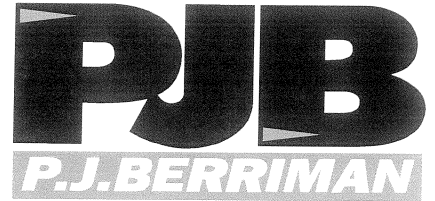


The Mechanical Engineer in Charge

Ref Document – EB0004 issue 01
Date 9th September 2004



PRODUCT SAFETY BULLETIN

AIR COMPRESSORS

APPLICABILITY

Vehicle mounted air compressors.

BACKGROUND

During the operation of a Mk4.5 Minecruiser while travelling inbye the operator noticed sparks coming from the engine compartment.

Further investigations found -

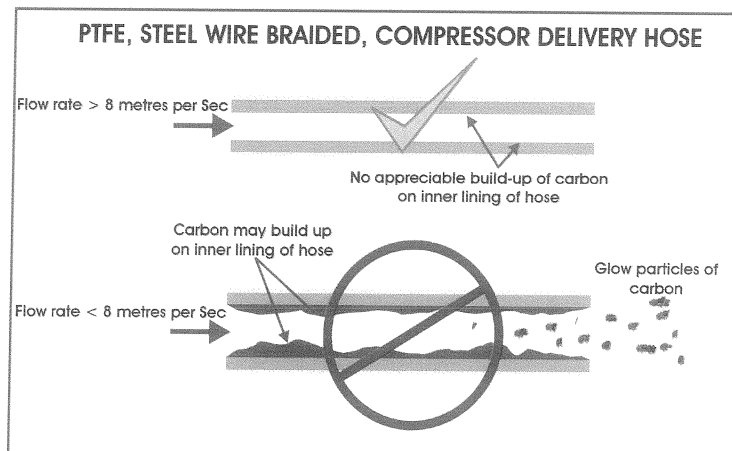
1. There had been a failure of the metal wire braided PTFE hose at the point where the hose directly connects to the discharge of the compressor.
2. Carbon & oil build up inside the compressor.
3. Carbon & oil build up inside the compressor discharge hose.
4. The engine cooling header hose located next to the failed compressor discharge hose was scorched.
5. The Compressor was found to be very worn but operable.

INFORMATION

A body of evidence suggests that the Compressor delivery hoses fitted to PJB Minecruisers is larger than is required.

A smaller diameter hose, creating a higher flow-rate will minimise any build-up of carbon.

If there is no build-up of carbon, then it cannot ignite into glow particles, causing damage to the hose and a possible hazard by being emitted.



It is believed that the gradual wear of a compressor over a long period may contribute to risk. As Compressors wear, they tend to bypass oil from the sump and into the delivery hose. Valve performance may also deteriorate.

The barriers to minimise the probability of a similar event re-occurring are therefore:-

- Replace the PTFE compressor delivery hose.
- Include Compressors in routine maintenance to ensure satisfactory condition.

RECOMMENDATIONS

Replace the existing ½" compressor discharge with ¼" compressor discharge hose and fittings.

PTFE, S Steel wire braided, Compressor Delivery Hoses		
Vehicle Type	Old Part No.	New Part No.
PJB Minecruiser	AR00685	AR00685
PJB Nipper	AR00715	AR00715
PJB Powertram	AR00685	PT05000

Re-route any hose in the vicinity of the compressor discharge hose/fittings away from the compressor discharge.

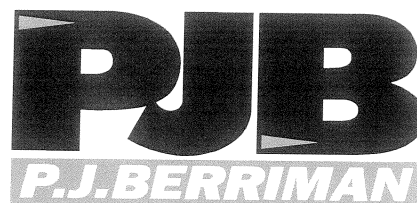
Include Compressors in routine Inspections and Maintenance

At Code C (120 engine hours or monthly),		
Preparation	Inspection	Action
Remove the air compressor intake filter and, compressor discharge hose.	Check for any evidence of oil and/or carbon build up	If oil and/or carbon deposits are found then the compressor is required to be replaced or repaired. At compressor replacement, the intake filter and discharge hose are also to be replaced.

