

# Refrigeration Contractors Medium Scope of Work

## Remodels

Revision Date:	
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Store #:	2560
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### RACK A

- NOTE CASE CHANGES
- CHANGE EPR ON CIRCUIT 1 & 2 TO SORIT 20
- CHANGE EPR ON CIRCUITS 9,10,11,13,14,19 TO SORIT 15
- ADD LIQUID SOLENOID TO PRODUCE PREP CIRCUIT 7
- ADD ROF FILTER
- REMOVE SURGE SOLENOID AND REPLACE WITH 1 5/8 BALL VALVE

### RACK B

- NOTE CASE CHANGES
- CHANGE EPR ON CIRCUIT 12 TO SORIT 15
- ADD ROF FILTER
- NEW ICE CREAM FREEZER COIL
- REMOVE SURGE SOLENOID AND REPLACE WITH 1 1/8 BALL VALVE
- ADD HR TANK ISOLATION VALVES
- CHANGE COMPRESSOR 2 FROM 3DS3A100L TO 2DF3F16KL-TFC-441 (BREAKER, CONTACTOR, WIRE)

### PARTS LIST:

8 – CPC SENSORS – 08A12068  
2 – SORIT 20 – 03E10440  
7 – SORIT 15 – 03E10439  
7 – 1 5/8 BALL VALVES – 03F10348  
7 – 1 3/8 BALL VALVES – 03F10347  
1 – 1 1/8 BALL VALVE – 03F10346  
1 – 5/8 BALL VALVE – 03F10344  
8 – MKC-1 208V COILS – 03B10095  
1 – 2DF3F16KL-TFC-441 – 96H51680S  
1 – 30A CONTACTOR – 08E10122  
1 – AUXILLARY – 08E10445  
1 – QOU330 BREAKER – 10J14182  
1 – 2D DEMAND COOLING KIT – 03B12001  
1 – 2D HEAD FAN – 09A12048

# **Refrigeration Contractors Medium Scope of Work Remodels**

6 – FINGER SAFE COVER – 10J14203  
1 – CURRENT SENSING RELAY – 08A13056  
2 – ROF FILTER KITS – 96H46535

## **Additional Notes\_\_\_\_\_**

1. Add pans above FF cases 56, 57, 58, 59, 60 and 61 all the way to the demise wall.
2. Add lights in front of racks in the motor room.
3. Remove unused copper, pans and hangers from produce side of store.

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\* NOTE: Please refer to drawings on the last pages for correct piping for Reclaim Water Heater, Split Pump-Out and Remote Header Suction Riser.

1. The Refrigeration Contractor will wear a Safety Yellow reflective vest while doing work in the stores. It will need to be a Class II fire resistance vest with your company's name on the back.
2. Refrigeration contractor will have a job trailer on site for storing all job related materials, case trim, and refrigeration parts until being installed. (Medium and High scope remodels only. Not needed on Low scope.)
  - a. Trim crew installs all case trim. The exceptions are, interior case trim (will be installed by the RC the night of the cases being relocated), any existing or new kick rails. RC will reinstall anything he removes during relocating a case and any trim that comes with a new case. All 1" bumper on NEW case lines ups. Any line ups with EXISTING cases the 1" bumper will be installed by the painters.
  - b. It is the refrigeration contractor's responsibility to insure that all case parts, trim, and refrigeration parts provided by Food Lion are not lost, damaged or stolen.
  - c. Any material provided by Food Lion that is lost, damaged or stolen will be replaced by the refrigeration contractor at their expense.
3. Case trim needs to be put on during the remodel as lineups of cases are installed.
  - a. Refrigeration contractor needs to secure any loose trim on existing cases that is not getting replaced.
4. All kick rails will be removed by the RC for floor tile work. There may be some new kick rails that will be replace and that will be listed on the case parts list you receive with the bid package.
  - a. Kick rails need to remain off until plumbing and other inspections that are required are complete. These kick rails will be placed in the RCs job trailer or trapeze hanger in the back room until time for the RC to re-install.
  - b. Old kick plates must be removed. Do not scab new kick plates over old ones.
  - c. (Case parts will be supplied by case manufacturer)  
EXCEPTION: existing Tyler or Hussmann trim by others.
5. Refrigeration contractor will be responsible for installing case drains and meeting inspection criteria.
  - a. Case drains shall not be teed together, 2 cases into one hub shall be 90 degree bends into or over hub. Reducing drain line size below case outlet size not allowed.
6. All new, relocated and existing cases shall be sealed, flashed and rodent proofed.
  - a. Back of Deli cases need to be flashed with stainless to the floor and caulked.
  - b. Seal any gaps in the back-to-back frozen food fan plenums.
  - c. Fan plenums need to be added to frozen food cases when installing additional cases to the lineup. These need to be sealed to the top of the cases and end promos to force air to be drawn under cases. Sealing end promos to include existing cases as well
7. Refrigeration contractor will sand and paint the shelf rails in the back of the cases getting interiors PRIOR to the new interiors going in.
8. All cases that have new interior skins refrigeration contractor will neatly cut out Model & Serial number and all other NSF, CRMA, UL, etc. decals and screw them to the top of the case or under the bottom of a single deck type case.
9. The installation of the 1" Boston bumper on the cases is no longer the responsibility of the refrigeration contractor. Registers?? Erin Stinson at 704-310-4253 to order bumper needed, allow 1-2 weeks lead time.

