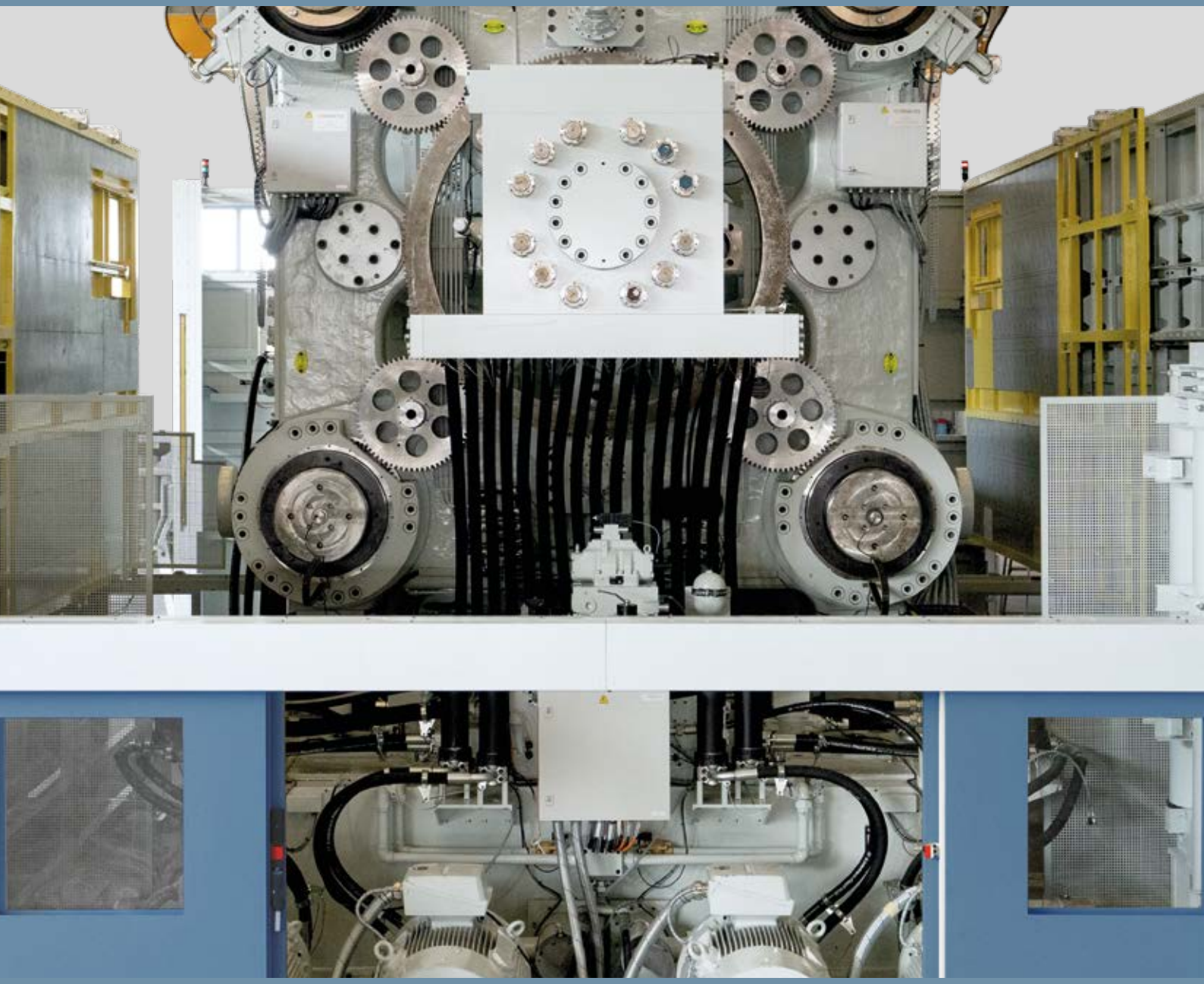
Product Catalogue / Die casting machines

