ABSTRACT

STUDY OF MAGNETIC PARTICLE INSPECTION AND LIFTING TEST 
ON FRAME AIR COMPRESSOR 
AT PT. COATES HIRE INDONESIA

Oleh
Nugroho Suparmadi
NRP : 6107 030 061

Compressors are widely used in some industries offshore to clean the pipe from the remnants of oil by using pressurized air. Some offshore industry would prefer a portable compressor rather than a fixed compressor, portable compressor with a large capacity has a dimensions and weight are large too, so it needs a frame with a string construction to be safe when transferred. But before use, should be tested to determine the feasibility of these frames, the test carried out Magnetic Particle Inspection and Lifting Test which is a test of NDT (Non Destructive Test).

The first testing on this frame is by Magnetic Particle Inspection (MPI), which is can check surface defects and sub-surface. MPI tested part of the welding around pad eyes. The test is performed several times by changing the position of yoke. The second test is a Lifting Test to check the frame can lift the load from the compressor. Compressor with dimensions of 3810 x 2150 x 1750 mm has a weight of 3.5 tons, while the frame has a SWL (Safe Working Load) of 4.75 tons, it means the frame has to work safely with the maximum lifting load 4.75 tons, so the ability transport frame during the test should be more than 4.75 tonnes. In this test added a compressor as an additional weight to test the strength of the frame. The additional of the load carried by chain at the bottom of the frame.

With these two tests can know feasible these frame can be used to transport the compressor according to SWL, so the compressor can be fully used in offshore. After testing has been done, the last step that must be done is certify to the parties involved to recognition of the worthiness of this frame air compressor.

Key Word : Compressor, frame, Magnetic Particle Inspection, pad eyes, Lifting Test