

PLANT RISK ASSESSMENT REPORT



SECTION 1: PLANT IDENTIFICATION

Report Number:	407/201-04	Assessment Date:	26 th July 2012
Company:	Wacker Neuson	Plant Type:	Single Drum Rollers
Assessment Purpose:	<input type="checkbox"/>	Operational risks associated with the plant as it stands – On site	
	<input type="checkbox"/>	Operational risks associated with the plant as it stands – Desk top analysis	
	<input type="checkbox"/>	Access Systems	
	<input type="checkbox"/>	Modification/s	
	<input checked="" type="checkbox"/>	Other : Group assessment of plant type	
Assessed by:	Josh Harley-Hill – VEHTEC Pty Ltd		



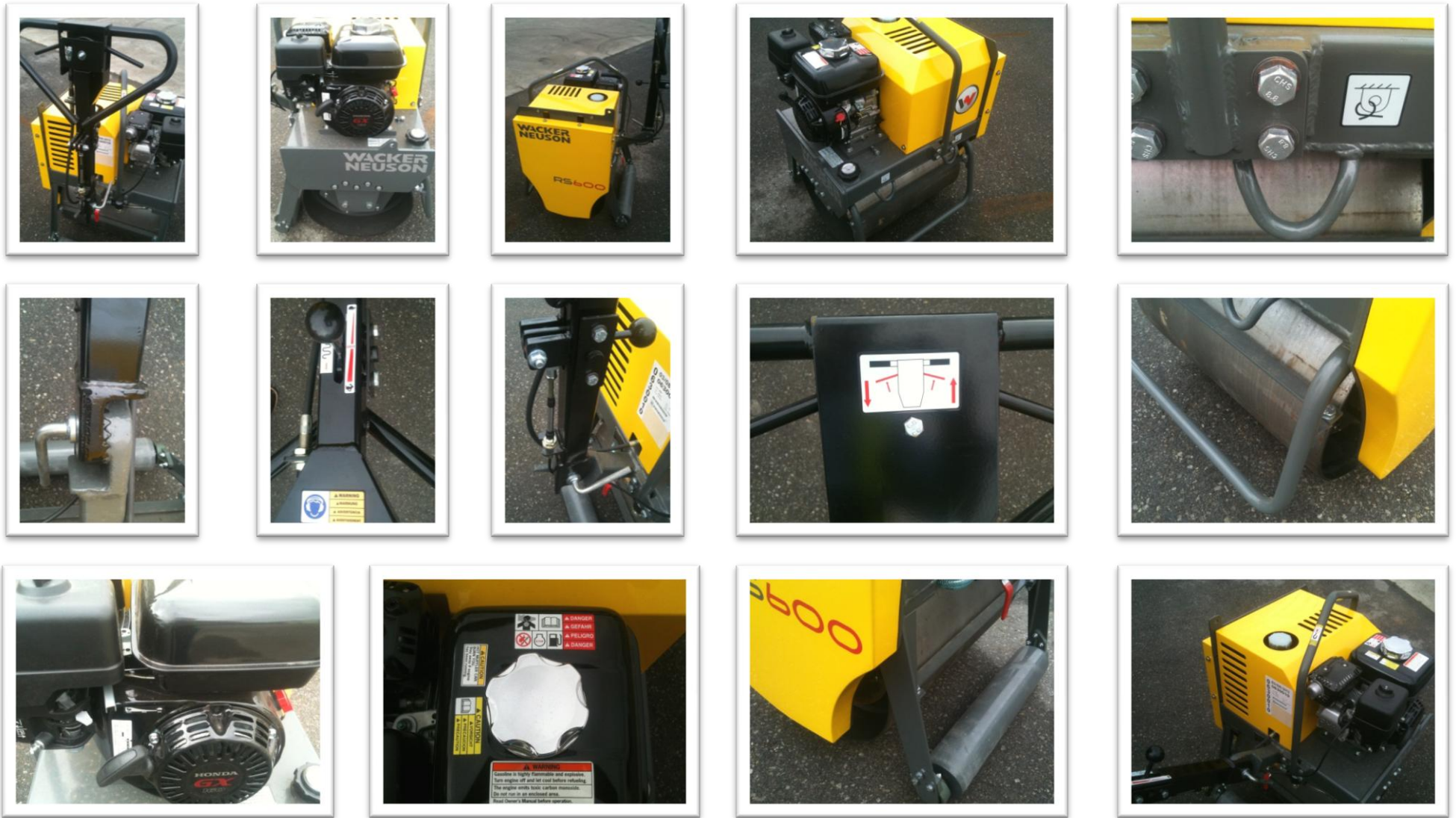
SECTION 2: PLANT SUMMARY

Preamble:

This assessment encompasses the Wacker Neuson range of Single Drum Rollers. Using variable hydrostatic drives they are ideal for smaller compaction activities as they are easily maneuverable in tight confines. Simple to use, they are designed for sand, gravel, soil and asphalt compaction and is equipped with a water sprinkler tube.

This document is intended to highlight Occupational Health Safety and Welfare related risks that may present during on site set up and operation and has been conducted in accordance with the OHS&W Legislation – 2010 Part 3 Division 3.3

Is the plant designed for its intended use?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<i>Final Sign off by Employer/Owner - All actions/recommendations complete</i> Name: _____ Position: _____ Signed: _____ Date: _____
Has the plant been modified from the original design?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Is the plant in good working condition?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Is action required before the plant can be safely used?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Has the required action / remedy been undertaken?	<input type="checkbox"/> Yes <input type="checkbox"/> N/A	



