

# PRODUCT RANGE

T E C H N O L O G I C A L E X C E L L E N C E



**IVECO**  
**MOTORS**



SOFIM  
HPI

NEF

CURSOR

VECTOR

**IVECO**  
MOTORS



T E C H N O L O G I C A L E X C E L L E N C E

**FROM 40 TO 1600 kW**





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## TECHNOLOGICAL EXCELLENCE FROM 40 TO 1600 kW

The engines of the new IVECO range are a perfect mix of traditional reliability with the introduction of innovative technology, which provides a sure formula for success. Quiet and powerful, they comply with the strictest certification standards and their innovative injection systems will enable them to be adapted to emission control regulations for many years to come.

### ***TAILOR MADE PRODUCTS FOR TOTAL CUSTOMER SYNERGY***

#### ***DESIGN SUPPORT***

- Feasibility analysis • Sharing decisions
- Optimizing solutions
- Defining engine characteristics

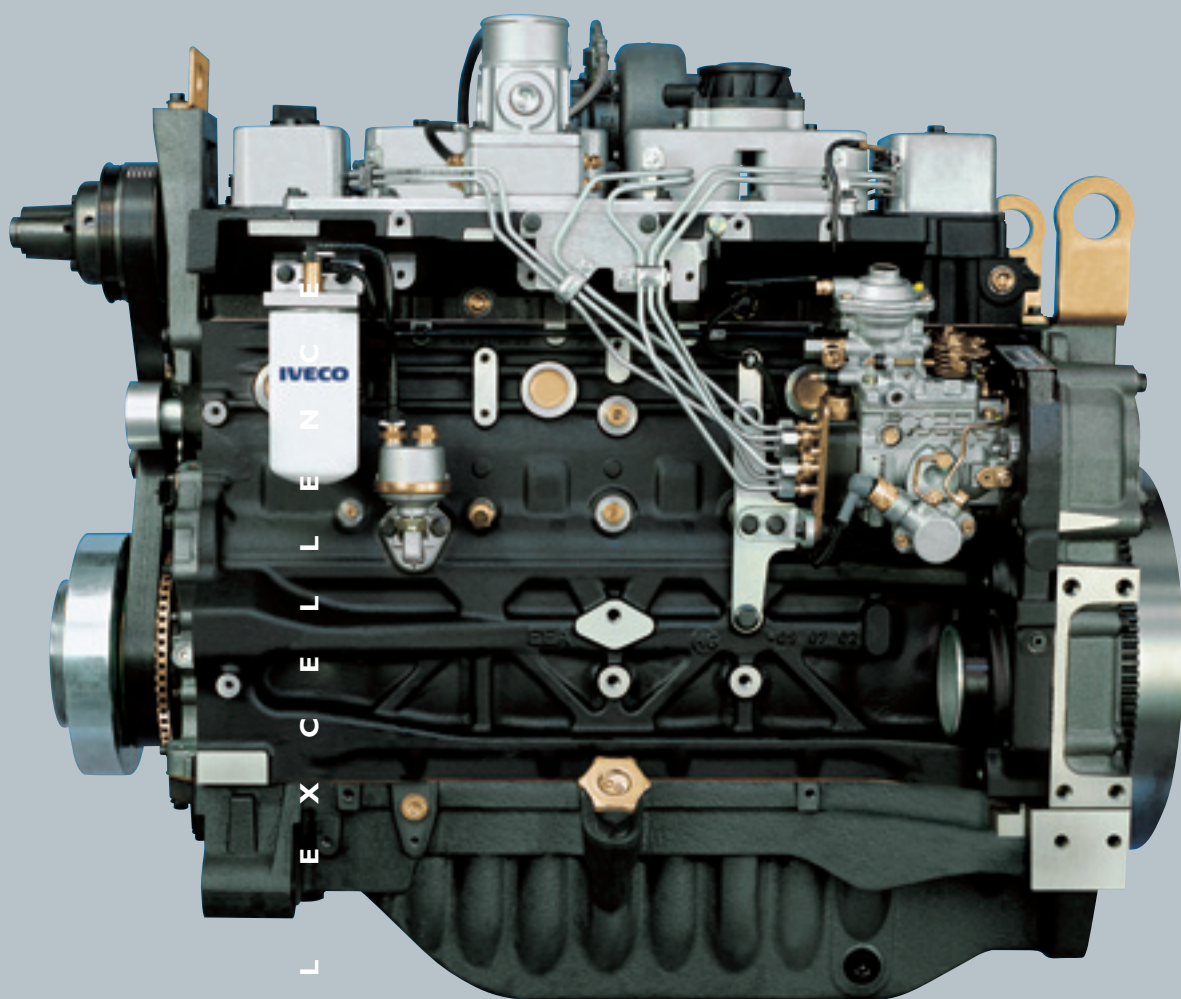
#### ***APPLICATION SUPPORT***

- Consultation throughout the process • Supply of equipment
- Bench tests and simulations • Engine customization

