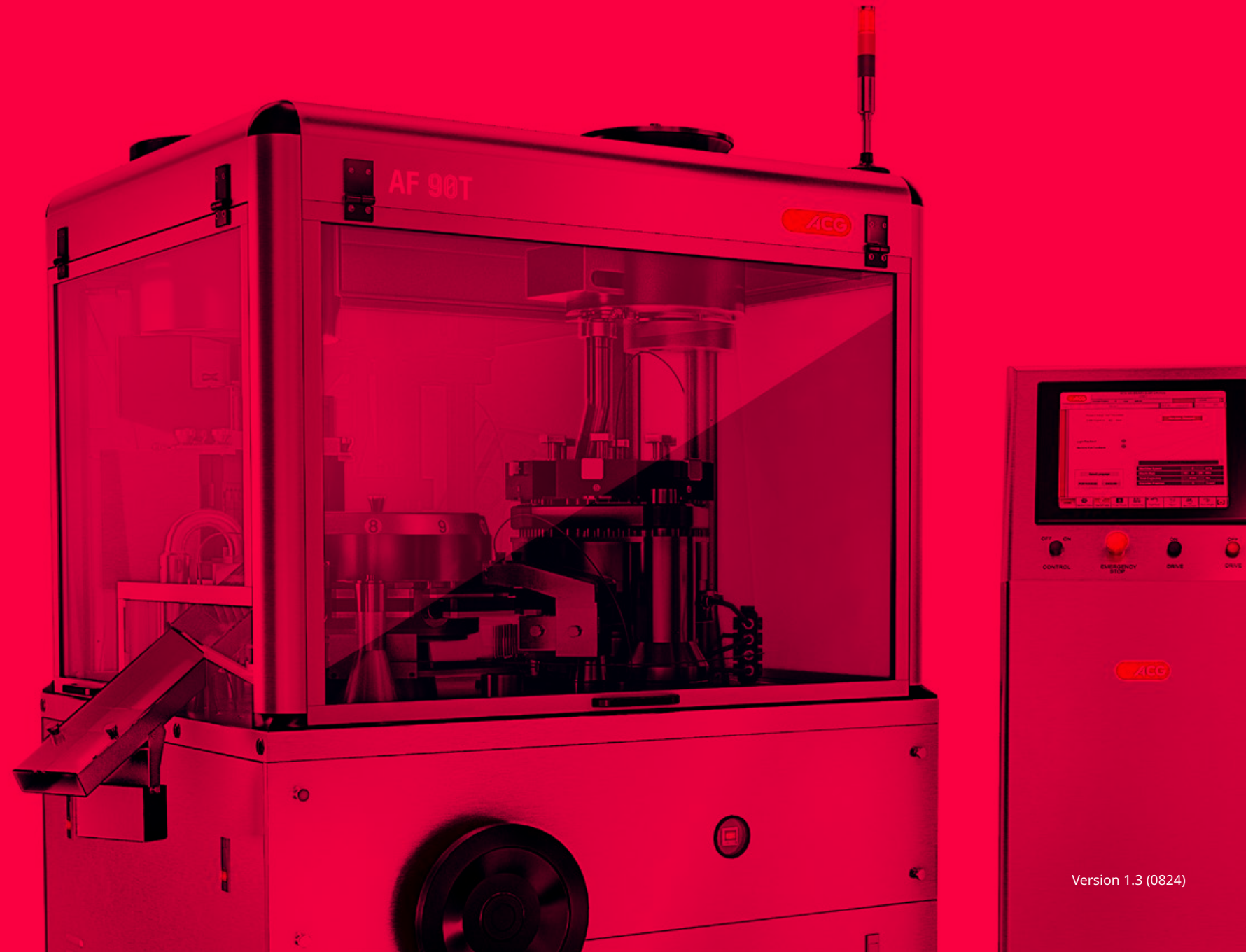


ACG

Make it better.

MACHINERY

Encapsulation



Version 1.3 (0824)

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AF series

With 2,227 successful installations (and counting) across the world, ACG's AF (automatic filling) series is a versatile high-speed option with a reputation for robustness over longer production runs. Fulfilling all GMP requirements, our AF machines support operations at hundreds of US FDA, EMA, MHRA, WHO and TGA-approved factories and have handled over 3,000 different formulations.

