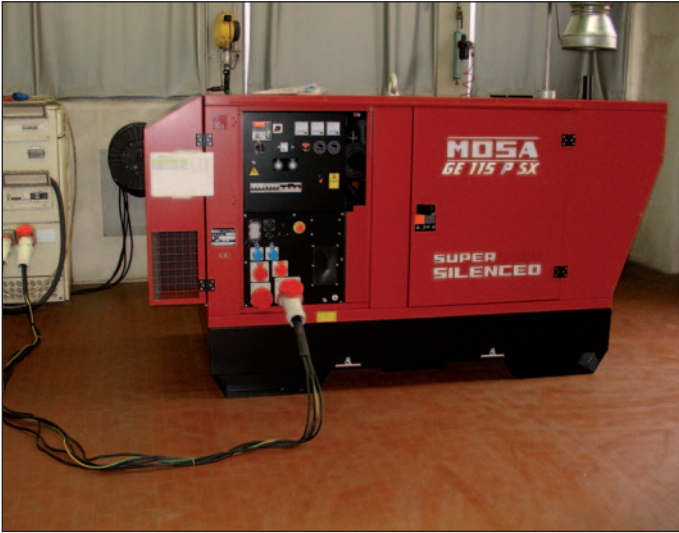


MOSA



INTRODUCTION and PRODUCT SELECTION GUIDE

MOSA – QUALITY AS STANDARD

Mosa Production Test Facility



Mosa Final Load Testing 1-2 Hours



MOSA manufactures a complete range of engine driven welder-generators from **150 to 600 amps** welding capacity with AC auxiliary power generation up to **32,000 Watts (40kVA)**.

The MOSA welder-generator range includes models with manual or electronic welding control and digital multi process welding capability.

MMA Stick welding, Shielded MIG & Self Shielded Flux Cored, TIG and Gouging processes are all available within the MOSA range of engine driven welder-generators.

The MOSA manufacturing facility in Northern Italy produces in excess of **16,000** machines per annum.

Over **750,000 sq.ft.** of production area includes Research & Development with modern CAD/CAM product design linked to automatic processing of components that continue through powder coating, assembly and final load testing of each machine for 1-2 hours.

The end result is a modern, fully compliant machine ready for despatch with total quality traceability under the ISO 9001 system.

Central to the success of MOSA welder-generators is the MOSA **ASYNCHRONOUS WELDING ALTERNATOR**. This brushless alternator designed and manufactured in-house by MOSA offers excellent welding characteristics and simultaneous AC auxiliary power and requires no maintenance as there are no brushes to wear and the solid rotor has no windings.

Consistent high quality DC welding output in all welding applications is guaranteed with the significant benefit of additional AC auxiliary power for running other items of equipment such as mains powered welding & cutting machines, power tools and lighting from a stable power supply.

In order to cover all types of professional welding applications MOSA uses different types of welding current regulation systems including:

- **MAGIC WELD/CT CHOPPER TECHNOLOGY**
- **TS ANALOGUE TECHNOLOGY**
- **DSP-MULTI PROCESS TECHNOLOGY**

MOSA – MAGICWELD SERIES

The **MagicWeld** series is a totally new concept in mobile welder-generators and uses **CHOPPER WELDING TECHNOLOGY** to provide an extremely smooth, ripple-free DC welding current with the added advantage of reduced component weight and high power-to-weight ratio.

MOSA MAGICWELD 150

The first unit in this series is the **MagicWeld 150**. Launched in 2005, the MagicWeld is a compact professional welder-generator which is easy to transport, easy to start and easy to operate – *an indispensable machine when it comes to mobile repair welding.*

New for 2009 is the **MagicWeld 150 Mk II** with Mosa **Power Optimiser Technology** to provide 150 amps of welding current @ 60% Duty Cycle plus open circuit welding of 65 volts DC for welding rutile, basic & cellulose electrodes up to **3.25mm**.

1.5kW of 110v auxiliary power is available for electric power tools, lighting etc.

The entire machine weighs only **35kg** and is powered by a Honda petrol engine fitted with “**power on demand**” auto idle control to reduce fuel consumption and engine wear.