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10. Trim needs to be completed by the 100% completion date on the remodel schedule.
  - a. Contact Case Manufacture with all missing items ASAP.
11. Remove produce hanging scales from cases in 2500 and 2600 series stores and save until told where to reinstall by the store manager. Older model stores will have new hanging scales provided. These are to be installed on the new produce case.
12. Remove all old style air flow shelving from the produce salad cases.
13. Replace all existing shelving in relocated cases to their original positions.
14. Refrigeration contractor will install new suction filters in all racks before cutting into any systems, or beginning any refrigeration work.
  - a. Suction, liquid and oil filters will be changed out 30, 60, 90 days after the refrigeration modifications. Per Spec.
  - b. The suction filters are to be removed at the 90 day change and springs left wire tied to rack.
  - c. At the 90 day filter change replace the float in the oil separator. This will be supplied by the rack manufacture.
15. Add high water capacity liquid line filters before cutting into system. These will be used until last refrigeration modification. Then removed and standard filters need to be installed.
  - a. All POE oil systems to have RCW liquid dryers on last change.
16. Run new refrigerant lines overhead to all new and relocated cases and walk in evaporators. Reuse of existing lines permitted but must comply with summary and approved by Maintenance Manager or Supervisor. This will be determined prior to bid.
17. When straighten the FF/IC line ups all new lines or repairs to existing line sets on top of the cases will need to be in your bid.
18. Install drip pans under all lines above all suspended ceilings Per Spec.
  - a. Pans are to be hung at the same time the refrigeration lines are installed.
  - b. Any drip pans that are presently installed will need to be checked for improper installation and leaks and either repaired or replaced.
  - c. If open ceiling stores doesn't have drip pans you shall install them. This will be for all lines in sales area and above backroom ceiling and the deli and produce areas.
19. Coordinate location of new or relocated risers and line sets with Energy Team member.
20. Any cases that will be installed new or relocated, that will use under floor conduit and pits, must have new refrigerant lines.
  - a. Any pre-existing pits that will be used must either be sealed concrete pits or new fiberglass pull boxes. No dirt pits will be acceptable.
    - i. Call the Energy Team member over the job immediately if this problem exists.
    - ii. If you set cases on any dirt pits, you will be asked to move the cases to correct the problem at your expense!!!
  - b. The GC will be responsible for sealing the new fiberglass pits and fill and concrete any existing pits that will not be used.
  - c. The Refrigeration Contractor will be responsible to seal the PVC inside with foam where your lines come into the pit.
  - d. The use of any under floor conduits, pits and line-sets will be determined by the Energy Team only. Do not plan on using these without his permission and direction.
21. **Refrigeration contractor will need a** day tech after each night with a case move. He shall be there by 7:30 AM the next morning. The tech will need to **insure** all work that night is completed to Food Lions spec, line sets insulated correctly, all supports in place on top of case, penetrations sealed, etc. He will need to complete Energy Team's field reports, verify shielded cable is terminated at the rack and the case, EPRs are

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adjusted, superheat set if possible, controller programed if a new circuit, defrost terminations working on all cases from previous night's work. The tech will trouble shoot and repair any problems that may occur the next morning. Once he has all issues 100% he may leave. If he leave and the Energy team member finds issues he will be called back out. If there is a night with no case move no tech will need to be there the next morning.

