



fme.

FOOD MACHINERY EUROPE

STEAM PEELER “ETERNITY” SPB200 Series

Application:

- French fries
- IQF lines
- Precooked veggies
- Preserved food
- Ready meals
- Frozen food

AVAILABLE MODELS

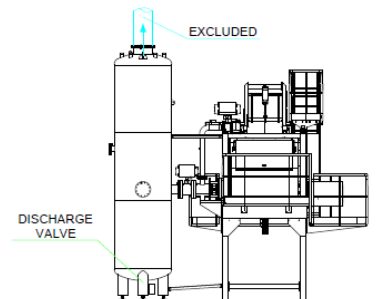
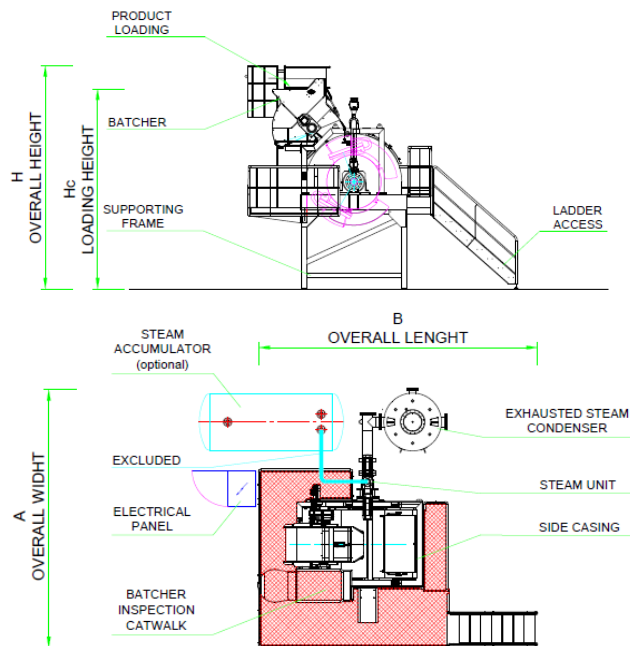
MODELS	PRODUCTION (Referred to potatoes and steam provided at 20 bar)	GEOMETRIC VOLUME	NET LOADING VOLUME	BATCH SIZE IN WEIGHT (Referred to product with density 600 kg/m ³)
SPB 210	Up to 6 ton/h	~ 360 litres	~ 170 litres	~ 100 kg
SPB 220	Up to 12 ton/h	~ 740 litres	~ 320 litres	~ 200 kg
SPB 240	Up to 24 ton/h	~ 1.160 litres	~ 650 litres	~ 390 kg
SPB 260	Up to 36 ton/h	~ 1.945 litres	~ 1.200 litres	~ 720 kg

PRODUCTION DATA

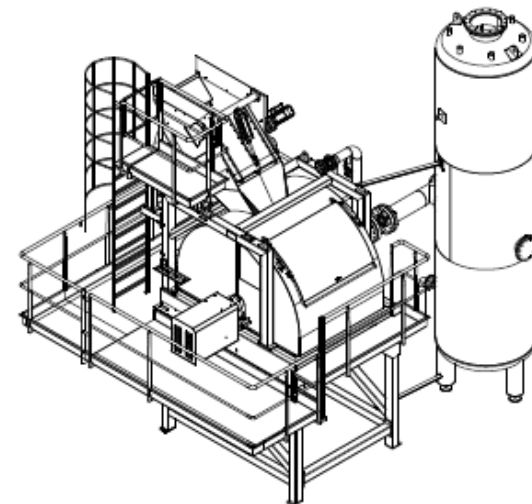


	Mod. SPB210			Mod. SPB220			Mod. SPB240			Mod. SPB260		
GEOMETRIC VOLUME	360 litres			740 litres			1.160 litres			1.945 litres		
MAX LOAD VOLUME	150 litres			320 litres			650 litres			1.200 litres		
CAPACITY PER HOUR REF. TO POTATO	~ 90 kg/batch	~ 67 cycles/h	~ 6.000 kg/h	~ 200 kg/batch	~ 65 cycles/h	~ 12.000 kg/h	~ 390 kg/batch	~ 62 cycles/h	~ 24.000 kg/h	~ 720 kg/batch	~ 50 cycles/h	~ 36.000 kg/h
CAPACITY PER HOUR REF. TO CARROT	~ 80 kg/batch	~ 55 cycles/h	~ 4.400 kg/h	~ 160 kg/batch	~ 53 cycles/h	~ 8.500 kg/h	~ 325 kg/batch	~ 51 cycles/h	~ 16.500 kg/h	~ 600 kg/batch	~ 42 cycles/h	~ 25.000 kg/h
CAPACITY PER HOUR REF. TO BUTTERNUT PUMPKIN	~ 45 kg/batch	~ 54 cycles/h	~ 2.400 kg/h	~ 95 kg/batch	~ 52 cycles/h	~ 5.000 kg/h	~ 195 kg/batch	~ 49 cycles/h	~ 9.500 kg/h	~ 360 kg/batch	~ 40 cycles/h	~ 14.500 kg/h

MAIN FEATURES



Construction in
AISI 304 and
316 L stainless
steel



Model	Production referred to potatoes in input and steam at 15 - 17 bar [kg/h]	Vessel material	Volume		Pressure			Overall dimensions				Installed electrical power [kW]
			geometric [litres]	max load [litres]	project [bar]	max working [bar]	testing [bar]	A Width [mm]	B Length [mm]	H Height [mm]	H _c Load height [mm]	
SPB210	up to 6.000	AISI 316 L stainless steel	360	170	24	up to 20	33,4	4.600	6.000	4.700	4.450	4
SPB220	up to 12.000	AISI 316 L stainless steel	740	320	24	up to 20	33,4	4.600	6.000	4.700	4.450	4
SPB240	up to 24.000	AISI 316 L stainless steel	1.160	650	24	up to 20	33,4	5.350	6.200	5.400	4.800	4
SPB260	up to 36.000	AISI 316 L stainless steel	1.945	1.200	24	up to 20	33,4	6.250	7.100	5.700	5.300	4

