

DISA
A Norican Technology

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World-class moulding technology

DISA MATCH

Norican Group
Shaping Industry

DISA
A Norican Technology

DISA
A Norican Technology

DISA delivers world-class moulding quality at high uptime with countless innovative features and continuous improvements while producing at the lowest cost per casting!

Norican Group
Shaping Industry

DISA's History

1900

DISA was established in Denmark under the name Dansk Rekyl Riffel Syndikat A/S

1936



The DISA name changes to Dansk Industri Syndikat A/S

1960



DISA purchases Patent for Vertical Flaskless Moulding technology
MAERSK takes over majority shares in DISA

1964



The first DISAMATIC vertical moulding machine sold

1986



DISA acquires BMD to include horizontal machines and sand mixers

2000



DISA introduces the first DISA MATCH machine

2009



DISA is acquired by MEP and merges with Wheelabrator.
Norican Group is established

2014



Norican Group acquired by the Private Equity fund Altor

2017



Norican acquires LMCS Group

2022



Norican acquires SIMPSON

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About DISA



Ulla Tønnesen
Head of DISA
Denmark HQ

60 years ago, DISA introduced vertical moulding technology.

Today, we're reinventing the modern foundry: data-driven, sustainable, ever-improving.

As a complete foundry partner and the market leader in moulding equipment, we can turn an empty field or an existing building into a complete, future-proof foundry – anywhere in the world.

Our customers

1,258

active customers

Americas: **180**
Asia: **413**
Eu: **356**
IMEA: **309**

3,584

machines in operation

Americas: **307**
Asia: **1,078**
Eu: **710**
IMEA: **1,489**

No of countries our
equipment is in operation

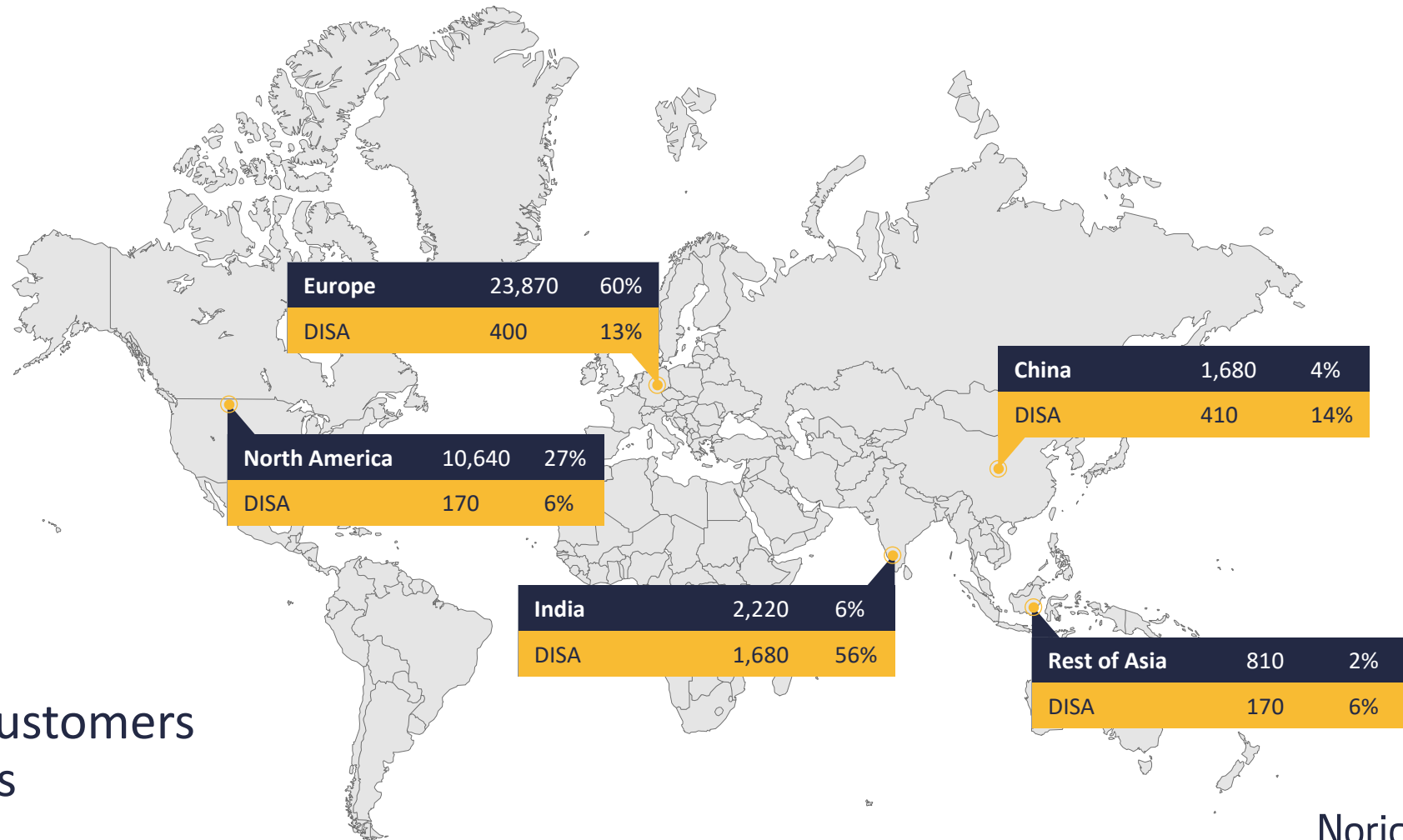
65

Norican Group, DISA - The Customers We Serve

Largest installed base globally

Norican Group	40,000
DISA	3,000
Wheelabrator	29,510
Italpresse Gauss	1,490
StrikoWestofen	6,060

Rest of the World	840	2%
DISA	170	6%



~10,000 active customers
in ~100 countries

DISA green sand castings (examples)



Small castings

Example 1: 0,4 kg
Example 2: 0,2 kg

Big castings

Example 3: 72 kg
Example 4: 60 kg

High speed castings

Example 5: 4,5 kg
Example 6: 1,5 kg

Complex castings

Example 7: 22 kg
Example 8: 30 kg

DISA castings in various alloys (examples)



Iron

Example 1: 13 kg
Example 2: 9,0 kg

Aluminium

Example 3: 5,0 kg
Example 4: 2,4 kg

Steel

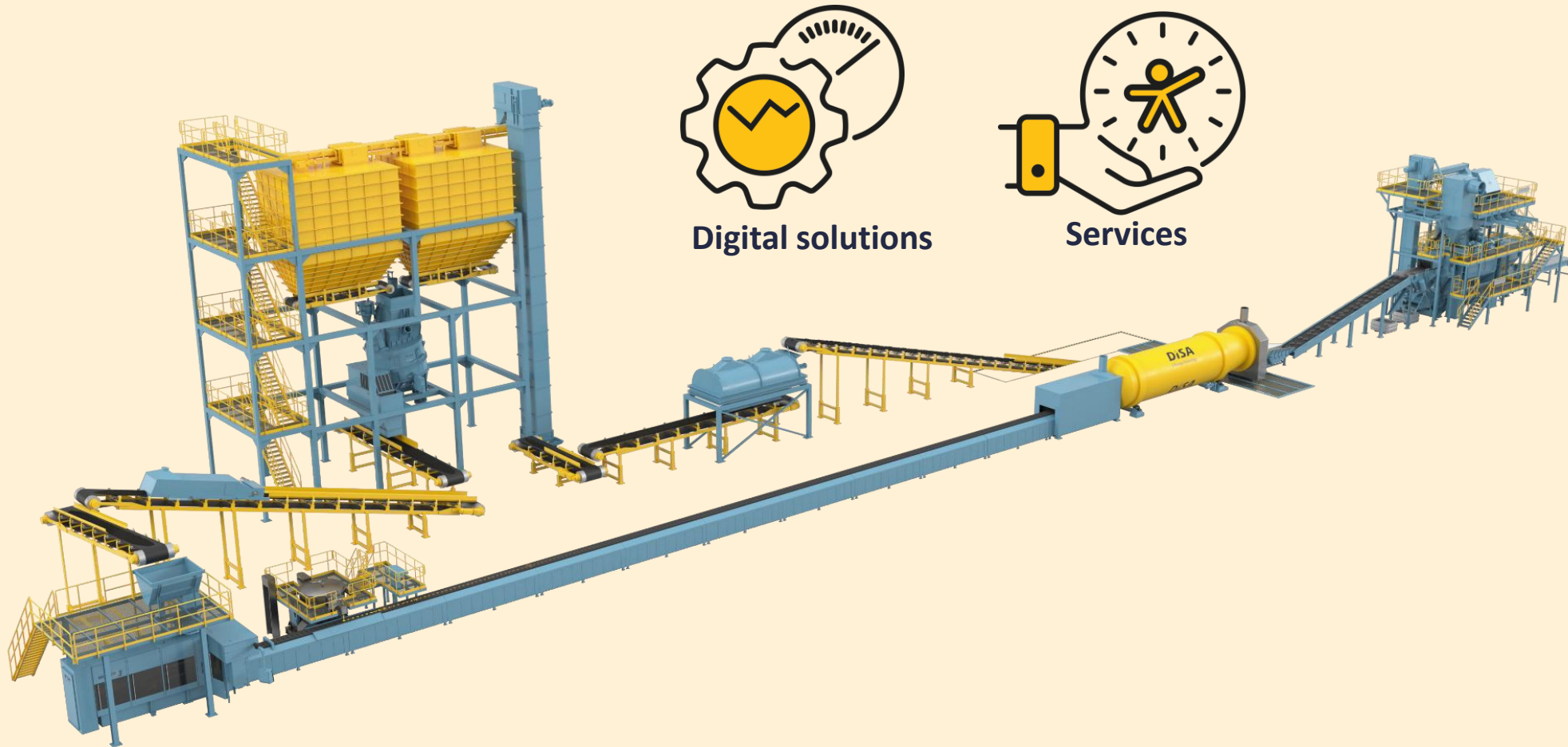
Example 5:
Example 6:

Bronze

Example 7: 2,6 kg
Example 8: 1,2 kg

DISA Complete Foundry Supplier

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- Moulding machine
- Cooling line
- Sand plant
- Sand mixer
- Cooling drum
- Shot blast
- Pouring Unit
- Aluminium
- Digital solutions
- Services

DISA Moulding Technologies

DISA



DISAMATIC (Vertical)

High-quality, high-speed production, low investment per kg of casting



DISA MATCH (Horizontal Flaskless)

Medium speed of quality castings that require fast pattern changes for maximum uptime



DISA FLEX (Horizontal Flask)

Flexible solution for production of medium and heavy near net shape castings

DISA Aftermarket & Services

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24/7 hotline support



Global onsite service



Regional warehouse



Equipment inspection (TOPS)



Process optimization (application)



Training (Operator and maintenance)



Remote services



Remote diagnostic service (RDS)



Remote virtual service (RSS)



DISA MATCH

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DISA MATCH



DISA MATCH 14/19, 16/20, 20/24

3 chamber size
14/19, 16/20, 20/24
3 moulding speeds
120, 150, 210 mph



DISA MATCH 24/28

1 chamber size
24/28
2 moulding speeds
120, 155 mph

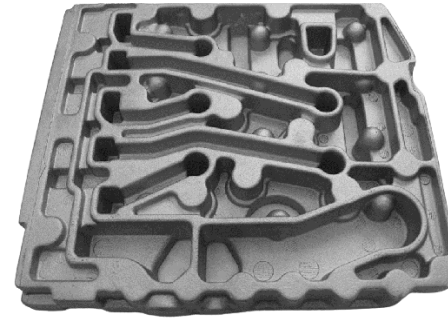
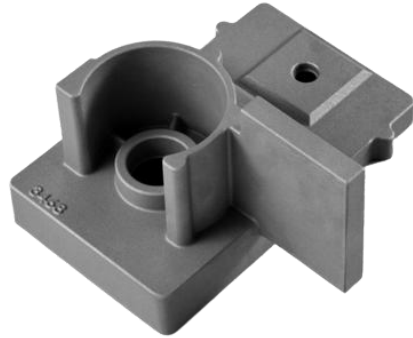


DISA MATCH 28/32, 32/32

2 chamber size
28/32, 32/32
1 moulding speed
100 mph

Example of castings produced on DISA MATCH

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MATCH 14/19
MATCH 16/20
MATCH 20/24



Casting weight:
Up to 36 kg (79 lb)
Casting dimension:
Up to 430 x 530 mm (17x21")
Capacity:
Up to 12.000 t/year (13,200 US t)



Sizes:

- 14x19 (355x482mm)
- 16x20 (406x508mm)
- 20/24 (508x609mm)

Example of castings produced on DISA MATCH

MATCH 24/28



Casting weight:

Up to 36-90 kg (198 lb)

Casting dimension:

Up to 550 x 650 mm (21.7x25.6")

Capacity:

Up to 15.000 t/year (16,500 US t/y)



Sizes:

- 24x28 (711x609mm)

Example of castings produced on DISA MATCH 32/32

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MATCH 28/32
MATCH 32/32



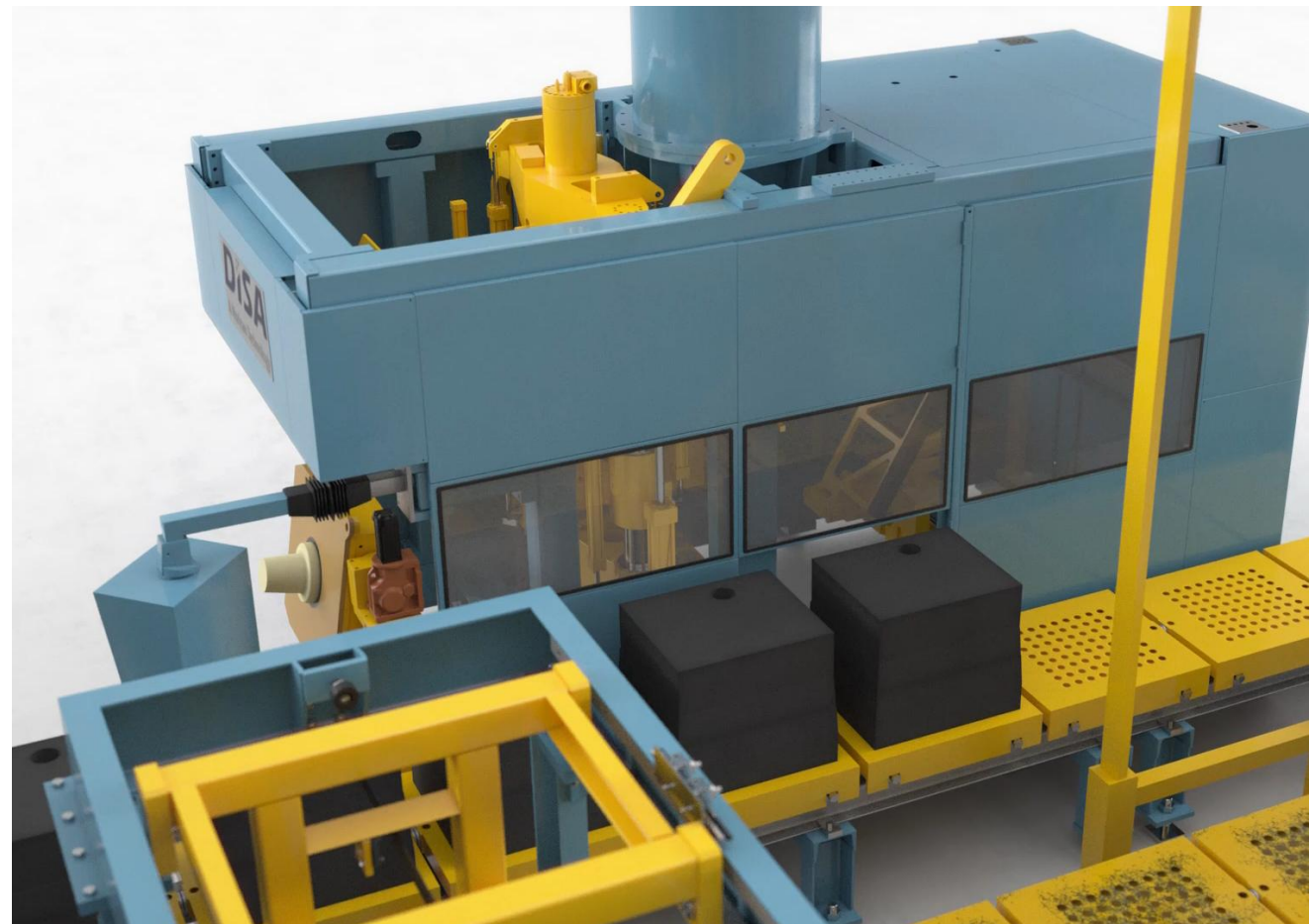
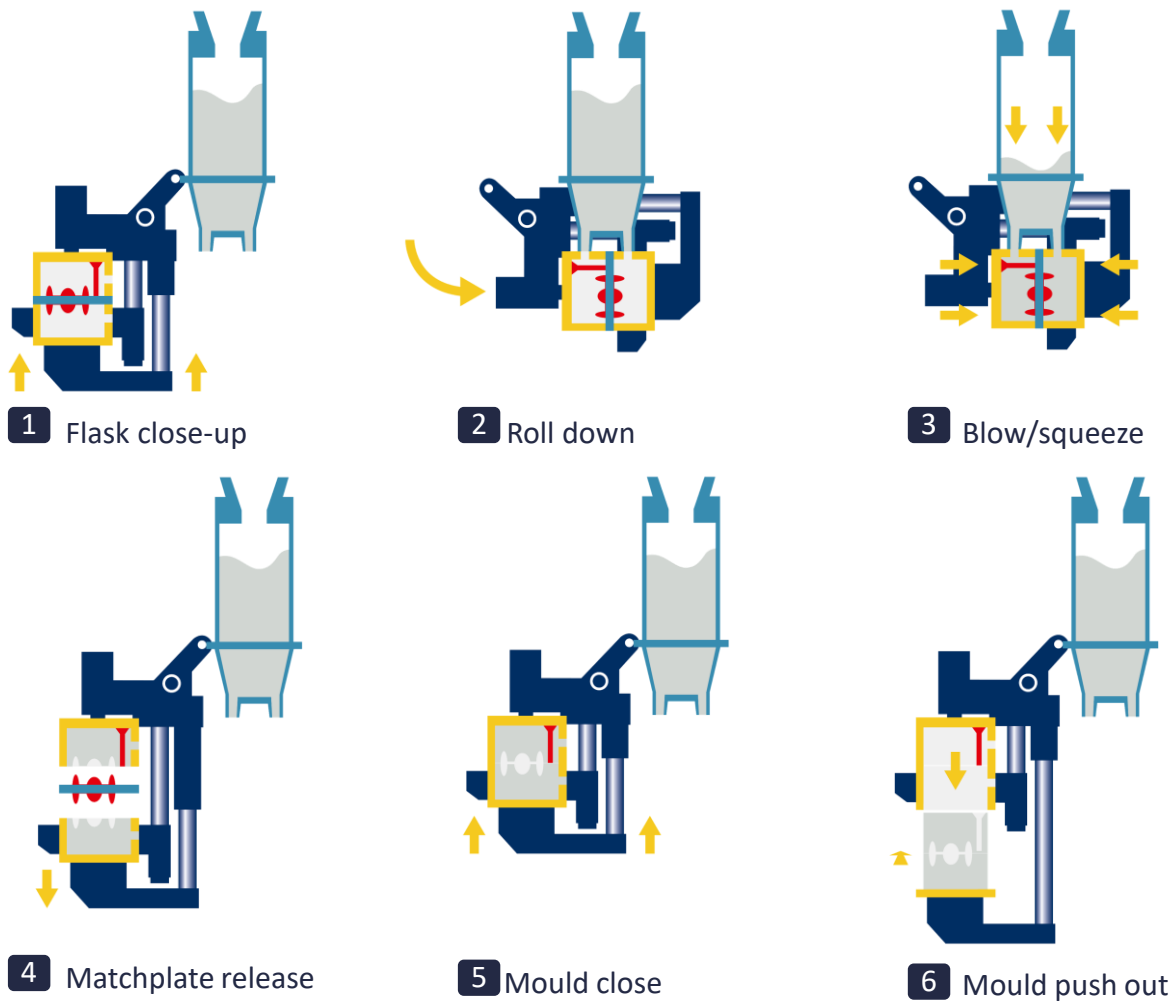
Casting weight:
Up to 90-128 kg (282 lb)
Casting dimension:
Up to 766-756 mm
Capacity:
Up to 20.000 t/year



