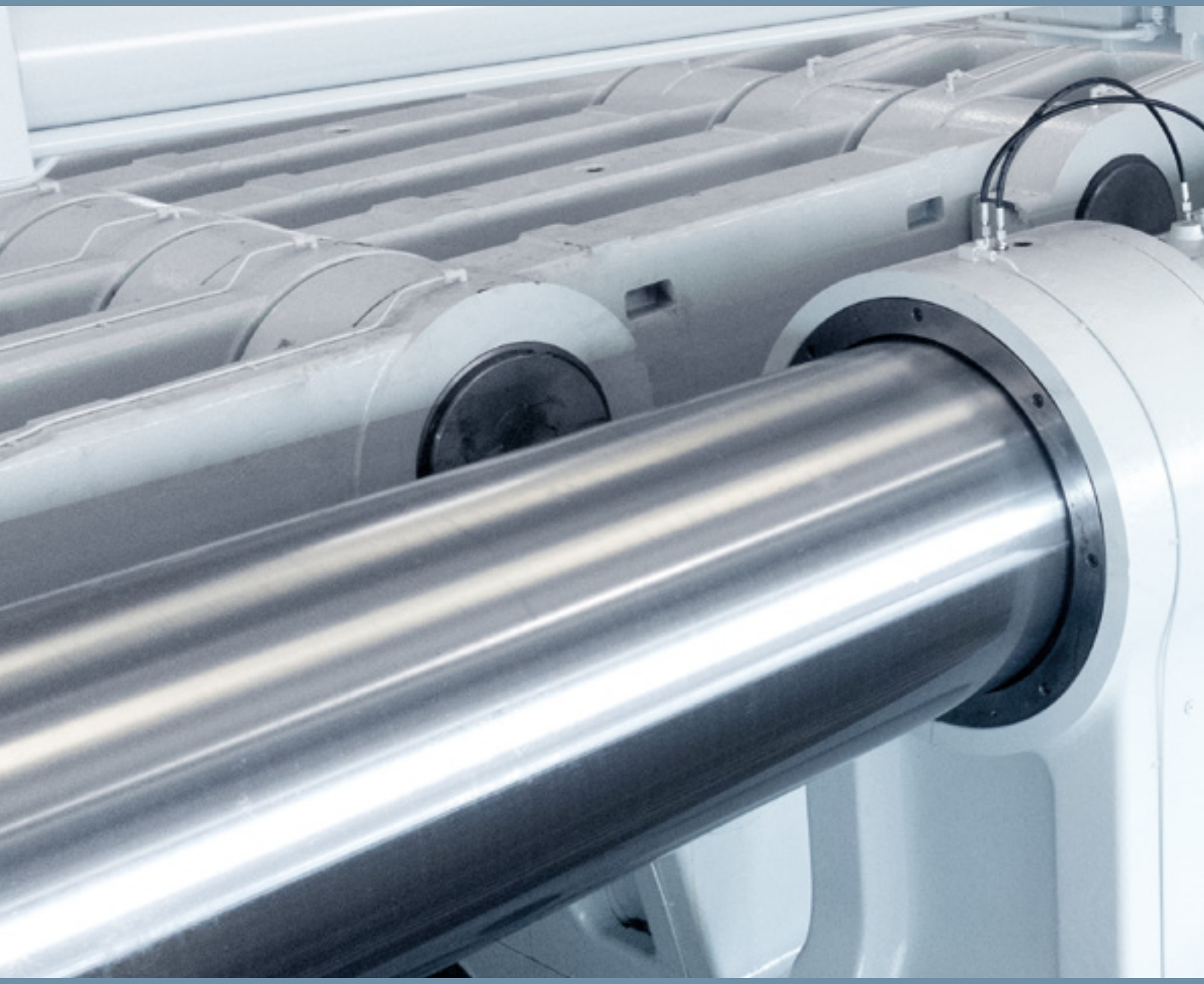
Product Catalogue / Die casting machines