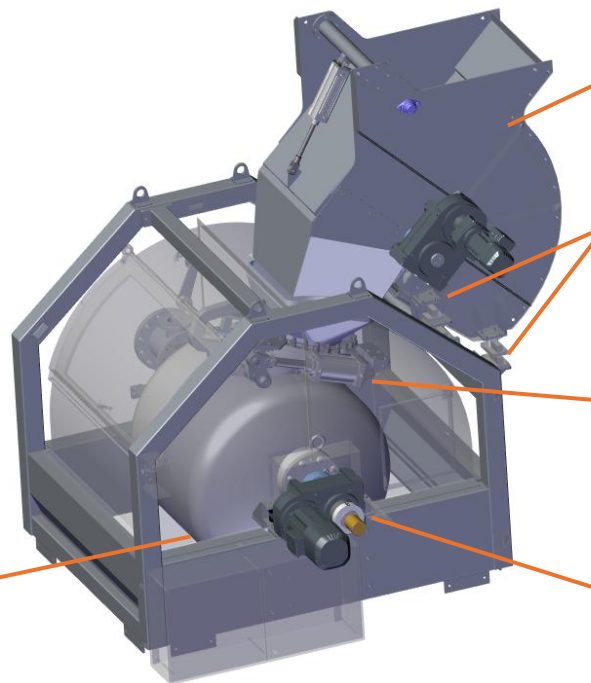
N.B.:
the capacities indicated are referred to product of good quality and medium size and the capacity changes according to the type of product transformed and to its ageing.

MAIN FEATURES

BENEFITS:

- LARGE CAPACITY LINES
- HIGH YIELD
- LOW PEELING LOSSES
- LOW MAINTENANCE
- HIGH FLEXIBILITY
- WIDE APPLICATION RANGE
- HYGIENIC DESIGN
- LONG LIFE TIME
- SHORT PAYBACK
- EASY ACCESSIBILITY

Long life pressure vessel
(stainless steel 316L)



