

Fillingsmaschine F-160

**Format range:**

Tube length:	70 - 200 mm
Tube diameter:	18 - 40 mm
Tube material:	Plastic or Aluminum
Tablet diameter:	18 - 30 mm
Tablet thickness:	3,5 - 10 mm

Please observe that the above mentioned intervals can be handled only with more than one set of format parts.

Machine data:

capacity:	Nominal up to 160 tubes a minute or 160000 tablets an hour, depending on the number of tablets per tube.
voltage:	3 x 400 V and earth, 50 Hz
power:	appr. 8 kW.
compressed air:	7 bar, appr. 850 L/minute.
weight:	appr. 800 kg (F160 with tablet table and cap feeder)

The above mentioned capacity can only be reached at proper production conditions and at a minimum of broken tablets. Ideal production conditions are temperatures of 18-20 °C and a relative humidity of 20-25%.

General Description

The GORDIC F-160 is a compact machine equipped with a SIEMENS S7 PLC which is operated from a control panel where operating instructions, error messages and tube speed, etc. are displayed.

The PLC in combination with pneumatics and replaceable format parts, reduces setup time for the GORDIC F-160 to a absolute minimum and provides flexibility in terms of possible product formats. The ROTAFILL-system, a unique technology for gentle counting and filling of cylindrical tablets in tubes, is especially suitable for fragile products like effervescent tablets.

Further on the modular design of the F-160 with its systems for fast removal of critical parts, enhances cleaning and technical overhaul.

Tablet feeding

The tablets are fed either directly from the tablet press outlet, eventually via a conveyor, over two chutes with each a distributor to a tablet table. The distributors provide an even distribution of tablets into the twenty channels. The tablets are then fed from the chutes on to the tablet table where they are distributed into a 20-channel cassette. From this cassette a controlled number of tablets are let into the tubes via the rotation filling tubes. The filling time for 20 tubes is about 1 to 1,5 seconds.

As an option the chutes can be replaced by a AIRSLIDE®. This AIRSLIDE ® is multifunctional and provides gentle distribution, dedusting and online buffering of tablets. We strongly recommend implementing an AIRSLIDE together with the F-160.

The GORDIC F-160 is equipped with 3 dust suction points in the tablet feeding unit. One under the distribution arms, one at the filling point and one under the tablet table. If a AIRSLIDE is implemented one additional dust exhaust must be included as a part of the air supply system.

Tube feeding

Empty tubes are fed automatically into filling position from a tube supply. Three different types of tube supply units are available:

1. *Unscrambler* for tubes, delivered in bulk. This unscrambler has a capacity of 2.500-5000 tubes which are oriented in the unscrambler and placed on a tube conveyor. The tube conveying system is equipped with security function for ejection of wrongly oriented tubes.
2. *Foldable external tube hub*.
3. *External tube hub(s)*.

Please note that all three units requires a "conveying unit for empty tubes".

For a closer description of the above mentioned tube supply units please select a topic an the menu to the left.

The GORDIC F-160 is equipped with a "Foldable external tube hub" and the minimal necessary "Conveying unit for empty tubes" as a default in the standard setup.

Cap feeding

Caps are fed from a centrifugal cap feeder, via five channels, to the capping station where they are fixed by vacuum. Five tubes are capped at the same time with individual pneumatic cylinders. The cap feeder can be loaded with up to 2000 caps at the time, depending on cap size.

As an option the F-160 can be equipped with an additional cap pre-feeder, including a conveying system.

Filling machine

The filling machine is fully automated and protected against personal injuries according to the valid CE-norm.

In the twenty channel cassette on the tablet table, the tablets are counted. When the preselected number of tablets are accumulated in each of the twenty channels, they are gently filled into twenty tubes, first passing through the twenty rotating in-feeder tubes. This ROTAFILL®-system, is a unique system especially developed for fast and gentle filling of tablets in tubes. With this system tablets with a crushing strength of only 40 N can be handled at full operational speed.

After filling, the tubes are transported on a belt conveyor towards the capping station. During transport a laser control unit controls if the tubes are filled to the correct level. Wrongly filled tubes are rejected. The tubes are then capped automatically and a sensor controls if a cap is present and correctly positioned. Rejected tubes are not capped.

After capping, the tubes are discharged five by five and can be taken care of manually or transported away on a conveying unit. We however strongly recommend the implementation of a conveying unit for filled tubes. Rejected tubes and significant badly capped tubes are ejected. Ink jet printing is preferably made during transport on the conveying unit.

The F-160 can be equipped with format parts for different tablets, tubes and caps. Change from one format to another is normally made within one hour. Simple format changes, like change from one tube length to another, are done much faster.