

Risk Assessment

On

The ATS 2000 Rapid Rail Cutter

& Driller Machine

Compiled By M.J. De Beer

Dynamic New Approach Bracha cc.



ATS 2000 (PTY) LTD

Cutting & Drilling Excellence



ATS RAPID RAIL Maintenance Solutions

The **Patented RAPID RAIL MAINTENANCE MACHINE** is a pneumatically powered rail maintenance machine, that has been specifically developed to make the job of rail sawing and drilling easy. Traditionally this work is done with equipment and tools that produce rough and inaccurate work. This in turn causes derailments and excessive wear on the Rolling Stock wheels and bearings.

Simply position the unit at the point where the cut needs to be made. Clamp the unit onto the rail. Start the saw motor, turning the feed wheel clockwise and cut through the rail. Stop Motor, return the saw by turning the feed wheel in the anti-clockwise back to the open position. Then start the drill motor and turn the feed wheel clockwise on the twin drilling head, which is already correctly positioned on the side of the rail. Drill the holes through, turning the feed wheel clockwise and then turn anti-clockwise back to open position. Unclamp the units' rail clamp; lift the unit off the rail and job is complete in just 5 minutes.

Results - Accuracy and Repeatability Is in the Machine and not the Operator

RS0025
355mm Tungsten Tipped Disc



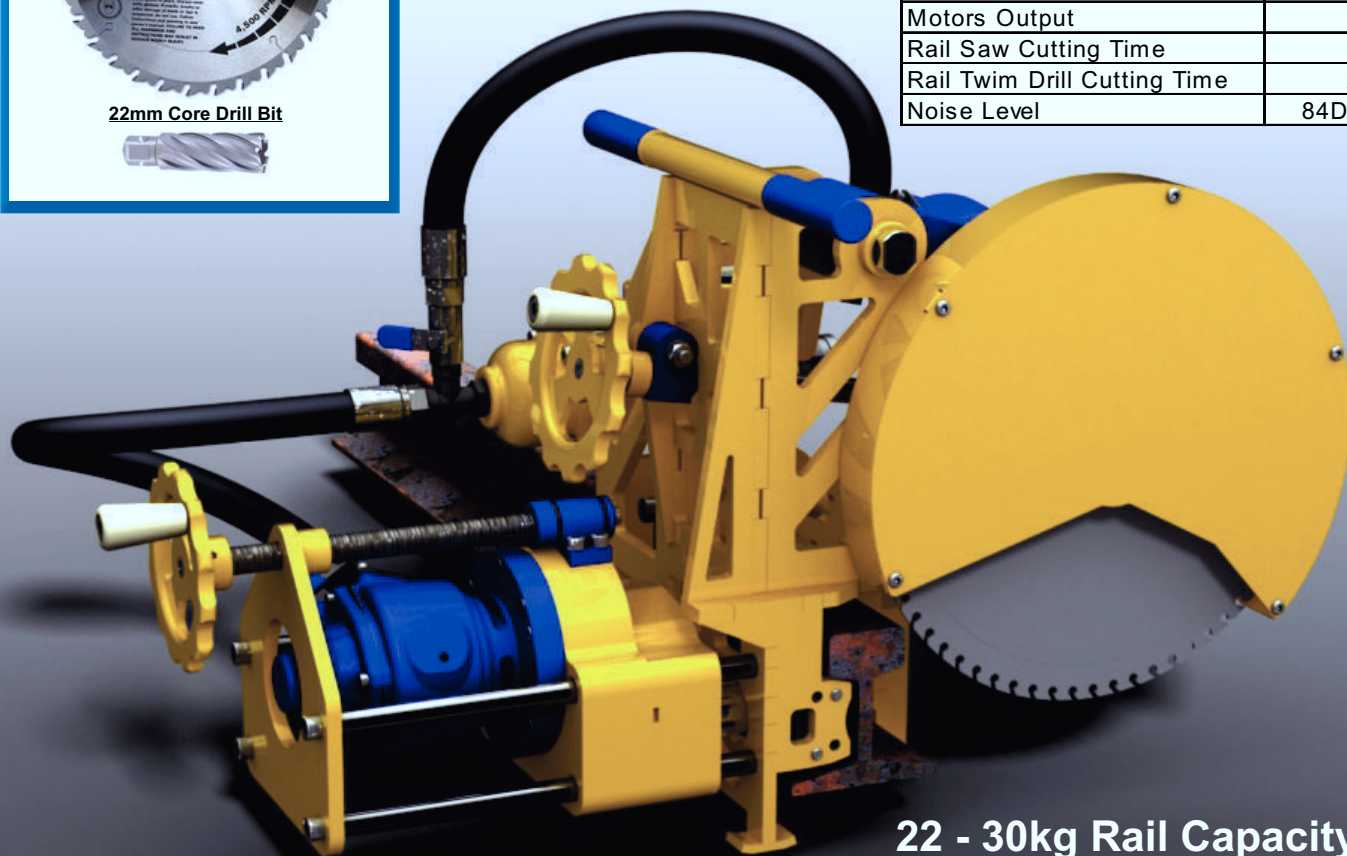
22mm Core Drill Bit



TÜV Rheinland®
CERT
ISO 9001

Specifications

Overall Height	530 mm
Overall Width	460 mm
Overall Length	728 mm
Weight	49 kg
Transport Size (mm)	W- 460 H-530 L-728
Working Pressure	4-7 bar
Air Inlet	1" BSPT
Motors Output	3 Kw
Rail Saw Cutting Time	3 min
Rail Twim Drill Cutting Time	2 min
Noise Level	84DbA @ 1m