MOSA MAGICWELD 200

Also new for 2009 is the **MagicWeld 200** welder-generator; this latest addition to the MagicWeld series offers additional welding output of **200 amps @ 60% duty cycle** for electrodes up to **4mm** and higher

110v auxiliary power of **1.6kW** powered by a Honda petrol engine with “**power on demand**” auto idle control - all contained in a compact, portable package weighing just **57kg**

MagicWeld Series

MagicWeld 150 amp: Open frame petrol, 35Kg
MagicWeld 200 amp: Open frame petrol, 57Kg

Model	Engine	Welding Process	Starting	Welding Current Regulation	Current Range Amps	Duty Cycle @ 60%	Welding Voltage OCV	Auxiliary Output 110V	Dimensions L x W x H mm	Weight Kg
MagicWeld 150 Mk II	Honda GX200 Petrol	MMA (Stick)	Manual Recoil	Digital Continuous	30-150	150A	40-65	1.5 kW DC	420 x 360 x 480	35
MagicWeld 200	Honda GX270 Petrol	MMA (Stick)	Manual Recoil	Digital Continuous	30-200	200A	40-70	1.6 kW AC	610 x 490 x 520	57

MOSA - TS & CT SERIES**200-400 Amp DC WELDERS / AC GENERATORS**

The **TS series** of MOSA welder-generators covers the general purpose range of welding requirements from 200 amps up to 400 amps DC welding current.

Electronic welding current control is standard on all models with the suffix "EL". This not only makes it easier to weld with electronic variable amperage control but also permits the use of AC auxiliary power whilst welding. All "EL" models have the facility to connect a 20 metre remote welding control and all "EL" models also feature Arc Force Control ("Electrode Dig Force").

CT – Chopper Technology is incorporated in the CT230 YSX series super silenced diesel models. The CT series uses a chopper type diode bridge operating at High Frequency to provide an extremely smooth ripple-free DC welding current with the added advantage of reduced component weight and high power-to-weight ratio.

In common with all MOSA welder-generators both the TS & CT series provide abundant single and three phase auxiliary AC power up to **20,000 watts (16 kVA)** for operation of any type of electrical equipment such as power tools, mains powered welding & cutting machines, lights etc.

MOSA TS & CT models feature modern fuel efficient petrol & diesel engines in either air or water cooled versions and are directly coupled to the **MOSA brushless asynchronous alternator**.

Engine shutdown (low oil pressure and high engine temperature) is standard on all petrol and diesel models.

MOSA TS & CT MODELS

TS 200 BS/EL	190 amp: Open frame petrol, air-cooled
TS 200 DES/CF	190 amp: Open frame diesel, air-cooled
CT 230 YSX/EL	210 amp: Super silenced diesel, air-cooled
CT 230 YSX/EL-CC/CV	210 amp: Super silenced diesel, air-cooled, CC/CV
TS 300 DIAMOND	300 amp: Silenced diesel, air-cooled, auto idle
TS 300 SXC/EL	300 amp: Super silenced diesel, air-cooled, auto idle
TS 350 YSX/EL	350 amp: Super silenced diesel, water-cooled , auto idle
TS 400 SXC/EL	400 amp: Super silenced diesel, air-cooled, auto idle
TS 400 PS/EL	400 amp: Silenced diesel, water-cooled , 1500 rpm

MOSA CT230 YSX & CT230 YSX-CC/CV

The CT 230 YSX/EL welder-generator has 210A **digital MMA welding output** plus auto arc force control to give extra "dig force" with electrodes and optional 20 metre welding remote control unit.

New for 2009 is the CT 230 YSX-CC/CV welder-generator; equipped with all of the features of the CT 230 YSX/EL plus adjustable arc force and CV welding control which allows welding of shielded MIG & flux cored wires using the optional **Mosa WF4 Mig wire feed unit package**. The CT 230 YSX-CC/CV is a compact, all-purpose site production and maintenance welder

Both CT 230 YSX models are housed within a super silent lockable canopy and powered by a modern Yanmar diesel engine with electric start and are able to operate up to **20 hours** on a single tank of diesel.