THE GREATEST PRESS EVER MANUFACTURED

GIGA PRESS



THE FUTURE OF DIE CASTING IS HERE

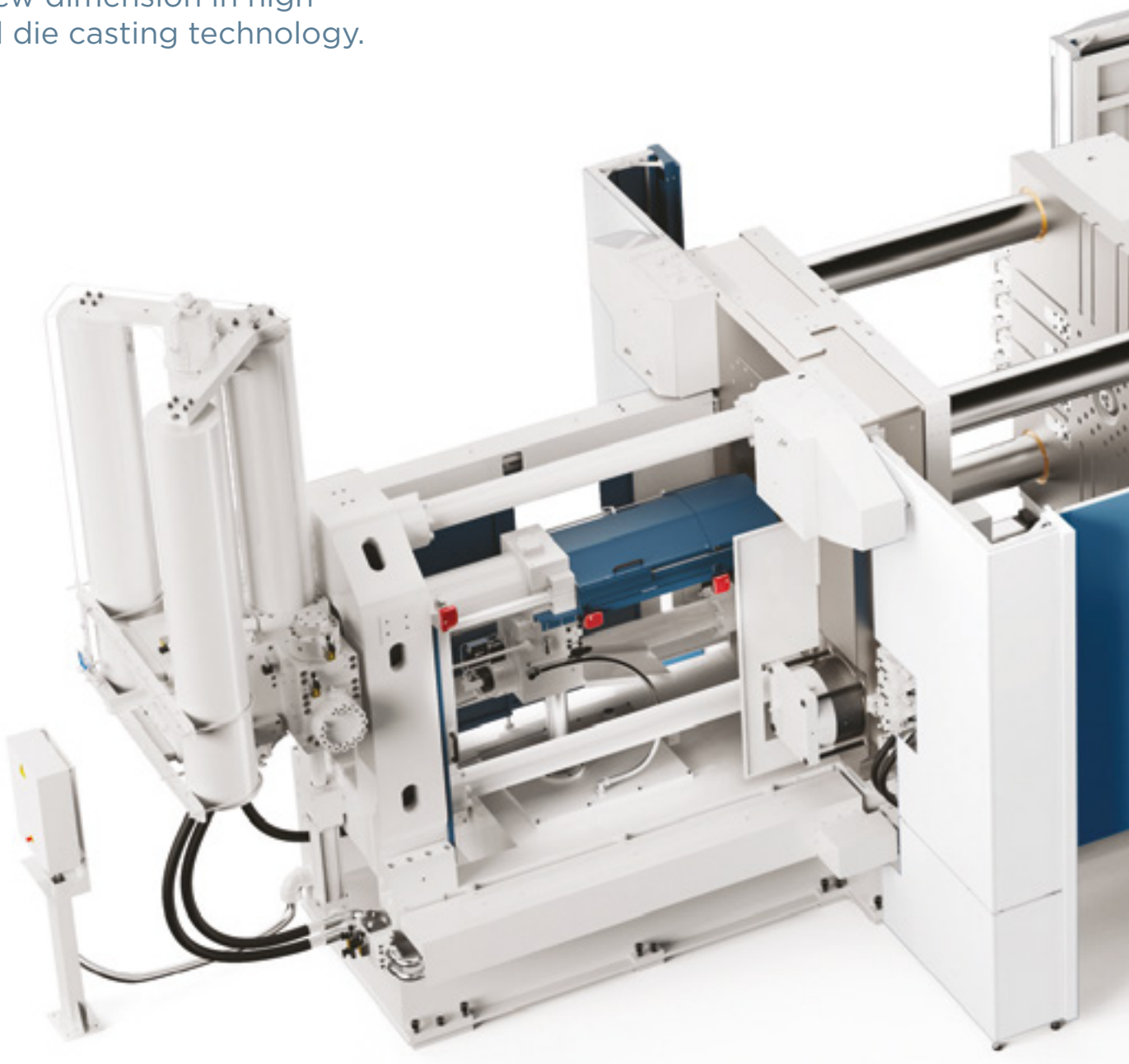
IDRA

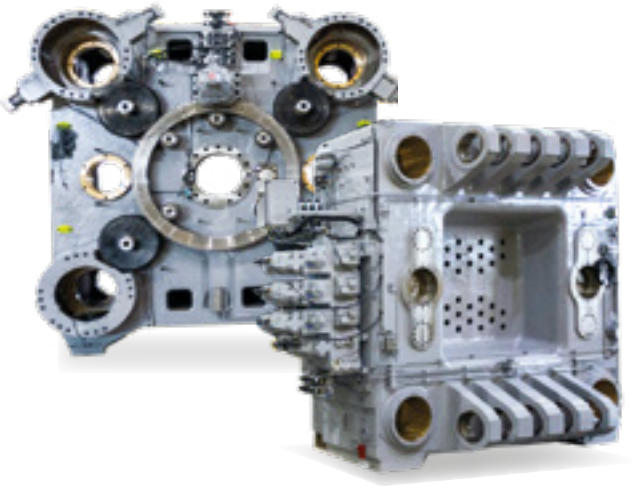
GIGA PRESS

Die Casting Machines

GIGAPRESS is a revolutionary die casting machine for the automotive industry, offering the perfect solution for the production of single piece chassis for Hybrid – full electric vehicles, not plagued by defects inherent with welding and bolting parts together.

GIGAPRESS introduces a new dimension in high end die casting technology.





It’s 27 meters long, 9 meters wide and 8,5 meters high, imposing as a fourstorey building. It can produce aluminium and magnesium alloy components with a force up to 9,000 tonnes. It was born in Travagliato, Brescia, Italy. And has revolutionized the electric car world.

The Idra's Dream team of experts had this clear goal in mind, when they first thought about GIGAPRESS, a visionary project to overcome the limits of traditional die casting press market.

"We want to make the largest single piece castings in the world."

The 'mission impossible' took 4 years of R&D, a talented team of excellent professionals in different fields, a total commitment and a strong perseverance to succeeding.

And now the future of die casting is here.

Equipped with the brand new 5S Injection System, **GIGAPRESS** provides more stable injection conditions in all phases, with the best possible dynamic force in every possible operating phase and therefore the possibility of manufacturing larger structural castings with thinner walls: the single piece chassis weigh less despite being structurally superior.

With many machines in full effect all over the world and many orders received by **IDRA** Group, **GIGAPRESS** is already a huge success, a revolution that is changing the world of automotive and die casting machines forever.

A result of four years of R&D by **IDRA**'s 'Dream Team' of experts, **GIGAPRESS** is a huge step-forward for the industry, offering best-in-class injection performance, a high dynamic force with strong intensification for final pressure and a complete setting flexibility with precise, and stable production parameters.