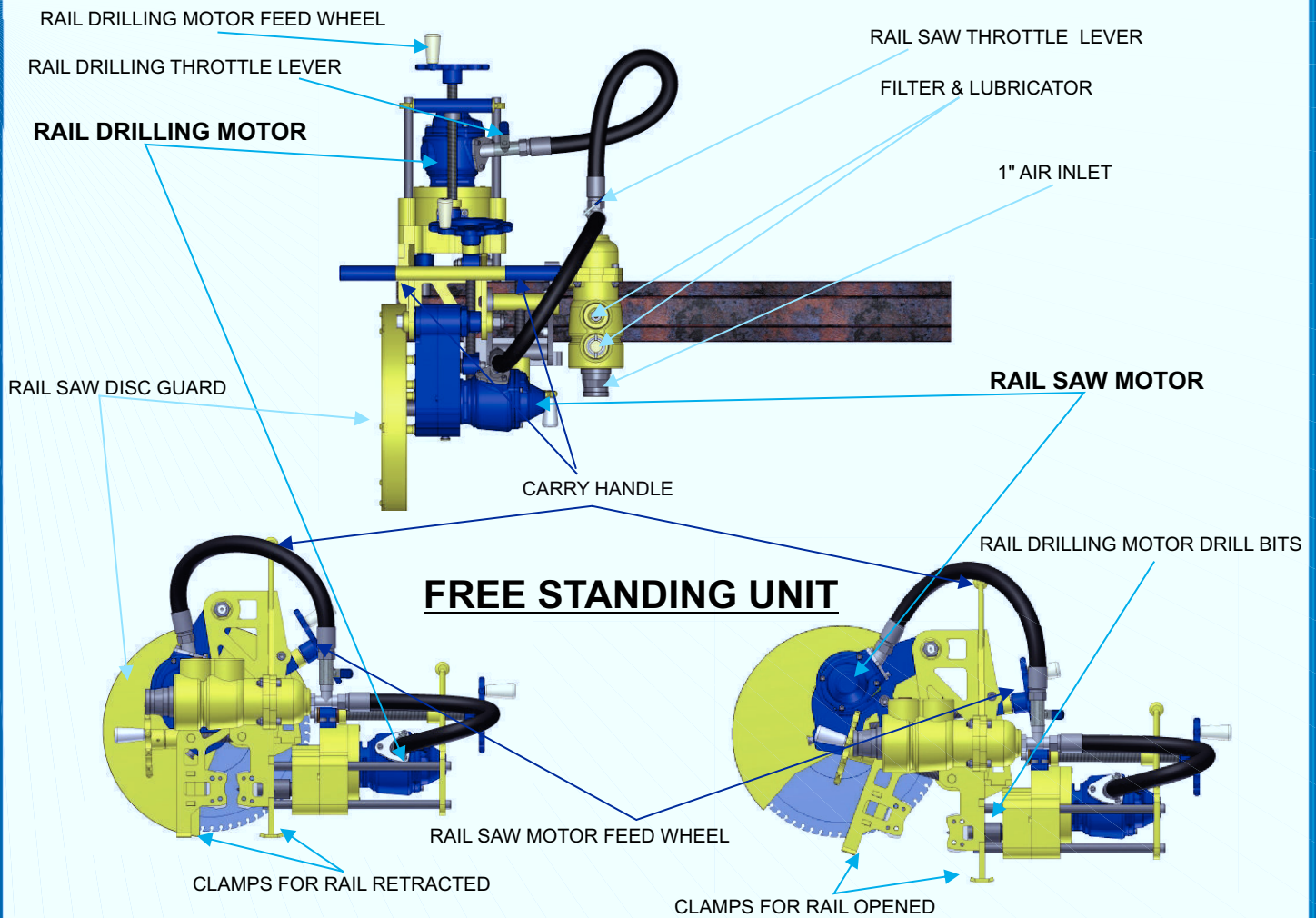
22 - 30kg Rail Capacity

PAT PEND: 2012/00129

Model No.	Description
ATS-RR-MSP	RAPID RAIL MAINTENANCE SOLUTION - PNEUMATIC POWERED (UNIT COMPLETE)

ATS RAPID RAIL Maintenance Solutions

UNIT CLAMPED ONTO AND CUTTING RAIL



Spares & Allied Equipment

OIL500
0.5 Litre
Air line Oil



OIL500-40
40 off 0.5 Litre
Air line Oil
in Box

OIL5000B
5 Litre
Air line Oil



ATS-EU-555-UH



ATS-G4-V230-DCD



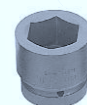
ATS-WP19-32X



V473 Grinding Disc



3/4"X30X50mm Impact Socket



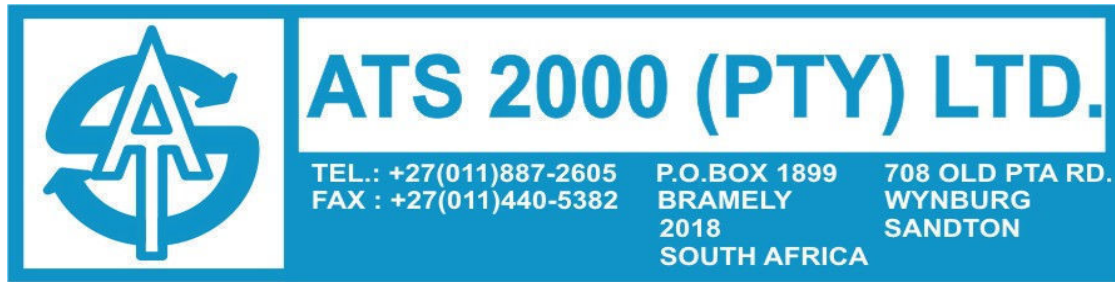
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B. INTRODUCTION

We the management of ATS 2000 Pty Ltd. arrange our work activities in such a manner as to ensure that the Health and Safety of not only our own employees, but also those of [the mines we conduct business with](#) are protected.

We undertake to comply with all relevant safety standards and legal requirements as required by [the mines we conduct business with](#) and provide sufficient risk assessment documentation to our clients. We undertake to fulfill our obligation in the safest manner possible.

C. SCOPE OF THE ASSESSMENT

The risk assessment was focused on the operation involving [The Rapid Rail Cutter & Driller machine in an UG environment](#) therefore the risk assessment is focused on the following:

Ordering the Rapid rail Cutter & driller machine, delivering the Rapid rail Cutter & driller machine, transporting the Rapid rail Cutter & driller machine inspecting the Rapid rail Cutter & driller machine, examining the area of cutting, measuring of sticks, cutting of sticks, safe transport of sticks. Transport the Rapid rail Cutter & driller machine at end of shift.