Applications

Fills pellets, tablets, micro-tablets, capsules, soft gels, and their combinations in capsules



Find this information on our website:
 Machinery > Encapsulation > Solid fill > AF series

Features	Benefits
High capsule-filling accuracy thanks to a precise slug-dosing principle	Provides a better yield of high-quality capsules within optimal weight-variation limits, while reducing powder wastage
Partial filling capability (up to 25 mg) for capsule sizes 000 to 5	Allows filling of capsule-based dry-powder inhalation (cDPI) formulations with minimum excipients, as well as filling of low-dose API with or without excipients
Quick and easy mechanical changeover	Increases productivity with minimum downtime
Capable of filling powders, pellets, tablets, micro-tablets, capsules, soft gels, and combinations thereof	Diverse filling options expand opportunities to a wider range of capsule products
Can be integrated with ACCURA - online 100% capsule checkweighers	Allows capsule filling and weight-checking in one pass

Technical specifications

Model	Capsule size	Maximum speed
AF 40T	000 - 5	40,000 capsules / hr
AF 90T	000 - 5	90,000 capsules / hr
AF 150T	000 - 5	150,000 capsules / hr
AF 200T	000 - 5	200,000 capsules / hr

AF 25T

For pilot-scale batches, you want a machine that's not only small and versatile, but also gives you capsules of dependably accurate fill weight. ACG's AF 25T is that very machine. Compact and fully automatic, it's perfect for small batches, and offers multiple capsule-filling options for excellent quality output.

Applications

Fills pellets, tablets, micro-tablets, capsules, soft gels, and their combinations in capsules



Find this information on our website:
Machinery > Encapsulation > Solid fill > AF series

Features	Benefits
Precise slug-dosing principle	Provides a better yield of high-quality capsules within optimal weight-variation limits, while reducing powder wastage
Partial filling capability (up to 25 mg) for capsule sizes 000 to 5	Allows filling of capsule-based dry powder inhalation (cDPI) formulations with minimum excipients, as well as filling of low-dose API with or without excipients
Swift and simple capsule size and product changeover	Minimal downtime means enhanced productivity
Capable of filling powders, pellets, tablets, micro-tablets, capsules, soft gels, and their combinations	Diverse filling options allow you to work on a wide range of capsule products

Technical specifications

Stations	8
Capsule size	000 - 5
Maximum speed	25,000 capsules / hr

ZRO series

Find this information on our website:
Machinery > Encapsulation > Solid fill > ZRO series

ZRO is a patented ACG technology, developed with a singular objective – to ensure higher yields during capsule filling. With cutting-edge design, ZRO machines simplify the filling of capsules with powders that are difficult to tamp or compact, and reduce powder waste. They also increase yield significantly, and enhance overall equipment effectiveness (OEE).

Applications

Fills pellets, tablets, micro-tablets, capsules, soft gels, and their combinations in capsules



Features	Benefits
Patented ZRO technology based on Zero Relative Motion (ZRM), in the powder-filling station	Achieves excellent capsule yield thanks to far less powder wastage It can handle sticky, fluffy, hygroscopic, and heat-sensitive powders – and those with a high percentage of fines
Partial filling capability (as low as 25 mg) for capsule sizes 000 to 5	Facilitates capsule filling of low-dose APIs, such as inhalation formulations
Simple mechanical changeover in under an hour	Maximum productivity with minimum downtime
Capable of filling powders, pellets, tablets, micro-tablets, capsules, soft gels, and combinations thereof	Fully adaptable to creating a wide range of capsule products
Can be integrated with ACCURA – ACG’s 100% capsule checkweigher	Guarantees accurately weighed capsules

Technical specifications

Model	Capsule size	Maximum speed
ZRO 90T	000 – 5	90,000 capsules / hr
ZRO 200T	000 – 5	200,000 capsules / hr

SOLID FILLING / SEMI-AUTOMATIC FILLING MACHINE

SA 9

Manual capsule-filling of pilot-scale batches can be daunting and cumbersome, while investing in automatic filling machinery might not seem economically viable. That's when you turn to SA 9 – ACG's semi-automatic capsule-filling machine. Developed with a degree of automation, SA 9 ensures a high fill-weight accuracy and high yields. And you can operate it easily and safely with minimal intervention or maintenance.