GIGAPRESS is great in sustainability, with 50% energy savings compared to Idra's existing OLCS product line, great in reliability, with easy maintenance and long lasting components, great in innovation, with a new and amazing Injection System, and great in style, with its good looking Italian design guarding system.

Great
in sustainability,
in reliability,
in innovation,
in style.

WATCH THE VIDEO

PRODUCT STORIES

The premium Die Casting Machine from **IDRA**.
The superior choice.

GIGAPRESS innovation

GIGAPRESS offers unparalleled guaranteed long life and reliability.
GIGAPRESS going from 5500 to 9000 tons and counting
opens a new era in die-casting 'giga' solutions.

NEW INJECTION SERIES 5S©

- Closed loop regenerative injection with aux servo pump for efficient recharge
- Extended velocity control valve life by balance of hydraulic forces
- High dynamic force necessary to fill difficult castings
- Maintaining same final pressure requirement for porosity in power train castings

NEW GUARDING SYSTEM

- Good looking Italian style
- Reducing complex electrical parts and stops
- Simplified assembly of the system with modular scalable construction
- Increased safety requirements for access while machine is running
- Reduced emissions from the die casting process

IPC HYDRAULIC SYSTEM

- Reduced energy consumption per cycle of the DCM cell
- Separated closing and injection pump systems
- Allowing subgroup testing for the injection system

CELL CONTROLLER INTEGRATION

- A more efficient way of managing the software requirements for complicated cells
- Standard DCM software avoids instability and unnecessary stops
- Flexibility and customization for many different configurations
- Easy integration with the best in market products

NEW INJECTION SERIES 5S©

NEO debuts the new revolutionary patented injection system, a result of an amazing R&D effort and two years of hot tests in collaboration with **IDRA Group**'s FSA partners. **5S** is a closed loop regenerative injection with aux servo pump for efficient recharge, that gives you total control of pressure and velocity, with high dynamic force necessary to fill difficult castings, and an incredibile amount of technological enhancements to give you superior results.