22. The Refrigeration contractor will have a minimum of six people the week of the frozen food case moves. This will be if replacing all frozen food and ice cream cases in one week.
23. Field top stub all relocated cases not top stubbed.
  - a. If cases show up that are not top stubbed, that was supposed to, top stub in the field and notify Energy Team member over job.
  - b. Do not run lines behind cases. All top stubs need to be connected to main line on top of cases using inverted traps and teed into the top of the main line using reducing tees.
  - c. All inverted traps on top of cases are to be painted the same color as the walls, when exposed above valance.
  - d. Keep traps as low as possible. Lines are to be supported on the top of cases with  $\frac{3}{4}$ " insulation over  $\frac{3}{4}$ " unistrut or  $\frac{3}{4}$ " insulated PVC every four foot.
  - e. Keep all line sets on top of cases as close as possible to back of the case.
24. All exiting cases that are NOT RELOCATING that have piping behind the case and has overhead line sets MUST be top stubbed. MAKE SURE THIS GETS IN YOUR BIDS ON ALL SPENDS (except minimums).
25. Medium temp and low temp racks with split suction headers at two different suction operating temperatures are to be tied together at the compressor suction headers and the suction crossover is to be opened.
  - a. You will need to check with the rack manufacturer for proper piping size as to not have a pressure drop between headers.
  - b. If you don't have this information, contact the rack manufacture or Energy team member
26. All split discharge headers are to be tied together and ran through a single oil separator.
  - a. The oil separator will need to be sized for the rack and replaced if not large enough.
  - b. You will need to add a check valve above any oil separator that does not have one.
27. Install a  $\frac{1}{4}$  check valve on the pilot line on any existing medium temp rack with split if needed.
28. Remove all hot gas defrost piping and associated valves and wiring from all medium temp racks.
  - a. Cap off all line stubs.
    - i. No pinched lines.
    - ii. NOTE: Pull all unnecessary and abandoned refrigeration circuit and hot gas wiring out of racks and back to electrical trough.
29. Install EPR and other associated components for additional circuits. Replace all suction stops with SORIT EPR valves. Except Parker suction stops, Delhaize will provide kit to convert these to EPR's.
  - a. These to be supplied by rack manufacturer.
  - b. New EPR pilot lines need to be ultra-tubes.
  - c. On a rack with no EPR's, you must make a hot gas header. This header will need a ball valve to isolate it from the main system.
    - i. Also it will need  $\frac{1}{4}$  inch Mueller A14838 sweat ball valves for each EPR hot gas pilot.
30. Wire racks that have both water and heat reclaim so that both can work at the same time.

