



V250218

***Technical Data Sheet***

***Model A4IN1P8***



**FORZA®**  
Aura

**Professional laser gun for clean welding processes.**

## **REMOTE CUTTING / WELDING / CLEANING, WELDING BEAD**

FORZA AURA revolutionized welding, offering an undeniable advantage over MIG, TIG, or electrode welding. Laser welding uses a beam of light to weld and doesn't rely on an electric arc, so you can create perfect welds without having to be an experienced professional.

Its main advantage is its small size and portability thanks to the air-cooling system that no longer requires water or a chiller, which means reduced operating costs.

## Specific features

FEATURE	DETAIL		
Nominal laser power	800W		
Type of work allowed	SOLDIER	COURT	REMOTE CLEANING
Maximum working thickness in ASTM A36 <sup>(1)</sup>	2.5mm   3/32in	1.5mm   3/64in	0.03mm   1.2mils
			Oxide layer
Maximum working speed at 0.7mm of ASTM A36	35 mm/s   1.4 in/s	50 mm/s   2 in/s	500mm2 /s   0.8in2 /s
			In oxide layer thickness 0.01mm   0.4mils
Permissible working gas type: ARGON, NITROGEN, NITROGEN, AIR			NITROGEN, AIR
Average gas flow required	10L/min	70L/min	32L/min
Type of consumer thread	Solid thread 0.8 to 1.6mm	-	-
Interchangeable nozzles	6 types <sup>(2)</sup>	1	- <sup>(3)</sup>

<sup>1.</sup> It is not recommended to scale the machine to this power if you plan to permanently work with thicknesses greater than the nominal. As the cut moves away from the nominal thickness, it will begin to show more pronounced lines and possible burrs. For greater thicknesses, purchase the higher-power model.

<sup>2.</sup> One of the welding nozzles is also used for cleaning the weld seam, this is detailed later.

<sup>3.</sup> Remote cleaning does not require an interchangeable nozzle, only the tube holding the nozzle is removed.



## Special Features

### Air Cooling System



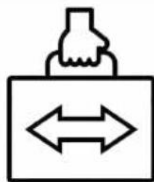
The cooling system is air-based, so the use of water for chiller cooling is no longer necessary.

### Quick Change Lenses



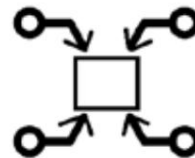
The gun's design allows for quick lens exchange depending on the type of work to be performed.

### Ultra Portable



Its reduced size and weight thanks to the air cooling system, allows great portability of the machine.

### Multifunction 4 in 1



The FORZA Aura machine allows the use of 4 functions: Welding, Weld seam cleaning, Cutting, Remote cleaning

### Multiple Welding Types



By using the different nozzles, the machine allows you to perform different types of welding according to your needs.

### Robot Gripper Option



An additional option is the use of a robotic arm for automated handling of the laser gun thanks to the input/output (I/O) communication port.

## General Specifications

SPECIFICATION	DETAIL
Model	FORZA AURA – A4IN1P8
Laser Type/Laser Technology	Fiber Laser 1080nm $\pm$ 10nm
Laser source connection type	QBH
Type of operation	By CW pulses
Nominal power of Fiber laser	800 W
Fiber laser working power range 10%-100% ( $\pm$ 0.5%)	
Stability at output power	$\pm$ 3%
Working frequency	4 – 5000Hz
Source protection level	IP54
Types of work	<b>SOLDERING/CUTTING/CLEANING</b> <b>CORD/REMOTE CLEANING</b>
Focusing system	Fixed
Type of gas to use in welding	Argon or Nitrogen
Type of gas to use in cutting	Argon, Nitrogen or Compressed Air
Type of gas to use for cleaning	Argon, Nitrogen or Compressed Air
Average gas consumption	Welding: 15L/min
	Cutting: 70L/min (Depending on thickness)
	Cleaning: 32L/min
Laser gun model	SUP 21 T
Average welding speed	~15 mm/s   0.6 in/s (1)
Maximum travel speed	200 mm/s   7.9 in/s

<sup>1</sup>. The welding speed depends on the thickness of the material, the thickness of the weld and the type of material. In a general reference under similar conditions, it is 3 times faster than traditional welding (electrode, TIG, MIG).