STRONG | At all speeds (even 10 m/s) the rod side of the injection cylinder remains always pressurized, allowing a perfect control with no cavitation of the hydraulic fluid.

- Maximum dynamic force of the injection
- cylinder always available (2nd phase)
- Improved dynamic force
- Better quality of the cast part

SIMPLE | Only one valve for injection speed control, which is inserted in the inlet side of the injection cylinder.

- Better control
- Less stress and heating effect
- Less stressed manifolds, tubes and seals

SUSTAINABLE | 5S is designed to maximize energy saving and to achieve a long lasting life, in order to improve the eco sustainability of the machine.

- Hydraulic fluid consumption reduction up to 54%
- Low energy consumption
- Efficient recharge and programmable pressure
- Long lasting components

SMOOTH | An hydraulic cushion is mounted with special design that manages the flow of the hydraulic fluid coming out of the rod side with constant counter pressure.

- Fluid never discharged to the tank
- Hydraulic fluid not emulsified
- Completely smooth first step
- Reduced mechanical noise during injection

STABLE | 5S innovative High Dynamic Force system brings revolutionary stability for injection parameters. This patented regenerative injection is giving first-class repeatability for first and second stage of velocity, while the intensification piston controlled by closed loop gives amazing final pressure.

- Unrivaled stability
- Top-notch repeatability
- Excellent final pressure

FASTEST CYCLE TIMES

- Integrated high flow hydraulic manifold blocks
- Increased pump capacity utilizing IPC technology

EASY MAINTENANCE AND MINIMAL RISK OF FLUID LOSS

- All-in-one hydraulic manifolds
- Limited use of external pipe-work
- Designed-for-access mechanical groups with new guard design

