

SILENT CHALLENGER MULTI 2 x 301

**New Generation Diesel Engine Driven Silent Welding Sets
with Multi-process Capability and Confirming to Latest CPCB Norms**



- **India's First Silent Double Operator Welding Set** with Multi Process Welding Capabilities and Confirming to Latest CPCB Norms for Noise and Emission Level
- Versatile Applications, Suitable for **Manual** and **Semiautomatic welding Processes** for **Cross Country Pipeline Welding Applications**
- Ideal for Heavy Duty Site Fabrication and Maintenance / Construction Applications.
- Highly Reliable even in Hostile Site Conditions
- Big savings in fuel and longer runs before next refueling compared to single operator welding sets.
- Specially Proven with Cellulosic (6010, 7010G & 8010G types) and other special type Electrodes and also with fluxcored welding wire types such as AWS 5.29, ASME SFA 5.29, E71T8K2 and E81T8 G.
- **Super Silent Operation**



WELDERS TO THE NATION SINCE 1951
ADOR WELDING LIMITED

(Formerly Known as Advani-Oerlikon Ltd.)

www.adorwelding.com



SILENT CHALLENGER MULTI 2 x 301

Double Operator Silent Engine driven Welding set for Multi Welding processes.

Brief Technical Specifications

Product Name	Model	Current Range (A)	Wire feeder	Torch
Double Operator Silent ED set	SILENT CHALLENGER MULTI 2X301	15-300 (2 operator) 30-600 (1 operator)	WF-40 Multi	Super SSPW 350

Ordering Information for Silent Challenger Multi 2X301:

PRODUCT	MODEL	PRODUCT CODE
Power Source	Silent Challenger Multi 2 x 301 (Skid)	F10.33.103.0026
Power Source	Silent Challenger Multi 2 x 301 (Two Wheel)	F10.33.103.0027
Power Source	Silent Challenger Multi 2 x 301 (Four Wheel)	F10.33.103.0028
Wire Feeder	WF-40 Multi	F10.33.103.0040
Torch	Super SSPW 350	F10.33.103.0041

INTRODUCTION

The double operator or often called as double holder, Engine driven silent welding set, Model - **Silent Challenger Multi 2x301**, is designed for **Manual(SMAW)** and **Semiautomatic (FCAW)** multi process welding applications at site, particularly for **cross country pipeline welding applications**. Depending on working pressure and the specifications, most of the cross country pipeline welding (Both Root pass and Filling/Capping of pipe joints) of smaller and medium size pipelines with pipe dia up to 36" was done so far, by manual or stick (SMAW) welding process, using 6010 and 7018 or 8010 grade electrodes. The welding productivity was always the problem with this process, resulting longer time for pipeline project completion. The fully automatic orbital welding process is used for pipelines of bigger dia pipe sizes beyond 40", which is very costly process for smaller and medium size pipeline projects. The Semiautomatic welding process with self shielded flux cored wire (FCAW) is introduced during last few years in India, on such small and medium size welding pipelines, which has reduced the overall

welding time to nearly 50% to 70%. This Semiautomatic FCAW process is used for hot or filling and capping passes of pipe joints, excluding the root pass.

Ador Welding Ltd has developed the above said double operator ED set (Silent Challenger Multi 2x301) with multi process capability, which is now already established on few cross country pipeline projects. It is the most versatile ED set designed for variety of applications from Cross country pipeline welding to the Maintenance or the prestigious site fabrication jobs. These new generation welding sets are **efficient** and **reliable**.

This welding set is designed for simultaneous use by two welders for multi processes like SMAW, GMAW/FCAW, GTAW etc. It is basically chopper based, high frequency power source which delivers welding power in CC or CV mode as required for different welding processes. It is powered by 4 cylinder 45 BHP diesel engine and meets the requirement of latest CPCB norm.