MOSA - TS & CT MODELS



TS 200 BS/EL



TS 200 DES/CF



CT 230 YSX/EL



CT 230/YSX-CC/CV



**TS 300 DIAMOND
TS 300 SXC/EL-EP1**



TS 400 SXC/EL-EP1



TS 350 YSX/EL



**TS 400 PS/EL
1500 rpm**

Model	Engine	Welding Process	Welding Current Regulation	Current Range Amps	Duty Cycle @ 60%	Welding Voltage OCV	AC Auxiliary Power			Dimensions L x W x H mm	Weight Kg
							400V	230V	110V		
TS200 BS/EL	Honda GX390 Petrol	MMA (Stick)	Electronic -Stepless Control	20-190A	170A	65	N/A	4kVA	4kVA	870 x 525 x 592	105
TS200 DES/CF	Yanmar L100N Diesel	MMA (Stick)	Manual 20-100A 90-190A	20-190A	160A	98	N/A	4kVA	4kVA	900 x 550 x 622	131
CT230 YSX/EL	Yanmar L100N Diesel	MMA (Stick)	Digital -Stepless Control	20-210A	210A	65	N/A	5kVA	2.5kVA	1050 x 650 x 920	247
CT230 YSX -CC/CV	Yanmar L100N Diesel	MMA (Stick) CC/CV MIG	Digital -Stepless Control	20-210A	210A	65	N/A	5kVA	2.5kVA	1050 x 650 x 920	247
TS300 Diamond & SXC/EL	Ruggerini RD210 Diesel	MMA (Stick)	Electronic -Stepless Control	20-300A	300A	70	10kVA	5kVA	2x2.5kVA	1320 x 790 x 750	350 & 370
TS400 SXC/EL	Lombardini 9LD625/2 Diesel	MMA (Stick)	Electronic -Stepless Control	20-400A	350A	70	13kVA	7kVA	3.5kVA	1455 x 870 x 880	465
TS350 YSX/EL	Yanmar 3TNV76 W/cooled Diesel	MMA (Stick)	Electronic -Stepless Control	20-350A	320A	65	12kVA	7kVA	3.5kVA	1610 x 720 x 1100	535
TS400 PS/EL 1500 rpm	Perkins 404C-22G W/cooled Diesel	MMA (Stick) Gouging	Electronic -Stepless Control	20-400A	400A	70	16kVA	12kVA	6kVA	1720 x 980 x 1110	780

MOSA - DSP MULTI PROCESS SERIES

DC ENGINE DRIVEN WELDERS - MULTI PROCESS, DIGITAL CHOPPER WELDING TECHNOLOGY

MOSA DSP (Digital Signal Processing) is a range of heavy duty, multi process welder-generators.

Total Capability - Designed and built for the most rigorous welding applications the DSP series features digital Chopper Technology controlled by microprocessor.

WDC (Welding Digital Control) - Offers 5 welding programmes available for Contact TIG DC, MMA Stick with 3 Arc Force settings including cellulose pipe electrodes plus a programme for CV MIG welding using the optional MOSA WF4 wire feed unit.

WDC Welding Panel Functions Include:

- SMAW:** Shielded Metal Arc welding (Stick)
- GMAW:** Gas Metal Arc Welding (MIG)
- FCAW:** Flux Cored Arc Welding (Flux Cored)
- GTAW:** Gas Tungsten Arc Welding (TIG) - Contact starting

Single or Double Operator Operation

For continuous duty applications the DSP series offers 1, 2 or 3 person operation from a single welder-generator.

Heavy Duty

A solid chassis construction with roll bar protection and powered by world class diesel engines from Perkins & Yanmar offering continuous operation up to 16 hours on a single tank of fuel.

Complete Power Solution

AC Multi voltage auxiliary power up to **32,000 Watts (40kVA)** makes the DSP series welder-generator a versatile power pack for additional items of equipment such as mains welding or cutting machines powered directly from the Mosa DSP series.