FIT FOR COMPLEX PARTS MANUFACTURE

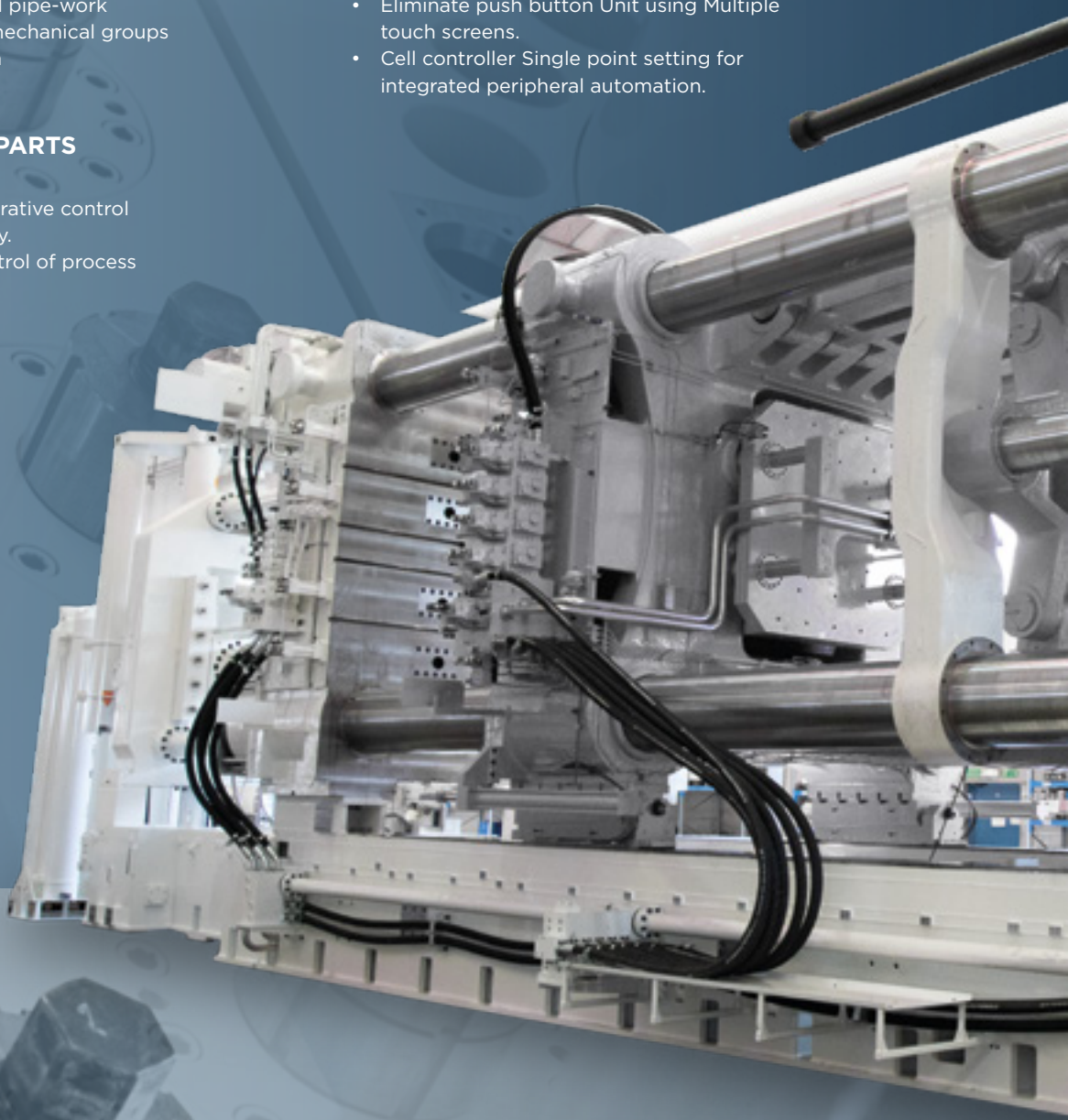
- Closed loop 5S regenerative control of the injection velocity.
- Programming and control of process parameters.

