

IRIZAR HEAVY INDUSTRIES INC PRODUCT CATALOG 2025





July 2017. Irizar Welding Rotator Model WR 1200 MT At Nuclear Construction Site in Georgia Power Plant Vogtle, USA Westinghouse Nuclear Power Generator AP 1000 PWR

Revision: June 20, 2025

Readers note: The information in this brochure is intended to be accurate. However, Irizar Heavy Industries reserves the right to make changes in design that may not be included.



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Irizar Heavy Industries Inc. is a Canadian company based in Edmonton. We take pride in manufacturing and offering the world's largest stock of Welding Rotators (up to 2,400 MT), Welding Manipulators (up to 9 m effective vertical column reach), and Tank Lifting Jacks for welded and bolted field erected tanks (up to 3,000 MT).

INDUSTRIAL SEGMENT

Our products work among other industries: Oil & Gas, Nuclear Power Generation, Aerospace, Pipes and Pressure Vessels, Onshore & Offshore Wind Towers and Monopiles, Rail Tanks, Mining, and Food Industry.

PRODUCT RANGE

- 1. Conventional Welding Rotators: From 1 to 2,000 MT
- 2. Self Aligned Rotators: From 5 to 500 MT
- 3. Anti-Drift Turning Rolls: From 250 to 2,500 MT
- 4. Self Aligned Rotators: From 5 to 500 MT
- 5. Track Welding Rotators: 5 & 20 MT
- 6. Pipe Rotators: From 1 to 25 MT
- 7. Welding Positioners: From 0.3 to 100 MT
- 8. Head & Tail Stock: From 1 to 100 MT
- 9. Welding Manipulators: From 2 x 2 m to 9 x 6 m (vertical x horizontal)
- 10. Girth Welders: AGW-1, AGW-1-C, AGW-2, LNG AGW-1 & Shell Buggies
- Tank Lifting Jack with a load capacity of 12 MT and 25 MT. Applicable for lifting API 650 Field Erected Tanks, LNG API 620 Welded Tanks and Bolted Tanks.

DESIGN: Our products are **Designed & Engineered** in Canada and made in our factories in China and India. We are proud to own the **World Largest Stock of Welding Positioning Equipment and Tank Lifting Jacks**. Our warehouse is located in Wetaskiwin, Alberta, Canada in a thirty acres lot; at thirty-five minutes from Edmonton International Airport. Welcome to visit our Show Room.

<u>STOCK & DELIVERY</u>: We are proud to own a *Huge Stock* in our warehouse in Alberta, Canada. Ninety-Five percentage of the orders can be found in stock. Our delivery time in Canada is three to five business days. In USA & US-Mexican border, delivery time is one week. In Latino America, approx. four weeks; and World-Wide, around five to six weeks.

EXPORTATION: Over sixty countries, among them: Angola, Antigua & Barbuda, Argentina, Australia, Belgium, Bahamas, Bolivia, Brazil, Canada, Chad, Chile, China, Colombia, Costa Rica, Cote D' Ivoire, Denmark, Ecuador, Egypt, France, Germany, Greece, Guatemala, India, Indonesia, Ireland, Italy, Japan, Jordan, Kazakhstan, Kuwait, Madagascar, Mali, Martinique & Guadeloupe, Mali, Mexico, Morocco, Netherlands, New Zealand, Nigeria, Norway, Oman, Pakistan, Panama, Paraguay, Peru, Philippines, Poland, Romania, Russia Federation, Saudi Arabia, Singapore, Senegal, Serbia, South Africa, Spain, Tanzania, Taiwan (China), Thailand, Ukraine, United Arab Emirates, United Kingdom, Uruguay, USA and Venezuela.

OUR GOALS: 1. To **Build State of the art High-Tech Products** exceeding International Standards. 2. To provide **Top-Quality Products**. 3. To provide **Safety Products**. 4. To provide **First-Class Service**. 5. To offer the **Most Competitive-Price**. 6. To have our products in **Stock & Ready for Shipping**. 7. To **Build a Long-Term Business Relationship** with our customers.

Our company produces finished products, but there is more to it. Passionate employees in every department that captivate what we stand for; to do our best. *Research & Development* always raise the bar of our products, again and again; our design engineers only aim for the best. *Sales & Marketing*: Our multinational team covers more than sixty countries all over the World. *Technical Support:* Our trust, know-how, integrity, as well as our fast and flexible service is always appreciated.

