DISA MATCH

Excellence in matchplate moulding

DISA
shaping industry

Exhaust manifold from Chongqing Minfa, China

DISA MATCH moulding technology

Originally introduced in 2001, DISA MATCH moulding technology revolutionised the options available to foundries looking for efficient, production of high quality castings in shorter runs with frequent pattern changes.

Ever since then, DISA has consistently sought to develop and manufacture foundry equipment that is second-to-none. Today, DISA is regarded as one of the premium suppliers in the global market for matchplate moulding machines, and offers mould sizes 20/24", 24/28", 28/32" and 32/32", all packed into a simplified and service friendly design with easy access to the moulding area.

Optimise reliability

- Rock-steady operation and consistency mean dependable production and delivery of high quality castings.

Maximise earnings

- Achieve the lowest costs per casting and short payback times with high speed and yield, ultra-short pattern change times, low maintenance requirements and the reuse of existing pattern plates.

World-class service and support

- DISA Global Services offers service and maintenance, operator training and foundry technology service agreements to help optimise your productivity and performance.

The obvious reasons for choosing a DISA MATCH

DISA combines the best practice in mechanical engineering with foundry processing to make moulding machines to improve your competitive edge.

Depending on your foundry expertise and expectations for business development there may be different reasons for choosing DISA MATCH instead of your current moulding solution.

Let us look at specific reasons for changing, replacing or upgrading your moulding equipment:

You are a foundry owner

- Reliability - Over 120 DISA MATCH installations worldwide
- Security - Preferred and trusted foundry partner of over 50 years -means your investment is secure

You are a maintenance manager

- Unparallelled service organisation with hotline offering expert support 24/7
- Preventive maintenance programme with recommended spare parts will help forecast your maintenance costs

You are a foundry operator

- Logic and ergonomic VDU (Visual Display Unit) interface for easy operation and trouble shooting
- Fast and precise pattern plate change by use of optional QMC (Quick Matchplate Changer)

Unbeatable mould quality

Core in drag mould

Cope mould

Drag mould

Features that make the difference

DISA MATCH moulding machines feature the very latest technology in high-speed production of high quality green sand moulds.

Ultra-hard moulds

Smooth operation and rigid design enable consistent production of ultra-hard moulds facilitating faster pouring.

Deep pocket moulds

Based on more than 50 years of experience, the DISA MATCH sand blow system ensures effective sand filling of deep pockets. Greater mould integrity, fully adjustable stripping height and acceleration protects mould integrity and optimises the cycle time.