D. OBJECTIVE

The purpose of this risk assessment is firstly to ensure that [ATS 2000 Pty Ltd.](#) not only comply with section 21 of [Mine Health and Safety Act](#) but also with requirements pertaining to risk assessments from, the mines we conduct business

with It also provides to ensure that hazards and risks associated with the operation we are about to perform are identified beforehand and suitable measures are implemented to ensure that the safety of employees and contractors and other persons are safe guarded during the performance of the operation of the rapid rail cutter & driller machine.

E. METHODOLOGY

The hazards associated with the operation were identified and assessed using the **HIRA** technique which was performed with the involvement of contractor employees, (listed in team members). Arrangement was made to enter the client site on **12/02/2012** after which the risk assessment was conducted.

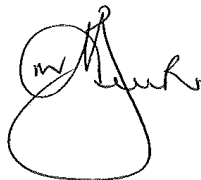
The HIRA process involves a group of personnel evaluating the safety of the operation (Rapid rail Cutter & driller machine) in order to determine whether the Rapid rail Cutter & driller machine will be able to be operated safely and within the design parameters, which have been set for the ATS 2000 Rapid rail Cutter & driller machine.

- Gaining access to the site stores for delivery of the Rapid rail Cutter & driller machine ;
- Gaining access for Personnel making deliveries presenting delivery notes;
- Equipment that will be required to perform the cutting of rails ;
- Equipment, tools and vehicles used to transport the Rapid rail Cutter & driller machine etc.
- Operating the Rapid rail Cutter & driller machine.
- Transferring the rapid rail cutter& driller Machine from one workplace to a new workplace

F. TEAM MEMBERS

- **M.J.De Beer**
- Member
- Dynamic New Approach Bracha cc.
- 34 years in Mining Training industry, 6 years in Safety Training (total 40 years)
- Cell No :082 7728746

- Signature :



- **Glenton W. Rebello**
- Member
- ATS 2000 (Pty) Ltd.
- Eleven years in Mining Sales Industry
- Cell No : 082 960 9204

- Signature :

- **Deon Rebello**
- Salesman/Member/Agent
- Sebtsa Mining Supplies cc.
- Two years in Mining Sales Industry
- Cell No: 0828842070

- Signature :

G. RISK MATRIX

The Risk Matrix is primarily used to quantify the level of risk associated with a particular hazard that has been identified. It is important to note that when using the Matrix one must also consider the worst possible case to be expected. The intention of the risk ranking exercise is so that planning towards responding to the risk is identified can be performed in accordance with the criticality of the individual risks identified, hence the hazard with the highest risk rating will be addressed first followed by those with the next highest risk rating.

An example of a risk matrix is attached.

H. SCOPE (ATS 2000 RAPID RAIL CUTTER & DRILLER MACHINE)

We intent to perform the following activities in accordance with the sales agreement:

1. a. Supply the ATS 2000 Rapid rail Cutter & driller machine to the mines for sale
- b. Ensure fitment of all safety devices on the Rapid rail Cutter & driller machine before delivery

I. EQUIPMENT USED DURING THE PROCESS

- ATS 2000 Rapid rail Cutter & driller machine
- A 22 Kg Rail
- A 30 Kg Rail

J. COMPETENCY OF PERSONNEL

There will be no Employees doing contract work unless the mining company that ATS 2000 Pty Ltd do business with allow logistics contracting employees to use /operate the machine

K. RISK ASSESSMENT APPROVAL DOCUMENT (WUFU)

Find worksheet attached Annexure (a)

L. RISK ASSESSMENT WORKSHEETS

Find worksheet attached Annexure (b)