Photographs are for illustrative purposes only. Functions, layout, engines and bodies will vary between models

SECTION 3: RISK ANALYSIS LIKELIHOOD AND CONSEQUENCES

Table 1. Measure of Likelihood (L)		
Level	Description	Detail
A	Almost Certain	The event is expected to occur in most circumstances
B	Likely	The event will probably occur in most circumstances
C	Moderate	The event should occur at some time
D	Unlikely	The event could occur at some time
E	Rare	The event may occur only in exceptional circumstances

Table 2. Measure of Consequences or Impact (C)		
Level	Description	Detail
1	Insignificant	No injuries, low financial loss
2	Minor	First Aid treatment, on site release immediately contained, medium financial loss
3	Moderate	Medical treatment required, on site release contained with outside assistance, high financial loss
4	Major	Extensive injuries, loss of production capability, off site release with no detrimental effects, major financial loss
5	Catastrophic	Death, toxic release off site with detrimental effect, huge financial loss

Table 3. Risk Analysis Matrix (Risk)					
Likelihood	Consequences				
	Insignificant 1	Minor 2	Moderate 3	Major 4	Catastrophic 5
A (Almost certain)	S	S	H	H	H
B (Likely)	M	S	S	H	H
C (Moderate)	L	M	S	H	H
D (Unlikely)	L	L	M	S	H
E (Rare)	L	L	M	S	S

Legend:

- **H**= High risk, detailed research and management planning required.
- **S**= Significant risk, senior management attention needed. Continuous review.
- **M**= Moderate risk, management responsibility. Periodic review
- **L**= low risk, manage by routine procedures. Periodic review to ensure risk does not increase.