#### ***AFTER-SALE SUPPORT***

- Logistics • Training • Documentation
- Technical assistance

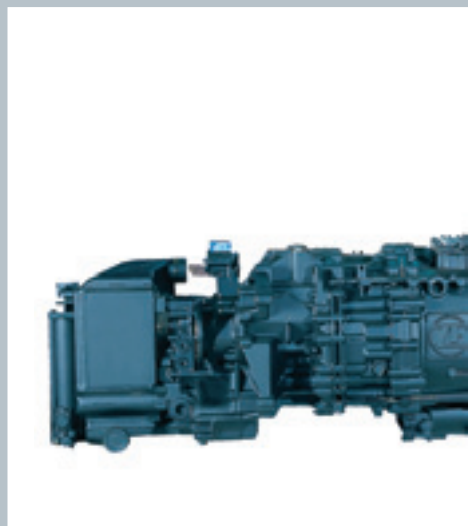




T E C H N O L O G I C A L E X C E L L E N C E

*Load bearing NEF*

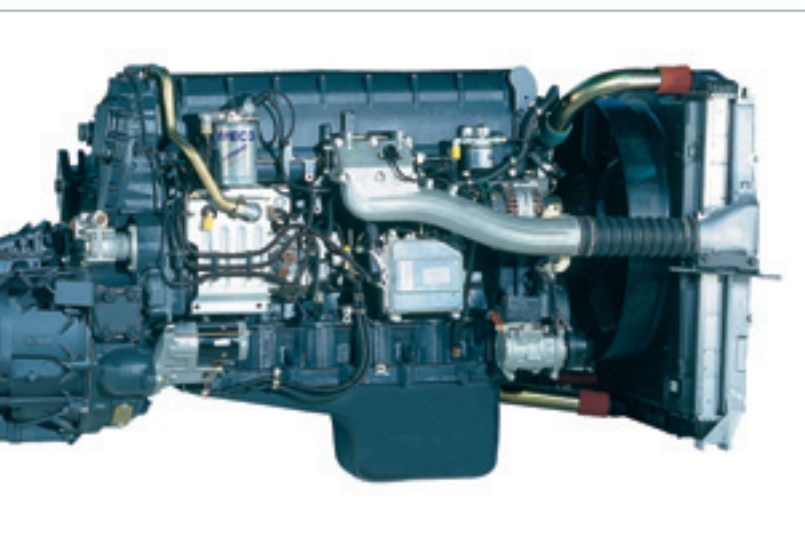
*CURSOR propulsion unit*



# SOLUTIONS FOR ALL NEEDS

A BROAD RANGE  
OF FITTING-OUT OPTIONS  
FOR THE MOST COMPETITIVE APPLICATIONS

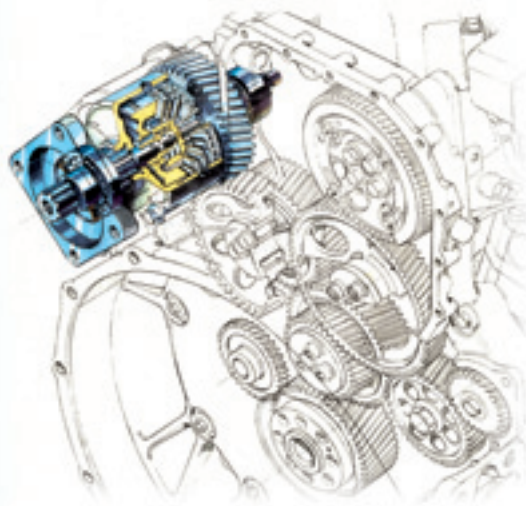
**Structural engine blocks** for load-bearing purposes. **Lubrication oil sumps**, produced by pressing or casting with aluminum, steel or cast iron, available in various configurations and dimensions to allow installations even in most restricted spaces, with the capability of operating at the severest inclinations. Oil dipstick with more positioning options. **Intake and exhaust manifolds** with different arrangements connected with rigid or flexible ducts. Low temperature **starting aids**, effective down to - 25°C. **Exhaust silencing** with single-body or multiple element solutions. Air - air, air - liquid and liquid - liquid **heat exchangers** for engine fluids, with different performance, dimensions and positions. Pusher or puller **cooling fans** of different size and position, mechanical or electrically driven with varying control systems.



