

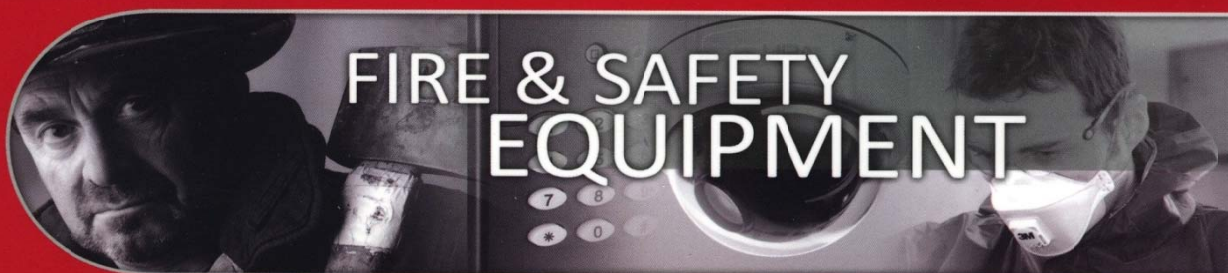
# Fire Fighting Pumps



شركة هبة لمعدات السلامة و الحريق المحدودة  
HEBA FIRE & SAFETY EQUIP. CO. LTD



## Systems Design & ENGINEERING



## FIRE & SAFETY EQUIPMENT

### **HEBA PUMP** *European standard*

## INDEX

- Scope of Supply.
- Items' Features.
- Sequence of pumps' operation
- Specifications.
- HEBA Fire Pumps' ranges.
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- Mechanical Drawing.
- products' Catalogs.



## Scope of Supply

### The Fire Pumps Set includes:

- **Main Pump, Electric Motor Driven Pump, contains :**  
1 IDEAL Pump, coupled with MEZ electric motor mounted on a common base frame
- **Stand by Pump, Diesel Engine Driven Pump, contains :**  
1 IDEAL Pump, coupled with LAMBORDINI Diesel Engine ( UP to 35 HP), & VM Motori Diesel Engine ( UP to 150 HP) mounted on a common base frame.
- **Jockey Pump, Vertical Multistage pump..**
- **Control Panel, Auto- Manual to protect and operate the set.**
- Pressure Gauge & Pressure Switches.
- Suction & Discharge Header - as Standard.
- Related Fittings & Accessories
- Pressure Tank.
- Common Fabricated steel base frame

### Fire Unit Scope

- Main Pump, Stand by , & Jockey set. ( EDJ )
- Main Pump, & Jockey Set. ( EJ )
- Stand by, & Jockey Set. ( DJ )
- With Suction line ( Standard ), & without it.



## Items' Features

### Main & Stand by Pump:

- Centrifugal Horizontal Endsuction Pump, single stage, Flexible coupling

- Brand : Bombas Ideal (made in Spain)

- Materials of Constructions:

*Casing And Cover* Cast Iron GG 25

*Impeller* Cast Iron GG 25

*Shaft* Stainless Steel AISI 420

*Wearing Rings* Cast Iron GG 25

*Meachanical Seal* Carbon ceramic

*DIN 24960*

- Bearing lubrication : *Oil for H types& grease for the rest.*



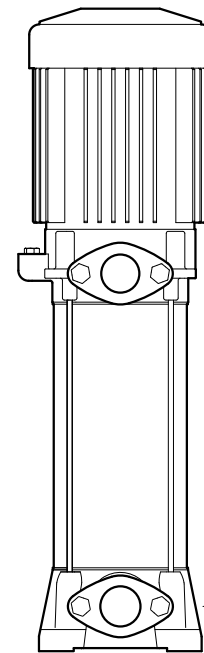
### Jockey Pump:

- Centrifugal Vertical Multistage.

- TEFC Motor, Class F, IP55, 2 poles

- Range : 3, 4, 5.5, & 7.5 HP

- Brand : Bombas Ideal (made in Spain)



\*\* See the Catalogs for more details ( catalog's chapter - IDEAL )



### Electric Motor Driven

- Low Voltage Three Phase Squirrel Cage Asynchronous Motors
- Totally Enclosed Fan Cooled IE3 IP 55 IM B3
- Isolation Class F, Iff 88%
- Brand : MEZ ( made in Czech Republic)
- Voltage : 220/380, 380/660 V. 2 poles 60Hz.
- Range ( KW) : 15, 22, 37, 45, 55, 75, 90, & 110 KW
- Approvals : CE, IEC/EN 60034



### Diesel Engine Driven

- 4 Stroke, Direct Injection. Fitted with a stop Soleniod

#### **LAMBARDINI** ( Up to 50 HP) - Italy made



- 12LD477 / 2 cylinders, 23HP@3600 rpm, Air Cooled
- LDW1003 / 3 cylinders, 27.2HP@3600 rpm, Water Cooled
- LDW1404 / 4 cylinders, 35.2HP@3600 rpm, Water Cooled.
- LDW2204 / 4 cylinders, 51HP@3000 rpm, Water Cooled. ( Slovakia )

#### **VM Motori** ( Up to 150 HP ) - Italy made

- D703 / 3 cylinders, 72HP@3000 rpm, Water Cooled.
- D754 / 4 cylinders, 100HP@3000 rpm, Water Cooled.
- D756 / 6 cylinders, 150HP@3000 rpm, Water Cooled.



#### **Accessories :**

- Fuel Tank.
- 12 VDC Battery.
- Stop soleniod.



## Related fittings & Accessories ( Assembly )

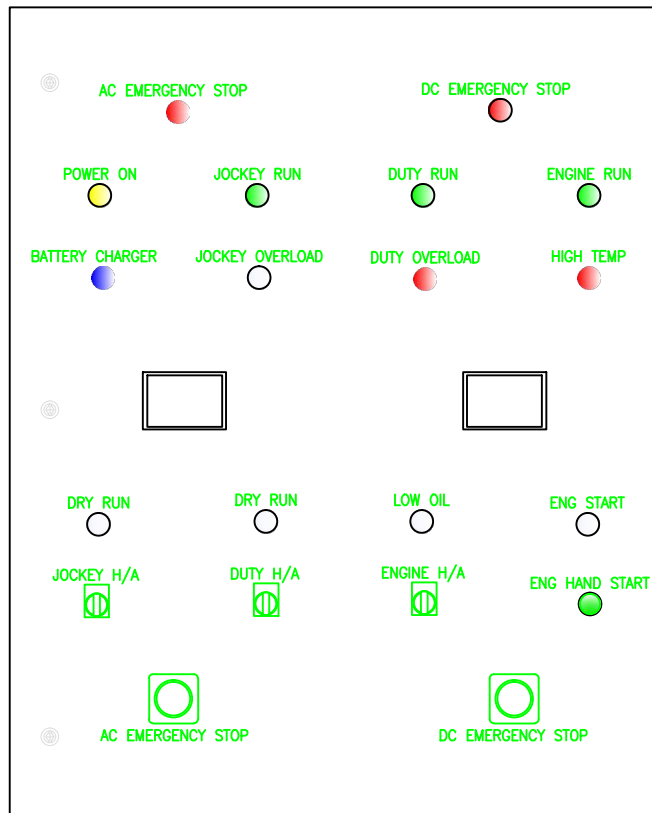
- **Gate Valves:** Threaded or flanged of good quality shall be fitted on suction and discharge of each pump.
- **Check Valves:** Spring type, cast iron flanged or threaded of a good quality shall be fitted on the discharge of each pump.
- **Rubber Expansion Joints:** single flanged or double sphere threaded according to pipe size, would be fitted at both side of diesel pump.
- **Suction & Discharge Headers.**
- **Pressure switched & pressure Gauge:** Differential adjustment type switch. Each pump is provided with a switch. Switched are pipeline mounted and provided with a ball valve for easy replacement.
- **Pressure Tank:** Membrane type pressure tank, equipped with isolating bleed off and charging valve . from 60 to 500 liters.
- **Rubber mount** for the diesel base frame.



## Control Panel

Standard features shall includes the following:

- Thermal Over load Relays
- Circuit Breakers.
- Hand/Off/ Auto switches.
- Automatic cranking system.
- Emergency stops.
- Automatic battery charger.
- Ammeter & Voltmeter ( for the pump set 500 gpm and above)
- Starting method: (1) Wye Delta Connection (for the pump set 500 gpm and above), (2) DOL ( for the rest ), (3) SoftStarter (as an Option).
- Warning lights.
- Water proof control box ( IP65)



## Sequence of Operation

The system is at first pressurized to a pre-set pressure that is determined by the pressure requirements of the fire fighting equipment such as sprinklers, hose reels. Due to minor leaking in the pipeline the pressure drop accordingly, so jockey pump should maintain the system pressurized through its pressure switch. In case of fire, the system pressure would drop majorly and electric pump would come into operation. In case of power supply failure, diesel pump would start on sequentiall.

Water consumption. The three pumps would stop automatically.

## Specifications

Pumps to DIN 24-255 define the hydraulic performances and principal dimensions of the horizontal centrifugal pumps. In accordance with these norms we have designed our range of the pumps.

This normalization leads to simplicity in maintenance, as well as manufacture, because fewer components are required to service the entire range, facilitating also the spare parts service. Fire pumps can lift liquids with temperature up to 105 celsius.





## HEBA Fire Pumps' Range

Rated capacity ( GPM )

120, 150, 250, 350, 400, 500, 750, 1000, 1250, 1500 GPM

Pressure up to 10 bar for all, 7 bar for 1500 gpm, & 12 bar for 750gpm.

### **Pump Performance Curve - Pump code**

- 120 gpm @ 7 bar - FI HFM P 0299 ( Fig 1)
- 150 gpm @ 7 Bar - FI HFM P 0214 ( Fig 2)
- 250 gpm @ 7 bar - FI HFM P 0094 ( Fig 3)
- 350 gpm @ 7 Bar - FI HFM P 0116 ( Fig 4)
- 500 gpm @ 7 bar - FI HFM P 0104 ( Fig 5&6)
- 750 gpm @ 7 bar - FI HFM P 0143 ( Fig 7&8)
- 1000 gpm @ 7 bar - FI HFM P 1065 ( Fig 9&10)
- 1500 gpm @ 7 bar - FI HFM P 1050 ( Fig 11&12)



