WRAPS Form
Machinery Safety Review Checklist

Equipment Name	**DW Scientific WASP Vacuum Source Model 602**
Asset Number	
Location:	**North Building, Basement, Skillman, NJ**
Form Completed By: (Name, Email)	**S.M. Vogl, CIH, CSP (svogl1@its.jnj.com)**
Date:	**August 17, 2012**

1		**Legal**	**OK**	**NOK**	**N/A**
	1	Are J&J requirements more stringent that local Health & Safety requirements ?			X
	2	If local Health & Safety requirements are more stringent than the J&J Zero Access policy have these been applied?			X
	3	Are European Directives applicable to this equipment ? (EU Mandatory) (World Wide desirable when possible)			X
	4	If EU Directives are applicable does the machine carry CE Marking and is the declaration of conformity and the instruction manual available?			X
	5	If the equipment is in or coming into the EU, has EMC assessments been carried out where applicable?			
2		**Zero Access Requirements**	**OK**	**NOK**	**N/A**
	1	Are fixed guards securely held in place with fixings (fasteners) which require special tools to remove? (Slotted screws or Allen heads may not comply if operators maintain tools)	X		
	2	Are moveable or operator accessible fixed guards fitted with positive acting interlocks or coded magnet where appropriate that are safety rated and of suitable robust industrial construction?			X
	3	Is guarding regularly inspected (at least quarterly) and properly maintained?			X
	4	Is the current guarding adequate and does it protect the operator from hazards while allowing safe access to perform operational tasks and maintain competitive production efficiency ?	X		
	5	Does guarding allow full view for the operator and is there adequate visibility (light, glare, fogging, or other issues etc.)?			X
	6	Are there any sharp edges, nip points, pinch points or other hazards caused by the guarding and warnings are provided if necessary ?			X
	7	Does the guarding provide adequate protection from the danger zone (top or bottom access, ladders or steps in the immediate area?	X		
	8	Can cleaning, adjustment & other operator's maintenance activities be safely carried out?			X
	9	Can loading of raw materials and unloading of finished product be carried out safely?			X
	10	Have any robotics been Risk assessed towards compliance with J&J requirements? The requirements can be found at the J&J Machine safety engineering guide 06 This reflects RIA15.06 for US, EN 775 in Europe and ISO 10218			X
	11	Does the guarding adequately contain hazardous materials such as :"Toxic compounds, gases or projectiles or projected machine parts in case of a possible failure of a rotating machine part"? (Think especially on inhalation and eyes)	X		
	12	Are appropriate measures adopted to stop people being trapped in the machine?			X
	13	If ZA guarding is not possible or appropriate? (e.g. Pedestal grinder, horizontal band saw) It is not possible for hazardous materials or substances to be ejected from the machine or appropriate PPE is provided ?			X
3		**Electrical Requirements Category 3 For New Amputation Potential Mach.**	**OK**	**NOK**	**N/A**
	1	Has a J&J Electrical Category Risk Assessment (Cat. 1,3,or 4) been carried out? EU according to EN 954.1			X
	2	Is the electrical system designed & installed according to appropriate standards /codes ? And if it is an existing machine, is it in good condition and maintained to original design intent?			X
	3	Is all wiring labeled or color coded per IEC 60204, NFPA 70, NFPA 79 , or appropriate local codes?			X
	4	Are permanently live circuits marked inside the panel & covered as required by IEC 60204, NFPA 70, NFPA79 or other local codes?			X
	5	Are electrical terminals above 50V AC and 75V DC covered (IEC touchproof components,or Lexan barrier) or are other methods (PPE protection) being used when diagnosing problems inside electrical panels?			X
	6	Are electrical enclosures adequately secured to unqualified personnel and electrical warnings fitted/posted on exterior?			X
	7	Is the machine and associated equipment adequately earthed / grounded?			X
	8	Are cables / electrical wiring mechanically protected in conduit /pipe, wire ways, exterior heavy rubber etc.?			X
	9	Are there Emergency stops provided, in appropriate number, and located correctly ?			X