MOSA DSP Vs ANALOGUE

MOSA DSP Chopper Technology	Vs.	Conventional Analogue Engine Driven Welders
Digital electronic current control for ripple free & stable welding arc	Vs.	Traditional SCR control allows ripple causing spatter & unstable arc condition
MOSA patented software controls the current & all welding parameters	Vs.	Only current is controlled with no other adjustment possible
DC TIG contact start facility	Vs.	TIG welding requires separate HF box
Higher efficiency means up to 14% More Power from the same engine and more auxiliary power available whilst welding	Vs.	Less welding and auxiliary power from the same engine
Digital processing means no need for bulky reactance component to smooth welding output = less components, less voltage drop, less weight & heat	Vs.	Reactance required to smooth output and reduce spatter = more weight, more current loss and less arc voltage
VRD (Voltage Reduction Device) safe reduction of the Open Circuit Voltage to less than 12 volts when not welding	Vs.	Not available on analogue machines

MOSA – DSP MULTI PROCESS MODELS



1



2



3



4

1. **DSP400 YSX-VRD**
400 amp: Super Silenced,
Yanmar diesel – 3000 rpm
2. **DSP500 PS/EL-VRD**
500 amp: Silenced,
Perkins diesel – 1500 rpm
3. **DSP600 PS/EL-VRD**
600 amp: Silenced,
Perkins diesel – 1500 rpm
4. **DSP2x400 PSX/EL-VRD**
2x400 amp: Silenced,
Double Operator,
Perkins diesel – 1500 rpm

Applications

- Mining & Quarrying
- Pipeline Construction
- Ship Repair & Construction
- Steel Fabrication & Construction
- Refinery & Petrochemical Construction
- Heavy Plant Maintenance & Shutdown

Optional Accessories Include:-

- Welding Cable Sets
- Site & Road Trailers
- CC/CV Wire Feed Unit
- Remote Welding Control
- Chalwyn Valve/Spark Arrestor
- Polarity Change Function (factory option)

Model	Engine	Welding Processes	Current Range Amps	Constant Voltage Range CV MIG	Duty Cycle @ 60%	Welding Voltage OCV	AC Auxiliary Output			Dimensions L x W x H mm	Weight Kg
							400V	230V	110V		
DSP400 YSX-VRD 3000 rpm	Yanmar 3TNV76 W/cooled Diesel	MMA CC/CV MIG DC TIG Gouging	10-400A	15-40V	350A	65V	12kVA	7kVA	3.5kVA	1570 x 720 x 1100	535
DSP500 PS/EL-VRD 1500 rpm	Perkins 404C-22G W/cooled Diesel	MMA CC/CV MIG DC TIG Gouging	10-500A	16-40V	450A	62V	16kVA	12kVA	6kVA	1720 x 980 x 1110	750
DSP600 PS/EL-VRD 1500 rpm	Perkins 1103A-33G W/cooled Diesel	MMA CC/CV MIG DC TIG Gouging	10-600A	16-44V	550A	60V	30kVA	15kVA	8kVA	2050 x 850 x 1135	980
DSP2x400 PSX/EL-VRD 1500rpm	Perkins 404C-22G W/cooled Diesel	MMA CC/CV MIG DC TIG Gouging	10-400A Double Operator	16-36V	180A	68V	40kVA	20kVA	10kVA	2490 x 1030 x 1480	1300