# Fire Fighting Pumps

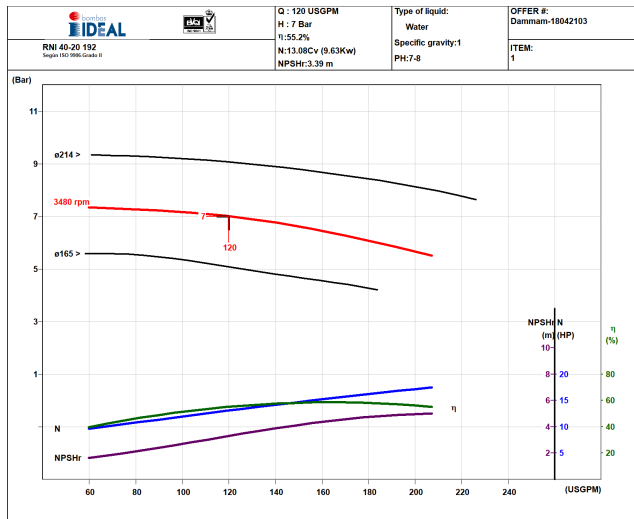


Fig 1: 120 gpm@ 7 Bar- 3600 rpm

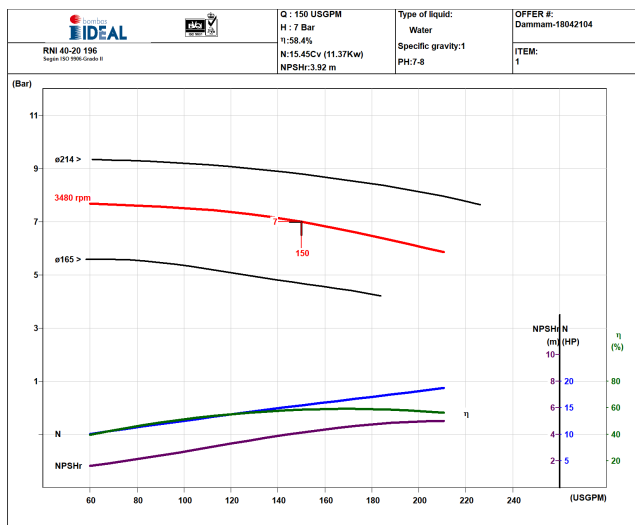


Fig 2: 150 gpm@ 7 Bar- 3600 rpm

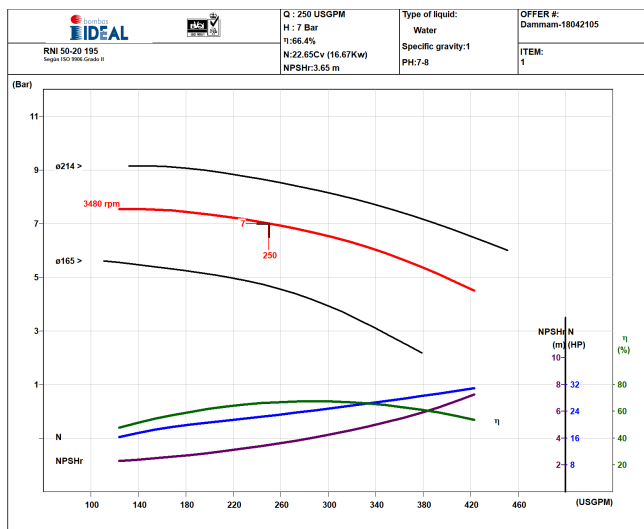


Fig 3: 250 gpm@ 7 Bar- 3600 rpm

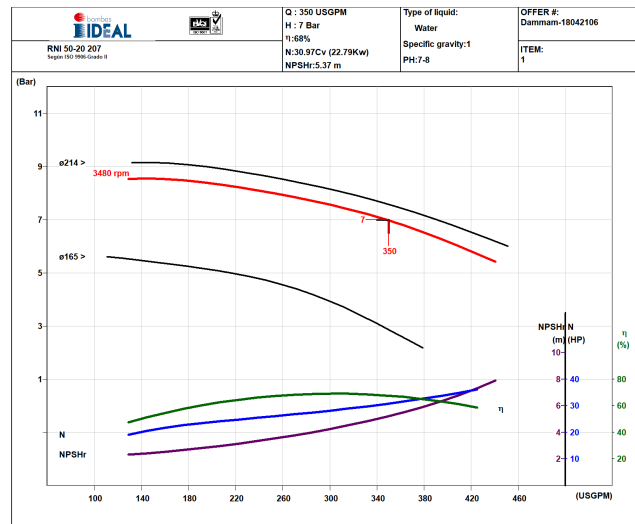


Fig 4: 350 gpm@ 7 Bar- 3600 rpm

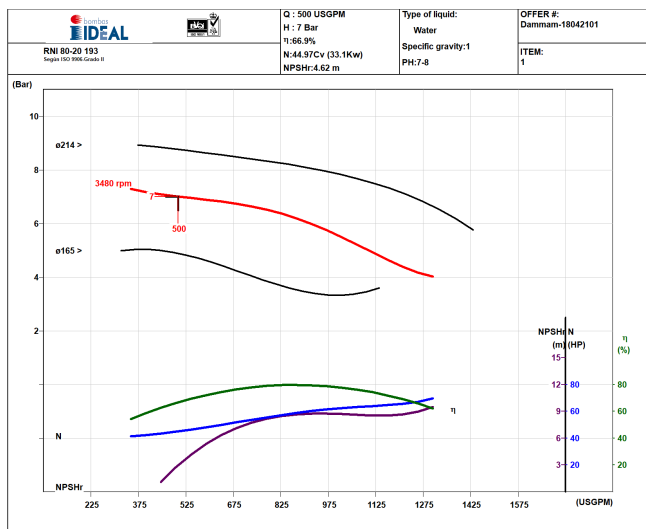


Fig 5: 500 gpm@ 7 Bar- 3600 rpm

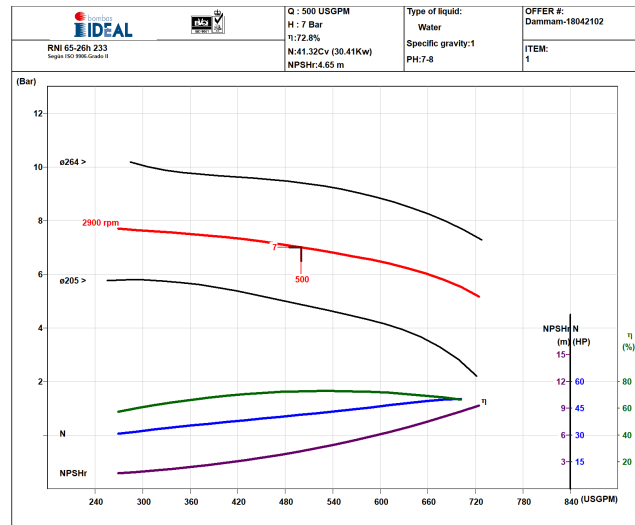


Fig 6: 500 gpm@ 7 Bar- 3000 rpm



# Fire Fighting Pumps

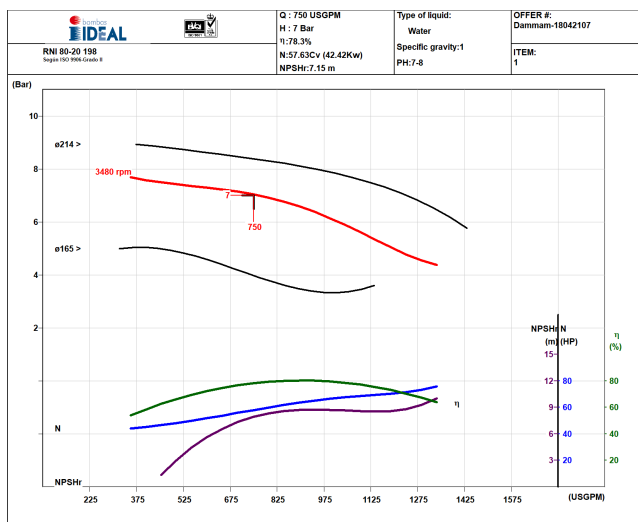


Fig 7: 750 gpm@ 7 Bar- 3600 rpm

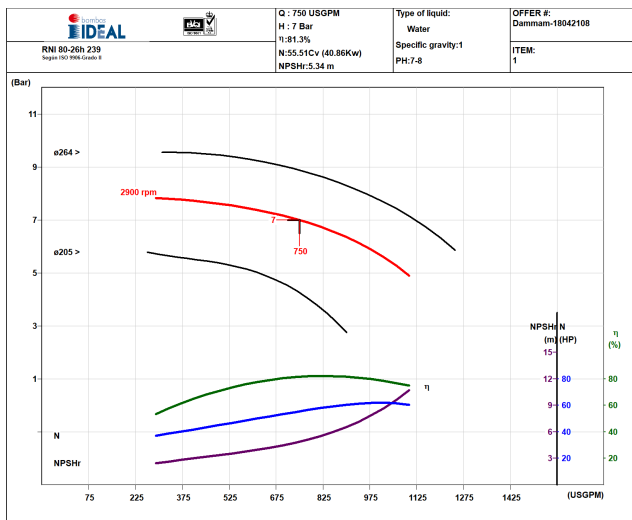


Fig 8: 750 gpm@ 7 Bar- 3000 rpm

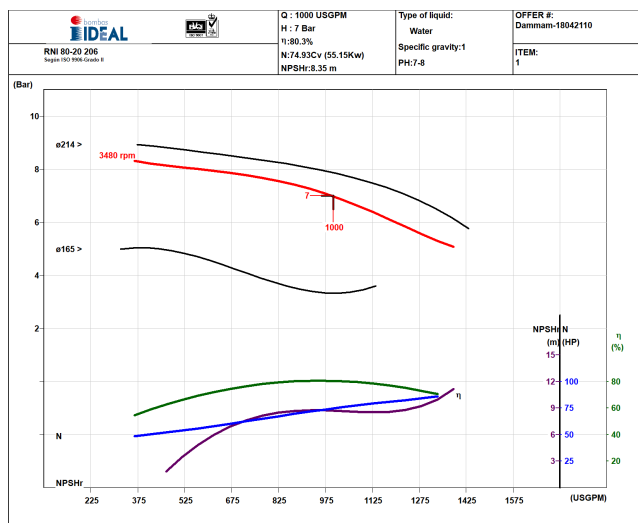


Fig 9: 1000 gpm@ 7 Bar- 3600 rpm

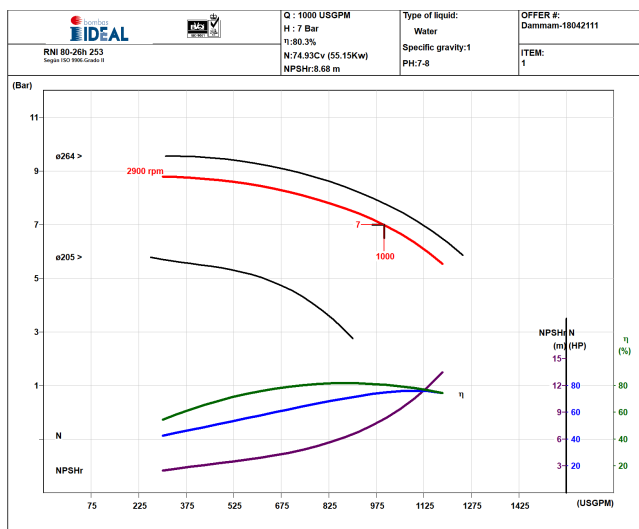


Fig 10: 1000 gpm@ 7 Bar- 3000 rpm

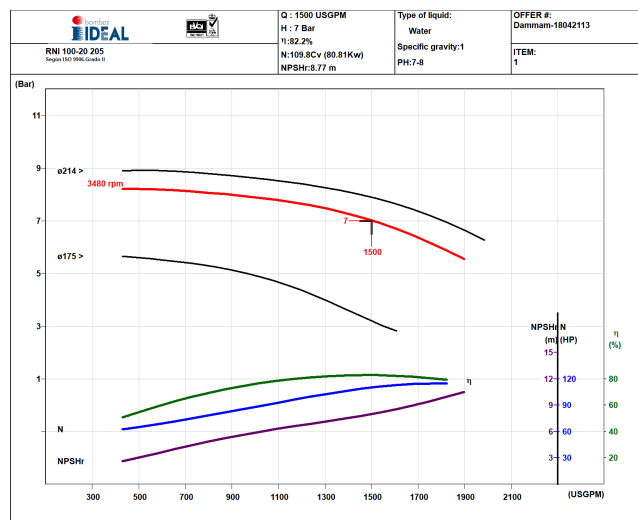


Fig 11: 1500 gpm@ 7 Bar- 3600 rpm

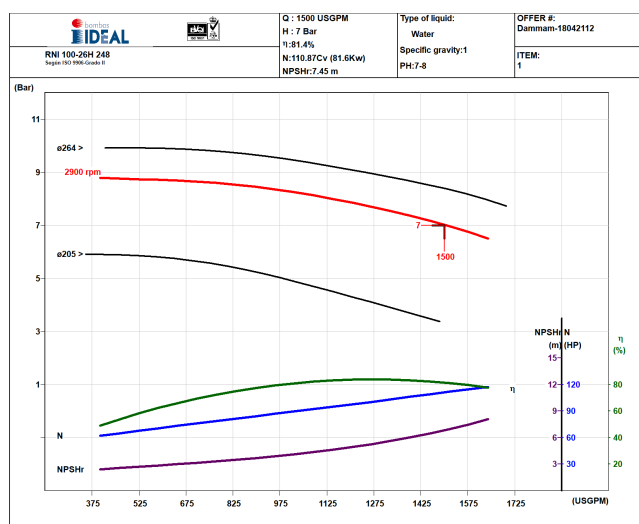


Fig 12: 1500 gpm@ 7 Bar- 3000 rpm



## Material list

- Electric Motor Size.
- Diesel Engine Model.
- Electric Pump Model.
- Diesel Pump Model.
- Jockey Pump Model.
- Suction & Discharge Size.
- Pipline Size.
- Pressure Tank Capacity.
- Battery Capacity.

HEBA Codes	Capacity GPM	Head PSI	Discharge pump *	Suction Pump *	Motor Driven *	Diesel Driven *	Jockey	Discharge Manifold	Suction Manifold
FI HFM P 0299	120	100	RNI 40-20	RNI 40-20	MEZ 18.5KW	LAMBORDINI 23HP	VIPV 3HP	2.5"	2.5"
FI HFM P 0214	150		RNI 40-20	RNI 40-20	MEZ 18.5KW	LAMBORDINI 23HP	VIPV 3HP	2.5"	2.5"
FI HFM P 0094	250		RNI 50-20	RNI 50-20	MEZ 22KW	LAMBORDINI 27HP	VIPV 4HP	3"	3"
FI HFM P 0116	350		RNI 50-20	RNI 50-20	MEZ 30KW	LAMBORDINI 35HP	VIPV 4HP	4"	4"
FI HFM P 0104	500		RNI 80-20	RNI 65-26H	MEZ 37KW	LAMBORDINI 51HP	VIPV 4HP	6"	6"
FI HFM P 0143	750		RNI 80-20	RNI 80-26H	MEZ 55KW	VM MOTORI 73HP	VIPV 5.5HP	6"	6"
FI HFM P 1065	1000		RNI 80-20	RNI 80-26H	MEZ 75KW	VM MOTORI 100HP	VIPV 5.5HP	8"	8"
FI HFM P 0XXX	1250		RNI 100-20	RNI 100-26H	MEZ 90KW	VM MOTORI 150HP	VIPV 7.5HP	8"	8"
FI HFM P 1050	1500		RNI 100-20	RNI 100-26H	MEZ 90KW	VM MOTORI 150HP	VIPV 7.5HP	8"	8"

Table 1 Fire Unit's components. (\*) the model may changed

HEBA Codes	Capacity GPM	Starting Method	Battery	Pressure Tank (Ltr)	Diesel Tank	Vibration Protections	Discharge Piping	Suction Piping
FI HFM P 0299	120	DOL	70 AH	60	External	Expansion Joints on suction and Discharge & Base rubber mount ( for Diesel only)	2"	2"
FI HFM P 0214	150	DOL	70 AH	60	External		2"	2"
FI HFM P 0094	250	DOL	70 AH	60	External		2.5"	2.5"
FI HFM P 0116	350	DOL	70 AH	60	External		3"	3"
FI HFM P 0104	500	Wye-Delta	100 AH	200	Built with Engine		3"	3"
FI HFM P 0143	750	Wye-Delta	100 AH	200	External		4"	5"
FI HFM P 1065	1000	Wye-Delta	100 AH	500	External		4"	5"
FI HFM P 0XXX	1250	Wye-Delta	100 AH	500	External		5"	5"
FI HFM P 1050	1500	Wye-Delta	100 AH	500	External		5"	5"

Table 2 Fire Unit's standrad features



## List of HEBA Pumps products

Pump Code	Description	Type	Pump Code	Description	Type
FI HFM P 0002	PUMP SET 1000GPM@8.5BAR	E/D/J	FI HFM P 0270	PUMP SET 250GPM@7BAR, WITHOUT SUCTION LINE	E/J
FI HFM P 0007	PUMP SET 120GPM@7BAR	D/J	FI HFM P 0274	PUMP SET 250GPM@6BAR	E/D/J
FI HFM P 0008	PUMP SET 750GPM@7BAR	D	FI HFM P 0275	PUMP SET 250GPM@6BAR, WITHOUT SUCTION LINE	E/D/J
FI HFM P 0020	PUMP SET 120GPM@6BAR	E/J	FI HFM P 0278	PUMP SET 250GPM@6BAR, WITHOUT SUCTION LINE	D/J
FI HFM P 0022	PUMP SET 120GPM@6BAR	D/J	FI HFM P 0283	PUMP SET 200GPM@7BAR, WITHOUT SUCTION LINE	E/D/J
FI HFM P 0025	PUMP SET 300GPM@7BAR	2E/J	FI HFM P 0284	PUMP SET 200GPM@7BAR	D/J
FI HFM P 0029	PUMP SET 200 GPM@7BAR	E/D/J	FI HFM P 0285	PUMP SET 200GPM@7BAR, WITHOUT SUCTION LINE	D/J
FI HFM P 0031	PUMP SET 250GPM@6BAR	D/J	FI HFM P 0286	PUMP SET 200GPM@7BAR	E/J
FI HFM P 0032	PUMP SET 500GPM@7BAR	D/J	FI HFM P 0288	PUMP SET 150GPM@7BAR	E/J
FI HFM P 0033	PUMP SET 150GPM@7BAR	D/J	FI HFM P 0289	PUMP SET 150GPM@7BAR, WITHOUT SUCTION LINE	E/D/J
FI HFM P 0051	PUMP SET 150GPM@6BAR	D/J	FI HFM P 0290	PUMP SET 150GPM@7BAR, WITHOUT SUCTION LINE	D/J
FI HFM P 0063	PUMP SET 250GPM@6BAR	E/D/J	FI HFM P 0291	PUMP SET 150GPM@7BAR, WITHOUT SUCTION LINE	E/J
FI HFM P 0071	PUMP SET 120GPM@7BAR	E/J	FI HFM P 0292	PUMP SET 150GPM@6BAR	E/D/J
FI HFM P 0074	PUMP SET 500GPM@9BAR	D/J	FI HFM P 0294	PUMP SET 150GPM@6BAR, WITHOUT SUCTION LINE	D/J
FI HFM P 0094	PUMP SET 250GPM@7BAR	E/D/J	FI HFM P 0297	PUMP SET 120GPM@7BAR, WITHOUT SUCTION LINE	E/D/J
FI HFM P 0102	PUMP SET 250GPM@7BAR	D/J	FI HFM P 0298	PUMP SET 120GPM@7BAR, WITHOUT SUCTION LINE	D/J
FI HFM P 0104	PUMP SET 500GPM@7BAR	E/D/J	FI HFM P 0299	PUMP SET 120GPM@7BAR	E/D/J
FI HFM P 0104S	PUMP SET 500GPM@7BAR,50HZ	E/D/J	FI HFM P 0304	PUMP SET 750GPM@7BAR	E/J
FI HFM P 0105	PUMP SET 500GPM@7BAR, WITHOUT SUCTION LINE	2E/J	FI HFM P 0309	PUMP SET 500GPM@8BAR	D/J
FI HFM P 0112	PUMP SET 300GPM@7BAR	E/D/J	FI HFM P 0311	PUMP SET 1000GPM@10BAR	2E/D/J
FI HFM P 0116	PUMP SET 350GPM@7BAR	E/D/J	FI HFM P 0316	PUMP SET 750GPM@9BAR, WITHOUT SUCTION LINE	E/D/J
FI HFM P 0143	PUMP SET 750GPM@7BAR	E/D/J	FI HFM P 0407	PUMP SET 500GPM@10BAR	E/D/J
FI HFM P 0162	PUMP SET 250GPM@9BAR	E/J	FI HFM P 0408	PUMP SET 500GPM@7BAR, WITHOUT SUCTION LINE	E/D/J
FI HFM P 0163	PUMP SET 500GPM@7BAR	E/J	FI HFM P 0501	PUMP SET 250GPM@7BAR	2E/J
FI HFM P 0189	PUMP SET 500GPM@8BAR	D/J	FI HFM P 1001	PUMP SET 500GPM@8BAR	E/J
FI HFM P 0214	PUMP SET 150GPM@7BAR	E/D/J	FI HFM P 1002	PUMP SET 750GPM@8BAR	E/D/J