*Only hazards with a risk deemed higher than 'low' need to be controlled

SECTION 4: HAZARD IDENTIFICATION

Hazard Item N°	Hazard Item Observation Detail	Hazard	L	C	Risk
1	Plant in its current state has potential to cause injury/illness due to:				
1.1	Entanglement (Bystander involved with roller drum/s – unlikely excellent visibility of roller from Operators position)	No			
1.2	Puncturing	No			
1.3	Cutting (Operator when starting engine)	Yes	D	3	M
1.4	Stretching (Operator when starting engine)	Yes	E	2	L
1.5	Stabbing	No			
1.6	Trapping (Plant tipping or rolling over in steep/uneven terrain or when operated close to excavations/trenches etc)	Yes	D	3	M
1.7	Abrasion (Bystander involved with roller drum/s – unlikely excellent visibility of roller from Operators position)	No			
1.8	Engulfment (Bystander involved with roller drum/s – unlikely excellent visibility of roller from Operators position)	No			
1.9a	Crushing (Pinch point when raising/lowering and clamping operators control handle)	Yes	D	3	M
1.9b	(Plant tipping or rolling over in steep/uneven terrain > 15 deg or when operated close to excavations/trenches etc)	Yes	D	4	S
1.10	Shearing	No			
1.11	Tearing (Operator when starting engine)	Yes	D	2	L
1.12	Asphyxiation (CO ₂ emitted from exhaust if used in confined space)	Yes	D	3	M
1.13	Slips, Trips (Designed for use on < 15 deg slope to avoid rollover)	Yes	B	3	M
1.14	Falls	No			
1.15	Falling Objects	No			
1.16	Expelled Parts	No			
2	Plant in its current or intended state has the potential to create a hazardous condition due to:				
2.1	Pressured Content	No			
2.2	Explosion (Engine refuelling procedures to be followed)	Yes	D	3	M
2.3	Radiation	N/A			
2.4	Vapour	N/A			
2.5	Dust (Open operator environment – Water bar to be used if fitted when required to reduce hazard)	Yes	B	1	M
2.6	Moisture	No			
2.7a	Gases (Exhaust is directed towards operator position. Not to be used in confined space)	Yes	D	2	L
2.7b	(Engine refuelling procedures to be followed as per Operators Manual)	Yes	E	2	L
2.8	Fire (Engine refuelling procedures to be followed as per Operators Manual)	Yes	E	2	L
2.9	Vibration (Roller has an exciter providing vibration for compaction)	Yes	A	2	S
2.10	Electricity	No			
2.11	Friction	No			

2.12	Ice Formation	No			
2.13	Laser Beams	No			
2.14	Hot and Cold Parts (Engine when performing maintenance checks, checks to be undertaken when plant is cold. Never perform maintenance when plant is hot. Exhaust system outlet may reach high temperatures at times.)	Yes	E	2	L
2.15	Temperature Extremes (Operator to be managed by SOP and/or Employers/Owners policy)	Yes	D	2	L
2.16	Noise (Low dB levels) (Operator required to wear appropriate PPE)	Yes	D	2	L
Yes / No / N/A					
3	Manual handling requirements have been assessed as acceptable (Lifting/Tie down points fitted and clearly identified with decals. Operators manual indicates static weight and method to ensure safe lift and transport)	Yes			
4	Repetitive, forceful, awkward, sustained movements have been minimised/ eliminated	Yes			
5	The current guard (s) and their condition are adequate for this plant (Designed for application)	Yes			
6	Is the guarding appropriate for all work requirements (Designed for application)	Yes			
7	Operator controls are located for ease of use by operators	Yes			
8	Operator controls are identified and marked appropriately	Yes			
9	Emergency stops are clearly marked	Yes			
10	Emergency stops are located at the most likely place (s) for emergency use	N/A			
11	The power source of the plant has been designed, constructed, installed, protected, maintained as to minimise the risk of harm to employees. (Plant to be maintained as per Operators Manual)	Yes			
12	There is provision to lock out the plant, and dissipate energy	Yes			
13	Access platforms/ladders/handrails are provided	N/A			
14	Access to moving parts from the platform can be performed safely	N/A			
15	Access platforms/ladders/handrails provide secure, non slipping access	N/A			
16	Lighting is adequate for plant operation, maintenance and cleaning at any time (Roller has no external lighting fitted. Use of Roller in low/failing light is subject to site environment lighting)	No			
17	Noise levels have been assessed as below 85dB(A) (Operator required to wear appropriate PPE)	No	A	2	S
18	Personal Protective Equipment (PPE) has been provided for safe operation of this plant (Employers / Owners responsibility)	N/A			
19	PPE requirements are signposted (Adequate decals fitted)	Yes			
20	There is provision for safe cleaning of this plant (NB Subject to availability of cleaning devices)	N/A			
21	Safe access to areas to be cleaned has been provided	N/A			
22	There is provision for easy and safe scrap removal	Yes			
23	The plant has the potential to jam/block	Yes			
24	A safe system of work has been established to remove jam/blockage (Block/jam only to be cleared by trained or experienced persons. Plant to be isolated in terms of operating manual) (Employers/Owners assessment required)	N/A			
25	Safe system of work has been established for any sample retrieval	N/A			
26	There is adequate provision to properly service and routinely grease and oil the plant (Plant to be maintained by appropriately trained personnel in line with the operators manual)	Yes			

