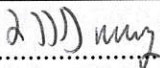
	DOC No: AEU00054	TITLE: MDI ULTRASONIC WASHING AND PACKING			Advanex Europe Ltd Head Office: Southwell Site Mill Park Way, Southwell Nottinghamshire, UK, NG25 0ET ☎: 00 44 (0) 1636 815555 ☎: 00 44 (0) 1636 817725 Bilborough Site ☎: 00 44 (0) 115 9293931 ☎: 00 44 (0) 115 9295773 Video Conference IP:80.176.189.113 www.advanexeurope.co.uk general@advanexeurope.co.uk
	Revision.	Date	Supersedes	Page	
	05	23/Nov/2015	Iss.04/ 11/May/2015	1 of 11	

DOCUMENT APPROVAL


Author's Signature:

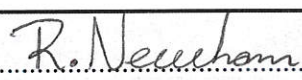
Your signature indicates that this document has been prepared in accordance with company standards or guidelines and adequately reflects the tasks and deliverables necessary.

Signature		Date	23-Nov-2015
Print Name	James Drury		
Title	Production Engineer		

Reviewer's Signature:

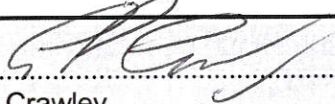
Your signature indicates that, you have reviewed this document and that it accurately and completely reflects the tasks and deliverables necessary.


Signature		Date	23 Nov 2015
Print Name	Steve Harris		
Title	Head of M&P manufacturing		

Signature		Date	23 Nov 2015
Print Name	Rob Newham		
Title	Operations Manager AEUS		

Quality Assurance/Compliance Approver's Signature:

Your signature indicates that this document complies with company standards or guidelines; and that the documentation and information contained herein complies with applicable regulatory, corporate, divisional/departmental requirements, and current Good Manufacturing Practices.

Signature		Date	10 Dec 2015
Print Name	Gary Crawley		
Title	Quality Manager		

	DOC No: AEU00054	TITLE: MDI ULTRASONIC WASHING AND PACKING			Advanex Europe Ltd Head Office: Southwell Site Mill Park Way, Southwell Nottinghamshire, UK, NG25 0ET ☎: 00 44 (0) 1636 815555 ✉: 00 44 (0) 1636 817725 Bilborough Site ☎: 00 44 (0) 115 9293931 ✉: 00 44 (0) 115 9295773 Video Conference IP:80.176.189.113 www.advanexeurope.co.uk general@advanexeurope.co.uk
	Revision.	Date	Supersedes	Page	
	05	23/Nov/2015	Iss.04/ 11/May/2015	2 of 11	

1.0 PURPOSE

- 1.1. The purpose of the document is to define the SOP (Standard Operating Procedure) to be followed by ADVANEX EUROPE Ltd, in order to ensure that all MDI (Measured Dose Inhalers) product is ultrasonically cleaned and then packed in a controlled and consistent manner.

2.0 SCOPE

- 2.1. The ultrasonically cleaning and packing method described is for the specified characteristics of MDI wire forms.
- 2.2. All equipment and processes on the MDI section have been formally qualified and validated. All personnel working on the MDI section are responsible for ensuring that no changes are made to the process without full change control as defined in SOP/PH001 (Document Number AEU00226).

3.0 TERMS, DEFINITIONS & ABBREVIATIONS


- 3.1. None applicable.

4.0 HEALTH, SAFETY & ENVIRONMENTAL

- 4.1. GMP (Good Manufacturing Practice) guidelines apply (Document Number AEU00389).
- 4.2. Within the factory area safety footwear is mandatory.
- 4.3. Within the factory area safety glasses must be worn at all times.
- 4.4. Non-Sterile Gloves must be worn in the Wash and Packing area.
- 4.5. Hair covers must be worn in the Wash and Packing area.

5.0 ASSOCIATED DOCUMENTS

- 5.1. Material Safety Data Sheets (COSHH).
- 5.2. Hazardous waste (Document Number AEU00062).
- 5.3. Actions to be taken upon the Spillage of Chemicals (Document Number AEU00007).
- 5.4. Maintenance record (Document Number AEU00403).
- 5.5. Temperature log (Document Number AEU00406).
- 5.6. MDI Weigh Count SOP (Document Number AEU00056).
- 5.7. Molecular Sieve Main (Document Number AEU00407).
- 5.8. Packing Box Assembly Procedure (Document Number AEU00323).
- 5.9. Packaging discrepancy form.
- 5.10. Production Record sheet: For recording the quantity of parts produced and wire information.
- 5.11. Works Order Instructions: Allowing full traceability for the batch.