NEO

OVER-THE-EDGE EFFICIENCY AND ECO SUSTAINABILITY



THE FUTURE OF DIE CASTING IS HERE

IDRA

NEO

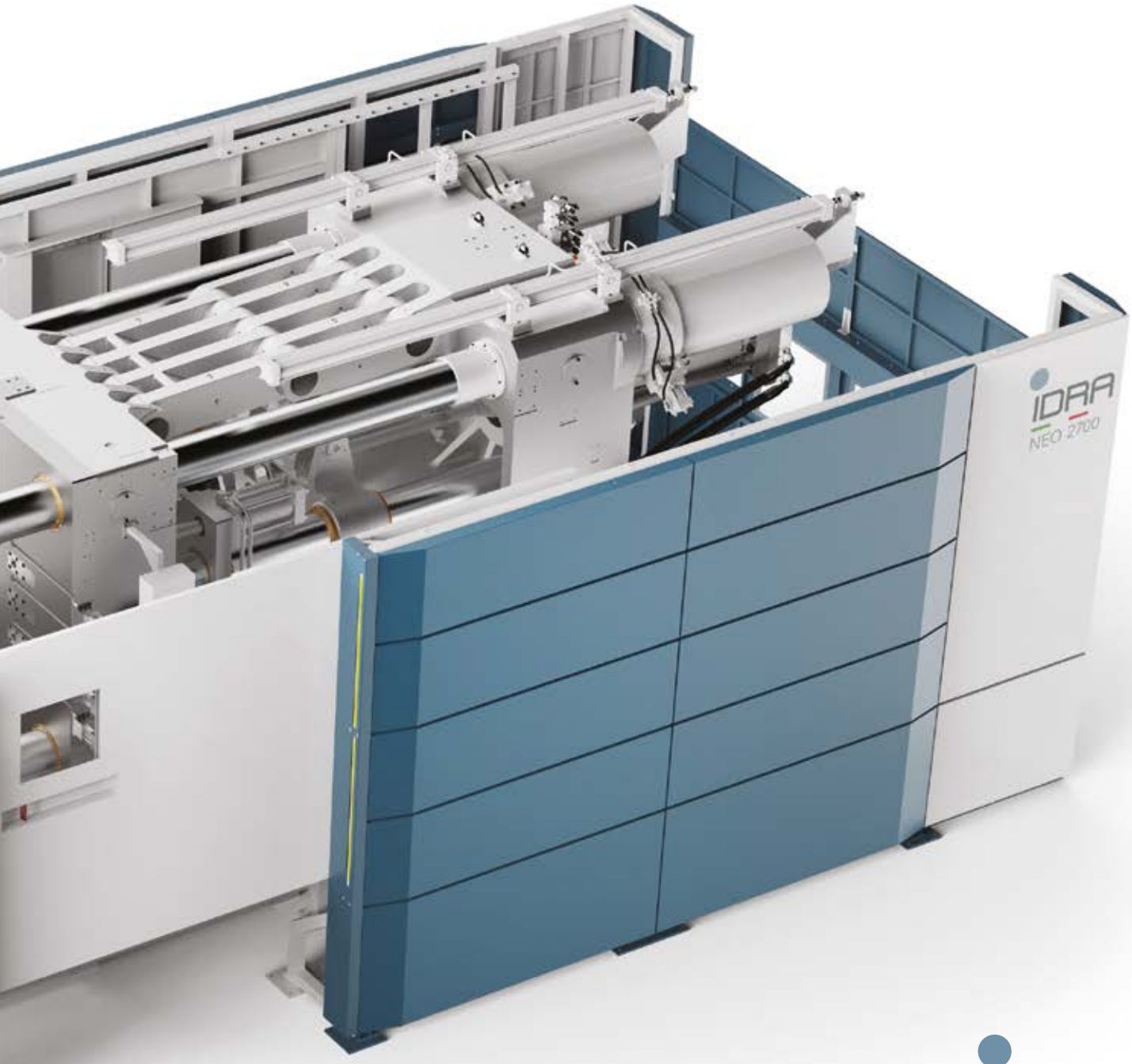
Die Casting Machines

NEO is the new paradigm in die-casting “Giga” solutions (going from 340 to 9000 tons). **NEO** is anticipating the future of OEM, offering the perfect solution for the production of aluminum parts for Hybrid – full electric vehicles and Production of large aluminum parts made with full automated HPDC cells*.

NEO innovative technology offers best-in-class performance with excellent injection performance, a high dynamic force with strong intensification for final pressure and a complete setting flexibility with precise, and stable production parameters.

*Aluminum parts for Hybrid - full electric vehicles: structural, battery box, rotors. Large aluminum parts: blocks, auto gears, multi-cavity structural.

- **NEO** introduces a new chapter in high end die casting technology.
- **NEO** also offers unparalleled guaranteed long life and reliability.

