

Uses of the Foot Valve

The foot valve is intended as an auxiliary to the controller handle operation to provide for temporary use of the hand which is normally engaged in holding down the controller handle. In bringing the foot valve into service, care must be taken that it be pressed down before releasing the controller handle, and vice versa, the controller handle must be pressed downward before releasing the foot valve, otherwise an emergency application will occur. The foot valve may be called into action while making a stop preparatory to receiving passengers and can also be used after the car is in motion. The controller handle can be left in any running position and the car kept in motion if pressure is maintained on the foot valve. Also the car can be permitted to coast while pressing on the foot valve.

Circuit Breakers

On such occasions as the circuit breaker cylinder is called into action, thereby cutting off the current to the motors, it is necessary to turn the controller handle to power-off position before closing the circuit breaker.

Correct Brake Operation

To gain time and economy in the use of power for propelling the car, the brake application should be adapted to the speed and load condition. For example— at a high speed or with heavy load, make a full application of the brakes and graduate off the pressure by partial releases as the car is coming to a stop. During the stop, the point at which these graduations should be

begun and the amount of the graduations will be readily acquired through experience. The initial application should be heavy enough and the distance from the stopping point at which it is begun should be such that the car will stop before reaching the stopping point, unless the graduations are made as related. When the actual stop is made, there should be just sufficient brake cylinder pressure to insure that the car will remain standing.

It is to be remembered that in making these graduated releases, if a mistake in judgment has been made and the car is not likely to stop until it is past the stopping point, the cylinder pressure should be increased by making a re-application. With a small amount of practice, the required degree of skill in making correct stops can be very readily obtained. The condition of the rail is to be considered at all times when making brake applications so as to avoid wheel sliding which greatly lengthens stops.

Emergency Applications

When it is desired to make an emergency application the hand or foot should be removed from their respective valves, as the case may be, or the handle of the brake valve should be moved quickly to Emergency Position and permitted to remain there until the car has come to a full stop and the danger is past. Emergency applications should be made at sufficiently frequent intervals to insure that all the apparatus, including the brake rigging, is in reliable operating condition.

In cases where the brake does not respond at once to attempted service applications, such as where a car

operator has mis-judged the location of the Service Application Position, the brake valve handle should be moved quickly to Emergency Position. In fact, familiarity with this position on the part of car operations will greatly add to the security of the car and passengers under their care.

GENERAL HINTS

Brake failures may be caused by defects in apparatus accessory to the Air Brake and Safety Car Control Equipment. We, therefore wish to point out that in addition to the Air Brakes, there remain three possible forces which can be controlled to produce a retarding effect.

The *Hand Brake* should be applied, if the occasion permits of a comparatively long stop distance, in case the air brakes have proven inoperative.

The Hand Brake, however, is also open to failure if its mechanism or the brake rigging is at fault.

Reverse Motors if an accident is impending, or if the hand and air brake are inoperative, by throwing the reverse lever in the direction opposite the car motion, and feeding up the controller two or three points.

Buck the Motors if the reversing has failed to produce a retarding effect due to the loss of power, either at the trolley or circuit breaker, by feeding the controller into the parallel positions with the reverse lever set in the opposite direction to the car motion.

The last two forces mentioned are particularly severe in their action on the car equipment, and should only be used to prevent an impending accident, when the brakes have proven inoperative.

The controller and reverse drum contacts must be cleaned of dirt and gummy oil, or other foreign substance on the regular car inspection period, to maintain the ability to buck the motors.