LOW ENERGY COST

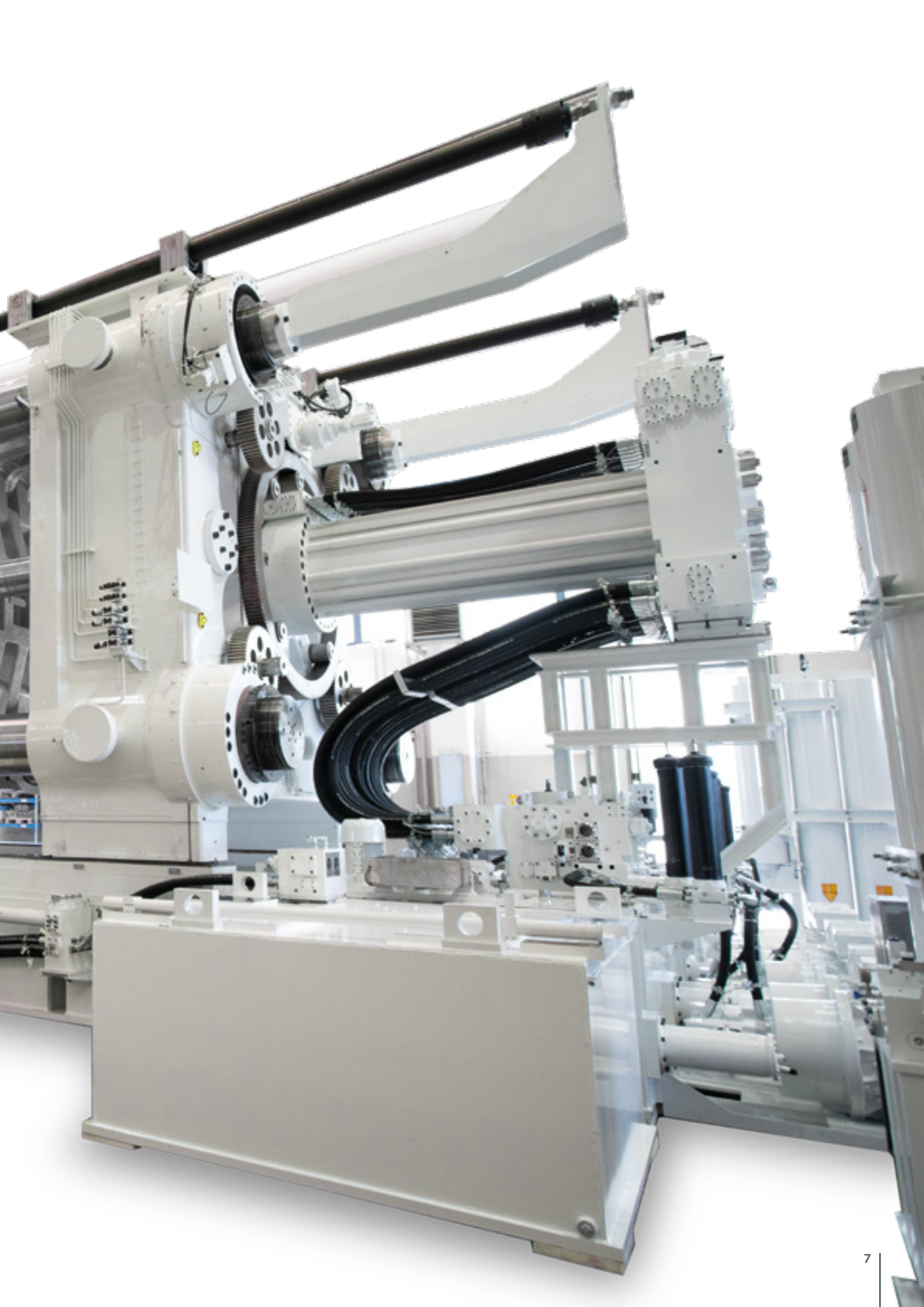
- Energy efficient motors with speed control
- Minimize injection pressure loss and accumulator recharge time

