

# R0015280 Module E Pneumatic Tests

Instructions to complete a full pneumatics test on completed module

 Difficulty **Medium**

 Duration **2 hour(s)**

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Comments

## Introduction

### Tools required

Pcl air line -12mm connector

### Parts Required

R0015000B Completed Module C

## Step 1 - Health and Safety

In this process pneumatic outputs will be tested in a non emergency stop environment

Ensure safe working practice is followed

- Ensure Machine test area is clear from personnel and all staff are aware of testing procedure commencing
- Ensure all Air connection lines are connected
- Ensure all walkways are not impeded by trailing pipes/leads
- Ensure all mechanical assemblies are at a sufficient stage for testing



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## Step 2 - Check all connections are made

- Check all valve bank ports are either connected or blanked off
- Check all mains feed pipes are connected or isolated
- Check all regulators are regulated to minimum setting
- Check all air flow control valves on cylinders and blow lines are set to mid range adjustment

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## Step 3 - Connect air feed

Connect air feed to mains 12mm feed pipe using pcl coupling and 12mmmm push fit adapter

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## Step 4 - check for air leaks

Investigate any air leaks and resolve

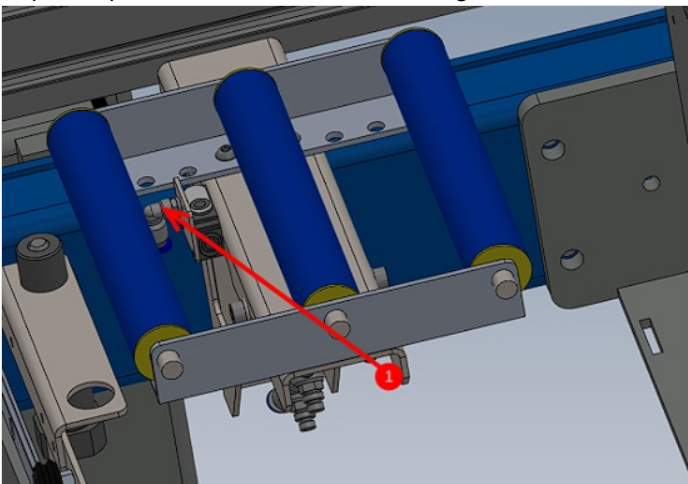
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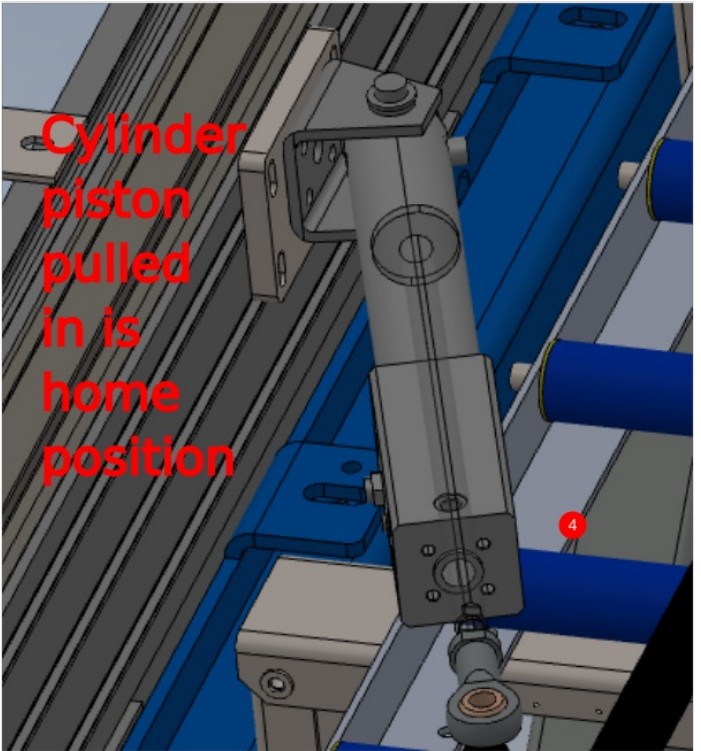
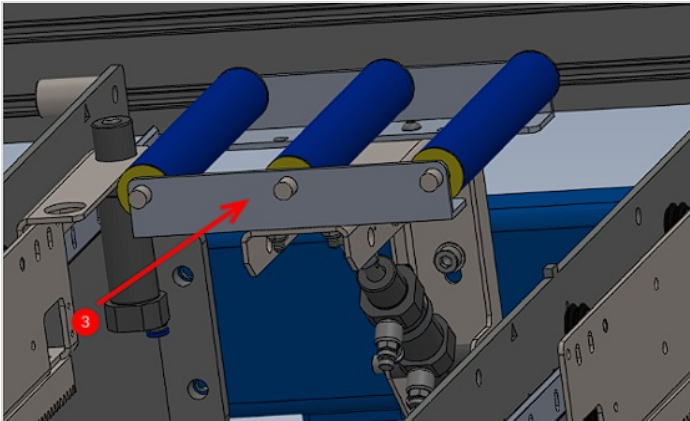
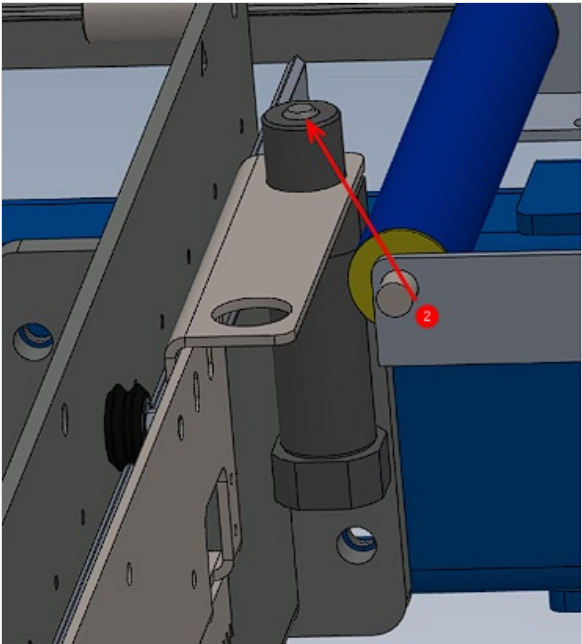
## Step 5 - Check home positions