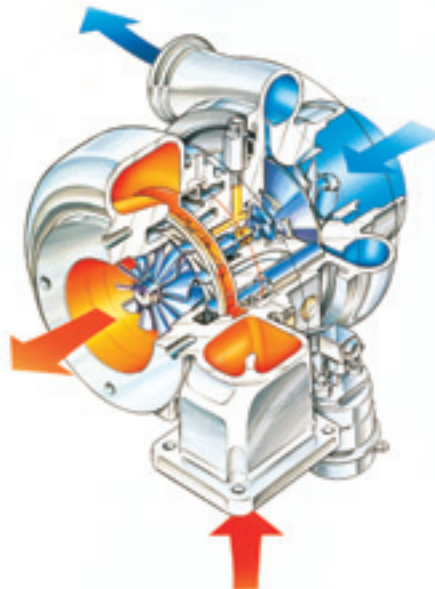
T E C H N O L O G I C A L E X C E L L E N C E



Air and A/C system **compressors, hydraulic pumps and power steering**. Components for **monitoring systems**, alarm systems or interfacing with external devices; availability of the CAN network, adopting engines with electronic injection control. **Electric starter motor and alternators for 12 and 24 V** electrical systems with elements having isolated poles and waterproof construction. **Oil, air and fuel filters** in various arrangement, position and characteristics, to meet the most demanding customer needs; supports with dual filter, suitable for changeover while engine is running.



Manual and electrical systems for draining and filling the engine fluids. Front and rear **power takeoffs**, also available in integrated version and with electrically or pneumatically controlled clutch coupling. Capability of operating simultaneously or independently from different PTOs. Flexible variations of auxiliary component multi fit types of drive with numerous positions to suit applications. **Turbochargers with variable or fixed geometry** and with waste gate. **Engines burning natural gas or “clean” fuels**.



# SOFIM HPI

## 4 CYLINDERS IN LINE - 2,3 AND 3 LITRE



Code		SOFIM HPI 2.3	SOFIM HPI 3.0
Displacement	cm <sup>3</sup>	2286	2997
Bore x stroke	mm	88 X 94	95,8 X 104
Idle speed	rpm	800	
Power (1)	kW @ rpm	85,3 @ 3900	122 @ 3500
Torque	Nm @ rpm	270 @ 1800	380 @ 1250
Operating noise (2)	dB(A)	≤ 93	
Fuel consumption (3)	g/kWh	205	200
Lenght (4)	mm	592	617
Width	mm	612	653
Overall height	mm	779	784
Weight (5)	kg	210	240
Certification	EURO 3 - CE 97/68 Phase 2 - EPA Tier 2		
Working life (BE10 l.f. 60%)	h	3500	5000

Stabilized cast iron engine block with the capability of 2nd life engine overhauling, **monolithic cast iron sub-block**. Monolithic aluminium cylinder head, die-cast aluminium overhead. Eutectic aluminium alloy pistons with cooling tunnel. Nodular cast iron drive shaft on 5 supports and dual mass flywheel. Liquid cooling with thermostatic valve-controlled loop. Forced lubrication with engine cooling liquid heat exchanger. Oil sump coupled to the engine block with elastic gasket. **4-valve per cylinder** timing system with direct control through finger rockers, hydraulic tappets. **Twin overhead shaft, driven by positive drive belt on the 2,3 litre and double chain on the 3 litre**. Supercharged with intercooler. Turbochargers with variable or fixed geometry with waste gate. **Common rail injection with total electronic control**.

Note:

- 1) Maximum value, compliant with suitable certifications and with Directive CE 97/68 (without fan), after 50 hours of operation, tolerance 3%. Test conditions ISO 3046/1: atmospheric pressure 100 kPa, T 25°C, relative humidity 30%, as per DIN 6271 - BS 5514 SAE J 1349 Standards.
- 2) Meets the ISO 3745 standard, at maximum power.
- 3) Best point.
- 4) From the rear of block to fan flange.
- 5) Without liquids, standard configuration.