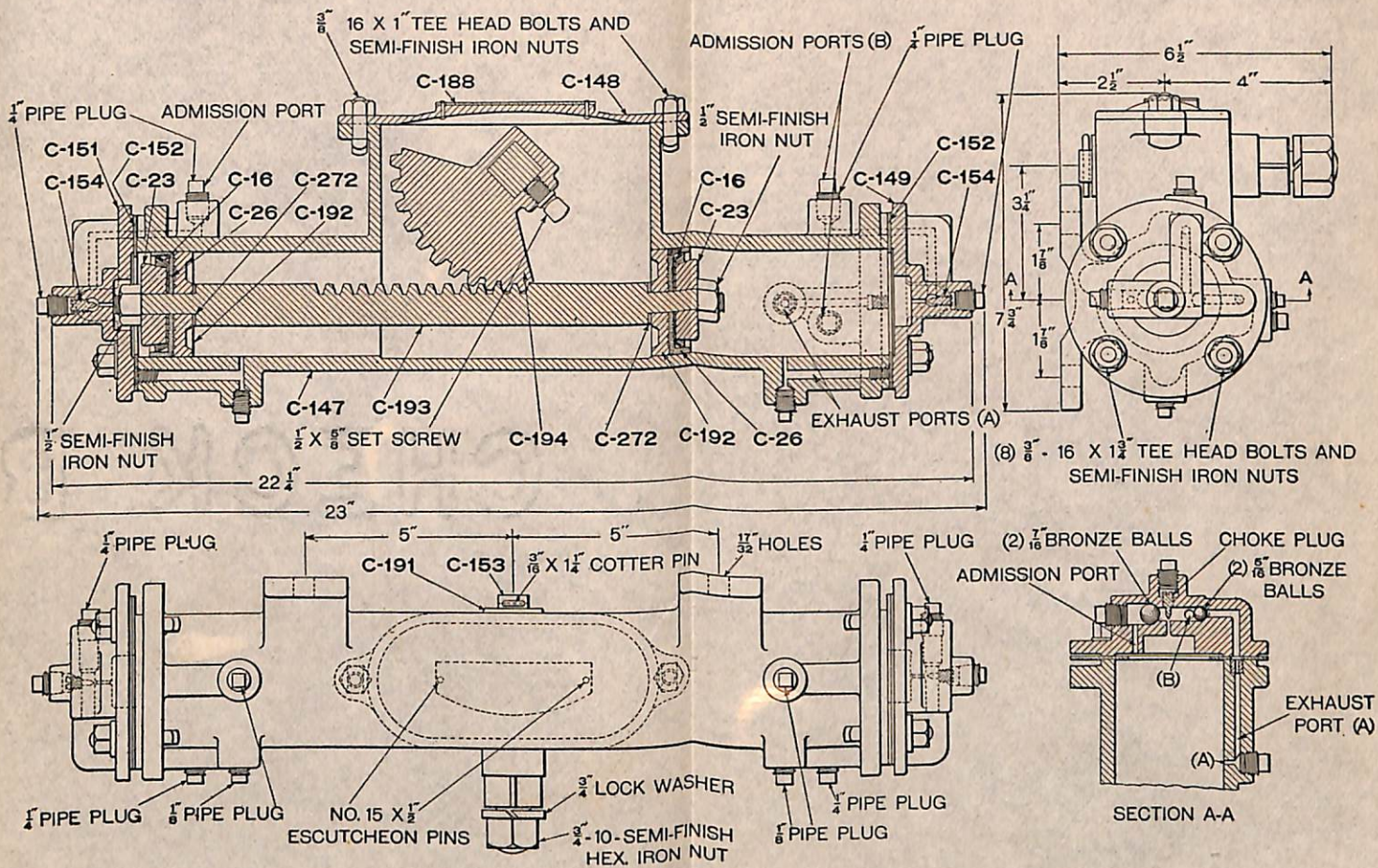


Fig. 49. Sectional and Plan Views of Door and Step Controller

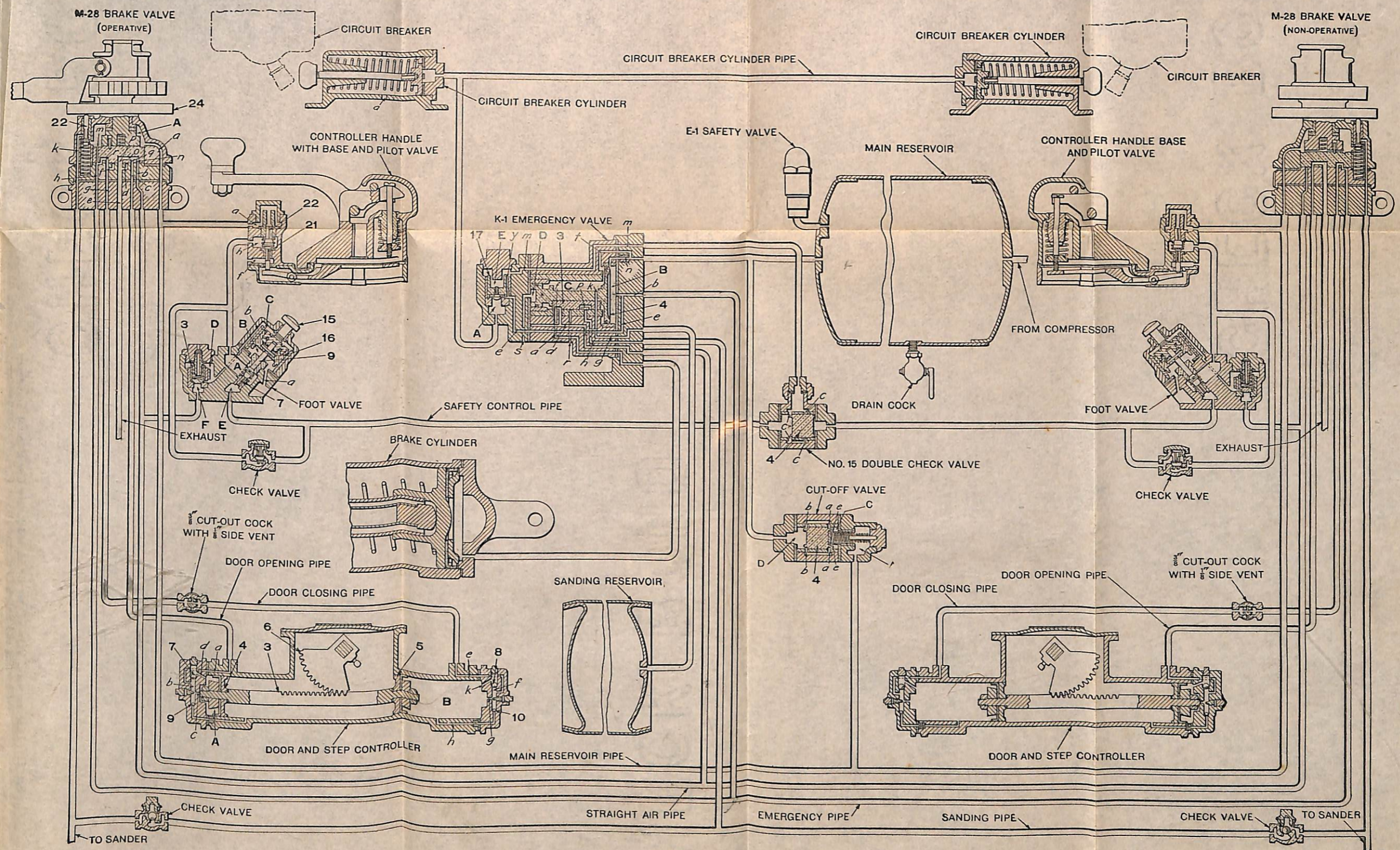


Fig. 51. Diagrammatic View of Air Brake and Safety Car Control Equipment Charging and Release Position. Doors Closed

