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3000 PSI water blaster gun – explosion

Background

This incident occurred on 26 November 2020. The operator was using a hired trailerised water blaster in a correct manner, and was experienced in its use. Regular maintenance checks and services had been carried out on the machine.

The water blaster gun involved in the incident has a threaded bung (bolt) at the top, that is screwed into the brass body. While in use, the threaded bung fired out of the water blaster gun with a force that blew the operator backwards.

The operator suffered serious facial injuries and was hospitalised for three days.

During the investigation, it was made apparent that this type of incident is not a known risk within the hire industry.

What's the issue?

WorkSafe New Zealand engaged experts to understand why this incident occurred. After ruling out a malfunction of the machine itself, a definitive cause for the bung ejecting under pressure could not be established.

The experts strongly suggested that bungs should never be removed from water blaster guns to either repair or maintain them, as it can create a risk of cross threading. A cross threaded bung allows for the potential for it to be ejected under pressure.

Our advice

If an existing high-pressure water blaster gun has a bung, instead of attempting to carry out maintenance on the bung, or replace certain parts, we recommend that you dispose of the entire water blaster gun and replace it with a new one.

There are several indicators to look out for that mean it may be time to replace the water blaster gun.

These include:

- when the equipment is in poor physical condition
- if the trigger mechanism is sticking or not functioning as it should
- if the gun itself is leaking water
- if the equipment has reached the end of its recommended lifespan provided by the manufacturer.

Solid manifold water blaster guns (gun without a bung, refer Figure 2 for example) are also available for purchase in New Zealand.

Where can you find more information?

You can find more information on this issue in this standard *AS/NZ 4233.1:2013 High Pressure water (hydro) jetting systems Part 1: Guide for safe operation and maintenance*.



FIGURE 1: The water blaster gun involved in the incident, including the bung and threaded brass body of the gun



FIGURE 2: Example showing the internal structure of a solid manifold gun (gun without a bung) and trigger assembly