



# A Company Set for Growth...



## GHADDAR Company Profile

Version V.1.3

September 28<sup>th</sup>, 2021



For Earth, For Life  
**Kubota**

**LEROY-SOMER™**

# Who We Are?

- GHADDAR Machinery Co. operates in the field of Electrical Power Generating Sets, Green and Hybrid Power Solutions, Sound attenuation and all types of Power control and automation systems.
- The company holds distributorship and OEM agreements with world leaders in the design and manufacture of industrial diesel engines.  
**Kubota - Japan**  
**John Deere – USA**  
**Cummins G-drive – USA**



- Ghaddar Machinery Co. is one of the biggest worldwide Energy provider to supply diesel, gas & bi-fuel Gensets with solar power.

# Who We Are?

## OUR CAPABILITIES

### Training

- › Certified Trainers and Facility
- › Engine Overhauling
- › Sizing and selection
- › Application courses
- › Parallel Operation
- › Medium Voltage
- › Controllers & Softwares
- › Customized Courses

### Certifications

- › ISO 9001:2018
- › Type-Test ISO8528
- › IP55 Panel as per IEC529
- › Soncap certification
- › Canopies are certified by Engine manufacturers

### Production

- › From 4 to 4000KVA
- › Voltages up to 20KV
- › 50Hz, 60Hz, 400Hz & 48Vdc
- › Diesel, Gas and Bi-fuel

### Engineering Solutions

- › PV – Diesel
- › Remote Cooling
- › Battery Storage
- › 20Ft containerized up to 1250KVA – 50Hz
- › Twin genset in 40Ft cont.

### Hybrid Application

- › VSG Hybrid 48V for Telecom
- › Solar Pump
- › PV – Battery storage (grid scale)
- › Residential applications

**TECHNICAL CAPABILITIES**

# Our Corporate Values

## Delivering Superior Results

Always being ahead of our customers, suppliers and employees expectations.

## Integrity

Adopt strong business and personal ethics, honesty and truth

## Diversity:

Acknowledge and respect the diversity of cultures, viewpoints and circumstances and accept differing thoughts and ideas.

## Discipline

Adhere to policies, processes and procedures and embrace values to maintain consistent thoughts and deeds for an uncompromised quality.

## Respect

Loyalty towards stakeholders, common courtesy and corporate citizenship responsibility to serve and improve the communities in which we live.

## Innovation

Apply innovative thinking in all the business aspects in order to maintain our leadership position



# Into the Future

- In 1980, GHADDAR Machinery Co. was founded by its owner and presiding Chairman, Mohammed Samih Ghaddar. The company specialises in the production of generating sets, electrical power solutions, sound and weather proof canopies and industrial power solutions.
- Gradually, the company expanded its business and hired up to 500 personnel in engineering, sales, marketing, finance and the various operational and managerial sectors
- The company built a state-of-the-art power plant which has the latest modern Machinery.



# Fact File

**1999**

Outstanding Sales Award

**2001**

Power Award “Best Dealer Worldwide”

**2005**

10,000 Engines Sales Achievement Award

**2007**

20,000th Engine Order Award

**2009**

Level 3 Standard in Service

**2011**

Accredited Training facility & District trainers



# Fact File



## 2013 & 2015

The British Business Awards - Largest importer from Great Britain (Offered by the "UK Trade and Investment" and the British Embassy in Lebanon).



## 2015

GHADDAR Generating sets Type Test certification by Bureau Veritas according to ISO8528-8 standard



## 2016

A new division was emerged to handle the the hybrid solutions that covers PV-Diesel applications, Telecom hybrid VSG solutions, Solar Pump applications, battery storage and grid scale solar solutions.



# Fact File

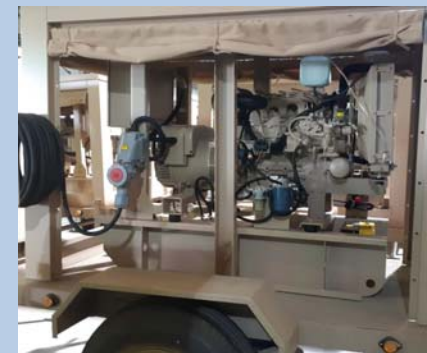
## 2018

Testing and verification of all GHADDAR open and canopied Genset against operation at high ambient temperature, vibration, back pressure and noise level according to most strict manufacturing standards.