T E C H N I C A L D E T A I L S



NEF

3, 4 AND 6 CYLINDERS IN LINE  
FROM 3,4 TO 6,7 LITRE

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Code		NEF 3 Cyl.	NEF 4 Cyl.	NEF 6 Cyl.
Displacement	cm³	3360	3920 / 4480	5880 / 6720
Bore x stroke	mm	104 X 132	102 X 120 / 104 X 132	
Idle speed	rpm	650		
Power (1)	kW @ rpm	58 @ 2300	125 @ 2700	202 @ 2500
Torque	Nm @ rpm	310 @ 1400	560 @ 1200	930 @ 1250
Operating noise (2)	dB(A)	≤ 91 - 95 with mechanical injection pump		
Fuel consumption (3)	g/kWh	217	208	205
Lenght (4)	mm	650 - 760	770 - 880	1010 - 1120
Width (4)	mm	585 - 700		
Overall height (4)	mm	800 - 920		
Weight (5)	kg	300	380 - 530	525 - 680
PTO	Nm	120	240	240
Certifications		EURO 3 - CE 97/68 Phase 2 - EPA Tier 2		
Working life (BE10 l.f. 60%)	h	6000	6000	6000
Available versions		Load-bearing	Load-bearing / not load-bearing	

Note:

- 1) Maximum value, compliant with suitable certifications and with Directive CE 97/68 (without fan), after 50 hours of operation, tolerance 3%. Test conditions ISO 3046/1: atmospheric pressure 100 kPa,T 25°C, relative humidity 30%, as per DIN 6271 - BS 5514 SAE J 1349 Standards.
- 2) Meets the ISO 3745 standard, at maximum power.
- 3) Best point.
- 4) Minimum-maximum value.
- 5) Without liquids, in different configuration.

Stabilized cast iron engine block with the capability of 2nd life engine overhauling, also available in load bearing structured version. Monolithic cast iron cylinder head, **high turbulence induction lines**. Hyper-eutectic aluminium alloy pistons with cooling tunnel, omega shaped combustion chamber. High strength steel or cast iron drive shaft. Liquid cooling with thermostatic valve-controlled loop. Forced lubrication with engine cooling liquid heat exchanger. Oil sump coupled to the engine block with elastic gasket. Timing system **with 2 or 4 valves per cylinder** controlled by rods and rocker arms. Gear-driven single camshaft in the engine block. Naturally aspirated, supercharged or supercharged with intercooler. Turbochargers controlled by waste gate. **Injection with mechanical pump or common rail with total electronic control**.



# CURSOR

## 6 CYLINDERS IN LINE - 7.8 - 10.3 - 12.9 LITRE



Code		CURSOR 8	CURSOR 10	CURSOR 13
Displacement	cm <sup>3</sup>	7790	10300	12880
Bore x stroke	mm	115 X 125	125 X 140	135 X 150
Idle speed	rpm	600		
Power (1)	kW @ rpm	265 @ 2100	335 @ 2100	397 @ 1900
Torque	Nm @ rpm	1420 @ 1500	1900 @ 1380	2350 @ 1000
Operating noise (2)	dB(A)	≤ 95		
Fuel consumption (3)	g/kWh	195		
Lenght (4)	mm	1110	1256	1329
Width (4)	mm	(638) 803	(694) 869	(731) 926
Overall height (4)	mm	1066	1112	1127
Weight (5)	kg	680	932	1006
Rear PTO	Nm	600	650	890
Certification		EURO 3 - CE 97/68 Phase 2 - EPA Tier 2		
Working life (BE10 l.f. 60%)	h	10000	15000	
Available versions		Horiz./Vert.	Vertical	

Stabilized cast iron engine block with wet cylinder liners, **monolithic cast iron sub-block**. Monolithic cast iron cylinder head, high turbulence **cross-flow induction lines**. Hyper-eutectic aluminium alloy pistons with cooling tunnel, omega shaped combustion chamber. High strength steel drive shaft, on 7 supports and with second balancing mass. Liquid cooling with thermostatic valve-controlled loop. Forced lubrication with engine cooling liquid heat exchanger and thermostatic valve. Oil sump coupled to the engine block with elastic gasket. Timing system with **4 valves per cylinder controlled by roller rocker arms. Single overhead shaft with 7 supports** driven by helical gears. Supercharged with intercooler. Turbochargers with variable or fixed geometry and with waste gate. **EUI injection system with total electronic control**.