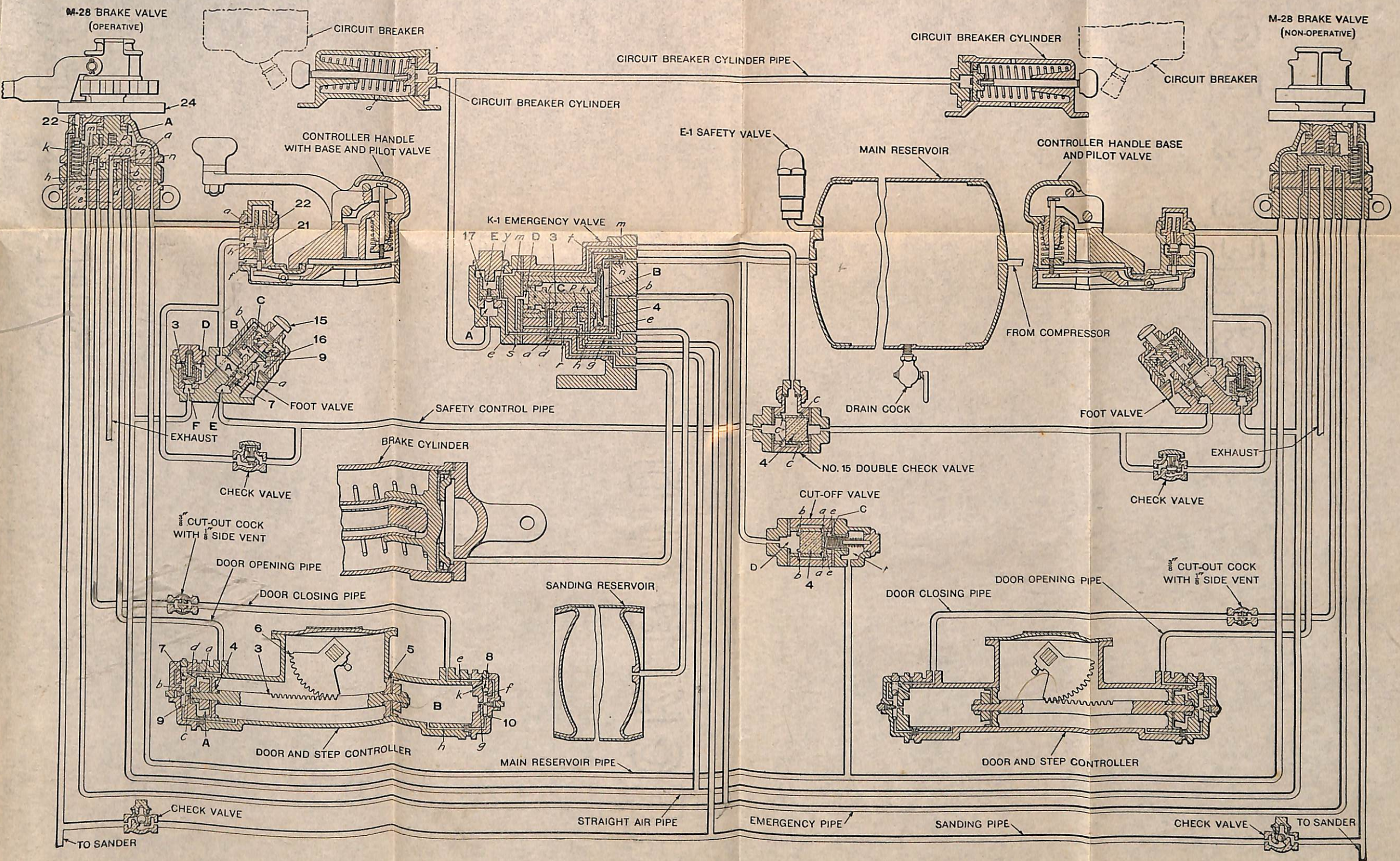


Fig. 51. Diagrammatic View of Air Brake and Safety Car Control Equipment Charging and Release Position. Doors Closed