M. RECOMMENDED PRE-USE INSPECTIONS

- 1) Ensure that the blade guard is in working order and all bolts is in place
- 2) Conduct daily inspections to check the tension of the cutting blade.
- 3) Conduct daily inspections to check the spring loaded pressure handle
- 3) **Inspect the safety throttle trigger mechanisms.**
- 4) Inspect the locking screw that secures the Rapid rail cutter & driller to the rail
- 5) Inspect the in line filters and lubricators of the Rapid Rail Cutter & Driller
- 6) Inspect the air hose and fittings
- 7) Inspect the Rail clamps
- 8) Inspect the Rail saw motor
- 9) Inspect the Rail drilling motors
- 10) **Inspect the carry/lifting handles on the unit**

N. OPERATIONAL, SUPERVISION AND TRAINING GUIDELINES

- 1) Place the Rapid Rail Cutter & Driller in a safe dry and easily accessible place and connect it to the compressed air supply
- 2) Place the Rapid rail cutter & driller on the rail that needs to be cut and slide the machine into the correct position
- 3) Align the cut off mark on the rail with the rapid rail cutter & driller blade
- 4) Clamp the rapid rail cutter & driller machine by turning the rail clamp handle in a clock wise direction until the machine is securely clamped into position.
- 5) Connect compressed air hose to the compressed air supply and hold hose away from other employees and open compressed air for 30 sec to blow out impurities out of the air supply hose
- 6) Connect compressed air hose to the rapid rail cutter and driller
- 7) **Fasten safety chain onto air hose**
- 8) Place both hands on both the spring loaded handle and signal helper to open compressed air
- 9) Gently lower the rotation cutting blade onto the Rail and allow for natural penetration through the rail applying enough pressure onto the pressure lever
- 10) Once the cut is complete, raise the cutting blade, and releasing the pressure on the holding down lever pressure lever
- 11) Once all cutting of broken rails are completed for the shift remove the ATS 2000 Rapid rail Cutter & driller machine to a safe dry place. (U/G Store)

RISK MANAGEMENT PROCESS

ATS 2000 Rapid Rail Saw Annexure (b)

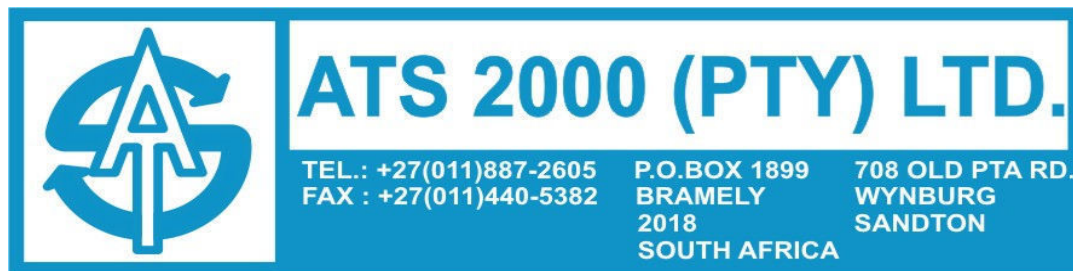
HAZARD IDENTIFICATION		RISK ASSESSMENT			RISK TREATMENT			
POTENTIAL HAZARD AND RISK	P	C	R	CURRENT CONTROLS	RECOMMENDATION	RESPONSIBLE PERSON	COMP. DATE	SIGN
1. Order the pneumatic ATS Rapid Rail Cutter & driller	E	5	1	SAP ordering system	Telephonic communication Risk assessment	Contracting firm ATS 2000 Pty Ltd	Ongoing	
2.Receiving the ATS Rapid Rail Cutter & driller	E	4	3	Way bills Delivery notes Store access	Signed way bill Signed delivery notes	Mine ATS 2000 Pty Ltd	Ongoing	
3. Issue the ATS Rapid rail Cutter & driller	C	5	4	PVC gloves (PPE) Eye Protection - Pvc Goggles Pre-use inspection Rapid Rail Cutter & Driller register (Planned Maintenance)	Safety meetings	ATS 2000 Pty Ltd Mine Personnel	On-going	
4. Transport the ATS Rapid Rail Cutter & driller	C	4	8	Mine to approve condition of equipment. Pre-use inspection of Rapid Rail cutter & driller Mine U/G flat material car Mine logistical personnel	Safe transport of Rapid Rail cutter & driller Mine logistical personnel	Mine Employees Contracting employee	After delivery to shaft	
5.Inspecting the ATS Rail Cutter & driller machine	C	4	8	Blade guard in place Check tension wheels Safety levers Locking tension wheel in place Inline filter and lubricator clean Hose and air hose fitting secure Check reserve supply of lubricator oil	Use relevant PPE	Mine Employees Contracting employee	On-going	