Depth of weld without filler	~15% of thickness and ~ 0.5mm   1/64in		
Depth of weld with filler	~ 1.2mm   3/64in		
Weld thickness (Depending on the filler material)	1 - 2mm   1/32 – 5/64in (2) —		
Maximum laser width in cleaning	120mm   4.7in		
Laser cutting width	0.1mm ~ 3mm   0.12 in(3) —		
Cutting precision	Depending on the thickness		
Recommended welding angle	0-30° (4) —		
Ideal welding angle	15°		
Command control	Horizontal touch screen		
Process control	Button on gun		
Maximum consumption of the laser source	3,000 W		
Maximum consumption of the wire feeder automatic	200 W		
Peak power consumption	3,500 W		
Average energy consumption	2 100 W (5)		
Working voltage	220V/1ph 50Hz - 60Hz		
Maximum current per line	18 A		
Minimum wire gauge of the breaker box	Up to 60°C (TW,UF)	Up to 90°C (THHN,THHW)	Voltage
	2 x 12AWG	2 x 16AWG	220VAC 1ph
	+ 1 x 12AWG Ground		
Recommended breaker for the machine	20 A		
FORZA Aura power cable length	5m   16.4ft		
Feeder power cable length 5m   16.4ft			

2. The thickness of the weld is related to the amount of material filler that is configured.

3. The width of the cut is directly proportional to the thickness of the material, the greater the thickness, the greater the width of the cut.

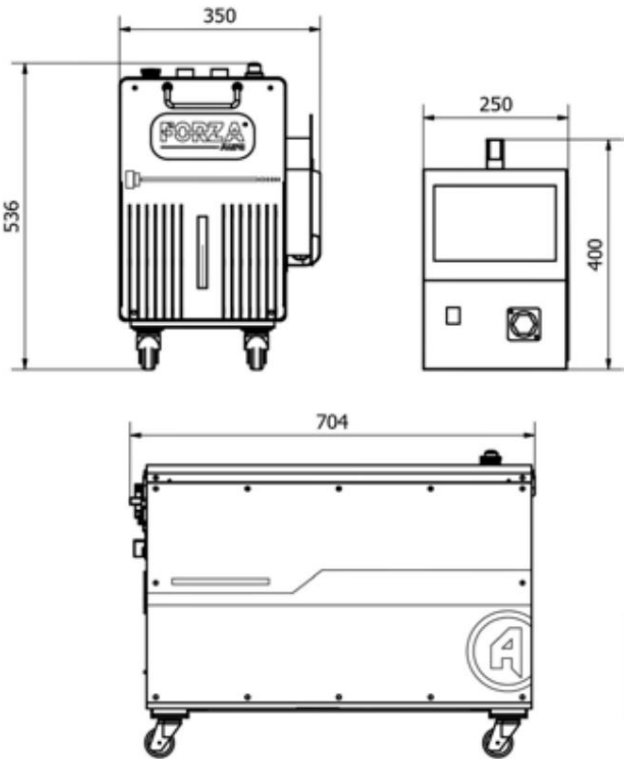
4. The tilt angle depends on the thickness of the cutting material and also the type of gas being used; the greater the thickness, the more the tilt angle can be affected.