USER FRIENDLY CONTROLS

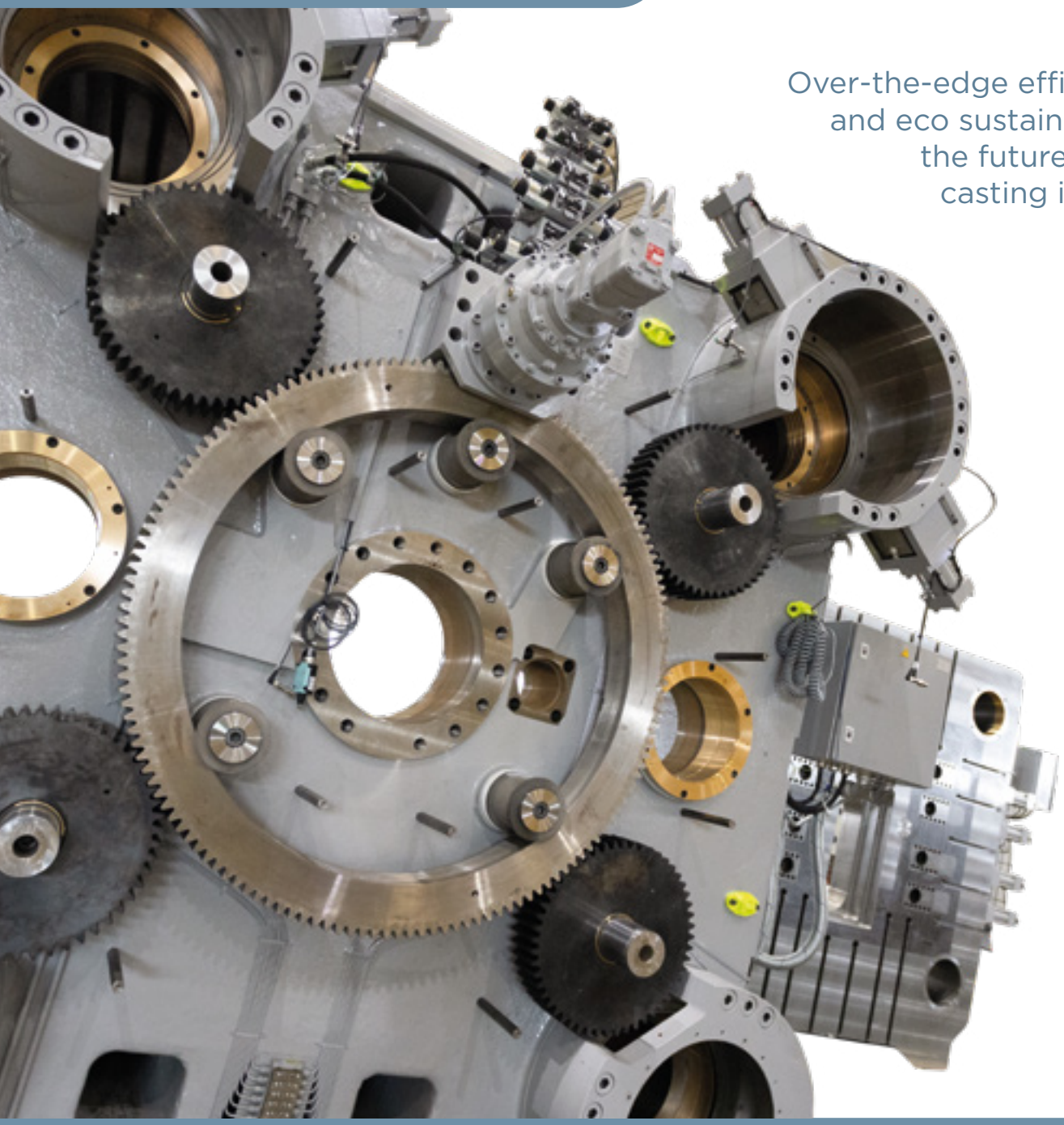
- Inject Computer 3.2 (best in class machine management software)
- Eliminate push button Unit using Multiple touch screens.
- Cell controller Single point setting for integrated peripheral automation.



Giga Presses charted
a new path and ways to build
the automobile.



Technical information



Over-the-edge efficiency and eco sustainability: the future of die casting is here.

FORECO, FOREVER

Forward thinking Eco Complimentary Commitment to the world we live in: it's **IDRA**'s mission to work with a green eye on the future, in order lo hand our world to the next generation better than we found it.

1. Low number of rejects in production.
2. High efficiency and optimised energy use.
3. Creating a sustainable foundry environment, right from the design stage.
4. It contributes to lower production costs.