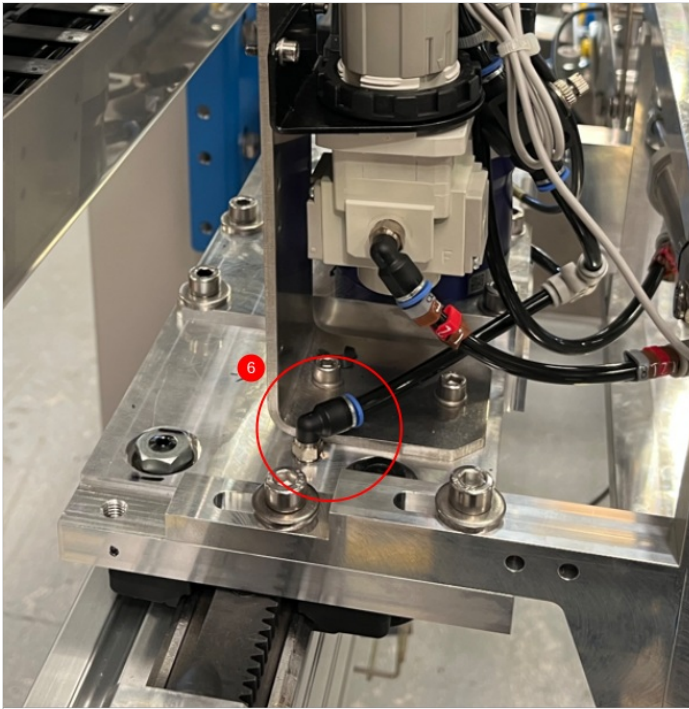
With no valves active ( no over rides pressed ) the following home positions of pneumatic assemblies should be