	DOC No: AEU00054	TITLE: MDI ULTRASONIC WASHING AND PACKING			Advanex Europe Ltd Head Office: Southwell Site Mill Park Way, Southwell Nottinghamshire, UK, NG25 0ET ☎: 00 44 (0) 1636 815555 ☎: 00 44 (0) 1636 817725 Bilborough Site ☎: 00 44 (0) 115 9293931 ☎: 00 44 (0) 115 9295773 Video Conference IP:80.176.189.113 www.advanexeurope.co.uk general@advanexeurope.co.uk
	Revision.	Date	Supersedes	Page	
	05	23/Nov/2015	Iss.04/ 11/May/2015	3 of 11	

6.0 PROCEDURE

6.1. Ultrasonic Wash Information.

- 6.1.1. The washing machine is externally calibrated & serviced by the manufacturer. Additional maintenance is carried out by authorised internal personnel.
- 6.1.2. The machine operative is responsible for ensuring that accurate logs are maintained for all records as detailed in Section 5:
- 6.1.3. Access to all machine settings are password protected. Any use of this password must be done only after the agreement of the Production Leader who will sign the maintenance record to verify any such agreement.
- 6.1.4. The machine is programmed to prevent use if the solvent levels drop below the minimum required. The solvent level is checked daily by the machine operator. Any solvent additions are recorded by the operator on the maintenance record, if any solvent is spilt during the topping up it is to be contained and removed in accordance with SOP Actions to be taken upon the Spillage of Chemicals (Document Number AEU00007).
- 6.1.5. Before beginning the process detailed below ensure that the correct bags and boxes are ready to receive the washed components and that all other specified processes have been completed.

6.2. Ultrasonic Wash Process.

Process Stage	Cleaning Agent	Time Required
Stage 1	100% Immersion into Chemical ratio HFE 71DA 15 litres (Approx.)	Minimum 3 minutes
Vapour Rinse	Vapours of Chemical ratio HFE 71DA	Minimum 30 seconds
Freeboard Dry	N/A	Minimum 30 seconds

Table 1: Required machine settings and chemical compounds.

- 6.2.1. **Default Cleaning Settings.** Use the machine settings and chemical compound as detailed in Table 1:
- 6.2.2. **Loading Process.**


	DOC No: AEU00054	TITLE: MDI ULTRASONIC WASHING AND PACKING			Advanex Europe Ltd Head Office: Southwell Site Mill Park Way, Southwell Nottinghamshire, UK, NG25 0ET ☎: 00 44 (0) 1636 815555 ✉: 00 44 (0) 1636 817725 Bilborough Site ☎: 00 44 (0) 115 9293931 ✉: 00 44 (0) 115 9295773 Video Conference IP:80.176.189.113 www.advanexeurope.co.uk general@advanexeurope.co.uk
	Revision.	Date	Supersedes	Page	
	05	23/Nov/2015	Iss.04/ 11/May/2015	4 of 11	




Figure 1: Loading up the pots.

- 6.2.2.1. **Load Pots.** Place the funnel over the pot to be filled then tip one bag into each pot as shown in Figure 1: remove the funnel and place the full pot into the basket.
- 6.2.2.2. **Load Full Basket Onto Conveyor.** Once the sixth pot has been loaded, place the full basket into the conveyor. The machine will automatically wash the components, when it's finished the machine will place the clean components on the conveyor on the far side of the wash.



Figure 2: The awaiting packing area in the Laminar Flow packing station

- 6.2.3. **Removal from Wash.** When the wash process is complete transfer the basket directly onto the awaiting packing area in the Laminar Flow packing station, as shown in Figure 2:
- 6.2.4. **Visual Inspection.** A visual inspection of 10 randomly selected parts is performed using a 10X microscope, immediately after the first wash cycle each day. If any visible contamination or discoloration is identified the visual inspection area of the maintenance
- SOP Template: AEU00061 Version: 02 Date: 20-Jan-14