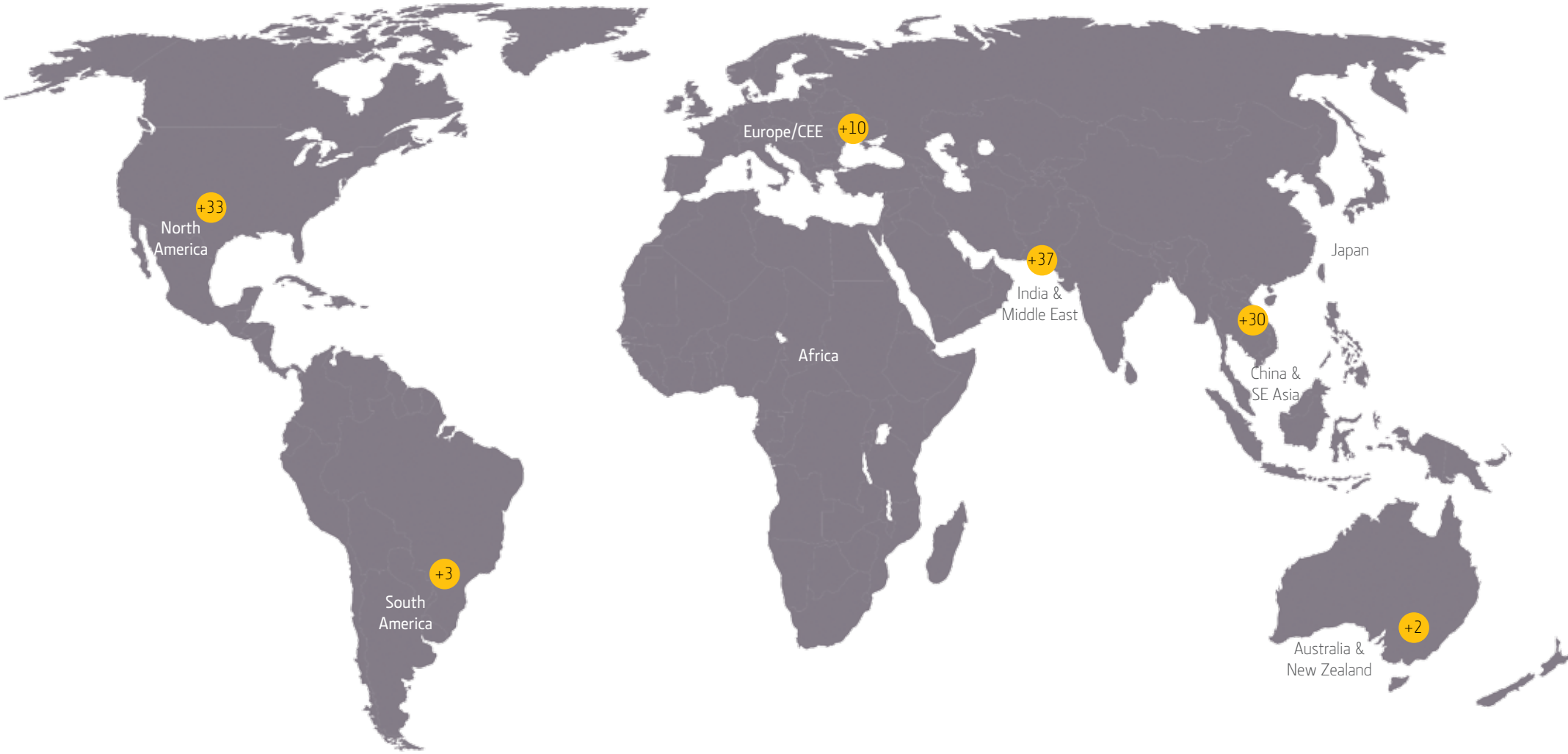
Constant sand-metal ratio

The fully adaptable mould height system ensures a constant sand-metal ratio.

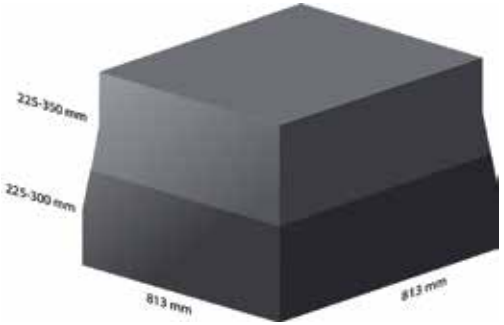
Cleaner and smarter

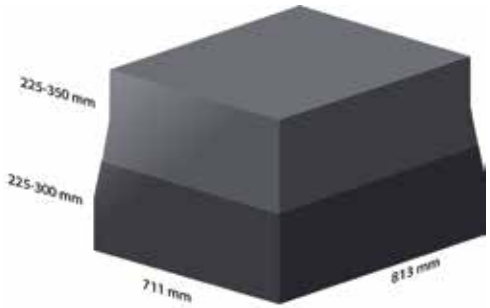
The DISA in-chamber pattern parting spray system prevents sand from sticking to the pattern plate. Unlike other systems, the DISA MATCH minimises sand spill.