POTENTIAL HAZARD AND RISK	P	C	R	CURRENT CONTROLS	RECOMMENDATION	RESPONSIBLE PERSON	COMP. DATE	SIGN
6. Examine the area where cutting & drilling the rail is to take place	A	1	25	Examine and make safe the area by the rail cutting employees Wear the relevant PPE Use the correct length pinch bar with gasket for the examination Install Temporary support units where necessary as per Support standards Clean the track and the track web where cutting is to take place Clean an area of +/- 100mm underneath the track, free of any rock, debris, mud etc.	Ensure the Examination and making safe of a workplace are conducted by an employee that has passed the necessary Comp. Person (A) training of the mine	Mine Employees Contracting Employee	On-going Daily	
7. Blow out air hoses	B	2	21	Examine air hose for cuts holes Wear Eye Protection Fasten the air hose onto lubricator Point air hose away from all employees Open compressed air for 30 seconds and blow out debris from air hose. Close compressed air Fasten /secure air hose onto Rail Cutter & driller lubricator	Never point an air hose towards employees If the installation of support is necessary ensure the installation of support take place by an employee that has passed (Comp. Person (B) Training)	Mine Employees Contracting Employee	On-going	
8. Latch the cutter & driller in open position	B	2	21	Employees need to use their relevant PPE Employees to take safe position when lifting rail cutter & driller is placed in position	Safety goggles must be worn Safety gloves must be worn Explain the limitations of PPE Employees to use fitted lifting handles to position the rail cutter & driller on	Mine Employees Contracting Employee	On-going	

					the rail			
9. Place Rail Cutter & driller on broken rail and slide it into position	A	1	25	Use relevant PPE Employee to take safe position Employees to use fitted lifting handles to position the rail cutter & driller	Safety goggles must be worn Safety gloves must be worn Explain the limitations of PPE safety gloves and safety goggles	Mine Employees Contracting employee	On-going	
10. Clamp the rapid rail cutter & driller into the position where the rail is to be cut but do not tighten altogether	C	3	13	Use Relevant PPE Mark the position where the rail is to be cut Employee to take safe position to lift rail cutter onto rail Clamp the rail cutter onto the rail in line with the mark Ensure area under rail is clear of Debris(100 mm)	Safety goggles must be worn Safety gloves must be worn Explain the limitations of PPE safety gloves and safety goggles	Mine Employees Contracting Employee	On-going	
11. Align cut off mark with rapid rail cutter & driller blade and tighten clamp onto the rail	C	3	13	Use Relevant PPE Employee to take safe position Open the compressed air ball valve and allow cutting blade to come to full rotation speed Turn cork screw lever in a clock wise direction to supply even pressure on the cutting blade to cut rail. Continue to turn corkscrew handle using both hands until the rail is cut through.	Safety goggles must be worn Safety gloves must be worn Explain the limitations of PPE safety gloves and safety goggles	Mine Employees Contracting Employee	On-going	
12. Operate the ATS 2000 rail cutter & driller by applying pressure with both hands and gently lowering the rotating blade onto the Rail	A	2	23	By Standing employees take safe position Wear relevant PPE Close ball valve to cutting disk when rail is cut through Turn cork screw lever in an anti-clockwise direction to release pressure of cutting disk. Ensure cutting blade has come to a complete stop No loose clothing to be worn	Safety goggles must be worn Safety gloves must be worn Explain the limitations of PPE safety gloves and safety goggles Lower rotating blade onto rail	Mine Employee Contracting employee	On-going	
13. Employees exposed to the cutting grit and noise from the ATS 2000	C	2	18	SABS approved ear protection (PPE Noise Clippers) Attached blade guard	Safety goggles must be worn Safety gloves must be worn	Mine Employees Contracting employee	On-going	

