ranking Manufacturer / User Controls / in Place		
				S	P	RR			S	P	RR
© – NCM Jackpot 140 (F) – To pre- stress prop to +200kN	Leaking – pressure loss	1.Poor welding 2.Plates to thin 3.Poor quality steel	Props can be blasted- or scraped-out, could cause a fall of ground, resulting in a serious injury or fatal	2	3	41	1.Pre-set welding machines and check by foreman. (IQCP) 2.Trained and experienced welders employed. 3.Pre-set jigs used to line- up products. 4.Quality check all plates and steel. (QCP) 5.Plates stored correctly. 6.Supplier of steel to supply chemical analysis certificate. (ISCOR 300WA)	1.Inspect NCM Jackpot before installation. 2.Monitor Jackpot visually during installation. 3.Re-place blasted-out or scraped-out elongates.	5	4	19
© – Jackpot valve (F) – To act as coupling between pump and Jackpot	Jackpot cannot be pre- stressed and / or leaking – pressure loss	1.Poorly fitted valve 2.Dirt preventing coupling 3.Valve damaged during transport	Props can be blasted- or scraped-out, could cause a fall of ground, resulting in a serious injury or fatal	2	3	41	1.Check valve before assembly. (IQCP) 2.All NCM Jackpots individually tested. (IQCP) 3.Plastic cap fitted to protect valve.	1.Inspect / clean valve before installation. 2.Monitor energizer visually during installation. 3.Re-place blasted-out or scraped-out elongates.	5	5	14

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Component © Function (F)	Failure	Cause	Consequence	S	P	RR			S	P	RR
© – Outer Tube (F) – To host the ring and yielding mechanism	1. Tube shear resulting in a loss in load 2. Ring and yielding mechanism non- functional	1. Poor welding 2. Poor quality steel 3. Incorrect tube diameter	Props can be blasted- or scraped-out, could cause a fall of ground, resulting in a serious injury or fatal	2	3	41	1. Pre-set robot welding machines and check by foreman. (IQCP SABS ISO 9002/2000) 2. Quality check all steel tubes. (IQCP SABS ISO 9002/2000) 3. Supplier of steel to supply chemical and mechanical analysis certificate. (ISCOR BS 1449 HR) 4. Welding checked after each welding stage (ICQP SABS ISO 9002/2000)	1. Inspect all outer tubes before installation. 2. Monitor tubes visually during installation. 3. Re-place blasted-out or scraped-out or sheared props.	5	4	19
© – Inner Tube (F) – To carry load and allow for yielding	Prop could fail resulting in a loss in load	1. Poor welding 2. Poor quality steel 3. Incorrect tube diameter	Props can be blasted-, scraped-out, could cause a fall of ground, resulting in a serious injury or fatal	2	3	41	1. Pre-set robot welding machines and check by foreman. (IQCP SABS ISO 9002/2000) 2. Quality check all steel tubes. (IQCP SABS ISO 9002/2000) 3. Supplier of steel to supply chemical and mechanical analysis certificate. (ISCOR SAE / AISI 1008)	1. Evaluate performance checks by CSIR. 2. Conduct random checks on diameter of tubes. 3. Replace blasted-, scraped- or sheared props. 4. Inspect all outer tubes before installation. 5. Monitor tubes visually during installation.	6	5	9

							4. Welding checked after each welding stage. (IQCP SABS ISO 9002/2000)			
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**ELBROC XT 150
TASK BASED RISK ASSESSMENT**

				Risk Ranking - No Controls in Place			Manufacturers Controls	Recommended Controls by User	Risk Ranking Manufacturer / User Controls in Place		
Task	Hazard / Functional Failure	Cause of Failure	Failure effect or consequences	S	P	RR			S	P	RR
Making safe and preparing working place for installation.	<p>1. Not installing temporary support as per mine standard.</p> <p>2. Not barring the working place until safe to work in.</p> <p>3. Prop cannot be pre-stressed properly.</p>	<p>1. Non-adherence to mine standards and making safe procedures.</p> <p>2. Footwall not cleaned properly.</p> <p>3. Hangingwall not barred to solid.</p>	<p>Failure to making safe and preparation of working place could lead to fall of ground resulting in a serious injury or fatal.</p> <p>Props can be blasted- or scraped-out, could cause a fall of ground, resulting in a serious injury or fatal.</p>	2	3	41	1. Training of ELBROC trainers in mine's support standards and procedures.	<p>1. Compiling of mine standards and procedures regarding making safe and work place preparation.</p> <p>2. Training of crews in making safe and work place preparation.</p> <p>3. Planned task observations.</p> <p>4. Replace blasted-out or scraped-out elongates.</p>	5	4	19