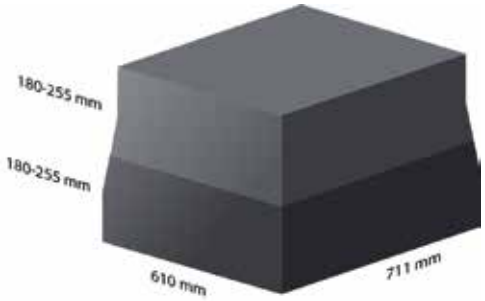
DISA MATCH installed base

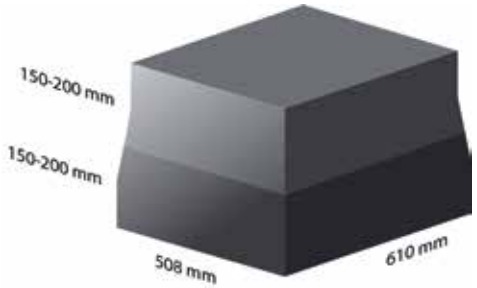


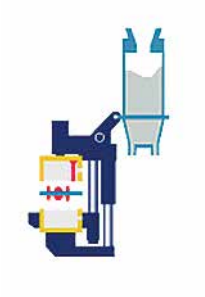
DISA MATCH mould sizes and moulding principles



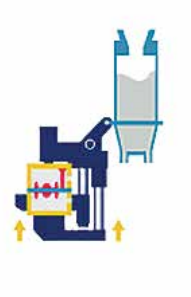








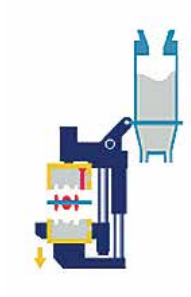
Starting position



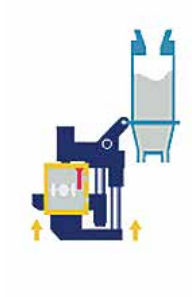
Flask close-up

Roll down

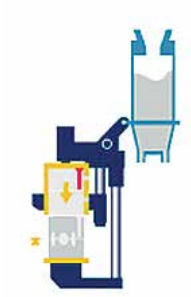
Blow / squeeze



Matchplate release



Mould close



Mould push out

DISA MATCH 20/24 – Optimum precision, speed and quality

DISA MATCH 20/24

Our new entry level moulding machine, the DISA MATCH 20/24, is designed for foundries wanting to increase their competitive edge with reliable and efficient, high-quality casting production with the lowest possible capital investment.

Advantages which are hard to match:

- With machine-related mismatch of max. 0.20 mm for minimal finishing costs
- Optimum output of precision castings using automatic core setter (CSE)
- PLC control system and VDU for easy operation and troubleshooting
- Replaceable wear plates
- In-chamber spray from the chamber sides
- Simplified and service-friendly design for easy access
- Lowest possible maintenance requirements
- Light curtain for easy and safe operation

"We have several thousand patterns of which all are active, and we have 1,000-1,500 very active patterns, meaning that we make them at least once every couple of months. None of our work is long-run work, and thus part of the DISA package that was so attractive to us was the job change time.

It is much, much quicker on this machine than on any other match plate machine I have been around"

Mike Slaydon, Operations Manager at Rochester Metal Products.

DISA MATCH 20/24 - Technical specifications

Matchplate system Type and chamber size Measurements	Metric	US	DISA MATCH 20/24 Metric	DISA MATCH 20/24 US
Machine capacity:				
Uncored	moulds per hour	moulds per hour	180	180
Automatically cored	moulds per hour	moulds per hour	145	145
Machine dimensions:				
Length, DMM	mm	inches	3965	156
Length, DMM + CSE	mm	inches	4400	173
Width	mm	inches	1850	73
Height, top of sand inlet	mm	inches	3910	154
Height, top of machine frame	mm	inches	2455	97
Height, mould bottom push out	mm	inches	560	22
Mould dimensions:				
Length	mm	inches	610	24
Width	mm	inches	508	20
Height, min.-max. of drag	mm	inches	150 - 200	5.9 - 7.9
Height, min.-max. of cope	mm	inches	150 - 200	5.9 - 7.9
Mismatch, max.	mm	inches	0.20	0 .01

On DISA MATCH, DISA Industries A/S holds patents and patents pending.