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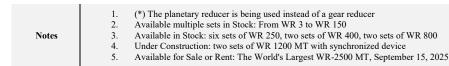


Conventional Tank Turning Rolls, WR Series

Tank Turning Rolls are used for positioning cylindrical workpieces. The set comprises one power rotator with variable speed and one idler roller. Bolts and nuts adjust center to center between wheels. Welding Rotators automatize the welding process by applying SAW (Submerged Arc Welding) on longitudinal and circumferential seams with the help of a Welding Manipulator. Conventional Welding Rotators, also known as Tank Rollers, Welding Rollers, Tank Rotators, Weld Rotators, Pipe Rotators, Welding Rolls, Welding Rotators, Vessel Rollers, Tank Rolls, Welding Tank Turning Rolls, Turning Rolls, Rotador de Soldadura, Virador de Soldadura, Virador de Tanques, Rotador de Tanques and Rotador de Tuberia



Model	Load & Rotation Capacity	Rotation speed	Power	Vessel Diameter Range	Who (mr			nsions	Weight
	(MT)	(mm/min)	(kW)	(mm)	Diam	Width	L*W*	H (mm)	(MT)
<u>WR 3</u>	3	100-1000	2*0.25	150-2500	200	112	1900*500*450	1350*300*450	0.35
<u>WR 5</u>	5	100-1000	2*0.37	150-3200	250	140	2000*500*480	1600*380*480	0.80
WR 10	10	100-1000	2*0.55	250-4800	300	170	2440*610*550	2320*450*550	1.00
<u>WR 20</u>	20	100-1000	2*1.10	250-4800	350	180	3000*675*600	2500*500*600	1.50
WR 40	40	100-1000	2*1.50	250-4800	400	200	3100*700*650	2610*700*650	2.30
<u>WR 60</u>	60	100-1000	2*2.20	300-5200	450	220	3450*820*830	3000*820*830	2.40
WR 80	80	100-1000	2*3.00	300-5200	500	240	4380*900*890	3400*700*890	2.90
<u>WR 100</u>	100	100-1000	2*3.00	800-7800	500	260	4380*970*980	3800*760*980	4.80
<u>WR 150</u>	150	100-1000	2*4.00	800-7800	500	260	4210*1000*980	3800*800*980	5.50
<u>WR 250</u>	250	100-1000	2*5.50	1200-9000	660	260	4900*1060*1100	4380*920*1100	10.00
<u>WR 400</u>	400	100-1000	2*5.50	1200-9000	700	300	5900*1140*1180	5500*920*1180	17.50
<u>WR 600</u>	600	100-1000	2*7.50	1200-9000	900	360	6900*1300*1600	6000*1200*1600	27.50
<u>WR 800</u>	800	100-1000	2*15.0	1200-9000	900	400	7100*1400*1600	6500*1260*1600	30.00
<u>WR 1000</u>	1000	100-1000	2*15.0	1200-9000	900	500	7500*1600*1800	7000*1320*1800	45.00
<u>WR 1200</u>	1200	100-1000	2*18.5	1500-12000	950	550	7500*1600*1875	7500*1320*1875	65.00
<u>WR 1600</u>	1600	100-1000	2*22.0	2000-12000	1100	600	8150*1850*2025	8150*1850*2025	85.00
<u>WR 2000</u>	2000	100-1000	2*7.5 (*)	3000-12000	1050	700	8150*1850*2025	8150*1850*2025	95.00
<u>WR 2500</u>	2500	100-1000	2*11.0 (*)	3000-12000	1100	800	9460*1785*2150	7600*1785*2150	110.00



Features

- 1. Prototype static and dynamic tested
- at full capacity by a Canadian Testing Laboratory
- Rotator's wheels from Model WR 3 to WR 100 are made of *Cast Iron*, covered with heavy duty-rubber HSA80, and two steel rings at the side. Rotator's wheels of WR 150 and larger are made of *Cast Steel ASTM 80-40* or equivalent; Then quenched and tempered at 43 ~ 45 HRC (Rockwell C).
- 3. Standard Rollers can support a maximum ECC load of 100 mm. We custom-built rotators for large eccentric loads of 200 mm.
- 4. Remote Control Box with 6 m cable: Forward/Stop/Reverse/Variable speed adjustment with a digital display in mm/min
- 5. Center to center distance between wheels adjustable through bolts and nuts.
- Angle between wheel's center and vessel center must be 45° to 110°. Never use less than 45° since produce un-safe conditions. To increase traction, use angles from 90° to 110°
 Selection Rules on Welding Rotators

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<u>3D: WR 3 - WR 400</u>
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3D: WR 600 - WR 1200

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Photos/Video
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Quality

