



MIXING GROUP

THE FUTURE OF MIXING ROOM AUTOMATION SOLUTIONS



Maximize equipment utilization

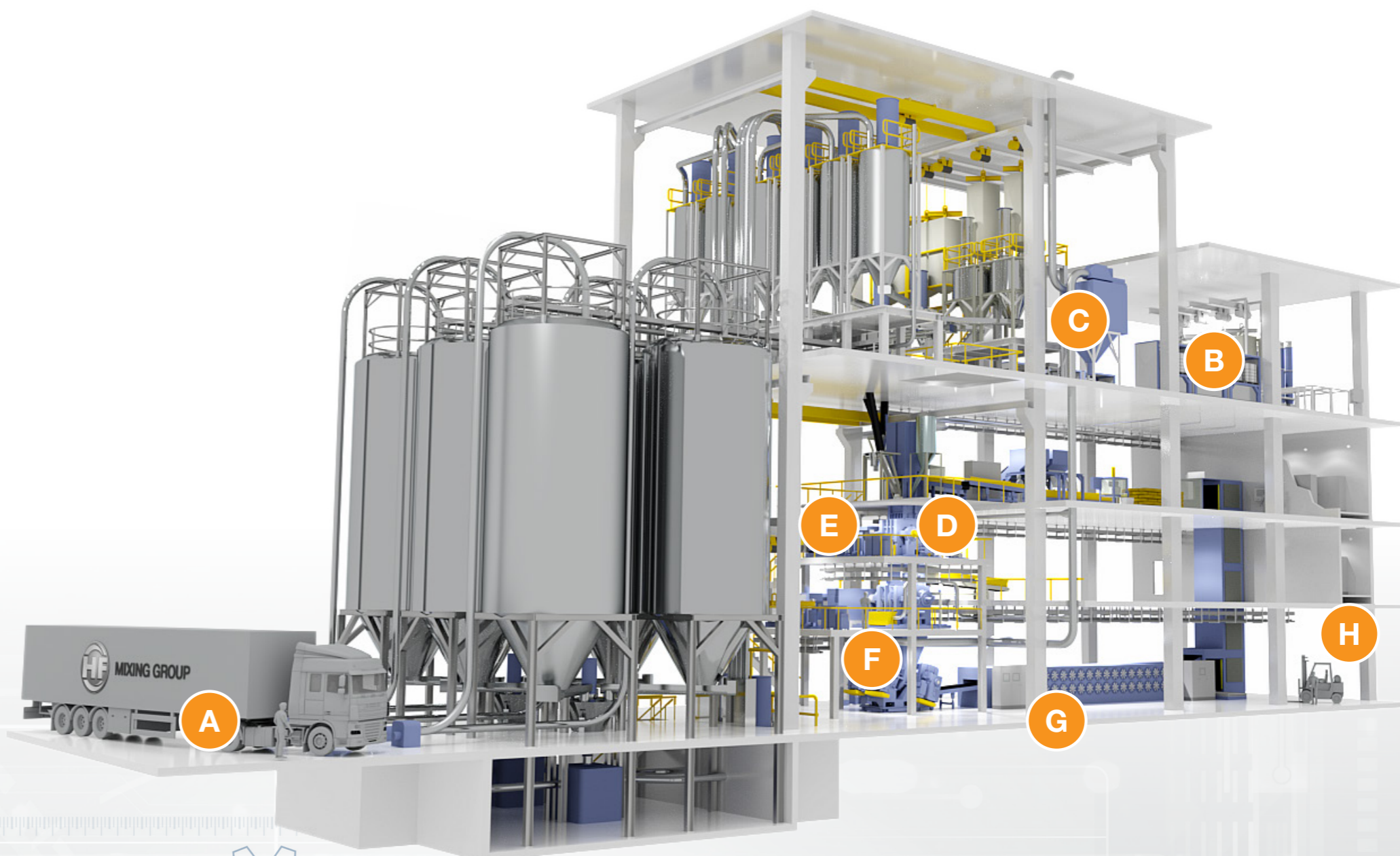
Minimize operational expenditure

Continuous improvement of production & processes

**NEW
ADVISE[®] 4.0**

SMART MIXING ROOM

ADVISE® is a modular and scalable system for mixing room automation. It covers every process within a mixing room: from the raw materials store, the computer-controlled manual and fully automated weighing of small components, the mixing process, downstream equipment and storage of mixtures. State-of-the-art automation systems are available for individual areas and machines. Separate applications can be selected according to requirements and merged together in a single automation system. Standard interfaces within mixing room automation systems enable easy connection to ERP systems and laboratory equipment.