Sizes:
• 32x32" (812x812mm)

The DISA MATCH technology (principle)

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The DISA MATCH concept

**Unique DISAMATIC
Blow/Squeeze**

**Lowest machine
related mismatch**

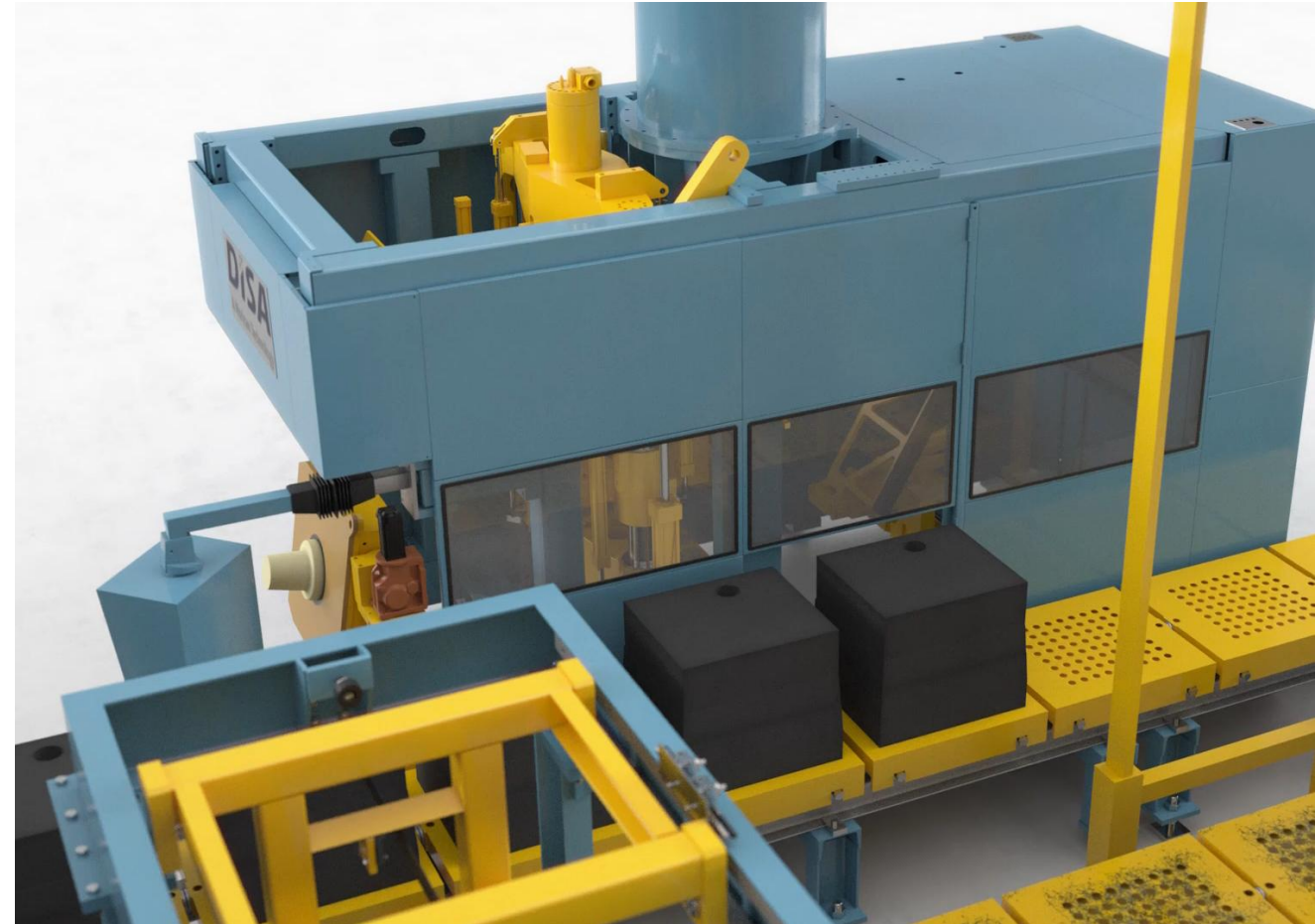
**Unbeatable uptime
due to extremely
robust and simple
design**

**Easy operation and
maintenance**

**Adaptive mold
height for sand-
metal ratio**

**Consistent casting
quality with
Minimal finishing
costs**

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Easy to operate

Quick and intuitive navigation in any language
Easy to use for your operators

Machine status and guided alarm messages
Easy diagnostic and troubleshooting

Recipe management for all patterns
Ensure correct parameters every time

Remote online connection to DISA
Quick expert support when needed



VDU – Visual Display Unit

Cored jobs at high speed

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Automatic core setting
Increases speed on cored castings



Accurate core setting precision
Less broken and dropped cores



Light at operator position
Improved working conditions



Accurate, repeatable core setting minimizing
cycle time over manually setting cores



CSE – Core Setter

Easy maintenance



Service friendly design with wide door and large internal areas for **fast and easy maintenance**



Cope and drag chamber wear plates design for **easily replaceable**



Hydraulic power unit placed outside the machine for **easy access**



Centralized automatic oil lubrication system **ensure correct lubricated parts**



Safe working environment



CE marked and complies with ISO standard
Highest safety standard in the industry



Light curtains eases **quick and safe access to moulding area**



Lifting equipment to avoid heavy operator lifts
Work environment supporting health and safety



Lowest noise level provide a **quieter working environment**



Excellent reliability and productivity

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First-class moulding quality with excellent reliability and productivity



Easy and safe to operate and maintain



Ultra short production change with high production output for cored and uncored jobs



*Highest uptime and performance available
Best investment and lowest cost per casting!*



The background of the slide is a detailed photograph of industrial machinery, likely a metalworking or manufacturing machine. It features a complex arrangement of yellow and blue painted metal components, including structural frames, hydraulic cylinders, and various mechanical linkages. Numerous blue and grey hoses and cables are connected to different parts of the machine. On the left side, there is a control panel with several black rotary knobs and a small digital display. A safety label with a key symbol is visible on the right side of the machine. The overall scene is brightly lit, highlighting the metallic surfaces and the intricate design of the equipment.

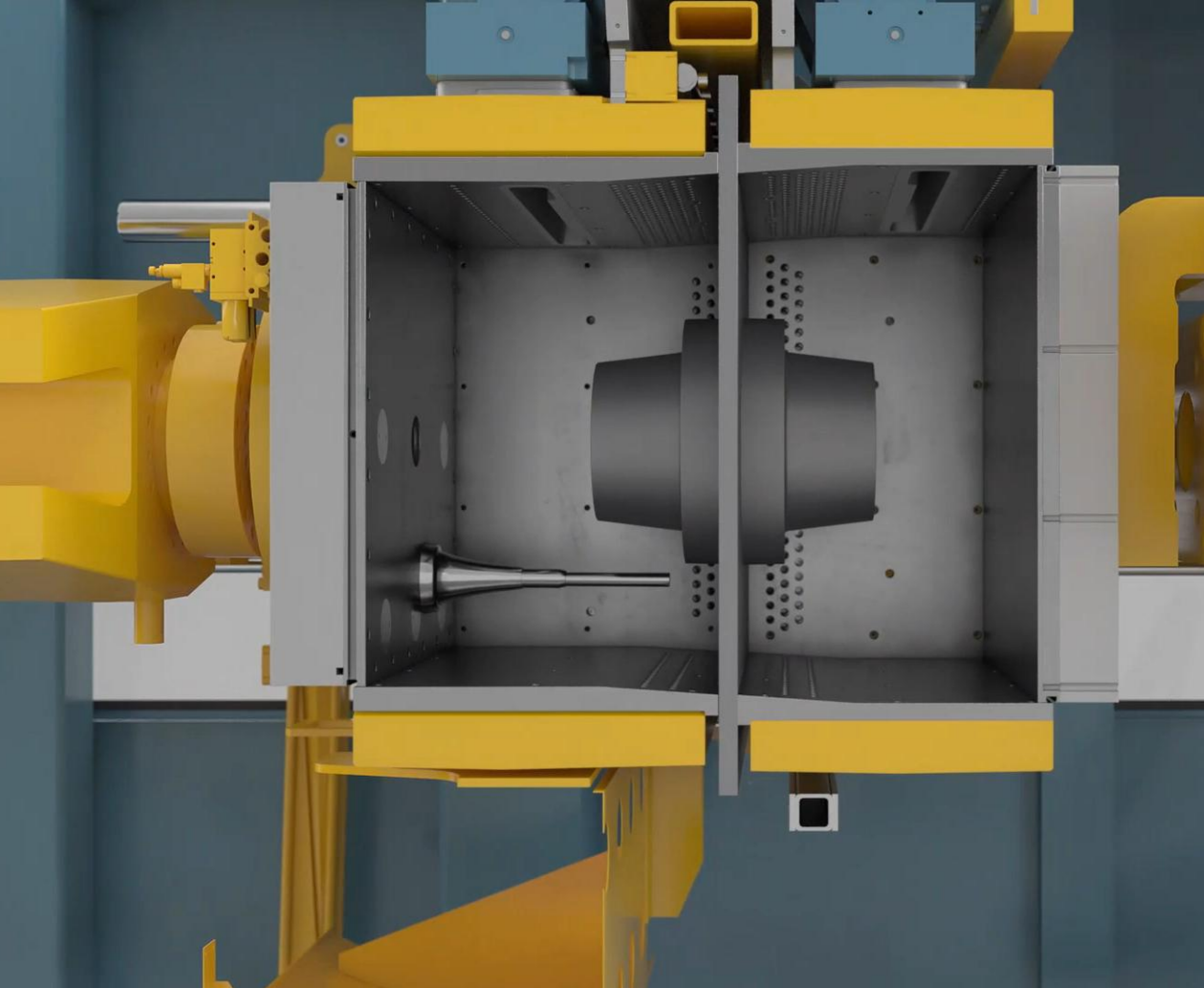
DISA MATCH

Equipment features

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Unique DISAMATIC blow and squeeze mechanism

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In-chamber spray **avoids sand sticking and open air spray**



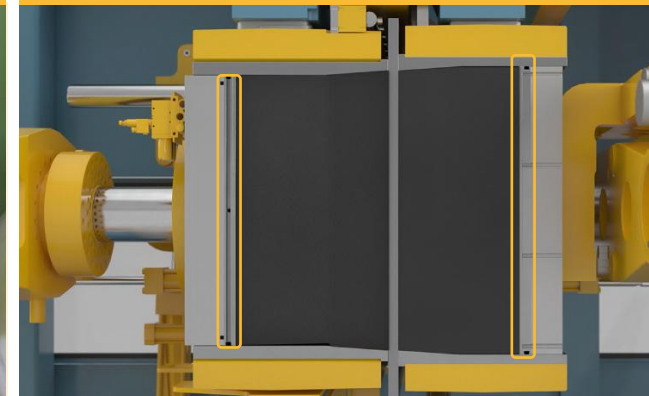
Flexible down Sprue locations **tailored to customer design**



Easily replaceable wear plates **without removing the flask**

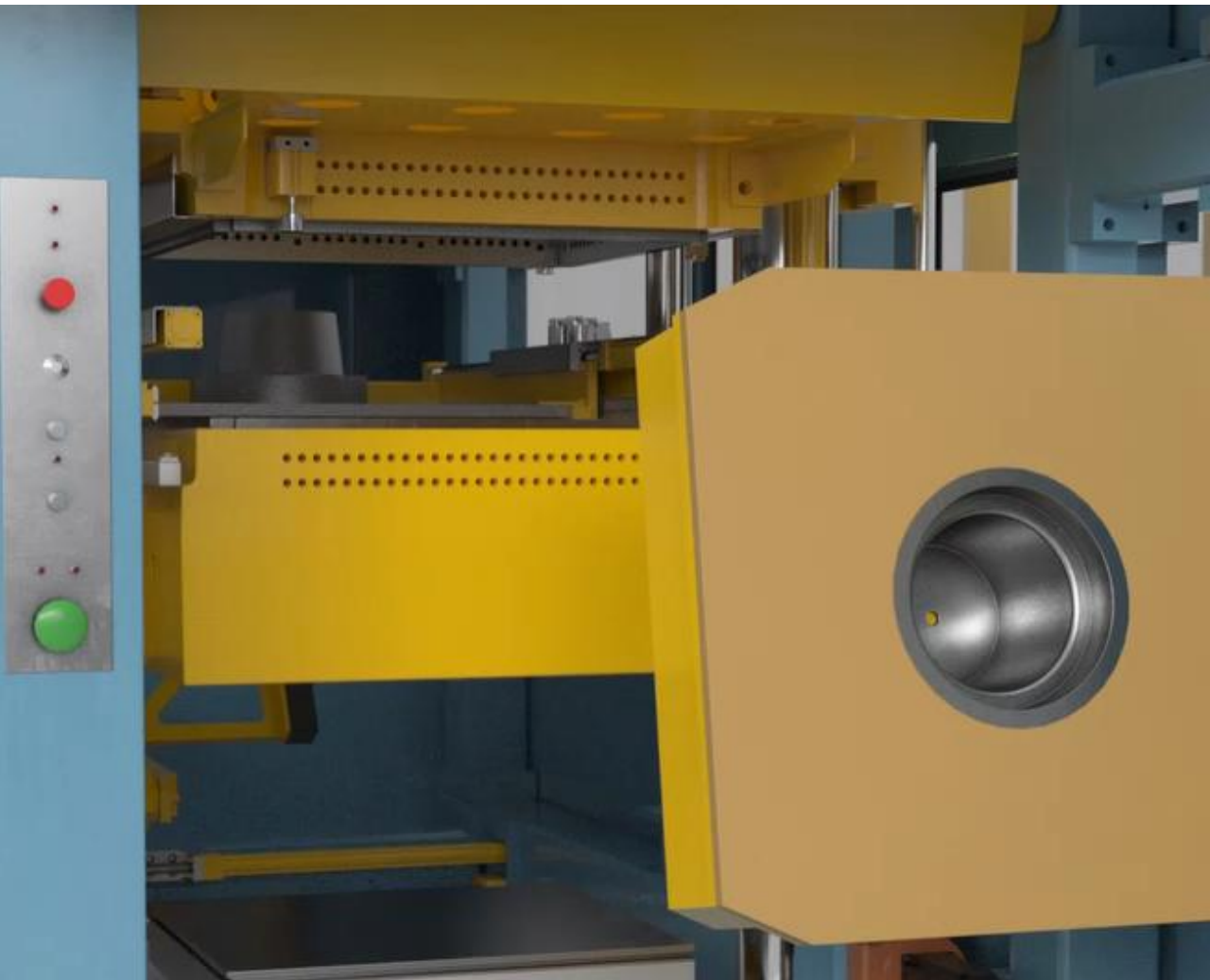


Inflatable seals **prevent sand blow-by and reduces flask wear**



Well proven and reliable mechanical design

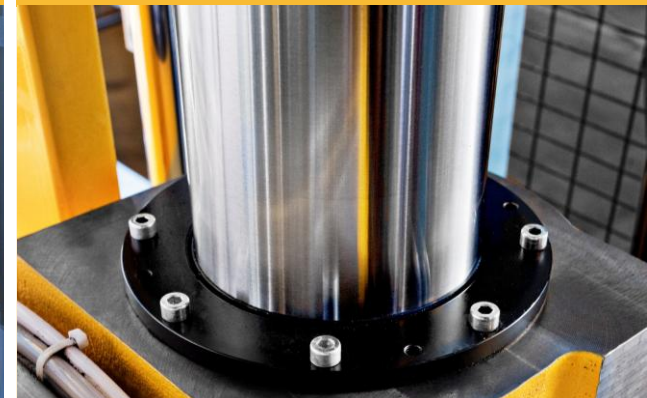
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Movements on the same fixed axis for **extremely low mismatch**