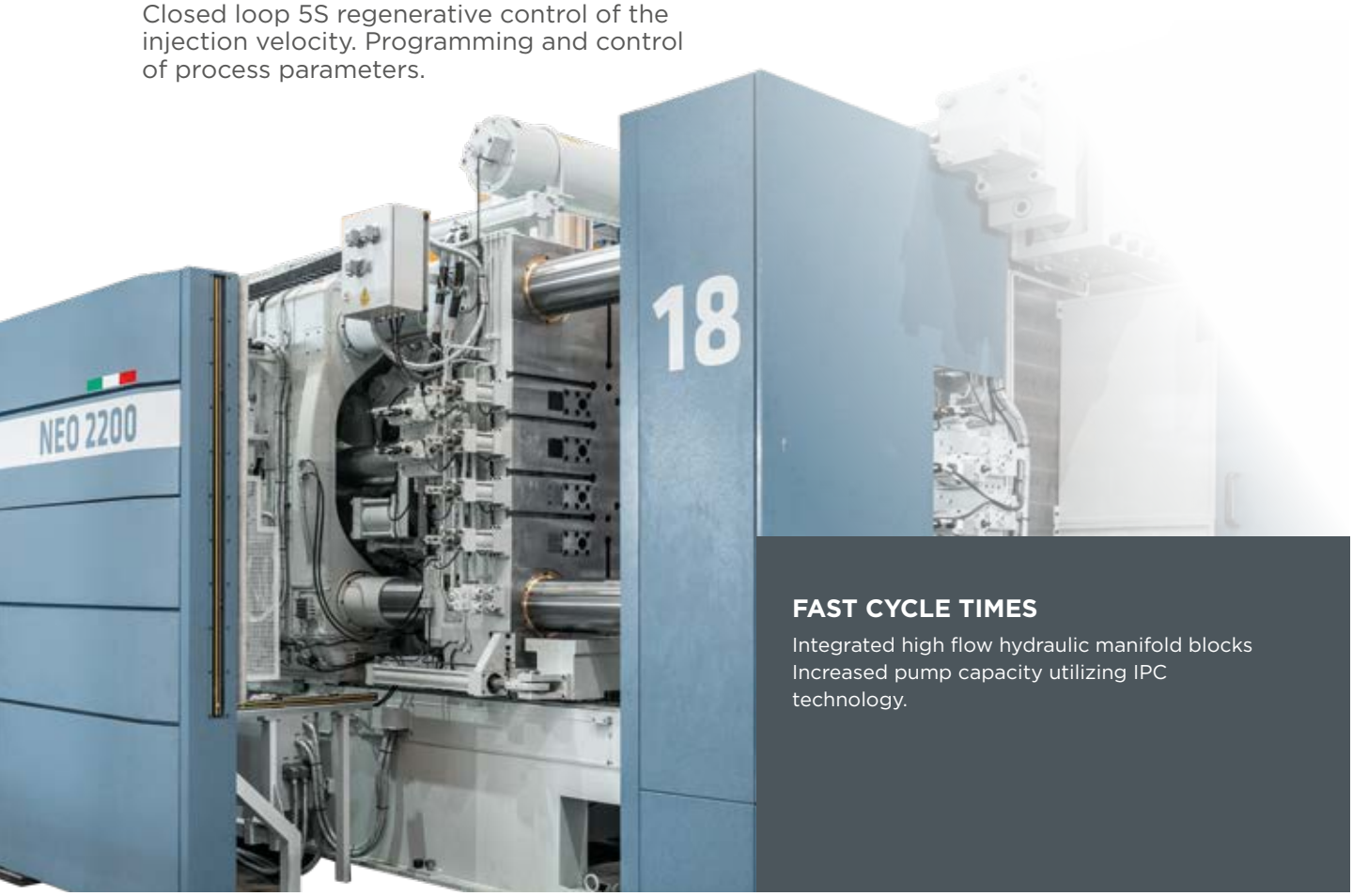


IDRA

NEO features

FIT FOR COMPLEX PARTS MANUFACTURE

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



FAST 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.

LOW ENERGY COST

Energy efficient motors (IPC system) optimize and reduce the consumption. The injection independent ICP motor pump group, minimize pressure loss and accumulator recharge time.