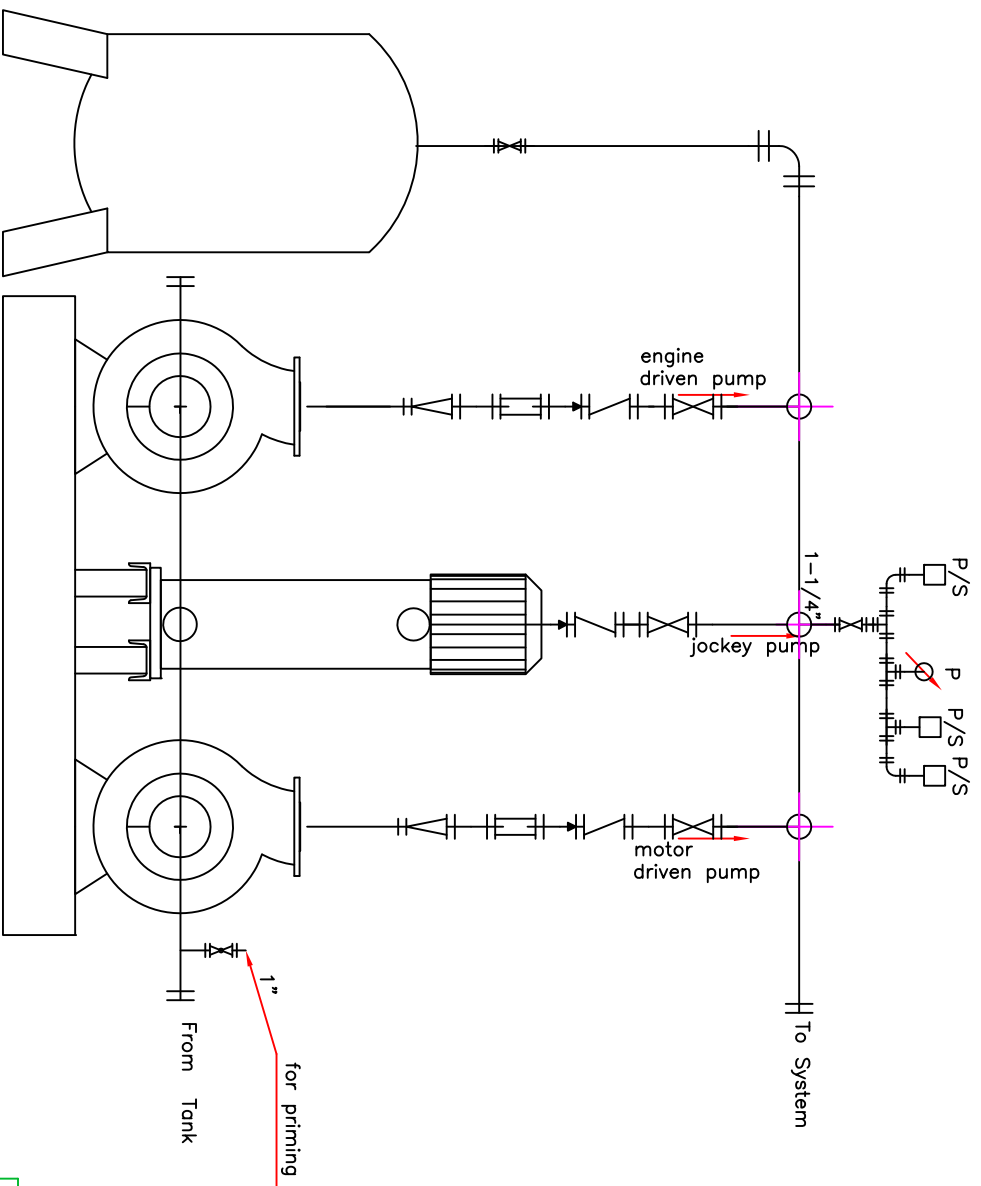


## Fire Fighting Pumps

FI HFM P 0229	PUMP SET 150GPM@8BAR	D/J	FI HFM P 1004	PUMP SET 750GPM@10BAR	E/D/J
FI HFM P 0232	PUMP SET 500GPM@9BAR	E/D/J	FI HFM P 1007	PUMP SET 300GPM@8BAR	E/D/J
FI HFM P 0233	PUMP SET 500GPM@8BAR	E/D/J	FI HFM P 1008	PUMP SET 500GPM@8BAR, WITHOUT SUCTION LINE	E/D/J
FI HFM P 0235	PUMP SET 1000GPM@7BAR	E/D/J	FI HFM P 1009	PUMP SET 550GPM@9BAR	E/D/J
FI HFM P 0236	PUMP SET 1000GPM@7BAR, WITHOUT SUCTION LINE	E/D/J	FI HFM P 1012	PUMP SET 350GPM@8BAR	E/D/J
FI HFM P 0238	PUMP SET 1000GPM@7BAR	D/J	FI HFM P 1014	PUMP SET 150GPM@10BAR	E/D/J
FI HFM P 0239	PUMP SET 1250 GPM@8BAR	E/D/J	FI HFM P 1015	PUMP SET 150GPM@8BAR	E/D/J
FI HFM P 0240	PUMP SET 1000GPM@7BAR	E/J	FI HFM P 1021	PUMP SET 500GPM@9BAR, WITHOUT SUCTION LINE	E/D/J
FI HFM P 0241	PUMP SET 1000GPM@7BAR, WITHOUT SUCTION LINE	E/J	FI HFM P 1024	PUMP SET 1000GPM@8BAR	E/D/J
FI HFM P 0242	PUMP SET 750GPM@7BAR, WITHOUT SUCTION LINE	E/D/J	FI HFM P 1027	PUMP SET 350GPM@9BAR	E/D/J
FI HFM P 0243	PUMP SET 750GPM@7BAR	D/J	FI HFM P 1028	PUMP SET 750GPM@9BAR	E/D/J
FI HFM P 0246	PUMP SET 500GPM@7BAR, WITHOUT SUCTION LINE	E/D/J	FI HFM P 1031	PUMP SET 350GPM@10BAR	E/D/J
FI HFM P 0252	PUMP SET 500GPM@7BAR	E/J	FI HFM P 1041	PUMP SET 200GPM@6BAR	E/J
FI HFM P 0253	PUMP SET 400GPM@7BAR	E/D/J	FI HFM P 1042	PUMP SET 100GPM@8BAR	E/D/J
FI HFM P 0254	PUMP SET 400GPM@7BAR, WITHOUT SUCTION LINE	E/D/J	FI HFM P 1050	PUMP SET 1500GPM@7BAR	E/D/J
FI HFM P 0257	PUMP SET 400GPM@7BAR	D/J	FI HFM P 1053	PUMP SET 1000GPM@9.5BAR	E/D/J
FI HFM P 0258	PUMP SET 400GPM@7BAR, WITHOUT SUCTION LINE	D/J	FI HFM P 1058	PUMP SET 1500GPM@7BAR	E/D/2J
FI HFM P 0263	PUMP SET 300GPM@7BAR, WITHOUT SUCTION LINE	E/D/J	FI HFM P 1061	PUMP SET 350GPM@8BAR	E/J
FI HFM P 0264	PUMP SET 300GPM@7BAR, WITHOUT SUCTION LINE	D/J	FI HFM P 1065	PUMP SET 1000GPM@10BAR	E/D/J
FI HFM P 0265	PUMP SET 300GPM@7BAR	E/J	FI HFM P 1070	PUMP SET 350GPM@7BAR, WITHOUT SUCTION LINE	E/D/J
FI HFM P 0267	PUMP SET 250GPM@7BAR, WITHOUT SUCTION LINE	E/D/J	FI HFM P 1081	PUMP SET 750GPM@8BAR	2E/J
FI HFM P 0268	PUMP SET 250GPM@7BAR, WITHOUT SUCTION LINE	D/J	FI HFM P 1082	PUMP SET 750GPM@8.5BAR	E/D/J
FI HFM P 0269	PUMP SET 250GPM@7BAR	E/J	FI HFM P 1085	PUMP SET 500GPM@9BAR	E/D/J
			FI HFM P 1089	PUMP SET 750GPM@7.7BAR	E/D/J
			FI HFM P 1097	PUMP SET 200GPM@8BAR	E/D/J
			FI HFM P 1098	PUMP SET 400GPM@8BAR	E/D/J

Table 3 HEBA Pumps Products

**Mechanical Drawing**



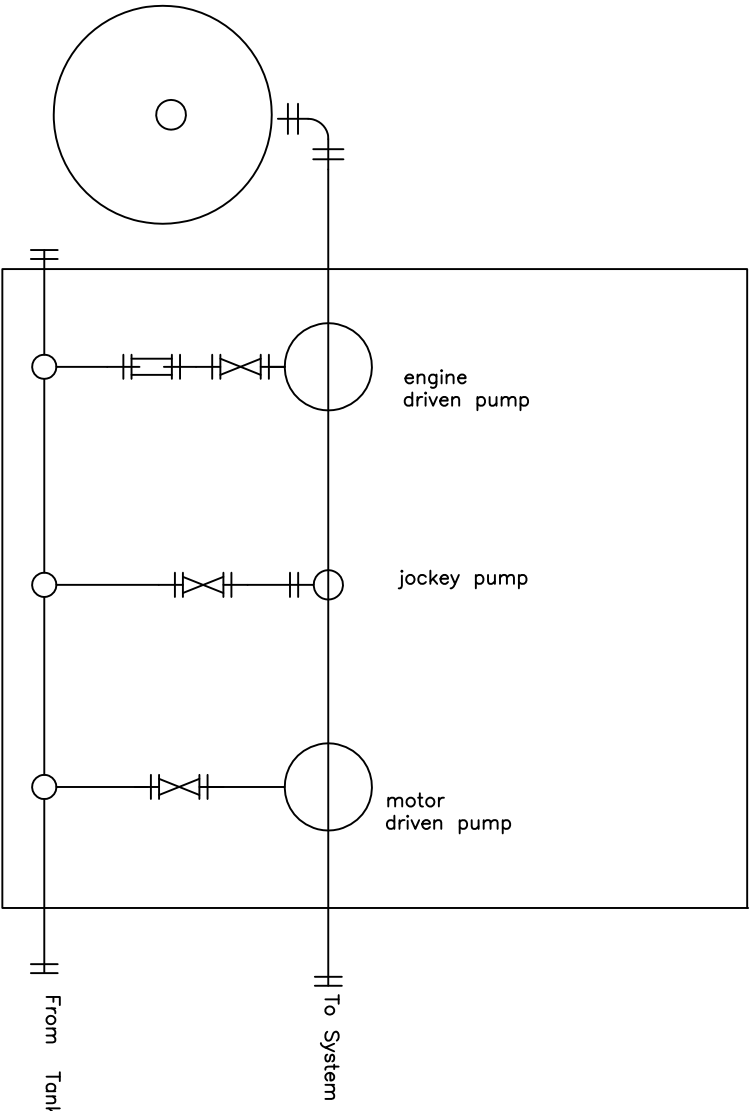
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**HEBA FIRE FIGHTING EQUIP.**  
**MFG. CO. LTD. DAMMAM**

DRAWN BY	DATE	13/03/07	PROJECTION
DESIGNED BY	SCALE	N.T.S	
APPROVED BY	ENGC. DEPT.	PROD.	
TITLE Simple Drawing for Set Assembly Front View			
PROJECT			

JOB No.	DRAWING No.	SHEET NO. SIZE REVISION
HE 0307 06 3 0015		10F1 A4



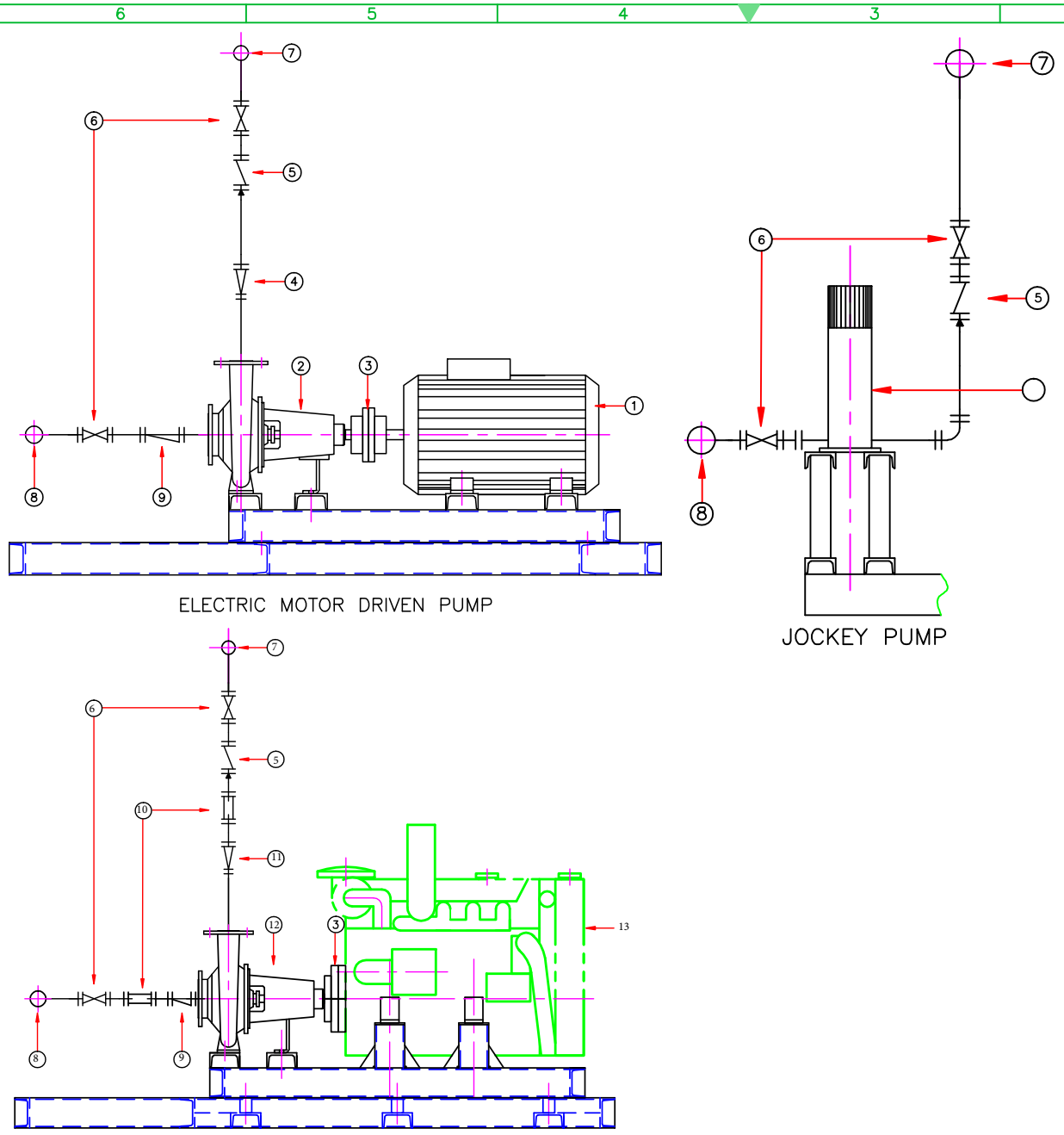
**HEBA FIRE FIGHTING EQUIP.  
MFG. CO. LTD. DAMMAM**

DRAWN BY	DATE	13/03/07	PROJECTION
DESIGNED BY	SCALE	N.T.S	
APPROVED BY	ENGC. DEPT. PROD.		

Simple Drawing for Set Assembly – Top View

PROJECT

JOB No.	DRAWING No.	SHEET NO. SIZE REVISION
HE 0307 06 3 0015		10F1 A4



- ITEM DESCRIPTION
- ①— ELECTRIC MOTOR
  - ②— PUMP
  - ③— COUPLING
  - ④— CONCENTRIC REDUCER
  - ⑤— CHECK VALVE
  - ⑥— GATE VALVE
  - ⑦— DISCHARGE LINE
  - ⑧— SUCTION LINE
  - ⑨— ECCENTRIC REDUCER
  - ⑩— RUBBER EXPANSION JOINES
  - ⑪— CONCENTRIC REDUCER
  - ⑫— DIESEL PUMP
  - ⑬— DIESEL ENGINE

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REV. No.	DATE	DESCRIPTION	DRAWN	CHECKED	APP'D.
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DRAWN BY	GLENN	DATE	25/02/08	PROJECTION	
DESIGNED BY	JAZZAZI	SCALE	N.T.S		
APPROVED BY	JAZZAZI	ENGG. DEPT.	PROD.		
TITLE ELECTRIC MOTOR DRIVEN PUMP					
PROJECT					
JOB No.	DRAWING No.	SHEET No.	SIZE	REVISION	
	HE 0208 22 03 P-46	10F1	A4		



**Products' Catalogs**

- Pumps Cataloge ( BOMBAS IDEAL )
- Electric Driven ( MEZ)
- Diesel Engine Driven ( LAMBARDINI & VM MOTORI)



**IDEAL pump**

bombas  
**IDEAL**

SERIE **RNI - GNI**



**50Hz**

**60Hz**

UNE 166.002

BUREAU VERITAS  
Certification



ISO 9001

BUREAU VERITAS  
Certification



ISO 14001

BUREAU VERITAS  
Certification



**RNI-GNI 1064**

## Certificación / Certification

### Calidad y Servicio

Son las dos constantes que mueven la empresa. Sintonizar con los deseos de los clientes y anticiparse a ellos nos permite gozar de su confianza, siendo esto el mejor valor de **Bombas Ideal**.

### Quality and Service

There are two constants that move our company; to know the customers wishes, and to anticipate them. This allows us to enjoy their trust. It is the best value of **Bombas Ideal**.

### Qualité et Service

La deux constantes qui poussent l'entreprise. Connaitre les souhaits des clients et s'anticiper à eux. Nous permet de jouir de leurs confiance. Cela est la meilleur value de: **Bombas Ideal**.



Este banco de pruebas es una herramienta indispensable para el departamento de I+D+i, cuyo protagonismo en la estrategia de la empresa es notorio, basándose el futuro en la continua creación y mejora de los productos. La preocupación constante por la innovación y calidad hace estar a la empresa en posesión del certificado ISO 9001.

In addition to the routine testing of production pumps, the test-bed is an essential tool of the R&D Department, whose role is central to the Company's long-term strategy. Bombas Ideal has always recognised the importance of the development of new products and the continuous improvements of the existing product range. Accreditation and implementation of ISO 9000 is an essential tool in the Company's constant search for quality and innovation.

Ce banc d'essais est un outil indispensable pour le département de R+D, dont le rôle dans la stratégie de l'entreprise est fondamental, le futur passant par la création et l'amélioration continue des produits. La constante préoccupation pour l'innovation et la qualité, ont conduit notre société à obtenir la certification ISO 9001.

**ELECTROBOMBAS HORIZONTALES NORMA DIN 24255**

**Aplications**

Suitable pumps for handling and pumping liquids in mines, irrigation, building, industries, air-conditioning, fire-fighting sets, etc.

**General characteristics**

EN 733/DIN 24255/NF E-44111 standards define the hydraulic performances and main dimensions of the end suction centrifugal pumps rating 10 bar with bearing bracket.

We have designed our range of horizontal centrifugal pumps in accordance with these standards

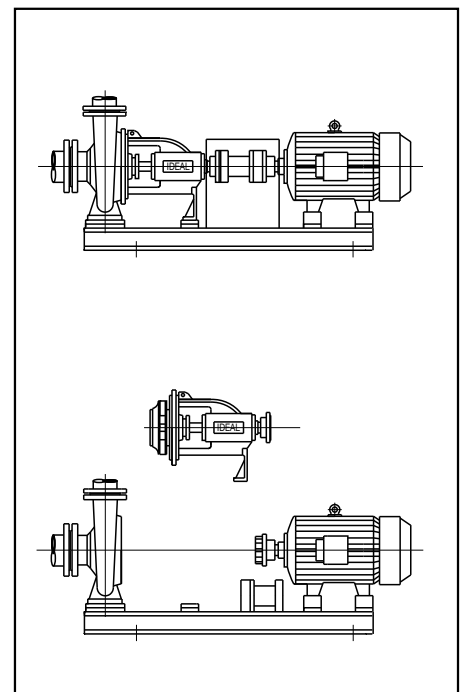
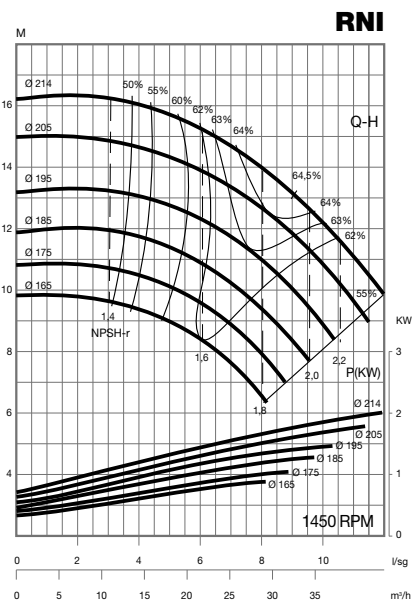
This standard philosophy leads to simplicity in maintenance, as well as manufacture, as fewer components are required to service the entire range, also making easier the spare parts service. Standard construction, either packing or mechanical seal, is suitable for pumping liquids with temperatures up to 100°C. When special mechanical seal is assembled, temperature of pumped liquid can reach 160° C.