Applications

Fills capsules with powders and pellets



Find this information on our website:
Machinery > Encapsulation > Solid fill > SA 9

Features	Benefits
Automatic loading station	No need for continuous monitoring
Automatic filling station	Reduces operator workload
Capable of filling capsules with powders and pellets	Facilitates working on a wide range of products

Technical specifications

Capsule size	00	0	1 – 5
Maximum speed	21,600 capsules / hr	25,200 capsules / hr	28,800 capsules / hr

SECUREFILL series

Find this information on our website:
Machinery > Encapsulation > Solid fill > SECUREFILL series

The SECUREFILL series is our high-level containment capsule-filling machine range. It's designed for filling capsules with highly potent drugs, and complies with occupational exposure band (OEB) up to level 4. Built with operator safety in mind, these machines are equipped for filling capsules with oncological, hormonal, biopharmaceutical, antiviral formulations, and other formulations containing highly potent active pharmaceutical ingredients (HPAPIs).

Applications

Containment filling of pellets, tablets, micro-tablets, capsules, soft gels, and their combinations in capsules



Features	Benefits
Designed as a monoblock structure of SS316L containing HEPA filters, a rapid transfer port (RTP), glove ports, and accurate dosing mechanisms maintained in a negative pressure environment	Ensures complete containment, thereby avoiding operator contact within OEL range 1 – 10 µg / m ³
Provision for contained charging and discharging	Integrated containment for upstream and downstream processes
Wet-in-place system to ensure wetting of all suspended particles in the pharma zone	Protects the operator and the operational environment from formulation residues – and enables easy cleaning
Certified for highly potent and cytotoxic formulations requiring OEB up to level 4	Supports the production of life-saving drugs that contain HPAPIs, such as oncology products
Can be integrated with check-weighers, metal detectors and de-dusters under containment conditions	Ensures safe production of high-quality capsules

Technical specifications

Model	Capsule size	Maximum speed	OEL
SECUREFILL 25T	00 – 5	25,000 capsules / hr	1 – 10 µg / m ³
SECUREFILL 40T	00 – 5	40,000 capsules / hr	1 – 10 µg / m ³

LIQUID FILLING

FLUIDOCAP F70

This unique series of fully automatic machines is designed for easy liquid-filling of two-piece hard capsules such as ACGcaps™ GL or ACGcaps™ HL. With output options ranging from 20,000 to 70,000 capsules per hour, you can use the machines not only for free-flowing liquids, but also pastes, suspensions, thixotropics and hot-melts.

Fluidocap F70 works best with medium to large batches.

Applications

Fills liquid and pellets, tablets, micro-tablets, capsules, soft gels and their combinations in liquid



Find this information on our website:

Machinery > Encapsulation > Liquid fill > FLUIDOCAP F70

Features	Benefits
Equipped with 'no-capsule-no-fill' sensors	Significantly less waste
Can handle formulations with viscosity of 100 to 40,000 cP	Far easier filling of capsules with pastes, hot melts and thixotropic solutions
Capable of filling liquid and pellets, tablets, micro-tablets, capsules, soft gels and their combinations in liquid	The versatility to create a wider range of capsule products
A built-in nitrogen / inert gas purging system	Supports the filling of oxygen-sensitive formulations

Technical specifications

Capsule size	00 - 4
Maximum speed	70,000 capsules / hr

LIQUID FILLING

FLUIDOCAP 1000

If you're looking to fill hard capsules with liquid, FLUIDOCAP 1000 is the ideal R&D or pilot-scale machine. It's semi-automatic, and integrates filling, closing and band-sealing processes in one compact and robust package. It can process a wide variety of capsules, from sizes 00 to 4, in gelatin and vegetarian variants.

