



White Paper

Rotary Discharge Machines for Reclaiming Bulk Materials from Stockpile

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In a recent article entitled "Review of Raw Material Stacking and Reclamation Methods" ("bulk solids handling" Vol. 1 (1981), No. 3, pp. 429-436) Dr. Chartes G. Schofield, Australia only covered those reclaiming methods and equipment which are used for reclaiming bulk materials above ground level. In the present paper a reclaiming system and equipment is described for sublevel installation and below ground discharging of bulk solids as manufactured by Maschinenbau Louise of Cologne, West Germany.

The design of a stockpile for any raw material requires the answers to several questions viz: existing area, max. height for storage, quantity of live material, capacity of supplied raw material, capacity of discharged materials going direct to the process or to the next destination blending strongly required or just wanted normal storage time to max. storage time, accuracy of discharged capacity, how dangerous is segregation coming from piling, brittleness of the piled material e.g. coke, pellets etc. operating hours of stacker, operating hours of discharge machinery.

Under normal circumstances a longitudinal stockpile will be selected, piled by a stacker or shuttle belt conveyors. It depends on the existing regulations to decide for an outdoor or indoor stockpile.

Underground extraction achieved by LOUISE rotary discharge machines is very attractive because of the main advantage that feed and discharge can be operated completely independently and totally automatically which means a lot of space can be saved in comparison with reclaimers working above ground.

With the necessary pre-testing of the materials required to be stored the correct stope angle can be fixed which will allow a high percentage of live capacity. The dead capacity can be easily used for any emergency situation and is basically used to build up the upper sloping walls.

The successful use of rotary discharge machines depends on the correct selection of the discharge wheel diameter in connection to the necessary penetration of the wheel. It has to be pointed out that the flow characteristics of the stored raw material determines the wheel diameter and not the desired discharge capacity, except in the event of high outputs which of necessity require the selection of the maximum discharge wheel diameter of 4,000 mm.