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General Notes and warnings

- **THESE ITEMS ARE HEAVY.**
- **Please ensure that you have the necessary lifting equipment available**
- **DO NOT ATTEMPT TO USE THE PIPES OF ANY ITEM AS A HANDLE**
- **DO NOT LOOSEN (UNDO) ANY FITTINGS**
- **DO NOT REMOVE ANY PIPEWORK**
- **USE SAFETY EQUIPMENT, MASKS AND COVERALLS AS DIRECTED IN GENERAL WORK INSTRUCTION WI03**
- **Information contained in this document is extracted from the BigRam specification document PS123 issue 4 and drawings G324 Issue2 and G342 Issue 5.**

1. Goods In

- Unpack from delivery boxes.
- Retain boxes for dispatch of finished goods.
- Visually inspect materials received from customer to check for apparent damage and Correct Quantities and Items as specified on the order / delivery note.
- In case of any discrepancies place in quarantine and contact the customer.
- Prepare job card based on form 9100 AMF 58 for all items recording the quantities received of each item on the rear of this card.
- Prepare additional job card (9100 AMF 07) for blasting operations as required for cylinders and other items that require blasting as shown on the reverse of the main job card.
- Add items to production schedule.
- Leave items on delivery pallet - place job cards in plastic envelope with items.

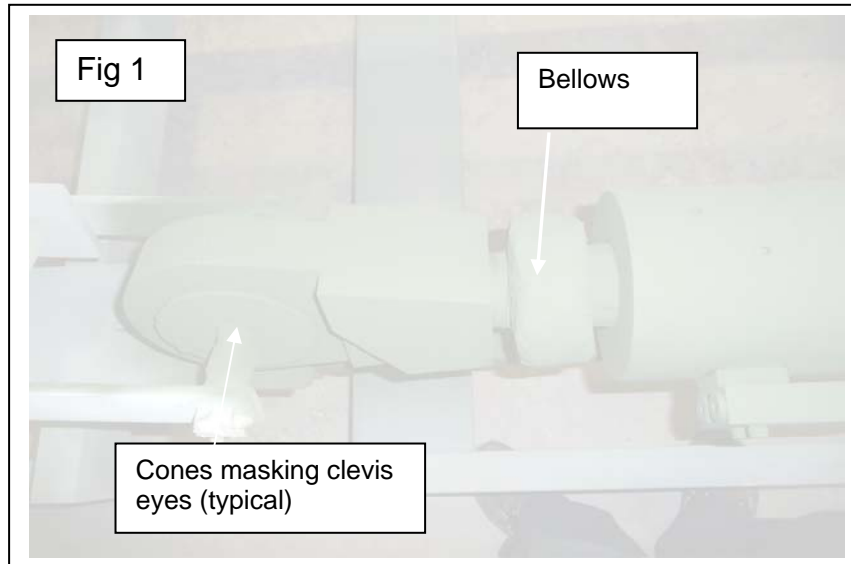
2. Preparation and First Mask (Cylinders only)

Cylinders – all cylinders require blast preparation prior to painting as follows:

- Fit the lifting and clevis masking cone devices – see Fig 1
- Mount items on the appropriate jig for the part.
- The following drawings are available in the customer file for reference:
 - BRM 12049 Issue 1

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- Remove any jubilee clips that retain hydraulic pipes on cylinders and retain for painting
- Where oil feed pipes run the length of the cylinder, use small wedges to lift the pipes 10 mm clear of the cylinder.



- Wipe down the units with *T Degreaser J102*
- Mask using “gaffer tape” the following areas of the cylinders:
 - All cylinder rods and the seal areas.
 - Pay particular attention to the masking of the bellows assembly on the Rotate Cylinders see Fig 1
 - Manifold Block Area of Anodised finish.
 - The identification labels
 - The control valves (hexagonal body and spindle)

3. Blast

- Ensure that the required masking is in position and is firmly fixed to the items.
- Place the items in the blast cabinet.
- Blast using aluminium oxide (60 – 80) until all areas are a uniform colour.
- Complete the required details on the blasting job card, including the data and time of the completion of the job.
- Use compressed air jet / brushes as appropriate to remove all blasting debris from the items and the jigs. Pay particular attention to the areas around the clevis eye masks.

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- Record the date and time that the operation is completed on the main job card.

Note – first coat painting of these items is to be completed within 4 hours of the completion of the shot blasting.