Note:

- 1) Maximum value, compliant with suitable certifications and with Directive CE 97/68 (without fan), after 50 hours of operation, tolerance 3%. Test conditions ISO 3046/1: atmospheric pressure 100 kPa, T 25°C, relative humidity 30%, as per DIN 6271 - BS 5514 SAE J 1349 Standards.
- 2) Meets the ISO 3745 standard, at maximum power.
- 3) Best point.
- 4) Data refer to the vertical version; length from flywheel case to fan flange - width (minimum engine block) maximum installation.
- 5) Without liquids, standard configuration.

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# VECTOR

V6 - V8 - V12 - V16  
FROM 15 TO 40 LITRE

Code		VECTOR 15	VECTOR 20	VECTOR 30	VECTOR 40
Cylinders	num.	6	8	12	16
Displacement	cm³	15060	20080	30120	40160
Bore x stroke	mm	145 X 152			
Idle speed	rpm	600			
Power (1)	kW @ rpm	540 @ 2100	720 @ 2100	1080 @ 2100	1440 @ 2100
Torque	Nm @ rpm	2800 @ 1200	3700 @ 1200	5600 @ 1200	7400 @ 1200
Operating noise (2)	dB(A)	≤ 97			
Fuel consumption(3)	g/kWh	195			
Lenght (4)	mm	1185	1375	1755	2150
Width	mm	1400			
Overall height (5)	mm	860			
Weight (6)	kg	1100	1450	2200	2900
Front PTO	Nm	400 X 2			
Rear PTO	Nm	800 @ 800	1100 @ 800	1650 @ 800	2200 @ 800
Certifications		EURO 3 - CE 97/68 Phase 2 - EPA Tier 2			
Working life (BE10 l.f. 60%)	h	25000			

Note:

- 1) Maximum value, compliant with suitable certifications and with Directive CE 97/68 (without fan), after 50 hours of operation, tolerance 3%. Test conditions ISO 3046/1: atmospheric pressure 100 kPa, T 25°C, relative humidity 30%, as per DIN 6271 - BS 5514 SAE J 1349 Standards.
- 2) Meets the ISO 3745 standard, at maximum power.
- 3) Best point.
- 4) Maximum value.
- 5) Minimum with low profile sump.
- 6) Without liquids, standard configuration.

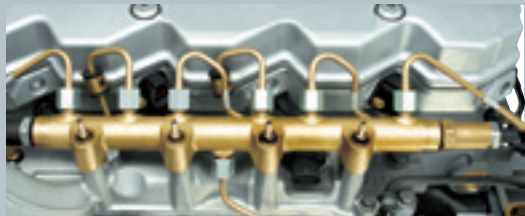
Stabilized cast iron monolithic engine block with wet cylinder liners. Singular cast iron cylinder heads with **high turbulence induction lines**. Eutectic aluminium alloy pistons, with toroidal cooling tunnel and omega shaped combustion chamber. High strength steel drive shaft with counterweights and front/rear balancing flywheels. **Ability to configure water, oil and combustion air cooling circuits in many different ways**. Forced lubrication with engine cooling liquid heat exchanger. Timing system with **4 valves per cylinder** controlled by rods with long life roller tappets and rocker arms. Single camshaft at the center of the engine block, driven by helical gears. Supercharged with intercooler. Turbochargers controlled by waste gate. **Common rail injection with total electronic control**.



# ENGINES DESIGNED FOR THE FUTURE

INNOVATIVE TECHNOLOGIES  
CUTTING EDGE INJECTION SYSTEMS  
MINIMIZED GAS AND SOUND EMISSIONS

The high technological level of the designs and of fabrication and assembly processes have helped produce *intrinsically clean engines* with first rate performance.



Thanks to the *injection pressures of up to 1600 bar* of Common Rail and EUI systems and to the flexibility of electronic control over all air and fuel parameters, the combustion process is optimized and *gas and acoustic emissions are contained* below the limits prescribed by current and future *EPA, EURO and CE standards*, which for NEF engines are also assured by the option of equipping them with *traditional injection pumps*.