5. Average consumption is calculated with 60% efficiency, this can increase depending on the work being done, this data is used for energy consumption in kWh

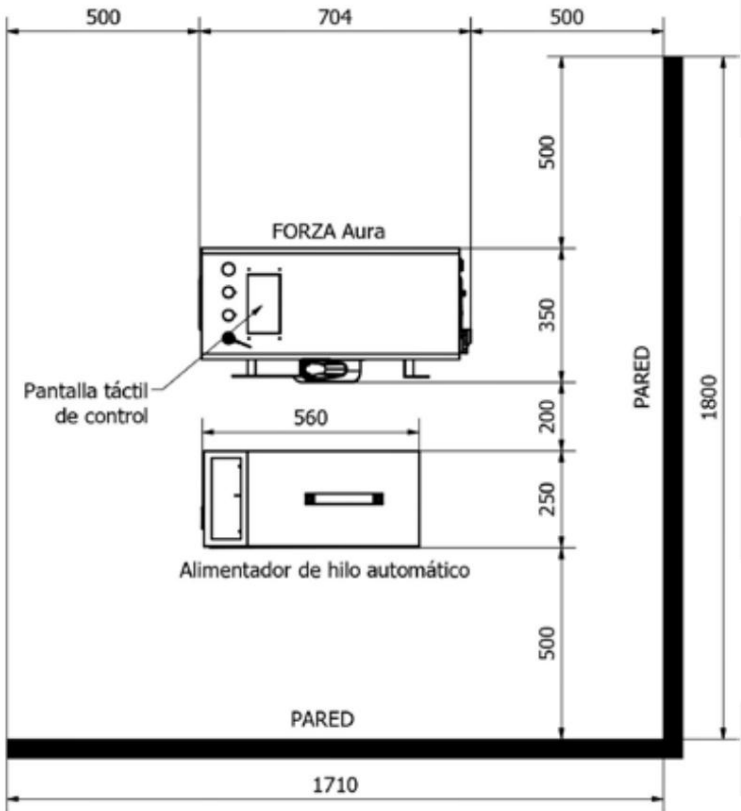
<b>Gun cable length</b>	<b>5m   16.4ft</b>
<b>Cooling method</b>	<b>Air cooled</b>
<b>Gas connection diameter</b>	<b>6mm hose (Nylon)</b>
<b>Maximum gas inlet pressure</b>	<b>10 bar</b>
<b>Recommended gas inlet pressure</b>	<b>6 bar</b>
<b>Weight of the professional gun</b>	<b>0.7 kg</b>
<b>Equipment weight</b>	<b>40 kg</b>
<b>Weight of equipment for transport</b>	<b>45 kg</b>
<b>Team measurements</b>	<b>350 x 704 x 536mm   1.2 x 2.3 x 1.8 ft</b>
<b>Automatic feeder measurements</b>	<b>250 x 560 x 400mm   0.8 x 1.8 x 1.3 ft</b>
<b>Transport measures(6)</b>	<b>520 x 870 x 960mm   0.5x9.5x1m</b>
<b>Relative humidity</b>	<b>&lt; 85%</b>
<b>Working temperature</b>	<b>-10 to 40o C</b>
<b>Certifications</b>	<b>CE, RoHS</b>
<b>Required PPE (Not included)</b>	<b>Protective glasses for 1060nm</b>
	<b>KN95 mask</b>
	<b>Gloves</b>
	<b>Gas extraction system</b>
	<b>Full protective suit (optional)</b>

