

Work Instruction		WO No.	Date:
Scope:			
Team Leader:		EP Point Motor Type:	
Activity: EP Point Motor (with micro-switches) Like For Like Renewal			
Reference: PR S 40010, PR S 40011, MN S 41341			
Activity No.	Task No.	Work Description	Completed Name/Sign
APPARATUS INSPECTION & PREPARATION			
1	1A	Ensure the new EP point motor/micro-switch unit is of correct configuration and bench tested. Inspect equipment type and configuration in accordance with the specific design and compare to the existing EP point motor/micro-switch unit.	
	1B*	Bell test and wire/null count internal wiring of the new micro-switch unit, compare to the specific circuit design and existing machine. Include a correlation of connected links and bridges to the circuit book. Visually inspect and insulation test the internal wiring.	
2	2A	Confirm the Normal position of points.	
	2B*	On the existing micro-switch unit, wire/null count the incoming terminals, including any bridges and identify tail cable core numbers on the terminals and compare to specific circuit diagram.	
	2C	Identify and mark air lines at the air control unit and the EP point motor. *Document the disconnections on attached circuit diagram.	
	2D	Conduct an apparatus inspection of the condition of the existing EP point motor mounting/fixings. Prepare to replace as required.	
SAFeworking & DISCONNECTION FROM INTERLOCKING			
3	3A	Ensure affected signalling apparatus is booked out of use in accordance with PR S 40008. Obtain authorisation for any temporary bridging in accordance with PR S 40002 as necessary.	
	3B	Disconnect the affected signalling apparatus and clip & lock points in accordance with PR S 40009 – Disconnection of Signalling Apparatus.	
	3C	If applicable, apply temporary bridging in accordance with PR S 40002. Test bridging and any contacts remaining in circuit as functional.	
DISCONNECTION, REMOVAL AND INSTALLATION			
4	4A*	Open links in location for micro-switch unit tail cable.	
	4B	Turn-off air supply valve to the points. Disconnect air lines in EP point motor, protect ends and withdraw clear.	
	4C*	Disconnect cable in micro-switch unit, protect ends and withdraw clear.	
	4D	Disconnect rodding and mounting bolts and remove EP point motor/micro-switch unit.	
5	5A	Install new EP point motor/micro-switch unit and connect all securing nuts, bolts and rodding. Replace any defective mounting/fixings.	
	5B	Inspect the cable and air lines for any signs of damage (replace if necessary). *Conduct an insulation test of the tail cable and record on circuit diagrams.	
	5C	Connect air lines as previously marked. *Connect the cables in accordance with previously correlated circuit diagram	
	5D	Conduct an apparatus inspection to ensure the installation is physically correct (all bolts, hoses, nuts and unions should be tight).	
ADJUSTMENT			
6	6A	Reopen the air valve, check/adjust the EP point motor air-flow regulators (if applicable). Operate the EP point motor and ensure no air leaks.	
	6B	Check/adjust the EP point motor travel and ensure latches correctly engage at each end of the stroke.	
	6C	Adjust the micro-switch actuator and ensure correct operation of switches.	
	6D	Following adjustment conduct a safety, security and reliability inspection of the fixings, split pins, locking tabs and keeper plates.	

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CERTIFICATION			
7	7A*	Wire count all terminals of the micro-switch unit with incoming tail cable installation to circuit diagram (NB: links to be counted as wire). Record on circuit diagram.	
8	8A	Close all associated terminal links in location and remove any temporary bridging (if applicable).	
9	9A	Using the air control unit, operate the points Normal and Reverse and confirm both ends operate correctly.	
	9B	Ensure open switch flangeway clearance along switch meets specification. Ensure closed switch fully closes up against stock rail. Ensure back drive is functional (if applicable).	
		Points Normal	Open Switch
		Points Normal	Closed Switch
		Points Reverse	Open Switch
		Points Reverse	Closed Switch
10 Note: Activity 10 shall be performed if bridging authority applied	10A*	Conduct a Points Correspondence Test Normal - Operate points to the Normal position and open each contact in the Normal detection circuit in turn and ensure Normal detection is lost and restored. Each contact# tested during the correspondence test shall be observed to “open” when the points are operated to the Reverse position. (<i>#denotes not required for encapsulated contacts which are back-proved in the opposite position.</i>)	
	10B*	Conduct a Points Correspondence Test Reverse - Operate the points to the Reverse position and open each contact in the Reverse detection circuit in turn and ensure Reverse detection is lost and restored. Each contact# tested during the correspondence test shall be observed to “open” when the points are operated to the Normal position. (<i>#denotes not required for encapsulated contacts which are back-proved in the opposite position.</i>)	
	10C*	Conduct an Out of Correspondence test of the following combinations and ensure no detection. Note: The following combinations only apply for an existing double-ended layout. A Signal Engineer shall be consulted if the layout consists of more than two ends.	
Out of correspondence test for existing double-ended layout	Operate points to Normal (both ends Normal)		
	A end hold Normal	Operate points lever Reverse	B end Reverse
	B end hold Reverse	Operate points lever Normal (ensure NWR is energised)	A end Normal
	Operate points to Reverse (both ends Reverse)		
	A end hold Reverse	Operate points lever Normal	B end Normal
	B end hold Normal	Operate points lever Reverse (ensure RWR is energised)	A end Reverse
11	11A	Certify the Facing Point Lock and Detection Normal & Reverse.	
12	12A	Arrange for the signaller to check the operation of the points, and associated signalling apparatus. Ensure the EP point motor/micro-switch unit is secure.	
	12B	Complete the return PR S 40017 FM 03.	
	12C	Book affected signalling apparatus back into use.	
<p>I certify _____ points at _____ location have been inspected and tested and are fit for service.</p> <p>_____ Position</p> <p>_____ Date</p> <p>Print Name Signature</p>			

*Not required if EP point motor/micro-switch unit are separated and only motor is changed (also see note on activity 10).