

NB

PROCEDURES AND MINING METHODS VARY THOUGHOUT THE MINING INDUSTRY.

THE FOLLOWING LESSON PLAN SERVES AS A GUIDE ONLY

AND M PROPS (PTY) LTD CANNOT BE HELD RESPONSIBLE

FOR THE INCORRECT INTERPRETATION THEREOF.

LESSON PLAN

COURSE TITLE : TEMPORARY SUPPORT PROP	LESSON TITLE : MEDIUM DUTY HYDRO-CAMLOK PROP
REFERENCE :	LAST REVISION DATE : Jan 2013

INSTRUCTIONAL SEQUENCE	SKILLS / KNOWLEDGE / KEY POINTS	FACILITATION METHODOLOGY TECHNIQUES AND AIDES	COURSE REFERENCE
OBJECTIVE	The trainee must show his ability to install and remove a Hydro-Camlok Prop safely and according to mine standard.	Trainer to discuss.	M Props (Pty) Ltd Lesson Plan Standard.
INTRODUCTION	To ensure that people are working in a safe and supported area at all times.	Trainer to discuss.	M Props (Pty) Ltd Lesson Plan Standard.
PURPOSE OF A HYDRO-CAMLOK PROP	To be used as temporary support in the mining operation where permanent support has yet to be installed and where potentially unsafe situations may be recognized. Hydro-Camlok Props can be used as additional support.	Trainer to explain and discuss.	M Props (Pty) Ltd Lesson Plan Standard.
DESCRIPTION	The Hydro-Camlok Prop consists of the following components: <ul style="list-style-type: none"> • head board • outer tube • inner tube • adjusting pin and chain • Hydraulic pre-stressing unit • footplate • corrosion indicator • Camlok spanner 	Trainer to demonstrate a Hydro-Camlok Prop and explain all components.	M Props (Pty) Ltd Lesson Plan Standard.

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PRECAUTIONS BEFORE USE	<ul style="list-style-type: none">• Check Hydraulic pre-stressing unit for damage.• Check and clean nozzle.• Check that pre-stressing pump is available and operational.• Check tubes for damage.• Check that setting pin and chain are intact.• Check head for damage.• Observe extent of deterioration of corrosion indicator and discard Hydro-Camlok Prop if corrosion indicator has disintegrated.• Check Camlok spanner for damage.	Trainer to demonstrate ability to assess the Hydro-Camlok Prop and recognize damage to the Hydro-Camlok Prop.	M Props (Pty) Ltd Lesson Plan Standard.

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TOOLS / ACCESSORIES FOR INSTALLATION OF HYDRO-CAMLOK PROP	<p>Ensure necessary tools are available:</p> <ul style="list-style-type: none"> • Appropriate length pinch bar, with gasket. • Water hose. • 2kg hammer (to flatten footwall). • Spade. • PPE (gloves, hard hat, gum boots, earplugs and goggles). • Ensure sufficient stock of Camlok spanners • Ensure sufficient stocks of Hydro-Camlok Props in store to suit varying conditions. 	Trainer to demonstrate tools and discuss.	M Props (Pty) Ltd Lesson Plan Standard.
PREPARATION OF INSTALLATION SITE FOR HYDRO-CAMLOK PROPS	<ul style="list-style-type: none"> • Water down to allay dust and expose fractures in hangingwall. • Examine hanging wall for faults, dykes, joints or slips, slabbing, loose rocks and any other features that result in a friable and dangerous hangingwall. • Sound the hanging with a pinch bar. • Mark position for installation of Hydro-Camlok Prop. (Competent person only). • Clean footwall to solid at installation position of Hydro-Camlok Prop. • Check condition of hydraulic pump, hoses and fittings. <p>NB: If abnormal conditions dictate installation of a Hydro-Camlok Prop on loose rock, a) the prop could dislodge and b) serious injuries may occur. Under these conditions it is imperative that the Hydro-Camlok Prop be installed on a large flat timber slab and regularly inspected.</p>	Trainer to stress the importance of the NB and to demonstrate and discuss this operation. Trainees to practice under supervision	M Props (Pty) Ltd Lesson Plan Standard.