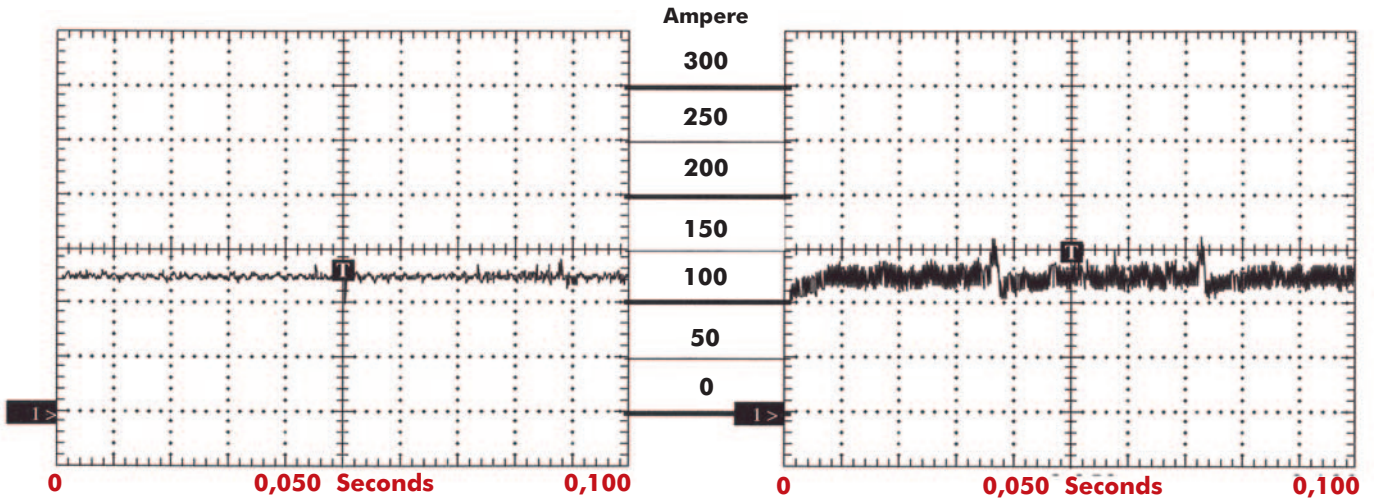


MOSA DSP SERIES

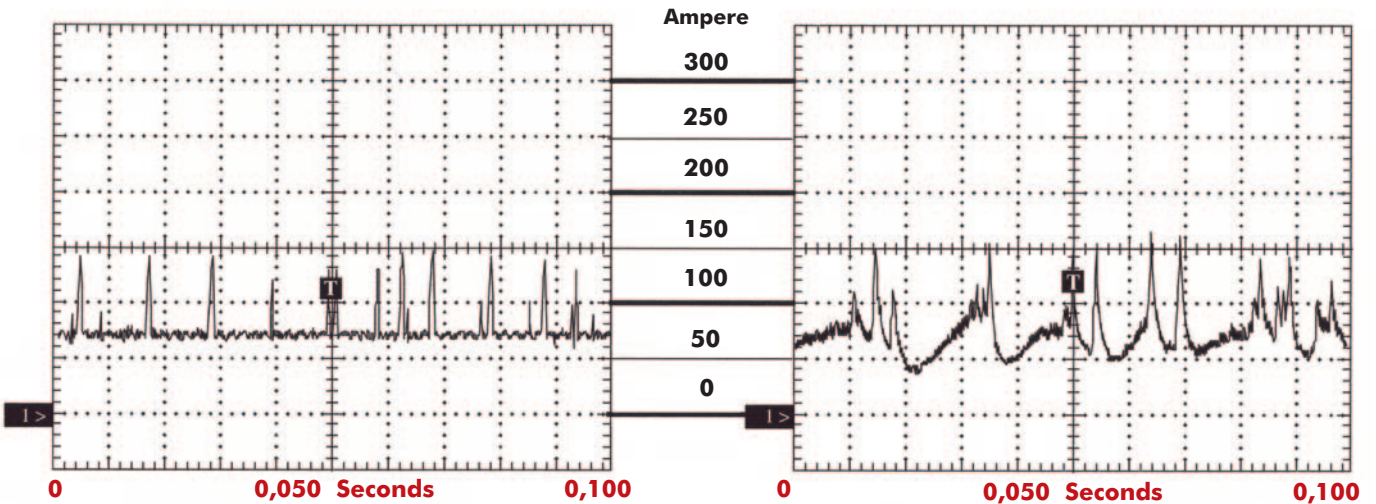
Vs

ANALOGUE WELDERS

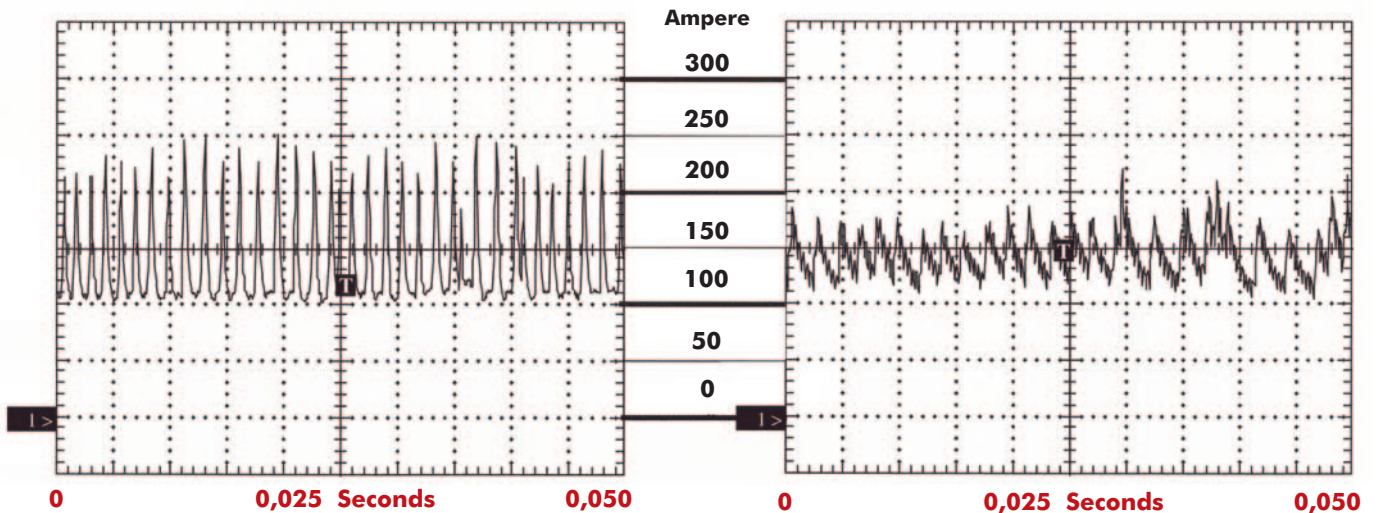
MMA CC (Constant Current) - ELECTRODE E7018 Ø3.25 mm @ 125A & 23V *



MMA CC (Constant Current) with ARC FORCE - ELECTRODE E6010 Ø3.25 mm @ 75A & 25V *



MIG CV (Constant Voltage) CO₂ Wire Ø0.8mm @ 130A & 20V (Wire Feed Speed 8m/min.) *



***In conclusion all the oscilloscope traces show that the new DSP has superior performances with a smoother arc and lack of ripple which means less spatter, more stable arc & consistent weld quality.**



MOSA - WDC WELDING DIGITAL CONTROL PANEL

MOSA WDC - DSP WELDING PROGRAMS

- STAND BY ■ No Program Selected
- TIG DC ■ Contact Starting
- CC-Stick ■ Arc Force Control ("Dig" Function)
- Cellulose Electrode Setting 1
- Cellulose Electrode Setting 2
- CV-Wire ■ GMAW (Gas Metal Arc Welding – MIG)
- FCAW (Flux Cored Arc Welding)



DSP Welding Voltmeter / Ammeter & Optional VRD indicator

MOSA WDC PANEL CONTROLS

Welding Program Selector

- Standby
- TIG DC
- CC-Stick
- CV-Wire

42v Power Socket

- Mosa WF4 Wire Feed Unit
- RC1 Welding Remote Control



Stepless Control
Welding Amperage (CC)
or
Welding Voltage (CV)

Polarity Inverter (Option)
Reverse Polarity
Welding Switch

Welding Current Range
Low Range – 50%
Full Range – Max

MOSA - WF4 CC/CV WIRE FEED UNIT

MOSA

WF4 - CC/CV MIG WIRE FEED UNIT

The Mosa WF4 is a semi-automatic wire feed unit designed for use with Mosa CC/CV & DSP welder-generators.

Connection is via the 42V front panel socket of the welder-generator which automatically transfers welding parameter adjustment to the WF4 wire feed unit.

Suitable for:

- MOSA CT230 YSX-CC/CV
- All DSP Models.