Last generation industrial multi-touch screen monitor

Automated machine settings

Improved User Experience

Intuitive User Interface

Digital button panel

Combination touchscreen and manual controls

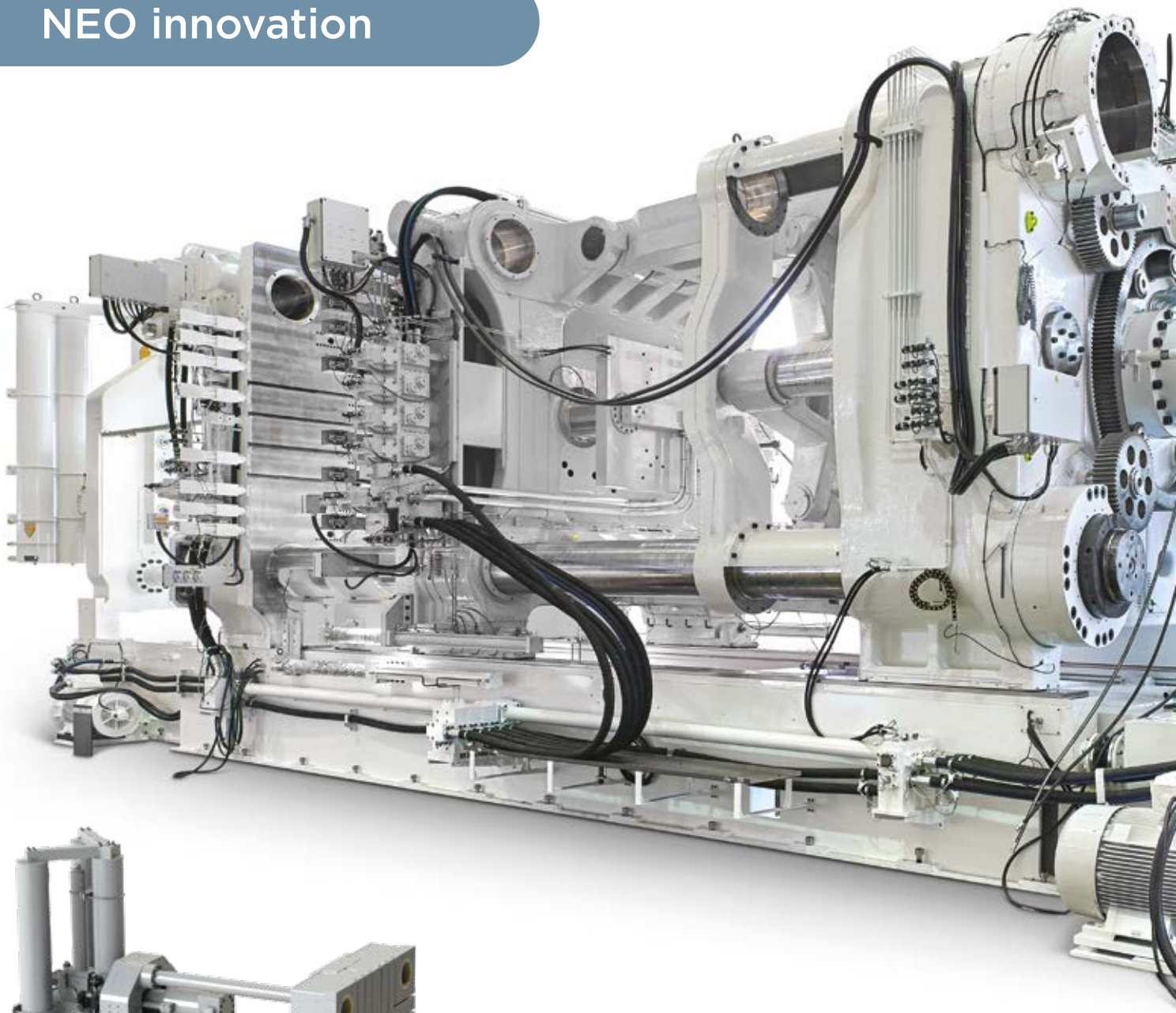
NOVA

NEO OPERATOR VISUAL ASSISTANT

USER FRIENDLY CONTROLS

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

NEO innovation



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.

> READ MORE

NEW GUARDING SYSTEM

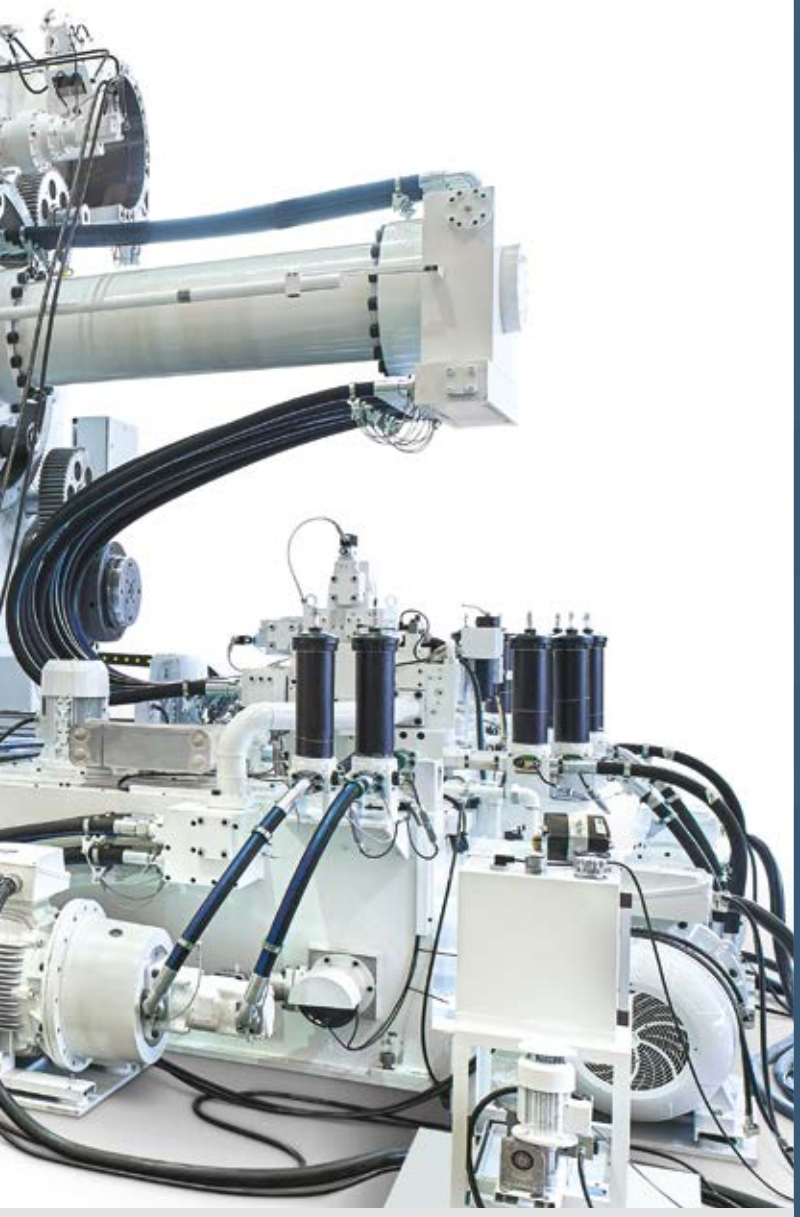
Reducing complex electrical parts and stops. Simplified assembly of the system with modular scalable construction.
Increased safety requirements for access while machine is running. Reduced emissions from the die casting process.

> READ NEXT PAGE

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.

> READ NEXT PAGE



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 | During injection high speed phase, the pressure in the piston rod side is always constant, allowing a perfect contrai with no cavitation of the hydraulic fluid.