Fast loading batcher

Batcher weighing system

Ø 450 mm opening door
for product loading

Direct motorization,
easily accessible



BUTTERNUT
PUMPKIN



PARSNIP



CARROT



SWEET
POTATO



POTATO



RED BEET



KOHLRABI



SWEDE

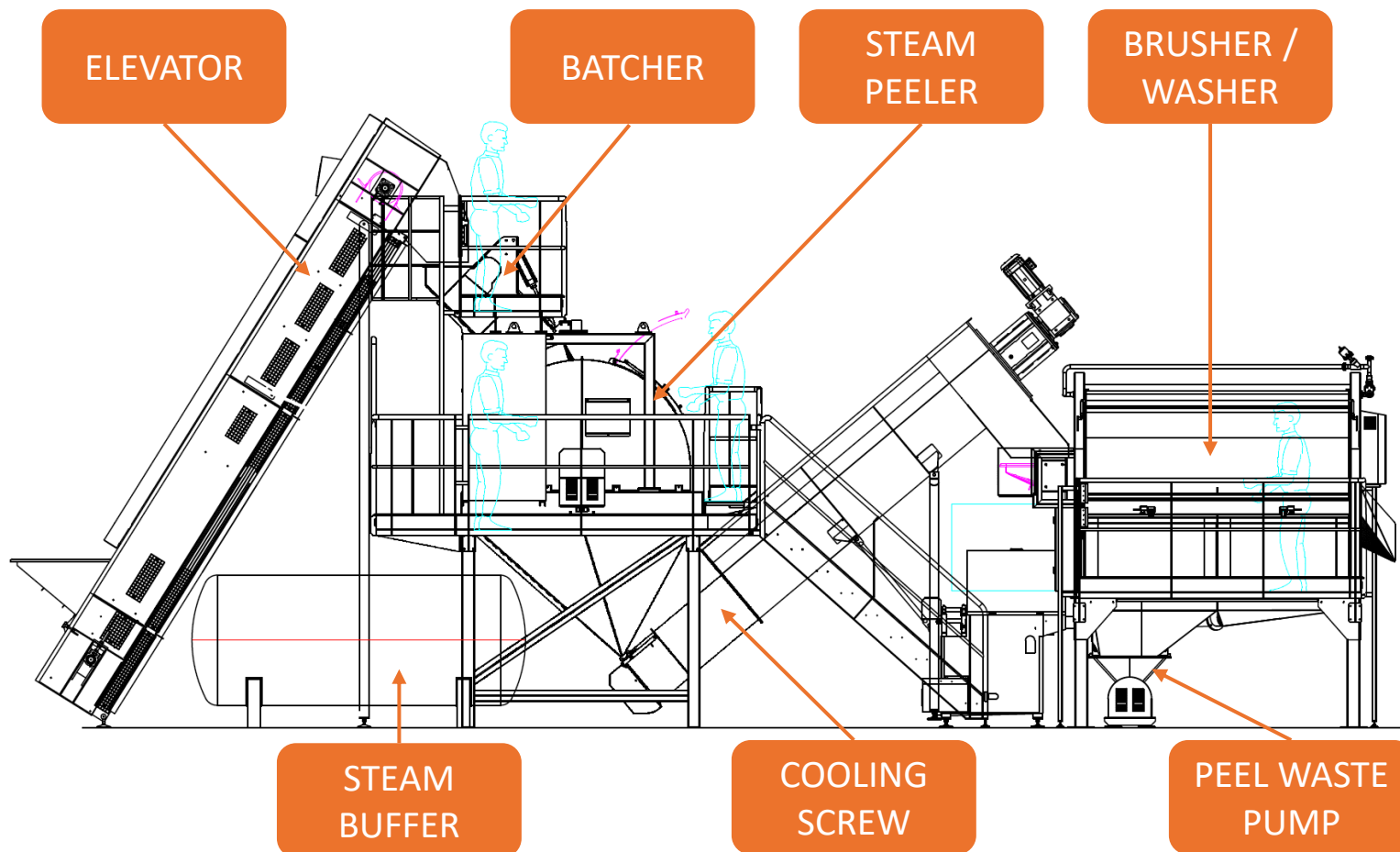


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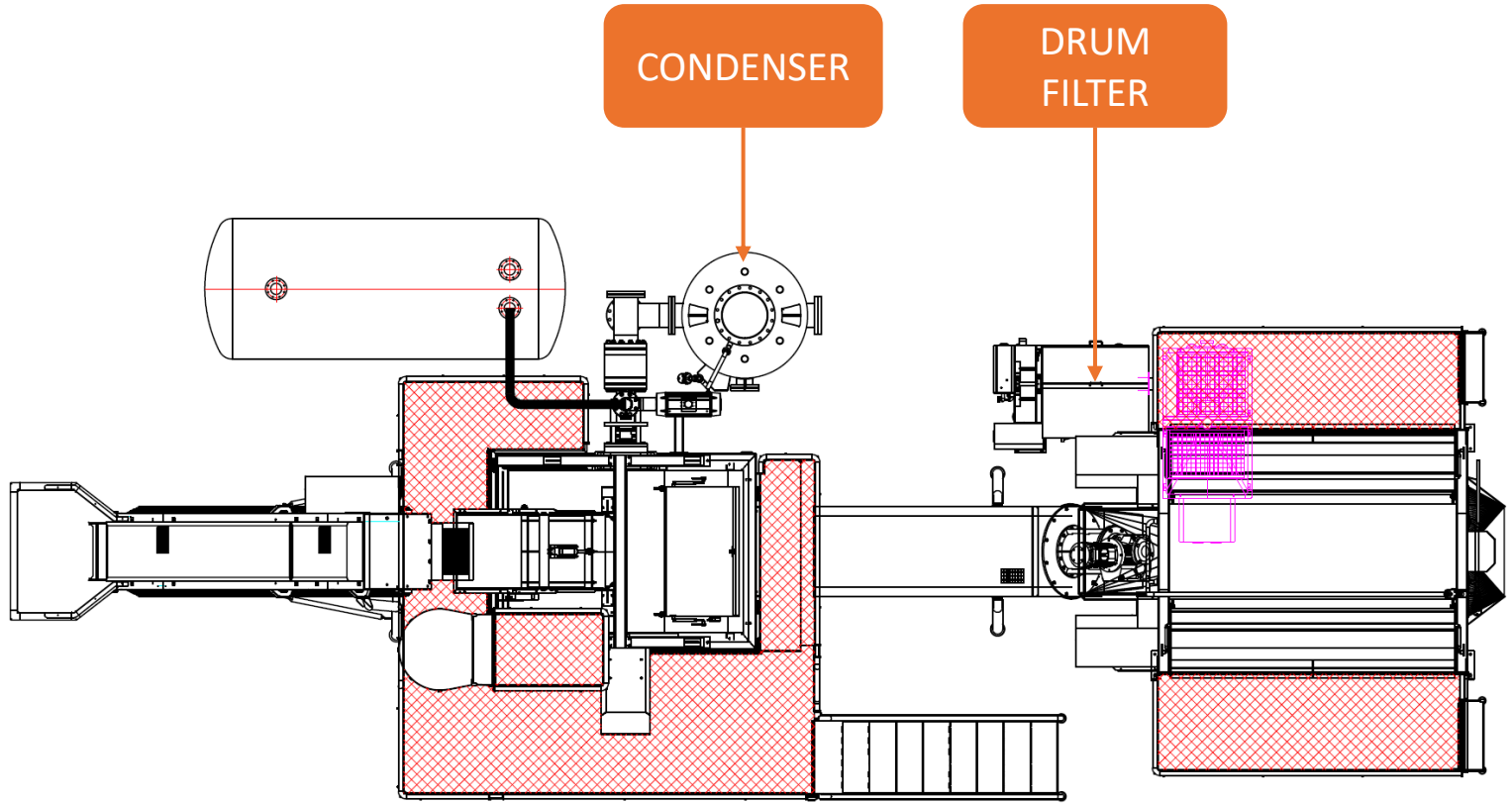


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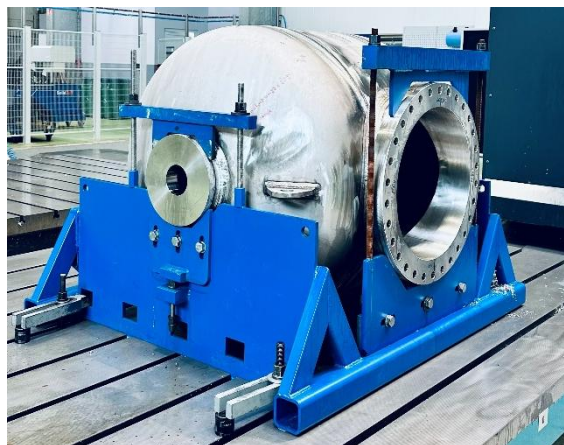
TYPICAL STEAM PEELING GROUP LAYOUT



TYPICAL STEAM PEELING GROUP LAYOUT



COMPLETE IN-HOUSE MANUFACTURING



FATIGUE WORKING DESIGN:
0-18 BAR: 3.600.000 CYCLES
0-13bar: "INFINITE FATIGUE LIFE"



