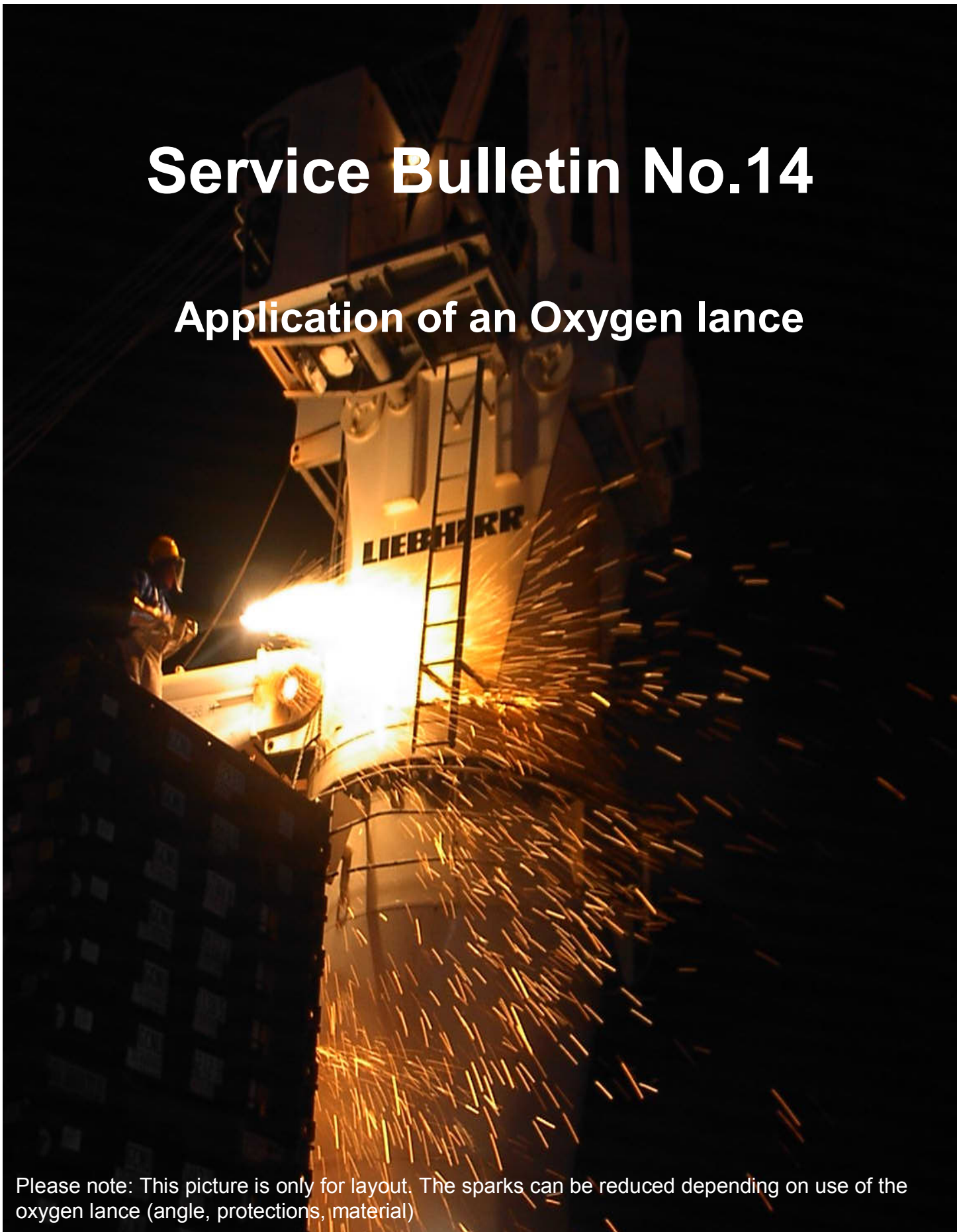


Service Bulletin No.14

Application of an Oxygen lance



Please note: This picture is only for layout. The sparks can be reduced depending on use of the oxygen lance (angle, protections, material)

Within this service bulletin we would like to show the use of a oxygen lance which is useful for burning out seized bolts, cutting, etc..



Removal of a A –Frame pin



Process and Application Range

The Process

The process is specified by DIN 32510 and instruction sheet DVS 2101.

The principle is that oxygen (6-12 bar) is blown into the combustion tube, which is filled with an exothermal reacting material, and is then ignited by a welding torch. This leads to the combustion of the tube, supported by the flow of pure oxygen, as with a hollow electrode. The temperatures reached during the combustion process are between 2000 °C and 2200 °C.

The use of combustion tubes provides an essential advantage in that, apart from the combustibility of the materials, high cutting speeds are obtained and thicknesses up to 2m can be cut according to the handling. The same applies to single boreholes. The tubes are flexible and can thus be applied to locations with difficult access.

Independent studies verify that the use of the combustion tubes does not lead to toxic emissions, for example nitrogen oxide, which are detrimental to health.

Application Range

The application of the combustion tubes is ideal for thermal cutting of metallic materials such as iron, steel, high-alloy steel, all kinds of casting, non-ferrous metals, and slag, as well as mineral materials, such as concrete, brickwork and rock.