Rapid rail cutter & driller				Eye protection to prevent red hot cutting grit flying into operators/bystanders eyes	Explain the limitations of PPE			
14. When Rail cutting is completed , close the ball valve on the cutting blade and open the ball valve on the twin drilling heads	C	2	18	SABS approved ear protection (PPE Noise Clippers) No loose clothing to be worn Turn cork screw lever with both hands in a clock wise direction to supply pressure on the drilling motor to drill holes through rail Do not move the machine from the original clamped position	Safety goggles must be worn Safety gloves must be worn Explain the limitations of PPE SABS approved ear protection (PPE- Noise Clippers)	Mine Employees	On-going	
15. Drill both holes through rail web without loosening or moving the rapid rail cutter & driller	C	2	18	Employees take safe position Wear relevant PPE to protect operator against hot drill cuttings No loose clothing to be worn Turn cork screw lever in a anti-clockwise direction to release pressure on the drilling motor to extract drills from rail after holes is drilled through rail web	Be careful of guard protection for blade heat (burning) wounds Be careful of hot drill cuttings (burning) wounds Safety goggles must be worn Safety gloves must be worn SABS approved ear protection (PPE- Noise Clippers)	Mine Employees Contracting employee	On-going	
16. Close Compressed air supply -ball valve and disconnect air hose from compressed air supply - lubricator	D	4	5	Employee take safe position Wear relevant PPE No loose clothing to be worn	Safety goggles must be worn Safety gloves must be worn Use an approver ladder to operate air valve	Mine Employees Contracting employee	On-going	
17. Remove by lifting the rapid rail cutter & driller machine from the work area	A	1	25	Employees take safe position Wear relevant PPE No loose clothing to be worn Only lift by using the lifting handles on the machine	Place Rapid cutting & drilling machine on flat material car	Mine Employee Contracting employee	On-going	
18. Complete the attached rail fish plates with the fishtail bolts and tighten to the required torque	C	3	13	Check condition of equipment. Post-use inspection Hand /eye coordination Communicate Nip points on fishplate and rails Wear relevant PPE	Safety goggles must be worn Safety gloves must be worn Never use a finger to guide bolt through a fishplate hole- always use a marlin spike	Mine Employees Contracting employee	Daily	

18. Transport the ATS 2000 Rapid rail Cutter & Driller machine to the next area of work Follow steps 1-18 for next cutting position	C	2	18	Check condition of equipment. Post-use inspection Hand transport Mine Support Employees Relevant PPE	Safe Transport/follow mine transport procedures Safety goggles must be worn Safety gloves must be worn	Mine Employees Contracting employee	Daily	
19. Examine the area where cutting & drilling the rail is to take place	A	1	25	Examine and make safe the area by the rail cutting employees Wear the relevant PPE Use the correct length pinch bar with gasket for the examination Temporary support units Support standards	Ensure the Examination and making safe of a workplace are conducted by an employee that has passed the necessary Comp. Person (A) training of the mine	Mine Employees Contracting Employee	On-going Daily	
20. Place Rail Cutter & driller on broken rail and slide it into position at new work area	A	1	25	Use relevant PPE Employee to take safe position Employees to use fitted lifting handles to position the rail cutter & driller	Safety goggles must be worn Safety gloves must be worn Explain the limitations of PPE safety gloves and safety goggles	Mine Employees Contracting employee	On-going	



RISK ASSESSMENT ON Rapid Rail Cutter & Driller

INTRODUCTION & OBJECTIVES

To identify hazards, prioritise the risk associated with the handling of the Rapid Rail cutter & driller machine, and highlight the controls required or in place to eliminate / minimise the risk related to the use of the Rapid Rail cutter & driller machine primarily from a point of view of health and safety, but also from a point of view of production delay.