MODEL		NEO 5500	NEO 5500 PLUS	NEO 6100	NEO 6100 PLUS	NEO 7000	NEO 7000 PLUS	NEO 8000	NEO 8000 PLUS	NEO 9000	NEO 9000 PLUS
Force											
Clamping force	kN	55.000		60.000		68.700		80.500		90.500	
Clamping force	ton	5.607		6.116		7.003		8.206		9.225	
Injection dynamic force (2^ phase)	kN	1.058	1.648	1.201	1.648	1.201	1.648	1.410	2.100	1.410	2.100
Injection force with 20 bar counterpressure	kN	3.764	4.431	4.287	4.431	4.287	4.431	4.645	5.652	4.645	5.652
Ejection force	kN	1.495		1.495		1.775		2.047	2.420	2.047	2.420
Technical performance data											
Max. die height	mm	2.400		2.400		2.500		2.600		2.600	
Min. die height	mm	1.500		1.500		1.600		1.700		1.700	
Platens dimensions HxV	mm	3.600x3.600		3.600x3.600		3.800x3.800		4.100x4.100		4.100x4.100	
Tie bar spacing	mm	2.300x2.300		2.300x2.300		2.400x2.400		2.620x2.620		2.600x2.600	
Tie bar diameter	mm	450		450		490		530		550	
Movable platen stroke	mm	2.300		2.300		2.400		2.600		2.600	
Ejection stroke	mm	400		400		400		400		400	
Injection stroke	mm	1.800		1.800		1.800		2.200		2.200	
Max. injection velocity (without alloy)	m/s	10		10		10		10		10	
Min. sleeve diameter	mm	160		160		180		220		220	
Max. sleeve diameter	mm	240		240		280		300		300	
Max shot weight (Al alloy) with 65% min. sleeve filling up and 95% of injection stroke	kg	58,1		58,1		73,5		134,3		134,3	
Max. shot weight (Al alloy) with 65% max sleeve filling up and 95% of injection stroke	kg	130,7		130,7		177,9		249,7		249,7	
Max projected area with min sleeve diameter	cm^2	2.938	2.496	2.814	2.723	4.078	3.945	6.588	5.414	7.406	6.087
Max. projected area with max. sleeve diameter	cm^2	6.610	5.615	6.332	6.126	9.868	9.547	12.250	10.068	13.772	1.1318
Max. projected area with nominal clamping force and p = 400 bar on alloy	cm^2	14.016		15.291		17.508		20.515		23.063	
Pressure on the alloy in the min. sleeve	bar	1.908	2246	2.173	2.246	1.717	1.775	1.246	1.516	1.246	1.516
Pressure on the alloy in the max. sleeve	bar	848	998	966	998	710	734	670	815	670	815
General											
Injection positions	mm	0;-650		0;-650		0;-800		0;-1000		0;-1000	
Max plunger penetration	mm	700		900		900		1.280		1.280	
Sleeve centering diameter	mm	370		370		420		480		480	
Working pressure	bar	180		180		180		180		180	
Injection pressure	bar	180	210	180	210	180	210	180	210	180	210
Dry Ciclyng (DIN 24480)	n/1'	1,3		1,3		1,3		1,1		1,1	
Pump group motor power	kW	4x75		4x75		4x90		4x110		4x110	
Injection group motor power	kW	55	75	55	75	55	75	75	110	75	110
Machine weight	ton	470		470		590		732		746	
Machine dimensions (L x W x H)	m	20,4x7,4x6,3		20,4x7,4x6,3		21,7x7,7x6,6		26x8,4x7,7		26,5x8,4x7,7	

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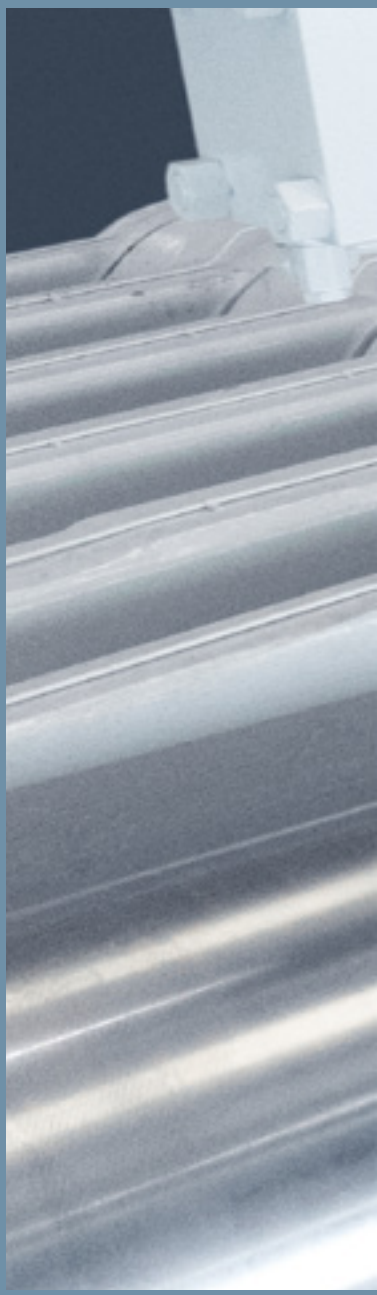

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