- Improved injection dynamic farce
- Less pressure losses
- Better cast part quality

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

NEO DCM GUARDING SYSTEM

NEO debuts the new Guarding system developed by **IDRA Group** following the “Foreco. Forever” philosophy: eco-sustainability and efficiency. The innovative system comes with reduced manufacturing costs and impact: the toggle guarding can now be eliminated using a closed system with light barrier protection, and difficult to manufacture sheet metal gear guards are no longer needed.

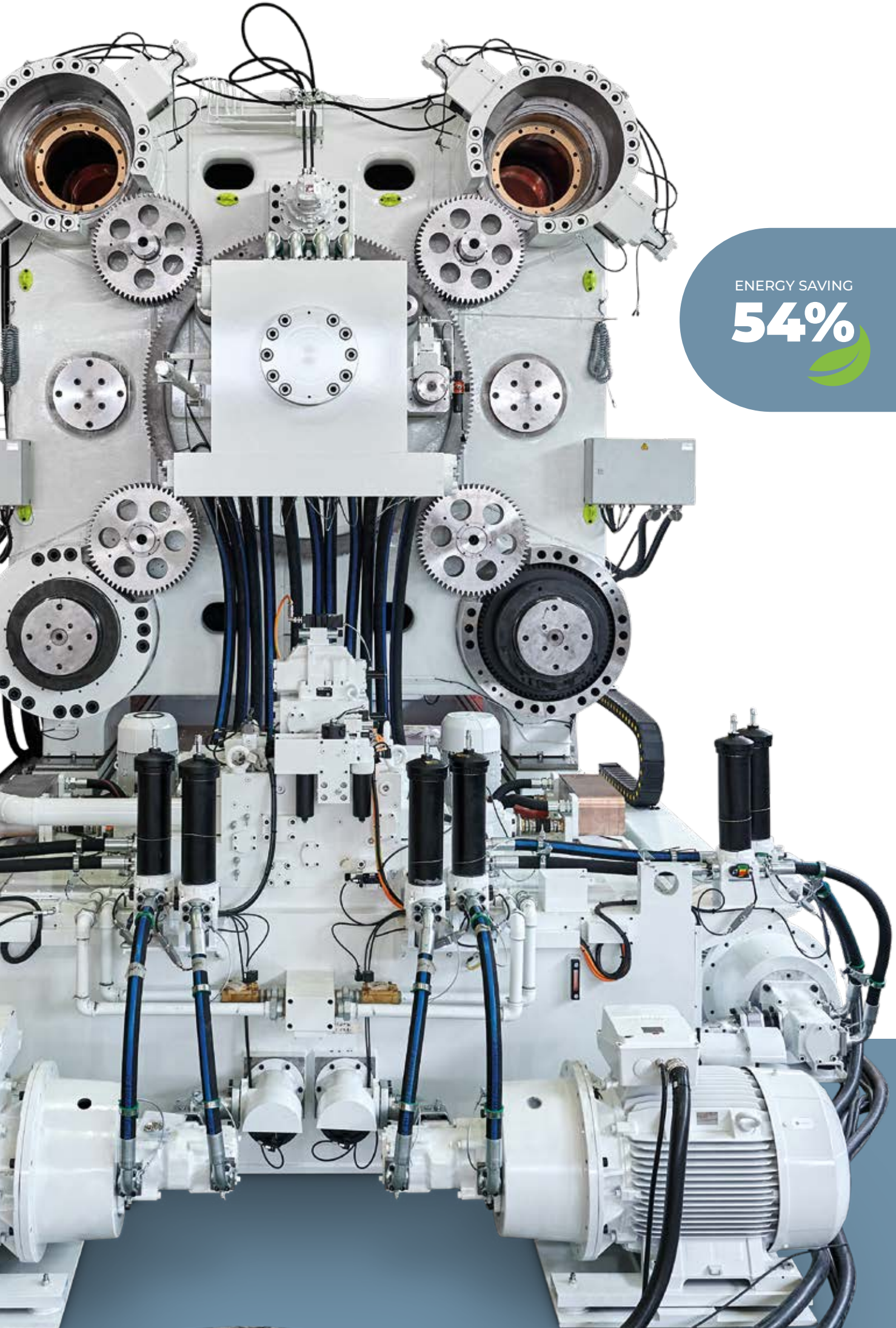
IPC DRIVE CONTROL PUMP SYSTEM

NEO comes equipped with the new over-the edge Drive Control Pump System developed by **IDRA Group**. The IPC has a new architecture, that can accomplish the same efficiency with smaller kW motors, thanks to a new Master- Slave, closing unit, an improved PLC control and a new Injection Accumulator charging unit, that charges independently from the closing and core puller system.

THE NEW DESIGN IS ALSO EASILY CUSTOMIZABLE: CUSTOMER NAME AND LOGO CAN BE ADDED TO REAR PANELS AND COLOUR SCHEME CAN EASILY BE MODIFIED ON REQUEST

- Servo Drive
- Reduced Wear
- Simplified Design
- Faster Guard movement
- Total machine protection
- Easy customization

The NGS goes the “less is more” route with a simplified electrical installation, a minimalistic design that reduces components and removes cable and switches. These improvements - together with a DC motor with direct belt drive - allows for a faster movement of the guards and a quicker cycle.