- | | |
|----------------------------|------------------------------|
| A Truck unloading | E Main drives |
| B Small chemicals | F Twin Screw Extruder |
| C Material weighing | G Batchoff |
| D Mixer | H Logistics |



SMART PRODUCTION

The goal of smart production is to **maximise** SAFETY, FLEXIBILITY, QUALITY and PRODUCTIVITY as well as to **minimize** COSTS and RISKS.

- Campaign Management
- Demand driven production – maximize utilization
 - Utilizing stock management (ADVISE® IMS)
 - Detailed product knowledge (ADVISE® PMS)
 - Optimum production planning (ADVISE® PPS)



Manufacturing Execution System (MES)

- Management of
 - Raw materials
 - Mixing recipes
 - Mixing orders
 - Reports
 - Charts
 - Mixing line configuration
 - User Management
 - Interfaces to 3rd party ERP systems
- ADVISE® PPS – Production Planning System
- ADVISE® PMS – Product Management System



Intralogistics

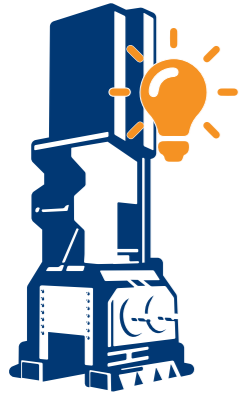
- Inventory management systems
- Material flow controls
- Lot traceability and material stocks
- Interface with warehouse management
- Mobile apps for logistics



Mixing Room Data Analysis

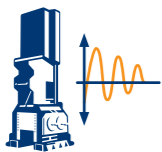
Analysis of:

- OEE (Overall equipment efficiency)
- Material
- Process
- Production
- Machines



SMART MACHINES

- ADVISE® CS – state-of-the-art machine PLC (platform independent – Siemens, Rockwell, Mitsubishi)
- Safety interlocks to safe guard both machine and operators
- Detailed diagnostic and maintenance interfaces
- Compliance with most stringent industry safety and operation standards
- ISA88-Standard
- Optimal utilization and availability of equipment through intelligent controllers



Intelligent Controllers

- iRAM – intelligent ram controller
- iTC – intelligent temperature control unit
- iXSeal – intelligent dust stop controller
- Intelligent constant batch temperature controller
- Intelligent torque related oil injection controller



Intelligent User Interface

- Easy navigation and interaction of machine controls due to consistent design
- Local languages available
- Individualisation of shown information



Remote User Interface

- Access configuration of field operator stations from central maintenance and service stations
- Possibility to receive remote service assistance from HF



Engineered Drives

- Process optimized main drive system engineered by HF
- Drive, motor, gear box – selected based on customers unique mixing needs allowing for most energy efficient and effective mixing performance
- Independent drive system for tangential mixers:
 - Gearbox with two inlets
 - Variable friction and angle settings
 - Different options for implementation
 - Two separate drive system
 - One drive system
- Hardware independent software controller



Data Exchange Self-Optimizing

- Automatic calibration of equipment through intelligent PLC
- Synchronisation of safety and process settings between machines on a single mixing line
- Secure communication over industrial network



SMART SERVICES

- 24/7 hotline
- Software updates & upgrades
- Remote and on-site services
- Preventive maintenance
- Consulting
- Training
- User support
- Electrical installation & engineering



Online Condition Monitoring

- Detailed device data
- Transit times
- Equipment downtimes
- Fault analysis
- Trends
- On premise or cloud solution