Controls

- 1 Shockproof Composite Casing
- 2 Variable Voltage Control
- 3 Variable Wire Feed Speed
- 4 Gas Purge & Wire Inch Selector Switch
- 5 2/4 Stroke MIG Torch Trigger Selector Switch
- 6 Variable Soft-Start Welding Control
- 7 Variable Burn-Back Wire Control for Precise Arc Striking
- 8 4x4 Wire Feed Block with Tool-Free Replacement System
- 9 Optional Water Cooling Connections
- 10 Euro MIG Torch Connection



Features

- 4x4 roll heavy duty wire feed system
- 600 amp welding capacity
- Wire capacity Ø 0.6 - 2.4mm
- Reduced size, user friendly design
- Sloping front panel with easy to view controls
- Robust handle and lifting eyebolt
- Metallic structure with shockproof plastic panels
- Optional 4 wheel base accessory

Technical Data - Mosa WF4

Input	42v
Motor Power	100w
Feed Rolls	4
Feed Speed	0.5-20 Metres/Min
Wire Diameters Ø	0.6-2.4mm
Welding Capacity	600 amps
Dimensions - L x W x H	570 x 275 x 400mm
Weight	17kg

Package Part Number 35.WF4-CC/CV includes:

- WF4 CC/CV Wire Feed Unit
- 1 Set of Feed Rolls 1.0/1.2mm
- 15 Metre Interconnections
- Argon Gas Hose
- Argon Regulator
- 3 Metre MIG Torch

MOSA - GENERATING SETS

MOSA manufactures an extensive range of generating sets from 4 Kva to 275 kVA that are designed to provide portable and standby power in all situations where mains power is unavailable or at risk of interruption.

Typical applications include:

Standby emergency power
Construction sites and rental
Remote areas beyond the mains supply

The Mosa range offers a model to suit all applications including:

Portable, petrol powered
Air or water cooled engines
3000 rpm or 1500 rpm engine speeds
Portable & stationary, diesel powered
Standby power models from 4 – 275 kVA
Super silenced 400V diesel sets for continuous operation
Dual voltage 230/110V for plant & tool rental applications
Multi Voltage 400/230/115V with multiple sockets for construction site power

EAS Series - Standby Emergency Power

As the demand for power worldwide increases for use at home, in business and for general infrastructure so too does the need for reliable uninterrupted power to meet this growing requirement
- The Mosa EAS Series of generating sets offers a solution to this problem.

Each machine in the EAS series is specially pre-wired at the production stage to offer a plug-in system allowing the generator to be connected to a Mosa EAS Auto Mains Failure Panel that can be installed to the mains input** and provides the means to transfer power from the mains supply to the generating set in the event of a power failure and then switch the power back once the mains power is restored.

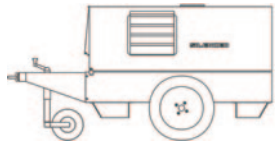
EAS Panels can be used with any Mosa generating set with a model name ending in "EAS" from 4 kVA to 275 kVA.