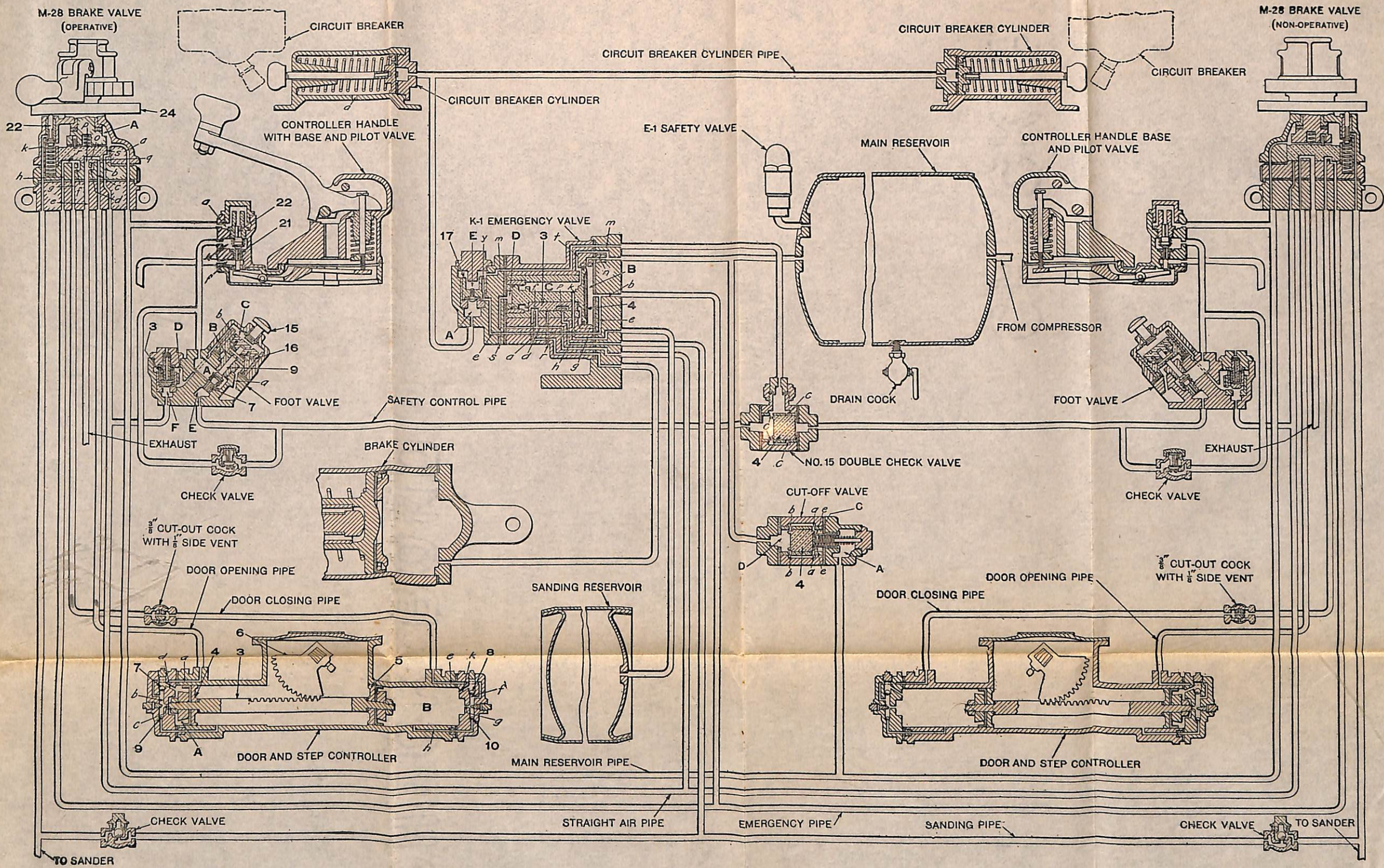


Fig. 52. Diagrammatic View of Air Brake and Safety Car Control Equipment Service Application Position, Doors Closed

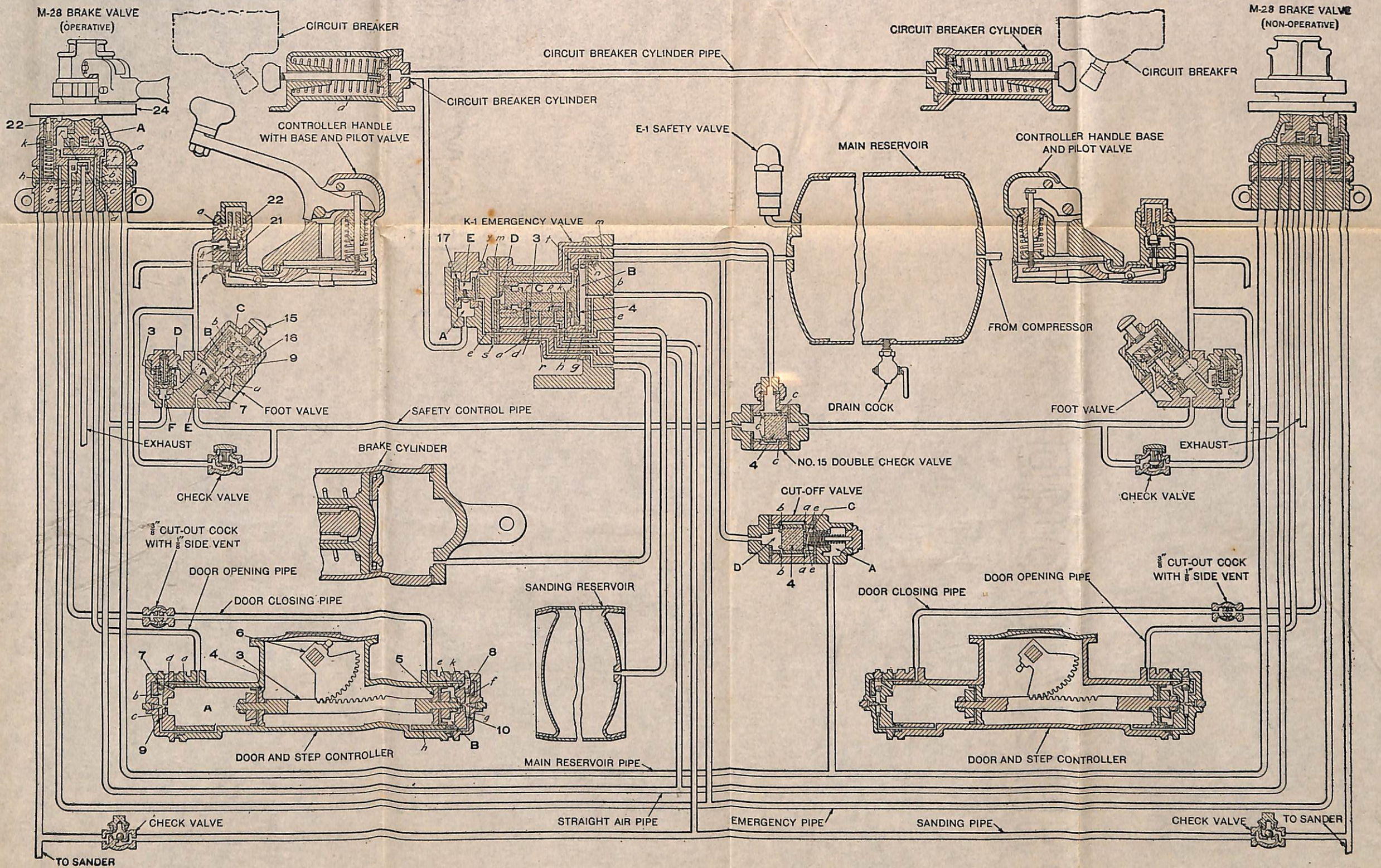


Fig. 53. Diagrammatic View of Air Brake and Safety Car Control Equipment
Door Open Position, Brakes Applied