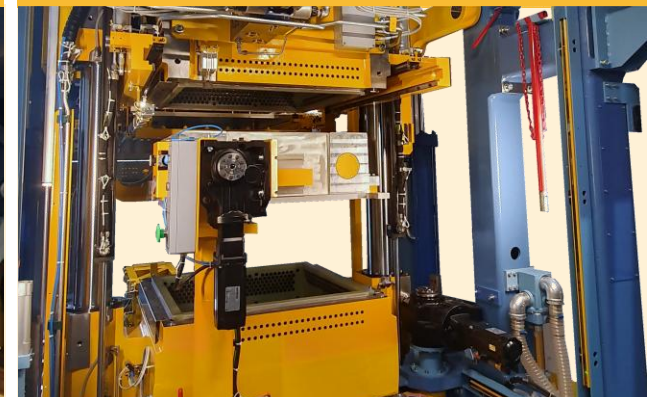
Well proven DISMATIC bushing design for **very low maintenance**



Automatic lubrication system for **long lifetime and sustainable**

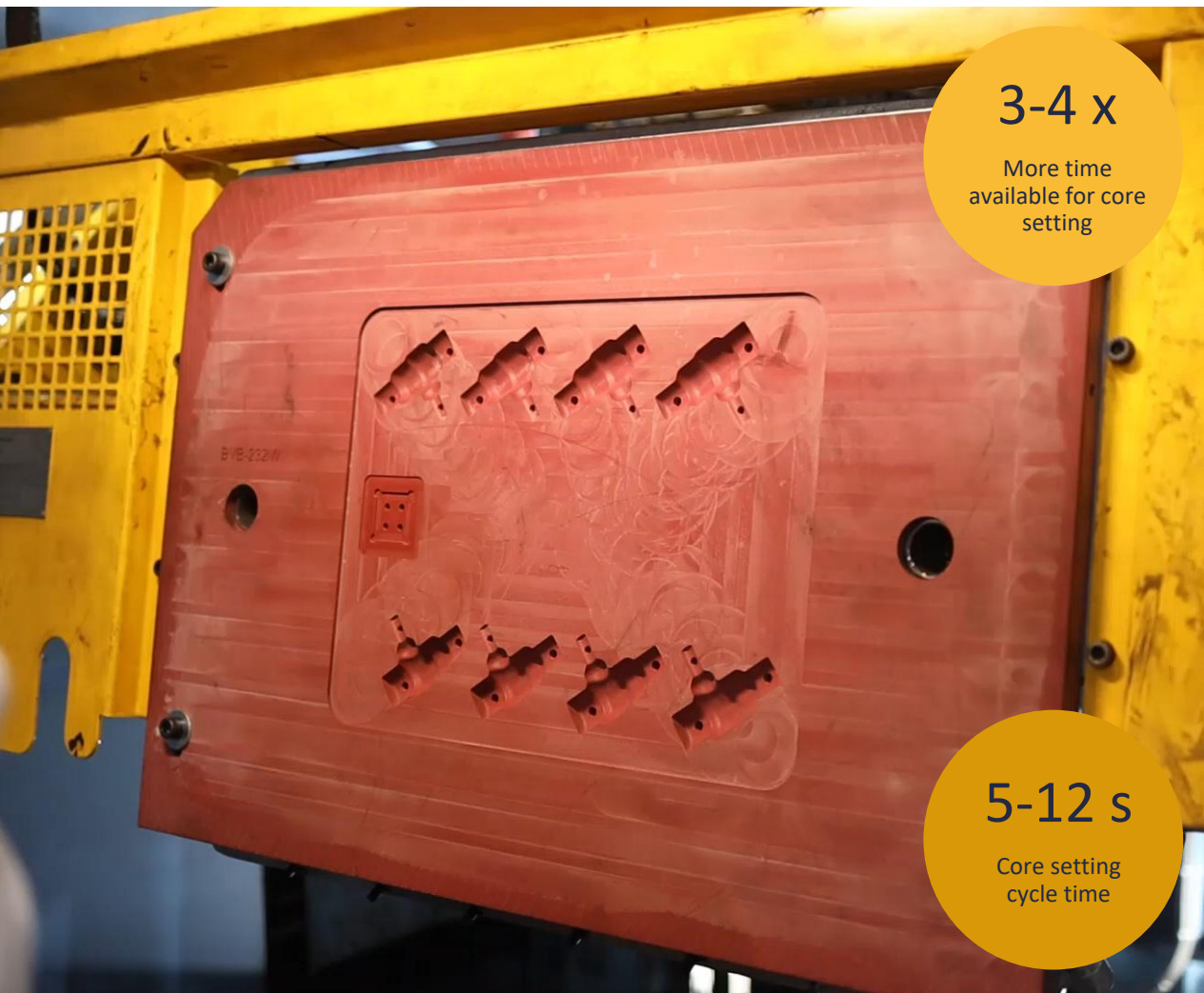


Robust mechanical design gives **high stability and repeatability**



High accuracy core setting (CSE)

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Improved operators ergonomi
with **ideal core setting position**



Fixed drag flask for **high precision
core setting**



Core mask guide pins allow **fast
change without adjustments**



Operator light for **brighter
working conditions**



High accuracy core setting (CSE)

DISA
A Norican Technology



Improved operators ergonomi
with **ideal core setting position**



Fixed drag flask for **high precision
core setting**



Core mask guide pins allow **fast
change without adjustments**



Operator light for **brighter
working conditions**



Easy and quick production changeover (QMC)

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2-3 min.

Changing time

255-400

kg

Lifting capacity

User-friendly change-unit can be
operated by anyone



Spacious area with light curtains
for optimal working conditions



DiSA QMC enables matchplate
change in 2-3 minutes



Enhance workplace by removing
heavy pattern plate lifting



Easy and quick production changeover (Manual)

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Manual

User-friendly change-unit can be
operated by anyone



Spacious area with light curtains
for optimal working conditions



DiSA QMC enables matchplate
change in 2-3 minutes



Enhance workplace by removing
heavy pattern plate lifting



DISA MATCH technical data

Metric

DISA MATCH

DISA MATCH Type:		14/19	16/20	20/24
Mould dimensions:				
Lenght	mm	483	508	610
Width	mm	356	406	508
Height, min.-max. of drag	mm	150-200	150-200	150-200
Height, min.-max. of cope	mm	150-200	150-200	150-200
Mismatch, max.	mm	0,2	0,2	0,2
DISA MATCH Capacity 150				
Uncored	mould/hour*	150	150	150
Automatically cored	mould/hour*	120	120	120
Sand consumption max.	tonnes/h**	15	19	28
Average power consumption	kW	30	30	30
Connected load	kVA	38	38	38
Compressed air consumption	Nm3/min	5	5	5
DISA MATCH Capacity 210				
Uncored	mould/hour*	210	210	210
Automatically cored	mould/hour*	160	160	160
Sand consumption max.	tonnes/h**	22	26	39
Average power consumption	kW	30	30	30
Connected load	kVA	38	38	38
Compressed air consumption	Nm3/min	7	7	7
Cooling water (DMM):				
at 15 °C inlet temp.	litres/min	17	17	17
Pressure:				
Squeeze pressure	bar	3-10	3-10	3-10
Shot pressure	bar	0 - 4,5	0 - 4,5	0-4,5
Compressed air requirements:				
Air pressure min	bar	5,5	5,5	5,5
Hydraulic fluid (DMM):				
	litres	370	370	370
Machine dimensions (please refer to DSQ and machine layout for drawings)				
Length, DMM	mm	3965	3965	3965
Length, DMM + CSE	mm	4400	4400	4400
Width	mm	1850	1850	1850
Height, top of sand inlet	mm	3910	3910	3910
Height, top of machine frame	mm	2455	2455	2455
Height, mould bottom push out	mm	560	560	560
Net weight:	tonnes	10,5	10,5	10,5

* At 200 mm mould thickness / ** At max. mould thickness

US

DISA MATCH

DISA MATCH Type:		14/19	16/20	20/24
Mould dimensions:				
Lenght	inches	19	20	24
Width	inches	14	16	20
Height, min.-max. of drag	inches	5,9 - 7,9	5,9 - 7,9	5,9 - 7,9
Height, min.-max. of cope	inches	5,9 - 7,9	5,9 - 7,9	5,9 - 7,9
Mismatch, max.	inches	0,008	0,008	0,008
DISA MATCH Capacity 150				
Uncored	mold/hour*	150	150	150
Automatically cored	mold/hour*	120	120	120
Sand consumption max.	tons/h**	17	20	31
Average power consumption	kW	30	30	30
Connected load	kVA	38	38	38
Compressed air consumption	cu ft/min	177	177	177
DISA MATCH Capacity 210				
Uncored	mold/hour*	210	210	210
Automatically cored	mold/hour*	160	160	160
Sand consumption max.	tons/h**	24	29	43
Average power consumption	kW	30	30	30
Connected load	kVA	38	38	38
Compressed air consumption	cu ft/min	247	247	247
Cooling water (DMM):				
at 59 °F inlet temp.	gallons/min	4	4	4
Pressure:				
Squeeze pressure	psi	44 - 148	44 - 148	44 - 148
Shot pressure	psi	0 - 67	0 - 67	0 - 67
Compressed air requirements:				
Air pressure min	psi	81	81	81
Hydraulic fluid (DMS):				
	gallons	98	98	98
Machine dimensions (please refer to DSQ and machine layout for drawings)				
Length, DMM	inches	156	156	156
Length, DMM + CSE	inches	173	173	173
Width	inches	73	73	73
Height, top of sand inlet	inches	154	154	154
Height, top of machine frame	inches	97	97	97
Height, mould bottom push out	inches	22	22	22
Net weight:	tons	12	12	12

* At 5.9 inches for mould thickness / ** At max. mould thickness

A photograph of a large industrial facility, likely a foundry or casting plant. The scene shows a long, automated system for handling molds. In the foreground, there are yellow safety railings and a blue metal structure. A series of dark, rectangular molds are being moved along a track. In the background, more blue metal structures and a person can be seen. The overall environment is industrial and brightly lit.