The volute, including suction and discharge flanges, is independently foot mounted, allowing for inspection on rotating and internal parts with both flanges connected.

The bearing frame, stuffing box, casing cover and impeller can be removed as an integral unit when using a spacer type coupling.

**Performance curve RNI**

The impeller can be trimmed to any diameter between max and min to optimise performance at the duty point. The most suitable motor size will then be chosen.





INTERCAMBIABILIDAD-DATOS TECNICOS / INTERCHANGEABILITY-TECHNICAL DATA / INTERCHANGEABLE-DONNÉES TECHNIQUES

TIPO TYPE	INTERCAMBIABILIDAD INTERCHANGEABILITY INTERCHANGEABLE			BRIDAS FLANGES BRIDE		RODETE Ø MAX. mm. IMPELLER Ø MAX. mm. ROUE Ø MAX. mm.	LIMITE VELOCIDAD RPM SPEED LIMIT RPM VITESSE MAX. T/pm	N/n directo KW/RPM N/n direct KW/RPM N/n direct KW/RPM	RODAMIENTOS BEARINGS ROULEMENTS		MAX. (105°C)		Peso neto eje/libre Kg Net weight frre shaft Kg Poids net arbre nu Kg
	TAPA CUERPO COVER COUVERCLE	SOPORTE BRACKET SUPPORT	CIERRE MECANICO MECHANICAL SEAL GAMITURE MECHANIQUE	ASP mm. SUC mm. ASP mm.	IMP mm. DISC mm. REF mm.				ANT. FRONT AVANT	POST. BACK ARRIERE	Pt BAR	Pp BAR	
RNI 32-13	25-13-1	N-25A	Ø 24(1)	50	32	139	3600	0,012	6305	6305	16	24	28
RNI 40-13				65	40	139	3600	0,012	6305	6305	16	24	30
RNI 50-13				65	50	139	3600	0,012	6305	6305	16	24	34
RNI 65-13				80	65	139	3600	0,012	6305	6305	16	24	39
RNI 32-16	25-16-2	N-25B	Ø 24(1)	50	32	174	3600	0,012	6305	6305	16	24	35
RNI 40-16				65	40	175	3600	0,012	6305	6305	16	24	36
RNI 50-16				65	50	174	3600	0,012	6305	6305	16	24	38
RNI 65-16				80	65	174	3600	0,012	6305	6305	16	24	43
RNI 80-16				100	80	174	2900	0,012	6305	6305	16	24	54
RNI 32-20	25-20-3	N-25A	Ø 24(1)	50	32	214	3600	0,012	6305	6305	16	24	41
RNI 40-20				65	40	214	3600	0,012	6305	6305	16	24	44
RNI 50-20				65	50	214	3600	0,012	6305	6305	16	24	46
RNI 65-20				80	65	214	3000	0,012	6305	6305	16	24	70
RNI 32-26	25-26-4	N-25B	Ø 24(1)	50	32	264	3000	0,012	6305	6305	16	24	59
RNI 40-26h				65	40	264	3000	0,012	3305	6305	16	24	61
RNI 50-26h				65	50	264	3000	0,012	3305	6305	16	24	63
RNI 80-20	35-20-5	N-35	Ø 32(1)	100	80	214	3600	0,032	6307	6307	16	24	70
RNI 100-20				125	100	214	2900	0,032	6307	6307	16	24	85
RNI 125-20				150	125	214	3000	0,032	6307	6307	16	24	106
RNI 150-20	35-20-5G	N-35G		200	150	220	1760	0,032	6307	6307	16	21	156
RNI 65-26h	35-26-6	N-35	Ø 32(1)	80	65	264	3000	0,032	3307	6307	16	24	81
RNI 80-26h				100	80	264	3000	0,032	3307	6307	16	24	91
RNI 100-26H	35-26-7	N-35	Ø 32(1)	125	100	264	3000	0,032	3307	3307	16	24	106
RNI 125-26				150	125	264	1760	0,032	6307	6307	16	21	115
RNI 40-32H	35-32-9	N-35H	Ø 32(1)	65	40	320	3000	0,032	3307	3307	16	24	96
RNI 50-32H				65	50	314	3000	0,032	3307	3307	16	24	101
RNI 65-32H	35-32-8	N-35	Ø 32(1)	80	65	316	3000	0,032	3307	3307	16	24	110
RNI 80-32H				100	80	318	3000	0,032	3307	3307	16	24	120
RNI 100-32				125	100	329	1800	0,032	6307	6307	16	21	134
RNI 150-26	45-26-13	N-45DA	Ø 43(1)	200	150	264	1800	0,072	6309	6309	10	16	148
RNI 125-32	45-32-11	N-45		150	125	329	1800	0,072	6309	6309	16	21	163
RNI 150-32				200	150	329	1800	0,072	6309	6309	10	16	170
RNI 80-40	45-40-12	N-45		100	80	409	1800	0,072	6309	6309	13	17	161
RNI 100-40				125	100	409	1800	0,072	6309	6309	13	17	174
RNI 125-40	45-40-10	N-45		150	125	409	1800	0,072	6309	6309	13	17	181
RNI 150-40				200	150	409	1800	0,072	6309	6309	10	16	209
RNI 125-50	60-50-16	60	Ø 60 (1)	150	125	500	1800	0,31	6312	6312	10	15	300
RNI 150-50			200	150	500	1800	0,31	6312	6312	10	15	300	
RN 200-200	150-250	N-400	Ø 45(2)	200	200	230	3000	0,059	6409	6409	4	6	190
RN 250-250	200-315	N-500	Ø 55(2)	250	250	290	2300	0,108	6411	6411	4	6	265
RNI 200-26	45-26-13	N-45A	Ø 43 (1)	250	200	264	1800	0,072	6309	6309	4	6	190
RNI 200-32	55-32-15	55	Ø 55 (1)	250	200	340	1800	0,19	6311	6311	6	9	233
RNI 250-32	55-32-15G			300	250	328	1800	0,19	6311	6311	6	9	248
RNI 200-40	55-40-14			250	200	418	1800	0,19	6311	6311	8	12	280
RNI 250-40	60-40-19	60	Ø 60 (1)	300	250	422	1800	0,31	6312	6312	8	12	445
RNI 200-50	65-50-16G			250	200	500	1760	0,31	6312	6312	10	15	410
RNI 250-50	75-50-18	75	Ø 75 (1)	300	250	500	1800	0,31	NU315	3315	10	15	516
RN 301-305	200-315	N-500	Ø 55(2)	300	300	328	2100	0,108	6411	6411	4	6	415
RN 300-315	300-315			300	300	345	1750	0,108	6411	6411	4	6	440
RNI 300-40	75-40-17	75	Ø 75 (1)	350	300	415	1760	0,62	NU315	3315	6	9	672
RN 450-400 PF		N-550	Ø 65(2)	450	400	445	950	0,33	6413	6413	2	3	645
RN 501-451 PF		N-600	Ø 70(2)	500	450	570	850	0,41	6414	6414	2	3	840
RN 651-601 PF		N-800	Ø 85(2)	650	600	720	720	0,77	22317	6317	2	3	1600

(1) Cierre mecánico DIN 24960 estándar • Mechanical seat to DIN 24960 Standard • Gamiture mecanique DIN 24960 Standard

(2) Cierre mecánico opcional • Mechanical seal under request • Gamiture mecanique optionnel

Pt Presión de trabajo • Working pressure • Pression de travail

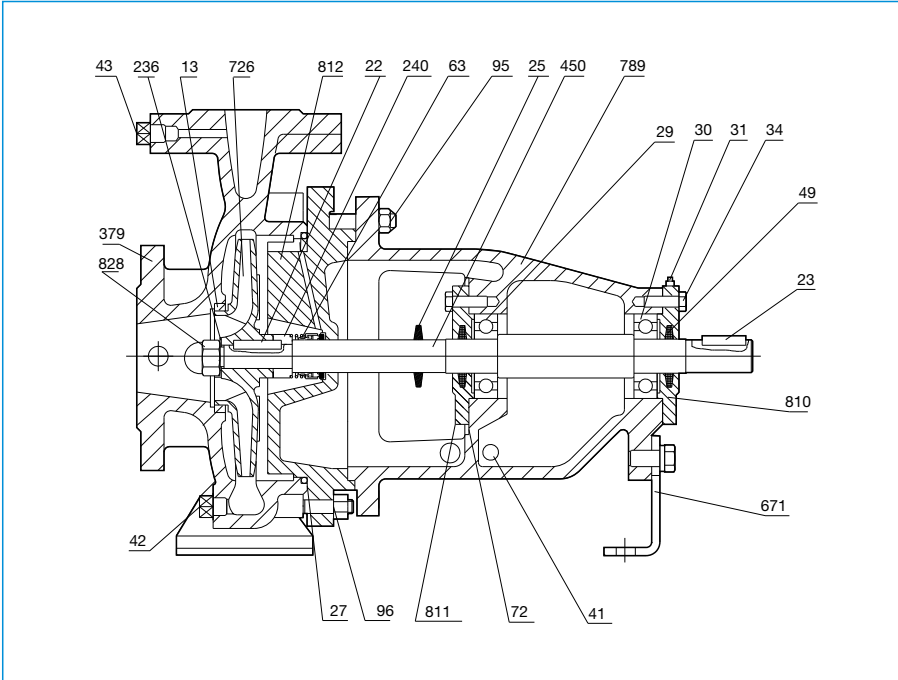
Pp Presión de prueba • Test pressure • Pression d'essais

Bombas con terminación en H o PF, rodamientos lubricados por aceite. Resto por grasa / Pump ending in H or PF are oil lubricated, rest by grease / Pompes avec terminaison en H et PF lubrification par huile, reste par graisse.

CORTE / COUPE / SECTION

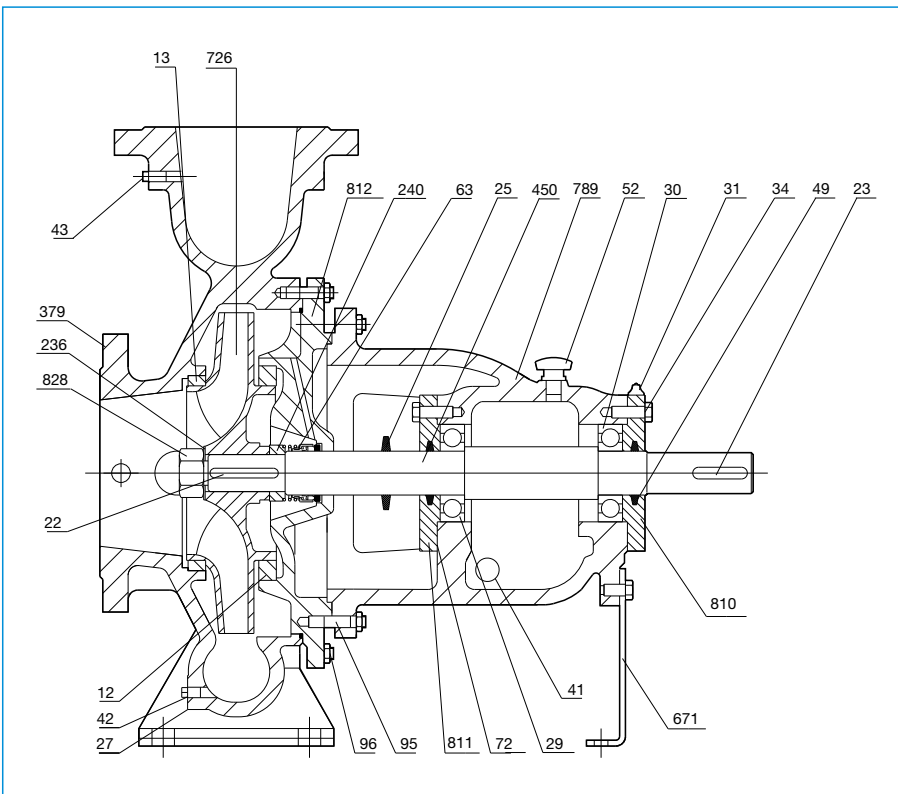
CONSTRUCCION NORMAL / STANDARD CONSTRUCTION / CONSTRUCTION NORMAL

CONSTRUCCIÓN CON ÁLABES DE EQUILIBRADO  
BACK VANES CONSTRUCTION  
CONSTRUCTION AVEC DES AUBES D'EQUILIBRAGE



RNI	32-13
RNI	32-16
RNI	32-20
RNI	32-26
RNI	40-13
RNI	40-16
RNI	40-20
RNI	40-26 h
RNI	50-13
RNI	50-16
RNI	50-20
RNI	50-26 h
RNI	65-13
RNI	65-16
RNI	65-20
RNI	65-26 h
RNI	80-16
RNI	80-20
RNI	80-26 h
RNI	100-20
RNI	100-26 H
RNI	125-20
RNI	125-26

CONSTRUCCIÓN CON AROS CIERRE EN LA IMPULSIÓN  
DISCHARGE WEAR RING CONSTRUCTION  
CONSTRUCTION AVEC DES BAGUES D'USURE AU REFOULEMENT



RNI	40-32 H
RNI	50-32 H
RNI	65-32 H
RNI	80-32 H
RNI	80-40
RNI	100-32
RNI	100-40
RNI	125-32
RNI	125-40
RNI	125-50
RNI	150-20
RNI	150-26
RNI	150-32
RNI	150-40
RNI	150-50
RNI	200-26
RNI	200-32
RNI	200-40
RNI	200-50
RNI	250-32
RNI	250-40
RNI	250-50
RNI	300-40

H/h Lubricante rodamientos : aceite  
H/h Bearings lubricant : oil  
H/h Lubrifiant roulements : huile



Cod.	DENOMINACION PIEZAS	Cod.	NAME OF PARTS	Cod.	DENOMINATION PIECES
12	Aro cierre impulsión	12	Discharge wearing	12	Bague d'usure refoulement
13	Aro cierre aspiración	13	Suction wearing	13	Bague d'usure d'aspiration
22	Chaveta ajuste rodete	22	Impeller key	22	Clavette de la roue
23	Chaveta ajuste acoplamiento	23	Coupling key	23	Clavette d'accouplement
24	Esparragos prensa con tuerca	24	Packing stud with nut	24	Goujon prese-toupe
25	Deflector	25	Deflector	25	Défecteur
* 27	Junta Tórica	27	Gasket	27	Joint
29	Rodamiento posterior	29	Back bearing	29	Roulement postérieur
30	Rodamiento anterior	30	Front bearing	30	Roulement antérieur
31	Engrasador de bola	31	Grease nipple	31	Graisser / fouloir
* 32	Empaquetadura	32	Packing	32	Garniture
33	Tornillo presión c/hexagonal	33	Screw	33	Vis
34	Tornillo presión c/hexagonal	34	Screw	34	Vis
39	Arandela dubo	39	Dubo washer	39	Rondelle dubo
40	Tapón purga	40	Vent plug	40	Bouchon de purge d'air
41	Tapón vaciado soporte	41	Support drain plug	41	Bouchon de vidange support
42	Tapón vaciado bomba	42	Drain plug	42	Bouchon de vidange pompe
43	Tapón orificio manómetro	43	Manometer plug	43	Bouchon du manomètre
46	Prisionero	46	Stud bolt	46	Prisonnier
* 49	Retén fluidos	49	Oil seal	49	Joint à lèvre
51	Tornillo presión c/hexagonal	51	Screw	51	Vis
52	Tapón llenado soporte	52	Filler plug support	52	Bouchon de remplissage support
* 63	Cierre mecánico DIN 24960	63	Mechanical seal DIN 24960	63	Garnit. Mécan: DIN 24960
* 66	Junta tórica	66	Gasket	66	Joint
* 72	Junta plana	72	Gasket	72	Joint plat
* 73	Junta tórica	73	O'ring	73	Joint torique
* 81	Junta plana	81	Gasket	81	Joint plat
95	Esparragos con tuerca	95	Stud	95	Goujon
96	Esparragos con tuerca	96	Stud	96	Goujon
98	Varilla nivel aceite	98	Oil level plug	98	Niveau d'huile
99	Aceite lubricante	99	Oil	99	Huile
210	Aro tope cierre mecánico	210	Mechan. Seal ring	210	Bague garniture mécanique
218	Aro refrigeración	218	Lantern ring	218	Bague lanterne
236	Arandela fijación tuerca rodete	236	Washer impeller nut	236	Rondelle roue
240	Arandela tope rodete	240	Impeller ring	240	Rondelle de la roue
320	Casquillo prensa	320	Shaft sleeve	320	Chemise d'arbre presse
379	Cuerpo de bomba	379	Pump casing	379	Corps pompe
380	Cuerpo aspiración	380	Suction casing	380	Corp d'aspiration
397	Casquillo cierre eje	397	Radial shaft ring	397	Rondelle blocage chem d'arbre
450	Eje	450	Shaft	450	Arbre avec chemise d'arbre
653	Prensa estopas	653	Packing gland	653	Presse-étoupe
671	Pie soporte	671	Support foot	671	Béquille
726	Rodete	726	Impeller	726	Roue
735	Casquillo tope empaquetadura	735	Packing sleeve	735	Douille press-étoupe
789	Soporte rodamientos	789	Bearing housing	789	Support roulements
790	Soporte motor	790	Motor support	790	Support moteur
810	Tapa rodamiento anterior	810	Front bearing cover	810	Courvercle du palier ant
811	Tapa rodamiento posterior	811	Back bearing cover	811	Courvercle du palier post.
812	Tapa cuerpo	812	Casing cover	812	Courvercle du cops
828	Tuerca sujeción rodete	828	Impeller nut	828	Ecrou de la roue
1001	Motor	1001	Motor	1001	Moteur

