

Maintenance Procedure

No. P834

Page 1 of 3

TASK DESCRIPTION WITH BOTH ENGINES SHUT DOWN AND UNIT ON WAYSIDE POWER, ENSURE LAYOVER PROTECTION DEVICES OPERATE PROPERLY. CHECK THERMOSTAT SETTINGS AND ADJUST IF NECESSARY. CHECK ALL PIPING FOR LEAKS OR DEFECTS.
BUILDER'S OR VENDOR'S MAINTENANCE INSTRUCTIONS GM-F59 Service Manual, Section 8H MP40 Locomotive Maintenance Manual
SPECIAL TOOLS REQUIRED:
RELATED MAINTENANCE PROCEDURES MODIFICATIONS, POINTERS, ETC.
SAFETY PRECAUTIONS: CONTRACTOR TO ASSUME RESPONSIBILITY FOR SAFETY RULES AND COMPLIANCE.
PREPARATION: 1) Secure locomotive from movement. 2) Shut down both engines and apply "DO NOT START" tag. 3) Place unit on wayside power. 4) Do not switch layover protection to ON position if engine water is drained.

PROCEDURE

F59 Locomotive Layover System

1. Place layover protection switch to ON position.
2. Ensure both LAYOVER MAIN and LAYOVER HEP engine layover lights illuminate.
3. Check layover cab heater thermostat setting (mid point) and if cab temperature is cold ensure heater is blowing warm air into the cab.
4. Check trickle charger operation. Ensure breaker is ON and charging rate restricted to 7 amps with a minimum of 64 volts.

Note: *Ensure shop battery charger is not connected to locomotive.*

5. Check and ensure all layover contactors have picked up. Same located in AC cabinet.
6. With amprobe tong meter check immersion heater current draw in each phase (15 amps per phase is normal). If coolant is above thermostat setting, increase setting until heater energizes. Current readings are taken at the IHC contactor located in the AC cabinet. The immersion heater thermostat should be set at 140 ° F when step 6 is completed.

DATE OF FIRST ISSUE	May 1997	AUTHORIZED BY:
REVISION 1	June 2009	TITLE: <div style="text-align: right; font-size: small;">Manager, Rail Equipment</div>

No. P834

7. Ensure immersion heaters are functioning by feeling for temperature increase in coolant systems.
8. Check water and oil circulating pumps for excessive vibration, noise, leaks and ensure correct motor rotation (clockwise when viewed from rear).
9. Lubricate all layover pumps as required.
10. Check all layover piping and couplings for leaks and security.
11. When inspection is complete, ensure layover switch is rotated to layover OFF position before the 575 volt wayside power is removed.
12. Record all work performed on work sheets and report any discrepancies to supervisor.

MP40 Layover System

1. Place layover protection switch to ON position.
2. Ensure both LAYOVER MAIN and LAYOVER HEP engine layover lights illuminate.
3. Check cab layover heating and if cab temperature is 55°F or lower ensure heater is blowing warm air into the cab.
4. Check and ensure all layover contactors in the HEP contactor cabinet have picked up.
5. Ensure indication for battery charger output is illuminated and the digital panel meter displays a trickle charge rate of 2 – 5 amps.

Note: *Ensure shop battery charger is not connected to locomotive.*

6. Observe and report to supervisor fault messages and fault code/flash displayed by the digital console mounted on the front face of the Kim Hotstart layover control cabinet.

Fault Code	Fault Description	Correspondant Flash Count
1	Heating Element	1 flash
2	Differential Temp / Lack of Flow	2 flashes
3	Low Temperature	3 flashes
4	Over Temperature	4 flashes
5	Thermocouple Open / Short	5 flashes
6	Motor Protective Switch Tripped	6 flashes
7	Thermocouple Range	7 flashes
8	Thermocouple Module / Power	8 flashes

DATE OF FIRST ISSUE	May 1997	AUTHORIZED BY:
REVISION 1	June 2009	TITLE: Manager, Rail Equipment

No. P834

Note: Each flashing fault code is followed by a 3 second pause before repeating until the fault is cleared and system is restarted.

- Also at the control console observe inlet and outlet temperatures for oil and coolant heater elements. The heating elements are cycled per Inlet sensed temperatures. Factory pre-set temperature is 120°F for Coolant and 100°F for Oil.



CAUTION

The layover system operating temperatures are factory pre-set in respect to specific operating criteria and shall not be changed without authorization. Improper setting may result in system malfunction and/or damages.

8. Check coolant and oil circulating pumps for excessive vibration, noise or leaks.
9. Ensure HEP layover heater is functioning by feeling for temperature increase in coolant system.
10. Check all layover piping and couplings for leaks and security.
11. When inspection completed, ensure layover switch is rotated to layover OFF position before the 575 volt wayside power is removed.
12. Report discrepancies to supervisor.

DATE OF FIRST ISSUE	May 1997	AUTHORIZED BY: TITLE: Manager, Rail Equipment
REVISION 1	June 2009	