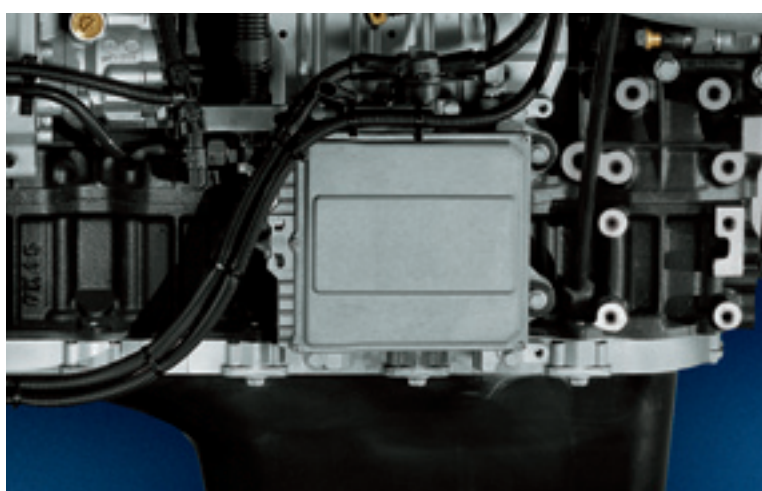


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## TOTAL ELECTRONIC CONTROL

**EXTREME RELIABILITY,  
BEST EFFICIENCY  
AND LONG WORKING LIFE**

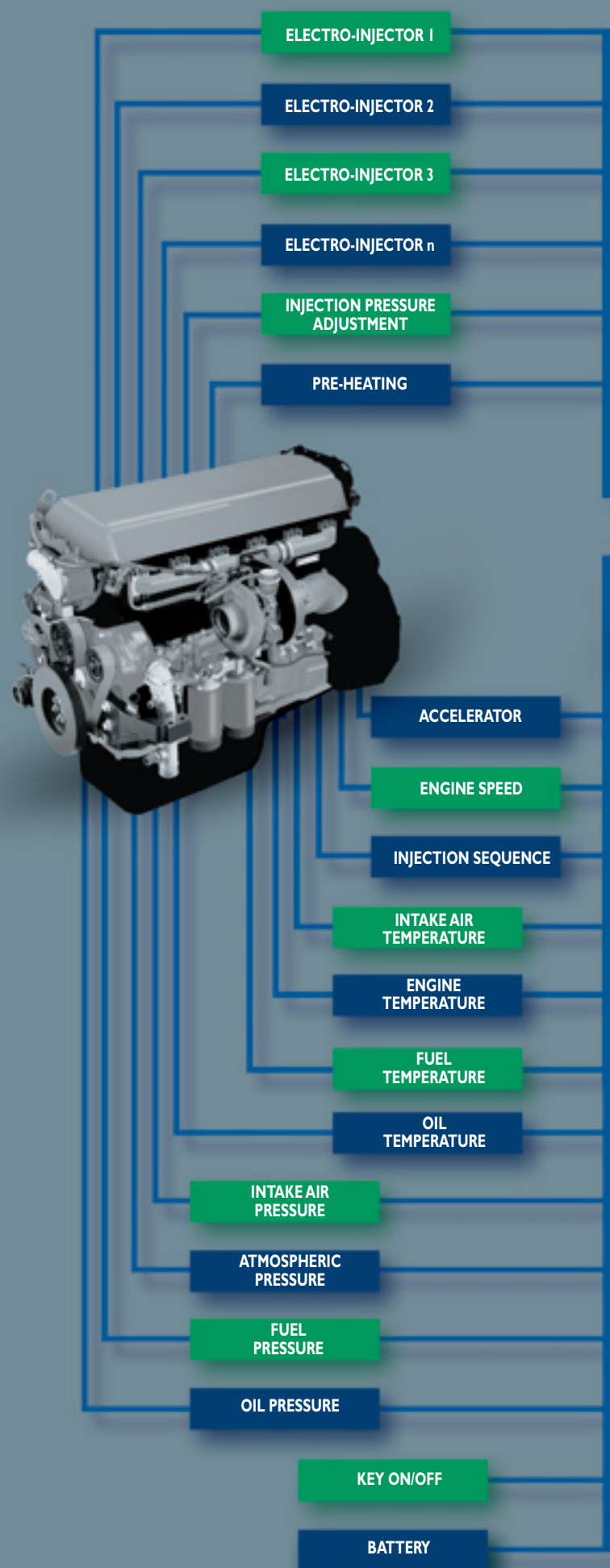


The **total electronic control** adopted by IVECO allows the shaping of the engine's torque and power curves to better match the engine performance to customer needs to meet all conditions of operation. Through the exchange of data on the **"CAN interface"**, it is possible to ensure that all the systems work together for optimum performance for the application. The engines' **long working life** is protected and assured by highly effective software within the Central Control Unit which, by detecting all unexpected operating conditions, however short in duration, can act when necessary to effect the engine's management to allow it to **work with total safety** and the utmost efficiency. Complementary to the role of engine management function, the electronic control unit extends to the verification of the entire **system's complete operation**. An extensive quantity of information, stored in the Central Unit and decoded with **user friendly portable tools**, allows the use to foresee servicing needs, providing precise indications to make it even easier **to plan maintenance activities**.