## 2019

Now in 2019, while GHADDAR Machinery Co. is approaching the 40<sup>th</sup> anniversary, the company production is rapidly approaching **400,000 engine-powered solutions, supplied to customers all over the globe.** This will be another milestone truly worthy the recognition.





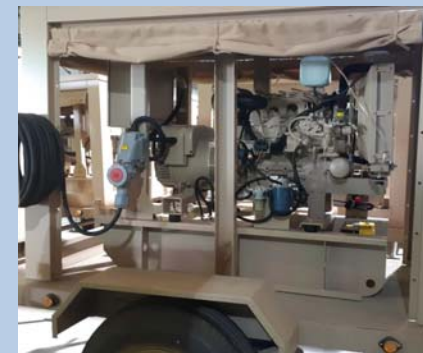
# Fact File

## 2021

In addition to the **ISO9001 Quality Management System** certification which we acquired in early nineties, the company was recently certified with:

**ISO 14001 Environmental Management System**

**ISO 45001 Occupational Health & Safety Management**



# Coverage



## Lebanon - Sidon

70,000 m<sup>2</sup> facility for manufacturing, distribution, aftersales service and management support.

250 Employees



## UAE - Sharjah

20,000 m<sup>2</sup> facility for manufacturing, distribution, aftersales service and management support.

130 Employees



## Nigeria - Lagos

11,000 m<sup>2</sup> facility for manufacturing, distribution, aftersales service and management support.

120 Employees



## Saudi Arabia - Rabegh

70,000 m<sup>2</sup> facility for manufacturing, distribution, aftersales service and management support.

Recruitment in Progress

# Coverage

## In addition to:

A widespread network of overseas power dealers covering Middle East, Near East, Africa, Part of Europe and South America.

<b>Iraq</b>	Nigeria	<b>Uganda</b>	Yemen
<b>Saudi-Arabia</b>	Cyprus	<b>Tanzania</b>	Egypt
<b>Qatar</b>	Greece	<b>Congo-DRC</b>	Algeria
<b>UAE</b>	Armenia	<b>Angola</b>	Ghana
<b>Kuwait</b>	Colombia	<b>Sierra Leone</b>	Guinea
<b>Oman</b>	Peru	<b>Zimbabwe</b>	Ivory Coast
<b>Jordan</b>	Pakistan	<b>South Africa</b>	Kenya
<b>Singapore</b>	Bangladesh	<b>Djiboti</b>	Libya
	Afghanistan	<b>Benin</b>	Gambia





# Coverage

- Dealers are ready and well equipped for assistance & after sales service. They can provide:
  - Spare Parts availability
  - Installation and after sales service having wide geographical coverage.
  - Trained service teams (by Certified Trainers)
  - Storage capacity
  - and sound managerial support.
- In addition to a strong support our engine manufacturers' distribution networks against warranty and spare parts availability.





# Our Business Partners



50Hz  
Range



250KVA

3350KVA



JOHN DEERE

30KVA

300KVA



Kubota

For Earth, For Life

9KVA

30KVA



# Our Business Partners



60Hz  
Range



250KVA

4000KVA



JOHN DEERE

30KVA

315KVA



Kubota

For Earth, For Life

9KVA

45KVA





# Our Business Partners



Telecom



Light-tower



Military



Airport



For Earth, For Life  
**Kubota**

# GHADDAR Small Range

(powered by Kubota)



Genset	Engine model	Alternator	50Hz 400V	60Hz 480V	SAE
			Prime	Prime	
KT9	D1105-E2BG	TAL040C	9.0	11.0	5 / 6.5
KT12	V1505-E2BG	TAL 040C	11.7	14.3	5 / 6.5
KT15	D1703-E2BG	TAL 040F	15.0	18.1	4 / 7.5
KT20	V2203-E2BG	TAL 040F	20.0	24.2	4 / 7.5
KT22.5	V2003-T-E2BG	TAL 042A	22.3	27.1	4 / 7.5
KT30	V3300-E2BG2	TAL 042C	28.9		3 / 11
KT36	V3300-E2BG			35.5	
KT36	V3300-T-E2BG2	TAL 042F	35.7		3 / 11
KT45	V3300-T-E2BG			44.6	



# World No. 1 Manufacturer

of small diesel engine (below 100HP) for industrial use



Corporate Heritage

Est in **1890** in Japan  
Started production of kerosene engines in 1922.