ENERGY SAVING

54%

Technical information

MODEL		NEO 340	NEO 450	NEO 600	NEO 800	NEO 1000
Force						
Clamping force	kN	3.876	5.290	7.053	8.740	11.168
Clamping force	ton	395	539	719	891	1.138
Injection dynamic force (2^ phase)	kN	246	246	246	335	335
Injection force with 20 bar counterpressure	kN	694	694	694	1.048	1.048
Ejection force	kN	277	277	433	433	433
Technical performance data						
Max. die height	mm	700	800	900	1.000	1.050
Min. die height	mm	250	300	400	450	450
Platens dimensions HxV	mm	1.029x1.029	1.160x1.160	1.350x1.350	1.400x1.400	1.620x1.620
Tie bar spacing	mm	669x669	760x760	865x865	910x910	1.000x1.000
Tie bar diameter	mm	130	140	165	180	200
Movable platen stroke	mm	600	700	780	900	960
Ejection stroke	mm	140	165	175	200	230
Injection stroke	mm	650	650	650	750	750
Max. injection velocity (without alloy)	m/s	9	9	9	9	9
Min. sleeve diameter	mm	60	60	60	80	80
Max. sleeve diameter	mm	80	90	100	120	130
Max shot weight (Al alloy) with 65% min. sleeve filling up and 95% of injection stroke	kg	2,95	2,95	2,95	6,05	6,05
Max. shot weight (Al alloy) with 65% max sleeve filling up and 95% of injection stroke	kg	5,25	6,64	8,20	13,62	15,98
Max projected area with min sleeve diameter	cm^2	158	216	287	419	536
Max. projected area with max. sleeve diameter	cm^2	281	485	798	943	1.414
Max. projected area with nominal clamping force and p = 400 bar on alloy	cm^2	988	1.348	1.797	2.227	2.846
Pressure on the alloy in the min. sleeve	bar	2.502	2.502	2.502	2.125	2.125
Pressure on the alloy in the max. sleeve	bar	1.407	1.112	901	945	805
General						
Injection positions	mm	0;-200	0; -270	0; -300	0;-350	0; -400
Max plunger penetration	mm	240	240	240	285	285
Sleeve centering diameter	mm	130	150	180	180	195
Working pressure	bar	180	180	180	180	180
Injection pressure	bar	180	180	180	180	180
Dry Ciclyng (DIN 24480)	n/1'	3,5	3,0	2,9	2,7	2,5
Pump group motor power	kW	30	37	37	37	45
Injection group motor power	kW	-	-	-	-	-
Machine weight	ton	18	24	33	47	56
Machine dimensions (L x W x H)	m	8.4x3,76x3,5	8,8x4,1x3,64	9,24x4,2x3,7	10,4x4,3x4,1	10,7x4,5x4,3

The technical information and pictures shown are subject to change and may be modified and/or improved as considered necessary.

NEO 1200	NEO 1500	NEO 1800	NEO 2200	NEO 2700	NEO 3000	NEO 3400	NEO 3800	NEO 4400
12.899	16.908	18.788	23.233	27.538	30.394	34.313	37.700	43.743
1.315	1.724	1.915	2.368	2.807	3.098	3.498	3.843	4.459
446	446	585	585	710	710	873	873	1.058
1.430	1.430	2.017	2.017	2.490	2.490	3.100	3.100	3.764
433	710	710	710	710	710	1109	1109	1109
1.100	1.200	1.450	1.550	1.750	1.750	1.900	2.100	2.100
450	450	600	700	800	800	900	1.100	1.100
1.730x1.730	1.850x1.850	1.960x1.960	2.120x2.120	2.380x2.380	2.530x2.530	2.640x2.640	2.840x2.840	2.900x2.900
1.100x1.100	1160x1.160	1.250x1.250	1.345x1.345	1.500x1.500	1.640x1.640	1.720x1.720	1.770x1.770	1.850x1.850
215	240	250	280	300	310	330	350	370
1.070	1.200	1.400	1.400	1.500	1.500	1.600	1.700	1.800
230	255	280	280	350	350	350	400	400
900	900	1.000	1.000	1.250	1.250	1.450	1.450	1.800
9	9	9	10	10	10	10	10	10
90	90	110	110	130	130	130	130	140
140	140	160	165	190	190	200	210	220
9,2	9,2	15,3	15,3	26,6	26,6	30,9	30,9	44,5
22,2	22,2	32,3	34,3	56,90	56,90	73,1	80,6	109,85
574	752	885	1.095	1.468	1.620	1.469	1.614	1.789
1.389	1.820	1.873	2.463	3.136	3.461	3.477	4.212	4.418
3.287	4.309	4.788	5.921	7.018	7.746	8.744	9.608	11.148
2.291	2.291	2.164	2.164	1.912	1.912	2.381	2.381	2.492
947	947	1.023	962	895	895	1.006	912	1.009
0; -450	0; -450	0; -500	0; -500	0; -500	0; -500	0;-550	0; -600	0;-600
350	350	420	420	550	550	550	550	700
195	195	225	265	290	290	310	330	330
180	180	180	180	180	180	180	180	180
180	180	180	180	180	180	180	180	180
2,5	2,2	2,1	1,9	1,7	1,6	1,7	1,5	1,5
2x37	2x37	2x37	2x45	2x45	2x75	2x90	2x90	2x90
-	-	37	37	45	45	45	45	55
65	85	98	113	150	185	223	245	270
11,65x4,8x4	12,2x5,0x4,2	13,3x5,1x5	13,4x5,3x4,9	15x5,46x5,38	15,3x5,7x5,4	16,6x6,7x5,6	17,1,x6,7x5,7	18x6,7x5,8