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	10	Are the Emergency stops of the correct type? (IEC or NEMA with yellow background - Red mushroom head pushbutton with maintained contact trigger action.)			X
	11	Do the Emergency stops function correctly and are not wired through a single channel PLC?			X
	12	Are Emergency stops wired as per J&J Electrical Category Risk Assessment (1, 3 or 4)?			X
	13	Do interlocks stop all hazardous parts/ motion/ processes which are accessible by the operator at this position?			X
	14	Is the safety control system wired fail-to-safe (where appropriate cat 3 or 4)?			X
	15	Are the used safety interlocks wired as per J&J Policy ? (Safety rated with positive acting key type switches or coded magnets with multiple channel channels and monitoring.)			X
	16	Are electronic sensitive devices (light curtains, light beams, safety mats,, rf sensors etc.) safety approved and rated to the appropriate Category (3 or 4) base on Risk assessment?			X
	17	Are electronic safety devices (light curtains, light beams, safety mats, rf sensors, etc.) located compliant to safety distance formula (Either EU or ANSI as appropriate) ?			X
	18	Does the operator have visual access around the machine from the operating position?			X
	19	Are positions which have restricted view from the operating position fully protected?			X
	20	Is there a delayed start on the machine with appropriate warning system?			X
	21	Is the warning system working and easily distinguished from background noise?			X
	22	The machine will not restart automatically, are interlocks correctly wired, are safety relay fitted where applicable, and is a dual action required to restart the machine (I.E push reset, push start).			X
	23	Is there a start control provided?			X
	24	Can the machine be started from one position only at anyone time?			X
	25	Are controls easily identifiable and unambiguous & positioned correctly?			X
	26	Are the controls positioned correctly to prevent inadvertent or accidental operation?			X
	27	Are speed levels marked and in durable printing to withstand intended use?			X
	28	Do stop controls bring work equipment/machine/tool to a safe condition in a safe manner?			X
	29	Are appropriate two hand controls provided where necessary for the correct application?			X
4		**Locking Interlocks on High Inertia / High Coast**	**OK**	**NOK**	**N/A**
	1	For high inertia machines, are locking interlock switches fitted / installed where the stopping time allows access to a hazardous situation?			X
	2	Is this equipment classified as not having "High Inertia" and therefore doesn't belong on the related Equipment Inventory ?			X
5		**Lockout Tagout - Full Compliance**	**OK**	**NOK**	**N/A**
	1	Is lockable isolation provided for all sources of energy and local isolation where appropriate?			X
	2	Is all stored energy removed where necessary (hydraulic/pneumatic, other)?			X
	3	Is a Strawman Service Model developed for the tasks associated with this equipment ?			X
	4	Has an equipment specific Lock Out/ Tag Out procedure been developed if necessary and the Lock Out/ Tag out inventory been updated ?			X
6		**No Operator Bypassing of Safety Interlocks**	**OK**	**NOK**	**N/A**
	1	Are electronic sensitive devices (light curtains, light beams, safety mats, rf sensors.) not easily bypassed?			X
	2	If mode selector switches affect safety (used during setup or changeover), is there restricted access to their use?			X
	3	Can setting up, cleaning, adjustment & other operator's maintenance activities be safely carried out?			X
7		**Operational requirements**	**OK**	**NOK**	**N/A**
	1	Is the equipment (machine,or tool) suitable for the task in which it is used?	X		
	2	Is there a Preventative Maintenance(PM) schedule, is equipment suitably maintained, and is maintenance logged?			X
	3	Is the equipment regularly inspected (repaired as appropriate) and are inspections logged? (Inspections can be carried out by production people but also by authorized bodies)			X
	4	Are there documented safe working procedures in place? (JSA's, Lockout Tagout, Hot Work)			X
	5	Are all employees suitably trained and is all training logged in their personal training records?			X
	6	Are all employees issued with relevant PPE ?			X
	7	Are the hydraulics equipment/ components in good condition ?			X
	8	Are the pneumatics equipment/ components in good condition ?			X
	9	Is the working area clean, tidy and good housekeeping maintained?			X
8.1		**General Conditions**	**OK**	**NOK**	**N/A**
	1	Is the machine stable under its own weight or bolted to the floor?	X		
	2	Are relevant warnings posted for residual risks in the local language?			X

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	3	Are rotational directions marked i.e. power transmissions, motors ?			X
	4	Does portable equipment have the ability to be secured ?			X
	5	Has a risk assessment been carried out to verify if this equipment doesn't include "Permit Required Confined Spaces" ?			X
	6	Hot / cold surfaces can not be touched easily and warnings are provided ?			X
	7	Are pipes, vessels, tanks etc. marked with their internal substances?			X
	8	Are flow directions marked on piping ductwork etc. where applicable?			X
8.2		**Ergonomics**	**OK**	**NOK**	**N/A**
	1	Has an ergonomic risk assessment been carried out on this machine ?			X
	2	Is there a safe means of access provided i.e. steps to the equipment?			X
8.3		**Industrial Hygiene**	**OK**	**NOK**	**N/A**
	1	Is there no possibility of release of hazardous substances above allowable J&J values? (e.g. Potent Compounds, organic vapors, gases or biohazards?)			X
	2	Have noise levels been assessed and recorded (target 80db for single machine or less for multiple machine installations)?			X
	3	Has a lighting survey been carried out & is portable or integral light supplied?			X
	4	Has a risk assessment been carried out to identify ionizing and/ or non-ionizing sources ?			X
8.4		**Fire Prevention**	**OK**	**NOK**	**N/A**
	1	There is no possibility of fire or overheating? (Heating devices, glue systems ?)			X
	2	There is no possibility of explosion? (Flammable gases, liquids,…….) are used in classified areas (US =>NFPA 30, Europe => ATEX)			X
8.5		**Fall prevention**	**OK**	**NOK**	**N/A**
	1	Have slip hazards been avoided/ minimized where contamination/ small parts on flooring materials is/ are present ?			X
	2	Trip hazards are absent (I.E. Hoses/ Pipes at ground level) ?			X
	3	Has the potential for falls from heights been assessed ?			X

NOTES: The unit is a small vacuum for plating (see photo). The operating parts of the unit are fully enclosed in a casing as part of its manufacture. Unit must be used in accordance with manufactures instructions and with good microbiological laboratory work practices.

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