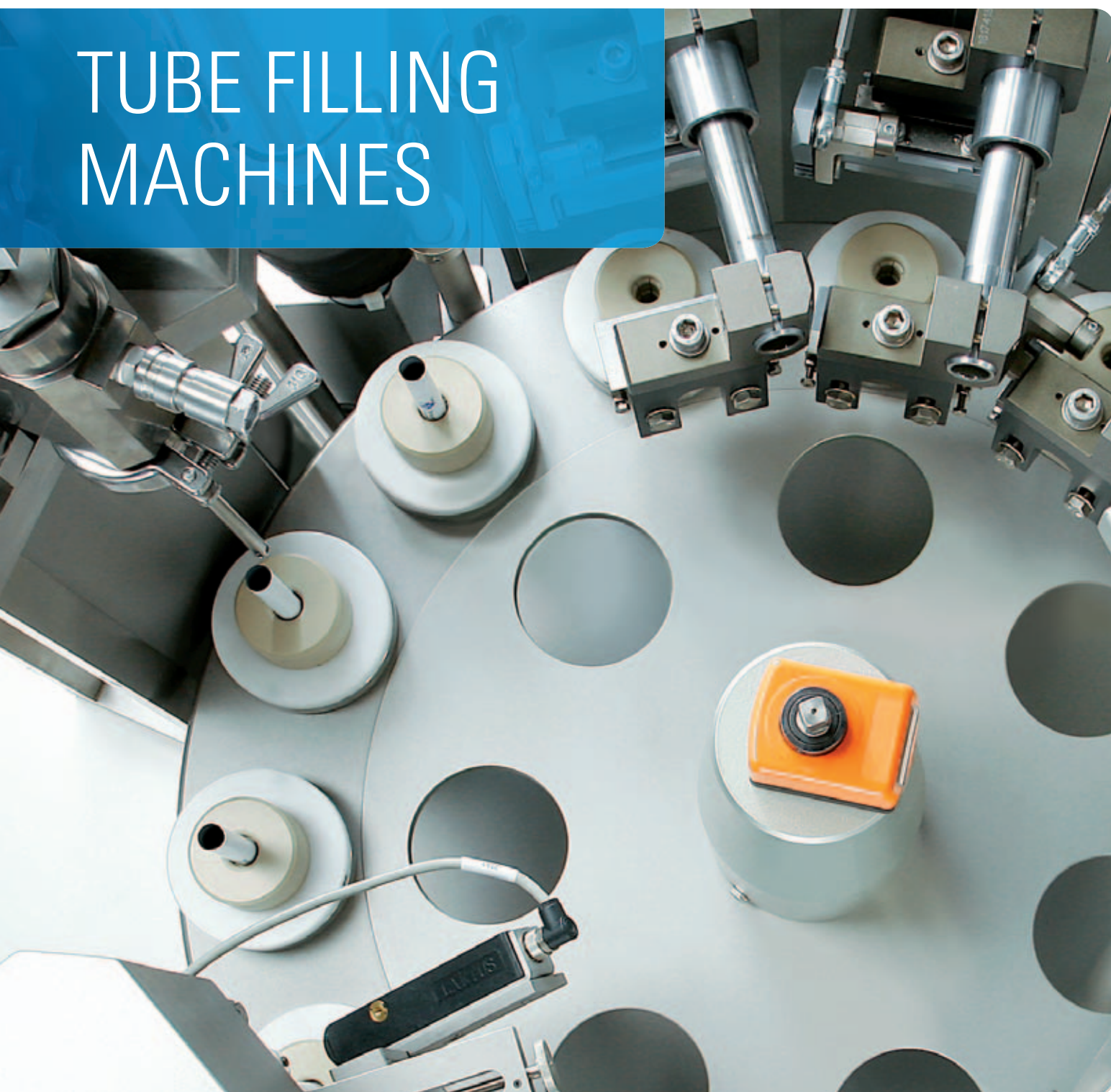


TUBE FILLING MACHINES



TUBE FILLING TECHNOLOGY – GAINING YOUR CONFIDENCE

With IWK you have a most competent partner at your side for solving complex issues and challenges aiming to the future, with a clear understanding of your market and your demands. As far as the packaging technology is concerned, we offer comprehensive and extensive know-how, competence and experience. Documentation and certification support is available as an option to reduce qualification and validation time.



Working principle

Depending on the equipment tubes are fed manually or automatically on to the tube feeding conveyor linking up with the transfer station in the tube filling machine. Tubes are placed into cups fitted to the rotary machine table and conveyed to the individual workstations by a proven, high-precision indexing drive for tube alignment, print registration, filling, closing, coding and trimming – where applicable. Filled tubes are discharged from the machine cap or tail leading or transferred to a cartoning machine for onward packaging.

High-precision dosing is guaranteed by an infinitely variable, direct and play-free pump drive for fill volumes within the dosing range of the machine. Wet parts required for a different product are exchanged en bloc. Size parts are exchanged without the use of tools. Settings of adjustable machine parameters are aided by digital counters, e.g. piston stroke, lifter stroke and filling nozzle stroke.