27	Safe systems of work have been established for hazards associated with any necessary maintenance of the plant (Employers/Owners responsibility)	N/A			
28	The rigidity and stability of the plant and supporting structure is adequate. (Plant to be operated within its capabilities and with regard to recommended operating environs as detailed within the Operators manual)	Yes			
29	The environment in which the plant is situated has been assessed for its interrelationship with this plant as acceptable (Employers/Owners responsibility)	N/A			
30	Ventilation and/or other air flow needs are adequate (Open Operators position)	Yes			
31	Static electricity hazards have been assessed and controlled	N/A			
32	Workplace substances associated with the use of the plant have been assessed	N/A			
33	Authorised entry systems for the plant and surrounds have been established	N/A			
34	The upstream and downstream effects of malfunction or unscheduled stoppage of the plant have been considered (Employers/Owners responsibility)	N/A			

SECTION 5: RISKS AND CONTROLS

Summary of Hazards Identified and solution(s) to adequately manage the respective risk.								
Hazard Item No	Level of Risk		Action Required / Comments					
1.3 1.4 1.9a 1.11	Low	Moderate	<p><u>Hazard</u> General access, maintenance and operation of the Single Drum Rollers can cause cutting, stretching, crushing and tearing.</p>	<p><u>Action Required</u> Nil</p>				
			<p><u>Comments</u> Incorrect use of the plant or operation in the incorrect environment poses a physical risk to the operator and bystanders. . The plant is well signed with warning and instruction decals.</p>	<table border="1"> <tr> <td>Responsible Person</td> <td>Operator</td> <td>Due Date</td> <td></td> </tr> </table>	Responsible Person	Operator	Due Date	
			Responsible Person	Operator	Due Date			
			<p><u>Controls</u> Care is to be taken during starting to prevent hand injuries resulting from impact with engine components.</p> <p>Care must be taken during starting to prevent muscular stretching and tearing.</p> <p>Operator is to perform a Jobsite Safety Analysis (JSA) prior to operation. Work Zone Traffic Management (WZTM) procedures need to be implemented prior to operation.</p>	<p>Actioned by: (Name & Date)</p>				
<p>Operators are to start, operate and maintain the plant in terms of the manufacturer’s instructions and keep clothes and limbs clear of the plant at all times when in operation.</p> <p><u>Revised Risk Assessment</u> With the above controls in place the risk is considered controlled.</p>	<p>Verified by: (Name & Date)</p>							

1.6 1.9b 1.13 2.2 2.8	Moderate Significant	<p>Hazard Rollover of the Single Drum Rollers can cause trapping and crushing, slipping and tripping hazards. Incorrect refuelling procedures may result in an explosion risking significant injury to both operators and bystanders.</p> <p>Comments Incorrect use of the plant or operation in the incorrect environment poses a physical risk to the operator and bystanders. The plant is well signed with warning and instruction decals.</p> <p>Controls Operator is to perform a Jobsite Safety Analysis (JSA) prior to operation. Work Zone Traffic Management (WZTM) procedures need to be implemented prior to operation.</p> <p>Operator to keep bystanders away during starting, refuelling and operation. Prior to starting the plant, the operator is to ensure that both they and the plant are on stable level ground and start the plant as per the operator’s manual.</p> <p>Operators are to start, operate and maintain the plant in terms of the manufacturer’s instructions and keep clothes and limbs clear of the plant at all times.</p> <p>When operating on slopes or hills, always operate the plant up and down hills rather than from side to side. NEVER operate the plant sideways on slopes. The plant may roll over, even on stable ground.</p> <p>Always use caution when operating near the edges of pits, trenches or platforms. Check to be sure ground surface is stable enough to support the weight of the plant and operator and ensure there is no danger of the plant sliding, falling or tipping.</p> <p>Revised Risk Assessment With the above controls in place the risk is considered controlled.</p>	Action Required	Nil				
			Responsible Person	Operator	Due Date			
			Actioned by: (Name & Date)					
			Verified by: (Name & Date)					