	DOC No: AEU00054	TITLE: MDI ULTRASONIC WASHING AND PACKING			Advanex Europe Ltd Head Office: Southwell Site Mill Park Way, Southwell Nottinghamshire, UK, NG25 0ET ☎: 00 44 (0) 1636 815555 ☎: 00 44 (0) 1636 817725 Bilborough Site ☎: 00 44 (0) 115 9293931 ☎: 00 44 (0) 115 9295773 Video Conference IP:80.176.189.113 www.advanexeurope.co.uk general@advanexeurope.co.uk
	Revision.	Date	Supersedes	Page	
	05	23/Nov/2015	Iss.04/ 11/May/2015	5 of 11	

record is completed accordingly and all parts cleaned since the last acceptable inspections, are identified and segregated. The incident must be reported to the Head of QA (Quality Assurance) who will initiate an investigation, document and retain the results.

6.3. Bagging.

6.3.1. Bagging Information.

6.3.1.1. Springs are packed only when all specified processes have been completed.

Note: Gloves must be worn, the washed springs must not come into contact with the operative's hands.



Figure 3: Example of the bag heat sealer control panel.

6.3.1.2. Ensure the heat sealer is set to achieve an appropriate seal, as shown by the example in Figure 3:

6.3.2. Bagging Procedure.

6.3.2.1. **Labelling Bags.** The correct label is then adhered to the bag. The final bag of production as identified in step 6.3.2.5 will have a 'STRATIFIED SAMPLES' label applied at this point.



Figure 4: Decanting from cleaning pot to clean, labeled bag.

6.3.2.2. **Filling Bags.** Place the required number of components into the bag, as detailed on the Works Order Instructions, using Figure 4: as a guide.


	DOC No: AEU00054	TITLE: MDI ULTRASONIC WASHING AND PACKING			Advanex Europe Ltd Head Office: Southwell Site Mill Park Way, Southwell Nottinghamshire, UK, NG25 0ET ☎: 00 44 (0) 1636 815555 ☎: 00 44 (0) 1636 817725 Bilborough Site ☎: 00 44 (0) 115 9293931 ☎: 00 44 (0) 115 9295773 Video Conference IP:80.176.189.113 www.advanexeurope.co.uk general@advanexeurope.co.uk
	Revision.	Date	Supersedes	Page	
	05	23/Nov/2015	Iss.04/ 11/May/2015	6 of 11	



Figure 5: Sealing of bags.

6.3.2.3. **Sealing Bags.** Ensure that there are no components at the top of the bag that may compromise the seal, holding fingers away from the heat pads, as shown in Figure 5: press the foot pedal to close the heat pads when the pads open after their cycle ensure that the bag is correctly sealed, as shown in Figure 6: and then replace the bag into the heat sealer slightly further away from the components, seal as before and check the integrity of the second seal. Place the sealed bag inside a second bag, which also is then to be double heat sealed. The operator must ensure that the seal of the second bag does not overlap the inner bag.