Tube filling machines in single or twin-lane design are available depending on output requirements.



TFS 10

TFS 10 TUBE FILLING MACHINE



Filling station

Product is fed into the machine by a 60 l hopper. Rotary valve – with supportive ball bearings at both ends – and dosing pump have separate drives. Volumetric dosing is achieved by exchanging matching pistons and cylinders and by infinitely variable piston stroke adjustment. The filling system with its dosing nozzle is mechanically separated from the rotary valve and the pump. The filling nozzle stroke is infinitely variable in relation to the tube length to be filled. Size parts are not required.



Tube feeding conveyor – chute – rotary machine table

Empty tubes are fed manually or automatically into the machine, picked up by a vacuum prism swinging into the upright position and inserting the tubes into the cups. Tube skirts slightly out of roundness can also be safely transferred and gentle guiding systems prevent the free falling of tubes.



TFS 15

TFS 15 TUBE FILLING MACHINE



Tube print registration

Tube print registration and code reading – if needed – is achieved by a photo-electric scanning device. The entire tube holder with a toothed rim at its base is rotated without vibration by a clutch-brake system and perfect print registration is thus guaranteed.



Tube pressing, emboss coding and discharge stations

Tube ends are pressed and embossed. Seals on plastic and laminated tubes are trimmed for best optical appearance. Filled and closed tubes are ejected from their cups and discharged from the machine on a chute.



TFS E TUBE FILLING MACHINE



Lobe pump system

Our revolutionary dosing system is only available at IWK. It allows highly reliable Cleaning in process (CIP) in less than 5 minutes. This maximizes uptime and consequently the OEE.



Servo lifting station for print registration and filling station

Format change over times of less than 25 minutes, reproducible through storage of all relevant process parameters, guarantee vertical start up. This combined with "en bloc" exchange of all wet parts allow highest production flexibility at maximum efficiency.



