

COFFEE REPLENISHMENT IS ENSURED

CASE STUDY: THERMOPLAN AG, WEGGIS, SWITZERLAND

Next time you drink a coffee at Starbucks, take a closer look at the coffee machine: There is alkitronic technology inside. The electric torque multiplier alkitronic ECW 40 was introduced in the coffee machine factory Thermoplan AG that also supplies Starbucks stores. The Swiss manufacturer uses them to tighten heating rods at an exact torque.

COMPANY PROFIL

As an exclusive manufacturer of fully automated coffee machines for Starbucks as well as for other companies of the gastronomy sector, the Swiss company Thermoplan AG from Weggis is well-known in this industry. The company was founded in 1974 and currently employs more than 200 staff members. The internationally active company with subsidiaries in Germany, Austria and the US sells its products in more than 60 countries worldwide.

60 countries, 200 employees, 20.000 fully automated coffee machines per year – the Swiss company Thermoplan is active worldwide

INITIAL SITUATION

Each year, Thermoplan AG sells around 20,000 fully automated coffee machines. An important step during assembly is to tighten heating rods at an exact torque. Since the plastic washer is vulnerable to high forces, this is a demanding task. Previously, the

heating rods were screwed in with an impact wrench and tightened with a torque wrench. This approach constituted beside the increased workload due to several work steps and the difficulty to not damaging the washer another problem: The noise caused by the use of these tools was enormous and was even strengthened by the bell-shaped construction of the containers.



Figure 1: The heating rods in the coffee machines are tightened with alkitronic torque multipliers.

SOLUTION

“These problems could be solved by using the electric torque multiplier alkitronic ECW 40”, explains Bruno Stoll, who is responsible for the company in the canton of Lucerne for alkitronic as a partner. Thus, for the multiplier a hung up with a pillar guide system, a swivel arm and a spring balancer serving as a counterweight has been installed. Due to this construction, the tool can be placed accurately and the washer does not get damaged due to uneven mechanical loading.

“In addition, the ECW 40 is characterized by its angled design which offers comfortable operations even in limited spaces”, says Stoll.

“By using the ECW 40, three work steps can be done in one“

Further advantages of the torque multiplier are the pre-adjustable torque in the range of 65 to 155 Nm. Moreover, the electric multiplier can process several tightening operations successively with required accuracy and a high repeatability of $\pm 3\%$, which saves time and power due to the follow-up inspection is omitted. “Thanks to the silent operation of the torque multiplier, the working atmosphere has also been improved”, reports Bruno Stoll. As long as reliable alkitronic machines support the maintenance process, you can be sure: There will always be enough coffee for you at Starbucks.



Figure 2: The alkitronic ECW in use for coffee machines

TECHNICAL DATA OF THE ECW

- ✓ Repeat shut-off accuracy $\pm 3\%$ for the same bolting application.
- ✓ Comfortable operation even with restricted access applications due to angle tools
- ✓ Electrical data:
Universal AC Input 100 V - 253 V,
frequency 45 Hz - 66 Hz Power max. 1100 W, protection category I. Protection class IP 54 (standard)
- ✓ Low-wear, maintenance-free and brushless synchronous motor
- ✓ Permanently higher joint quality by continuous rotation of the square drive
- ✓ Ergonomic and comfortable operation: The 360 degree rotating handle prevents reaction forces from being transferred to the operator.