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- a. A four wire shielded cable will be ran from the refrigeration rack to both reclaim water heaters and sensors will be installed per Food Lion drawing attached. Then controls will be set up to operate water reclaim using these temp sensors as maximum control.
31. Remove all surge valves and associated wiring. Install a ball valve for isolation in its place.
32. If subcooler doesn't have an ORIT valve, install one.
33. Replace all caps that are currently missing.
34. All new wiring in racks for new circuit control wiring needs to be #18 stranded copper wires.
  - a. Parts added to the rack that require electrical will need to be ran in Poly-Tuff type flex conduit and not metal flex.
35. The Refrigeration contractor is now responsible for final sensor cable termination, for case temp sensors; defrost termination and magnetic door switch wiring at the rack/header control cabinet and at the cases/walk-in boxes for all new and relocated cases/walk-in boxes.
36. Replace all mechanical door switches with new magnetic switches provided by the case manufacture. Electrician to pull a 6 wire 22 ga. shielded cable if needed. Refrigeration contractor to terminate at both ends. The 6 wire 22 ga. shielded cable is for the door switch, termination and temperature sensor.
37. Sensors to be installed to all existing circuits and any circuits not having sensors.
  - a. Extra boards may be needed to accommodate additional sensors.
  - b. The Energy Team member will provide any needed boards.
38. The refrigeration contractor is responsible for adding and mounting any necessary temp sensors in relocated/new cases/walk-in boxes where needed.
  - a. NOTE: New cases should come with sensors.
  - b. It is still the EC's responsibility to install wiring and shielded cable for the cases/walk-in boxes and door switches for the correct refrigeration circuit and route to the Rack/Header control cabinet.
  - c. The EC is also responsible for tagging wires in the Rack/ Header control cabinet and the cases/ walk-in boxes with the proper circuit designation.
  - d. The EC will still be responsible if the circuit is open, shorted or crossed.
  - e. NOTE: These must be working 100% the night/day of cases/ cooler installation.
39. Suction temp sensors are to be installed to all racks at the outlet of each suction filter.
40. When installing new rack controllers or a new rack, controller communications are to be operational ASAP for alarming feature and communications.
41. Add input and output boards to accommodate circuit additions.
  - a. Energy Team Member will provide boards.
  - b. Refer to refrigeration summary sheets for specific location of all circuit placements on racks.
42. Make sure controller is programmed to Food Lion set point guide specifications.
43. Remove all unused and unnecessary piping, pans and hangers in motor room and throughout store.
44. Use appropriate caps to seal off all unused circuits. (No pinching the lines)
45. Install a liquid line solenoid and coil for the produce prep/garden cooler circuit at the rack down stream of the liquid line ball valve if there is not one currently on the rack.
  - a. Wire the liquid line solenoid coil in parallel with the EPR solenoid coil.
  - b. Cut out produce prep solenoid above produce prep room and cap wiring if applicable.
  - c. For racks with RMC, RMCC controllers the mechanical contractor will run a 2 wire shielded cable from EMS panel to the rack with the produce prep circuit. The RC will need to daisy chain the wiring for the produce prep temp sensor on the 16AI board in the EMS panel to a

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spare 16AI board in the rack. Note: the dip switch must be in the down position in the EMS panel and the up position on the 16AI board in the rack to read correctly.

- d. For racks with RMC controllers it will be necessary to set up a spare output on an 8RO board for temperature control through the sensor control field. You will need to series the control wire feeding the produce prep EPR and Liquid line solenoid through this 8RO BDPT. Note: this board point will be wired NC and the dip switch up.
  - e. For E2 controllers you will not need to run the shielded cable, this can be done through global network.
  - f. Program controllers for this application
  - g. All Food Lion Remodels except Low Spend and C&T – Remove t'stat add sensor. Wire both sensor and damper to ECP..
46. All new condensers will need a ¼ angle Henry valve installed on the inverted trap.
- a. Make sure all inverted traps in the supply line to the condenser are located far enough away from the electrical door on the condenser so it can open at a 90 deg angle.
47. If refrigerant conversion required refer to Conversion scope provided by Maintenance Manager.
48. If a new rack with (R407A) is installed and the existing rack is (R22) all existing cases and walk-ins must have caps and schraders replaced. Also all packing's on TXV's and Henry valves must tightened
49. Updated rack summaries are to be laminated and attached to racks.
50. Each motor room is to have a current fixture plan labeled with new circuits and installed behind Plexiglas on door.
- a. Show all temp sensor locations in all cases using a \* or S.
  - b. Label all new and relocated circuits, label will be supplied by rack manufacturer.
51. All case manufacturers literature and/or CD's for the cases and racks are to be left in the motor room for the Maintenance Tech.
52. Wash motor room after completion of work.
53. Leave receiver level properly charged to 50% in heat reclaim mode in summer, 30% in winter.
- a. Refrigerant level needs to be verified by Food Lion representative.
54. All Food Lion specs and warranties will be adhered to in accordance with remodel specifications and Energy Team's instructions.
55. Contractors will be responsible for ALL refrigeration calls starting on the Precon date, until the end of the warranty period; this includes new, relocated and existing cases and machine room equipment.
- a. The Refrigeration Contractor will be required to supply a backup contractor after hours and on weekends. If the call is on existing equipment and not the fault of the Refrigeration contractor he will be paid for that call after the approval of the Maintenance Supervisor.
  - b. The Refrigeration Contractor will notify the Maintenance Supervisor as to any problems or loss product that might occur during this time. The Maintenance Supervisor will evaluate for responsibility of payment.
  - c. The Food Lion Maintenance dispatchers will NOT reassign tickets based on comments from the contractor. If the problem is an existing one, the ONLY way the work order can be reassigned is for the contractor to contact the Maintenance Supervisor or Technician, who will advise the dispatchers if the work order is to be reassigned to someone other than the renewal contractor.
56. Make all changes as highlighted on refrigeration summary for case changes and verify with fixture plan.
- a. Contact the Energy Team member assigned to job if there are any discrepancies.