2.5 2.7a 2.7b 2.9 2.16 17	Low Moderate Significant	<p><u>Hazard</u> Dust, gasses, noise and vibrations.</p>	<p><u>Action Required</u></p>	Nil			
		<p><u>Comments</u> Single Drum rollers can create dust through the compaction process. The plant is well signed with warning and instruction decals.</p>	<p>Responsible Person</p>	Operator	Due Date		
		<p>Single Drum rollers can expose the operator and bystanders to exhaust gases through operation and petrol gases during refuelling.</p>	<p>Actioned by: (Name & Date)</p>				
		<p>Single Drum rollers can expose the operator to significant vibration and noise levels.</p> <p><u>Controls</u> Operators are to be completely familiar with the Operators' manual prior to use of the plant.</p> <p>Appropriate ear protection and breathing masks are to be used as required by the end users assessment of the operational environment and in terms of Employers/Owners policies.</p> <p>Operators are to regularly have breaks from the activity in terms of Employers/Owners management policies.</p> <p><u>Revised Risk Assessment</u> With the above controls in place the risk is considered controlled.</p>	<p>Verified by: (Name & Date)</p>				

SECTION 6: CONTROL MEASURES AND TRAINING

Control Measures

Pre-Operation	A Standard Operating Procedure (SOP) should be developed for the correct use of the plants' systems prior to deployment. Complete familiarisation of the Operators Manual and all systems shall be considered mandatory. The plant is intended for relatively flat ground deployment only and for specific compaction activities.
Modifications	Any modification to the factory unit should be strongly considered to ensure that it will not have any detrimental effect to the stability, safety or operation of the plant. Modifications should only be undertaken by suitably qualified or experienced persons.
Transportation	When transporting the rollers place blocks in front of and behind drum and lift operator handle into the upright position. Designated tie down and lifting points are fitted and identified. Never use any other part of the roller to tie the machine down, as severe damage may occur. Operator's manual details how to safely lift roller.
Operational Risk	This risk assessment does not negate the requirement of the operator/supervisor to conduct an operational risk assessment of this piece of plant for its intended use and its interface with the operators and the suitability of this piece of plant to integrate and complete the required task. This document has been prepared with due care, however cannot be considered complete given the limited knowledge of the intended operational environment for which the plant has been selected.
Work Zone Traffic Management	This risk assessment has been prepared with the knowledge that effective Work Zone Traffic Management (WZTM) systems will be employed in line with AS1742.3, OHS&W Regulations 2010, Road Traffic Act 1971 and internal Standard Operating Procedures.
Continuous Review	This document is not intended to be static, nor is it intended to be considered complete for all situations. This document forms the basis to allow the Employer/Owner of the asset to have an informed position. A system of continuous review should be embraced in line with Management Policies.

Operator Competencies

Formal Qualifications:	Must comply with the regulations enforced by the WorkSafe authority within the state that the plant is being operated.
Competency Assessed Skills:	Skills must comply with the requirements of the guidelines established by the relevant state based WorkSafe authority and assessed by the state WorkSafe body's authorised assessor.
General Training Instruction:	On the job training by qualified Operator.
Experience:	As appropriate and assessed (as above).
Standard Work Procedure (s):	To be developed by the employer/owner.

SECTION 7: PLANT INSPECTIONS, MAINTENANCE AND TESTING

Inspection, Maintenance and Testing Requirements	Frequency
Manufacturer's operator and service manuals as supplied with the plant	Refer operator manual
Servicing and maintenance	As per manufacturers guidelines
Daily checks as per operators handbook	Daily before use

**This is not a definitive list and may need to be revised over time*