COMPLETE IN-HOUSE ASSEMBLY



**FULLY PRE-ASSEMBLED AND PRE-TESTED
BEFORE SHIPPING**

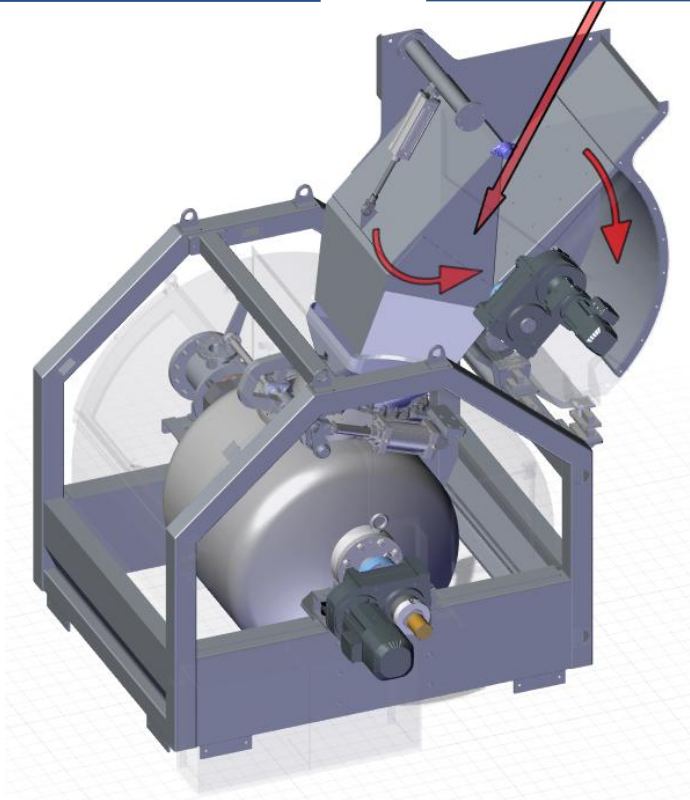


DETAILS AND EXECUTIONS

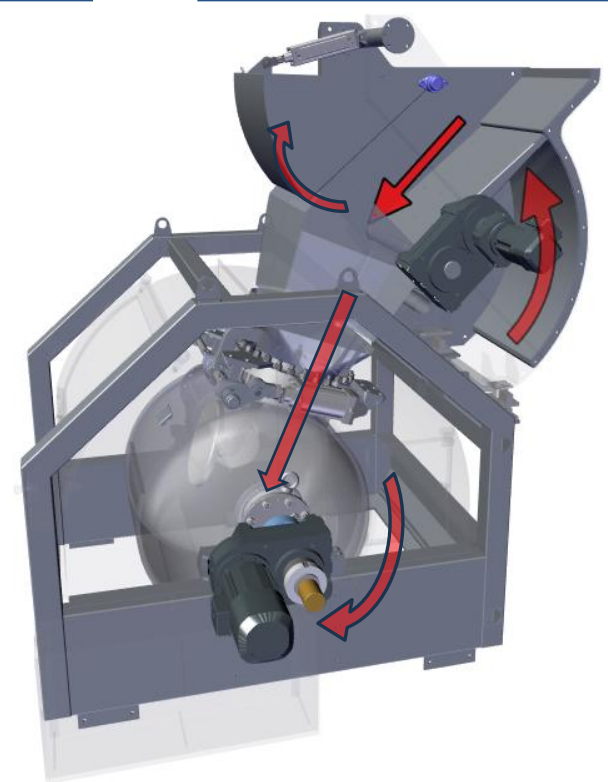


LOADING PHASE

BATCHER
PRE-WEIGHING



PRODUCT INFEEED
BATCHER ACCUMULATION



BATCHER OPENING
PEELER LOADING

BATCHER



WEIGHING CELLS FOR BATCH SETTING



BENEFITS:

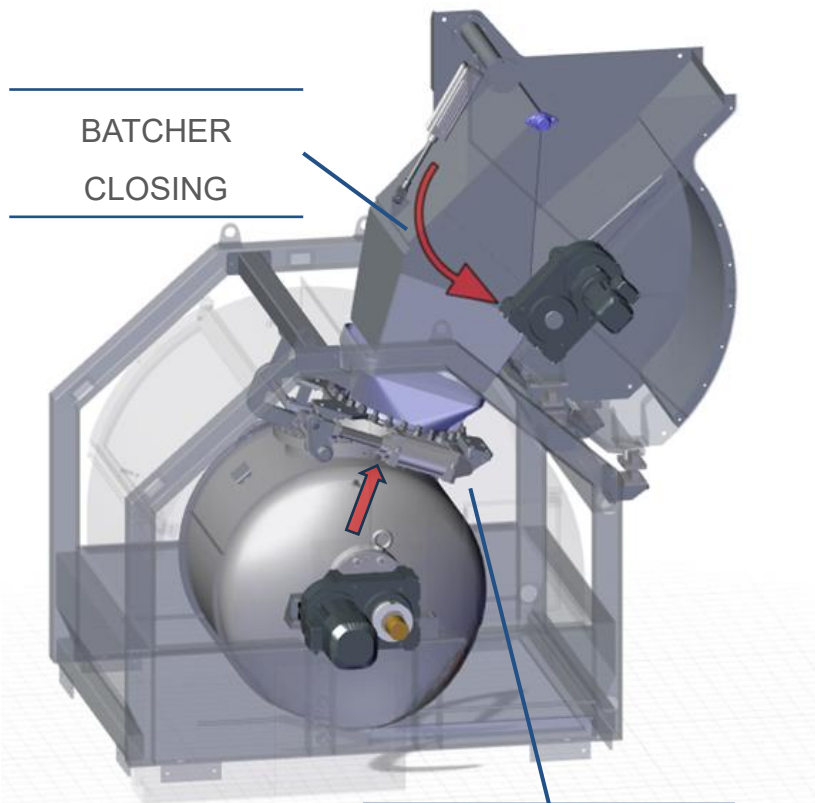
SIMPLE AND SOLID EXECUTION

FAST LOADING AND UNLOADING WITH NO RETENTION AREAS



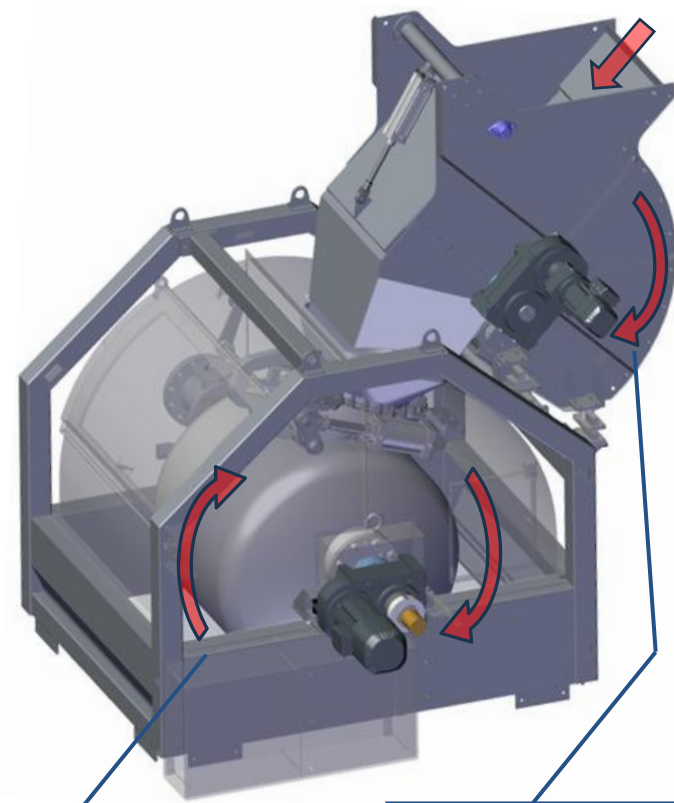
**FULLY ACCESSIBLE FOR
CLEANING AND
MAINTENANCE**

