

Surface finishing for heavy machines

LORENZO ASA (pictured), technical sales manager, OMSG, discusses his company's well-recognised capabilities in achieving the state of the art in heavy machines finishing



The structural arm of an agricultural machine at shot blasting exit

full removal of dross, contaminants and working residuals and the achievement of surface roughness, which is required for strong paint sticking. This can be completely achieved by means of a qualitative centrifugal blasting plant in which, an adequate number of properly positioned and well-dimensioned centrifugal wheels invest the work pieces with streams of large amounts of accelerated abrasive.

Sometimes it is not so easy to treat metal steelworks: they can show very complex shapes and deep undercuts, which may reduce shot blasting uniformity. Therefore, plants that aim to deal with these structures will have to be fitted with a number of expedients driven by experience. OMSG has brought its 52 >>

There are applications in which surfaces have to daily undergo the exhausting action of natural elements. One of them for sure is related to earthmoving equipment, which has to deal with not only extreme environmental conditions, but also the continuous wearing action of ground and stones.

In such a set, painting is much more than simple aesthetic finishing: it is the guarantee of long-lasting components and the most effective bulwark against rust. Therefore no top-ranking machine can be considered qualitative, if the painting process is lacking and no painting process can be considered satisfactory, unless relying on a former perfect surface preparation.

Both for powder and liquid coating, suitable treatment in fact ensures the



The bulky floor of an earthmoving machine



The complex chassis of a mobile crane

years' know-how in centrifugal shot blast machines and its well-recognised technical capability to develop special plants for special applications to achieve the state of the art in heavy machines finishing with particular attention to ever-growing production rates.

TUNNELBLAST SOLUTION

For these reasons, OMSG proposes its Tunnelblast wheel blast machine, which can be installed in automated production lines and is able to perfectly polish to SA 2½ finishing grade components of up to 4 x 4 m wide and several tonnes in a single passage. The whole process can be managed by PLC, thus giving a high level of automation, together with ease in human control.

The turbines SG350 and SG380 patented by OMSG, which are the core of the system, ensure a uniform and widespread abrasive media stream, thus giving exceptional results. The choice of special wear resistant materials, together with the accurate manufacturing process and tuning, also gives to OMSG wheels smooth running, with an uninterrupted work life much longer than the normal

turbines currently on the market.

Launched abrasive is collected by means of below hoppers and screw conveyors to a bucket elevator and conveyed to the media-cleaning device. This unit has huge relevance in the good functioning of machines and in the worklife of components. It makes the abrasive fall in a thin curtain, crossed by a countercurrent airflow stream, thus separating good shots from dust, chips, contaminants and worn shots. The good selection is then sent again to the wheel for another cycle.

Should the production include thin profiles that are intrinsically subject to deformation as a consequence of shot blasting, the experience of OMSG will help in finding the right balance among power, throwing energy and blast pattern regulation.

The possible permanence of a small amount of residual abrasive over the blasted work pieces can be easily removed manually or automatically in a following blowing chamber. Suitable conveying devices collect shot and bring it back to the machine to avoid any waste of consumables.

After shot blasting, a cathaphoresis system can be installed as the former anti-corrosion primer. Then the parts usually get into a phosphodegreasing chemical treatment stage with several water rinses and drying and, finally, enter into a painting booth. This plant can be either of powder or liquid type and sometimes makes use of electrostatic principles to improve finishing quality. Some of the most advanced applications exploit nanotechnological pre-treatment, which gives exceptional results in terms of lifetime.

OMSG, with its two European branches OMSG Deutschland and OMSG France and supported by a worldwide sales and assistance network, can boast dozens of satisfied customers in Germany, France, Belarus, Spain, India and Italy in the field of agricultural and earthmoving machines. OMSG is nowadays a valuable and reliable partner for any manufacturer of any type of agricultural, earthmoving and heavy machines, especially when experience, professionalism and skill are needed to find the right solution suiting specific needs of demanding applications.