At the Code D (2000 engine hours or two yearly),		
Preparation	Inspection	Action
Remove the air compressor intake filter and, compressor discharge hose.	Check for any evidence of oil and/or carbon build up.	If oil and/or carbon deposits are found then the compressor is required to be replaced or repaired. At compressor replacement, the intake filter and discharge hose are also to be replaced.
Remove the compressor head.	Check for any evidence of oil and/or carbon build up. [Pay particular attention to the exhaust valve assembly]	If oil and/or carbon deposits are found then the compressor is required to be replaced or repaired. Fit a new head gasket on re-assembly. At compressor replacement, the intake filter and discharge hose are also to be replaced.
With the engine at high idle allow the compressor to recharge the air receivers.	Check the temperature of the compressor discharge fitting during the engine temperature checks.; the maximum acceptable surface temperature on the compressor discharge fitting is 118° C.	If excessive, - Check for system leaks. - Replace Compressor At compressor replacement, the intake filter and discharge hose are also to be replaced.

The Mechanical Engineer in Charge

Ref Document – EB0006 issue 01
Date July 11, 2005



PRODUCT SAFETY BULLETIN

AIR COMPRESSORS

APPLICABILITY

Vehicle mounted air compressors.

BACKGROUND

This document is to be read in conjunction with PJB Bulletin EB0004 (copy attached).

During the operation of a Mk4.5 Minecruiser while travelling inbye the operator noticed sparks and a flash within the engine compartment. The machine had previously been fitted with the smaller diameter compressor hose referred to in EB0004.

Further investigations found -

1. There had been a failure of the metal wire braded PTFE hose at the point where the hose directly connects to the discharge of the compressor. The hose had detached from the stem of the fitting attaching it to the compressor. The teflon hose at the point of failure showed evidence of damage due to high temperatures.
2. The downstream end of the hose and the discharge check valve were completely blocked with an oily carbon sludge.
3. The compressor governor had been adjusted to a pressure greater than the pressure at which the cylinder pressure relief valves were set. Consequently, the compressor was continuously loaded.
4. The compressor was found to be worn but operable.

RECOMMENDATIONS

Include additional checks in routine Inspections and Maintenance. The instructions in ***bold italics*** are additional or different to those described in Bulletin EB0004.

At Code C (120 engine hours or monthly),		
Preparation	Inspection	Action
Remove the air compressor intake filter, compressor discharge hose <i>and compressor discharge check valve.</i>	Check for any evidence of oil and/or carbon build up – <i>check both ends of the compressor hose and inside the check valve.</i>	If oil and/or carbon deposits are found then the compressor is required to be replaced or repaired. At compressor replacement, the intake filter and discharge hose are also to be replaced. <i>Clean or replace the compressor discharge check valve.</i>

At the Code D (2000 engine hours or two yearly),

Preparation	Inspection	Action
Remove the air compressor intake filter, compressor discharge hose and compressor discharge check valve.	Check for any evidence of oil and/or carbon build up – check both ends of the compressor hose and inside the check valve.	If oil and/or carbon deposits are found then the compressor is required to be replaced or repaired. At compressor replacement, the intake filter and discharge hose are also to be replaced. Clean or replace the compressor discharge check valve.
Remove the compressor head.	Check for any evidence of oil and/or carbon build up. [Pay particular attention to the exhaust valve assembly]	If oil and/or carbon deposits are found then the compressor is required to be replaced or repaired. Fit a new head gasket on re-assembly. At compressor replacement, the intake filter and discharge hose are also to be replaced. Clean or replace the compressor discharge check valve.
While the compressor is charging the pneumatic system.	Check the compressor governor pressure setting	Set to 860 kPa.
With the engine at high idle allow the compressor to recharge the air receivers.	Check the temperature of the compressor discharge fitting during the engine temperature checks.; the surface temperature on the compressor discharge fitting should be no greater than 100° C plus the ambient temperature at the time of testing.	If excessive, - Check for system leaks. - Replace Compressor At compressor replacement, the intake filter and discharge hose are also to be replaced. Clean or replace the compressor discharge check valve.