PEELING PHASE



BATCHER
CLOSING

PRESSURE VESSEL
DOOR CLOSING

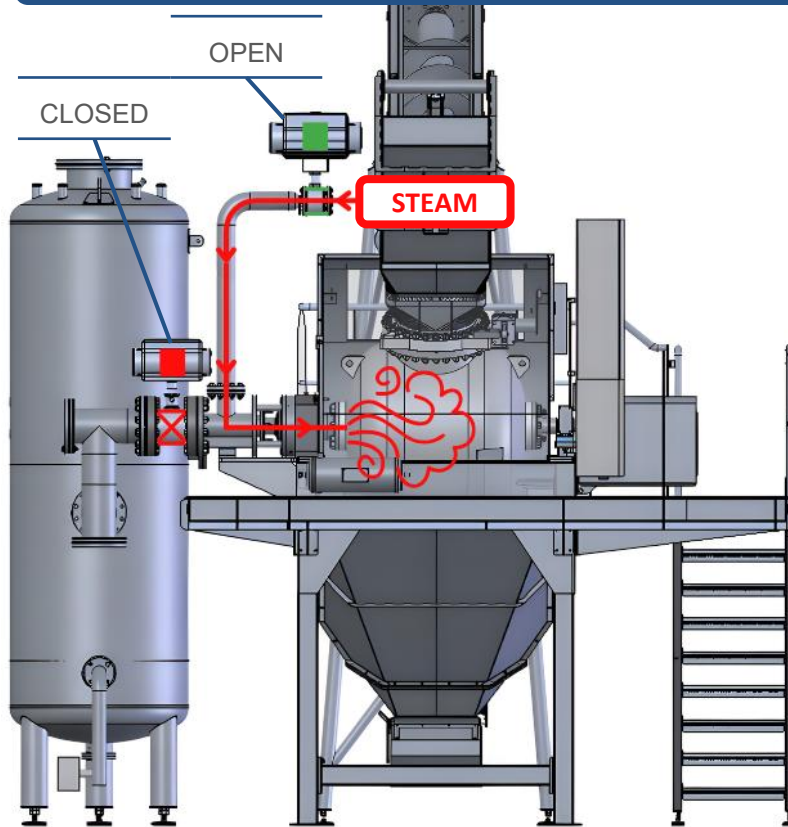


ROTATION
VESSEL

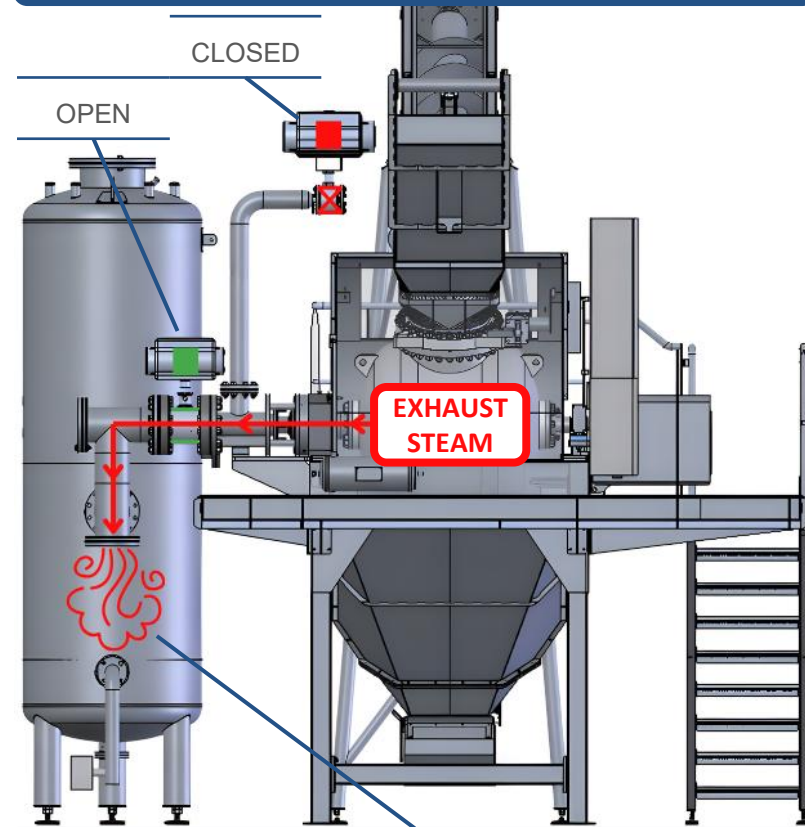
NEXT BATCH
ACCUMULATION

STEAM MANAGEMENT

STEAMING

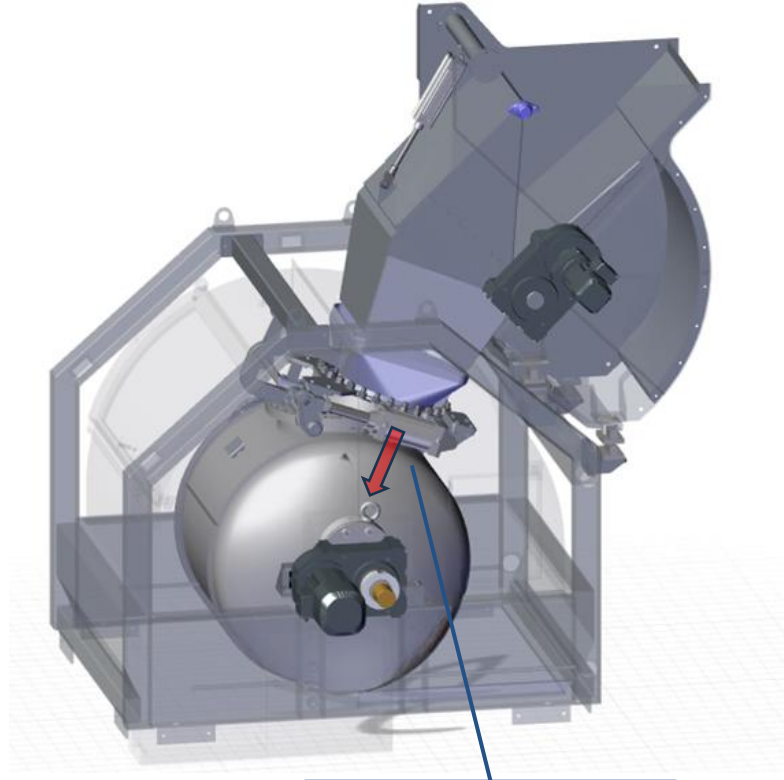


BLOW OFF

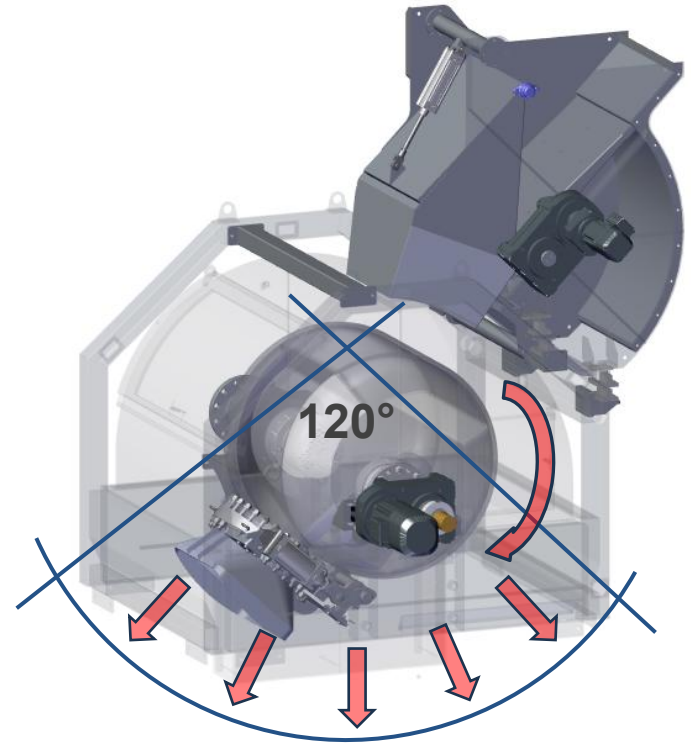


EXHAUST STEAM DISCHARGE IN THE CONDENSER

DISCHARGE PHASE



PRESSURE VESSEL
DOOR OPENING



WIDE DISCHARGE ANGLE FOR COMPLETE BATCH
UNLOADING

PRESSURE VESSEL



VESSEL BODY
IN STAINLESS
STEEL 316L