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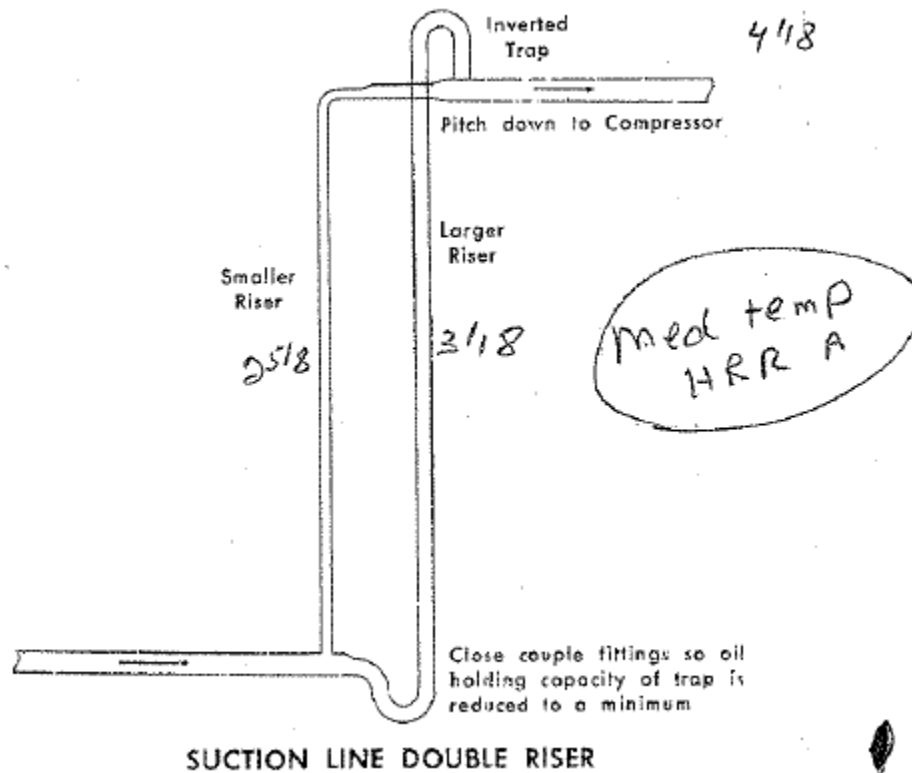
- b. No deviations are to be made from the refrigeration summary without authorization from the Energy Team member.
  - c. All changes and discrepancies are to be checked through the case manufacture for proper sizing and load.
57. New frozen food and I/C glass door cases with t-stat to shut off lights and anti-sweats during defrost will set at 0° for I/C cases and +10° for frozen food cases. Then silicone dial. ALL new Kysor FF and IC need bottom frame A/S secondary connected in raceway.
58. RC is responsible for setting superheat and EPR's on existing Medium Temp cases that have retrofit doors installed. This to be done morning after the doors are installed. Also install T stat and solenoid if needed for any system with doors and open cases on same circuit. It shall be installed on door section cases only and rack EPR to control open case temperature.
73. The Refrigeration Contractor will install manufacturer's provided motion sensors on the frozen food and ice cream glass door cases with LED lighting. These sensors will be mounted in the center of each case. ONLY install on cases opposing other refrigerated cases! No end caps will get motion sensors. If you have questions on where to mount these sensors please contact the Food Lion Energy Team member. The setting on the sensor will be dim to 20%, delay after detection is 1 minute.
51. RC to install check valve above oil separator if the existing racks don't have them. Parts supplied by rack manufacturer.
59. The RC needs to check the M1.01 or the M6.01 to see if a new heat reclaim coil is being added to any new or existing Air Handler in the store. If a coil is added the RC will pipe it the same as the condenser line set.
60. When changing a 4D or 6D to a 2D or 3D add a current sensing relay to the 240 wire to the oil control.
61. Need to pipe the receiver relief valve for all racks through the roof. Follow the condenser lines through the pitch pocket. Pipe size should be 7/8 copper up to (2) racks, 1 1/8 for (3) racks and 1 3/8 for (4) racks. Add a u-bend to prevent rain from entering; Relief location must be piped 20' away from ventilation openings and 15 ft off the ground. or meet local and state codes.
62. Install the New ROF oil filter kit provided by the Rack Manufacturers on all existing racks.
- a. Use only mounting brackets provided in kit to mount the new oil filter.
  - b. Install 3/8's ¼ turn shut off valve with pressure tap on the down stream side off oil filters, so they may be readily isolated.
  - c. Install pressure tap on the oil filter side for drainage. (Supplied by the rack manufacturer)
  - d. Strap oil filters to rack on vertical steel upright in the upright position, install horizontal steel uni-strut to mount it as needed.
  - e. Oil filter to be in high pressure line prior to reservoir, if not relocate.