RISK MATRIX USED

	A	B	C	D	E	PROBABILITY / FREQUENCY	CONSEQUENCE / SEVERITY	RISK RANKING
1	25	24	22	19	15	1= FATALITY/ MAJOR / PRODUCTION DELAY (MORE THAN 3 DAYS)	A= COMMON	20-25 HIGH
2	23	21	18	14	10	2= REPORTABLE INJURY / PRODUCTION DELAY (1- 3 DAYS)	B= IT COULD OCCUR	
3	20	17	13	9	6	3= LOST TIME INJURY / PRODUCTION DELAY (1 DAY OR LESS)	C= IT HAS OCCURRED	7-19 MEDIUM
4	16	12	8	5	3	4= RETURN TO WORK INJURY / PRODUCTION DELAY (LESS THAN 1 HOUR)	D= NOT LIKELY TO OCCUR	
5	11	7	4	2	1	5= NO INJURY, DELAY OR DAMAGE	E= PRACTICALLY IMPOSABLE	1-6 LOW

RISK MEASUREMENT INDEX

CONSEQUENCES (Worst case scenario if hazard should realize)

	Index Value	Result
Catastrophic (many fatalities or damage over R100,000,000)	100	
Disaster (a few fatalities or damage over R10,000,000)	40	
Very Serious (one fatality or damage over R1,000,000)	15	
Serious (serious injury or damage over R 100,000)	7	
Important (temporary disability or damage over R10,000)	3	
Of Concern (minor injury or damage over R1,000)	1	

EXPOSURE (How often hazardous event occurs or is present)

	Index Value	Result
Continuous (many times daily)	10	
Frequent (once daily)	6	
Occasionally (once per week to monthly)	3	
Unusual (once / month to once / year)	2	
Rare (yearly)	1	
Very rarely (not known to have occurred but remotely possible)	0.5	

PROBABILITY (Chance of loss / harm during the exposure period)

Current controls / safeguards in place to be objectively assessed for sufficiency.

	Index Value	Result
Is the most likely and expected result if event occurs	10	
Quite possible (50/50 chance)	6	
Unusual but possible	3	
Only remotely possible (has happened somewhere)	1	
Conceivable but very unlikely (hasn't happened yet)	0.5	
Practically impossible (one in a million)	0.1	

RISK RESULT = CONSEQUENCE x EXPOSURE x PROBABILITY

RISK CLASSIFICATION

MORE THAN 400	Very High Risk, immediate correction with high level input
200 to 400	High Risk, immediate correction required
70 to 200	Substantial Risk, correction needed
20 to 70	Possible Risk, attention indicated
LESS THAN 20	Risk perhaps tolerable as is

RISK REDUCTION

% REDUCTION	DESCRIPTION	VALUE
10%	SMALL	6
20%	SMALL	4
50%	EFFECTIVE	3
75%	VERY EFFECTIVE	2
100%	ELIMINATED	1

ESTIMATED COSTS

More than R1 000 000	10
R500 000 – R1 000 000	6
R100 000 – R500 000	4
R50 000 – R100 000	3
R20 000 – R50 000	2
R10 000 – R20 000	1
Less than R10 000	0.5

		PRIORITY SCALE	
PRIORITY = $\frac{\text{RISK RESULT}}{\text{RISK REDUCTION} \times \text{ESTIMATED COST}}$		100	HIGH
		80	
		60	
		50	
		40	
		20	
		10	MEDIUM
		8	
		6	
		4	
		3	LOW
		2	
		1	

WRITTEN UNDERTAKING FROM USER/MINE
Section 21 MHSA
Annexure (a)

Organisation : _____

Division : _____

Mine : _____

Date : _____

Herewith a written undertaking, to take all specified steps sufficient to ensure, as far as reasonably practicable, that The ATS 2000 Rapid Rail Cutter & Driller Machine will be used properly, and in such a manner that it will not affect the health and safety of persons working there with it, persons work in the vicinity or the area environment.

It is herewith we the user accepts the information in the risk assessment supplied to be sufficient in ensuring the proper use of the articles/machine supplied.

Signed on the _____ of _____ 2012, at _____.

Manager : _____

Engineer : _____

Best Practice Mine Overseer : _____

Chief Safety Officer : _____

Training Manager : _____