DISA AMH

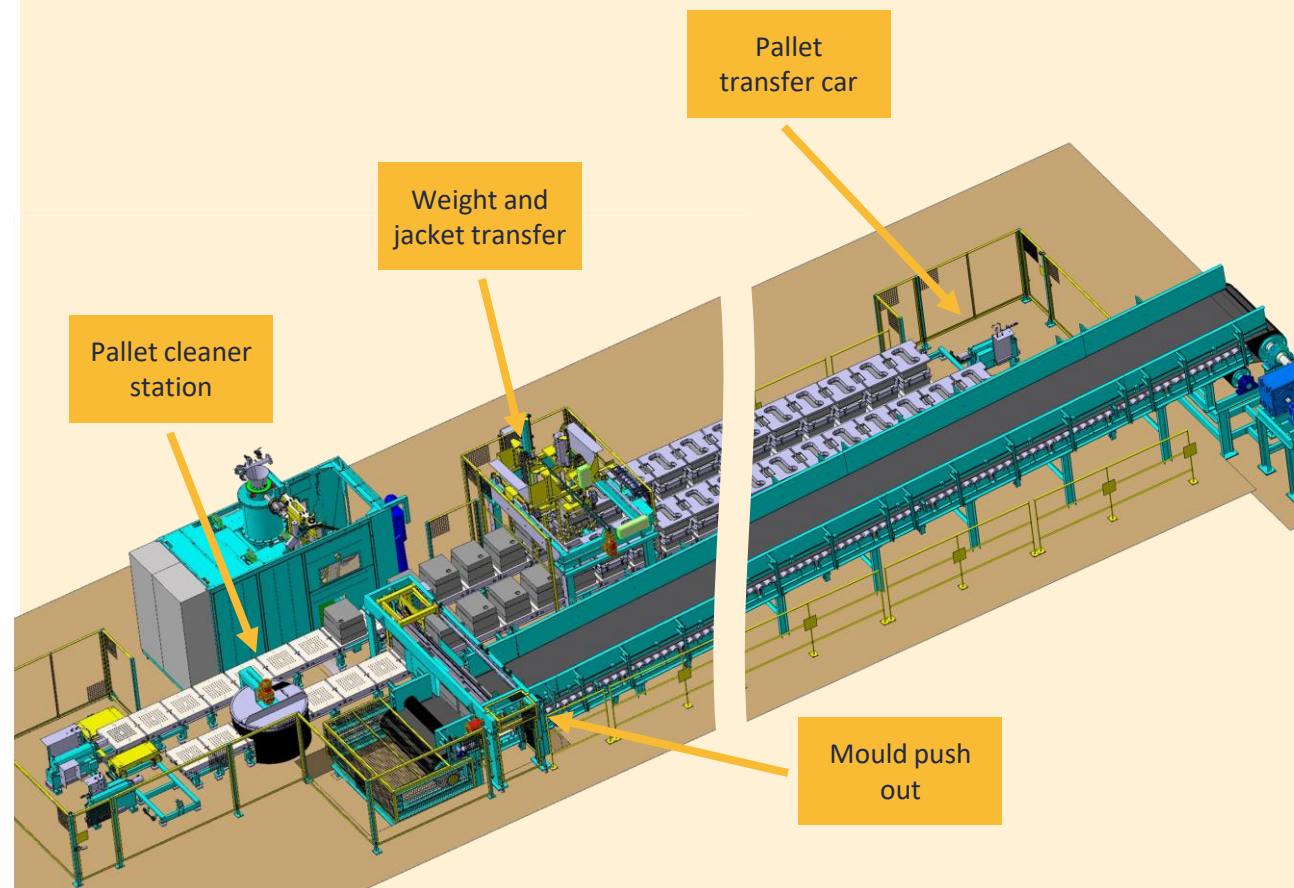
Automatic Mould Handling

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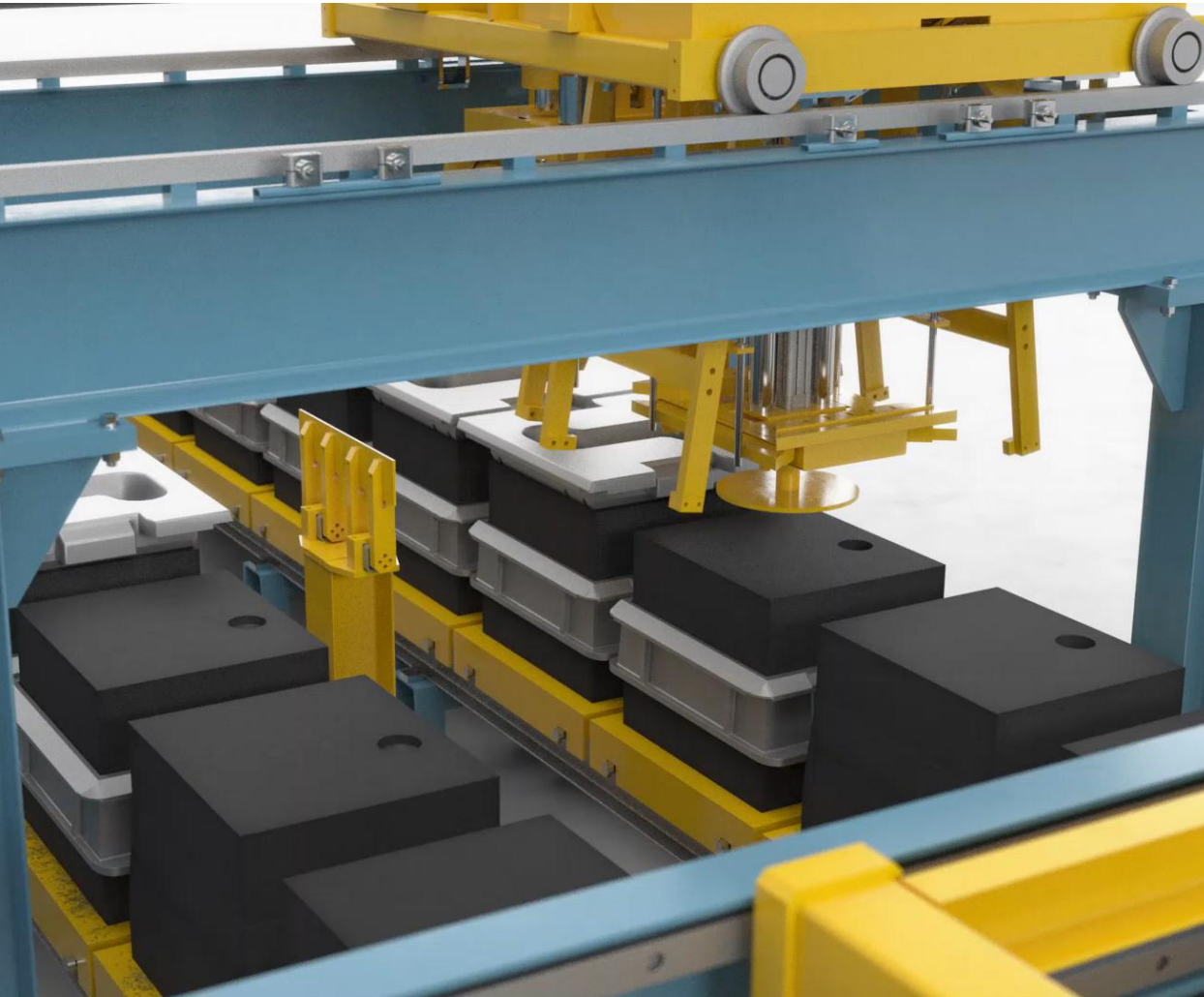
Fully integrated and synchronized in-mould cooling solution



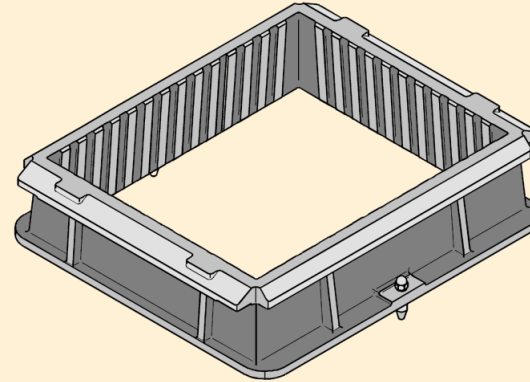
Modular customized layout to fit **available space** and **cooling needs**



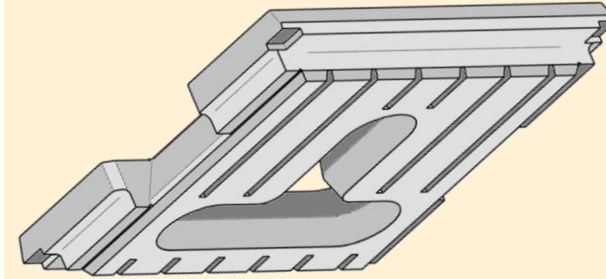
Automatic weight and jacket transferring and cleaning



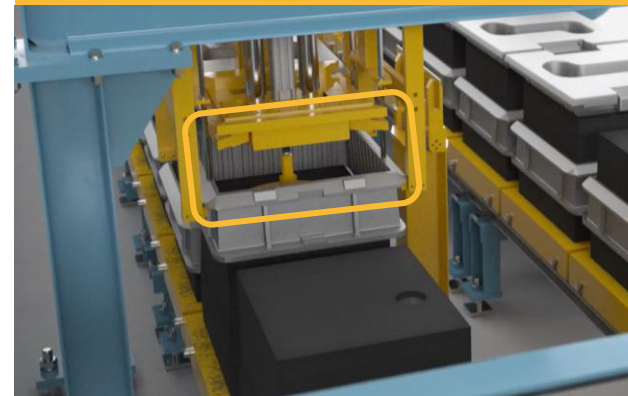
Aluminum jackets **reduces sand sticking**



Cast iron weight with enclosed pouring area **avoid melt over run**



Jacket cleaner **removing sand and risk of mismatch**

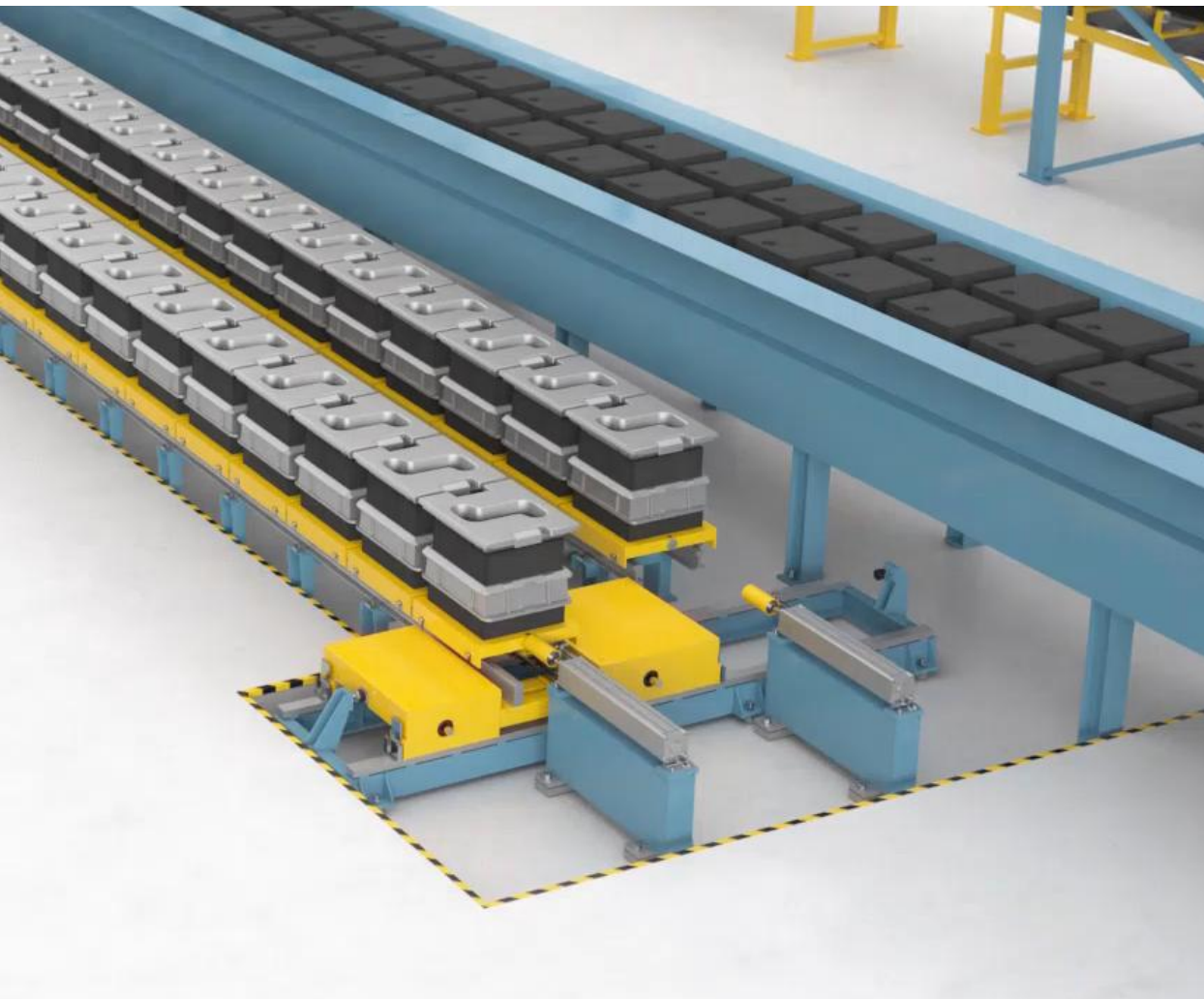


Clean weights **ensures even mould counter pressure**



Robust design with a minimum of maintenance and long lifetime

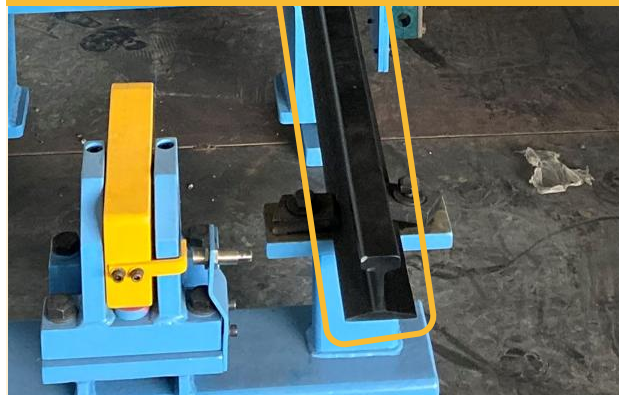
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Transfer car



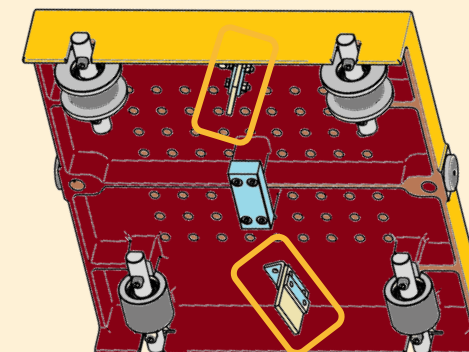
Proven long lifetime rail design
promise **low maintenance cost**



Mould covers keeps sand onto the pallets **minimizes cleaning**



Scrapers cleans wheels and rails
for **even mould transportation**



Pallet cars



Venting pallet holes for **easy moisture and gas evaporation**



Mould push out sand scraper pre-cleaning **pallets sand breaks off**



Wheel and bearing designed for high load and temperature



Pallet cleaning station **ensures ???**



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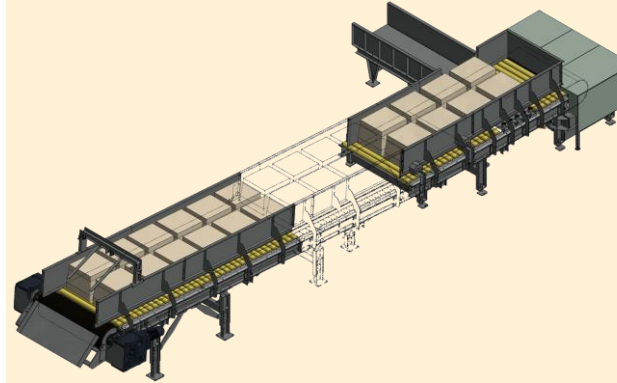
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Custom cooling conveyor to match your required cooling time

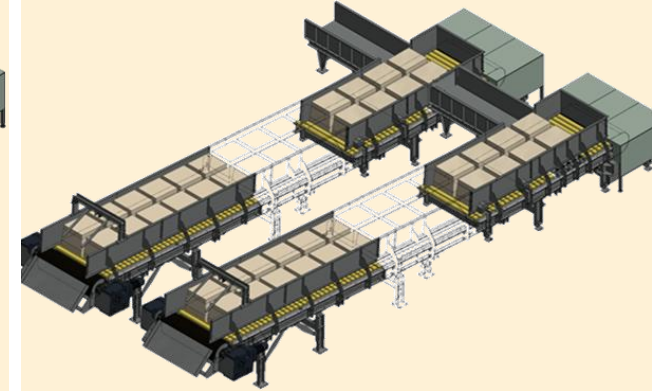
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Cooling conveyor **up to 90 meters**



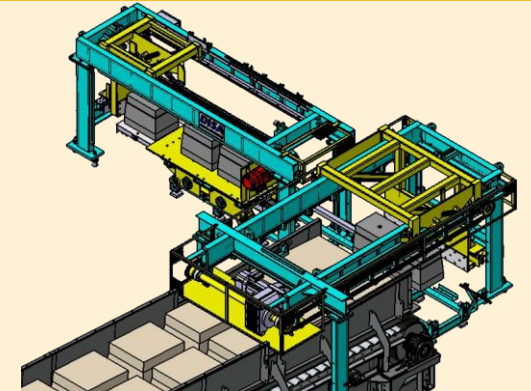
Cooling conveyor as **single or multi rows**



Push unit moves moulds to conveyor for **extended cooling**



Multi rows transfer car conveyors for **even longer cooling time**



The background of the slide is a detailed photograph of industrial machinery, likely a CNC machine. It features a complex arrangement of yellow and blue painted metal components, including a vertical column, a horizontal cross-table, and various pneumatic cylinders and hoses. A control panel with a screen and buttons is visible on the left side. The overall scene is brightly lit, highlighting the metallic surfaces and the intricate mechanical design.

DISA MATCH

Process challenges

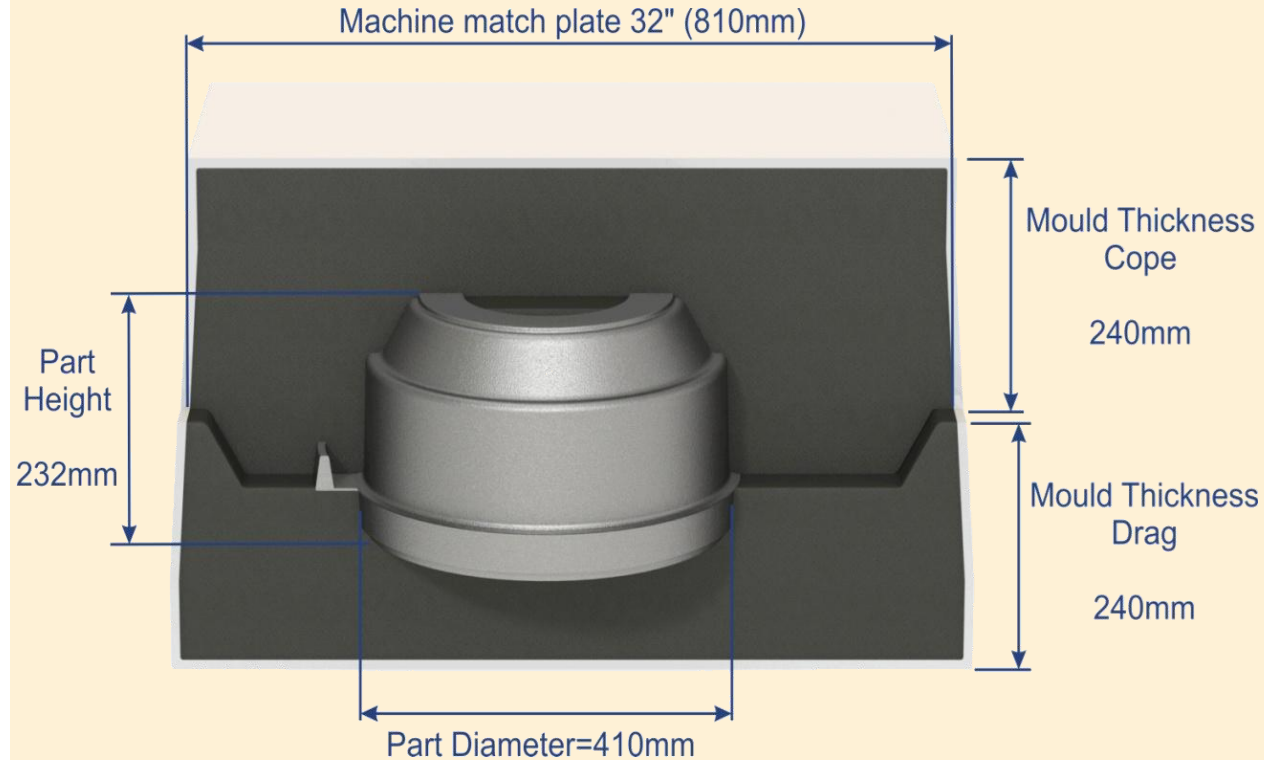
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Truck brake drum production - Specification