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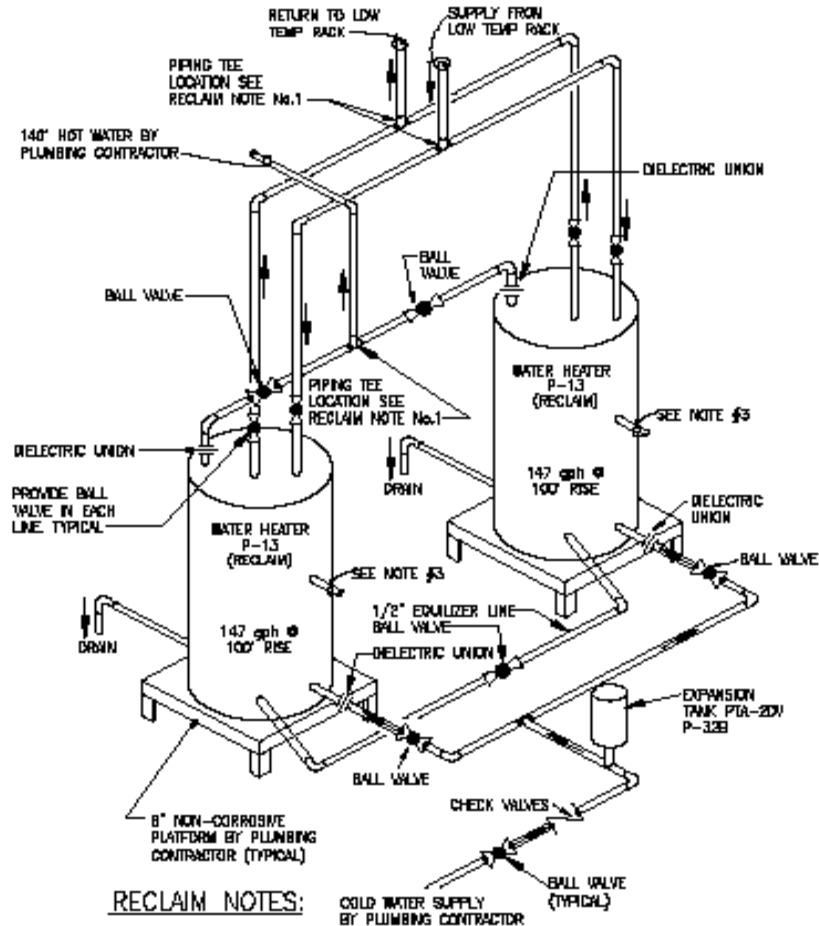
### Suction Line Double Riser Detail



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### Water Heat Reclaim Detail



1 HEAT RECLAIM SCHEMATIC  
PB.01 NOT TO SCALE

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### Pump-out for Split Condenser Detail

