

COMPRESSED AIR SYSTEM38-1 GENERAL:-

The compressed air system is served by two Worthington, two stage, electric motor driven compressors, each having a capacity of 11.4 c.f.m. at 600 pounds pressure. These compressors are located in the engine room, B-1, port and starboard, and are cross connected and provided with an equalizing tank and automatic control.

38-2 The compressors discharge at full pressure to the starting air tanks which are provided with relief valves set to relieve at 660 pounds per square inch pressure. A cross connection between the port and starboard starting air tanks provides the air supply from either system in event of failure in the other.

38-3 The starting air tanks, two port and two starboard, supply air to either Fairbanks-Morse Engines or General Motors Engines as indicated:-

(a) Fairbanks-Morse Engines

(1) Main Engines through a reducing valve set to reduce the air to the engines to 250 p.s.i. and through a by-pass valve directly to engine. A relief valve is provided in the starting air line to the engines set to relieve at 275 p.s.i.

(2) Ship's Service Air and Whistle Air Storage Tanks through a reducing valve set to reduce the air to these tanks to 100 p.s.i. and through a by-pass valve directly to these tanks. These tanks are provided with relief valves set to relieve at 110 p.s.i.

(b) General Motors Engines

(1) Main Engines directly - 600 p.s.i.

(2) Ship's Service Air and Whistle Air Storage Tanks through a reducing valve set to reduce the air to these tanks to 100 p.s.i. and through a by-pass valve directly to

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- 38-3 (b) (cont'd.)
(2) these tanks. These tanks are provided with relief valves set to relieve at 110 p.s.i.
(3) Shaft Brakes, port and starboard, through a reducing valve set to reduce the air to 125 p.s.i. These lines are provided with relief valves set to relieve at 140 p.s.i.

38-4 The Ship's Service Air System supplies air to:-

- (a) Six tire servicing outlets on Superstructure Deck, starboard side.
(b) Sea chests, port and starboard; refrigerating machinery and to work bench and hose connection in engine room through a reducing valve 100/55 p.s.i.
(c) Fresh Water Compression Tank, 100 pound service.
(d) Boiler room, 100 pound service.
(e) General workshop, 100 pound service.
(f) Fairbanks-Morse Engines

Shaft brakes, port and starboard, through a reducing valve 100/80 p.s.i. These lines are provided with a low pressure alarm and a pressure switch to control brake.

38-5 COMPRESSOR OPERATING CHARACTERISTICS:-

Displacement at 800 RPM - 19.7 c.f.m.
Actual capacity at 800 RPM and 600 pound gage discharge pressure - 11.4 c.f.m.
Intercooler pressure - 80-85 p.s.i. gage.
Final discharge pressure - 600 p.s.i. gage.
Temperature of air intake - 122° F.
Temperature of 1st stage discharge - 370° F.
Temperature of 2nd stage intake - 100° F.
Temperature of 2nd stage discharge - 320° F.
Temperature of after cooler discharge.
Air intake pressure - 14.7 p.s.i.
B.H.P. of compressor - 7.2.

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38-5 COMPRESSOR OPERATING CHARACTERISTICS:-

Gage Settings:-

Set red marker of intercooler gage at 85 pounds.
Set red marker of final discharge gage at 600 pounds.
Set red marker of ore gage at 25 pounds.

Relief Valve Settings:-

Intercooler relief valve set at 95 pounds.
Aftercooler relief valve set at 660 pounds.

For further information concerning the Com-
pressed Air System, see PLATE XVI.