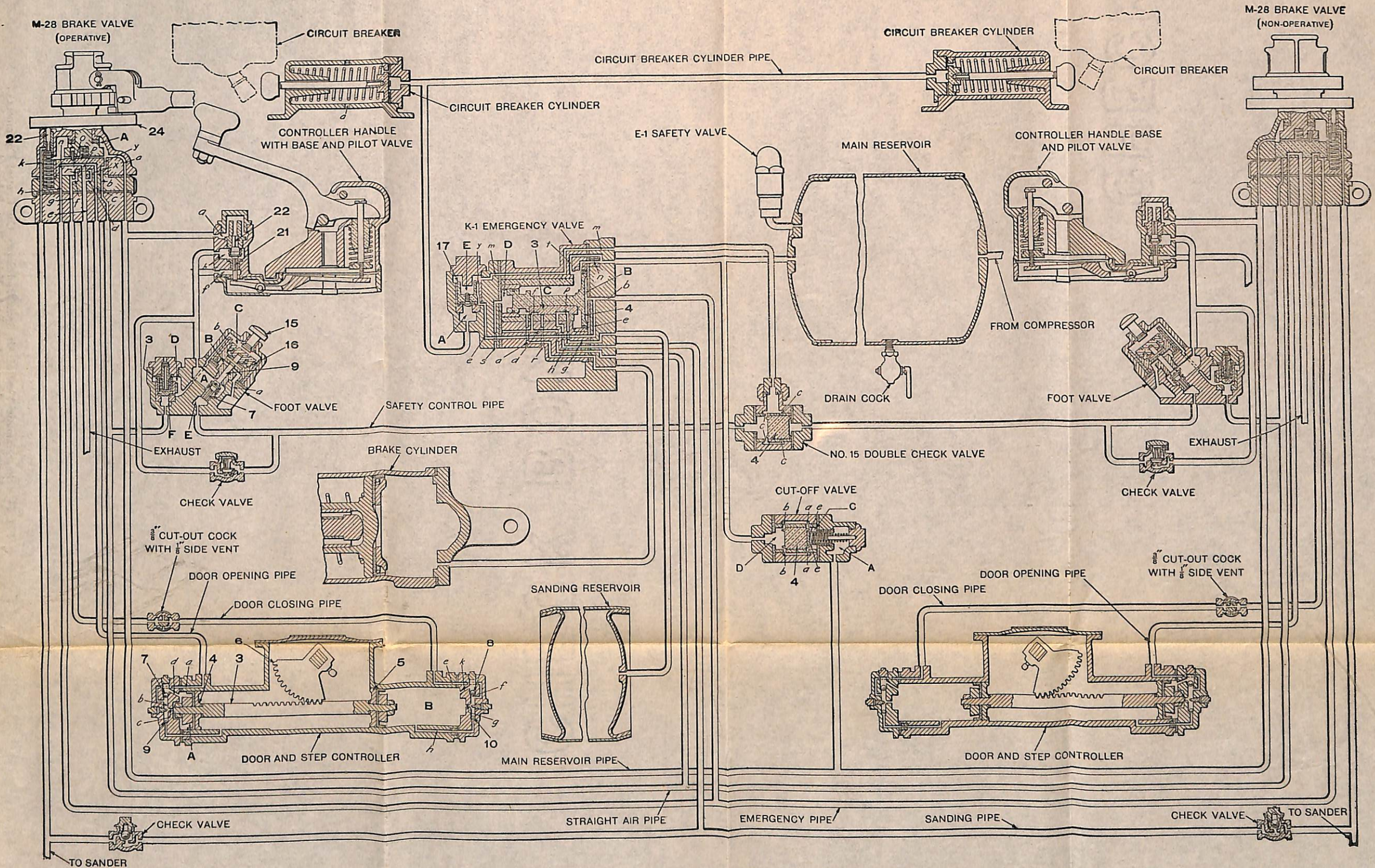


Fig. 54. Diagrammatic View of Air Brake and Safety Car Control Equipment
Emergency Application from Brake Valve. Doors Balanced