## Casting Technology

This technology enables consistent production of complex designed crankcases to maintain the high quality of our engines.



**29** million  
engines produced.  
As of Dec 2016



## Engineering Excellence



We work closely with you from design stage through production to fulfill the most important requirements of your engine. This is why there is nothing better than a Kubota engine.

**100%**  
Hot test



Every engine shipped from Kubota factory is hot tested to secure the engine performance to meet your high expectations.

Wide engine range  
with multiple fuel options.

4 kW  129 kW

Corporate Net Sales More than

**1.5** trillion JPY 

**1st** CARB certified



Kubota was the 1st manufacturer to receive the certification for the U.S. CARB ULGE emission regulations for engines under 19 kW in 1993.

**For Earth, For Life**  
**Kubota**

# MADE IN JAPAN

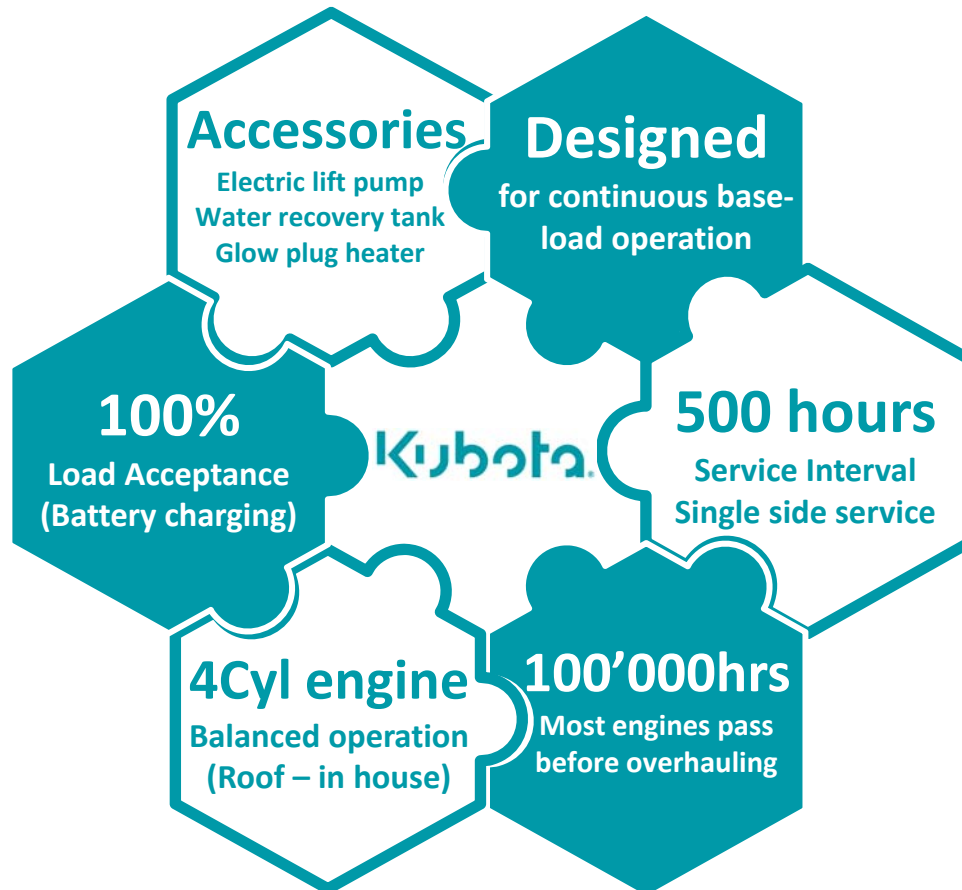


All Kubota Engines of GHADDAR are only



For Earth, For Life  
**Kubota**

# FACTS & FIGURES



**2 YEARS  
OR  
2,000 HOURS  
WARRANTY**



# Our Business Partners



## John Deere

is a global independent manufacturer of engines, drivetrains and equipment for Agricultural, Construction and Forestry Machinery.