4. De mask after blasting

- Ensure all blasting debris is cleaned away.
- Remove masking materials from the cylinders as follows:
 - From the black anodised areas
 - From the control valves and spindles
- Remove tube retaining bands from the A Frame and Articulator cylinders. Retain bands for painting separately.
- Fit temporary jacking wedges to hold tubes away from cylinders
- Record the time taken to complete this operation on the job card (9100 AMF 57)

5. Degrease and clean (all items)

- Prior to painting, degrease all items by hand, using wipes as required and cleaning solvent *T Degreaser J102* as necessary.
- Ensure that all grease and contamination is removed from the items.
- In the case of the cylinders, ensure that the areas around the clevis pin cones is clear of debris.
- Record the time the operation starts and finishes on the job card.

6. Mask for painting

Ensure the items are dry and mask as detailed below:

- Ensure the following areas are masked:
 - Flange port areas
 - Spot faces of threaded ports
 - All solenoid labels and assembly serial labels
 - black plastic nuts for retention of solenoids
 - electrical connection
 - mating face of pump assembly
- Ensure that the following are *not* masked
 - SV labels
 - Solenoid bodies
 - Plastic covers of adjusts

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- In the case of the large rams, carefully insert small wooden wedges between the pipe work and the main body of the cylinder to lift the pipe work is just clear of the cylinder body so that the cylinder body and pipe work can be painted.

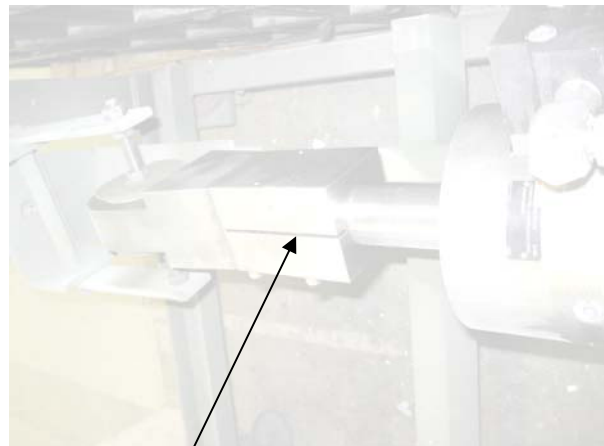
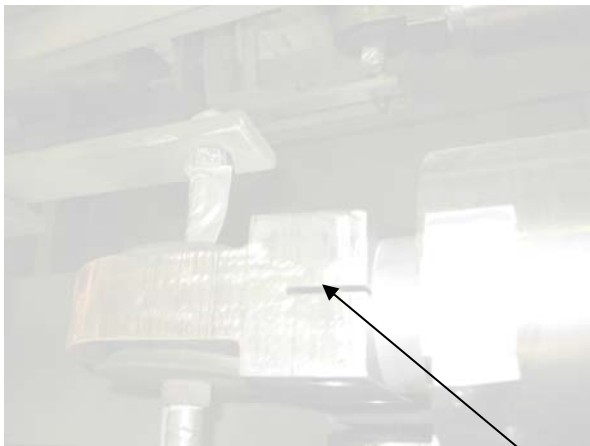
7. Etch Priming DOD-P-15328D (all items, including tube retaining bands)

- Check that the masking is correctly and firmly applied.
- Source the etch priming materials ensuring that they are within the use by dates.
- Mix according to spec sheet AMF DS04.
- Record batch numbers, mix ratio, job start and finish times, date and shop environmental conditions on the job card
- Apply the paint in a continuous wet film within 1 hour of preparation mixing ensuring that all surfaces (including tapped holes and Allen key sockets) are covered
- Allow paint to dry according to spec sheet AMF DS04.
- Recoat within 24 hours


8. Apply Seal

- Apply Silkaflex 221 to the split joints of the rod eye ends on these cylinders as shown in Fig 3

Fig 3



Apply Silkaflex 221 to seal all of these splits

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9. Paint System (all items, including tube retaining bands)

9.1. Epoxy Primer MIL-P-53022B

- Check that the masking system is still firmly applied
- Source the primer materials ensuring that they are within the “use by” dates
- Mix according to AMF DS04
- Record batch numbers, mix ratio, job start and finish times and shop environmental conditions on the job card
- Apply the paint with spray to achieve a wet film thickness of 65 – 97 microns ensuring that all surfaces (including tapped holes and Allen key sockets) are covered
- Allow paint to dry according to spec sheet AMF DS04.
- Recoat within 48 hours