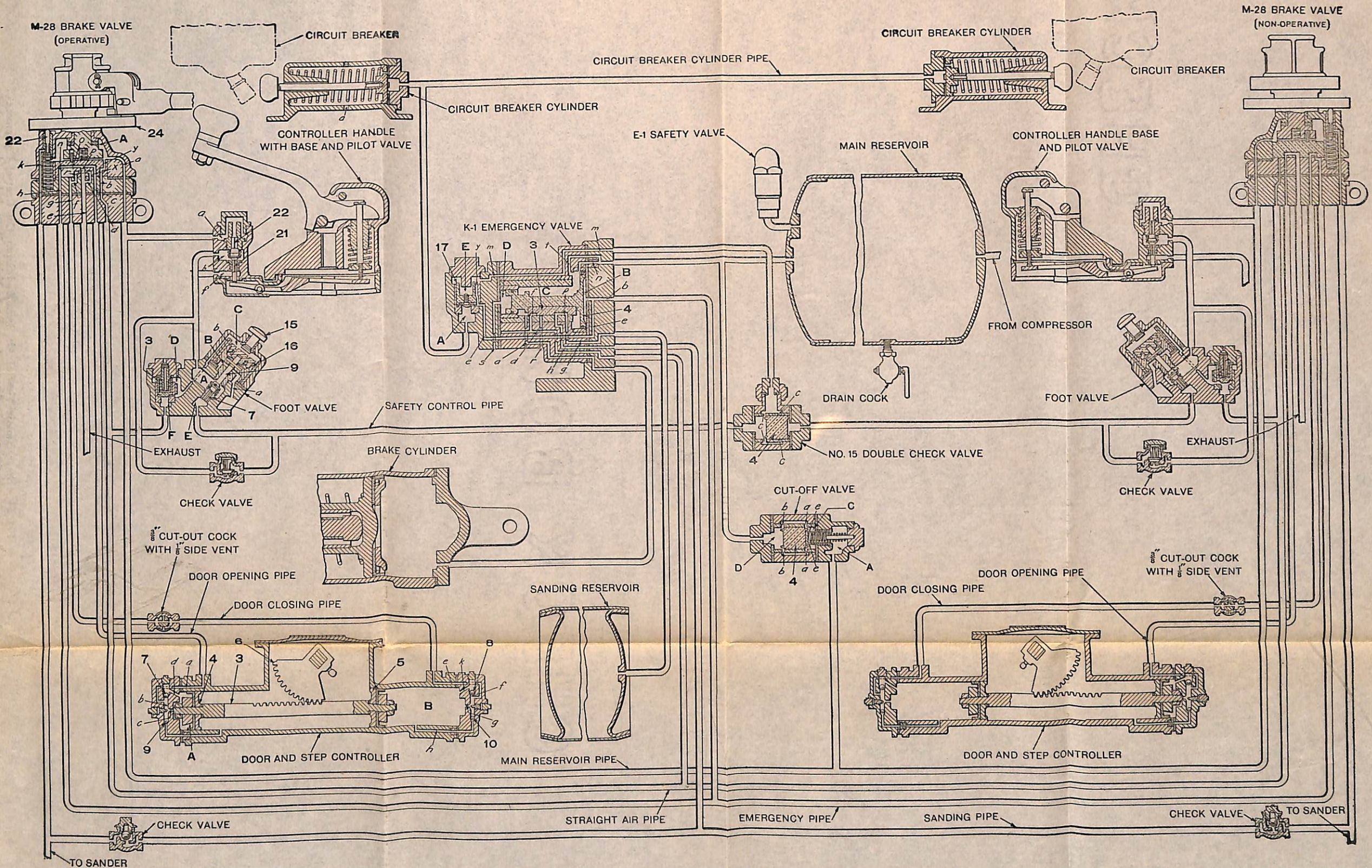
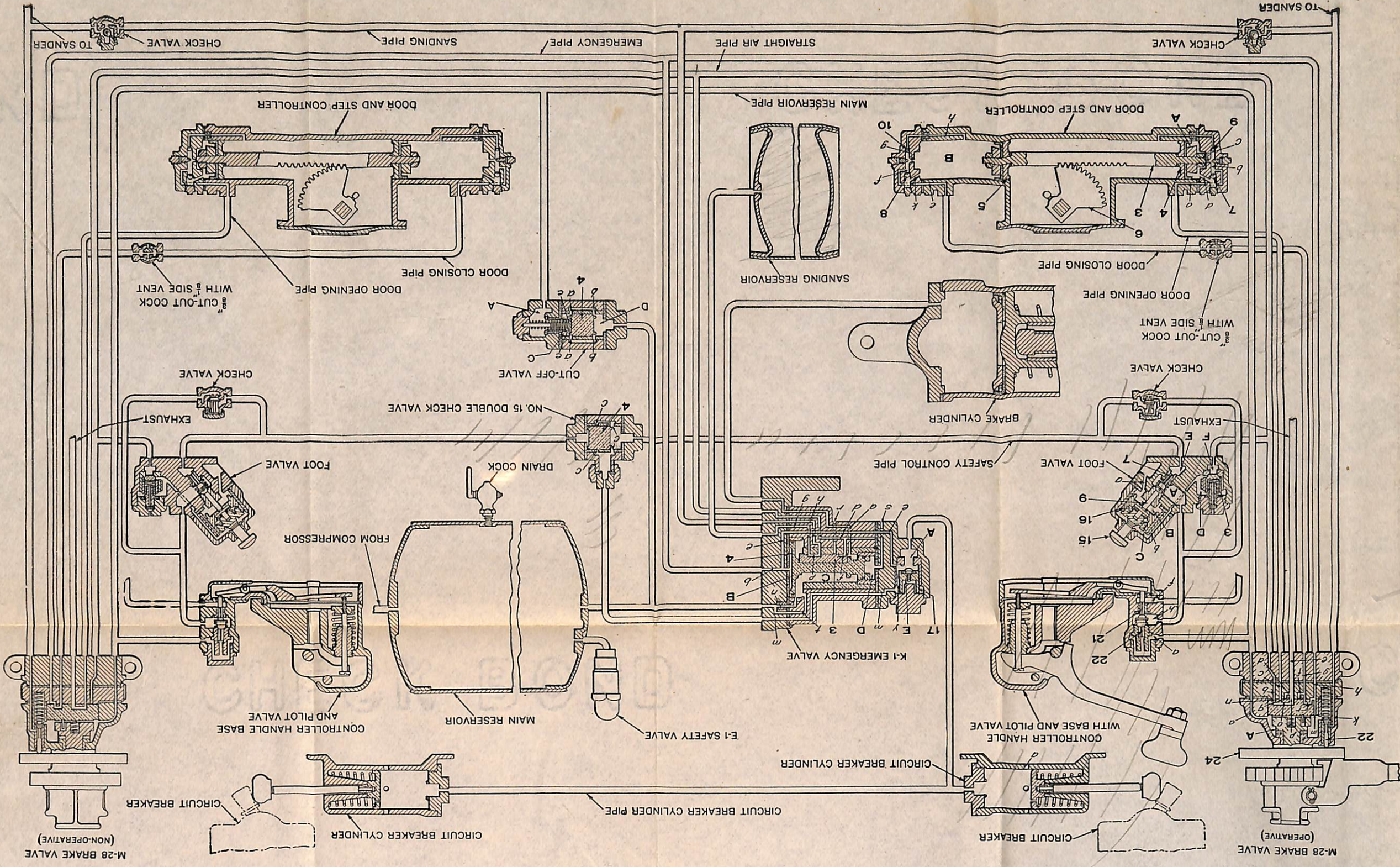


Fig. 54. Diagrammatic View of Air Brake and Safety Car Control Equipment
Emergency Application from Brake Valve. Doors Balanced

Fig. 55. Diagrammatic View of Air Brake and Safety Car Control Equipment. Doors Balanced. Application from Controller Handle, Brake Valve in Release Position. Doors Balanced.



TO SANDER

CHECK VALVE TO SANDER

CHECK VALVE

EMERGENCY PIPE

STRAIGHT AIR PIPE

SANDING PIPE

DOOR AND STEP CONTROLLER

DOOR AND STEP CONTROLLER

DOOR CLOSING PIPE WITH 1/2" CUT-OUT COCK

DOOR OPENING PIPE

SANDING RESERVOIR

DOOR CLOSING PIPE

DOOR OPENING PIPE WITH 1/2" CUT-OUT COCK

CHECK VALVE

CUT-OFF VALVE

BRAKE CYLINDER

EXHAUST

NO. 15 DOUBLE CHECK VALVE

SAFETY CONTROL PIPE

FOOT VALVE

FROM COMPRESSOR

K-1 EMERGENCY VALVE

E-1 SAFETY VALVE

CONTROLLER HANDLE WITH BASE AND PILOT VALVE

CONTROLLER HANDLE BASE AND PILOT VALVE

CIRCUIT BREAKER CYLINDER

CIRCUIT BREAKER

CIRCUIT BREAKER CYLINDER PIPE

CIRCUIT BREAKER

M-28 BRAKE VALVE (OPERATIVE)