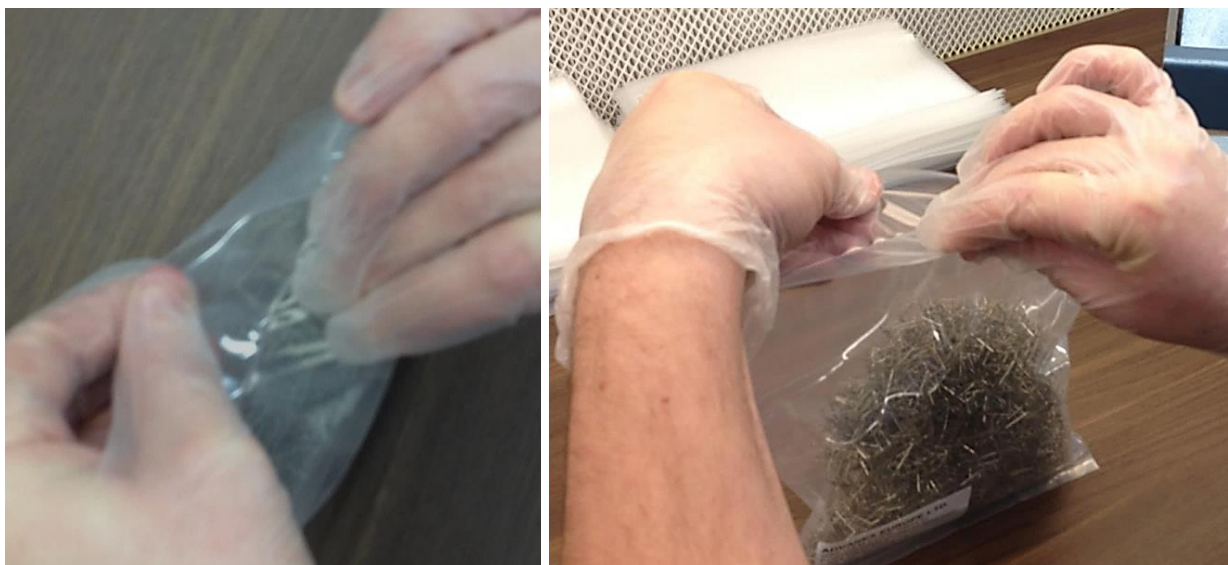



Figure 6: Checking the integrity of the seal.

	DOC No: AEU00054	TITLE: MDI ULTRASONIC WASHING AND PACKING			Advanex Europe Ltd Head Office: Southwell Site Mill Park Way, Southwell Nottinghamshire, UK, NG25 0ET ☎: 00 44 (0) 1636 815555 ☎: 00 44 (0) 1636 817725 Bilborough Site ☎: 00 44 (0) 115 9293931 ☎: 00 44 (0) 115 9295773 Video Conference IP:80.176.189.113 www.advanexeurope.co.uk general@advanexeurope.co.uk
	Revision.	Date	Supersedes	Page	
	05	23/Nov/2015	Iss.04/ 11/May/2015	7 of 11	

6.3.2.4. **Checking.** The operator is responsible for ensuring that all of the labels are used with no wire forms remaining, any such discrepancy is recorded on the Works Order Instruction and the batch segregated pending further investigation. Records of all reported discrepancies and the results of any subsequent investigation will be recorded by the section leader on a packaging discrepancy form and this form will be passed to the Head of QA.

6.3.2.5. **The Final Bag.** The bag detailed in the appropriate step of ‘MDI Weigh Count (Document Number AEU00056)’ will be identified by a ‘STRATIFIED SAMPLES’ label placed on the inner bag.

6.4. Boxing.

6.4.1. **Prepare Box.** Prepare box in accordance with Packing Box Assembly Procedure (Document Number AEU00323).




Figure 7: Tape reinforcing the box.

6.4.2. **Box Reinforcing.** Turn the box over and cut two strips of tape to hold the small flaps down as shown in Figure 7:



Figure 8: Example of components being loaded. **Note:** Not All Components Use Sub Dividers.

	DOC No: AEU00054	TITLE: MDI ULTRASONIC WASHING AND PACKING			Advanex Europe Ltd Head Office: Southwell Site Mill Park Way, Southwell Nottinghamshire, UK, NG25 0ET ☎: 00 44 (0) 1636 815555 ☎: 00 44 (0) 1636 817725 Bilborough Site ☎: 00 44 (0) 115 9293931 ☎: 00 44 (0) 115 9295773 Video Conference IP:80.176.189.113 www.advanexeurope.co.uk general@advanexeurope.co.uk
	Revision.	Date	Supersedes	Page	
	05	23/Nov/2015	Iss.04/ 11/May/2015	8 of 11	

6.4.3. **First Layer.** Place a Layer Pad into the box. If required, place the Layer Dividers and the appropriate Sub Dividers as detailed in Figure 8:

6.4.4. **Component Loading.** The Packing operative will place the finished bags into the correct box as per Works Order Instruction, ensuring that all bags contain the correct product, are sealed, and correctly labelled.

6.4.5. **Further Layers.** Once the first layer is complete with the required number of bags place a Layer Pad over it and if required, the Layer Dividers and the appropriate Sub Dividers using the same method as was employed for the first layer and detailed in Figure 8:

6.4.6. **Final Layer.** Once the final layer is complete, place a Layer Pad over it and tape the box down as described for the base in Packing Box Assembly Procedure (Document Number AEU00323).

6.4.7. **Labelling.** The sealed box then is to have the correct labels applied securely to both ends of the box.



Figure 9: The Stratified sample box shown both open and loaded with the three sample bags and sealed by a "Stratified Samples Enclosed" Label.