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# Bus CAN



## SYSTEM PERFORMANCE

- Computation of injection quantity and advance
- Combustion verification
- Management of starting aid systems
- Isochronous control over engine rpm setting
- Optimized acceleration transient management
- Balancing torque delivery among the cylinders



- Injection compensation with engine and fuel temperature variations
- Tailoring operation to different environmental conditions
- Limiting engine torque and maximum rpm
- Managing the PTO rpm and the torque increase mode
- Recording operating events: hours, consumption, utilization factors
- Communication with other electronic units connected to the application on "CAN" network
- Self-diagnosis of critical operating factors
- Alarm indication in preventive, present, critical mode
- Communication with programming and diagnosing tools





IVECO Motors confirms its current and future presence on the world engine market with specific skills dedicated to the following applications

**AUTOMOTIVE, INDUSTRIAL  
AND AGRICULTURAL, MARINE,  
AND ENERGY GENERATION**

The IVECO Motors sales network has over 600 points of sale all over the world, with over 1,000 technical assistance centers. With more than 400,000 engines delivered every year, IVECO Motors is one of the world's foremost manufacturers of Diesel engines in the 40 to 1600 kW power range.

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HEAD OFFICES AND BRANCHES

**IVECO S.p.A.**

IVECO Motors  
Lungo Stura Lazio, 49  
10156 Torino - Italy  
Tel. +39 (011) 0076245  
Fax +39 (011) 0076275  
[www.ivecomotors.com](http://www.ivecomotors.com)

**IVECO S.p.A.**

IVECO Motors  
Viale dell'Industria, 15/17  
20010 Pregnana Milanese, (MI) - Italy  
Tel. +39 (02) 935101  
Fax +39 (02) 93590029

**IVECO FRANCE S.A.**

IVECO Motors  
50 Rue Ampère - B.P. 103  
69685 Chassieu Cedex - France  
Tel. +33 (04) 72472222  
Fax +33 (04) 78905990

**IVECO MAGIRUS A.G.**

IVECO Motors  
Heiner Fleischmann-Straße, 9  
74172 Neckarsulm - Germany  
Tel. +49 (07132) 976990  
Fax +49 (07132) 976935

**IVECO SWEDEN A.B.**

IVECO Motors  
Lergökgatan, 12  
42150 Västra Frölunda - Sweden  
Tel. +46 (31) 492450  
Fax +46 (31) 492457

**IVECO U.K. Ltd**

IVECO Motors  
Road One - Industrial Estate  
CW7 3QP Winsford - U.K.  
Tel. +44 (01606) 541027  
Fax +44 (01606) 541124

**IVECO N.V.**

IVECO Motors  
Liaison office-India  
52 Okhla-Industrial Estate  
Phase III  
110020 New Delhi - India  
Tel. +91 98 10403881 - 2  
Fax +91 11 51613573

**IVECO FIAT**

Representative Office in P.R.China  
10/F Jinling Hotel  
World Trade Center 2 Hanzhong Road  
210005 Nanjing - China  
Tel. +86 (25) 4710981  
Fax +86 (25) 4701105

**IVECO L.A.**

IVECO Motors  
Rua Alameda da Serra, 222  
Vale do Sereno - Brazil  
34000 - 000 Nova Lima (MG)  
Tel. +55 (31) 3286 3732/33/34  
Fax +55 (31) 3286 3735

**IVECO MOTORS OF N.A.**

245 E. North Avenue  
Carol Stream, IL 60188 - 2021 USA  
Tel. +1 630 260 42 26  
Fax +1 630 260 42 67



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*The information provided herein is current as of the publication date. The figures illustrate only a few of the countless possible configurations and layout of the engines. The manufacturer reserves the right to make modifications at any time and without advance notice, to meet technical or commercial requirements or to comply with legal and regulatory requirements.*