Applications

Capsule filling with liquid, hot melts and pastes, and band sealing



Find this information on our website:
Machinery > Encapsulation > Liquid fill > FLUIDOCAP 1000

Features	Benefits
A single, small-footprint machine that integrates filling and sealing operations	Optimal use of space
Can handle formulations with viscosity ranging from 40 to 3,000 cP	Easy, reliable filling of capsules with pastes, hot melts and thixotropic solutions
Capable of band-sealing and drying filled capsules	Ensures integrity of the dosage form, provides brand distinction, and enhances shelf life

Technical specifications

Output	00 - 4
Maximum speed	1,000 capsules / hr

BAND SEALING

PROSEAL 70

PROSEAL 70 is a capsule band sealing machine ideal for sealing two-piece hard capsules filled with liquids of varying viscosities, along with pellets, tablets, capsules and combinations thereof. PROSEAL 70 can be integrated with FLUIDOCAP, offering a seamless liquid-filling and band-sealing solution.

Applications

Capsule band sealing



Find this information on our website:
Machinery > Encapsulation > Band sealing > PROSEAL 70

Features	Benefits
Three-drum loading and orientation system	Smooth and efficient capsule loading
Provision for manual and automatic gelatin bath replenishment	Flexibility in operation
Option of automatic viscosity control and gelatin recycling system	Better in-process control – ensures the required viscosity Prevents wastage of gelatin
Improved drying through two blowers – one for suction and another for discharge	Effective airflow management to help drying of capsule seals

Technical specifications

Output	70,000 capsules / hr
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Empty capsule sorter (ECS 100)

Find this information on our website:
 Machinery > Encapsulation > Encapsulation ancillary > ECS 100

ECS 100 is designed for the automatic sorting of empty capsules, loose caps and loose bodies from filled capsules produced in the automatic encapsulation machine.



Features	Benefits
Removes all empty capsules and checks for loose caps or loose body	Ensures only filled capsules proceed
Compact dimensions	Can easily be accommodated in the capsule-filling line
Simple sorting mechanism	Easy operation and maintenance

Technical specifications	
Output	Up to 200,000 capsules / hr

ANCILLARIES

Checkweigher (CW 10)

CW 10 is a fully automatic online sample checkweigher designed for statistical weight control of filled capsules. CW 10 provides you with timely reports on weight variation within the batch.



Find this information on our website:
Machinery > Encapsulation > Encapsulation ancillary > CW 10

Features	Benefits
Fully automatic operation for sample collection, weighing and reporting	No manual intervention required
Format-free design	Online sample checkweighing of capsules of any formulation and dose
Weighing with an accuracy of + / -1 mg	Reliable results
Sampling can be done on a 'time-interval' basis or 'number of strokes / interval' basis	Flexibility in sampling

Technical specifications

Output	Up to 10 capsules / min
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ANCILLARIES

De-dusting and polishing machine (DP)

DP is a horizontal de-dusting and polishing system that uses the rotating brush concept to continuously remove excessive powder from the surface of capsule shells. It can be integrated with encapsulation machines.



Find this information on our website:
Machinery > Encapsulation > Encapsulation ancillary > DP

Features	Benefits
A polishing chamber with a spiral brush	Ensures effective dedusting of capsules
Provided with an air displacement unit	Ensures complete removal of dust from the capsule shell surface and prevents it from settling back
All product contact parts are food-grade-certified	Ensures safe handling of the product during operation

Technical specifications

	DP 100	DP 200
Output	Up to 100,000 capsules / hr	Up to 200,000 capsules / hr

Filled capsule elevator (FCE)

Find this information on our website:
Machinery > Encapsulation > Encapsulation ancillary > FCE

FCE is used for transferring filled capsules between various processes – for example, from sorting to checkweighing.



Features	Benefits
Transfers filled capsules using blower units	Transfers filled capsules without any manual intervention
Conveys capsules of all sizes (000 to 5)	Does not require different format parts for different capsule sizes
Automates the transfer of filled capsules	Supports conformance to cGMP norms

Technical specifications	
Output	Up to 250,000 capsules / hr

Metal detector (MD)

Find this information on our website:
 Machinery > Encapsulation > Encapsulation ancillary > MD

MD detects minute particles of metal – ferrous, non-ferrous, and stainless steel – in tablets and filled capsules. The equipment is interfaced with the encapsulation and tablet compression machine, and separates tablets and capsules containing metal traces.



