



DEPARTMENT OF TRADE AND COMMERCE
STANDARDS DIVISION

OTTAWA, January 17th, 1957

RESTRICTED APPROVAL LISTING

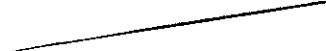
Automatic Loading and discharging Hopper scale manufactured by N.V. Servo - Balans, 40 Wegestraat, The Hague, Holland. Under the provisions of the Weights and Measures Act, Chapter 292, R.S.C. 1952, and Regulations thereunder (P.C. 6894), the apparatus specified and illustrated herein has been listed as an approved device for restricted use and may be used in Canada in accordance with the conditions applicable.

Apparatus Listed: Servo Duplex weigher - automatic filling and discharging hopper scale model SBD.
Rating of Apparatus: 8 tons to 500 tons per hour.

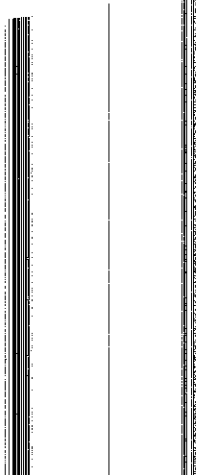
Application: Bulk weighing of crude or cheap material such as crude ore, salt, fertilizer, lime, cement and similar products including raw sugar. When equipped with a tank and valves it may also be used for weighing crude or cheap liquids.

Conditions: As prescribed in P.C. 6894. Maximum tolerance .2%. It should be noted that these devices are required to bear a plate permanently affixed to the device bearing the words:
Restricted - Trade and Commerce
or the mark
Restricted - T & C

Description: This device is a fully automatic filling and discharging bulk hopper scale. The weighing, registration and operation of the inlet and discharge gates is accomplished by a combination of hydraulic and mechanical means. The hopper or tank is suspended from a single bifurcated lever of the first order by flexure plates at the load point on the lever. The lever is also suspended from the frame by flexure plates at the fulcrum point. Power is transmitted by a connecting rod from the end of the main lever to an extension lever which actuates the beam by means of a connecting rod. Lateral movement of the hopper is restricted by flexure plates connected with both hopper and frame. The beam is equipped with V type pivots and bearings of hardened steel. The movement of the beam when the hopper is receiving material operates a slide valve which admits oil under pressure to a primary cylinder causing the piston to move and activating a mechanism consisting of a rack and pinion, steel tapes and rollers which operate the dial indicator and beam poise which are synchronized.



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Description: (cont'd)


A clamp on the primary piston rod opens a valve at the appropriate time admitting oil under pressure to the auxiliary cylinder causing it to move and opening or closing the hopper inlet and discharge valves and clutches or declutches the totalizer driving mechanism.

Residue remaining in the hopper after discharge is registered on the dial indicator and is not registered by the totalizer. The oil used for hydraulic operation is kept at a constant temperature with a submerged heating unit and pressure is supplied by an oil pump and electric motor. The scales when used for trade are supplied with either permanent weights or steel containers for loose weights equal to the capacity of the hopper load. These weights may be raised from the frame by mechanical or electrical and mechanical means to a position where they can be used as a live load for test purposes.

Testing:

The weights supplied, after verification, may be used for static testing of the device. If possible discharges from the hopper should be weighed on a sensitive and accurate platform scale. Maximum applicable tolerance .2%.


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Reference: A-411