Matchplate system Type and chamber size Measurements	Metric	US	DISA MATCH 20/24 Metric	DISA MATCH 20/24 US
Pressure:				
Squeeze pressure	kp/cm²	psi	3 - 10.0	43 - 142
Shot pressure	kp/cm²	psi	0 - 4.5	0 - 65
Moulding sand requirements:				
By min. mould height	t/hour	t/hour	25	27
By max. mould height	t/hour	t/hour	33	36
Pneumatic requirements:				
Air pressure min.	bar	psi	5	71
Hydraulic fluid:	litres	gallons	400	150
Net weight:	tonnes	tonnes	11	11
Electrical requirements:				
Average power consumption	KW	KW	30	30
Connected load	KVA	KVA	38	38

DISA MATCH 24/28 – Unbeatable mould quality

DISA MATCH 24/28

Optimum efficiency

The DISA MATCH 24/28 has achieved a strong foothold in multiple competitive industries from years of reliable operation. Its high flexibility targets a wide umbrella of application areas such as brake discs and train parts.

- High speed of 120 uncored m/h due to unique DISA blow/squeeze mechanism (cored speed of up to 100 m/h)

Excellent castings

- With machine-related mismatch of max 0.20 mm / 0.01" for minimal finishing costs

Unbeatable uptime

- Light curtain for easy and safe operation
- Extremely robust and simple design with state-of-the art PLC system

" Having bought our first DISA MATCH line back in 2011 and experienced only excellent performance, we were never in doubt about placing the latest order for the DISA MATCH 24/28.

Unwavering commitment, sense of customer satisfaction and consistent after-market support are some of the key values of DISA."

Mr. Vinay Naik, Chairman Atharva Foundries Pvt. Ltd.

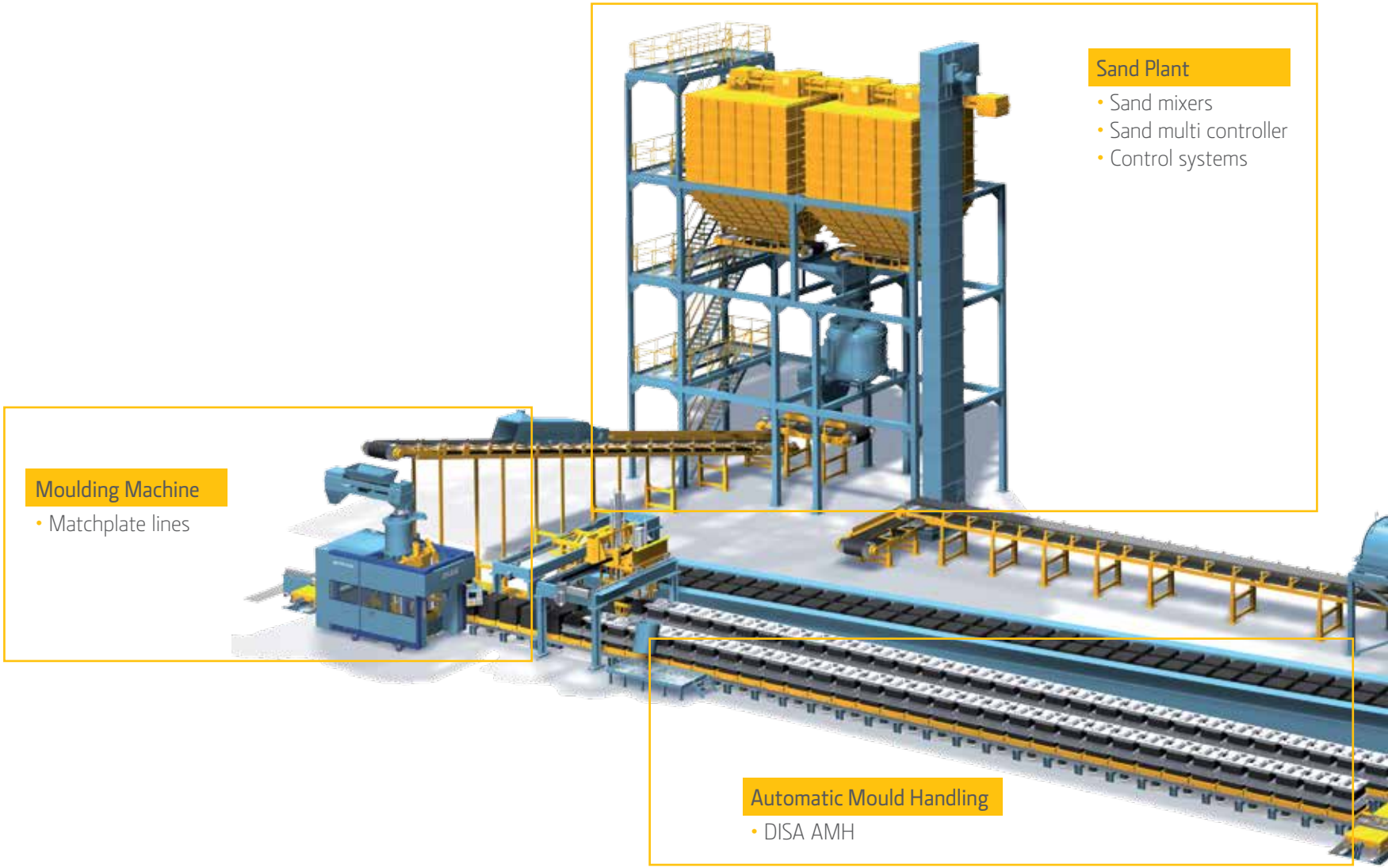
DISA MATCH 24/28 - Technical specifications