**JOHN DEERE**



# GHADDAR Medium Range

(Powered by JOHN DEERE)

				50hz / 1500rpm 230/400 V			
Genset Type	John Deere Engine	Cylinders	Leroy Somer Alternator	Prime		Standby	
				KVA	KW	KVA	KW
DT30-DT32S	3029DFU29R	3	TAL042C	27.5	22.0	32.3	26.0
DT40-DT45S	3029TFU20	3	TAL042F	40.1	32.1	44.9	35.9
DT60-DT66S	4045TF158R	4	TAL042H	60.0	48.0	66.0	52.8
DT70-DT75S	4045TF158R	4	TAL044B	67.3	53.8	75.0	60.0
DT80-DT88S	4045TF258R	4	TAL044B	79.0	63.2	87.6	70.1
DT100-DT110S	4045HF158R	4	TAL044D	98.9	79.1	110.8	88.6
DT120-DT135S	6068TF258R	6	TAL044H	121.5	97.2	135.0	108.0
DT150-DT165S	6068HF158R	6	TAL044J	150.0	120.0	165.0	132.0
DT180-DT200S	6068HF258R	6	TAL046A	180.0	144.0	201.6	161.3
DT200-DT220S	6068HFU20	6	TAL046B	200.0	160.0	218.8	175.0
DT250-DT270S	6068HFU55	6	TAL046D	246.0	196.8	270.0	216.0
DT300-DT330S	6090HFU84	6	TAL046F	300.0	240.0	331.0	264.8

# FACTS & FIGURES

Engines produced so far  
8,000,000

One of World's Most valuable brands in 2018 (ranked 88 )  
Value of 5.4 Billion USD

Engine manufacturing  
since 1918

Agricultural Equipment  
#1 worldwide

Net Sales and Revenues  
28 Billion USD

Equipment manufacturing  
since 1837

Construction Equipment  
#2 in USA

Oldest used corporate logo  
More than 135yrs



1876



1912



1936



1937



1950



1956

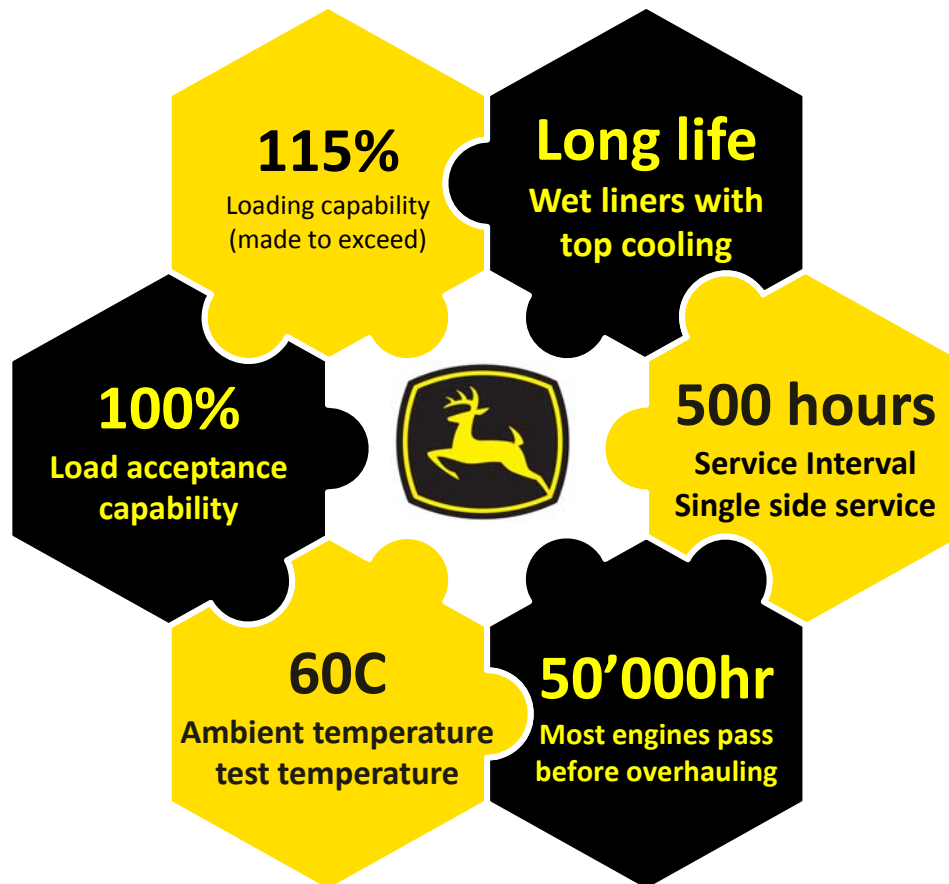


1968



**JOHN DEERE**

# FACTS & FIGURES



# Our Business Partners



Cummins Engine Technology securing efficiency and performance **Powering GHADDAR Generators.**  
Range from 250 to 4000 KVA.