SALIENT FEATURES

- It is the only double operator silent ED set which complies CPCB Emission and Noise norms vide GSR 371(E) dated 17th May'2002 with noise level upto 75 decibels measured at 1 mtr from the set.**
- Unique Brushless welding generator** of it's kind. Maintenance free as no windings, commutator, rotating diode on the rotor assembly.
- Chopper based, energy efficient** welding current controls for CC/CV output welding characteristic enables lesser input power to the welding generator, thus the simultaneous use of 2 welders possible without overheating and overloading of the double operator welding set



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4. **Precise Arc force adjustments** in Manual mode and **Electronic choke in** Semiautomatic mode provided for the **control of Arc dynamics**
5. Maintenance free Brushless type generator with



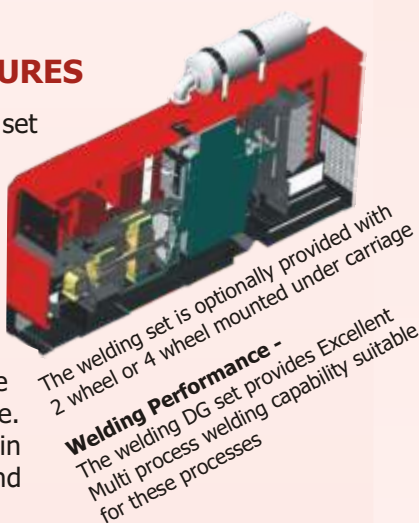
Chopper based current control, resulting excellent welding performance even with extra long cable lengths.

6. It has multi welding processes capabilities and basically designed for cross country pipeline welding applications using SMAW and GMAW/FCAW processes with self shielded wire
7. Significant savings per day per set on fuel consumption account (upto Rs. 1500/- per day per set) compared to the use of 2 individual ED sets
8. Single bearing, closed coupled type construction with life-long stainless steel flexible coupling arrangement. No component on the rotor, which can fail prematurely, makes these machines an ideal choice for cross-country pipeline welding.
9. 18 KVA, 3 Phase, 415 volts and 6 KVA, 1 Phase Auxiliary Power source provided as standard feature. This enables Customer to use more nos. of tools at a time, reduces grinding time and edge preparation time for pipes. Also single phase auxiliary power source can be used simultaneously while welding is in progress.

CONSTRUCTIONAL FEATURES

The base frame or the skid of the set is made out of pressed channel or the angle frame of MS material. It is very strong and rugged frame since it is built in with fuel tank. **The acoustic canopy** is mounted on this frame. Overall mechanical construction is modular, consisting of mainly three main items like Base frame (i.e. skid), Acoustic canopy and main assembly unit of Engine and generator

The canopy of these welding sets is basically designed for meeting the overall requirements of **Noise and**



The welding set is optionally provided with 2 wheel or 4 wheel mounted under carriage

Welding Performance -
The welding DG set provides Excellent Multi process welding capability suitable for these processes

Emission norms laid down by **Central Pollution Control Board (CPCB)**, which comes under Ministry of Environment and Forest, Government of India.

The set has rugged construction and it is suitable for very rough handling at project sites. It has basically THREE compartments as against ONE compartment available on the canopy of non-complying ED sets. These compartments are called as **Suction compartment, Middle compartment and Exhaust (or Radiator) compartment**. These compartments are built with panel of thick sheet metal and single piece folded sufficient end frames from the same sheet. They are further pretreated and suitably powder coated to withstand the rough whether conditions of outdoor site applications. For the absorption noise/sound, all the panels of canopy are fitted with the best quality, fire resistant / retardant insulation material/foam (40mm thick PU foam with 2 mm EVA back up sheet-back up sheet not provided by any other manufacturers) from inside. Thus the overall sound level is maintained very well within 75 decibels, when measured at 1 mtr distance from the machine.