(\*) Piezas recomendadas para 2 años de funcionamiento  
[Recommended spares for 2 years operation](#)  
 Pièces recommandées pour 2 ans de fonctionnement



MATERIALES DE CONSTRUCCIÓN / MATERIALS OF CONSTRUCTION / MATERIAUX DE CONSTRUCTION

	Materiales	Standard	ABC	STX	ABCX
<b>RNI</b>	Cuerpo y tapa Rodete Eje Aro cierre Estanqueidad Lubricacion rod. Camisa eje	Hierro fundido GG25 Hierro fundido GG25 Acero inoxidable AISI 420 Hierro fundido GG25 Cierre mecanico grafito-ceámica Modelos H Aceite, resto grasa —	Hierro fundido GG25 Bronce 85-5-5-5 Acero inoxidable AISI 420 Hierro fundido GG25 Cierre mecanico grafito-ceámica Modelos H Aceite, resto grasa —	Hierro fundido GG25 Hierro fundido GG25 Acero inoxidable AISI 316 Hierro fundido GG25 Cierre mecanico grafito-ceámica Modelos H Aceite, resto grasa —	Hierro fundido GG25 Bronce 85-5-5-5 Acero inoxidable AISI 316 Hierro fundido GG25 Cierre mecanico grafito-ceámica Modelos H Aceite, resto grasa —
<b>RNI</b>	Cuerpo y tapa Rodete Eje Aro cierre Estanqueidad Lubricacion rod. Camisa eje	Hierro fundido GG25 Hierro fundido GG25 Acero inoxidable AISI 420 — Empaquetadura Grasa —	Hierro fundido GG25 Bronce 85-5-5-5 Acero inoxidable AISI 420 — Empaquetadura Grasa —	Hierro fundido GG25 Hierro fundido GG25 Acero inoxidable AISI 316 — Cierre mecanico acero-grafito Grasa —	Hierro fundido GG25 Bronce 85-5-5-5 Acero inoxidable AISI 316 — Cierre mecanico acero-grafito Grasa —
<b>RNE</b>	Cuerpo y tapa Rodete Eje Aro cierre Estanqueidad Lubricacion rod Camisa eje	Hierro fundido GG25 Hierro fundido GG25 Acero AISI 1045 Bronce 90-10 Empaquetadura Aceite Acero inoxidable AISI 304	Hierro fundido GG25 Bronce 90-10 Acero AISI 1045 Bronce 90-10 Empaquetadura Aceite Acero inoxidable AISI 304	Hierro fundido GG25 Hierro fundido GG25 Acero AISI 1045 Bronce 90-10 Cierre mecanico acero-grafito Aceite Acero inoxidable AISI 316	Hierro fundido GG25 Bronce 90-10 Acero AISI 1045 Bronce 90-10 Cierre mecanico acero-grafito Aceite Acero inoxidable AISI 316
<b>RN modelo PF</b>	Cuerpo Rodete Eje Aro cierre Estanqueidad Lubricacion rodamientos Camisa eje	Hierro fundido GG25 Hierro fundido GG25 Acero inoxidable AISI 316 — Empaquetadura Aceite —	Hierro fundido GG25 Bronce 85-5-5-5 Acero inoxidable AISI 316 — Empaquetadura Aceite —	Hierro fundido GG25 Hierro fundido GG25 Acero inoxidable AISI 316 — Cierre mecanico acero-grafito Aceite —	Hierro fundido GG25 Bronce 85-5-5-5 Acero inoxidable AISI 316 — Cierre mecanico acero-grafito Aceite —

	Materials	Standard	ABC	STX	ABCX
<b>RNI</b>	Casing and cover Impeller Shaft Wear ring Sealing Bearing lubrication Shaft sleeve	Cast iron GG 25 Cast iron GG 25 Stainless steel AISI 420 Cast iron GG 25 Mechanical seal carbon-ceramic Oil for H types, grease for the rest —	Cast iron GG 25 Bronce 85-5-5-5 Stainless steel AISI 420 Cast iron GG 25 Mechanical seal carbon-ceramic Oil for H types, grease for the rest —	Cast iron GG 25 Cast iron GG 25 Stainless steel AISI 316 Cast iron GG 25 Mechanical seal carbon-ceramic Oil for H types, grease for the rest —	Cast iron GG 25 Bronce 85-5-5-5 Stainless steel AISI 316 Cast iron GG 25 Mechanical seal carbon-ceramic Oil for H types, grease for the rest —
<b>RNI</b>	Casing and cover Impeller Shaft Wear ring Sealing Bearing lubrication Shaft sleeve	Cast iron GG 25 Cast iron GG 25 Stainless steel AISI 420 — Packing Grease —	Cast iron GG 25 Bronce 85-5-5-5 Stainless steel AISI 420 — Packing Grease —	Cast iron GG 25 Cast iron GG 25 Stainless steel AISI 316 — Mechanical seal St.St.-carbon Grease —	Cast iron GG 25 Bronce 85-5-5-5 Stainless steel AISI 316 — Mechanical seal St.St.-carbon Grease —
<b>RNE</b>	Casing and cover Impeller Shaft Wear ring Sealing Bearing lubrication Shaft sleeve	Cast iron GG 25 Cast iron GG 25 High tensile steel AISI 1045 Bronze 90-10 Packing Oil Stainless steel AISI 304	Cast iron GG 25 Bronce 90-10 High tensile steel AISI 1045 Bronze 90-10 Packing Oil Stainless steel AISI 304	Cast iron GG 25 Cast iron GG 25 High tensile steel AISI 1045 Bronze 90-10 Mechanical seal St.St.-carbon Oil Stainless steel AISI 316	Cast iron GG 25 Bronce 90-10 High tensile steel AISI 1045 Bronze 90-10 Mechanical seal St.St.-carbon Oil Stainless steel AISI 316
<b>RN types PF</b>	Pump casing Impeller Shaft Wear ring Sealing Bearing lubrication Shaft sleeve	Cast iron GG25 Cast iron GG25 Stainless steel AISI 316 — Packing Oil —	Cast iron GG25 Bronce 85-5-5-5 Stainless steel AISI 316 — Packing Oil —	Cast iron GG25 Cast iron GG25 Stainless steel AISI 316 — Mechanical seal St.St.-carbon Oil —	Cast iron GG25 Bronce 85-5-5-5 Stainless steel AISI 316 — Mechanical seal St.St.-carbon Oil —

	Materiaux	Standard	ABC	STX	ABCX
<b>RNI</b>	Corps et couvercle Roue Arbre Bague d'usure Étanchéité Lubrication Chemise d'arbre	Fonte grise GG25 Fonte grise GG25 Acier inox AISI 420 Font gris GG25 Garniture mec. carbone-ceramique Types H en huile, reste en graisse —	Fonte grise GG25 Bronce 85-5-5-5 Acero inoxidable AISI 420 Font gris GG25 Garniture mec. carbone-ceramique Types H en huile, reste en graisse —	Fonte grise GG25 Fonte grise GG25 Acero inoxidable AISI 316 Acier inox AISI 420 Garniture mec. carbone-ceramique Types H en huile, reste en graisse —	Fonte grise GG25 Bronce 85-5-5-5 Acero inoxidable AISI 316 Hierro fundido GG25 Garniture mec. carbone-ceramique Types H en huile, reste en graisse —
<b>RNI</b>	Corps et couvercle Roue Arbre Bague d'usure Étanchéité Lubrication Chemise d'arbre	Fonte grise GG25 Fonte grise GG25 Acier inox AISI 420 — Presse-étoupe Graisse —	Fonte grise GG25 Bronce 85-5-5-5 Acier inox AISI 420 — Presse-étoupe Graisse —	Fonte grise GG25 Fonte grise GG25 Acier inox AISI 316 — Garniture mec. acier-graphite Graisse —	Fonte grise GG25 Bronce 85-5-5-5 Acier inox AISI 316 — Garniture mec. acier-graphite Graisse —
<b>RNE</b>	Corps et couvercle Roue Arbre Bague d'usure Étanchéité Lubrication Chemise d'arbre	Fonte grise GG25 Fonte grise GG25 Acier AISI 1045 Bronze 90-10 Presse-étoupe Huile Acier inox AISI 304	Fonte grise GG25 Bronce 90-10 Acier AISI 1045 Bronze 90-10 Presse-étoupe Huile Acier inox AISI 304	Fonte grise GG25 Fonte grise GG25 Acier AISI 1045 Bronze 90-10 Garniture mec. acier-graphite Huile Acier inox AISI 316	Fonte grise GG25 Bronce 90-10 Acier AISI 1045 Bronze 90-10 Garniture mec. acier-graphite Huile Acier inox AISI 316
<b>RN types PF</b>	Corps Roue Arbre Bague d'usure Étanchéité Lubrication Chemise d'arbre	Fonte grise GG25 Fonte grise GG25 Acier inox AISI 316 — Presse-étoupe Huile —	Fonte grise GG25 Bronce 85-5-5-5 Acier inox AISI 316 — Presse-étoupe Huile —	Fonte grise GG25 Fonte grise GG25 Acier inox AISI 316 — Garniture mec. acier-graphite Huile —	Fonte grise GG25 Bronce 85-5-5-5 Acier inox AISI 316 — Garniture mec. acier-graphite Huile —





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BOMBAS IDEAL, S.A. reserved the right to alter performance, specifications at any time without prior notice  
BOMBAS IDEAL, S.A. se réserve le droit de varier les renseignements et dimensions de ce catalogue sans préavis

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**Jockey Pump**

## Electrobombas Multicelulares Verticales

Vertical Multistage Pumps

Electropompes Multicellulaires Verticales



### Aplicaciones

Especialmente indicadas para grupos de presión sean regulados por presostatos o variador de velocidad para abastecimientos civiles, industriales, agrícolas, riego por aspersión, equipos contra incendios, etc., y en general para bombeo de aguas o líquidos de características parecidas al agua.

### Límites de la aplicación

Líquidos sin elementos abrasivos o aditivos que puedan perjudicar a los materiales de la bomba.  
Número máximo de arranques: 20-40 en intervalos regulares.  
Temperatura máxima del líquido: 30° C.  
Temperatura máxima ambiente: 40° C.

### Construcción

Bombas centrifugas multi-etapas en disposición vertical, con rodetes de tipo axial. Sello mecánico.  
Configuración monobloc con motor de eje prolongado, equipadas con bridas roscadas.  
Aspiración en la base de la bomba y la impulsión en el cuerpo superior ambas en posición horizontal. De serie a 180° pero pueden disponerse a 90° así como en el mismo sentido.

### Motores

A inducción de tipo asíncrono y con ventilación externa de 2 polos a 60 Hz (3500 RPM).  
Aislamiento tipo F, protección IP-55, servicio continuo S1  
Trifásicos: hasta 5.5 HP a 230/400V y 7.5HP a 400/690V.

### Bajo demanda

Voltajes y frecuencias especiales. Sellos mecánicos especiales.



### Applications

Specially indicated for pressure sets, working with pressure switches or also frequency converters, for civil supplies, industrial, agricultural, spray irrigation, fire-fighting sets, etc. and in general, to pump water or liquids with similar water characteristics.

### Application limits

Liquids without any abrasive particles that could damage the pump materials.  
Maximum starts per hour: 20-40 in regular intervals.  
Maximum temperature of the liquid: 30° C.  
Maximum ambient temperature: 40° C.

### Construction

Vertical multistage centrifugal pumps, with axial impellers. Mechanical seal.  
Close coupled version with prolonged motor shaft, equipped with screwed flange. The suction in horizontal, and the discharge in vertical. Standard version to 180°, but it can be at 90° as well as in the same side.

### Motors

Inductive and asynchronous ones, with external fan cooled of 2 poles at 60Hz (3500 RPM). Insulation class F, IP55 protection, S1 continuous duty.  
Three-phase: up to 5,5HP at 230/400V and from 7,5HP at 400/690V.

### On request

Special voltages and frequencies. Special mechanical seals.



### Applications

Spécialement conçues pour groupes de pression, elles sont réglées par pressostats ou variateur de vitesse. Pour approvisionnement génie civil, usages industriels, agricoles, arrosages par aspersion, équipements contre incendie, etc... et en général pour pompage d'eau ou liquides de caractéristiques similaires à l'eau.

### Application limits

Liquides sans éléments abrasifs ou additifs qui puissent nuire aux matériaux de la pompe. Nombre maximum de démarrages: 20-40 à intervalles réguliers.  
Température maximum du liquide: 30°C.  
Température ambiante maximum: 40°C.

### Construction

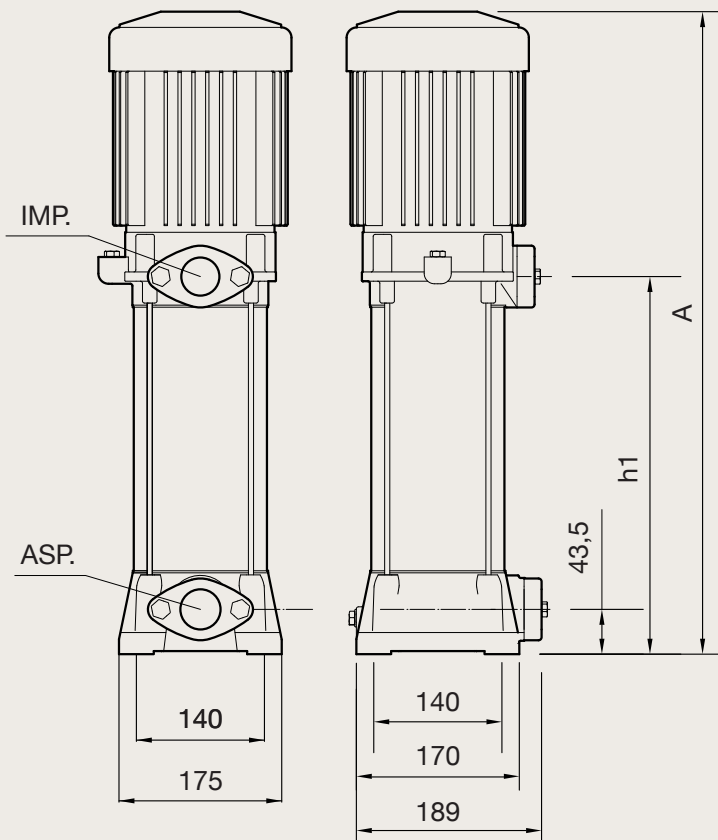
Pompes centrifuges multicellulaires en disposition verticale, avec roues type axial. Garniture mécanique. Construction monobloc avec moteur version arbre long, orifices d'aspiration et de refoulement filetés.

### Motors

A induction de type asynchrone avec ventilation externe de 2 pôles à 60Hz (3500 RPM). Isolement type F, protection IP55, service continu S1.  
Triphasés jusqu'à 5,5HP à 230/400V et de 7,5HP à 400/690V.

### On request

Voltages et fréquences spéciaux. Garnitures mécaniques spéciales.