Specifications

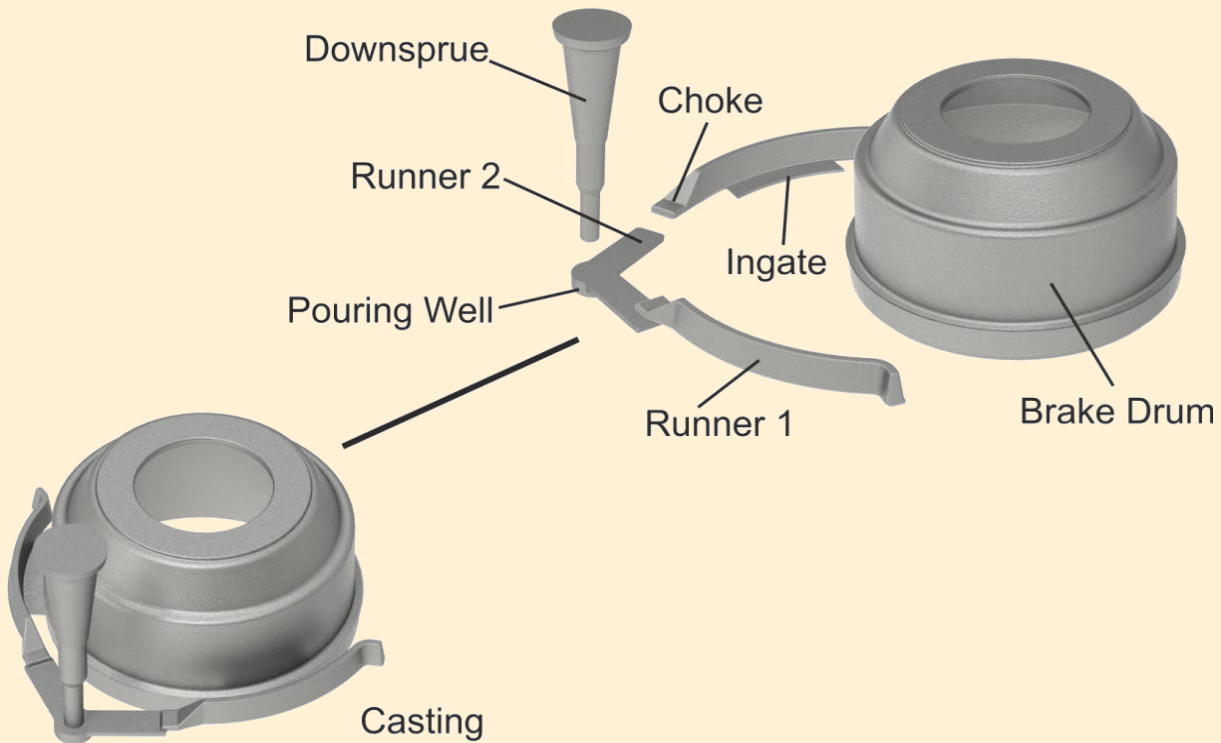
- Part weight: 34 kg (casting)
- Material: Grey Iron
- Machine: DISA MATCH 32 x 32
- Part diameter: 410 mm
- Part height: 232 mm
- Part pouring time: 12 sec (2,83 kg/sec)
- Mould thickness drag: 240 mm
- Mould thickness cope: 240 mm

Data

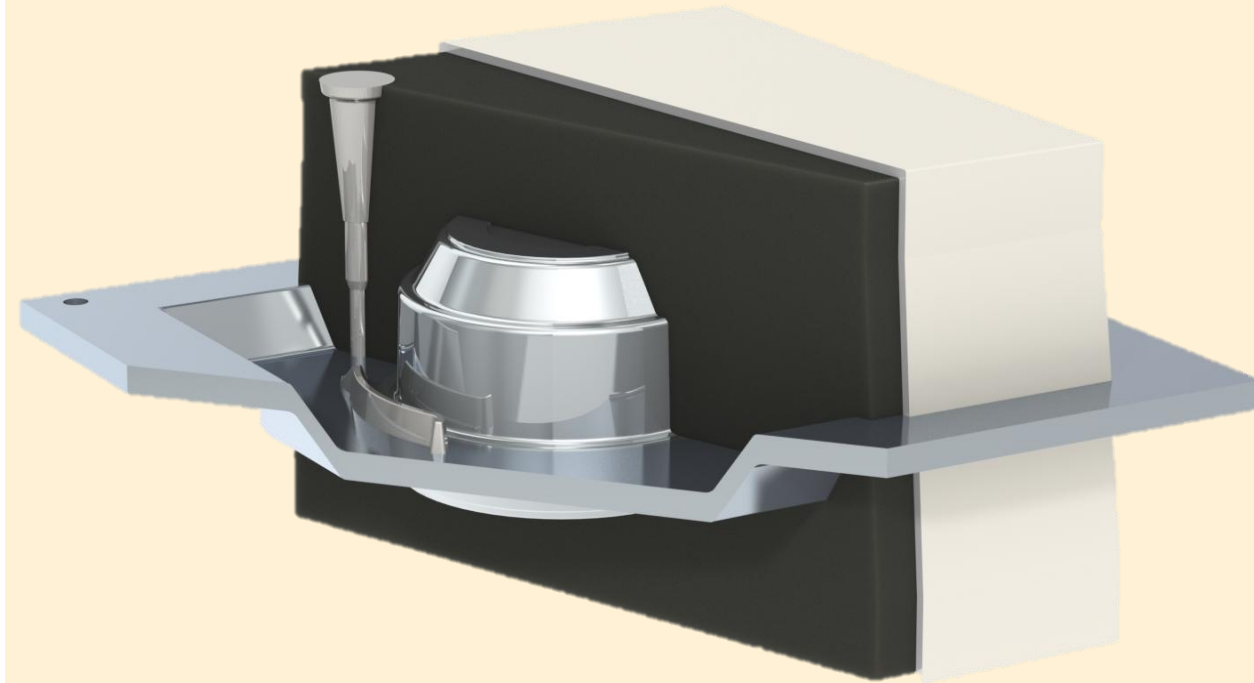


Truck brake drum production - Gating system

Drag mould impression

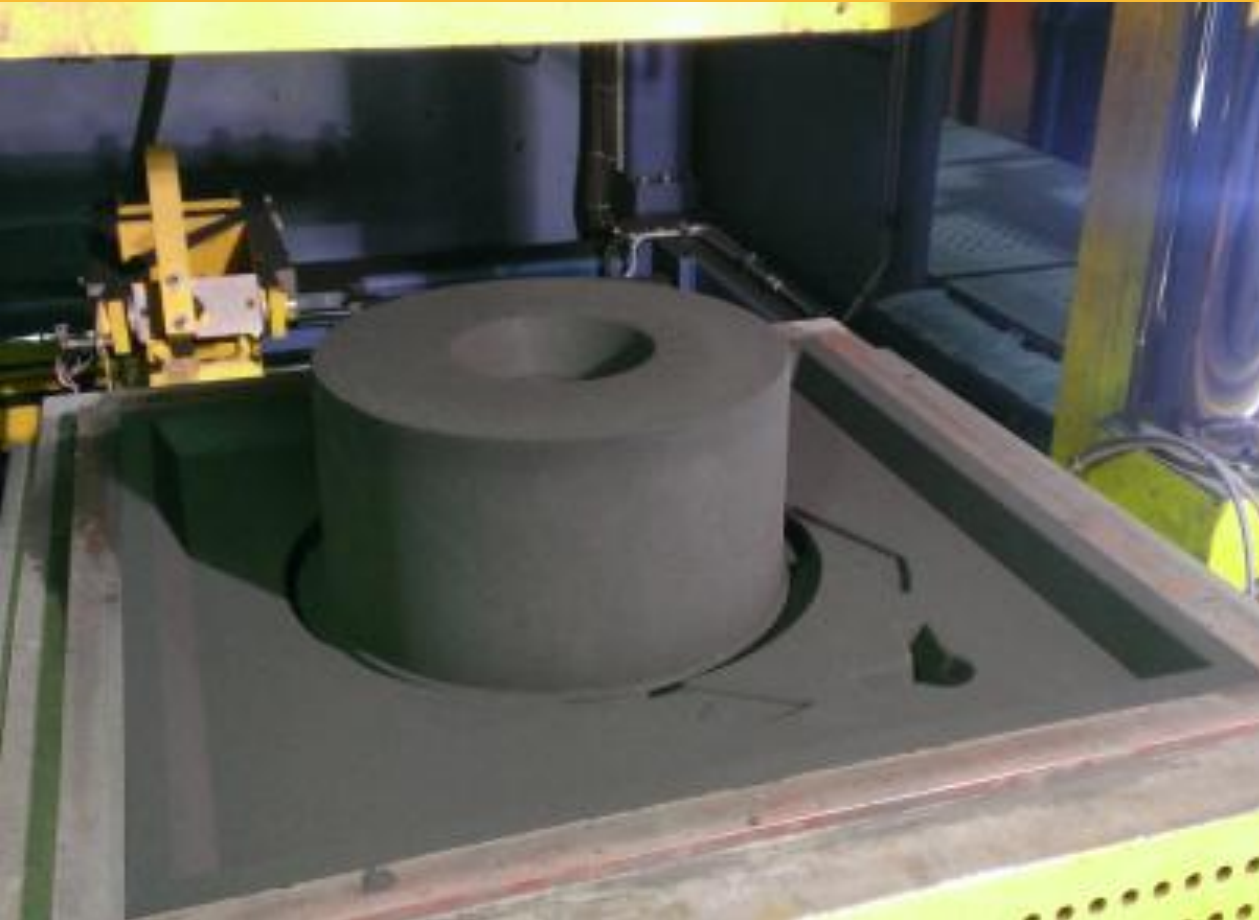


Cope mould impression



Truck brake drum production

Drag mould impression

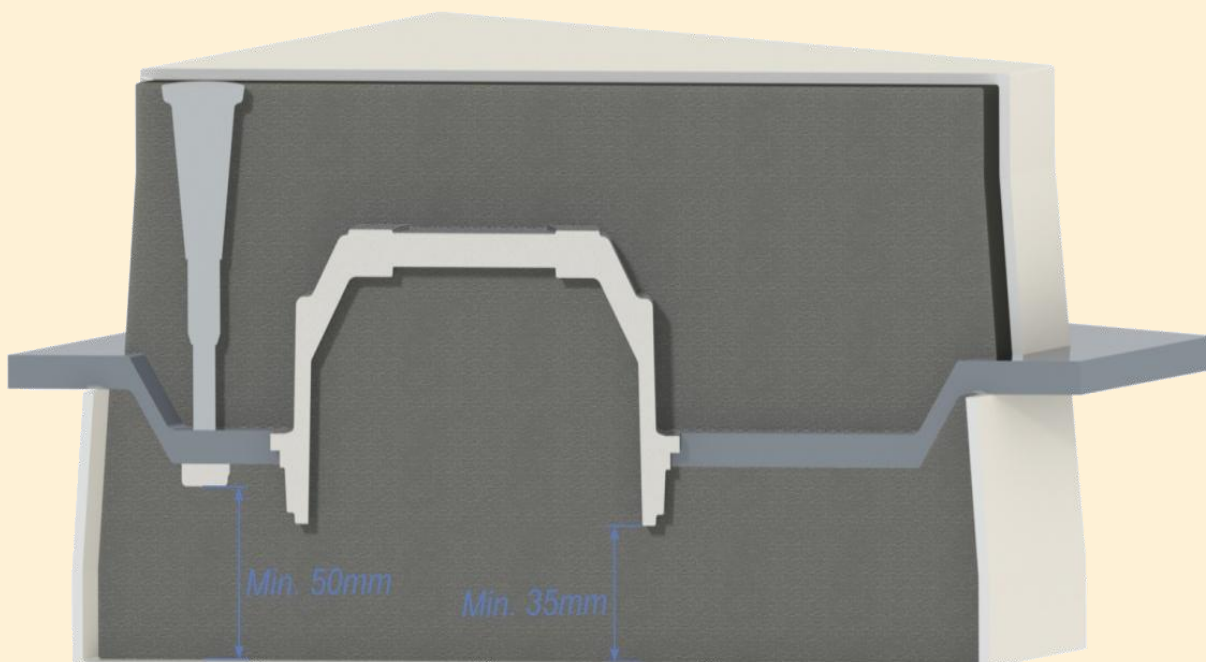


Cope mould impression



Truck brake drum production

Sand thickness recommendations



Result



Exothermic setting



Pin for exothermic riser



Exothermic riser (Sleeve)