Remote Maintenance

- Fast remote support
- Reduced downtime
- High resolution rate (75%)
- Secure connection (No cloud service)
- 24/7 full access on demand



Virtual machines

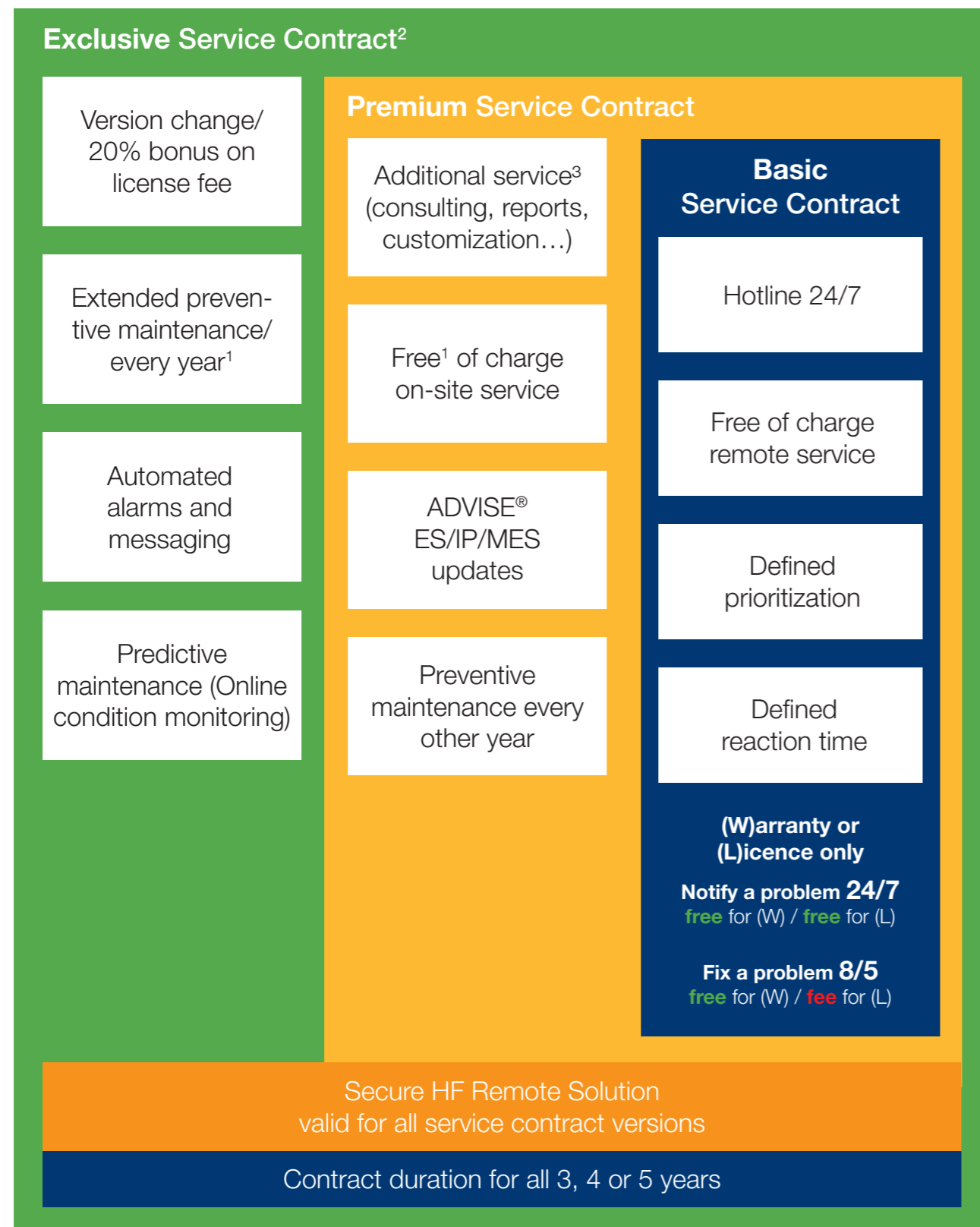
- HF machine and equipment library
- Digital machine twins
- Electrical and PLC validation
- Virtual commissioning and startup