6. The FORZA Aura is shipped in a single package with its Automatic Thread Feeder.

**Machine measurements**

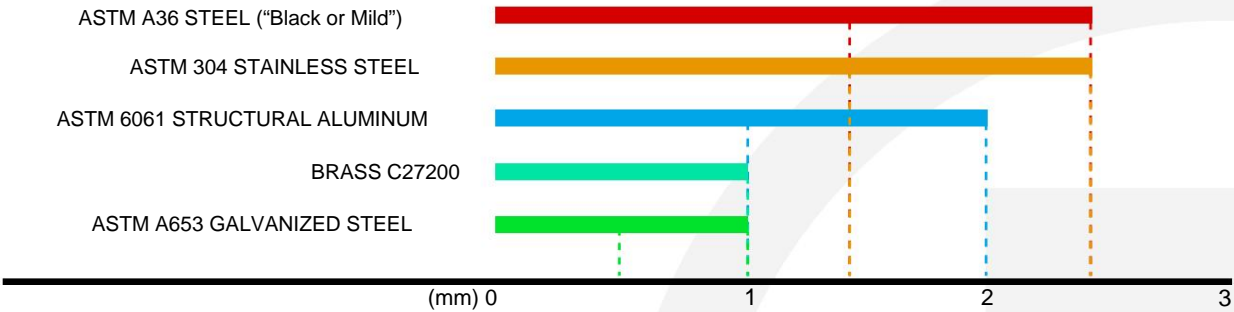
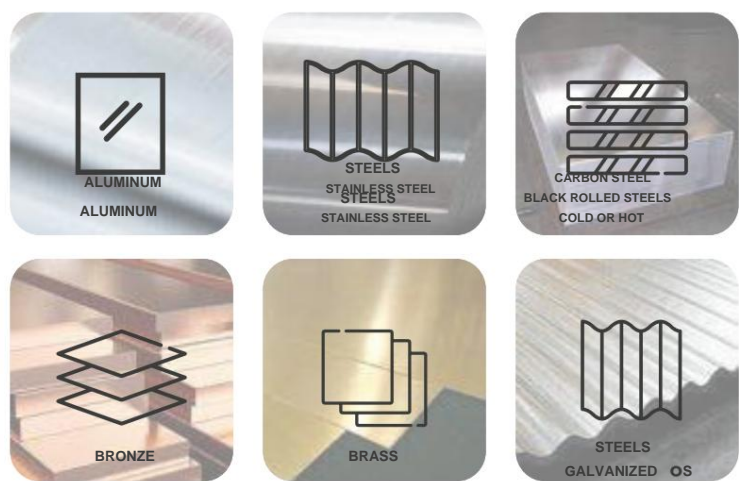


**Space required**











Applicable materials




MATERIAL	SOLDADIER			COURT CORTE		
	mm	in	Calibre	mm	in	Calibre
ASTM A36 STEEL ("Black or Mild")		2.5mm   3/32in		1.5 mm   1/32in		
ACERO ASTM A36 ("Negro o Dulce")	2.5	3/32	13	1.5	1/32	16
ASTM 304 STAINLESS STEEL		2.5mm   3/32in		1.5 mm   1/32in		
ACERO INOXIDABLE ASTM 304	2.5	3/32	13	1.5	1/32	16
ASTM 6061 STRUCTURAL ALUMINUM		2 mm   5/64in		.1 mm   3/64in		
ALUMINIO ESTRUCTURAL ASTM 6061	2	5/64	12	1	3/64	18
BRASS C27200		1 mm   3/64in		0.5 mm   1/64in		
LATÓN C27200	1	3/64	20	0.5	1/64	27
ASTM A653 GALVANIZED STEEL		1 mm   3/64in		0.5 mm   1/64in		
ACERO GALVANIZADO ASTM A653	1	3/64	20	0.5	1/64	27




Packing List:

- 1 x FORZA AURA 800W A4IN1P8 machine.  (1)
- 1 x SUP-21S multifunction pistol. 
- 1 x 800W Air cooling laser source 
- 1 x HMI Touch Screen 
- 1 x Integrated CPU 
- 1 x Clamping Clap 


-PERIPHERALS-

- 1 x Automatic thread feeder  (2)




-CABLES, CONNECTORS AND DUCT-



- 5m x WeldFeed Control Cable 
- 5m x WeldFeed Power Cable 
- 5m x Cable 2x12 AWG + 1x12 AWG Machine power (T:Tip-Plug connection) 