M-28 BRAKE VALVE (NON-OPERATIVE)

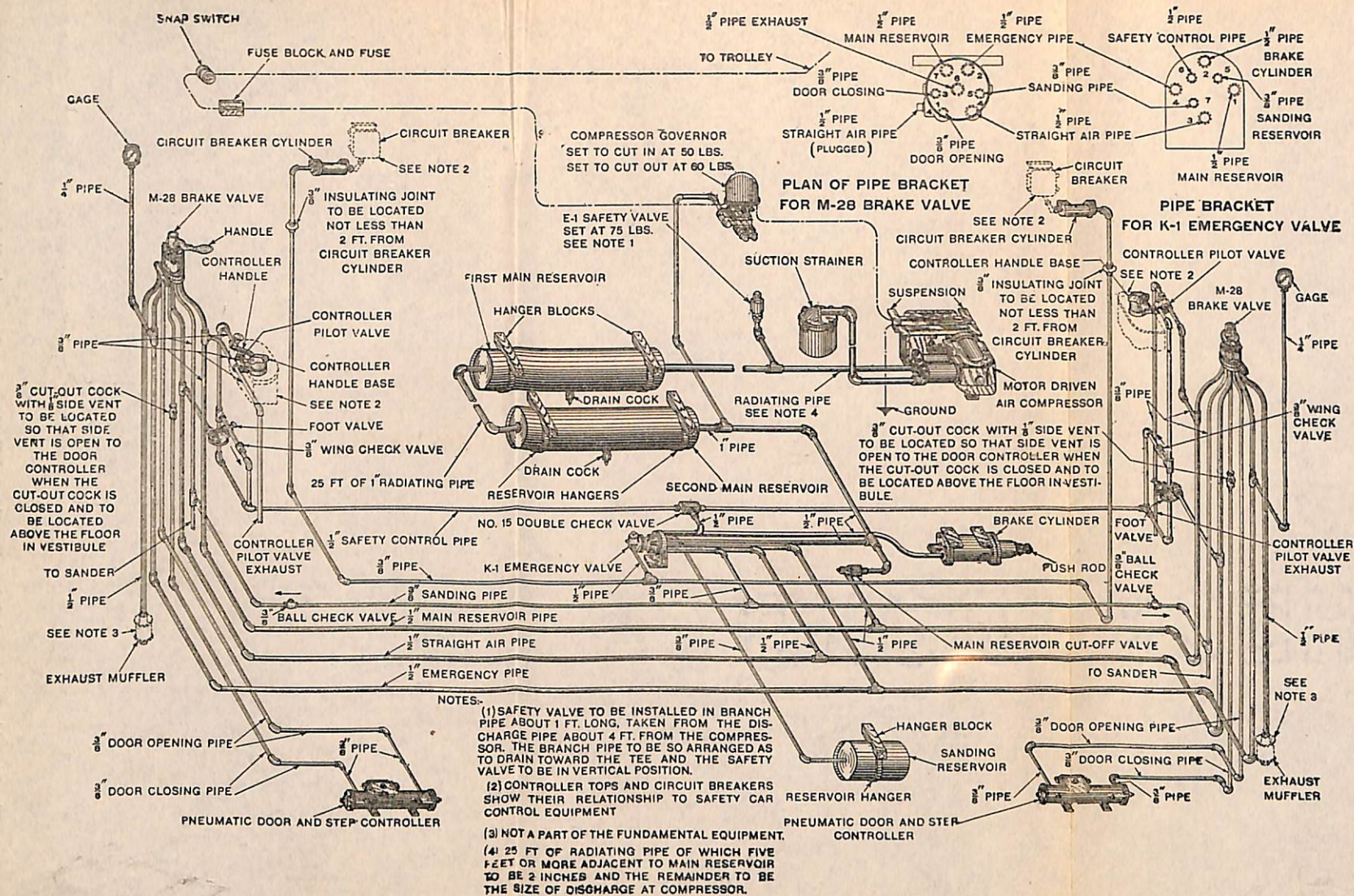


Fig. 56. Air Brake and Safety Car Control Equipment. Isometric Piping Diagram. Double End.