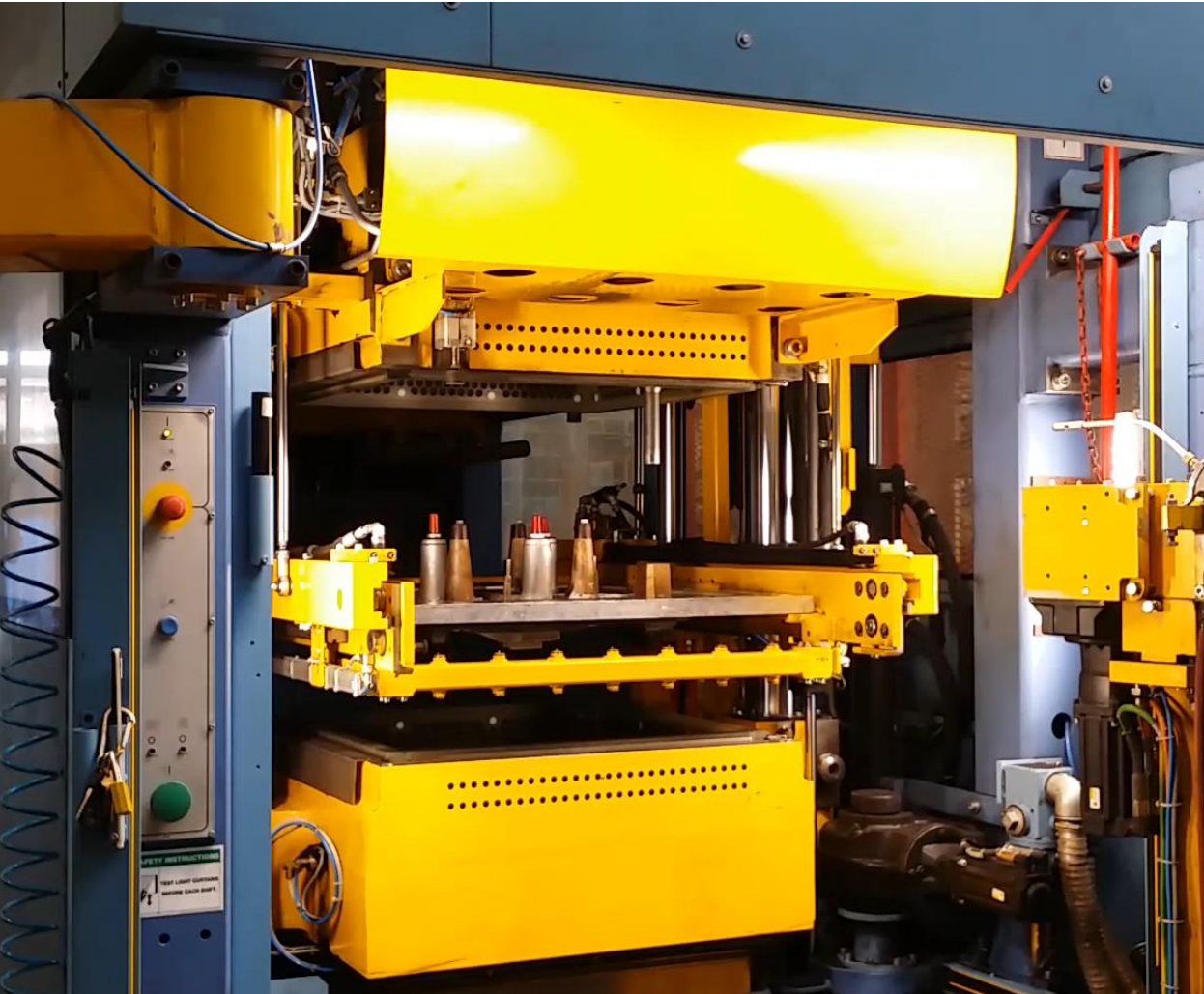
COPE side – without
exothermic riser



COPE side – with exothermic riser



Exothermic riser - Examples



COPE side – with exothermic riser



Setting of exothermic riser on
COPE side



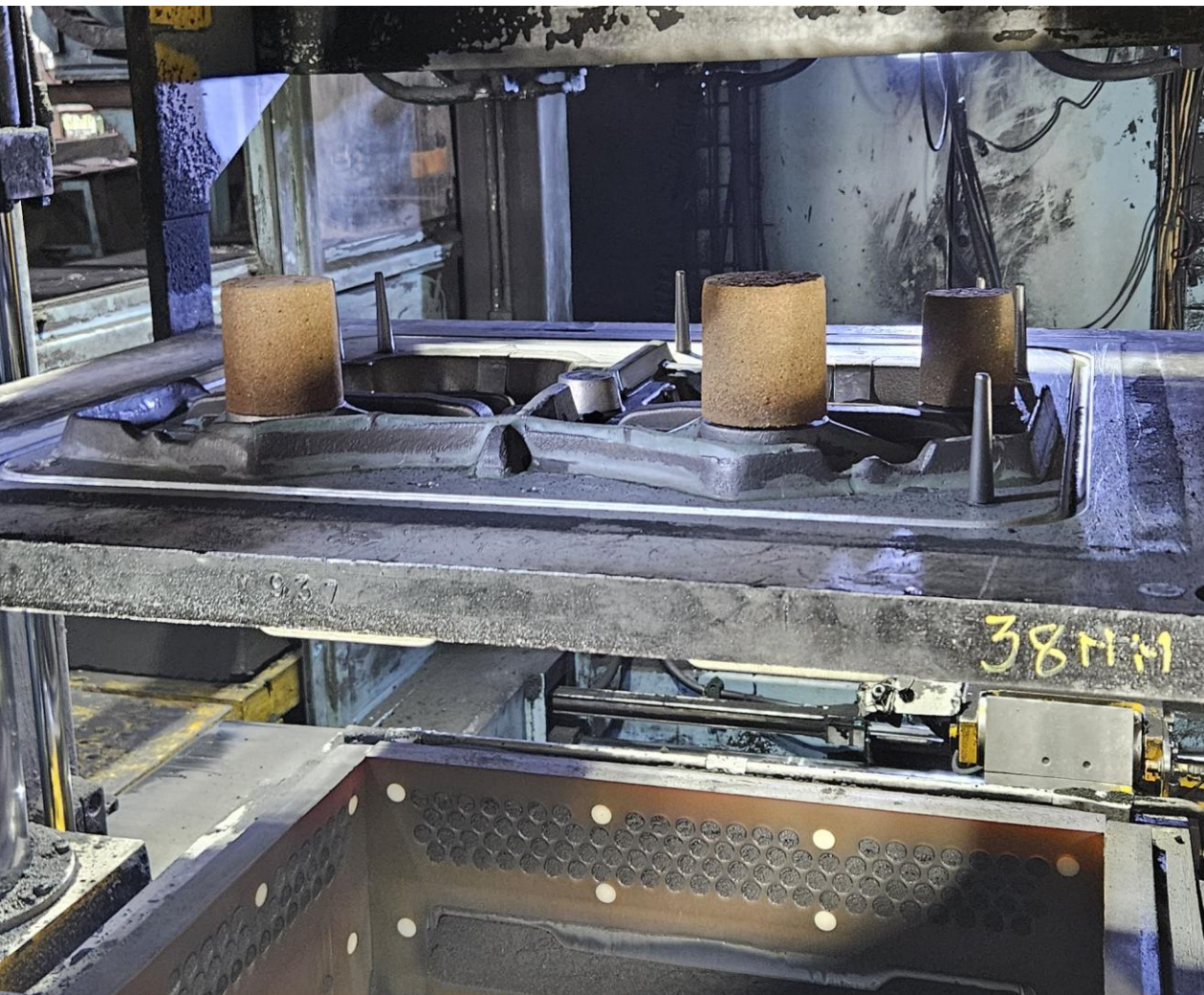
Exothermic riser on COPE side



DRAG side



Exothermic riser - Examples



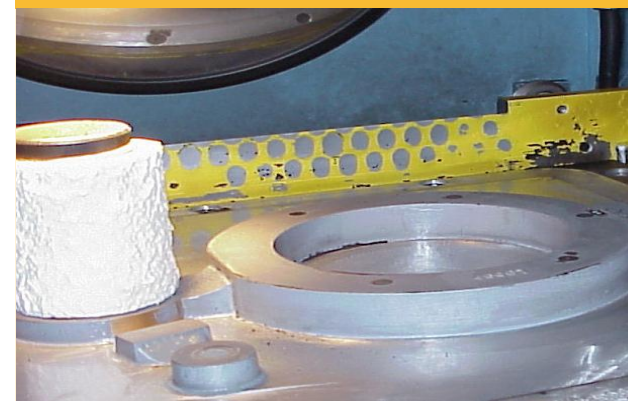
COPE side – with exothermic riser



Setting of exothermic riser on
COPE side



Exothermic riser on COPE side



DRAG side



Spot feeder - Examples



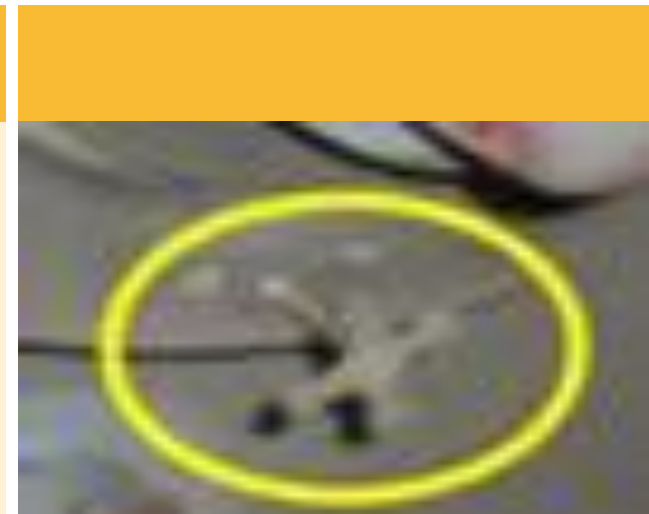
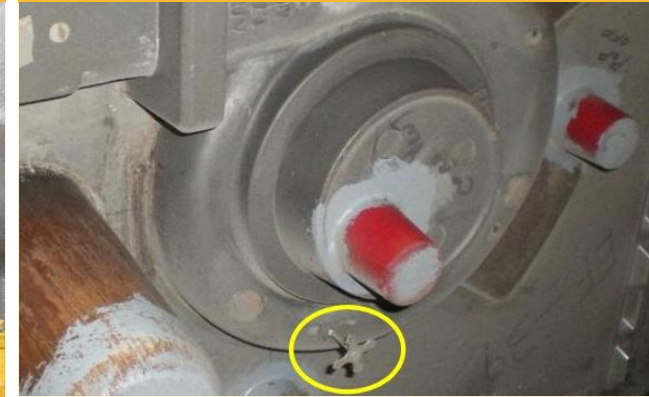
Chaplet setting



COPE side – with chaplet mounted



COPE side – with chaplet mounted



Chill setting

COPE side – with chills mounted

Chills mounted



Chills - Examples



COPE side – without chills mounted



Magnet point for chill



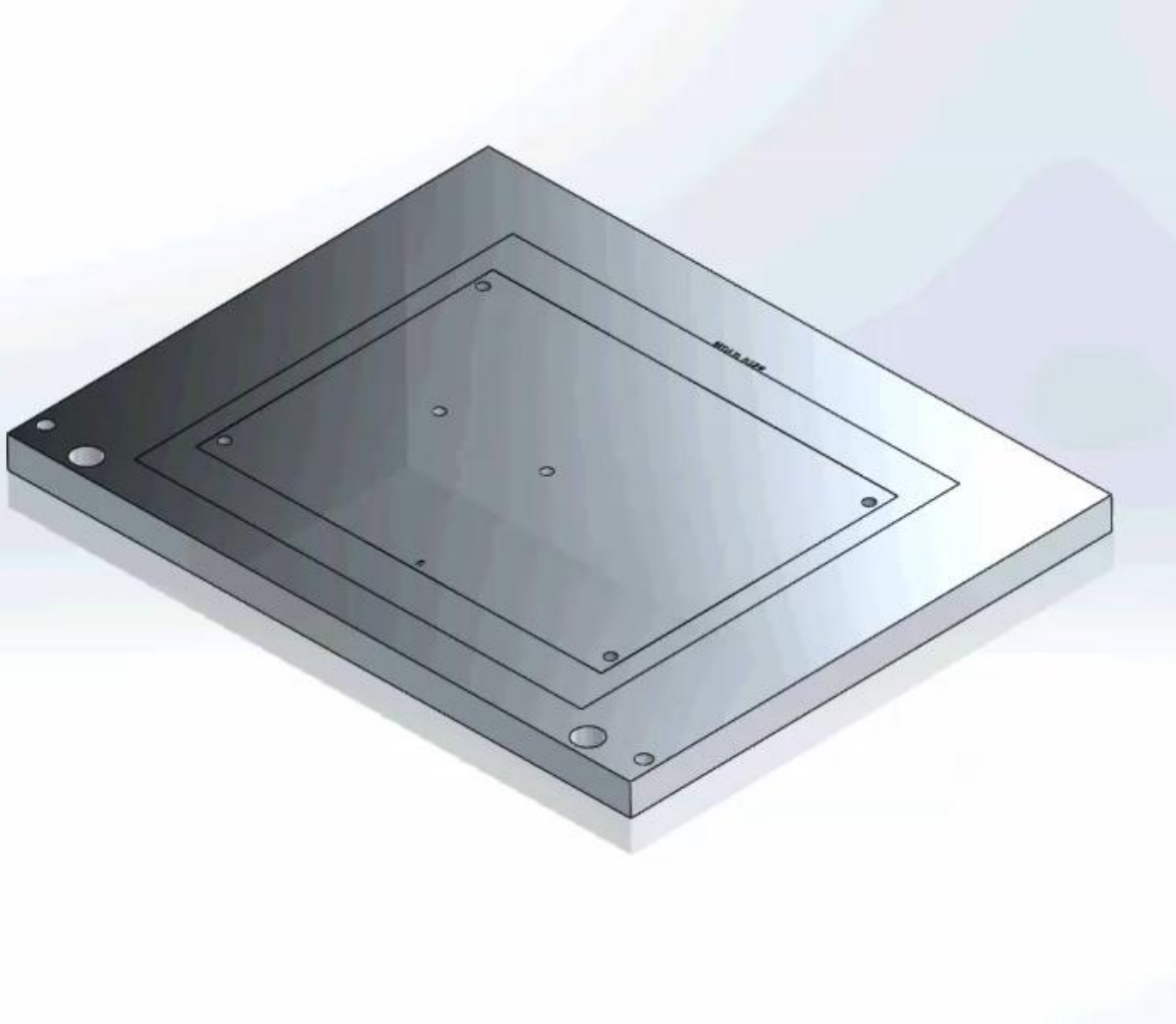
DRAG side



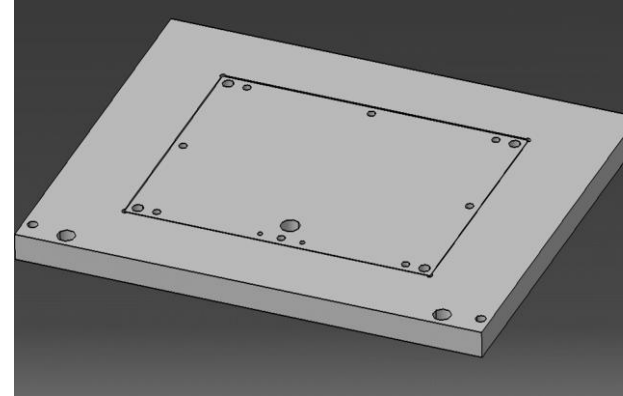
Magnet point for chill



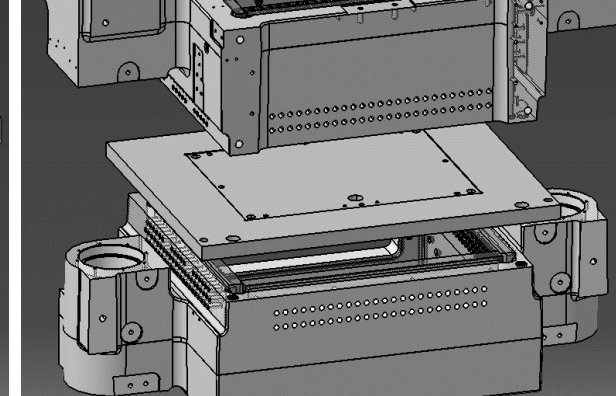
Adapter plate



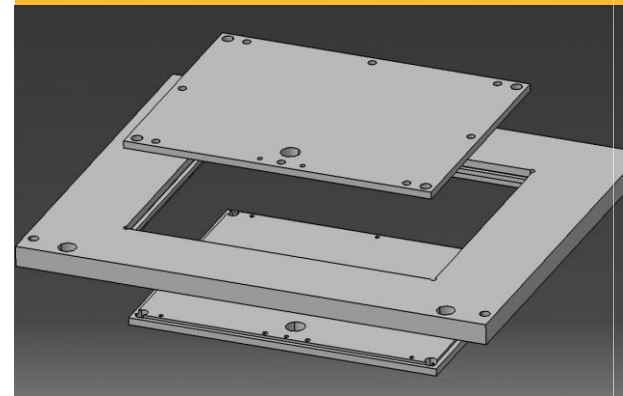
Adapter plate with other pattern plate size



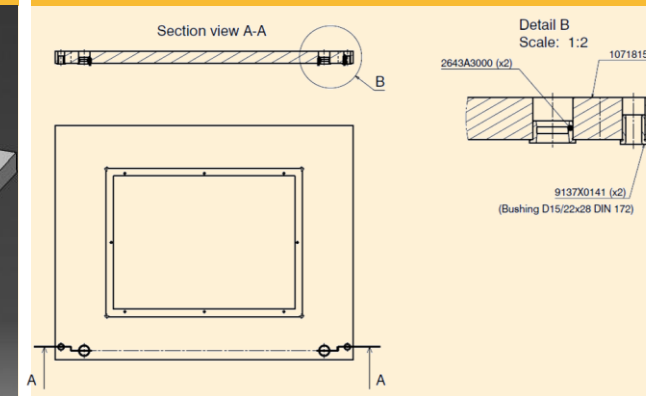
Adapter plate guide pin location in machine



Mounting of pattern plate in adapter plate



Adapter plate



Venting - Examples



Parting line Gas Vent 0.2mm



Extra Down Sprue for gas Vent



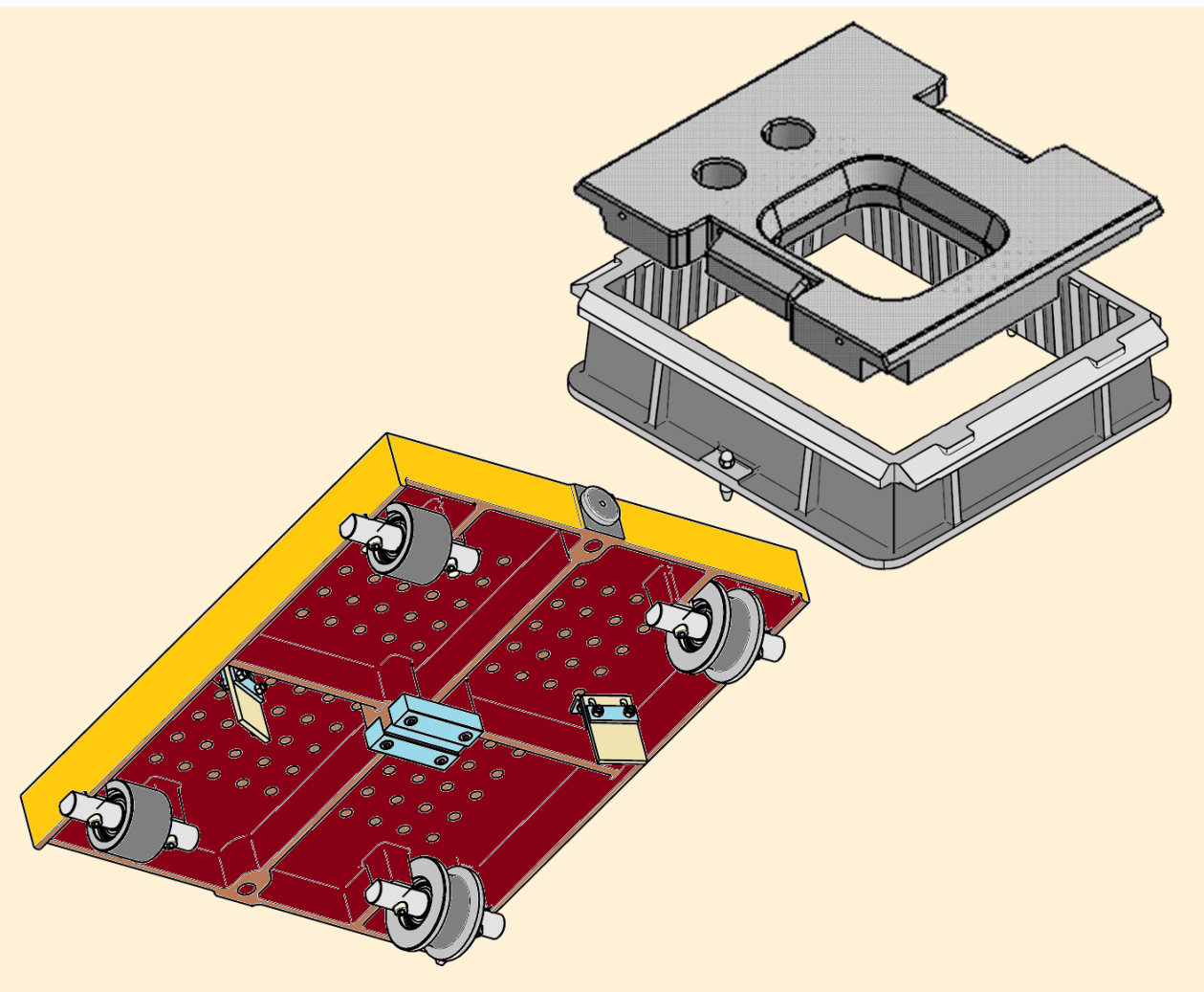
Vent for gas Vent



Direct vent at pattern



Mould weights, jackets and pallet cars dimensions



Dimensions

14/19	Size in mm	Weight in kg	Material
Mould weight	490 x 600 x 90	104	Grey iron casting
Jacket		19	Aluminium
Pallet car	600 x 570	71	
16/20			
Mould weight	540 x 625x 90	123	Grey iron casting
Jacket		21	Aluminium
Pallet car	600 x 570	71	
20/24			
Mould weight	640 x 725 x 90	175	Grey iron casting
Jacket		26	Aluminium
Pallet car	700 x 670	104	
24/28			
Mould weight	840 x 728 x 125	325	Grey iron casting
Jacket		38	Aluminium
Pallet car	710 x 880	138	
28/32			
Mould weight	940 x 830 x 153	480	Grey iron casting
Jacket		52	Aluminium
Pallet car	810 x 960	184	
32/32			
Mould weight	940 x 930 x 145	550	Grey iron casting
Jacket		63	Aluminium
Pallet car	910 x 980	230	