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				Risk Ranking - No Controls in Place			Manufacturers Controls	Recommended Controls by User	Risk Ranking Manufacturer / User Controls in Place		
Task	Hazard / Functional Failure	Cause of Failure	Failure effect or consequences	S	P	RR			S	P	RR
Loading of material car.	Jackpot cannot be pre- stressed properly.	Valve damaged.	Props can be blasted- or scraped-out, could cause a fall of ground, resulting in a serious injury or fatal	2	3	41	Plastic caps fitted to protect valve.	1. Loading procedure to be compiled. 2. Check for protective plastic cap. 3. Replace blasted-out or scraped-out elongates.	5	5	14
Storing of units.	Props cannot be pre- stressed properly.	1.Valve damaged 2.Damaged by machinery / rolling stock.	Props can be blasted- or scraped-out, could cause a fall of ground, resulting in a serious injury or fatal	2	3	41	1. Plastic caps fitted to protect valve.	1. Check for protective plastic cap. 2. Proper storage of units in demarcated areas. 3. Replace blasted-out or scraped-out elongates.	5	5	14
Manual transport	1. Jackpot cannot be	1.Valve damaged.	Props can be blasted- or scraped-out, could cause a	2	3	41	1.Plastic caps fitted to protect valve.	1.Check that protective plastic cap is fitted before	5	5	14

	pre-stressed.		fall of ground, resulting in a serious injury or fatal									
	2. Props fall over.	2. Props fall on worker through gravity.	Manual transport can cause worker to fall causing injuries.	2	5	32	1. Carrying handles fitted to assist in transporting	transporting. 2. Replace blasted and / or scraped-out elongates.	4	6	15	
								1. Check that carrying handles is fitted and apply. 2. Wear protective clothing at all times as per mines standards and procedures.				

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Task	Hazard / Functional Failure	Cause of Failure	Failure effect or consequences	S	P	RR			S	P	RR
Sizing and extension of the unit.	Prop cannot be pre- stressed or installed correctly.	1.Incorrect sizing. 2.Incorrect extension. 3.Correct unit lengths not available.	If the prop is not extended to its full length and / or skew the lift of the Jackpot (80mm) will be insufficient to pre-stress the prop. Oversize props cannot be installed perpendicular to the strata that can cause props to be blasted- or scraped-out, could cause a fall of ground, resulting in a serious injury or fatal.	2	3	41	1.Training of ELBROC trainers in mine's support standards and procedures. 2. Training of ELBROC trainers in correct methods of sizing and sawing.	1.Compiling of mine standards and procedures regarding sizing and extension of props. 2. Training of crews. 3. Planned task observations. 4. Replace scraped-out and / or blasted-out props.	5	4	19

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Task	Hazard / Functional Failure	Cause of Failure	Failure effect or consequences	S	P	RR			S	P	RR
Placement, spacing of props and positioning of installer during pre- stressing of unit.	1.Props cannot be pre-stressed, installed at 90° to strata or on correct spacing correctly. 2. Installer not positioned at a safe place during installation.	1.Inadequate training. 2. Incorrect coupling of pressure hoses to valve. 3. Props not installed on correct spacings. 4. Incorrect positioning of installer whilst pre-stressing prop.	Prop cannot perform as designed if not spaced correctly as per mine support standard, could cause a fall of ground, resulting in a serious injury or fatal. A fall of ground may occur during the installation and pre-stressing of the prop resulting in serious injuries or fatal.	2	3	41	1.Training of ELBROC trainers in mine's support standards and procedures. 2. Training of ELBROC trainers in correct methods of positioning whilst pre-stressing.	1.Compiling of mine standards and procedures regarding support spacing and positioning whilst pre- stressing. 2. Training of crews in the mines support standards and procedures regarding pre-stressing. 3. Planned task observations.	5	4	19