- 1. Engineered in Canada.
- 2. Intertek label SPE 1000 on main control box; available under request.
- Available <u>CE Mark</u> Certificate of Conformity No 181108/JIR/05; issue by Consultants Europe BV, The Netherlands.
- 4. Gearbox's shells made of cast iron ASTM-A48-A48M or equivalent.
- 5. Open gears and pinions made of Q235 steel or equivalent.
- 6. Shafts made of ANSI-1045 or equivalent.
- Motors and control box with IP 54 protection against dust and heavy rain.
- 8. Frequency driver made by <u>TECO Westinghouse or Delta</u>
- 9. Shot blasted ISO 8501-SA2.5
- 10. Coating thickness of 250 microns



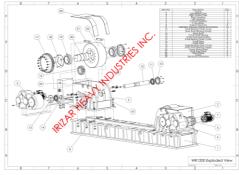
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Standard Package: 1. One Power Roll, dual motor, with Control Box and Remote Control Box, 2. One Idler Roll, 3. <u>Operation Manual</u> with Electric Diagram, 4. One year <u>Warranty</u>

Optional

- 1. Foot Pedal with 6 m cable. Forward/Stop/Reverse
- <u>Wireless Remote Control</u>: With 60 m reach and 128 channels. Control: Forward/Stop/Reverse/Variable speed adjustment with a digital display in mm/min
- 3. Turning rolls mounted idler or motorized bogies with a constant speed of 1.5 m/minute; or, variable speed 0.15 to 1.5 m/minute
- Screw Device (manual or motorized) for adjust center to center wheel distance. Available for models up to WR 150
- 5. Rotator's wheel covered with polyurethane HSA95; only for rollers up to WR 250. Ideal for construction of stainless-steel tanks.
- 6. <u>Rotators for shot blasting and painting</u> with an explosion-proof on motors and main control box
- 7. **NEW!** Welding rotator designed for handling large eccentric loads, capable of accommodating up to 200 mm eccentricity.
- 8. <u>Synchronized Device</u>: Synchronize rotation speed of two power rotators



Irizar Power Welding Rotator Model WR 1200 MT Engineered in Canada. Tested at C-FER, Canadian Laboratory



January 2017. Irizar Welding Rotator Model WR 1200 MT Nuclear Power Generator at VC Summer, South Carolina USA Westinghouse AP 1000 PWR



Irizar Welding Rotator Model WR 1200 Engineered in Canada. Load & Rotation Capacity: 1,200 MT At Work in the USA, Spain & China



Irizar Model WR 1200 video 1200 MT Load and Rotation Capacity

Selection Rules on Welding Rotators



March 2013. Irizar Welding Rotator Model WR 1200 MT Nuclear Power Generator at Haiyang, Shandong, China Westinghouse AP 1000 PWR

March 2014. Irizar Welding Rotator Model WR 1200 MT Nuclear Power Genertor at CNNC in Sanmen, Tazhou Zhejang, China The world's first AP1000 third-generation nuclear unit



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Self-Aligned Tank Turning Rolls, SAR Series

Self-Aligned Welding Rotators are used for positioning cylindrical workpieces allowing better weight distribution because of their eight wheels; they self-adjust the vessel diameter providing zero downtime lost. The set comprises one power rotator with variable speed and one idler roller. Self-Adjusted Turning Rolls automatize the welding process by applying SAW (Submerged Arc Welding) on longitudinal and circumferential seams with the help of a Welding Manipulator. Self Aligned Welding Rotators, also known as Self Aligning Welding Rotators, Self Adjusted Turning Rolls, Self Alignment Rollers, Self Adjustment Welding Rollers, Self Adjusting Tank Rolls, Rotador Soldadura Auto Ajustable, Virador Soldadura Auto Ajustable, Rotador Tanques Auto Ajustable and Rotador Tuberia Auto Ajustable