Materiales	
Cuerpo de aspiración:	Hº fundido GG25
Camisa externa:	en acero inox AISI 304
Rodetes:	en acero inox AISI 304
Difusores:	PPO 30%
Cuerpo de impulsión:	Hº fundido GG25
Eje:	Acero inox AISI 303
Sello mecánico:	Grafito/cerámica
Juntas:	NBR
Materials	
Suction casing :	Cast iron GG25
External shell:	Stainless steel AISI 304
Impellers:	Stainless steel AISI 304
Diffusers:	PPO 30%
Discharge casing:	Cast iron GG25
Shaft:	Stainless steel AISI 303
Mechanical seal:	Graphite/ceramic
O ring:	NBR
Materiaux	
Corps d'aspiration en fonte:	GG25
Chemise externe:	en acier inox AISI 304
Roues en acier inox:	AISI 304
Diffuseurs:	PPO 30%
Corps de refoulement en fonte:	GG25
Arbre en acier inox:	AISI 303
Garniture mécanique en graphite/ceramic:	
Joint:	NBR

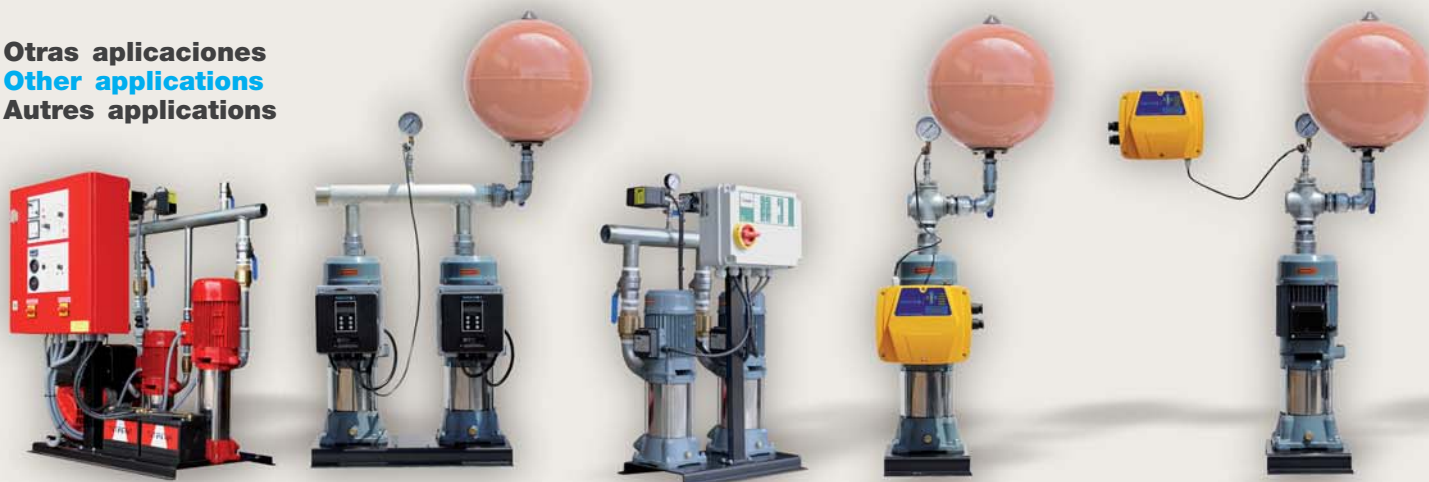
**Prestaciones y características / Performance and characteristics / Performances et caractéristiques**

Tipo Type	Motor / Moteur			l/min m³/h	18	36	54	72	90	108	144	188	220	280	340	400
	P2 (HP)	P2 (KW)	P1 (KW)		1	2,1	3,2	4,3	5,4	6,5	8,6	10,8	13,2	16,8	20,4	24
VIPV-30T	3	2,2	2,86	M	80	78	75	71	65	60	45	28	-	-	-	-
VIPV-40T	4	3	3,84		97	95	90	86	80	73	56	35	-	-	-	-
VIPV-55T	5,5	4	5,01		135	130	125	120	112	105	80	50	-	-	-	-
VIPV 10-75T	7,5	5,5	6,74		-	-	-	90	89	86	83	79	76	65	49	25

Tipo Type	Motor / Moteur			Intensidad (A)		Dimensiones (mm)		ASP.	IMP.	Kg.
	P2 (HP)	P2 (KW)	P1 (KW)	230V	400V	A	h1			
VIPV-30T	3	2,2	2,86	5,4	3,1	466	227	1 1/2"G	1 1/4"G	23
VIPV-40T	4	3	3,84	6,6	3,8	553	251	1 1/2"G	1 1/4"G	31
VIPV-55T	5,5	4	5,01	8,8	5,1	630	300	1 1/2"G	1 1/4"G	37
VIPV 10-75T	7,5	5,5	6,74	12,6	7,3	718	362	1 1/2"G	1 1/2"G	47

M: Monofásico / Single-phase / Monophasé - T: Trifásico / Three-phase / Triphasés

**Otras aplicaciones  
Other applications  
Autres applications**



**BOMBAS IDEAL, S.A.**  
P. Ind. Mediterráneo. Cid, 8  
Tel.: 902 203 400 - Fax: 902 73 38 18  
Massalfassar - Valencia (Spain)  
bombasideal.com



**MEZ Electric Motor**



**M.E.Z. TRADE** s. r. o.

Vinohradská 184  
130 52 Praha 3  
Czech Republic



**EXPORT  
IMPORT**

HEBA FIRE FIGHTING EQUIP. MFG. CO. LTD.  
P.O.Box 404  
Dammam 31411  
KINGDOM OF SAUDI ARABIA

## CERTIFICATE

Re: „MEZ Brand induction motors 14BG Series and 7AA/7BA Series“

We certify herewith that all MEZ Brand three phase squirrel-cage inductions motors with windings either 220/380V or 380/660V exported to Saudi Arabia have been designed to be operated both with the 50 Hz and 60 Hz electrical network.

M.E.Z. Trade s.r.o.

  
M.E.Z. TRADE  
S.R.O.  
PRAHA

Jan Tůma  
Managing Director

Prague 1.3.2011



# IEC Käfigläufermotoren IEC squirrel-cage motors

Eigengekühlte Energiespartmotoren Self ventilated energy saving motors

„High Efficiency“ IE2 - IEC 60034-30:2008

## Motorenreihe IE2 „Hoch Effizienz“

Motor line IE2 „High Efficiency“

Angaben bei 50 Hz

Specifications at 50 Hz

Bemes- sungs- leistung	Bau- größe	Typ	Betriebswerte bei Bemessungsleistung			Energie- effizienz	Wirkungsgrad			Leistung sfaktor	Anzugs- moment	Anzugs- strom	Kipp- moment	Messflächen- schalldruck- pegel	Trägheits- moment	Ge- wicht
			Dreh- zahl	Dreh- moment	Strom bei 400 V		IEC 60034- 30:2008	4/4-Last	3/4-Last							
Rated output	Frame size (FS)	type	Rated speed	Rated torque	Rated current	Efficiency class	Efficiency 4/4 load	Efficiency 3/4 load	Efficiency 1/2 load	Power factor 4/4 load	Locked rotor torque	Locked rotor current	Break down torque	Noise	Moment of inertia	weight
P <sub>N</sub>	BG	-	n <sub>N</sub>	M <sub>N</sub>	I <sub>N</sub>	-	η <sub>N</sub>	η <sub>N</sub>	η <sub>N</sub>	cosφ <sub>N</sub>	M <sub>N</sub> /M <sub>N</sub>	I <sub>N</sub> /I <sub>N</sub>	M <sub>K</sub> /M <sub>N</sub>	L <sub>pfA</sub>	J	m
kW	mm	-	min <sup>-1</sup>	Nm	A	-	%	%	%	-	-	-	-	dB	Kg m <sup>2</sup>	kg

### Energiespartmotoren nach IEC 60034-30:2008 "Hoch Effizienz" IE2

Energy efficient motors according to IEC 60034-30:2008 "High Efficiency" IE2

2-pol – 3000 min<sup>-1</sup> @ 50 Hz

0,18	63 M	9AA 63 M-02k	2840	0,61	0,50	-	67,4	66,9	62,4	0,78	2,5	4,8	3,1	49	0,00022	4,0
0,25	63 M	9AA 63 M-02	2840	0,84	0,65	-	69,9	69,9	65,9	0,80	2,3	4,9	2,5	49	0,00026	4,7
0,37	71 M	9AA 71 M-02k	2840	1,20	0,95	-	72,8	72,8	69,8	0,77	3,1	6,5	3,1	52	0,00041	6,0
0,55	71 M	9AA 71 M-02	2835	1,90	1,42	-	74,4	74,4	71,4	0,75	3,4	6,3	2,9	52	0,00050	7,2
0,75	80 M	1TZ9001-0DA2	2805	2,55	1,67	IE2	77,4	77,9	74,4	0,84	1,9	4,9	2,3	60	0,00080	9,0
1,1	80 M	1TZ9001-0DA3	2835	3,71	2,40	IE2	79,6	79,6	78,6	0,83	2,7	6,0	3,1	60	0,0011	11
1,5	90 S	1TZ9001-0EA0	2885	4,97	3,15	IE2	81,3	81,3	80,3	0,84	2,7	6,9	3,6	65	0,0017	13
2,2	90 L	1TZ9001-0EA4	2890	7,27	4,50	IE2	83,2	83,2	82,2	0,85	2,5	7,1	3,7	65	0,0021	15
3	100 L	1TZ9001-1AA4	2905	9,86	6,10	IE2	84,6	84,6	83,6	0,84	2,3	7,0	3,3	67	0,0044	21
4	100 L <sub>XL</sub>	1TZ9001-1AA6	2905	13,6	7,80	IE2	85,8	85,8	84,8	0,86	2,5	7,6	3,5	67	0,0054	26
4	112 M	1TZ9001-1BA2	2950	13,0	7,80	IE2	85,8	85,8	84,8	0,86	2,4	7,4	3,3	69	0,0092	27
5,5	112 M <sub>XL</sub>	1TZ9001-1BA6	2950	17,8	10,3	IE2	87,0	87,0	86,0	0,89	2,2	7,7	3,3	69	0,012	34
5,5	132 S	1TZ9001-1CA0	2950	17,8	10,5	IE2	87,0	87,0	86,0	0,87	1,8	6,6	2,9	68	0,020	39
7,5	132 S	1TZ9001-1CA1	2950	24,3	14,1	IE2	88,1	88,1	87,1	0,87	2,2	7,5	3,1	68	0,024	43
11	132 M <sub>XL</sub>	1TZ9001-1CA6	2950	35,6	20,0	IE2	89,4	89,4	88,4	0,89	2,3	7,9	3,2	68	0,031	57
11	160 M	1TZ9001-1DA2	2955	35,6	20,5	IE2	89,4	89,4	88,4	0,87	2,1	7,4	3,2	70	0,045	67
15	160 M	1TZ9001-1DA3	2955	48,5	27,0	IE2	90,3	90,3	89,3	0,88	2,4	7,6	3,4	70	0,053	75
18,5	160 L	1TZ9001-1DA4	2955	59,8	33,5	IE2	90,9	90,9	89,9	0,88	2,9	7,9	3,6	70	0,061	84
22	160 L <sub>XL</sub>	1TZ9001-1DA6	2955	71,1	39,0	IE2	91,3	91,3	90,3	0,89	3,1	8,4	3,7	70	0,068	94
22	180 M	1TZ9501-1EA2	2940	71,5	40,5	IE2	91,3	91,8	91,4	0,87	2,7	7,4	3,6	68	0,069	145
30	180 L	1TZ9501-1EA6	2960	97,4	53,0	IE2	92,0	92,5	92,1	i.V.	3,4	7,8	7,8	68	0,069	175
30	200 L	1TZ9501-2AA4	2955	97,0	54,0	IE2	92,0	92,3	91,7	0,87	2,5	6,9	3,3	71	0,13	200
37	200 L	1TZ9501-2AA5	2960	119	66,0	IE2	92,5	92,8	92,3	0,88	2,7	7,4	3,5	71	0,15	225
45	200 L	1TZ9501-2AA6	i.V.	i.V.	i.V.	i.V.	i.V.	i.V.	i.V.	i.V.	i.V.	i.V.	i.V.	i.V.	i.V.	i.V.
45	225 M	1TZ9501-2BA2	2965	145	79,0	IE2	92,9	93,1	92,5	0,88	2,7	7,8	3,7	71	0,23	295
55	225 M	1TZ9501-2BA6	2960	177	97,0	IE2	92,2	93,6	93,2	0,88	2,5	7,0	7,0	70	0,26	320
55	250 M	1TZ9501-2CA2	2970	177	96,0	IE2	93,2	93,3	92,4	0,89	2,3	6,8	3,1	74	0,40	360
75	250 M	1TZ9501-2CA6	2970	241	136	IE2	93,8	93,6	92,6	0,85	2,2	7,0	7,0	74	0,46	390
75	280 S	1TZ9501-2DA0	2978	240	133	IE2	93,8	93,6	92,4	0,87	2,5	7,2	3,2	74	0,71	490
90	280 M	1TZ9501-2DA2	2975	289	157	IE2	94,1	94,2	93,5	0,88	2,5	7,1	3,1	74	0,83	530
110	280 M	1TZ9501-2DA6	2975	353	187	IE2	94,3	94,5	94,1	0,90	2,5	7,4	7,4	71	1,00	620
110	315 S	1TZ9501-3AA0	2982	352	187	IE2	94,3	94,2	93,3	0,90	2,4	7,3	3,0	76	1,30	720
132	315 M	1TZ9501-3AA2	2982	423	220	IE2	94,6	94,7	94,1	0,91	2,4	7,2	3,1	76	1,60	880
160	315 L	1TZ9501-3AA4	2982	512	265	IE2	94,8	94,9	94,3	0,92	2,3	7,0	3,1	78	1,80	930
200	315 L	1TZ9501-3AA5	2982	640	330	IE2	95,0	95,2	94,8	0,92	2,4	7,1	3,0	78	2,20	1130
250	315 L	1TZ9501-3AA6	i.V.	i.V.	i.V.	i.V.	i.V.	i.V.	i.V.	i.V.	i.V.	i.V.	i.V.	i.V.	i.V.	i.V.

Motorenausführung: Wärmeklasse 155 (F), Ausnutzung nach Wärmeklasse 130 (B), Schutzart IP55

Leistung bei Dauerbetrieb (S1)

Umgebungstemperatur bis 40°C

Sonderleistungen auf Anfrage





# IEC Käfigläufermotoren IEC squirrel-cage motors

Eigengekühlte Energiesparmotoren Self-ventilated energy saving motors

„High Efficiency“ IE2 - IEC 60034-30:2008

## Motorenreihe IE2 „Hoch Effizienz“

Motor line IE2 „High Efficiency“

Angaben bei 60 Hz

Specifications at 60 Hz

Bemes- sungs- leistung	Bau- Größe	Typ	Betriebswerte bei Bemessungsleistung			Energie- effizienz	Wirkungsgrad			Leistung sfaktor	Anzugs- moment	Anzugs- strom	Kipp- moment	Messflächen- schalldruck- pegel	Material	Zeich- nung
			Dreh- zahl	Dreh- moment	Strom bei 460 V		IEC 60034- 30:2008	4/4-Last	3/4-Last							
Rated output	Frame size (FS)	Type	Rated speed	Rated torque	Rated current	Efficiency class	Efficiency 4/4 load	Efficiency 3/4 load	Efficiency 1/2 load	Power factor 4/4 load	Locked rotor torque	Locked rotor current	Break down torque	Noise	Material	Drawing
P <sub>N</sub>	BG		n <sub>N</sub>	M <sub>N</sub>	I <sub>N</sub>		η <sub>N</sub>	η <sub>N</sub>	η <sub>N</sub>	COSφ <sub>N</sub>	M <sub>N</sub> /M <sub>N</sub>	I <sub>N</sub> /I <sub>N</sub>	M <sub>K</sub> /M <sub>N</sub>	L <sub>pfA</sub>	-	-
kW	Mm	-	min <sup>-1</sup>	Nm	A	-	%	%	%	-	-	-	-	dB	-	-

### Energiesparmotoren nach IEC 60034-30:2008 "Hoch Effizienz" IE2

Energy efficient motors according to IEC 60034-30:2008 "High Efficiency" IE2

2-pol – 3600 min<sup>-1</sup> @ 60 Hz

0,21	63 M	9AA 63 M-02k	3440	0,58	0,49	-	68,0	67,5	64,0	0,79	3,0	5,4	3,2	49		
0,29	63 M	9AA 63 M-02	3440	0,81	0,64	-	70,8	70,8	66,8	0,80	4,1	10,2	4,2	49		
0,43	71 M	9AA 71 M-02k	3440	1,19	0,99	-	71,0	71,0	67,0	0,77	4,8	9,8	4,9	52		
0,63	71 M	9AA 71 M-02	3445	1,75	1,46	-	72,0	72,0	68,0	0,75	5,4	10,0	5,4	52		
0,86	80 M	1TZ9001-0DA2	3410	2,41	1,70	IE2	75,5	75,5	72,5	0,84	1,9	5,2	2,3	64		
1,27	80 M	1TZ9001-0DA3	3430	3,54	2,30	IE2	82,5	82,5	81,5	0,84	2,7	6,3	3,3	64		
1,75	90 S	1TZ9001-0EA0	3480	4,80	3,10	IE2	84,0	84,0	83,0	0,85	2,6	7,4	3,8	69		
2,55	90 L	1TZ9001-0EA4	3485	6,99	4,35	IE2	85,5	85,5	84,5	0,86	2,6	7,6	3,9	69		
3,45	100 L	1TZ9001-1AA4	3505	9,40	5,80	IE2	87,5	87,5	86,5	0,85	2,2	7,3	3,3	71		
4,55	100 L <sub>XL</sub>	1TZ9001-1AA6	3505	12,4	7,50	IE2	87,5	87,5	86,5	0,87	2,5	7,9	3,5	71		
4,55	112 M	1TZ9001-1BA2	3550	12,2	7,50	IE2	87,5	87,5	86,5	0,87	2,4	7,8	3,3	73		
6,30	112 M <sub>XL</sub>	1TZ9001-1BA6	3550	17,0	9,90	IE2	88,5	88,5	87,5	0,90	2,2	7,9	3,3	73		
6,30	132 S	1TZ9001-1CA0	3550	17,0	10,2	IE2	88,5	88,5	87,5	0,88	1,8	6,9	2,9	72		
8,60	132 S	1TZ9001-1CA1	3550	23,1	13,7	IE2	89,5	89,5	88,5	0,88	2,0	7,4	3,1	72		
12,6	132 M <sub>XL</sub>	1TZ9001-1CA6	3550	33,9	19,5	IE2	90,2	90,2	89,2	0,90	2,3	8,2	3,2	72		
12,6	160 M	1TZ9001-1DA2	3555	33,9	19,9	IE2	90,2	90,2	89,2	0,88	2,1	7,4	3,2	77		
17,3	160 M	1TZ9001-1DA3	3555	46,5	27,0	IE2	91,0	91,0	90,0	0,89	2,4	7,6	3,4	77		
21,3	160 L	1TZ9001-1DA4	3555	57,2	33,0	IE2	91,0	91,0	90,0	0,89	2,9	7,9	3,6	77		
25,3	160 L <sub>XL</sub>	1TZ9001-1DA6	3555	68,0	39,0	IE2	91,0	91,0	90,0	0,90	3,1	8,4	3,7	77		
24,5	180 M	1TZ9501-1EA2	3540	66,1	39,0	IE2	91,0	91,2	89,9	0,87	2,7	7,7	3,8	71		
33,5	180 L	1TZ9501-1EA6	3540	90,4	51,0	IE2	92,4	92,6	92,3	i.V.	3,4	3,4	7,8	71		
33,5	200 L	1TZ9501-2AA4	3560	89,9	53,0	IE2	92,4	92,3	90,8	0,87	2,5	6,9	3,3	75		
41,5	200 L	1TZ9501-2AA5	3560	111	64,0	IE2	93,0	93,0	92,2	0,88	2,9	7,3	3,5	75		
51,0	200 L	1TZ9501-2AA6	i.V.	i.V.	i.V.	i.V.	i.V.	i.V.	i.V.	i.V.	i.V.	i.V.	i.V.	i.V.		
51,0	225 M	1TZ9501-2BA2	3565	136	78,0	IE2	93,0	93,0	92,0	0,88	2,7	7,6	3,7	75		
62,0	225 M	1TZ9501-2BA6	3560	166	94,0	IE2	93,0	93,1	92,5	0,89	2,5	2,5	7,0	75		
62,0	250 M	1TZ9501-2CA2	3570	166	94,0	IE2	93,0	92,8	91,6	0,89	2,3	6,8	3,1	79		
84,0	250 M	1TZ9501-2CA6	3570	225	130	IE2	94,5	94,3	93,0	0,86	2,2	2,2	7,0	79		
84,0	280 S	1TZ9501-2DA0	3578	224	128	IE2	94,5	94,1	92,7	0,87	2,5	7,2	3,1	79		
101	280 M	1TZ9501-2DA2	3575	269	151	IE2	94,5	94,4	93,4	0,89	2,5	7,2	3,1	79		
123	280 M	1TZ9501-2DA6	3575	329	182	IE2	94,5	94,6	94,0	0,90	2,5	2,5	7,4	76		
123	315 S	1TZ9501-3AA0	3582	328	182	IE2	94,5	94,3	93,0	0,90	2,4	7,0	3,0	81		
148	315 M	1TZ9501-3AA2	3582	395	215	IE2	95,0	94,9	94,0	0,91	2,4	7,2	3,1	81		
180	315 L	1TZ9501-3AA4	3580	480	255	IE2	95,4	95,3	94,4	0,92	2,3	7,0	3,0	83		
224	315 L	1TZ9501-3AA5	3580	598	320	IE2	95,4	95,4	94,8	0,92	2,9	7,4	3,0	83		
i.V.	315 L	1TZ9501-3AA6	i.V.	i.V.	i.V.	i.V.	i.V.	i.V.	i.V.	i.V.	i.V.	i.V.	i.V.	i.V.		