-CONSUMABLES / ACCESSORIES-












- 5 x Protective lens 
- 7 x Welding/Cutting/Bead Cleaning Nozzles. 
- 4 x Wire Feeder Nozzles 

-TOOL BOX-

- 1 x Metric Allen Key Set. 
- 1 x Phillips screwdriver 
- 1 x Flathead screwdriver 
- 1 x Cotton swab case 
- 1 x Cleaning cloths. 
- 1 x 1080nm Protective Glasses 
- 1 x QBH Protector 


Item	Measures	Net Weight	Gross Weight
 (1)	W: 520mm H: 960mm L:950mm	40kg	66kg
 (2)	W: 250mm H: 400mm L: 560mm	13.2kg	-

## NOZZLE / BASES KIT:

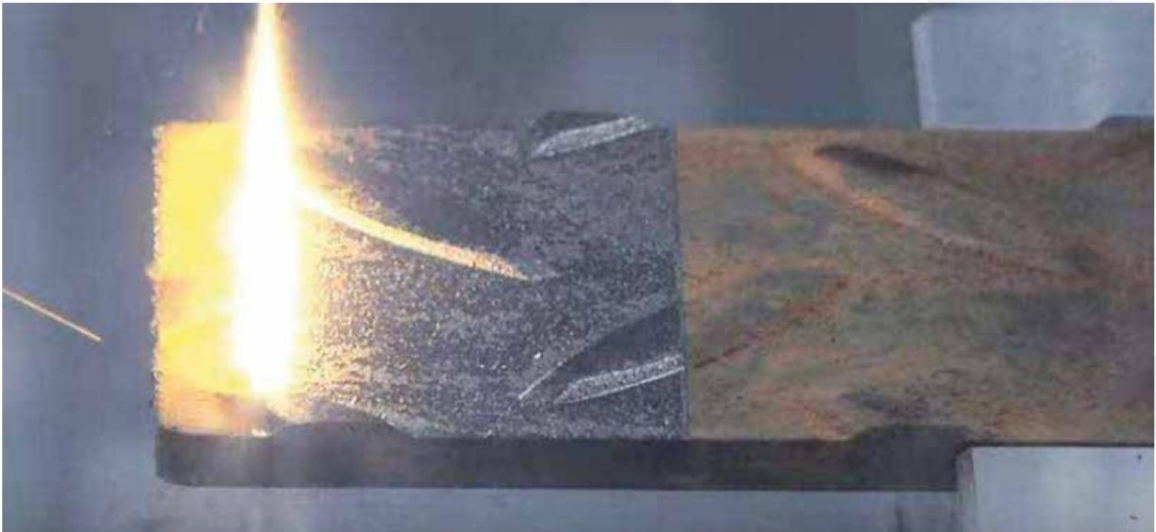
Photo	Model	Operation
	<u>AS-12</u>	FLAT WELDING
		INSIDE CORNER
		For 0.8/1/1.2mm wire
	BS-16	FLAT WELDING
		INSIDE CORNER
		For 1.6mm wire
	CS-12	WELDING
		OUTSIDE CORNER
		For 0.8/1/1.2mm wire
	ES-12	FLAT WELDING
		OUTSIDE CORNER
		For 0.8/1/1.2mm wire
	FS-16	FLAT WELDING
		OUTSIDE CORNER
		For 1.6mm wire
	C	CORNER WELDING EXTERIOR / CLEANING OF CORD
	CUTTING NOZZLE	COURT
	WIRE NOZZLE	WIRE FEED 0.8
	WIRE NOZZLE	WIRE FEED 1.0
	WIRE NOZZLE	WIRE FEED 1.2
	WIRE NOZZLE	WIRE FEED 1.6

NOTE: The included nozzle kit may vary depending on the equipment version.

