



Gradall machine meets **ALUMINUM MILL** needs for superior dross skimming

Modern aluminum mills strive to find more effective dross skimming solutions for many reasons, including increasing furnace utilization time, improving heat transmission and speeding up the cold charge melting cycle. Without an effective process, mills know that dross, sludge and metal buildup can reduce furnace capacity, pollute metal analysis and increase unscheduled downtime for cleaning. ❖ The Novelis brand name is known globally for producing rolled aluminum used in the manufacture of beverage cans, automobiles, architectural products and consumer electronics. Addressing the de-drossing needs at its Oswego, N.Y., mill, Novelis' engineers consulted with Gradall to design a better dross skimming solution, based on the success of Gradall machines in metal mill maintenance around the world. ❖ Gradall engineers set out to create a de-drossing machine that was mobile enough to work on several furnaces; able to work quickly to shorten the time furnace doors are open; skim the molten surface accurately, removing a minimum amount of aluminum; clean furnace walls and bottoms without damaging the refractory lining; and submerge scrap, mix and homogenize the molten bath. ❖ An additional consideration was operator protection: mills want de-drossing solutions that will withdraw operators from hot, dangerous work areas and protect them from splashes.

GRADALL VERSATILITY ADVANTAGE

Novelis' Oswego, N.Y., mill uses three large furnaces, each with a 140-ton capacity, and two smaller furnaces, each with 100-ton capacities, heating aluminum to 750° C to create molten aluminum. ❖ To address Novelis' need to skim dross efficiently from all of those furnaces, Gradall engineers designed a specialized machine starting with an XL 4210 V excavator model with a mobile crawler excavator undercarriage and a unique boom that could reach out 49 feet (14.9 m) to fully utilize a paddle attachment. ❖ To accommodate various furnace sizes and mouth heights, the entire boom can be raised and lowered in its horizontal position, starting at 74.3 inches (1.88 m) from ground level and rising to 102.6 inches (2.6 m). ❖ To create an appropriate boom angle for hard-to-reach areas inside each furnace, the front and rear of the first section can be raised or lowered independently.



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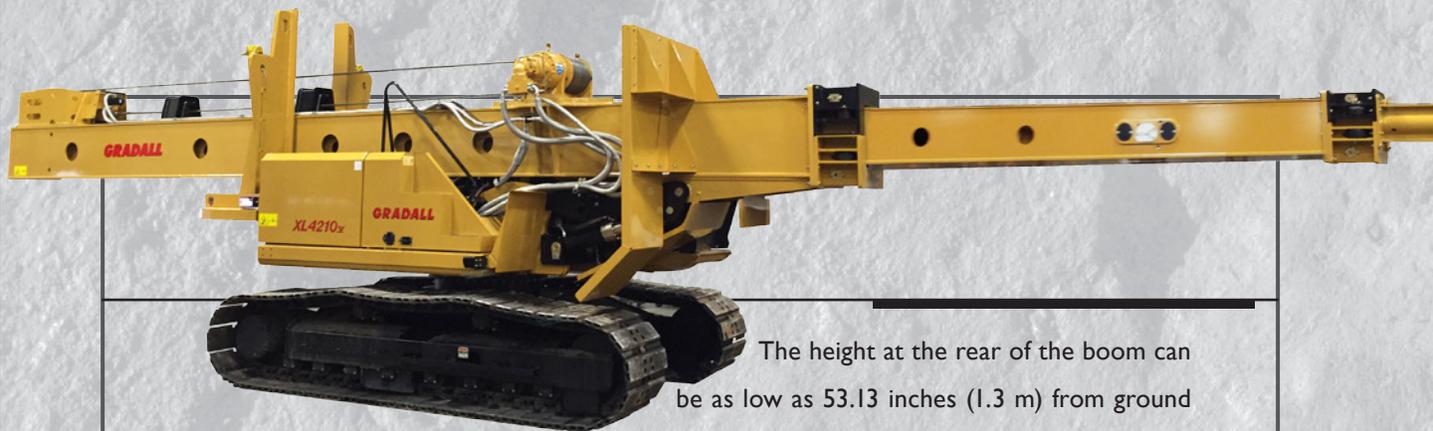
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The height at the rear of the boom can be as low as 53.13 inches (1.3 m) from ground level, rising to 229.36 inches (5.8 m) at its maximum height. The front of the first boom section can be adjusted from 52.9 inches (1.3 m) to 107.89 inches (2.7 m) from ground level. ❖ Unlike the standard Gradall triangular boom, the machine designed for Novelis has a square boom that accommodates hydraulically driven cables and a winch system. Two cables in the winch section and three inside the boom allow the two sections to telescope simultaneously. ❖ Electrical and hydraulic components are fully protected and positioned away from the furnace to avoid exposure to heat and molten metal splashes. The operator cab is also fully protected with heat-resistant glass and heavy-duty construction built to withstand pounding common in metal mills. For ease of operation, operators control the boom and paddle with joysticks built into the arm pods of the seating module. ❖ Other skimming machines could not match the Gradall's boom movements and cycle speed, according to Novelis. For reliable mobility, the machine has a stable crawler undercarriage that can move quickly from one furnace to another – another advantage over stationary or hard-to-relocate dross skimming solutions. ❖ An additional advantage for Gradall was its product support capabilities, with factory-supported parts and service expertise nearby when its needed by Novelis. ❖ In the end, the Gradall dross skimming solution was able to meet all of the modern aluminum mill requirements: ease of use; high reliability; low maintenance; flexibility to work at more than one furnace; operator protection; and the ability to work quickly. ❖ For information about Gradall machines for aluminum or steel mills, call Gradall at 330-339-2211 or visit www.gradallmetalmill.com



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