NEO Foreco

NEO also offers unparalleled guaranteed long life and reliability

FORECO, FOREVER

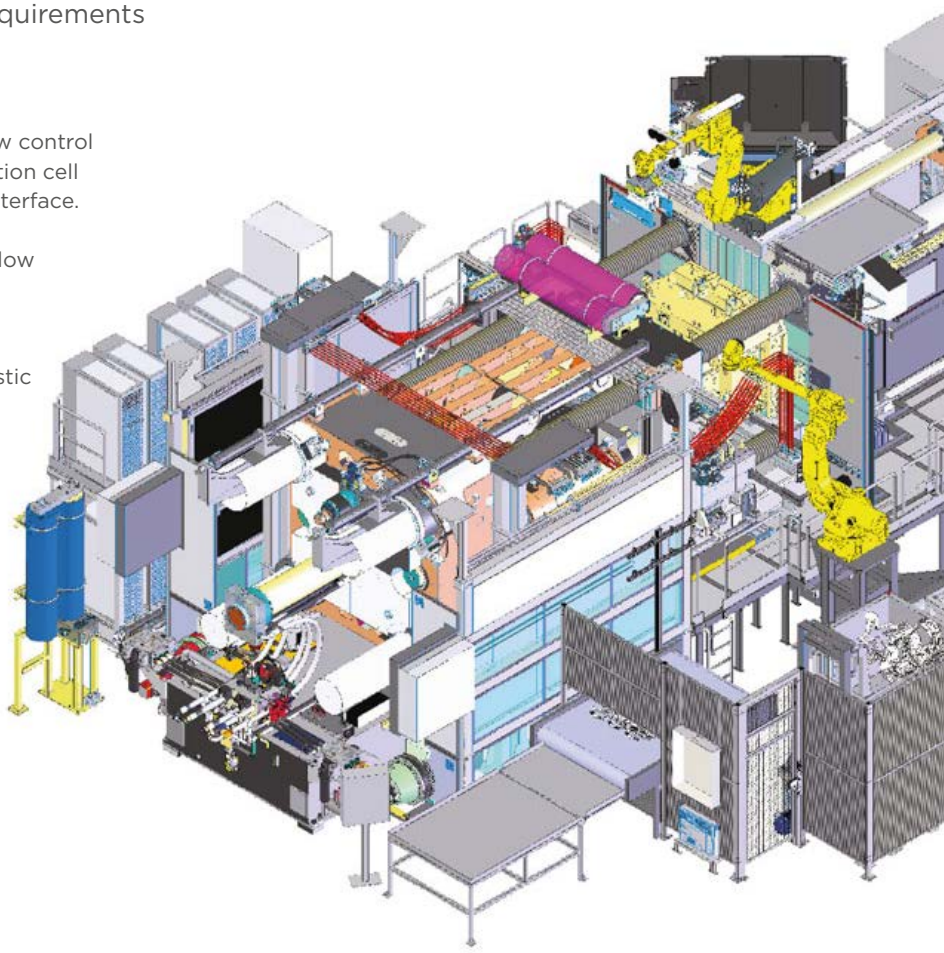
Forward thinking Eco Complimentary Commitment to the world we live in: it's **IDRA**'s mission to work with a green eye on the future, in order lo hand our world to the next generation better than we found it.

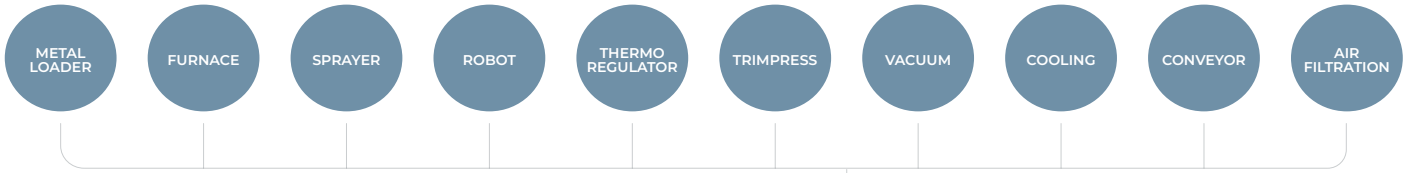
1. Low number of rejects in production.
2. High efficiency and optimised energy use.
3. Creating a sustainable foundry environment, right from the design stage.
4. It contributes to lower production costs.