Matchplate system Type and chamber size Measurements	Metric	US	DISA MATCH 24/28 Metric	DISA MATCH 24/28 US
Machine capacity:				
Uncored	moulds per hour	moulds per hour	120	120
Automatically cored	moulds per hour	moulds per hour	100	100
Machine dimensions:				
Length, DMM	mm	inches	4610	181
Length, DMM + CSE	mm	inches	5609	221
Width	mm	inches	2180	86
Height, top of sand inlet	mm	inches	4283	169
Height, top of machine frame	mm	inches	2650	104
Height, mould bottom push out	mm	inches	655	26
Mould dimensions:				
Length	mm	inches	711	28
Width	mm	inches	610	24
Height, min.-max. of drag	mm	inches	180 - 255	7 - 10
Height, min.-max. of cope	mm	inches	180 - 255	7 - 10
Mismatch, max.	mm	inches	0.20	0.01

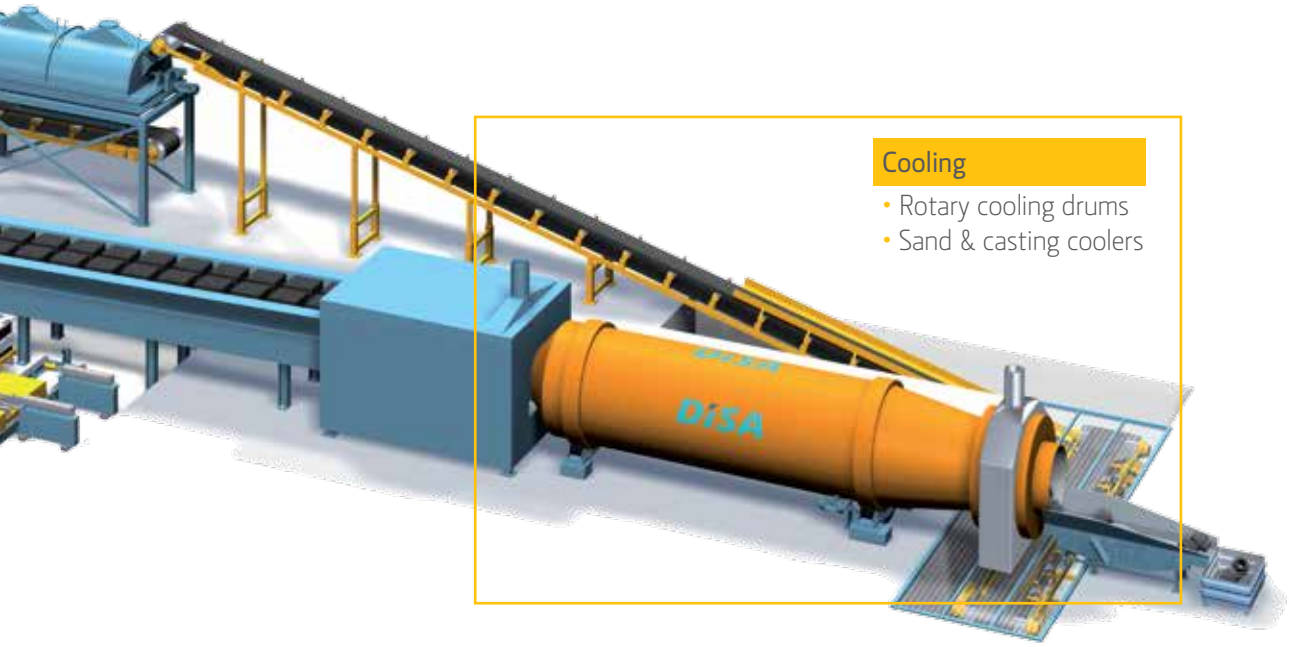
On DISA MATCH, DISA Industries A/S holds patents and patents pending.