Aluminium / aluminum

Grauguss / cast iron

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Motor design: thermal class 155 (F), utilization for thermal class 130 (B), protection category IP55

engine output at continuous operation (S1)

environmental temperature up to 40°C

special outputs on request

**Diesel Engine**





## VM MOTORI



## D 700 - D 750



PER POMPE ANTINCENDIO  
 FOR FIRE FIGHTING PUMPS  
 FRP-F3S

### Allestimento standard versione F30 – Standard bill of material F30 version

Avviamento elettrico 12V senza cruscotto  
 Alternatore 14V-55A con connettore W  
 Elettrovalvola di stop ad eccitazione (solo 4 e 6 cilindri)  
 Filtro olio  
 Scambiatore olio motore  
 Filtro gasolio  
 Pressostato olio  
 Contatto elettrico alta temperatura acqua  
 Raccordi per trasmettitori  
 Campana coprivolano SAE4 predisposta con foro per montaggio pick-up  
 Volano 8"-10"  
 Controflangia di scarico  
 Filtro aria a secco montato sulla campana coprivolano  
 Ventola premente  
 Radiatore acqua montato  
 Doppia cinghia  
 Protezione ventola  
 Nr. 4 staffe motore fornite a parte (2 sul lato anteriore del basamento e 2 sul lato campana coprivolano)  
 Comando acceleratore manuale a posizione variabile  
 Staffe di trasporto  
 Manuale di Istruzioni  
 Libretto servizi assistenza e ricambi nel mondo  
 Scheda garanzia

12 V electric start without dashboard  
 14V-55A Alternator with W connector  
 Stop solenoid energized to stop (only 4 and 6 cyl.)  
 Lube oil filter  
 Lube oil cooling exchanger  
 Fuel filter  
 Lube oil pressure switch  
 High water temperature switch  
 Adapter for transmitter and senders  
 SAE4 flywheel housing with pick-up hole provision  
 8" – 10" Flywheel  
 Dry air filter fitted on top of flywheel housing  
 Blower/pusher cooling fan  
 Fitted water radiator  
 Cooling fan cover  
 Twin V belt provision  
 N.4 Engine brackets supplied loose (2 on the block front end and 2 on the flywheel housing side)  
 Exhaust counter-flange  
 Variable position Manual throttle control  
 Engine shipping brackets  
 Operator Manual  
 Service and parts organization booklet  
 Warranty card

### Allestimento standard versione F3S – Standard bill of material F3S version

Avviamento elettrico 12V senza cruscotto  
 Alternatore 14V-55A con connettore W  
 Elettrovalvola di stop ad eccitazione (solo 4 e 6 cilindri)  
 Filtro olio  
 Scambiatore olio motore  
 Filtro gasolio  
 Pressostato olio  
 Contatto elettrico alta temperatura acqua  
 Raccordi per trasmettitori  
 Campana coprivolano SAE4 predisposta con foro per montaggio pick-up  
 Volano 8"-10"  
 Controflangia di scarico  
 Filtro aria a secco montato sulla campana coprivolano  
 Ventola premente  
 Nr. 4 staffe motore fornite a parte (2 sul lato anteriore del basamento e 2 sul lato campana coprivolano)  
 Comando acceleratore manuale a posizione variabile  
 Staffe di trasporto  
 Manuale di Istruzioni  
 Libretto servizi assistenza e ricambi nel mondo  
 Scheda garanzia

12 V electric start without dashboard  
 14V-55A Alternator with W connector  
 Stop solenoid energized to stop (only 4 and 6 cyl.)  
 Lube oil filter  
 Lube oil cooling exchanger  
 Fuel filter  
 Lube oil pressure switch  
 High water temperature switch  
 Adapter for transmitter and senders  
 SAE4 flywheel housing with pick-up hole provision  
 8" – 10" Flywheel  
 Dry air filter fitted on top of flywheel housing  
 Twin V belt provision  
 N.4 Engine brackets supplied loose (2 on the block front end and 2 on the flywheel housing side)  
 Exhaust counter-flange  
 Variable position Manual throttle control  
 Engine shipping brackets  
 Operator Manual  
 Service and parts organization booklet  
 Warranty card



VM MOTORI prefers **Q8 Oils**

is registered trademark of VM MOTOR – As technical advancement continue, specification may change.



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 industrial-marine@vmmotori.com  
 cod. A11-10

www.vmmotori.it

**POTENTI**

Potenze specifiche e coppie motrici elevate insieme ad alte velocità di rotazione.

**COMPATTI**

Compattezza e ridotte dimensioni facilitano l'installazione e la manutenzione.

**ECONOMICI**

Qualità elevata e lunghi intervalli di manutenzione riducono i costi di esercizio.

**Predisposti per essere conformi alla Normativa EN 12845**

**POWER**

High specific power and torque, combined with high speed RPM

**COMPACT**

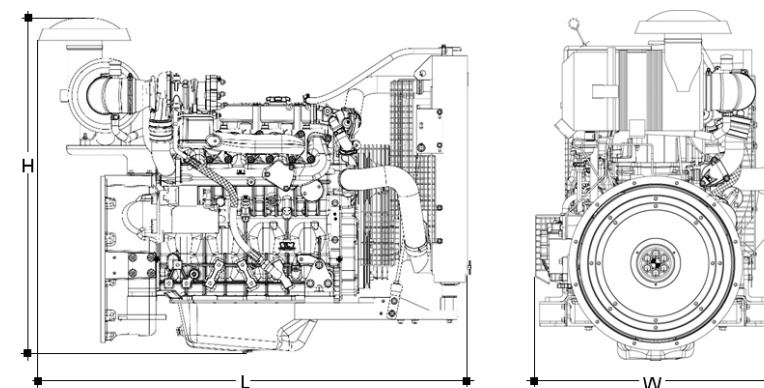
Their smaller dimensions and compactness make installation and maintenance easier.

**ECONOMICAL**

High quality and long service intervals reduce costs.

**Arranged to be compliance with EN12845 Legislation**

**DIMENSIONI E PESO – DIMENSION AND WEIGHT**



TIPO DI MOTORE ENGINE TYPE	L x W x H	Peso a Secco Dry Weight
	mm	kg.
D703E0.FRP	1002X586X796	230
D703TE0.FRP	1002X586X796	245
D754TPE2.FRP	1158X641X887	295
D756IPE2.FRP	1542X695X965	425
D703E0.F3S	792X586X796	205
D703TE0.F3S	792X586X796	215
D754TPE2.F3S	936X570X902	262
D756TPE2.F3S	1204X661X965	325
D756IPE2.F3S	1204X661X965	325

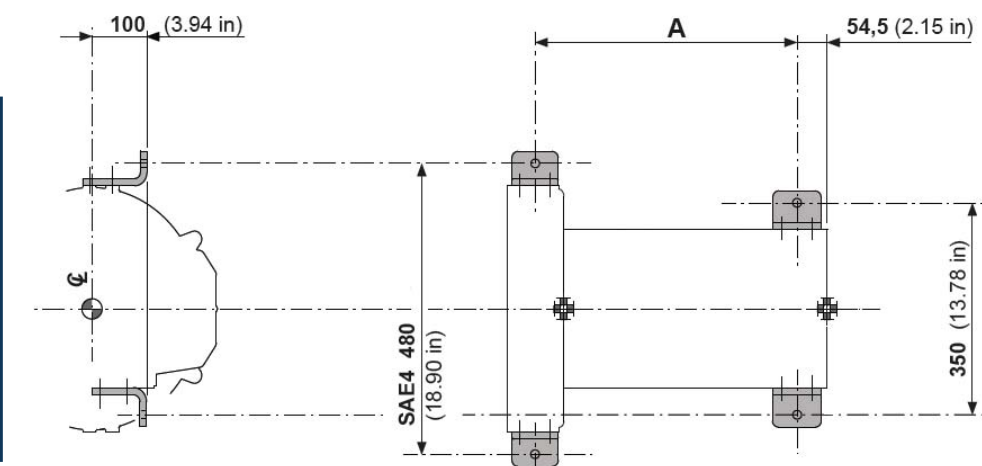
**CARATTERISTICHE TECNICHE - TECHNICAL FEATURES**

TIPO DI MOTORE ENGINE TYPE	Potenza massima secondo ISO3046 IFN Max Power according to ISO3046 IFN			Coppia massima Max Torque		Aspirazione Intake	Nr. Cilindri N. Cylinders	Alesaggio x corsa Bore x Stroke	Cilindrata Displacement
	Kw	HP	rpm	Nm	rpm			mm	litri
D703E0.FRP	35	48	3000	145	1800	NA	3	94X100	2,1
D703TE0.FRP	53	72	3000	237	1600	T	3	94X100	2,1
D754TPE2.FRP	73,5	100	3000	315	2000	T	4	94X107	3,0
D756IPE2.FRP	110	150	3000	520	1800	I	6	94X107	4,5
D703E0.F3S	35	48	3000	145	1800	NA	3	94X100	2,1
D703TE0.F3S	53	72	3000	237	1600	T	3	94X100	2,1
D754TPE2.F3S	73,5	100	3000	315	2000	T	4	94X107	3,0
D756TPE2.F3S	105	142	3000	493	1800	T	6	94X107	4,5
D756IPE2.F3S	110	150	3000	520	1800	I	6	94X107	4,5

Nelle dimensioni del motore OPU sono compresi filtro aria e radiatore OPU  
 OPU Engine Dimension including air cleaner and cooling package  
 Nelle dimensioni del motore è compreso il filtro aria ma non il radiatore acqua  
 Engine Dimension including air cleaner

**POSIZIONAMENTO STAFFE – ENGINE BRACKET POSITIONING**

TIPO DI MOTORE ENGINE TYPE	A
D703E0.FRP e F3S	368,5 mm
D703TE0.FRP e F3S	14,5"
D754TPE2.FRP e F3S	480,5 mm
	18,91"
D756IPE2.FRP e F3S	704,5 mm
	27,73"



Impiego intermittente secondo le norme ISO3046 IFN. Le potenze si riferiscono a motori con rodaggio di circa 50 ore.  
 Intermittent Power according to ISO3046 IFN. Power data refers to run-in engine (50 hours)

Versione F3S è predisposta per applicazione con scambiatore di calore  
 F3S version is ready to be fitted with heat exchanger



- 2 cylinders
- 954 cm<sup>3</sup>
- 16,8 kW/23,1 HP
- 3600 r.p.m.
- Nm 55,0@2100

## Available homologation

- ECE R 24 ▲
- EPA TIER IV ■

## Construction

- 4-stroke air cooled diesel engine
- Direct injection
- Air cooled by fan integral to the flywheel
- Mechanical fuel lift pump
- Forced lubrication with oil pump
- Full flow oil filtration with external cartridge filter
- Automatic extra fuel starting device
- Torque regulator
- Centrifugal speed governor
- Crankcase in die-cast aluminium
- Electric starting
- Counter-clockwise rotation (viewed from power take-off side)
- Aluminium alloy independent heads
- Independent cast-iron cylinders
- Power take-off on crankshaft



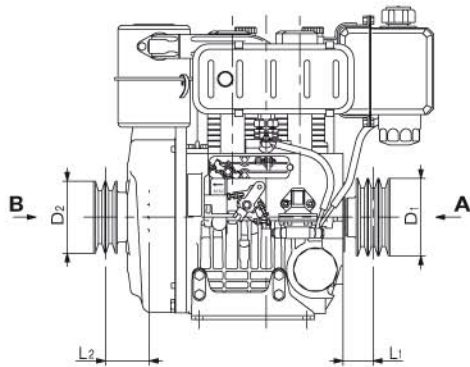
## Applications

- Dumper
- Vibrating Roller
- Generating Set
- Welding Set
- High pressure cleaner
- Transporter
- Hydraulic power pack
- Agricultural pump
- Two-wheel tractor

## Specifications

Cylinders	N.	2
Displacement	cm <sup>3</sup>	954
Bore	mm	90
Stroke	mm	75
Compression ratio		19:1
Rating kW/HP	N (80/1269/CEE) ISO 1585	16,8/22,8
	NB ISO 3046 IFN	15,7/21,4
	NA ISO 3046 ICXN	14,5/19,7
Max. torque	Nm	55,0@2100
Max. torque 3 P.T.O.	Nm	25,0
Counterclockwise rotation		
Engine speed - 3 P.T.O. ratio		1:0:89
Minimum idling speed r.p.m.		1000
Fuel tank capacity	l	7
Oil consumption	kg/h.	0,011
Oil sump capacity	l	3
Min. allowable oil pressure	bar	0,8
Max. allowable inclination for:		
- short periods of operation (max. time 30 minutes)		25°
- peak values (max. time 1 minute)		35°
Cap. of air required for correct combustion @ 3600/3000 r.p.m.	l/min.	1500/1220
Cap. of air required for correct cooling @ 3600/3000 r.p.m.	l/min.	15800/13200
Dry weight	kg	78
Recommended battery	V/Ah	12/55
Axial load	(continuous) kg	100
	(intermittent) kg	350

Minimum pulley diameters for belt drive



$$D_1 \text{ (mm)} \geq 220 [78+L_1 \text{ (mm)}] \quad \frac{N \text{ (kW)}}{n \text{ (RPM)}}$$

$$D_2 \text{ (mm)} \geq 196 [150+L_2 \text{ (mm)}] \quad \frac{N \text{ (kW)}}{n \text{ (RPM)}}$$

Max. intermittent axial load in both directions A-B = 350 kg

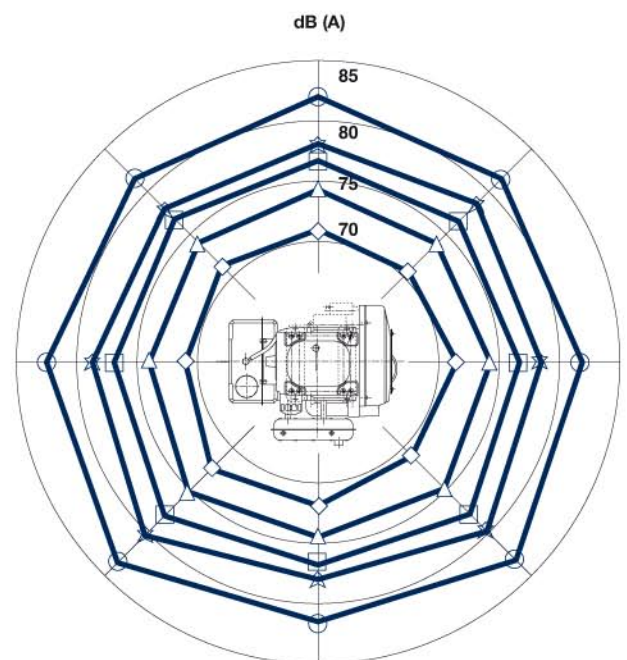
HOMOLOGATION ECE R 24 ▲

Rating kW @ 3600 rpm	ISO 14396	16,2
Max. torque	Nm	53,0@2400



## Sound pressure level dB (A)

Sound level polar diagram open field - 7 meters microphone - no load running engine.