PROJECT PRESSURE FOR THE PRESSURE VESSEL: UP TO 24 BARG



NO BLIND SPOTS DURING DISCHARGING

PRODUCT FEEDING / DISCHARGE DOOR



BENEFITS:

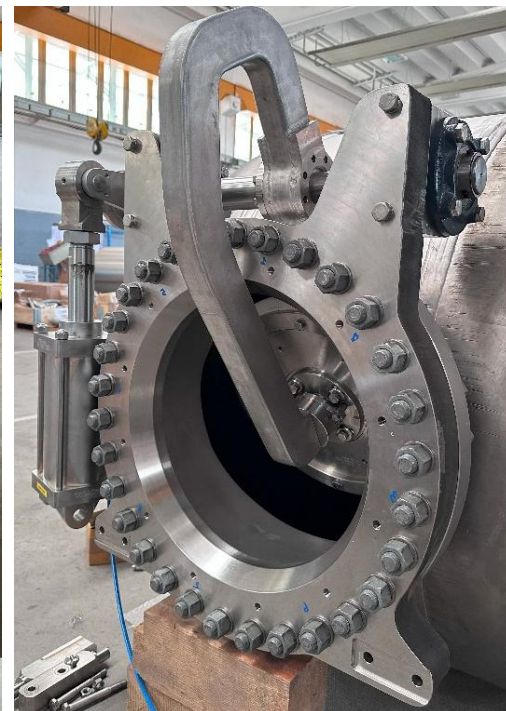
SOLID EXECUTION

NO BRIDGING DURING LOADING AND DISCHARGE

ANTI «FAKE-CLOSING» DOOR DESIGN



**LONG-LIFE PNEUMATIC
FEEDING DOOR ACTUATOR**



EASY ACCESS AND MAINTENANCE



PRESSURE VESSEL EASY MAINTENANCE:

- BEARING GREASING
- SEALS ADJUSTMENT

INSPECTION HATCH FOR THE FEEDING DOOR

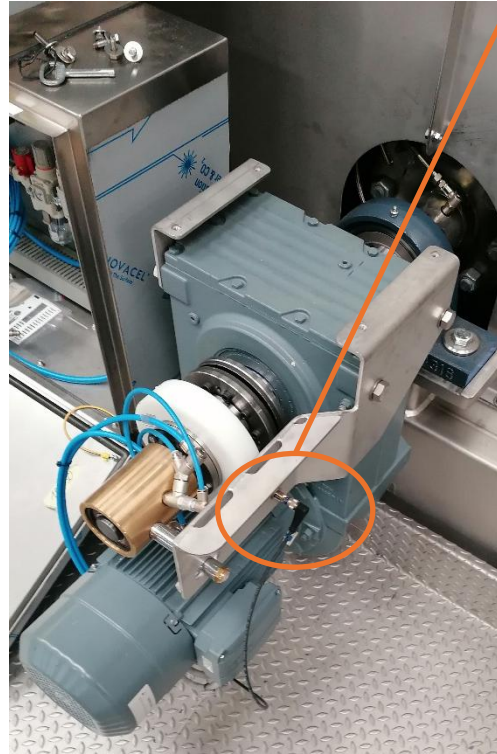
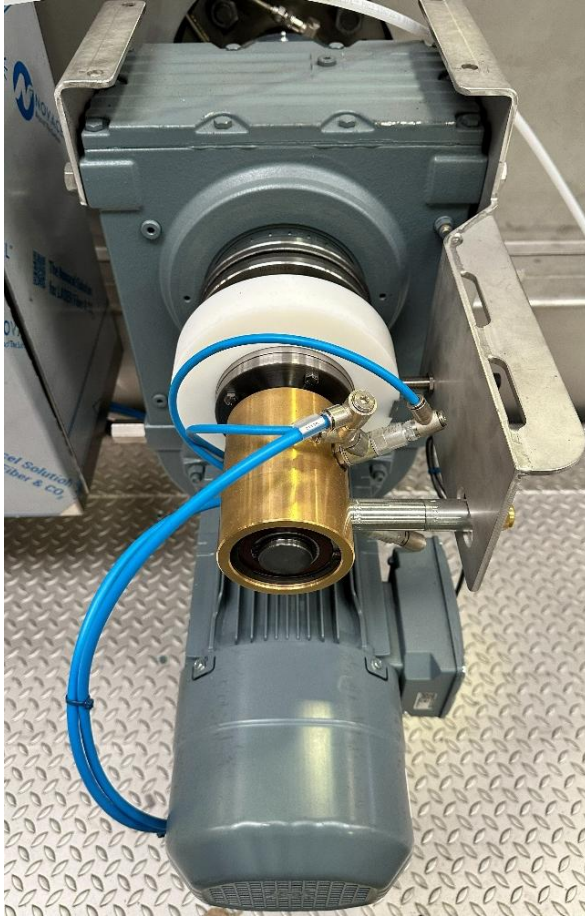