Matchplate system Type and chamber size Measurements	Metric	US	DISA MATCH 24/28 Metric	DISA MATCH 24/28 US
Pressure:				
Squeeze pressure	kp/cm²	psi	3.0 - 10	42.6 - 142
Shot pressure	kp/cm²	psi	0 - 4.5	0 - 64
Moulding sand requirements:				
By min. mould height	t/hour	t/hour	28	31
By max. mould height	t/hour	t/hour	40	44
Pneumatic requirements:				
Air pressure min.	bar	psi	5	71
Hydraulic fluid:	litres	gallons	800	211
Net weight:	tonnes	tonnes	15	17
Electrical requirements:				
Average power consumption	KW	KW	75	75
Connected load	KVA	KVA	95	95

The complete DISA MATCH foundry



View an animation of the
DISA MATCH complete foundry here



DISA MATCH 28/32 – High performance for the modern foundry

DISA MATCH 28/32

DISA MATCH moulding machines offer a long line of advantages designed to maximise performance and yield.

Short installation time

Installation-ready on delivery and thoroughly pre-tested before shipment.

Optimum efficiency

Up to 100 uncored and 75 cored moulds per hour enabled by the unique DISA blow/squeeze mechanism.

Unbeatable uptime

Extremely robust and simple design with state-of-the-art PLC system offering an intuitive operator overview and diagnostics.

Flexibility

Fast and simple change of matchplates and downsprue position.

Minimal finishing costs

Less than 0.01"/0.25 mm machine-related mismatch enabled by a simplified and more rigid design.

Only two main tie rods are used, removing the need for pins and bushes between the cope and drag.

Easy maintenance

- Standardised parts
- Wide door for easy access
- Maintenance-friendly large internal area
- Screw on replaceable chamber wear plates for quick change

Cleaner and quieter working environment, in-chamber spray, low noise level and maximum health and safety considerations.

"Instead of just 16 moulds per hour using the old jolt-squeeze machines, we are now turning out 28/32 moulds at a rate of 75 an hour. The fully automated moulding machine and mould handling line are fully synchronized and our manpower requirement has dropped from 26 to just 6 people.

Our ability to produce more complex castings means we can now offer our customers a much wider range of more complex and heavier components, and our machining costs have been cut right down to the bone."

Tadeusz Jurga, Vice-Chairman
Drawski Cast Iron Foundry, Poland

DISA MATCH 28/32 - Technical specifications

Matchplate system Type and chamber size Measurements	Metric	US	DISA MATCH 28/32 Metric	DISA MATCH 28/32 US
Machine capacity:				
Uncored	moulds per hour	moulds per hour	100	100
Automatically cored	moulds per hour	moulds per hour	75	75
Machine dimensions:				
Length, DMM	mm	inches	5560	219
Length, DMM + CSE	mm	inches	6500	256
Width	mm	inches	2400	95
Height, top of sand inlet	mm	inches	4732	186
Height, top of machine frame	mm	inches	3060	120
Height, mould bottom push out	mm	inches	596	24
Mould dimensions:				
Length	mm	inches	813	32
Width	mm	inches	711	28
Height, min.-max. of drag	mm	inches	225 - 300	8.9 - 11.8
Height, min.-max. of cope	mm	inches	225 - 350	8.9 - 13.8
Mismatch, max.	mm	inches	0.25	0.01

On DISA MATCH, DISA Industries A/S holds patents and patents pending.

