

ENGINE DRIVEN WELDER

ZEN 400 PS

The images are for reference

WELDING PROCESS



SMAW Shielded
Metal Arc welding
(STICK)



Gas Tungsten Arc
Welding (TIG)



Air carbon
Arc Gouging



FEATURES

- Arc welding source in D.C. welding
- Electronic regulation of welding current
- Welding with any type of electrode including cellulosic electrodes
- Double welding range (20A-200A / 30A-400A)
- Arc Gouging dedicated sockets
- AC power generator also available in welding
- Fully opening engine side bonnet which facilitates all maintenance operations
- Central lifting hook

DEFINITIONS



Welding current regulation
Welding arc regulation
Welding scale selection



Welding current regulation
Welding arc regulation
Welding scale selection
Digital ammeter - welding current
Digital voltmeter - welding voltage
VRD Indicator



water
cooled



diesel



electric
starter

ENGINE 1500 RPM

4 STROKE, DIRECT INJECTION, NATURAL ASPIRATED	
Model	PERKINS - 404A-22G1
* Stand-by net power	20.3 kWm (27.6 hp)
* PRP net power	18.4 kWm (25 hp)
* COP net power	/
Cylinder / Displacement	4/ 2216 cm ³ (2,216 lt.)
Bore / Stroke	84 / 100 (mm)
Compression ratio	23.3 : 1
BMEP (Brake Mean Effective Pressure : LTP - PRP)	743.7 kPa – 669.3 kPa
Speed governor type	Mechanical
FUEL CONSUMPTION	
110 % (Stand-by power)	6.1 lt./h
100 % of PRP	5.3 lt./h
75 % of PRP	4 lt./h
50 % of PRP	2.9 lt./h
25% of PRP	
COOLING SYSTEM	
Total system cap. - only engine	40.2 m ³ /min
Fan air flow	
LUBRIFICATION SYSTEM	
Total oil system capacity	/
Oil capacity in sump	/
Oil consumption at full load	

EXHAUST SYSTEM	3.94 m ³ /min.
Maximum exhaust gas flow	505 °C
Max. exhaust gas temp.	10.2 kPa (0.102 bar)
Maximum back pressure	/
External diameter exhaust pipe	12 Vdc
ELECTRICAL SYSTEM	2 kW
Starter motor power	55 A
Battery charging alternator cap.	- 15°C
Cold start	/
AIR FILTER	Dry
Combustion air flow	1.45 m ³ /min.
HEAT REJECTED AT FULL LOAD	
To exhaust system	16.6 kW - 944 Btu/min.
To water and oil	19.6 kW - 1114 Btu/min.
Radiated to room	4.4 kW - 250 Btu/min.
To charge cooler	/

* Maximum output (not overloadable) according to ISO 3046-1

WELDING AND GENERATION

C.C. WELDING

CONSTANT CURRENT	
Welding current Max	400A / 30V (Stick) 350A / 34V (Stick - IEC rating) 400A / 26V (Tig)
Current adjustment range	20 A / 20.8 V - 400 A / 30 V (Stick) 20 A / 20.8 V - 350 A / 34 V (Stick - IEC rating) 20 A / 10.8 V - 400 A / 26 V (Tig)
Type of regulation	Continue on 2 Step: 20A ÷ 200A / 30A ÷ 400A
Duty cycle	350A / 34V @ 100% (Stick) 400A / 26V @ 60% - 350A / 24V @ 100% (Tig)
Open circuit voltage	72 V
Arc force control	Si

GENERAL SPECIFICATIONS

Fuel tank capacity	60 l	IP protection degree	IP 23
Starter battery	12 Vdc -80Ah	Acoustic pressure	66 dB(A) @ 7m
Fuel consumption (welding 60%)	3.15 l/h	Max. ambient temperature	40 °C
Running time (welding 60%)	19 h		

A.C. GENERATION

ALTERNATOR ASYNCHRONOUS THREE-PHASE, SELF-EXCITED, SELF-REGULATED, BRUSHLESS	
Insulation class	H

AUXILIARY GENERATION

OUTPUT 1		OUTPUT 2	
Type of source	3-phase	Type of source	1-phase
Frequency	50 Hz	Frequency	50 Hz
Apparent Power + Active Power	16 kVA (12.8 kW)	Apparent Power + Active Power	10kVA / kW
Cos φ	0.8	Cos φ	0.8 / 1
Voltage	400 V	Voltage	230 V
Current	23.1 A	Current	43.5 A
OUTPUT 3		OUTPUT 4	
Type of source	1-phase	Type of source	/
Frequency	50 Hz	Frequency	/
Apparent Power + Active Power	5kVA / kW	Apparent Power + Active Power	/
Cos φ	1	Cos φ	/
Voltage	110 V	Voltage	/
Current	45.5 A	Current	/

SIMULTANEOUS LOAD CHARACTERISTIC

WELDING CURRENT	≥ 250A	175A	125A	75A	0A
POWER GENERATION 400V	0kVA	8,5kVA	11kVA	13kVA	16kVA
POWER GENERATION 230V	0kVA	6kVA	8,5kVA	10kVA	10kVA
POWER GENERATION 110V	0kVA	3,5kVA	5kVA	5kVA	5kVA