Features	Benefits
100% online detection	Ensures the highest quality levels by rejecting tablets and capsules containing metal traces
High sensitivity to all metals, including non-magnetic stainless steel	Guarantees against any kind of metallic contamination
All contact parts are manufactured with SS316 or FDA-certified food-grade material	Ensures no metal residues are introduced into the capsules from the detector itself, so it's easy to validate the system

Technical specifications

Output	270,000 capsules / hr	
Detectable particle diameters	Ferrous	0.15 mm
	Non-ferrous	0.2 mm
	Stainless steel	0.3 mm

ANCILLARIES

Sorter elevator (SE)

Connecting the SE to the automatic encapsulation machine's empty capsule hopper means defective empty capsules can be diametrically sorted out at the start. This helps prevent stoppage during the filling process.



Find this information on our website:
Machinery > Encapsulation > Encapsulation ancillary > SE

Features	Benefits
Output of up to 220,000 capsules per hour (depending on the encapsulation machine)	The high speed of the sorter allows it to stay ahead of the encapsulation machine's consumption
Small footprint line machine	Saves space
Integrates with ACG's encapsulation machines to automate capsule loading	Enables complete automation, for smooth operation

Technical specifications	SE 100	SE 200
Output	Up to 100,000 capsules / hr	Up to 220,000 capsules / hr

Product conveying system (PCS)

Find this information on our website:
 Machinery > Encapsulation > Encapsulation ancillary > PCS

PCS automatically transfers powder / pellets to the hopper, and can easily be synchronised with the capsule-filling machine. Using the vacuum, it transfers the formulation to be filled in the capsules without segregation. PCS is constructed with stainless steel and other food-grade materials to ensure product safety.



Features	Benefits
Transfer capacity of up to 400 litres per hour	Ensures a quick and constant supply of powder / pellets to the capsule-filling machine
Blower separated from the filling room	Suitable for a silent operation area
No spillage / dusting during transfer	Fully automated and cGMP-compliant
An additional filter bag fitted inside	Ensures a safe working environment

Technical specifications	
Output	Up to 400 l / hr

CODE series

Enabling many innovations in the pharmaceutical industry, ACG's customised oral dosage encapsulation (CODE) series comprises custom-made attachments for special encapsulation needs. Retrofittable to encapsulation machines developed and manufactured by ACG, the CODE series enables the filling of capsules with a wide range of combinations – such as granules, pellets, powders, mini- and micro-tablets, capsules and soft gels.

Applications

Solid filling

Powder, pellets, tablets, micro-tablets, capsules and combinations thereof

Liquid filling

Liquids and pellets, tablets, micro-tablets, capsules, and their combinations in liquid



Possibilities of filling capsules with different combinations using CODE

Encapsulation machines	Fill type		
	Powder	Tablets / pellets / micro-tablets / capsules	Liquid
AF series	✓	✓	✗
FLUIDOCAP F70	✗	✓	✓
SECUREFILL series	✓	✓	✗
ZRO series	✓	✓	✗
SA9	✓	✓	✗

Features	Benefits
Adept at filling capsules with powders, tablets, capsules, pellets, liquids – and combinations thereof	Achieve highly versatile dosage forms Option to combine more than one drug substance and release profile in a single capsule
Combinations of up to four different product types	Create innovative drug products that can facilitate patients' compliance with treatment regimes
Retrofittable to all encapsulation machines across R&D, pilot and production scales	Enhances the versatility of the encapsulation machine without additional investment
Fully customisable to product weight and dimensions	Every attachment is suited to the needs of the application as required
Vision-based inspection systems	For improved-quality capsules with higher accuracy in weight
Minimal change parts required	Higher value for money on investment, and cost-effective in the long term

Aftermarket. Not afterthought.

At ACG, we understand that when you get a new piece of factory equipment, you're buying far more than a machine; you're also investing in a relationship that will last its lifetime.

That's why we take our aftermarket service so seriously.

Whether you need advice or training, are preparing to make your factories 'smarter', or simply need a machine fixed fast, know that ACG will always go above and beyond to offer excellent service and value. As far as we're concerned, we're in this together – for life.



Let's talk.

Get in touch to find out more about our range of products and services. If you have specific equipment needs, we can even collaborate on delivering a purpose-made solution. We look forward to chatting.

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