◆ 1500 RPM ▲ 2000 RPM ◻ 2500 RPM ★ 3000 RPM ○ 3600 RPM



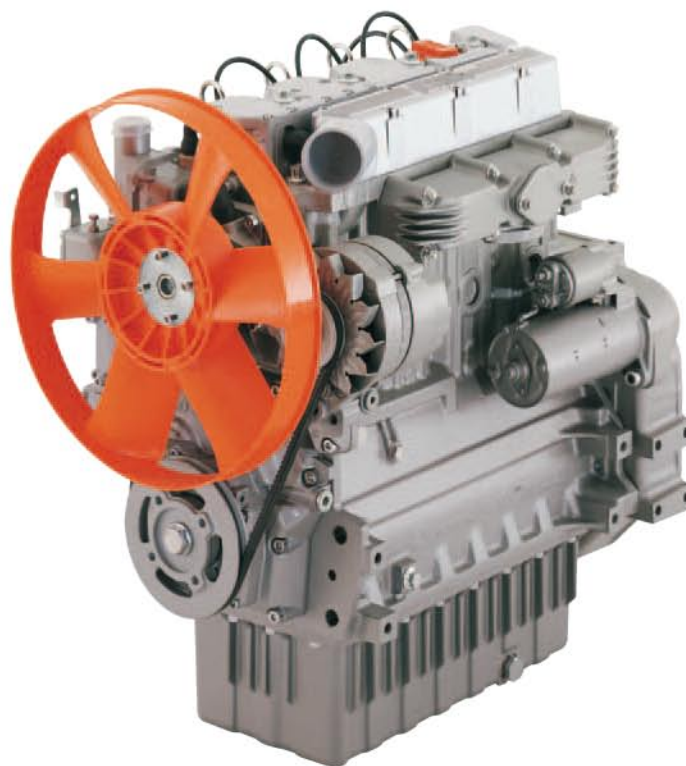
- 4 cylinders
- 2199 cm<sup>3</sup>
- 37,5 kW/51,0 HP
- 3000 r.p.m.
- Nm 144,0@2000

## Available homologation

- EPA Interim TIER IV ◇
- 2004/26/CE Stage 3A ◆
- ECE R24 ▲

## Construction

- 4-stroke diesel engine with cylinders in line
- Fluid-cooled with axial fan.
- Indirect injection.
- Single-shaft distribution with rod, valve levers and hydraulic tappets.
- Geared distribution control.
- Double pto on the crankshaft.
- Two pto on the distribution.
- Counterclockwise, rotation (1° PTO).
- Forced lubrication with vane pump on the crankshaft.
- Total passage external oil filter.
- Positionable fan and water pump.
- Automatic extra fuel starting device.
- Centrifugal governor.
- Torque regulator.
- Cast iron engine block with re-borable integral liners.
- Cast iron cylinder head.



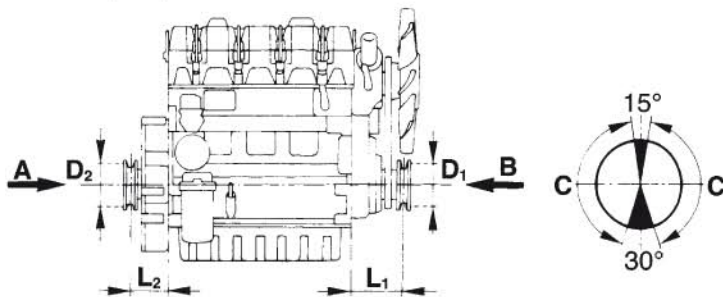
## Applications

- Mini excavator
- Excavator
- Fork lift
- Dumper
- Gen set
- Aerial platform
- Compressor
- High pressure cleaner
- Sweeper
- Pump
- Tractor

## Specifications

Cylinders	N.	4
Displacement	cm <sup>3</sup>	2199
Bore	mm	88
Stroke	mm	90,4
Compression ratio		22,5:1
Rating kW/HP	N (80/1269/CEE) ISO 1585	37,5/51,0
	NB ISO 3046 IFN	34,5/46,9
	NA ISO 3046 ICXN	32,0/44,0
Max. torque	Nm	144,0@2000
Max. torque 3 PT.O.	Nm	39,2@3000
Min. idling speed		900
Water pump delivery at 3000 r.p.m.	l/min.	100
Oil consumption	kg/h.	0,025
Oil sump capacity		
	with dynamic horizontal stabilizer	l 4,5
	without dynamic horizontal stabilizer	l 5,7
Max. allowable inclination for:		
- short periods of operation (max. time 30 minutes)		25°
- peak values (max. time 1 minute)		35°
Cap. of air required for correct combustion @ 3000 r.p.m.	l/min.	3300
Cap. of air required for correct cooling @ 3000 r.p.m.	m <sup>3</sup> /min.	128
Dry weight	kg	192
Recommended battery	V/Ah	12/88

Minimum pulley diameters for belt drive



V belt	$D_2 \text{ (mm)} \geq 73 [L_2 \text{ (mm)} + 118]$	$\frac{N \text{ (kW)}}{n \text{ (RPM)}}$
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Cogged belt	$D_1 \text{ (mm)} \geq 46 [L_1 \text{ (mm)} + 118]$	$\frac{N \text{ (kW)}}{n \text{ (RPM)}}$
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Max. intermittent axial load in both directions A-B = 300 kg  
C - zone in which the radial load acts on the pulley

HOMOLOGATIONS EPA Interim TIER IV e 2004/26/CE Stage 3A ◆ ◆

Rating kW @ 3000 rpm	ISO 14396	36,6
Max. torque	Nm	132,5@2100

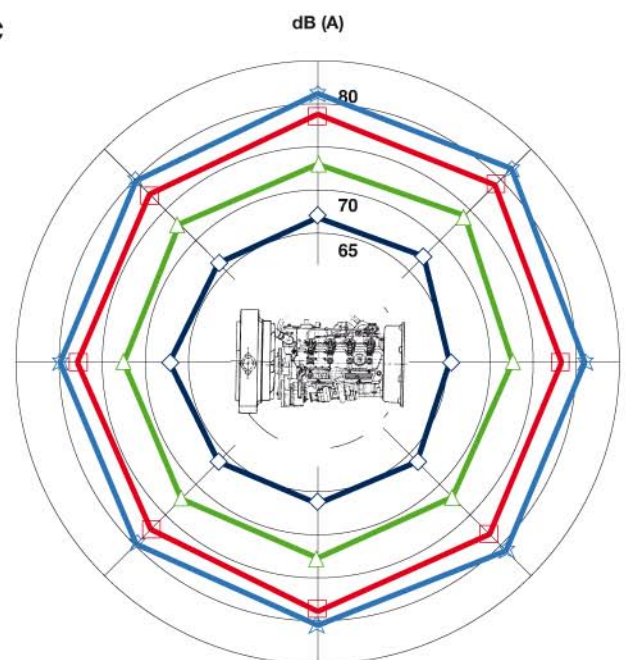
HOMOLOGATION ECE R24 ▲

Rating kW @ 3000 rpm	ISO 14396	35,0
Max. torque	Nm	130,0@2100



## Sound pressure level dB (A)

Sound level polar diagram open field - 7 meters microphone - no load running engine.



900 RPM ◆ 1800 RPM ▲ 2500 RPM ■ 3000 RPM ◆



- 3 cylinders
- 1028 cm<sup>3</sup>
- 20,0 kW/27,2 HP
- 3600 r.p.m.
- Nm 67,0@2000

## Available homologation

- EPA Interim TIER IV ◇
- 2004/26/CE Stage 3A ✦
- ECE R 24 ▲

## Construction

- 4-stroke diesel engine with cylinders in line
- Liquid-cooled with axial fan.
- Indirect injection with injector-pump on head.
- Single-shaft distribution in head.
- Distribution control with timing belt.
- Double pto on the crankshaft.
- Pto on the distribution.
- Counterclockwise rotation (1° PTO).
- Forced lubrication with vane pump on the crankshaft.
- Total passage external oil filter.
- Water pump in the engine block.
- Automatic extra fuel starting device.
- Centrifugal governor.
- Torque regulator.
- Cast iron engine block with re-borable integral liners.
- Aluminium cylinder head.



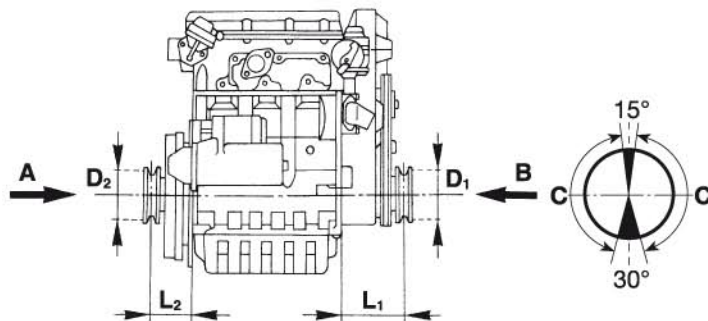
## Applications

- Excavator
- Generating set
- Refrigerating unit
- Sweeper
- Access platform
- Roller
- Lawn mower
- Dumper

## Specifications

Cylinders	N.	3
Displacement	cm <sup>3</sup>	1028
Bore	mm	75
Stroke	mm	77,6
Compression ratio		22,8:1
Rating kW/HP	N (80/1269/CEE) ISO 1585	20,0/27,2
	NB ISO 3046 IFN	18,0/24,5
	NA ISO 3046 ICXN	16,5/22,4
Max. torque	Nm	67,0@2000
Max. torque 3 PT.O.	Nm	37,0@1800
Min. idling speed		900
Water pump delivery at 3600 r.p.m.	l/min.	50 (~)
Oil consumption	kg/h.	0,012
Oil sump capacity	l	2,4
Min. allowable oil pressure	bar	1,5
Max. allowable inclination for:		
- short periods of operation (max. time 30 minutes)		25°
- peak values (max. time 1 minute)		35°
Cap. of air required for correct combustion @ 3600 r.p.m.	l/min.	1850
Cap. of air required for correct cooling @ 3600 r.p.m.	m <sup>3</sup> /min.	80 (1:1)
Dry weight	kg	85
Recommended battery	V/Ah	12/70

Minimum pulley diameters for belt drive



V belt	$D_2 \text{ (mm)} \geq 114 [L_2 \text{ (mm)} + 101]$	$\frac{N \text{ (kW)}}{n \text{ (RPM)}}$
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Cogged belt	$D_1 \text{ (mm)} \geq 79 [L_1 \text{ (mm)} + 101]$	$\frac{N \text{ (kW)}}{n \text{ (RPM)}}$
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Max. intermittent axial load in both directions A-B = 300 kg  
C - zone in which the radial load acts on the pulley

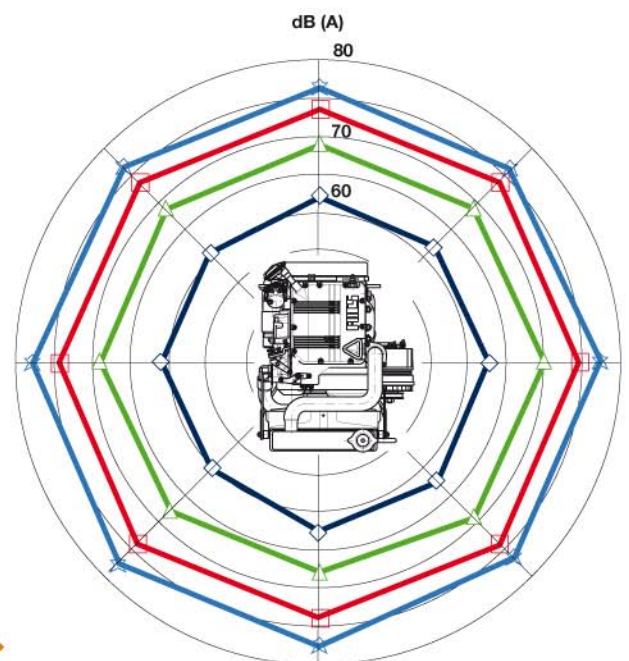
HOMOLOGATIONS EPA Interim TIER IV and 2004/26/CE Stage 3A

Rating kW @ 3600 rpm	ISO 14396	19,5
Max. torque	Nm	64,0@2100



## Sound pressure level dB (A)

Sound level polar diagram open field - 7 meters microphone - no load running engine.



1000 RPM    2000 RPM    3000 RPM    3600 RPM



- 4 cylinders
- 1372 cm<sup>3</sup>
- 26,0 kW/35,2 HP
- 3600 r.p.m.
- Nm 84,0@2000

## Available homologation

- EPA Interim TIER IV ◇
- 2004/26/CE Stage 3A ◇
- ECE R 24 ▲
- 80/1269 CE ◇



## Construction

- 4-stroke diesel engine with cylinders in line
- Liquid-cooled with axial fan.
- Indirect injection with injector-pump on head.
- Single-shaft distribution in head.
- Distribution control with timing belt.
- Double pto on the crankshaft.
- Pto on the distribution.
- Counterclockwise rotation (1° PTO).
- Forced lubrication with vane pump on the crankshaft.
- Total passage external oil filter.
- Water pump in the engine block.
- Automatic extra fuel starting device.
- Centrifugal governor.
- Torque regulator.
- Cast iron engine block with re-borable integral liners.
- Aluminium cylinder head.

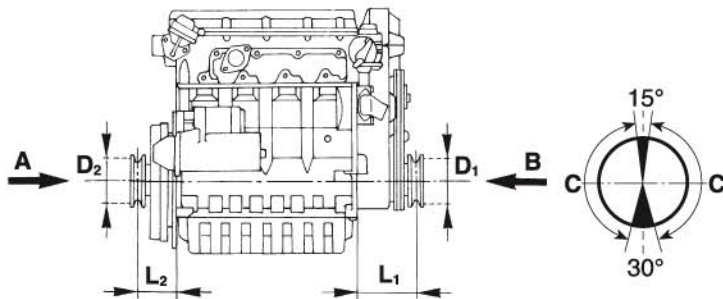
## Applications

- Excavator
- Dumper
- Roller
- Access platform
- Generating set
- Sweeper
- Lawn mower

## Specifications

Cylinders	N.	4
Displacement	cm <sup>3</sup>	1372
Bore	mm	75
Stroke	mm	77,6
Compression ratio		22,8:1
Rating kW/HP	N (80/1269/CEE) ISO 1585	26,0/35,2
	NB ISO 3046 IFN	24,5/33,3
	NA ISO 3046 ICXN	22,4/30,5
Max. torque	Nm	84,0@2000
Max. torque 3 PT.O.	Nm	37,0@1800
Min. idling speed		900
Water pump delivery at 3600 r.p.m.	l/min.	70 (~)
Oil consumption	kg/h.	0,017
Oil sump capacity	l	3,3
Min. allowable oil pressure	bar	1,5
Max. allowable inclination for:		
- short periods of operation (max. time 30 minutes)		25°
- peak values (max. time 1 minute)		35°
Cap. of air required for correct combustion @ 3600 r.p.m.	l/min.	2470
Cap. of air required for correct cooling @ 3600 r.p.m.	m <sup>3</sup> /min.	115 (1:1)
Dry weight	kg	98
Recommended battery	V/Ah	12/70

Minimum pulley diameters for belt drive



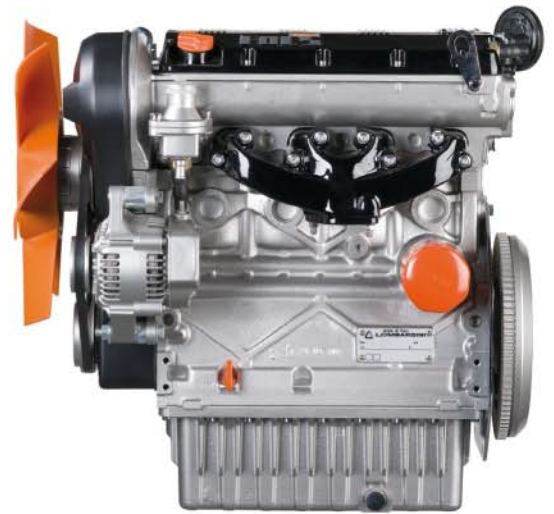
V Belt	$D_2 \text{ (mm)} \geq 110 [L_2 \text{ (mm)} + 101]$	$\frac{N \text{ (kW)}}{n \text{ (RPM)}}$
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Cogged belt	$D_1 \text{ (mm)} \geq 72 [L_1 \text{ (mm)} + 101]$	$\frac{N \text{ (kW)}}{n \text{ (RPM)}}$
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Max. intermittent axial load in both directions A-B = 300 kg  
C - zone in which the radial load acts on the pulley

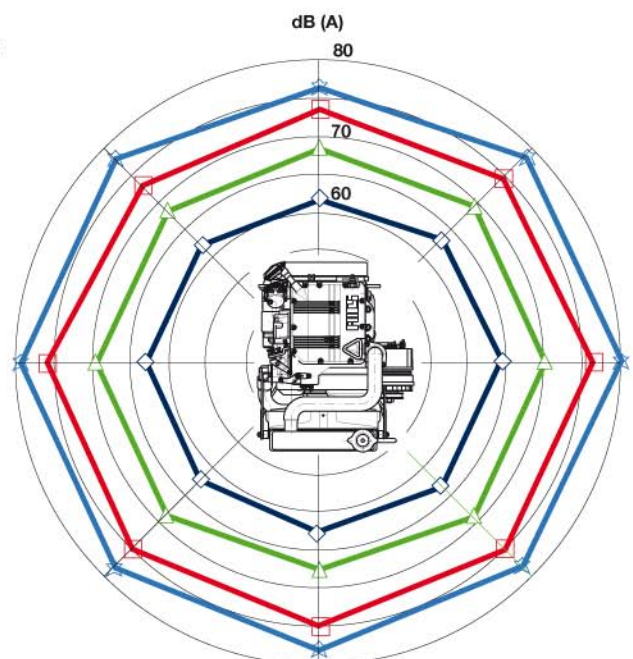
HOMOLOGATIONS EPA Interim TIER IV e 2004/26/CE Stage 3A

Rating kW @ 3600 rpm	ISO 14396	25,5
Max torque	Nm	78,0@2200



## Sound pressure level dB (A)

Sound level polar diagram open field - 7 meters microphone - no load running engine.



1000 RPM 2000 RPM 3000 RPM 3600 RPM