Model	Load & Rotation	Rotation	Power	Vessel Diameter		heel 1m)		nsions H (mm)	Weight
Model	Capacity (MT)	speed (mm/min)	(kW)	Range (mm)	Diameter	Width	Power Roll	Idler Roll	(MT)
SAR 5	5	100-1000	0.75		250	140	1620*690*700	1380*380*700	0.85
SAR 10	10	100-1000	1.10		300	170	1880*780*820	1454*390*820	1.20
<u>SAR 20</u>	20	100-1000	1.50		350	180	2150*960*850	1700*480*850	2.00
<u>SAR 40</u>	40	100-1000	3.00		400	200	2600*1000*1100	2200*500*1100	3.00
<u>SAR 60</u>	60	100-1000	4.00	Chart	450	220	3000*1100*1150	2500*540*1150	4.00
<u>SAR 80</u>	80	100-1000	4.00	Next Page	500	240	3200*1200*1200	2700*620*1200	4.50
SAR 100	100	100-1000	5.50		500	260	3500*1200*1400	3000*750*1400	5.50
SAR 150	150	100-1000	3.0*2		500	220	3500*1200*1400	3000*750*1400	6.00
SAR 250	250	100-1000	5.5*2		660	260	5010*1200*1600	3800*790*1600	12.00
SAR 500	500	100-1000	7.5*2		800	300	5800*1400*2000	5000*1000*2000	28.00

Photos/Video



Available multiple sets in Stock: From SAR 5 to SAR 250 Available in Stock: One sets of SAR 500

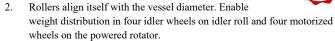
3D: SAR 150 - SAR 500

<u>3D: SAR 5 - SAR 100</u>

2

Features

1. Prototype static and dynamic tested at full capacity by a *Canadian Testing Laboratory*.



3. Rotators wheels from SAR 5 up to SAR 100 are made of Cast Iron, covered with heavy duty-rubber HSA80, and two steel rings at the side. Rotator's wheels larger of SAR 150 are made of Cast Steel ASTM 80-40 or equivalent; then quenched and tempered at 43 ~ 45 HRC (Rockwell C)

4. Remote Control Box with 6 m cable: Forward/Stop/Reverse/Variable speed adjustment with a digital display in mm/min.

5. Selection Rules on Welding Rotators

Quality:

1. Engineered in Canada. 2. Intertek label SPE 1000 on main control box; available under request. 3. Available <u>CE Mark</u> Certificate of Conformity No 181108/JIR/05; issue by Consultants Europe BV, The Netherlands. 4. Gearbox's shells made of cast iron ASTM-A48-A48M or equivalent. 5. Open gears train and pinions made of Q235 steel or equivalent. 6. Shafts made of ANSI-1045 or equivalent; 7. Motors and control box with IP 54 protection against dust and heavy rain. 8. Frequency driver made by <u>TECO Westinghouse or Delta</u>; 9. Shot blasted ISO 8501-SA2.5; 10. Coating thickness of 250 microns.

Standard Package

- 1. One Power Roll, dual motor, with Control Box and Remote Control Box
- 2. One idler roll
- 3. Operation Manual with Electric Diagram
- 4. One year Warranty

Optional

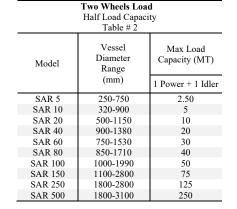
- 1. Foot Pedal with 6.0 m cable. Forward/Stop/Reverse
- 2. <u>Wireless Remote Control</u>: With 60 m reach and 128 channels. Control: Forward/Stop/Reverse/Variable speed adjustment with a digital display in mm/min
- Turning rolls mounted over idler or motorized bogie with a constant speed of 1.5 m/min; or, variable speed from 0.15 to 1.5 m/minute
- 4. Rotator with brake motor for large eccentricity tanks (offset G.C from tank rotation center line).
- Rotator's wheels covered with polyurethane HSA95; only for rollers up to SAR 250. Ideal for construction of stainless-steel tanks.
- <u>Synchronized Device</u>: Synchronize rotation speed of two power rotators.

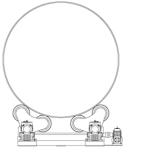


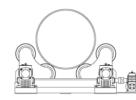
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	Four Wheels Loa Full Load Capaci Table # 1	
Model	Vessel Diameter Range	Max Load and Rotation Capacity (MT)
	(mm)	1 Power + 1 Idler
SAR 5	770-2300	5
SAR 10	920-2800	10
SAR 20	1170-3500	20
SAR 40	1400-5200	40
SAR 60	1550-4800	60
SAR 80	1730-5000	80
SAR 100	2010-5500	100
SAR 150	2810-6000	150
SAR 250	2810-8000	250
SAR 500	3110-8000	500







SELECTION RULES ON WELDING ROTATORS

Rule # 1: Conventional Welding Rotators

They have a fixed load capacity consistent across the range of vessel diameters.

Rule # 2: Self-Aligned Welding Rotators

On the other hand, the vessel's load capacity is only half when supported solely by the bottom wheels. These rotators adjust to the vessel's diameter within the Roller's range, thus eliminating downtime. Besides, with eight wheels, they provide better weight distribution.