INSPECTION DOOR FOR THE LATERAL PNEUMATIC FEEDING ACTUATOR

MOTORIZATION AND POSITIONING

PRESSURE VESSEL POSITION SENSOR

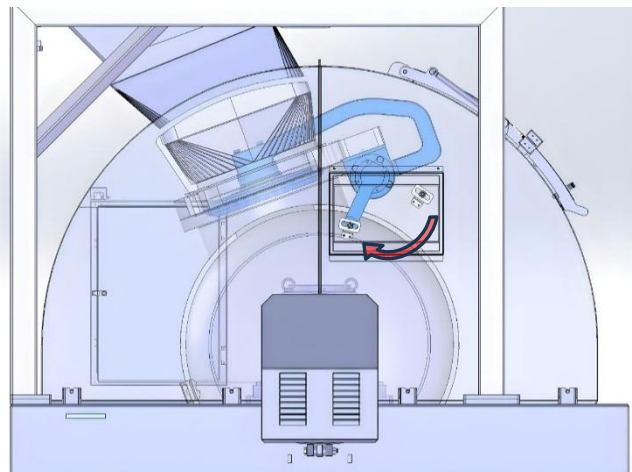
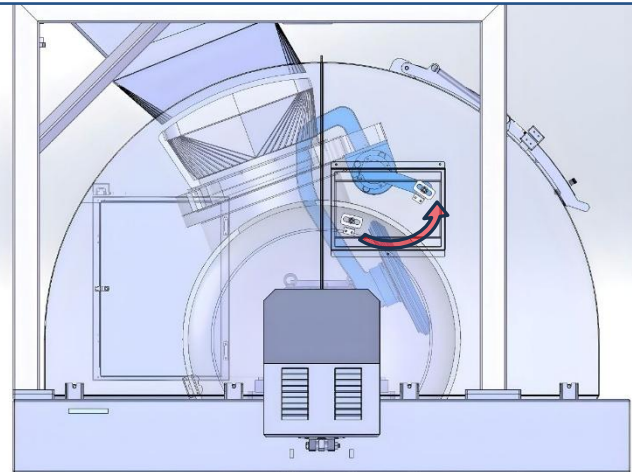
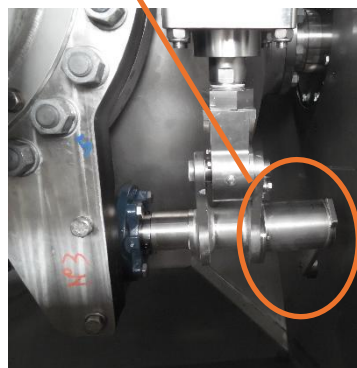
MOUNTED EXTERNALLY: SAFE POSITION, EASILY ACCESSIBLE



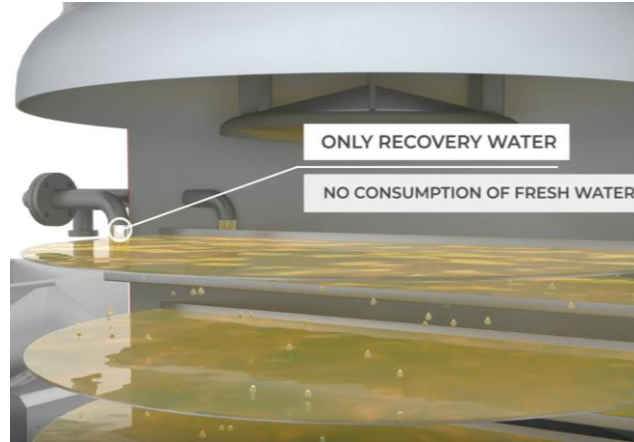
MOTORIZATION AND POSITIONING

DOOR POSITION CHECK

MOUNTED EXTERNALLY: SAFE POSITION, EASILY ACCESSIBLE

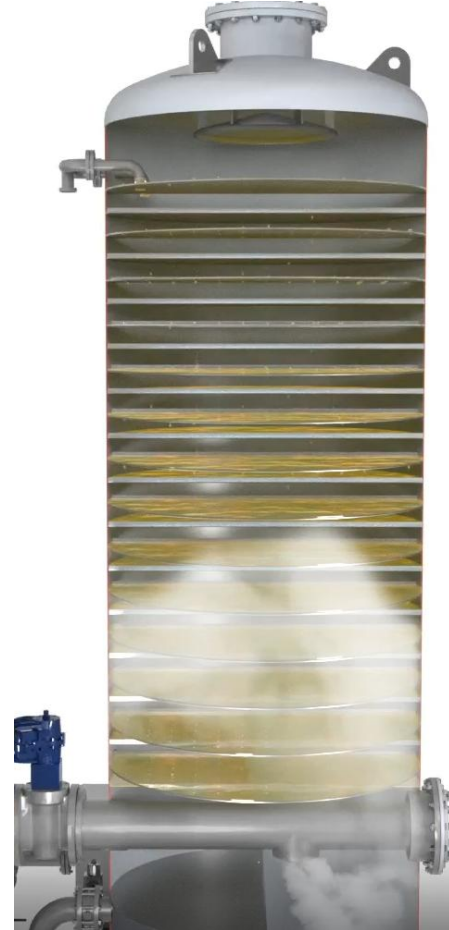


EXHAUST STEAM CONDENSER



ACCURATE STEAM MANAGEMENT:

- RAPID BLOW-OFF
- FAST REACTIVITY STEAM VALVE
(< 1 sec. FULL OPENING)
- LOW MAINTENANCE ON VALVES
AND PIPING
- EASY ACCESS FOR MAINTENANCE ON
WEAR COMPONENTS