Matchplate system Type and chamber size Measurements	Metric	US	DISA MATCH 28/32 Metric	DISA MATCH 28/32 US
Pressure:				
Squeeze pressure	kp/cm²	psi	3 - 10	42.6 - 142
Shot pressure	kp/cm²	psi	0 - 4.5	0 - 64
Moulding sand requirements:				
By min. mould height	t/hour	t/hour	40	43
By max. mould height	t/hour	t/hour	58	62
Pneumatic requirements:				
Air pressure min.	bar	psi	5	71
Hydraulic fluid:	litres	gallons	400	106
Net weight:	tonnes	tonnes	25	28
Electrical requirements:				
Average power consumption	KW	KW	60	60
Connected load	KVA	KVA	75	75

DISA MATCH 32/32 – World-class leader for superior size castings

DISA MATCH 32/32

Representing the flagship of the DISA MATCH range, the DISA MATCH 32/32 offers the optimum size for a variety of applications in the automotive industry.

It is widely recognised as the first choice for many foundry owners aiming to minimise their finishing costs and develop their business.

Built on DISA's commitment and expertise in foundry solutions, the DISA MATCH 32/32 is a leader in its class providing state-of-the-art technology and high reliability.

- Enhanced pattern carrier design (introduced in 2015 for DISA MATCH 28/32 and 32/32)
- Improved QMC guidance system providing more working space for the operator (introduced in 2015).

"At SMI – Saudi Mechanical Industries Co. – we are working closely with a wide base of global clients and major companies in Saudi Arabia, such as Aramco, to provide water pump solutions and various engineered components. Back in 2011 we invested in a complete foundry from DISA, the back bone of the foundry is a DISA MATCH 32/32, and this machine has been running more than satisfactorily ever since – helping SMI to produce water pumps, and thereby supplying water to the world"

Chief Operating Officer, Ahmed Khraishi
Saudi Mechanical Industries Co

DISA MATCH 32/32 - Technical specifications

Matchplate system Type and chamber size Measurements	Metric	US	DISA MATCH 32/32 Metric	DISA MATCH 32/32 US
Machine capacity:				
Uncored	moulds per hour	moulds per hour	100	100
Automatically cored	moulds per hour	moulds per hour	75	75
Machine dimensions:				
Length, DMM	mm	inches	5560	219
Length, DMM + CSE	mm	inches	6500	256
Width	mm	inches	2400	95
Height, top of sand inlet	mm	inches	4781	188
Height, top of machine frame	mm	inches	3060	120
Height, mould bottom push out	mm	inches	596	24
Mould dimensions:				
Length	mm	inches	813	32
Width	mm	inches	813	32
Height, min.-max. of drag	mm	inches	225 - 300	8.9 - 11.8
Height, min.-max. of cope	mm	inches	225 - 350	8.9 - 13.8
Mismatch, max.	mm	inches	0.25	0.01

On DISA MATCH, DISA Industries A/S holds patents and patents pending.

Matchplate system Type and chamber size Measurements	Metric	US	DISA MATCH 32/32 Metric	DISA MATCH 32/32 US
Pressure:				
Squeeze pressure	kp/cm²	psi	3 - 10	42.6 - 142
Shot pressure	kp/cm²	psi	0 - 4.5	0 - 64
Moulding sand requirements:				
By min. mould height	t/hour	t/hour	47	51
By max. mould height	t/hour	t/hour	67	72
Pneumatic requirements:				
Air pressure min.	bar	psi	5	71
Hydraulic fluid:	litres	gallons	400	106
Net weight:	tonnes	tonnes	25	28
Electrical requirements:				
Average power consumption	KW	KW	60	60
Connected load	KVA	KVA	75	75

Performance enhancing options

The DISA MATCH moulding machines include an array of performance enhancing options for superior mould production quality and efficiency.

Automatic Core setter (CSE)

The CSE is available for all DISA MATCH sizes and is particularly valuable for long production series and/or for heavy cores. The DISA CSE for DISA MATCH 27/32 and 32/32 gives the operator 36 seconds to place the core in the core mask.