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Thank you

Norican Group
Shaping Industry

DISA the complete foundry supplier – We are with you all the way **DISA**

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Clarification of
requirements via
loading study



Overall project plan,
layout and contract



Installation,
acceptance test and
production start-up



Casting production
and aftermarket
support and services

Pick your Service Package



Services	Premium	Standard	Lite
Supervised Installation (Duration depends on amount of equipment)	X	X	X
Lite Online Training (4 modules – 3 hours each)	X	X	X
Total Optimization Production Service - TOPS (In warranty period)	X	X	X
Onsite Training (5 days – 35 hours in total)	X	X	
Remote Smart Service - RSS (10 hours)	X	X	
Remote Smart Application - RSA (10 hours)	X	X	
Onsite Training Advanced (5 days – 40 hours in total)	X		
Application Onsite (3 weeks – 120 hours)	X		

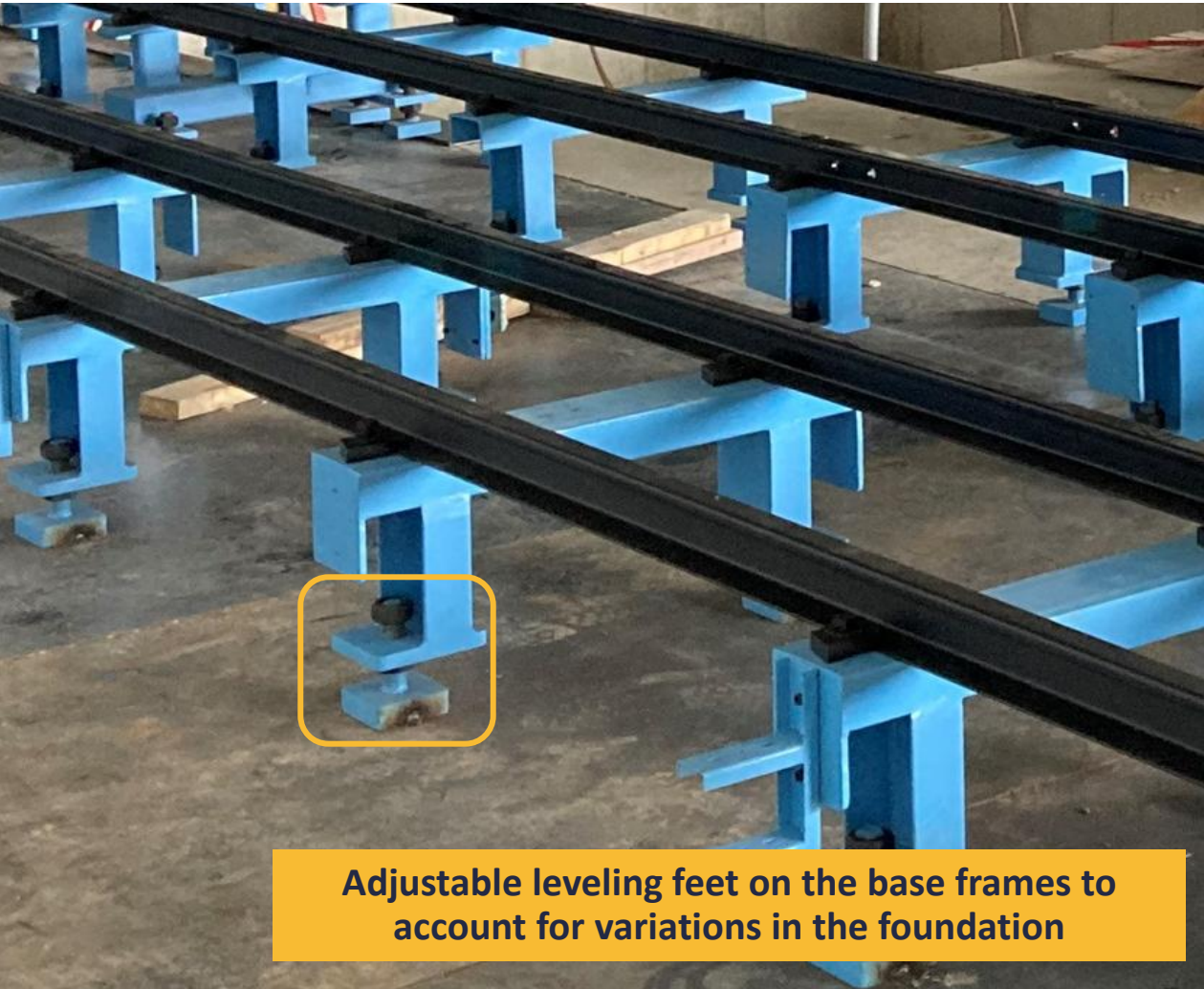
Product overview - Vertical

	Machine types	Typical production (tons/year)	Typical casting size (kg)	Mould size (mm)	Uncored speed (moulds/hour)	Cored speed (moulds/hour)
Vertical	DISAMATIC C3-150 A, B			480 X 600 / 535 X 650	150	120
	DISAMATIC C3-250 A, B, X			480 X 600 / 535 X 650 / 535 X 750	250	220
	DISAMATIC C3-350 A, B, X			480 X 600 / 535 X 650 / 535 X 750	350	300
	DISAMATIC D1-205 A			400 X 500	205	185
	DISAMATIC D1-315 A			400 X 500	315	285
	DISAMATIC D3-365 A, B, C, X, Z			480 X 600 / 535 X 650 / 550 X 675 / 535 X 750 / 570 X 750	365	333
	DISAMATIC D3-425 A, B, C, X, Z			480 X 600 / 535 X 650 / 550 X 675 / 535 X 750 / 570 X 750	425	380
	DISAMATIC D3-555 A, B, C, X, Z			480 X 600 / 535 X 650 / 550 X 675 / 535 X 750 / 570 X 750	555	465 / 485
	DISAMATIC D5-355 B, C, Z			600 X 775 / 600 x 800 / 650 X 850	355	330
	DISAMATIC D5-415 B, C, Z			600 X 775 / 600 x 800 / 650 X 850	415	385
	DISAMATIC D5-450 B, C, Z			600 X 775 / 600 x 800 / 650 X 850	450	415

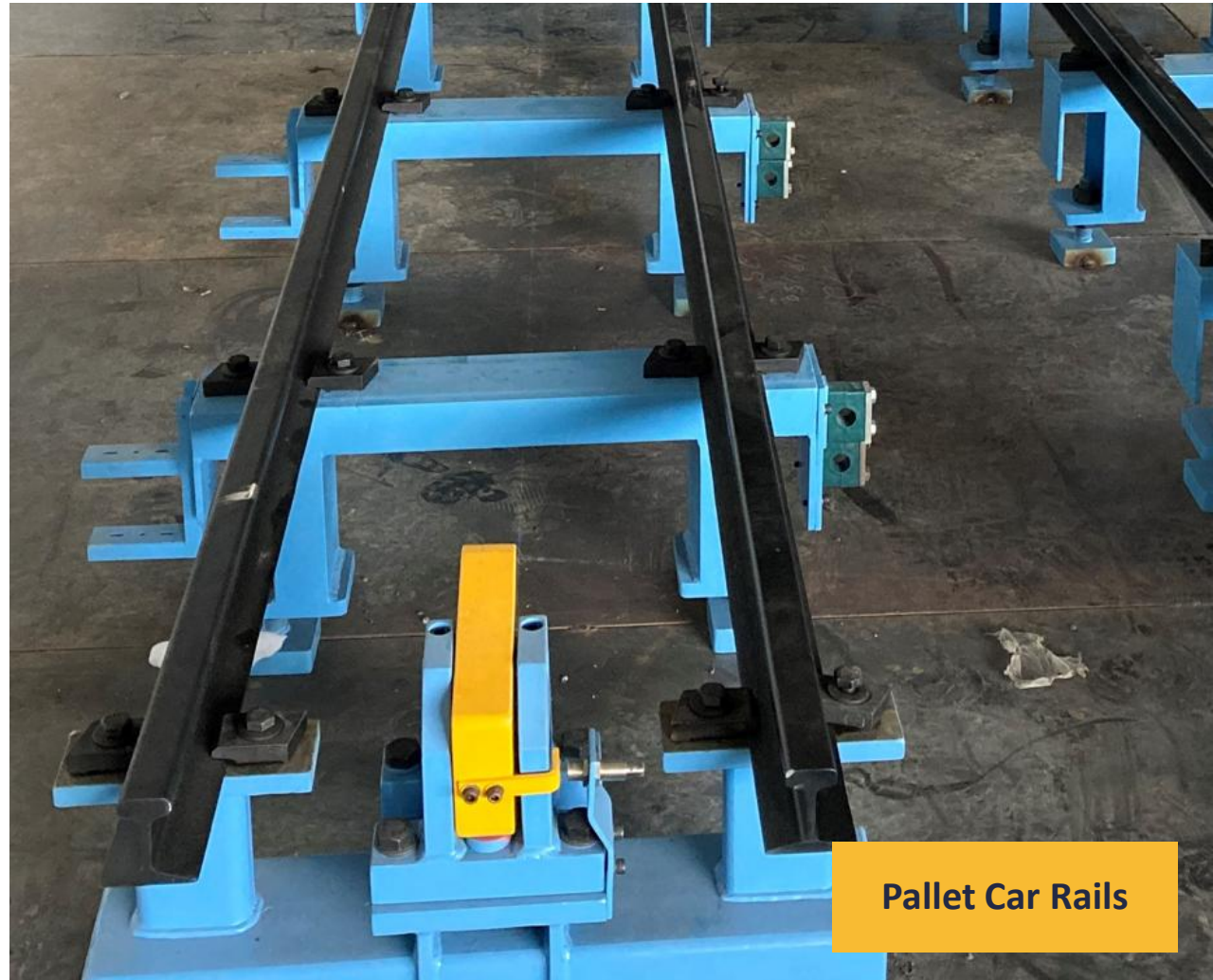
Product overview - Horizontal

	Machine types	Typical production (tons/year)	Typical casting size (kg)	Mould size (mm)	Uncored speed (moulds/hour)	Cored speed (moulds/hour)
Flaskless	MATCH 14/19			356 x 483	150/210	120/160
	MATCH 16/20			406 x 508	150/210	120/160
	MATCH 20/24			508 x 610	150/210	120/160
	MATCH 24/28			610 x 711	120/155	100/120
	MATCH 28/32			711 x 813	100	75
	MATCH 32/32			813 x 813	100	75
Flask	DISA FLEX 70 HS			200/250/300/325/350 x 700	120	-
	DISA FLEX 80			200/250/300/325/350 x 800	110	-
	DISA FLEX90			250/300/350/400/450 x 1000	100	-

Pallet car base frames and rails



Adjustable leveling feet on the base frames to account for variations in the foundation



Pallet Car Rails

Weight and jacket transfer

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Pallet car transfer stations, hydraulic push and brake units

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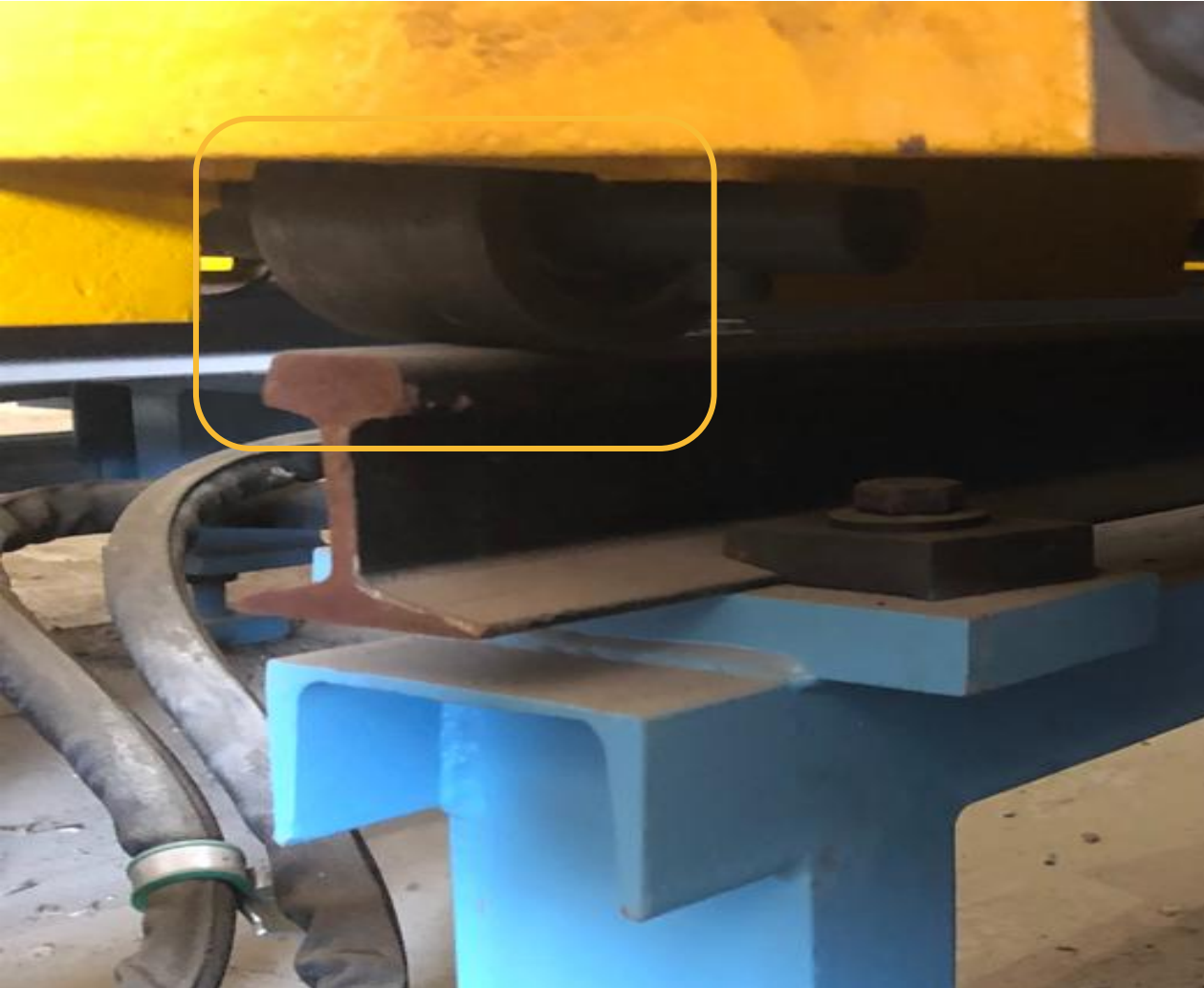


Pallet cleaning station

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Pallet car load and guide wheels