- 1 Y239 material load sensor blowers should be switched OFF
- 2 Y147 Pop up E should be retracted
- 3 Y146 Roller beds should be lifted
- 4 Y221 Channel bar should be closest to Hepco beam (retracted)
- 5 Y220 Channel lock should be turned on (no movement possible )
- 6 Y241 Rack blower should be switched OFF
- 7 Y131 Gripper height should be raised up

Any discrepancies on these should be investigated to correct

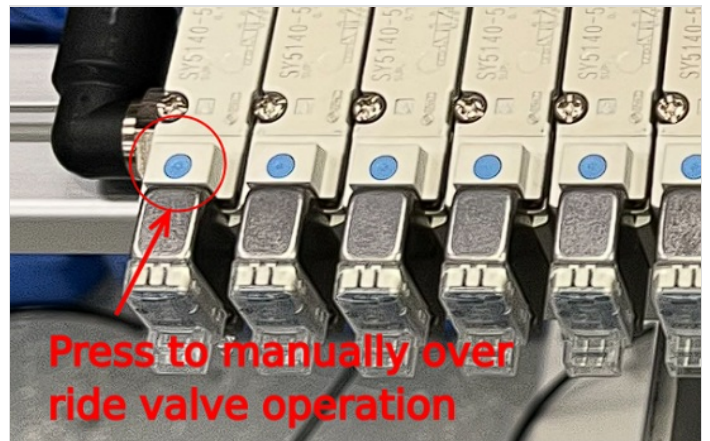






## Step 6 - Test valve bank outputs

Each valve on the Valve bank can be manually overridden to activate the output.  
When each valve is fired, attention should be paid to identify any air leaks that occur when the active side of the system becomes live



## Step 7 - Test Y239 material load sensor blowers should be switched OFF

manually fire Y239.  
Check that flow regulator is fitted in the correct orientation . Check this by holding the valve on over ride then adjust the thumb wheel fully clockwise until the air flow stops , then turn fully anti clockwise and air flow should reach maximum  
If no adjustment is possible from thumb wheel, this means the flow regulator is fitted back to front

## Step 8 - Test Y147 Pop up E should be retracted

Manually over riding Y147 valve should make All pop up cylinders fire the piston into the active position  
Check for air leaks in active position

## Step 9 - Test Y146 Roller beds should be lifted

Manually over ride Y146 and all roller beds should drop down from the lifted position. Investigate any air leaks in the activated position  
Movement should be smooth , and even across all roller beds operating.  
If movement is violent, check that process has been followed and all flow regs are set to 2 1/2 turns open from the fully closed position.  
Report through ncr if this is the case

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## Step 10 - Test Y221 Channel bar and Y220 Channel lock

Y221 and Y220 need to be tested in parallel

Set Y220 regulator to 0.1 MPA Manually fire and hold Y221 . Adjust regulator to increase pressure to 0.1 MPA

If regulator doesn't increase in pressure check pipework for faults .

With Y221 held, Activate Y220. Channel bar should move as the lock is now released.

Release Y220 , then release Y221. Channel bar should not move.

Activate Y221 and then the channel bar should retract.

Doing these tests ensures the lock function as well as channel movement is correct

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## Step 11 - Test Y241 Rack blower

manually fire Y241.

Check that flow regulator is fitted in the correct orientation . Check this by holding the valve on over ride then adjust the thumb wheel fully clockwise until the air flow stops , then turn fully anti clockwise and air flow should reach maximum

If no adjustment is possible from thumb wheel, this means the flow regulator is fitted back to front

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## Step 12 - Test Y131 Gripper height

Manually fire Y131

With valve held in the over ridden state, adjust regulator next to gripper to increase pressure to 0.4 MPA and then reduce pressure to zero.

This is to confirm regulator is fitted to the system correctly . If regulation is not possible, check piping as fault is evident .

Once happy with operation, set regulator pressure to 0.15 MPA

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## Step 13 - Remove pcl connections

once testing is complete remove air coupling and associated cable/pipe management installed for testing

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