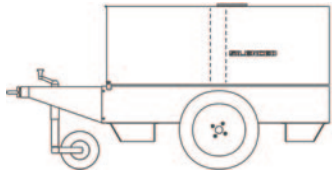
MOSA - ACCESSORIES

CTL SITE TOW KITS

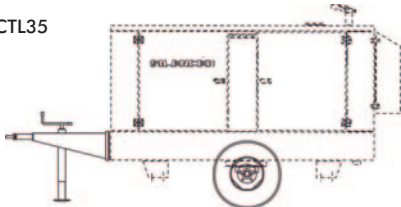
CTL300/400



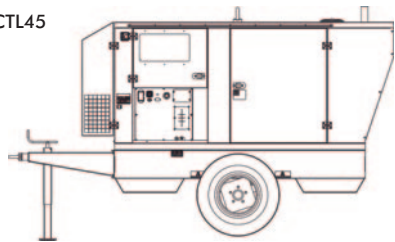
CTL22



CTL35



CTL45

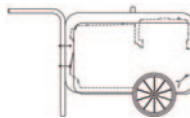


CTM WHEELS & HANDLES KITS

CTM-MW



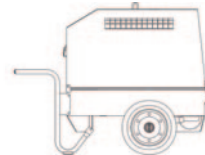
CTM200



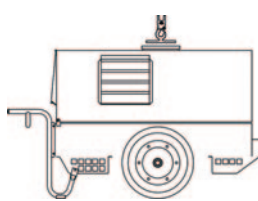
CTM6/2



CTM2



CTM300



TC2 WELDER REMOTE CONTROL 20M



TC4 MAGNETIC WELDER REMOTE CONTROL 20M



RC1 WELDER REMOTE CONTROL 20M



WCS WELDING CABLE SETS



PAR600 PARALLEL BOX 2x300 Amps

RST20/35
FULL CHASSIS
ROAD TOW-BRAKED



RT2530/3540 ROAD TOW-UNBRAKED



RTB4161
ROAD
TOW-
BRAKED



77.SKD SERVICE KITS & SPARE PARTS



WF4 CC/CV Wire Feed Unit

MOSA – GENERATOR SELECTION DATA

- 1 Add the wattage of each tool or appliance together to find the total number of watts (this information is normally found on the rating plate)
- 2 Check what, if any, additional starting power the tool or appliance requires – see Load Starting & Appliance Type Guide
- 3 Select the generating set – include an additional 10% power capacity for future use

LOAD STARTING

Electrical equipment such as air compressors, cement mixers, pumps & refrigerators normally require 2-3 times their normal running power to start (See Motor Starting Guide)

Resistive loads such as lighting, kettles, heaters etc do not require additional starting power but power tools may require extra capacity when operated under full load

APPLIANCE TYPE	WATTS
Construction	
Air Compressor: 3HP	3300W**
Angle Grinder: 4" to 12"	550-2500W
Arc Welders: 130 to 200 Amp	3500-7000W
Cement Mixer	1000-1500W**
Bench Saw Masonry: 10" to 14"	4000-7000W**
Bench Saw Timber: 12" to 16"	3000-6000W**
Circular Saw	1000-1500W
Concrete Poker	1500W
Dehumidifier	4000W
Fan Heater	1000-3000W
Flood Lamp	500W
Electric Drill: 8mm to 23mm	350-1000W
Hammer/Breaker	3000W
Hot Air Gun	1500-2000W
Impact Wrench	1000W
Jig Saw	400W
Planers	700-1000W
Routers	500-1000W
Sanders: (Floor) 8"	2000W
Sanders: (Orbital)	1000W
Garden	
Chain Saw: 10" to 16"	1500W
Hedge Trimmer	350-500W
Lawn Mower: 10"	800-1000W
Pressure Washer: 2HP	2200W**
Strimmer: 10"	350W
Domestic/Commercial	
Central Heating Pump	300W
Colour TV	250W
Computer	400-1200W
Cooker	3000W-10000W**
Electric Iron	1500-2000W
Freezer	700-4000W**
Flourescent Lamp	60W
Kettle	3000W
Light Bulb	60-150W
Microwave	600-2000W
Photocopier	1600W
Radio/HiFi	200W
Refrigerator: Large	700-1500W**
Tumble Dryer	2400W**
Washing Machine	1000-4000W**

*For Precise Wattage refer to Manufacturers Rating Plate
** See Motor Starting Guide*

MOTOR STARTING GUIDE		
MOTOR SIZE	RUNNING WATTS	STARTING WATTS
1/4" HP	400	1050
1/2" HP	600	1800
3/4" HP	850	2600
1.0 HP	1100	3300
2.0 HP	2200	6600
3.0 HP	3300	9900

USEFUL POWER CONVERSIONS		
1 kW	=	1.25 kVA
1 kVA	=	0.80 kW
1 kW	=	1000 watts
1 HP	=	746 watts

TO CONVERT		
kW to kVA	divide by	0.8
kVA to kW	multiply by	0.8
watts to kW	divide by	1000
watts to HP	multiply by	0.00134
kW to HP	multiply by	1.34
HP to kW	multiply by	0.746

HP	kW
1.0	0.75
1.5	1.12
2.0	1.49
3.0	2.24
5.0	3.73
5.5	4.10
7.5	5.59
10.0	7.46
20.0	14.91

TO FIND

WATTS
CALCULATE:
VOLTS x AMPS

AMPS
CALCULATE:
WATTS/VOLTS

kW=kilowatt
kVA=kilo volt amp
HP=Horsepower