# GHADDAR Medium & Big Range

(Powered by Cummins G-Drive)



Genset Type	Cummins Engine	Cylinders	Leroy Somer Alternator	Prime		Standby	
				KVA	KW	KVA	KW
CT135-CT150S	6BTAA5.9-G6	6	TAL044H	135	108	150	120
CT200-CT220S	QSB7-G5	6	TAL046B	193	154	220	176
CT250-CT275S	QSL9-G3	6	TAL046D	250	200	275	220
CT300-CT330S	QSL9-G5	6	TAL046F	300	240	330	264
CT360-CT390S	NTA855-G4	6	TAL046F	358	286	392	314
CT410-CT450S	QSZ13-G7	6	TAL047A	410	328	450	360
CT480-CT545S	QSZ13-G5	6	TAL047C	479	383	545	436
CT500-CT550S	QSX15-G8	6	TAL047C	496	397	553	442
CT635-CT690S	VTA28-G5	12	TAL047F	633	506	687	550
CT800-CT865S	QSK23-G3	6	TAL049C	801	641	864	691
CT1000-CT1100S	QST30-G4	12	TAL049E	1,000	800	1,100	880
CT1000-CT1100S	KTA38-G5	12	TAL049E	1,000	800	1,100	880
CT1250-CT1315S	KTA50-G3	16	LSA50.2M6	1,250	1,000	1,375	1,100
CT1400-CT1650S	KTA50-G8	16	LSA50.2L8	1,400	1,120	1,650	1,320
CT1500-CT1650S	KTA50-GS8	16	LSA50.2L8	1,500	1,200	1,650	1,320
CT2000-CT2200S	QSK60-G4	16	LSA52.3S6	2,000	1,600	2,200	1,760
CT2400-CT2650S	QSK78-G9	18	LSA 52.3 L12	2,390	1,912	2,640	2,112
CT2500-CT2800S	QSK78-G9	18	LSA 52.3 UL16	2,540	2,032	2,805	2,244
CT2650-CT2950S	QSK78-G9	18	LSA 53.2 M9	2,666	2,133	2,946	2,357
CT2850-CT3150S	QSK95-G4	16	LSA 53.2 M9	2,850	2,280	3,150	2,520
CT3150-CT3500S	QSK95-G4	16	LSA 53.2 M12	3,150	2,520	3,480	2,784
CT3350-CT3800S	QSK95-G4	16	LSA 54.2 L14	3,350	2,680	3,785	3,028



# FACTS & FIGURES



**190**

Countries & territories

**58,600**

Global employees

**1.3M+**

Engines built in 2017

**8,000**

Wholly-owned &  
independent  
distributor & dealer  
locations

**\$734M**

Invested in research  
& development in  
2017

**99**

Years of industry  
leadership

**The Biggest Engine Manufacturer for 1.3L to 95L**



# FACTS & FIGURES



Cummins is best choice for power plant applications ?

## LOWER OPEX

Less fuel & Oil consumption  
No need for valve clearance check  
Long time to overhaul



## RELIABILITY

Selection of heavy duty components  
Robust field proven design  
Long time to overhaul



## LOWER CAPEX

Global manufacturing  
Simple fuel systems  
Heritage of 100yrs of manufacturing



## DURABILITY

No risk of failure due to overspeed  
Field proven fuel systems  
Heritage of 100yrs of manufacturing



Power  
Plant

Oil &  
Gas

Renting

Data  
Center

MSC  
Sites

# Our Business Partners **LEROY-SOMER**<sup>TM</sup>



In 2017, Nidec-Japan purchased  
**LEROY-SOMER**<sup>TM</sup>  
**KATO ENGINEERING**<sup>TM</sup> to become  
**GLOBAL #1 Supplier of Alternators**





# Our Business Partners



Two brands:

**LEROY-SOMER**  
**KATO ENGINEERING**

**120+ active patents**

**Standards & Certifications**



Over  
**80**  
Service Centers

in over  
**40**  
countries

Generators up to



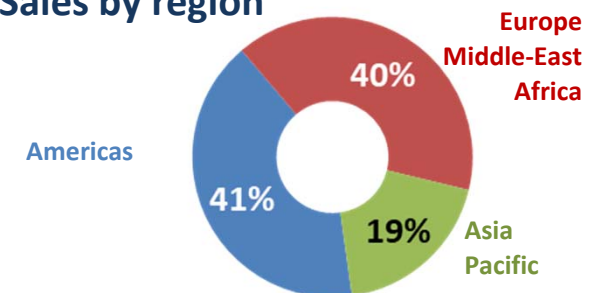
Global  
In Alternators

**#1**

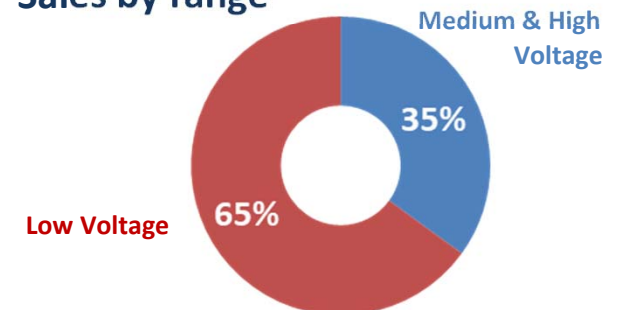
Owned by

**Nidec**  
All for dreams

**Sales by region**



**Sales by range**



**LEROY-SOMER**

# Quality Comes First

## Key elements leading to **Quality Product!**



- Automated Production Lines
- Electrical Wiring & accessories
- Powder Coating Line
- Testing Facility
- Original Components / Quality Suppliers

# Quality Comes First

## Automated Production Lines



Fully automated Assembly  
Lines operated according to  
Lean Six Sigma Quality System

# Quality Comes First

## Automated Wiring Machine



**komax**

Komax- Zeta is a very sophisticated crimp to crimp machine

Swiss technology that has no rival



The same machine is adopted by quality automobile industries.





# Quality Comes First



Automated Wiring Machine

**Quality** production



**Quantity** production

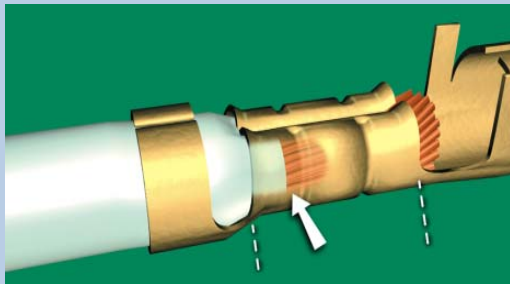


# Quality Comes First

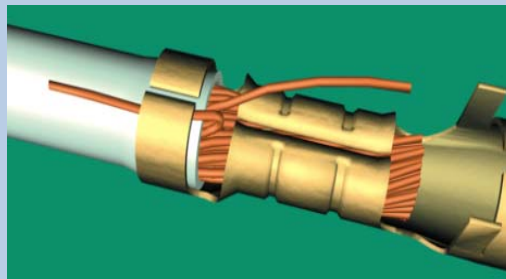
## Every crimp is QUALITY CHECKED

### Expert Said:

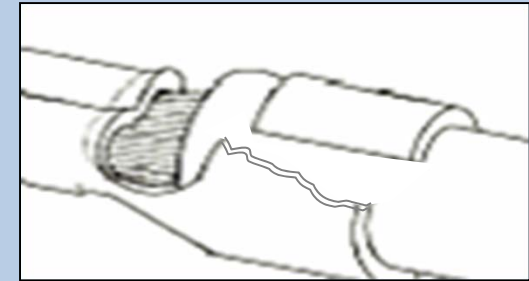
**90%** of genset tripping is due to wiring problems



Co-crimped insulation



Missing/withdrawn strands



Missing Bracket

### Solution:

Using Automatic crimp machine that has quality check of every crimp instantaneously

# Quality Comes First

Our wiring is the easiest to trace:

## 1- Number coded

Number of each wire is printed at both ends two times

## 2- Function coded

The function of each is printed at both ends of wire

## 3- Color coded

Because of the capability of Komax, our loom is of different colored wires.