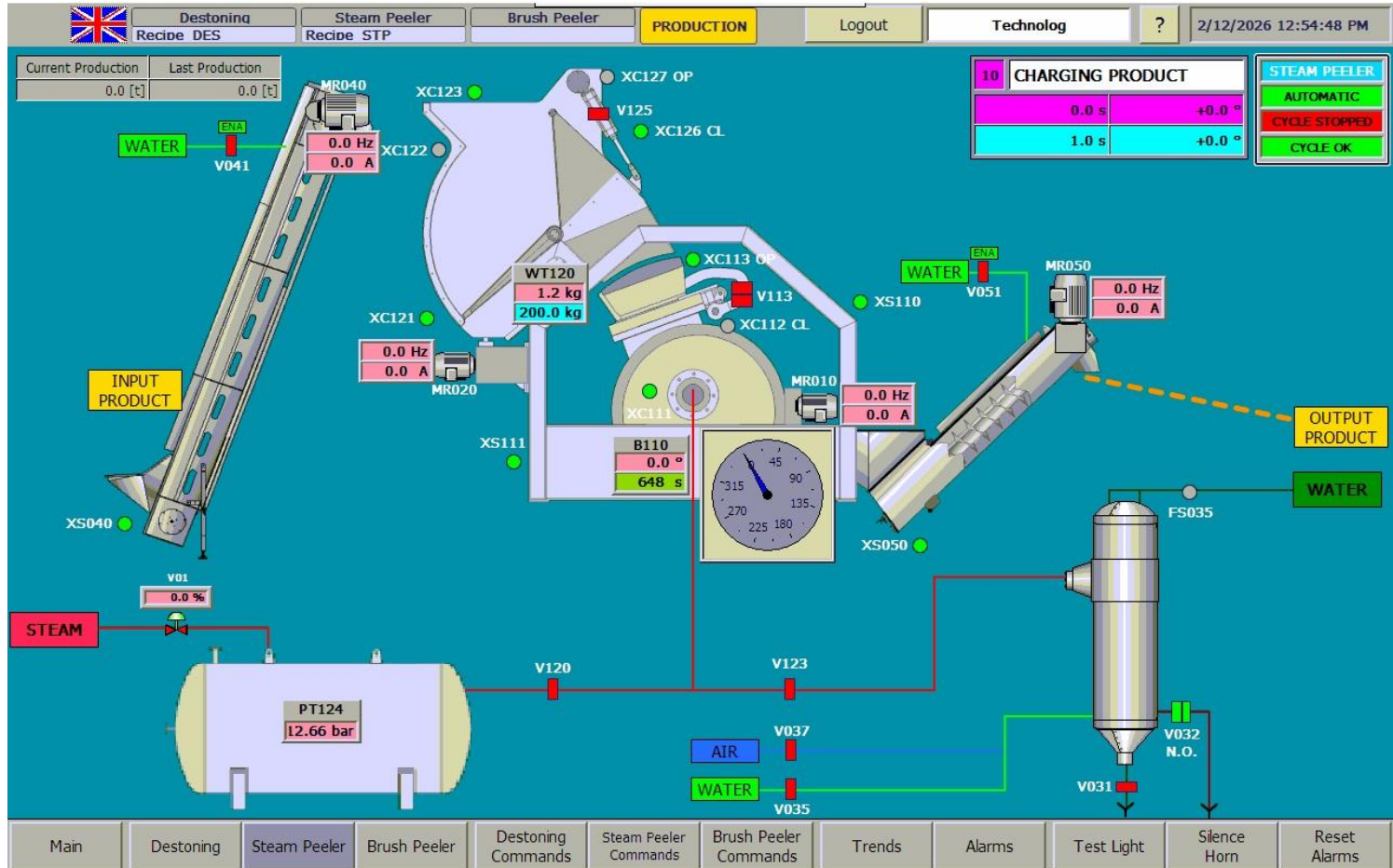


STEAM ACCUMULATOR



**EFFICIENT AND QUICK STEAM INJECTION THANKS TO
STEAM ACCUMULATOR**





INDUSTRIAL APPLICATIONS



STEAM PEELING TIME CYCLE SIMULATION

Raw material: new crop, good quality potatoes

Accurate steam peeling destined to french fries line

Calculation based on SPB220, batch size 320lt = 200Kg

Steam supply: 15–18 barg, provided by an accumulator installed next to the peeler



Cycle phase	Time* (sec)
Product loading	35
Vessel closing	
Air expulsion	
Blow off (vacuum effect)	
Product discharge	
Return to load position	
Steaming	10
Number of cycles per hour	$3600 / 45 = 80$ cycles per hour
Hourly capacity	$80 \times 200 \text{ Kg} = 16,000 \text{ Kg/h input}^*$

** SPB220 is typically for lines up to 12 ton/h capacity, but over-dimensioned (as other models) to allow raw material variation and calibration on set points without influencing the line output*

STEAM PEELING YIELDS

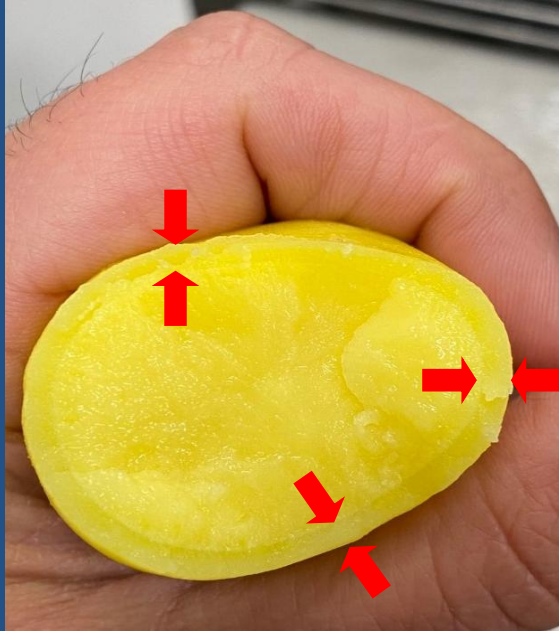
Product	Size (mm)	Bulk Density (kg/m ³)	Steam 8-10 bar		Steam 16-18 bar	
			Steam time	Peel loss *	Steam time	Peel loss *
Potatoes	Ø 30 -100 length 150	650	20 sec	8%	8 sec	6%
Carrots	Ø 15 – 35 length 300	440	35 sec	8%	18 sec	6%
Celeriac	Ø 80 - 200	440	150 sec	10%	125 sec	8%
Parsley	Ø 10 – 30 length 250	400	40 sec	10%	28 sec	8%
Beetroot	Ø 40 – 100	600	105 sec	15%	90 sec	13%
Kohlrabi	Ø 80 – 200	440	100 sec	12%	75 sec	9%
Parsnip	Ø 50 – 120 length 150	600	100 sec	10%	70 sec	8%

* Indicative average values referred to productions based on good quality and homogeneous conditions (storing, temperature, etc...)



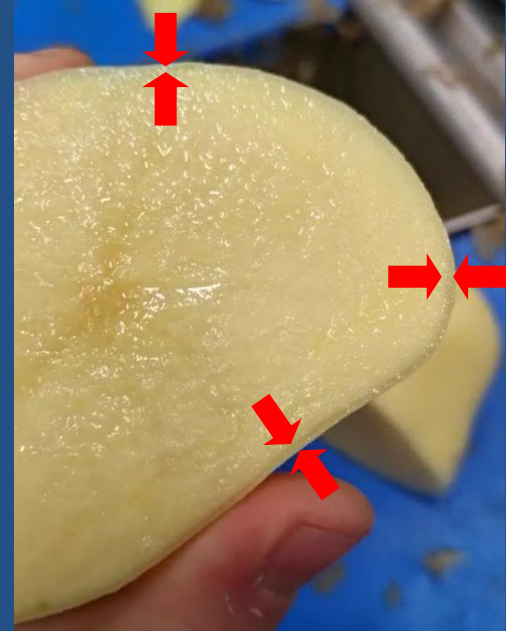
STEAM PEELING YIELDS

**POTATO
STEAM PRESSURE: 9 BARG**



cooking ring 2 mm

**POTATO
STEAM PRESSURE: 17 BARG**



cooking ring < 0,5 mm