WELDING PROCESSES SMAW, GMAW, FCAW, GTAW, GOUGING

Process Manual

SMAW process
CC characteristic

3.2 mm electrode

Root run (E6010,
85-90 A, 5G position)
and Hot pass
(E8010, 100-140A,
26-30V)

Performance



Process Semiautomatic

FCAW process
CV characteristics
2.0 mm flux cored
wire (innershield)
Filling and Capping with

220-280A / 22V
Overhead position
6G, Top to bottom

180-220A/21V
Overhead position
6G, Bottom side

Performance



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Technical Specifications

CC/CV



Welding Generator

Welding generator	Type	Brushless without windings/brushes on Rotor Assembly		
		Semi Auto(CV)	Manual(CC)	Manual CC
Welding process	Type			
Nos. of Welders	Nos.	2	2	1
Welding current range	Amps	15-300	15-300	30-600
Max hand welding current @ 40%	Amps	300	300	600
Max hand welding current @ 60%	Amps	250	250	500
Max hand welding current @ 100%	Amps	200	200	400
Open Circuit Voltage (max)	Vots	92	92	92
Generally Confirming to	Std.	2635	2635	2635
Speed	rpm	1800	1800	1800
Insulation	Type	F	F	F
Diametor of coated electrode / FCAW wire	mms	1.2-2.4	2.5-6.3	2.5-6.3
Welding current adjustment	Type	Single range,stepless welding current adjustment from panel and Remote control unit		

Auxiliary Power source

Voltage		Volts	415/240
Nos of phases		Nos	3/1
Rating Three phase / Single phase		KVA	18/6
Output Sockets		Nos	4 nos

General

Dimensions and Weight			
Skid Mounted (LXWXH)	mms		2500X820X1460
2Wheel mounted (LXWXH)	mms		3410X1455X1990
4Wheel mounted (LXWXH)	mms		3410X1555X1990
Weight Kgs			
Skid Mounted	Kgs		1160
2 Wheel mounted	Kgs		1300
4 Wheel mounted	Kgs		1400

Torch

Model Type	Type	Super SSPW 350
Max current carrying capacity @ 60%	Amps	350
Suitable for wire dia	mm	2.0/2.4
Torch end connector	Type	standard L
Weight	Kgs	2.3

Engine

Make		Simpson
Type	model	S433
Cylinders	No	4
Rated Engine speed	rpm	1800
Engine cooling	type	water
Engine rating	HP	45 at 1800 r.p.m.
Confirms to	standard	IS 10002/82
Starting	Type	12 volt electric start
Fuel consumption (at 2 x 300 A load)	Litre/hr	4.5
Fuel tank capacity	Litres	75
Engine safety protections - Optional	Type	Engine autoshut off in case of LLOP and HCT

CPCB compliance meets CPCB norms for **Noise and Emission**

Optional accessories

Mandatory Engine maintenance kit	Code no	S10.64.101.0004
Welding accessories	Code no	S10.64.001.0014

Wire feeder WF-40 Multi

Wire feed speed	mtr/min	0.12 - 5.5
Suitable for wire	mm	2.0 - 2.4
Wire drive rollers	No	4
Size (LXWXH)	mms	520x240x360
Torch connection type	Type	standard
Drive motor Type	Type	PMDC
Drive motor Voltage	Volts	42
Weight without spool	Kgs	22

- **Warranty:** One year from the date of purchase. ADOR WELDING LIMITED warrants that all new equipment sold from Plant/Area Offices / Authorised Distributors are free from defects in materials and workmanship and will perform in full accordance with applicable specifications. For engine back to back warrantee from engine manufacturer.

- In view of continuous development, ADOR WELDING LIMITED reserves the right to modify/ change the design and/or the specifications without any prior notice.

- Backed by dedicated customer care package.

APPLICATION



1. Root pass Hot passes and (Filling/Capping) of cross country pipelines by **Manual** and **Semiautomatic** processes respectively.
2. X ray quality welding for prestigious site fabrication jobs.
3. Site maintenance of construction machineries, Construction Sites etc.



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