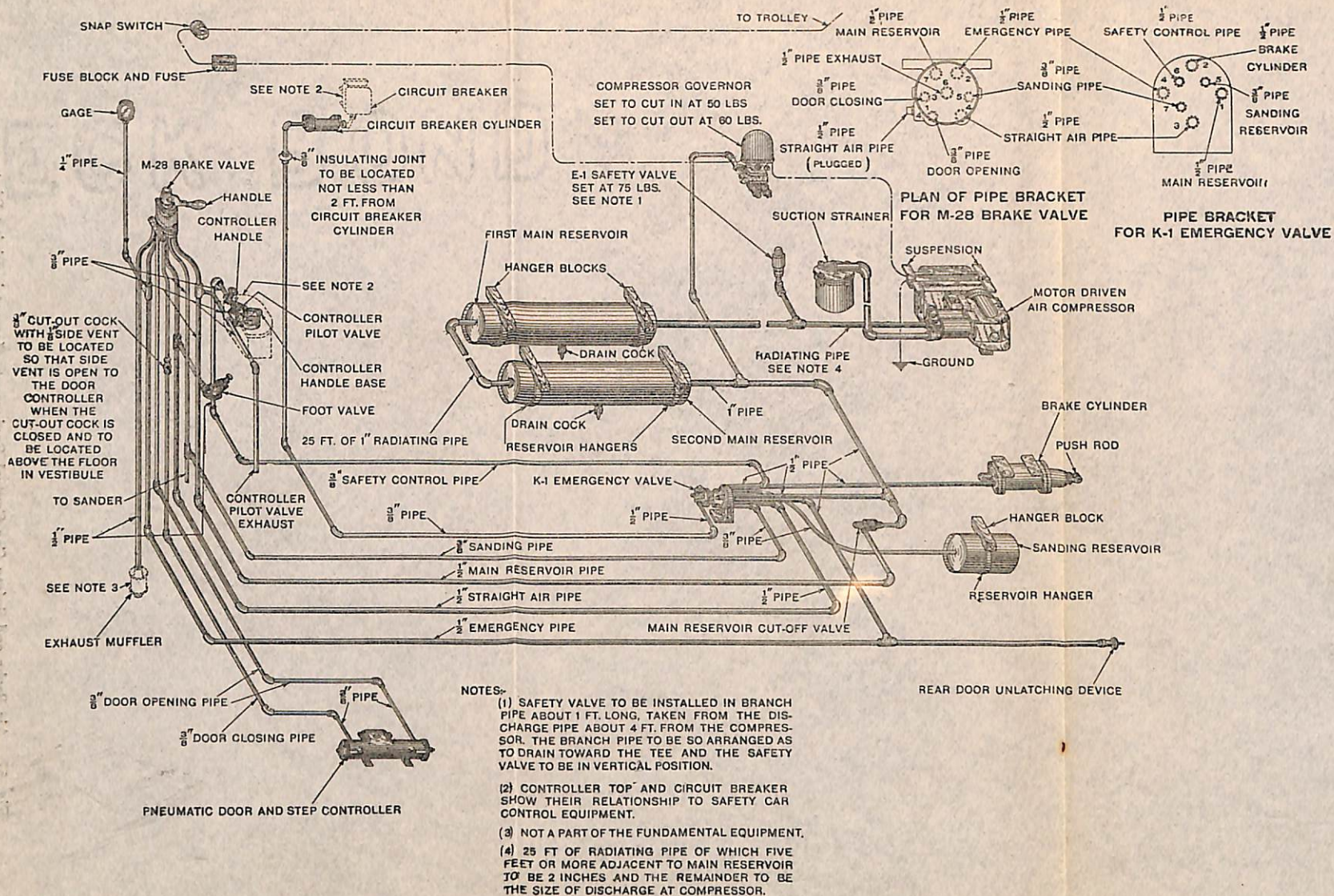


Fig. 57. Air Brake and Safety Car Control Equipment. Isometric Piping Diagram. Single End

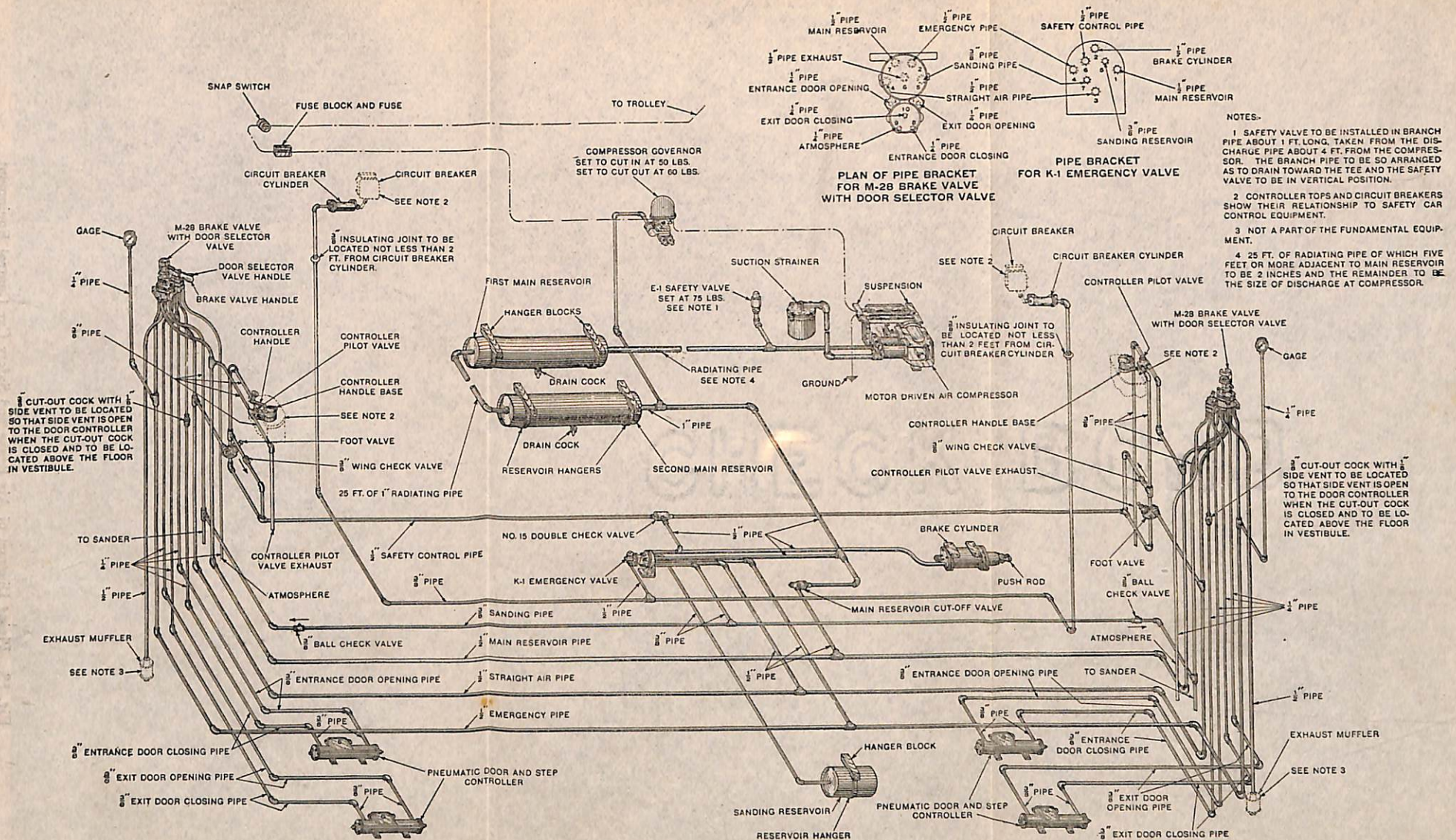


Fig. 58. Piping Diagram of Air Brake and Safety Car Control Equipment with M-28 Brake Valve having Selector Valve