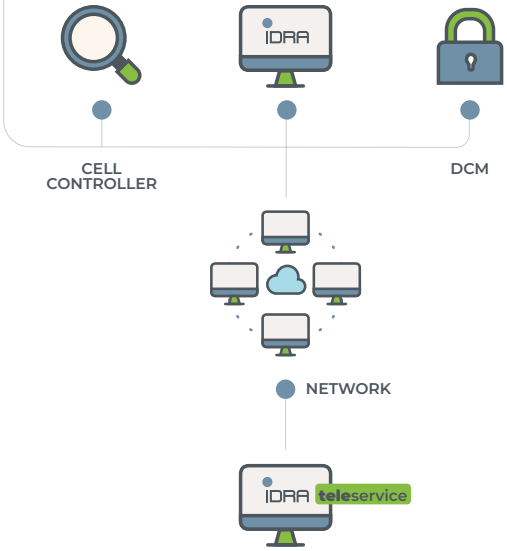
IDRA Cell Controller

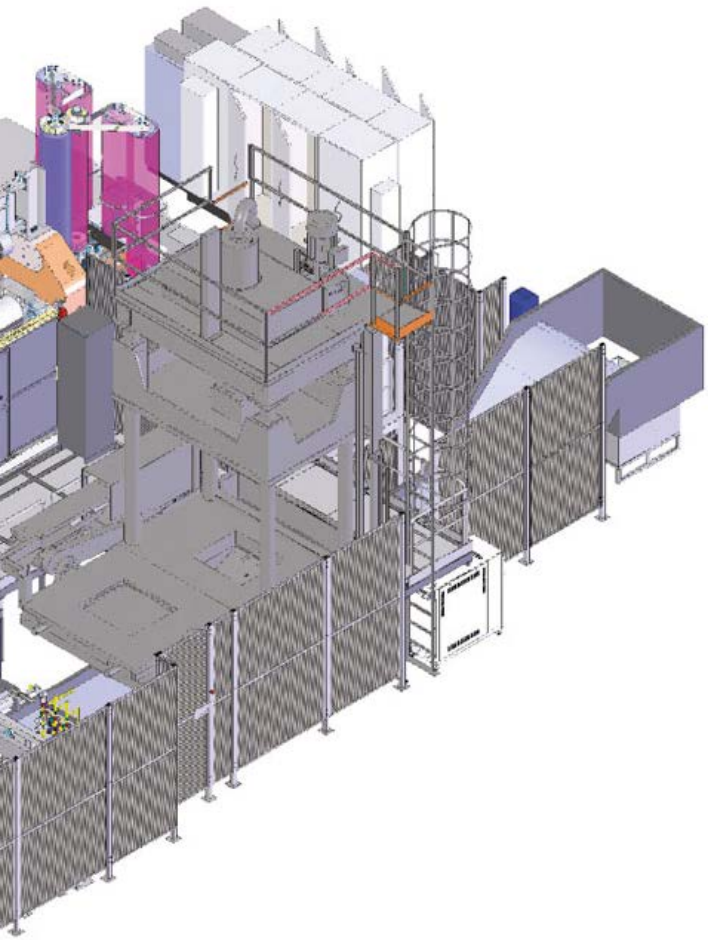
IDRA Cell Controller is a brand new 4.0 architecture developed by **IDRA** and available in all the new machines, to perform efficiently the software requirements for complicated cells.

From a single 'Cell Controller' unit, you can now control the DCM and all the peripherals of the automation cell with an easy to read, easy to customize user interface. **IDRA** Cell Controller brings a new level of connectivity and integration, with a seamless flow of data exchange between DCM and the peripherals, to give you full control over production and process traceability. In a single screen you have a complete diagnostic analysis of the cell, greatly improving set-up and maintenance times and costs.









The **DCM software** is standard to give 100% reliability, and the Cell Controller offers complete flexibility and customization for many different configurations.

- Lower Maintenance
- Controller Costs for Peripherals
- Easy customization and integration process
- High Quality Data and comprensive integration
- Improved OEE efficiency
- Total safety control
- Industry 4.0 ready

Foundry Star Alliance

WE LIKE TO WORK TOGETHER WITH YOU

STRONGER TOGETHER

IDRA Cell Controller System is the amazing result of a combined effort of the **Foundry Star Alliance** (**FSA**), a group of leading companies in their specific field of activity who decided to cooperate with the aim of better support the very rapid growth of the global light alloy HPDC markets.

The global approach of the OEM's require a level of knowledge and skill that cannot be available in one single company. The members of the **FSA** are cooperating and pulling together their combined resources and specific technology; the result is the best reliable, integrated and automated high pressure die casting production cell in the market.

Choosing **IDRA** Cell Controller System you get a clear competitive advantage, with a solution that natively integrates with the best in market products.

FSA combines the leading European companies in the different light alloy HPDC fields of expertise.

INNOVATION | We are pulling together our combined resources and specific technology to move forward, faster and stronger.

TIME TO MARKET | In a quickly evolving market, we work together to anticipate the future and be the first to deliver.

GREEN FUTURE | FSA partners value our environment and are working towards a brigher future for our Earth. Together, we can do more.

TURN KEY SOLUTIONS | Different skill and expertise: we can provide the solutions to solve all the various challenges of our customers.

Goals

VISIT US ON YOUTUBE

#WeLikeToWorkTogheterWithYou

EN

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