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INSTALLATION OF HYDRO-CAMLOK PROP	<ul style="list-style-type: none"> • Place Hydro-Camlok Prop below mark indicated on hangingwall. • Attach Camlok spanner to valve and push to close. • Remove Camlok spanner from prop. • Ensure that nozzle faces the direction of remote release. • Rotate head to best support hangingwall fractures. • Position Hydro-Camlok Prop 90° to hangingwall. • Ensure adjusting pin (chain side) is pointing in direction of remote release. <p>NB: Release of Hydro-Camlok Prop may be hampered should above procedure not be adhered to.</p> <p>NB: Ensure down dip side clear of workers when installing Hydro-Camlok Props.</p> <ul style="list-style-type: none"> • Extend tube until head touches the hanging wall. • Insert adjusting pin into appropriate hole. • Ensure that adjusting pin has penetrated through both holes in tube. • Attach the hydraulic pump hose coupling to Hydro-Camlok prop nozzle. • Rotate hose coupling 90° to the left. • Using available hydraulic pump, pressurize Hydro-Camlok prop sufficiently to stand unaided. • <p>NB: Refer to relevant hydraulic pump instruction manual as to the correct procedures that need to be followed pertaining to the pump.</p> <ul style="list-style-type: none"> • From a safe area remotely pre-load prop to 12 mpa. • Remove hydraulic pump hose coupling from installed prop. <p>NB: Use of an assistant is recommended when installing Hydro-Camlok Props.</p>	Trainer to demonstrate and trainees to practice under supervision.	M Props (Pty) Ltd Lesson Plan Standard.

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INSTALLATION OF HYDRO-CAMLOK PROP	<ul style="list-style-type: none"> • Hydro-Camlok Props should be installed according to mine standards (refer to support layouts and any special instructions) • Consult Rock Engineering Department for support layouts and or responsible Mine Official. <p>NB: Additional Hydro-Camlok Props to be installed if area contains geological features.</p>		
INSTALLATION OF HYDRO-CAMLOK PROP	<p>NB: Operator to observe hanging wall during installation procedure.</p> <ul style="list-style-type: none"> • Install required number of Hydro-Camlok Props using the above procedure. <p>NB: Ensure that all adjusting pins (chain side) face in the direction of remote release.</p>	Trainer to demonstrate and trainees to practice under supervision.	M Props (Pty) Ltd Lesson Plan Standard.

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REMOVAL OF HYDRO-CAMLOK PROP	<ul style="list-style-type: none"> • Inspect working area and ensure permanent support is installed to mine standard prior to removing Hydro-Camlok Props. • Remove all persons and materials from working area. • Commence removal of Hydro-Camlok Props in accordance with mine standard. • Attached to Camlok spanner to Hydro-Camlok Prop valve at 45° away from the release position. • Attach Camlok Spanner hook to chain link closest to adjusting pin. Ensure secure attachment of hook. • Operator to move to a safe supported area not less than 3m from prop in a straight line to the prop to be released. • Grip spanner cable handles attached to Camlok spanner and take up slack. Do not wrap sling around hand or arm. This allows operator to discard if abnormal occurrence takes place. • Pull Camlok spanner sling handles in opposing directions, this action will engage spanner into the release position. • Ensure firm footing. • Pull Camlok spanner sling firmly to release Camlok Prop. Camlok Spanner will rotate towards operator. The elasticized hook will now be under tension and as the preload on the prop is removed the adjusting pin will be extracted. • Using the attached Camlok spanner sling, pull prop to a safe supported area. • Remove all Hydro-Camlok props using above procedure. • Store in safe place. 	<p>Trainer to explain and discuss equipment, PPE, tools & accessories.</p> <p>Trainer to demonstrate and trainees to practice under supervision.</p>	M Props (Pty) Ltd Lesson Plan Standard.

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REMOVAL OF HYDRO-CAMLOK PROP	<p>NB: Always observe Hydro-Camlok Prop whilst removing, for signs of danger.</p> <p>NB: If the Hydro-Camlok Prop does not remote release, examine the area for potential hangingwall failure and do not attempt to remove prop or re-enter the area prior to re-accessing and making the area safe. Hydro-Camlok Props may only be remote released from a safe distance.</p> <p>NB: Never enter unsupported areas after removing Hydro-Camlok Props</p>		
REMOVAL OF HYDRO-CAMLOK PROP	<ul style="list-style-type: none"> Ensure use of appropriate length Remote Release handles for removal of long props. (Minimum 3m or in accordance with mine standard). 	<p>Trainer to explain and discuss equipment, PPE, tools & accessories.</p> <p>Trainer to demonstrate and trainees to practice under supervision.</p>	M Props (Pty) Ltd Lesson Plan Standard.

**ACKNOWLEDGEMENT OF RECEIPT FOR THE
MEDIUM DUTY HYDRO-CAMLOK PROP
LESSON PLAN**

(MINE)

(RECEIVED BY)

(DATE)

(SIGNATURE)

ISSUED ON BEHALF OF M PROPS (PTY) LTD

(NAME)

(DATE)

(SIGNATURE)