## 4- Color Size

Wires of same color, will have different cross section area





# Quality Comes First

## Power Coating Line

### Highly resistant to:

- Harsh environment
- Sun Light (UV)
- Chemicals
- Impact

### Reducing risk of

- Scratches
- Abrasions
- Corrosion
- Fading



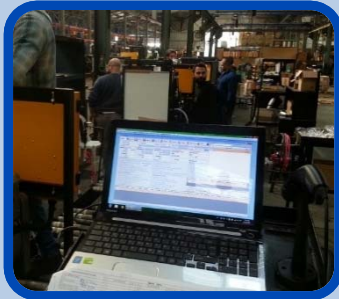


# Quality Comes First

## Genset Testing Facility



A purpose-built testing station accommodates every Genset manufactured at GHADDAR Machinery factory.



The system allows actual readings for all parameters of the Gensets to be recorded according to a procedure that complies to the requirements of ISO8528-6 standard.

A fully automated and error-free report is generated and accompanied with every Genset.

# Quality Comes First

## Test Witnessing Room

- Dedicated room is made to witness testing with big window for real time viewing.
- The testing is also monitored and captured by a 60 inch TV that shows all genset values.
- Genset performance is tested according to ISO8528 requirements.



# Quality Comes First

## Genset Testing – Optional tests

- Load test up to 110% (the procedure to be agreed with customer)
- High temperature test (Fire protection ISO 6826)
- Ambient clearance test
- Load acceptance test according to ISO8528-5
- Load Rejection test according to ISO8528-5
- Vibration test according to ISO8528-9
- Winding insulation test according to IEC 335-1
- Leakage current and Dielectric strength test according to IEC 335-1

# Quality Comes First Compliance with International Standards

## Paint

- The skid and control panel enclosure are painted by heat-treated and powder-coated electrostatic corona spraying.
- Paints passed durability tests conforming to international quality standards.
- Impact (EN ISO 6272)
- Salt Spray Resistance (ASTM B117-73)
- Humidity Resistance (ASTM D2247)



## Control & Monitoring Panels

Generating sets are fitted with different types of control panels tailored according to the set's need.

- Panels are tested and certified according to IP55 and IEC 60529 standards.
- Creepage and clearance are tested according to ISO 8528-8 and IEC 60355-1.
- Dielectric strength and current leakage are tested according to ISO 8528-8, IEC 60355-1 and IEC 60990.
- Hinges and locks are impact tested according to ISO 8528-8 and IEC 68-2-75





# Quality Comes First

## Long list of mechanical Options

- ❖ Bi-fuel (Gas+Diesel)
- ❖ Air shut off valve
- ❖ Twin Electrical Starters
- ❖ Pneumatic Starter
- ❖ Pre-Lube oil pump
- ❖ Oil sampler
- ❖ Fusible link fuel valve
- ❖ Fire Alarm panel
- ❖ Spring AVMs
- ❖ Inlet Fuel pressure
- ❖ Inlet Fuel temp
- ❖ Oil temp
- ❖ Exhaust temp
- ❖ Coolant pressure
- ❖ Boost air pressure



# Quality Comes First

## Quality Components

**For Earth, For Life**  


**#1 Global Engine Manufacturer for industrial engines up to 100HP (800K per annum)**



**#1 Global Manufacturer for Agricultural Equipment | Top 100 valued brands**



**#1 Global Manufacturer for industrial engines up to 4400HP (1.3M per annum)**

**LEROY-SOMER**™

**#1 Global Manufacturer of AC Alternators from 10KVA to 25MVA**

## Quality Comes First – Quality suppliers

**komax**

  
**ComAp**

**LIBAN  
CABLES**

**murphy**  
FWMurphy

**Klauke**®

**BROYCE  
CONTROL**

**DSE**

**LEONI**

  
**Tyco  
Electronics**

  
**DEUTSCH**

**WIEDENBACH**  
INDIVIDUAL INKJET MARKING SOLUTIONS

**schunk**

**ABB**

**Schneider**  
Electric

**Weidmüller**

**CARLO GAVAZZI**

 **finder**®

  
**NAGARES**

# After-sales Support



**Service:** GHADDAR Machinery Co. is part of the worldwide Kubota, John Deere distributor network as well as Cummins G-Drive OEM Network dedicated to providing a service of excellence to operators of our engines.