CONTROL PANEL

ENGINE

- Controller RGK420SA
- Engine protector thermal circuit breaker: 1x30A
- Engine protector thermal circuit breaker: 1x5A
- Siren
- Emergency stop button

FEATURES CONTROLLER RGK420SA	
Operating Mode	• MAN - REMOTE
Display	• Graphic back-light LCD display • Buttons: START ▼ - ▲ • Key
Measures generator	• Voltage L1-L2 / L2-L3 / L3-L1 - N-L1/N-L2/N-L3 • Frequency Hz
Measures engine	• Fuel level • rpm meter • Hours meter • Battery voltage
Protections generator	• Overvoltage • Undervoltage • Overfrequency • Underfrequency
Protections engine	• Overspeed • Underspeed • High temperature shutdown • Low oil pressure shutdown • Low fuel level warning • Low fuel level shutdown • Battery voltage • Battery flat • Battery charge alternator failure • Arresto d'emergenza / Emergency stop • Mancato avviamento / Start failure • Mancato arresto / Stop failure • Manutenzione / Maintenance
Features	• Operator interface via symbols, codes and texts • Setpoints adjustable via controller buttons or PC • Remote Start and Stop • Configurable inputs and outputs • Operation temperature : -30°C -+70°C • NFC interface for wireless programming

WELDING

- Continuous control of the welding current from 30A to 400A or 20A to 200A
- Welding range switch
- Continuous control of the arc force
- Remote control connector. Automatic switching when the connector is inserted
- Welding output sockets: 1x Welding (+) 600A
1x Welding (-) 600A
1x Only gouging (+) 600A
- 2x Display (only with EVO Instrument panel)
 - Welding current setting
 - Current and voltage measurement during the welding phase
- VRD ON/OFF switch (inside electrical box)

GENERATION (VERS. 400V / 230V / 110V)

- Differential switch (400V/230V)
- Magnetothermal switch for 230V sockets
- Magnetothermal switch for 110V-32A socket
- Thermal circuit breaker for 110V-16A socket protection
- Output sockets : 1x 400V 32A 3P+N+T CEE IP67
1x 230V 32A 2P+T CEE IP67
1x 110V 32A 2P+T CEE
1x 110V 16A 2P+T CEE
- Earth terminal (PE)

WEIGHT - DIMENSIONS ACCESSORIES

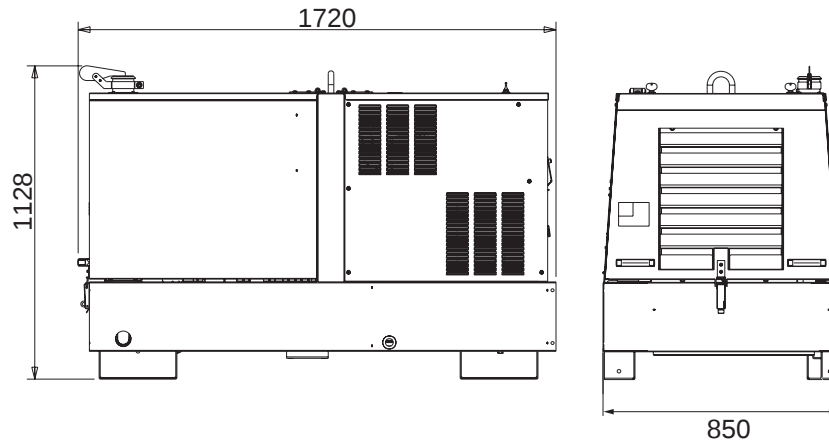


DRY WEIGHT:
• 780 Kg

The welding machine pictured may include optional accessories.



DIMENSION PICTURE



VERSIONS IN ADDITION TO THE STANDARD FEATURES

	INSTRUMENT	POL	OIL & GAS	TOP
V and A digital welding	✓	✓	✓	✓
Water T. + Oil P. indicator light	✓	✓	✓	✓
Polarity change		✓		✓
Spark arrestor			✓	✓
Battery switch			✓	✓
Chalwin valve			✓	✓

OPTIONS ON REQUEST

- Remote control RC2
- Remote control RCE (with EVO instrument panel)
- Remote control extension cord (30m)
- Welding cables K500 (20+15 m, 50 mm²)
- Welding kit (mask gloves, etc.)
- Earthing kit
- Site tow CTL22
- Site tow trailer, 4 wheels, 2 steering wheels, ball joint
- Road tow running gear CTV1
- Locking Fuel Cap

AVAILABLE VERSIONS

C1BC1029	STANDARD
C1BC1029BK	INSTRUMENT
C1BC1022BK	POL
C1BC1029BCKNP	OIL & GAS
C1BC1022BCKNP	TOP

GENERAL INFORMATION

COMPLIANCE GENERATING SETS WITH EC DIRECTIVES AND STANDARDS

2006/42 / EC (Machinery Directive)
 2014/35 / UE (Low Voltage Directive)
 2014/30 / UE (Electromagnetic Compatibility Directive)
 IEC-EN 60974-1 Arc welding equipment - Welding power sources
 IEC-EN 60974-10 Arc welding equipment - Electromagnetic compatibility (EMC) requirements



ISO 9001:2015 - Cert. 0192

WARRANTY

All devices are covered by the manufacturer's warranty.