Quick Matchplate Changer (QMC)

The DISA QMC enables the changing of matchplates within 3 minutes. It is highly recommended for both smaller and larger moulding machines where matchplates can weigh up to 900 pounds/400 kilos

Computer Integrated Manufacturing (CIM)

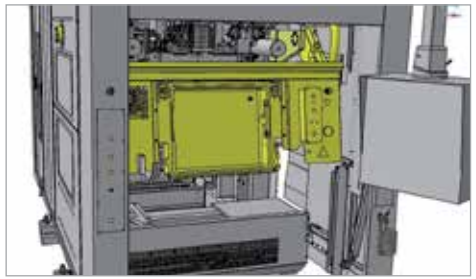
DISA CIM enables direct connectivity between the DISA MATCH and reporting applications on the foundry network. This facilitates real time production monitoring, reporting and pattern related parameter download.

DISA Global Services

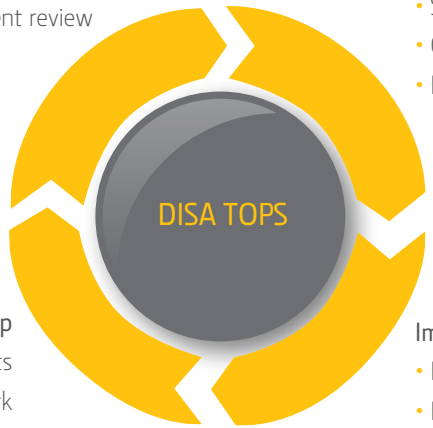
DISA's unparalleled service organisation provides and ensures the following:

- 24 hours hotline
- Availability of spare parts
- DISA TOPS – DISA's exclusive customer inspection, service and maintenance programme
- DISA Foundry Cockpit
- DISA Training
- DISA Remote Monitoring Services
- DISA Foundry Optimisation

QMC - Quick Matchplate Changer



CSE - Automatic Core Setting



Evaluation

- Complete DMS inspection
- Review spare parts inventory
- Process audits (Benchmark)
- Management review

Planning activities

- Define immediate needs
- Set priorities
- Schedule activities
- Order components
- Management review

Implementation

- Maintenance
- Repairs
- Updates
- Major overhaul supervision
- Machine adjustment for optimal performance
- Management review

Follow up

- Evaluate the results
- Check Benchmark
- Define new goals
- Management review

DISA MATCH AMH – Smooth and cool automatic mould handling

Automatic Mould Handling system - (AMH)

Mould integrity during pouring, solidification and cooling is critical in foundry production.

DISA's Automatic Mould Handling system (AMH) is specifically designed for operation together with the DISA MATCH moulding machine. Consisting of a variable length pouring/cooling line including an automatic weight and jacket transfer-cleaning station, the AMH synchronises perfectly with the DISA MATCH to ensure mould integrity all the way to final shakeout.

After the last mould has been transferred to the shakeout or belt conveyor, the pallet cars pass through a pallet cleaning station, before a new mould is placed on the pallet car again.

Tailored to specific needs

The high speed of the DISA MATCH requires a mould handling system that enables effective mould cooling. Many foundries, however, do not have sufficient space for an in-line conveyor of the required length.

The AMH can be configured to ensure mould integrity by effective cooling without having to compromise on moulding speed. This is achieved with up to two parallel sections between the DISA MATCH and the final shakeout. Additional cooling can be achieved by adding a belt conveyor before the shakeout.

Cutting edge control system for maximum speed and precision

The DISA MATCH control system enables optimisation of all functions and movements, facilitating maximum speed and precision.

- Self-diagnostic features
- Colour Visual Display Unit (VDU) for easy operation and instant troubleshooting
- Compatible with DISA CIM

Advanced diagnostics for remote troubleshooting

The AMH also supports the DISA Remote Monitoring System (RMS). This lets a DISA engineer connect directly to both the DISA MATCH and AMH operator panels to obtain information necessary to help the foundry maximise performance and availability.

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Norican Group is the parent company of DISA and Wheelabrator.

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