Weight and jacket change station

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Sand spillage guards

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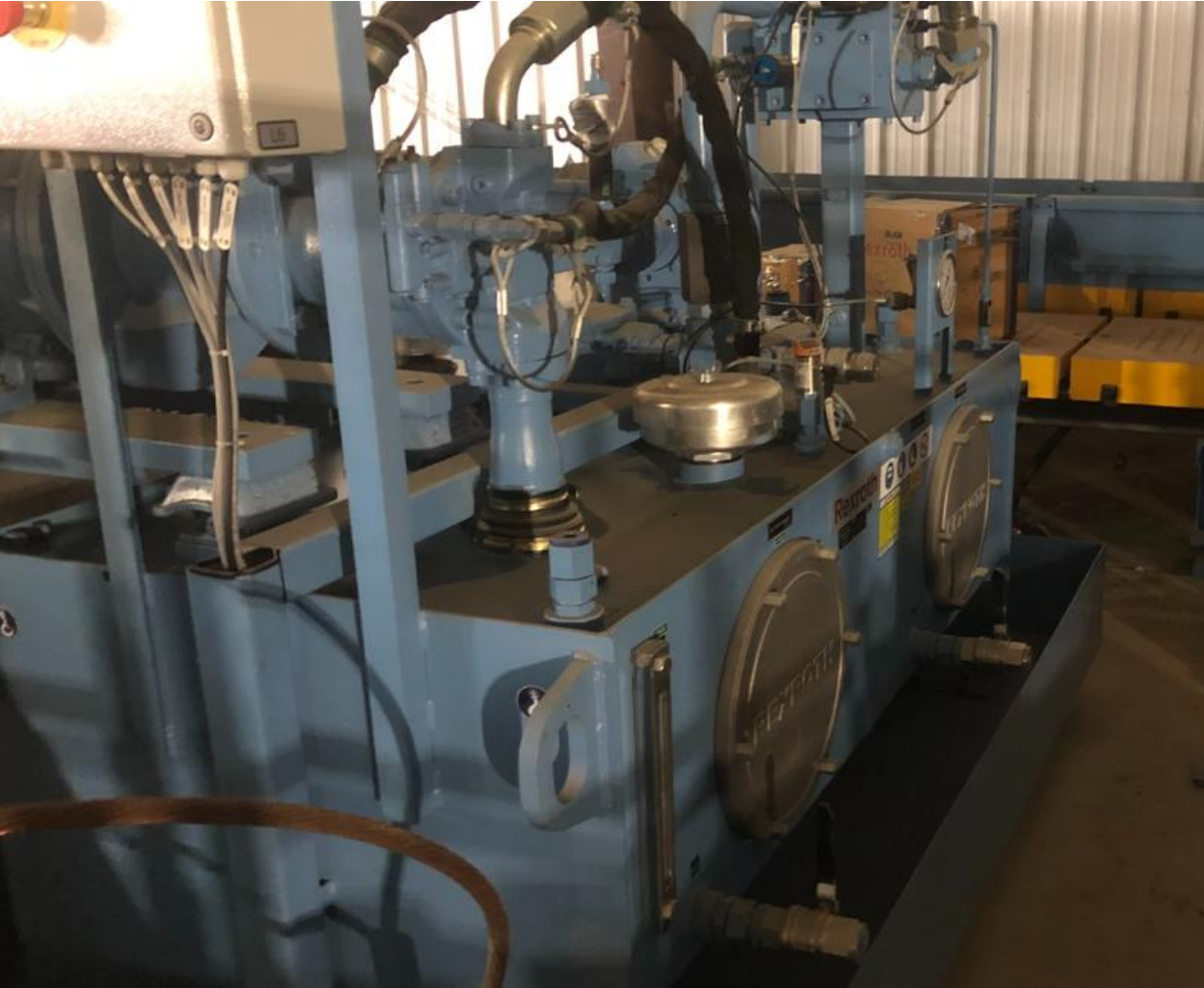
Mould push-out



Rexroth hydraulic pump station (Customer supplied containment p

DI SA

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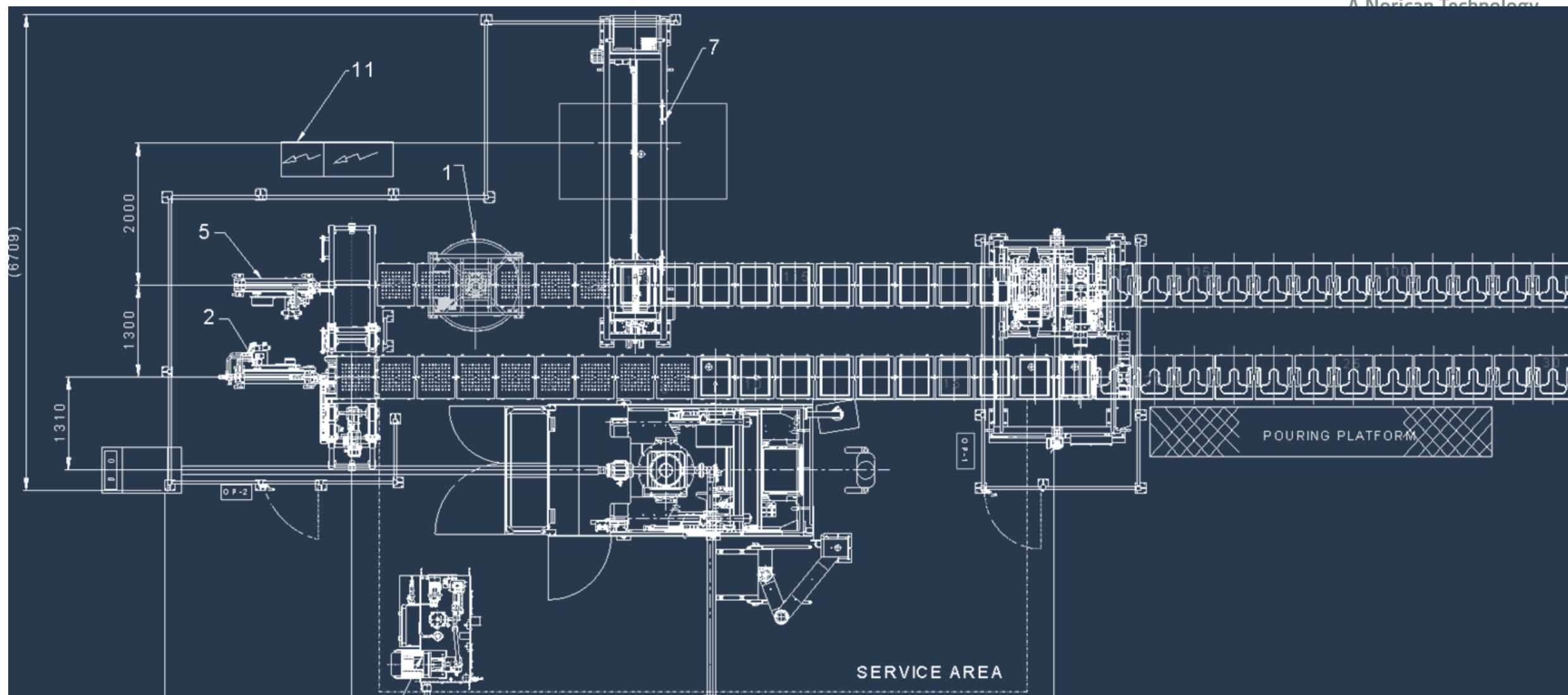


Mould push-off

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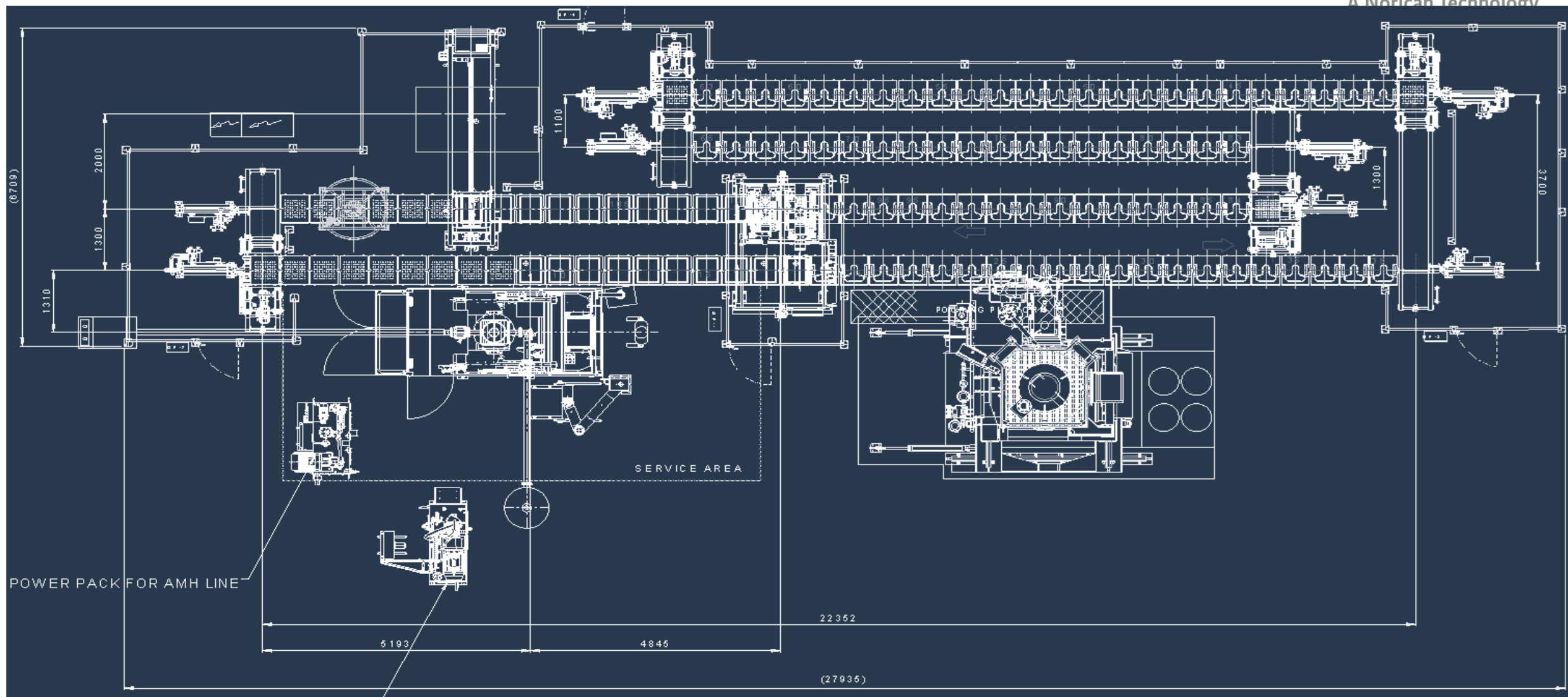
Right-Hand DISA Match / Standard 30 Minutes Cooling AMH



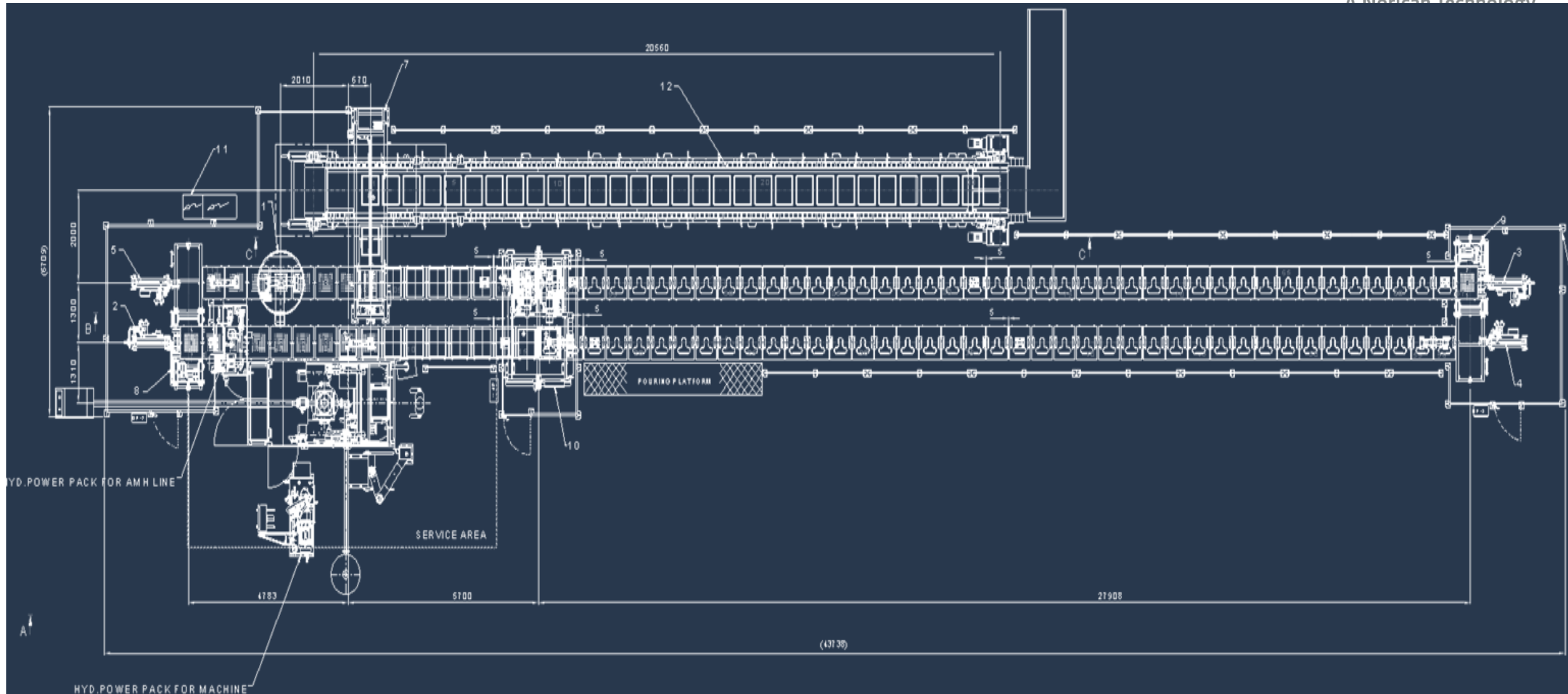
Right-Hand DISA Match / Custom 30 Minute AMH With Pressure Po

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Right-Hand DISA Match / Standard 40 Minutes Cooling AMH



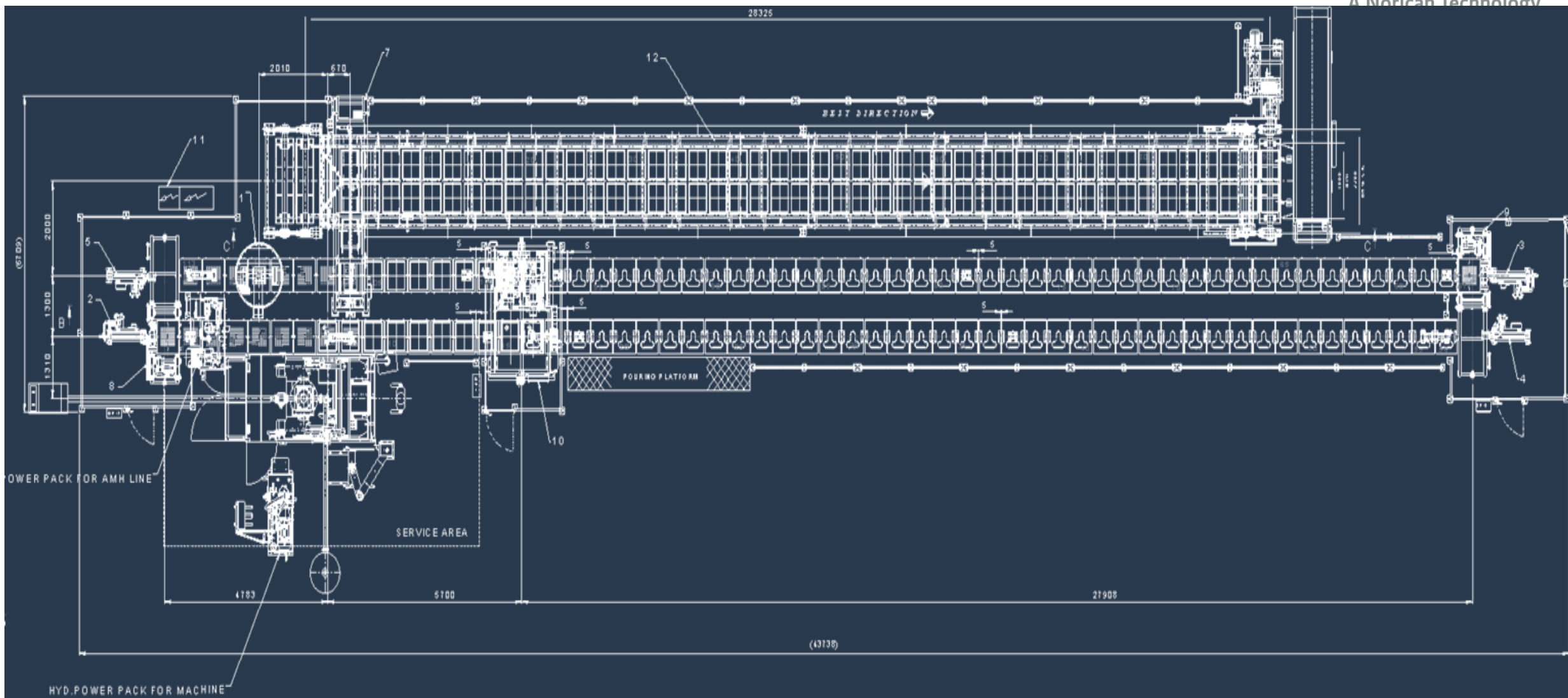
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Right-Hand DISA Match / Standard 60 Minutes Cooling AMH

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