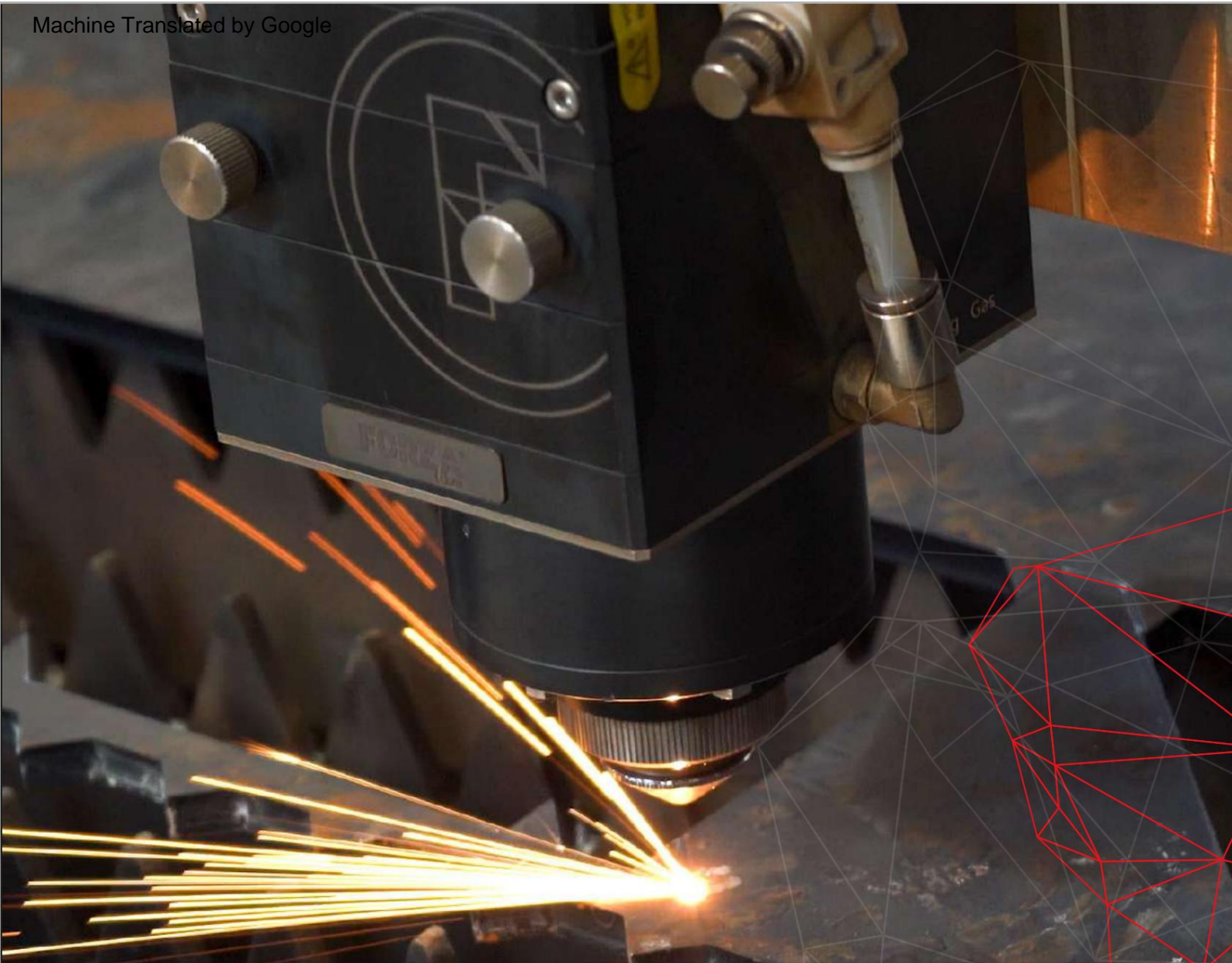
**Consumables:**

Photo	Model	Article	Measures	Life Time
	CF-L18.0X2.0-4K	Lens of protection	D:18mm T:2mm	200 hours

**Manufactured Parts:**







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