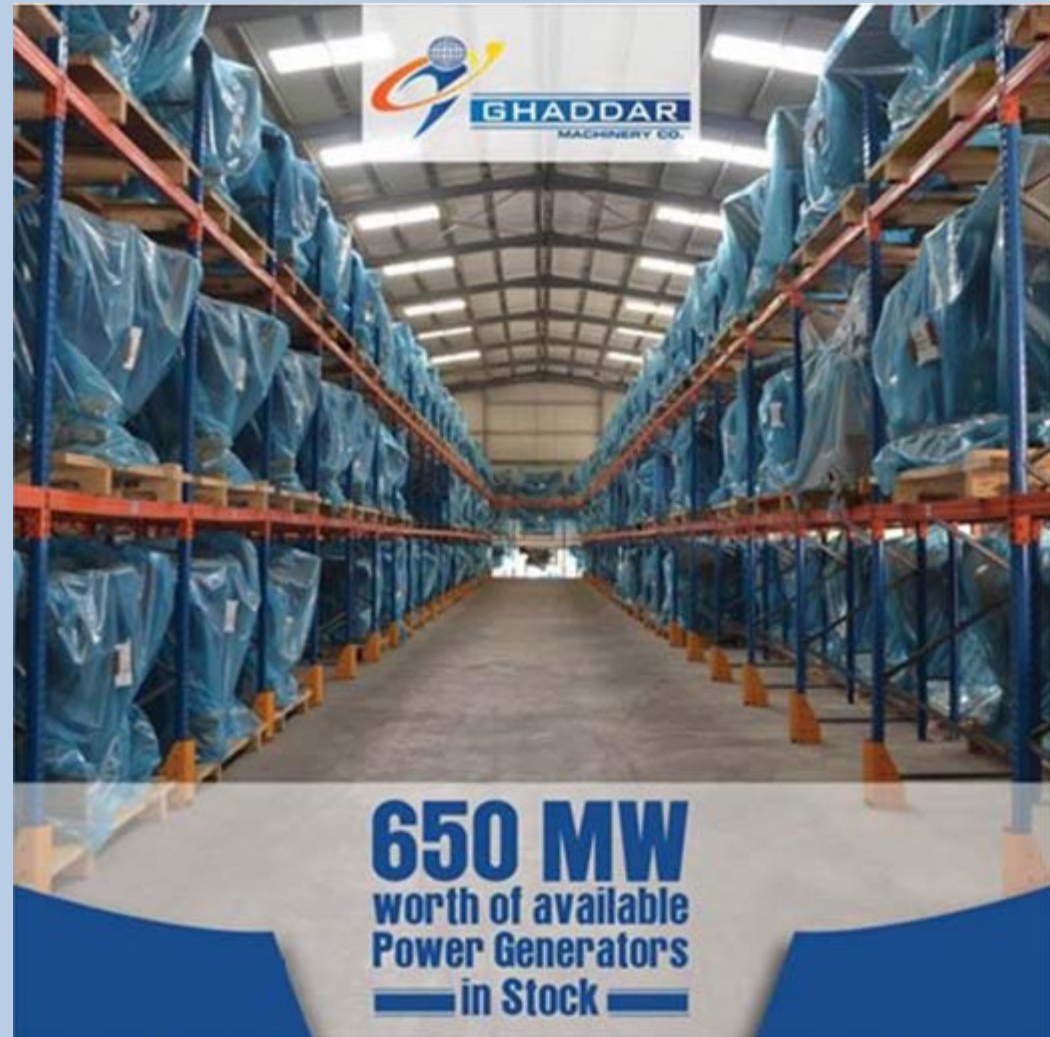
We offer various levels of service from complete preventive maintenance contracts, installation, and start-up supervision, to field corrective on-needed basis service.

**Parts:** GHADDAR Machinery Co. maintains an inventory of Genuine Spare parts, renowned for their reliability and durability.



# Stock availability

- One of the biggest engines and alternators stockist in the world allowing the company to respond to any order no matter of its magnitude.



## Key Differentiators

- Extensive experience and technical capability in power generation gained across 30 years.
- One of the biggest engines and alternators stockist in the Middle East and Africa allowing the company to respond to any order no matter of it magnitude.
- Qualified team of engineers and professionals managing the operation.
- State of the art production facility with the most advanced machinery and high production capacity.

## Key Differentiators

- Outstanding track record for supply of quality products and services to most demanding customers.
- Diversified scope of energy supply that includes solar, hybrid systems, gas gensets, bi-fuel gensets, LV & MV applications and others.
- Certified trainers and training facility offering the most updated training material for engines and overall Genset application as well.
- Spare parts stock availability for quick supply.
- Strong Geographic Distribution and network chain providing sound aftersales service and technical Support.