9.2. Top Coat MIL-DTL-64159 Type II

- Check that the masking is correctly and firmly applied.
- Source the etch priming materials ensuring that they are within the use by dates.
- Mix according to spec sheet AMF DS04.
- Record batch numbers, mix ratio, job start and finish times and shop environmental conditions on the job card
- Apply the paint in a single wet layer of continuous build. Allow paint to dry according to spec sheet AMF DS04 ensuring that all surfaces (including tapped holes and Allen key sockets) are covered

10. De mask

- Handle the finished product as little as possible and only when wearing linen gloves
- Carefully remove the masking materials (and wedges, where used) from the finished job and ensure that any paint residue is removed from masked areas.
- Examine all surfaces, particular the tapped holes and Allen key sockets. Patch repair as required (see section 11).
- Record time taken to complete this on the job card.

11. Tube Retaining Bands

- Refit the tube retaining bands to the cylinders, ensuring that the positions of the bands conform to the dimensions shown in Fig 4

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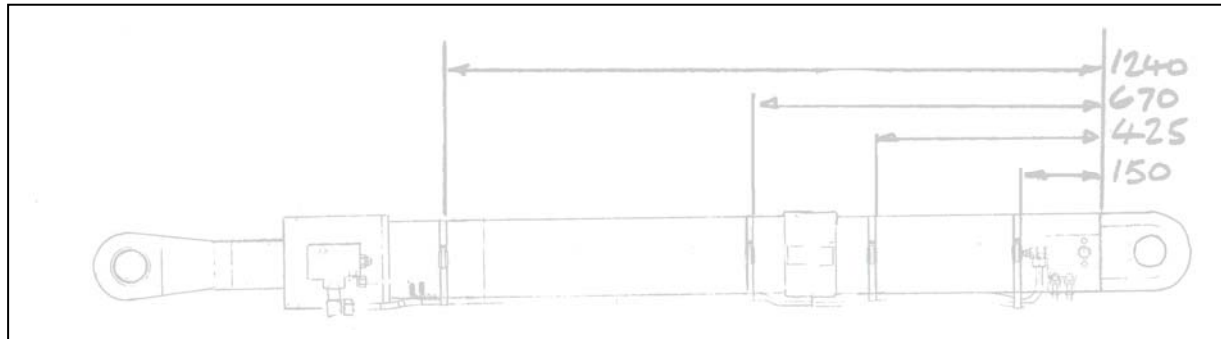



Fig 4 – Left and Right Hand Articulator

12. Inspection

- Visually inspect all items to ensure that application is uniform, free of bubbles and other defects – see Work Instruction WI15.
- Record the results on the job card.
- Allow the product to cure (one week at normal shop temperatures).
- Perform thickness measurements using the elco-meter on the finished products to ensure that the specified coat thickness is met (as defined on the data sheet AMF DS04 or its equivalent). Indicate Pass/Fail on the job card.
- Perform cross hatch test to measure adhesion of product according to Ascot Work Instruction WI 17 – this should take place on a flat space on one item in each batch and the position should be varied from batch to batch. As required by the WI 17, photograph the results, print 2 copies and attach both to the job card.
- Under take patch repair on any necessary areas and on the area where the cross hatch test has been performed.

13. Patch Repair

- Clean paint surface with detergent, rinse and allow to dry.
- Lightly abrade with 320 grit silicon carbide paper.
- Cut back blistering, flaking or chipped paint until a firm surface is reached then roughen the surface and chamfer the edges with medium grade wet and dry abrasive.
- Wipe down surfaces with the thinner appropriate to the paint used.
- Apply mixed paint by brush or spray.

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- Apply first coat as soon as possible after surface preparation and extend some 50mm over the adjoining sound coat.
- Where bare metal has been exposed, the first coat must be the Etching primer.
- Where the primer is exposed but undamaged the first coat shall be the primer.
- Follow the primer coat with the specified finish coat.
- Replace tube retaining bands

14. Pack

- Carefully demount from handling jigs
- Pack in wooden boxes supplied by customer
- Obtain C of C from office and pack with goods, together with one copy of the cross hatch test photograph.
- Retain the 2nd copy with the job card for future reference.