TFS 30 TUBE FILLING MACHINE



Filling station

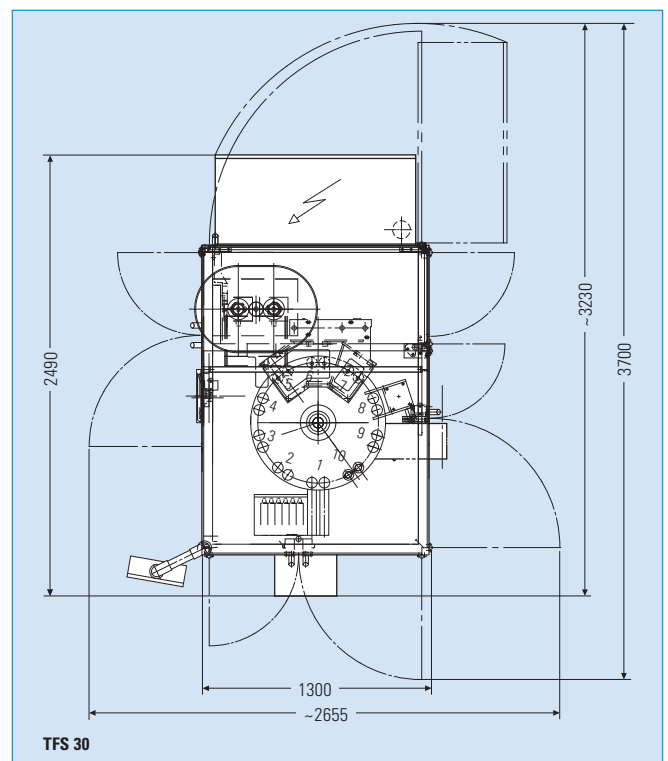
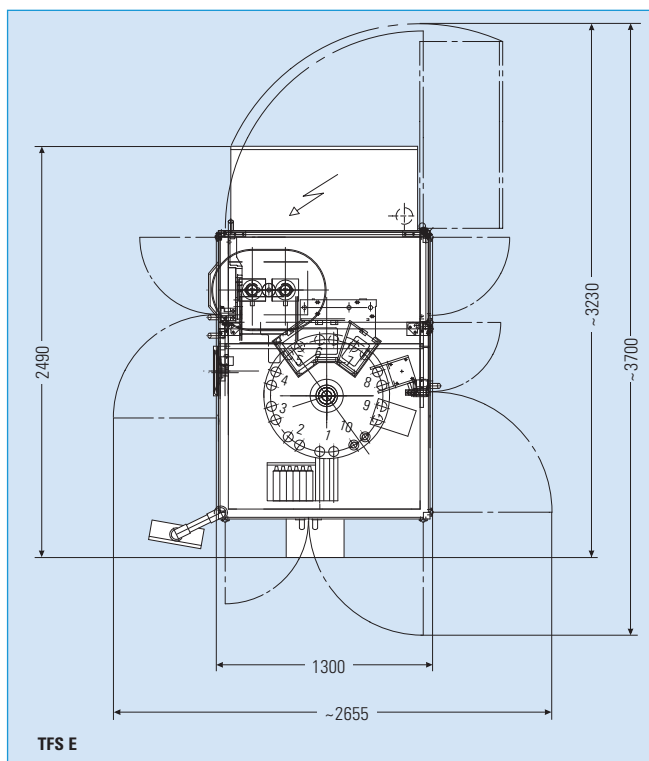
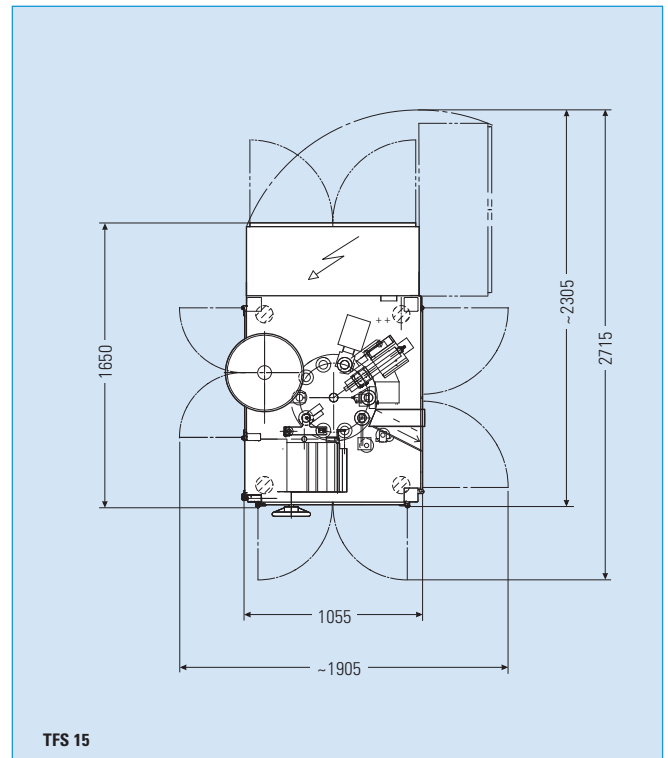
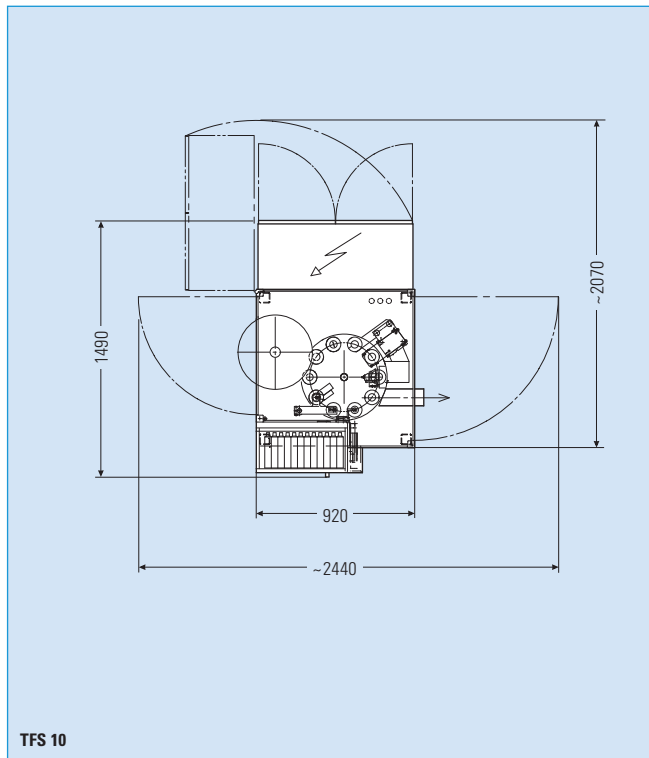
Rotary valves and dosing pistons are driven separately and dosing systems can be individually adjusted for best fill accuracies. Products with high viscosity can be processed without a problem because both rotary valve shafts have supportive bearings at both ends. The infinitely variable filling nozzle stroke meets all tube skirt lengths within the size range of the machine. Clean filling without air entrapment is thus guaranteed.



Rotary table

High grade components in the TFS 30 make for unsurpassed machine life under continuously rated operating conditions. The globoid drive, at a glance, is a good example for the stable and exceptionally robust machine construction. The rugged cam drive ensures play-free worktable rotation without jolting as well as gentle tube conveyance during low and high speed machine operation.

TECHNICAL DATA



Tube filling machine model	TFS 10	TFS 15	TFS E	TFS 30
Tube diameter (mm)	10-52	10-60	10-52	10-40 (option 50)
Total tube length (mm)	40-250	40-250	50-280	50-250
Dosing volume (ml)	1.5-400	1.5-400	1-350	1.5-350
Max. output (tubes/min.)	70	90	140/180/220	200
Power rating	3 × 400 V/50 Hz	3 × 400 V/50 Hz	3 × 400 V/50 Hz	3 × 400 V/50 Hz
Compressed air pressure (bar)	6	6	6	6

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