Typical applications of the combustion tubes have been:

Demolition and Scrapping

Cutting up plant etc. such as, old machines, presses, boilers, including brick-lined vessels with fireproof material or other coatings.



Steel Construction and Repair Works

Hole Lancing:

Hole Lancing' is often necessary in the profile cutting of thick metal sheets.

Flame cutters or conventional blow torch cutting machines, can experience problems when dealing with thicknesses of over 120mm. Mechanical drilling on the flame cutting table can also be difficult. Using the combustion tubes, hole lancing can be done in seconds. To reduce sparks and flying slag particles, we recommend the use of an impact pot (300 x 300 x 300mm) over the hole to be burnt. On completion of hole lancing, normal cutting equipment can then be used.

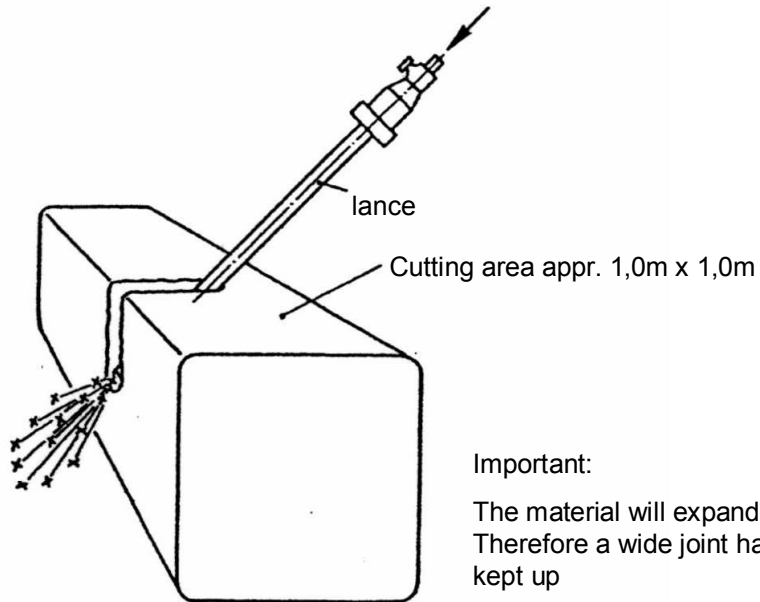
Burning out seized bolts:

The process is ideal for burning out seized bolts (about 40mm upwards). With the combustion tube, holes of various sizes (according to the size of the bolt) can be burned axially. On cooling the bolt shrinks and can be removed easily

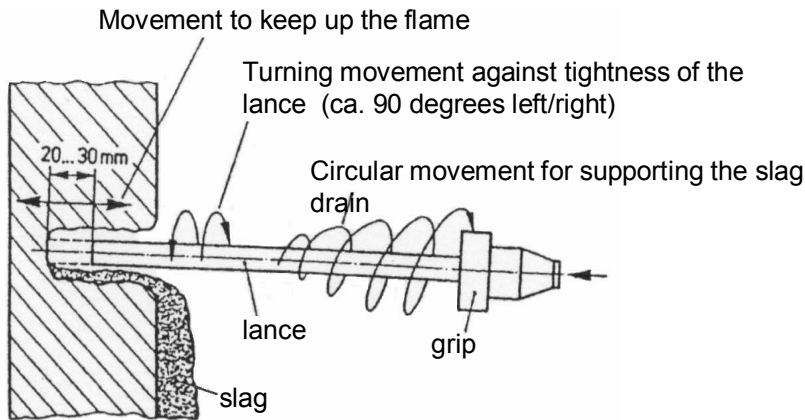


Typical applications:

Cutting metal bars:

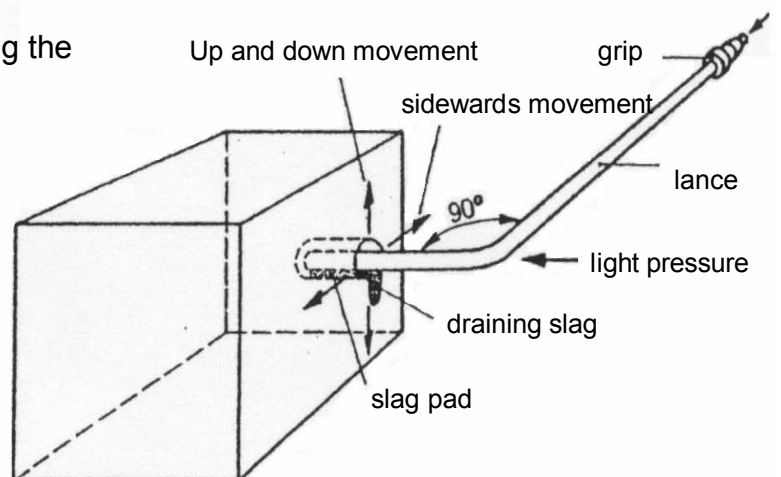


Burning out holes:



Pic. 1: movements of oxygen lance during the burning process

Pic. 2: burning horizontal holes with a 90 degree bent oxygen lance



Liebherr Werk Nenzing will provide all the necessary equipment, including a specialist.

Equipment includes:

Combustion tube shank,
Pressure reducer,
Wire armored hose,
Protective clothing and helmets
Core lance



Note:

Oxygen not included (to be provided by the customer on site)