6.5. **The Stratified Sample Box.** The stratified sample box will contain the last bag of the production batch (see 6.3.2.5) for each component type and will be identified with a label stating 'STRATIFIED SAMPLES ENCLOSED'.

6.6. **Sealing the Stratified Sample Box.** Once the three different stratified samples have been loaded into the stratified sample box, seal the box using a second 'STRATIFIED SAMPLES ENCLOSED' label, as shown in Figure 9:

6.7. **Palletising the Boxes.**


	DOC No: AEU00054	TITLE: MDI ULTRASONIC WASHING AND PACKING			Advanex Europe Ltd Head Office: Southwell Site Mill Park Way, Southwell Nottinghamshire, UK, NG25 0ET ☎: 00 44 (0) 1636 815555 ✉: 00 44 (0) 1636 817725 Bilborough Site ☎: 00 44 (0) 115 9293931 ✉: 00 44 (0) 115 9295773 Video Conference IP:80.176.189.113 www.advanexeurope.co.uk general@advanexeurope.co.uk
	Revision.	Date	Supersedes	Page	
	05	23/Nov/2015	Iss.04/ 11/May/2015	9 of 11	



Figure 10: Prepared pallet showing the number and ‘DOCUMENTS & SAMPLES ENCLOSED’ label.

- 6.7.1. **Preparing the Pallets.** Lay a pallet of the type defined on the Works Order Instruction, out as shown in Figure 10: Onto the pallet place the layer board taken from the storage racking and number the pallet using the numbered labels, on the final pallet add the label ‘DOCUMENTS & SAMPLES ENCLOSED’ as shown in Figure 10:



Figure 11: Complete set of boxes for the Drive Wheel Support, then complete first layer.

- 6.7.2. **First Layer.** Place the Drive Wheel Support boxes on the first layer along with the first box of the Drum Axle. As shown in Figure 11:


	DOC No: AEU00054	TITLE: MDI ULTRASONIC WASHING AND PACKING			Advanex Europe Ltd Head Office: Southwell Site Mill Park Way, Southwell Nottinghamshire, UK, NG25 0ET ☎: 00 44 (0) 1636 815555 ✉: 00 44 (0) 1636 817725 Bilborough Site ☎: 00 44 (0) 115 9293931 ✉: 00 44 (0) 115 9295773 Video Conference IP:80.176.189.113 www.advanexeurope.co.uk general@advanexeurope.co.uk
	Revision.	Date	Supersedes	Page	
	05	23/Nov/2015	Iss.04/ 11/May/2015	10 of 11	



Figure 12: Layer board in place and first box of second layer in position.

6.7.3. **Layer Board Between Layers.** Get a small layer board from the storage racking, place the small layer board on top of the first layer of boxes. Place the second row of boxes over the top of the layer board, as shown in Figure 12: & Figure 13:



Figure 13: Full pallet with the Slipping Clutch Boxes and the stratified sample box.

6.7.4. **Slipping Clutch Boxes.** Place the Slipping Clutch boxes as shown in Figure 13:

6.7.5. **The Stratified Sample Box.** Place the Stratified Sample box with the Slipping clutch boxes as shown in Figure 13:

6.8. **Task Completion.**


	DOC No: AEU00054	TITLE: MDI ULTRASONIC WASHING AND PACKING			Advanex Europe Ltd Head Office: Southwell Site Mill Park Way, Southwell Nottinghamshire, UK, NG25 0ET ☎: 00 44 (0) 1636 815555 ☎: 00 44 (0) 1636 817725 Bilborough Site ☎: 00 44 (0) 115 9293931 ☎: 00 44 (0) 115 9295773 Video Conference IP:80.176.189.113 www.advanexeurope.co.uk general@advanexeurope.co.uk
	Revision.	Date	Supersedes	Page	
	05	23/Nov/2015	Iss.04/ 11/May/2015	11 of 11	



Figure 14: Example of the storage area.

- 6.8.1. **Completed Pallet.** When the batch quantity, as advised on the Works Order Instruction is complete, move the pallet into the storage area and inform the stores personnel, as shown in Figure 14:

NOTE: If The Floor Level Has No Available Spaces Leave The Pallet In The Aisle And Inform The Stores Personal, Do Not Attempt To Place A Pallet Onto The Racking Yourself.

- 6.8.2. **Completed Batch.** When the final pallet of the batch is complete take completed Works Order Instruction and Production Record sheet to the Production Controller.