Customer Service Portal

- Electronic spare parts catalogue
- Detailed documentation
- Inspection reports
- Service requests
- Helpdesk

BENEFITS OF THE VARIOUS SERVICE CONTRACTS

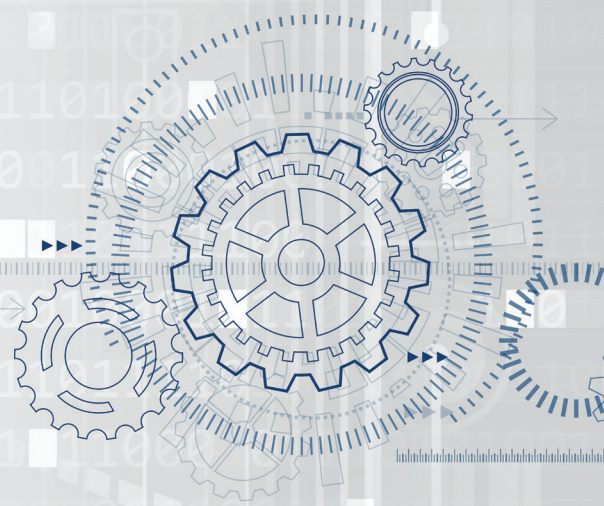


ADVISE[®] 4.0 PRODUCT SHEET

Manufacturing Execution System Solutions		ADVISE [®] LAB	ADVISE [®] BASIC	ADVISE [®] PREMIUM
		Lab mixer	Single mixers without any automatic weighing	Single and multiple mixing lines with automatic weighing
Basic functions	User groups and user-related language translation	■	■	■
	Mixer units configuration (set values, step parameters, ...)	■	■	■
	Weighing units configuration (scales, silos, dosingpath, ...)	-	-	■
	Downstream units configuration (sets values, step parameters, delivery, ...)	-	□	■
	Material master data	■	■	■
	Recipe management	■	■	■
	Production order management	■	■	■
	Chart analyser for process data evaluation	■	■	■
	Reporting of production data	■	■	■
	Extended functions	IMS inventory management	-	-
PPS production planning		-	-	□
PMS product management		-	-	□
Campaign management		-	-	□
Recipe validation		□	□	□
Rework material handling		-	-	□
Interfaces	ERP interfaces	□	□	□
	LAB interfaces	□	-	□
Analysis functions	IP Intelligent analysis of long term process data	□	-	□
	IP Evaluation clients	□	-	□
Process Control Solutions		ADVISE [®] LAB	ADVISE [®] BASIC	ADVISE [®] PREMIUM
		Lab mixer	Single mixers without any automatic weighing	Single and multiple mixing lines with automatic weighing
Mixer app	Full mixing process automation	■	■	■
	Full weighing process automation	-	-	■
	Smart compound temperature control	□	□	□
	Torque-related oil injection control	-	-	□
	Ram position profile control	□	□	□
Polymer app	Online manual weighing	-	-	■
	Material identification (Raw material, prepared chemicals, pre-mixtures, rework material)	-	-	□
SCW app (small chemical weighing)	Offline manual weighing	□	□	■
	Raw material identification	□	□	□
	Labeling of prepared chemical bags (intermediates)	□	□	□
ACW app (automatic chemical weighing)	Offline automatic weighing	-	□	□
	Labeling of prepared chemical bags (intermediates)	-	□	□
Mill app	Milling process automation	-	-	■
	Material identification (prepared chemicals)	-	-	□
BOF app (batch off)	Downstream process automation	-	-	□
Material tracking and tracing	Material receiving and material release	-	-	□
	Material disposition	-	-	□
	Silo filling application / big bag replacement control	-	-	□
	Batch / pallet weighing and labelling station	-	-	■

■ Standard □ Optional - not available

¹= cost for travel and accommodation is not included ²= available in 2019
³= calculated on an variable hourly fee between 10 - 100 hrs. p.a.



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