Rule # 3: Manual Adjustment

Conventional welding rotators require manual adjustment of the distance between wheels (center to center) using nuts and bolts. This adjustment results in downtime whenever the vessel's diameter changes, necessitating re-torquing.

Rule # 4: Workpiece with Concentric Loads

When selecting a welding rotator, ensure that it matches the load and rotational capacity of the roller. For workpieces with lengths up to a maximum of 30 to 40 meters, use one power rotator and one idler. If necessary, consider adding extra idlers to prevent bending of the workpiece. For workpieces exceeding 40 meters and up to a maximum length of 60 to 80 meters, use two powered rotators along with a <u>synchronized device</u>. Add extra idlers if need.

Rule # 5: Workpiece with Eccentric Loads

Select a Welding Rotator with the greater of:

- 1. Load and rotation capacity.
- 2. Below formula

 $\geq \frac{5 \ \times \text{Vessel Weight (MT)} \times \text{C.G (in.)}}{\text{Vessel Radius (in.)}}$

Brake's motor is required if:

Vessel Radius (inches) x $0.7 \ge C.G$ "

Rule # 6: Increase load and rotation capacity

To increase by 100%, add one extra set (power rotator and idler rotator) along with a <u>synchronized device</u>. This is valid only if the workpiece does not exceed the roller's capacity.



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500 MT, Irizar Model SAR 500



500 MT, Irizar Model SAR 500 at work in UAE



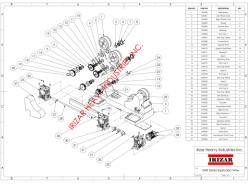
Self Aligned Welding Rolls Model SAR 100



Self Aligned Welding Rolls Model SAR 80



500 MT Irizar Model SAR 500 at work in Saudi Arabia



Welding Rotator Model SAR 100 Engineered in Canada



Self Aligned Welding Rolls Model SAR 150





Welding Rotator's wheels tested on Irizar UTM



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Anti-Drift Turning Rolls, AD-WR Series

Anti-Drift Turning Rolls prevent or minimize the screw effect [longitudinal displacement] during the workpiece's rotation. They have an axial vessel accuracy of \pm 3.0 mm through a PLC and a Sensor Automatic Anti-Drift Controller. Anti-Drift Turning Rolls, also known as Anti-Creep Rotators and Anti-Drift Rotators

Standard Package



Video



- 1. One Power Roll with Control Box and Remote-Control Box
- 2. One Idler Roll with up/down servo motor on both wheels
- 3. PLC & Sensor Automatic Anti-Drift Controlled
- 4. Operation Manual with Electrical Diagram
- 5. One year Warranty



2500 MT, Irizar Anti-Drift Welding Rotator Model AD-WR 2500

Model	Load & Rotation	Rotation	Power	Vessel Diameter		neel m)	Dimensions	Weight
Model	Capacity (MT)	speed (mm/min)	(kW)	Range (mm)	Diameter	Width	L*H*W1*W2 (mm)	(MT)
AD-WR 100	100	100-1000	2*3.0	1000-8000	500	260	5300*1070*1000*600	6.24
AD-WR 150	150	100-1000	2*4.0	1000-8000	500	260	5700*1140*1050*650	7.15
AD-WR 250	250	100-1000	2*5.5	1000-9000	660	260	5700*1250*1140*700	13.00
AD-WR 400	400	100-1000	2*5.5	1200-9000	700	300	6600*1450*1320*830	22.75
AD-WR 600	600	100-1000	2*7.5	1500-9000	900	360	7200*1600*1385*1385	35.75
AD-WR 800	800	100-1000	2*15.0	2000-9000	900	400	7300*1600*1385*1385	30.00
AD-WR 1000	1000	100-1000	2*15.0	2000-9000	900	550	7400*1850*1450*1450	45.00
AD-WR 1200	1200	100-1000	2*18.50	2000-12000	900	550	7400*1850*1450*1450	65.00
AD-WR 1600	1600	100-1000	2*20.0	2000-12000	1100	700	7900*1860*2000*1800	85.00
AD-WR 2000	2000	100-1000	2*24.0	2000-12000	1100	700	8500*1960*2000*1900	95.00
AD-WR 2500	2500	100-1000	2*24.0	2000-12000	1100	800	9685*1935*2150*1785	110.00

Notes

Available in Stock: one set of AD-WR 100, one set of AD-WR 800 and two sets of AD-WR 1200 Available for Sale or Rent: The World's Largest AD-WR 2500 MT, September 15, 2025



500 MT, Irizar Model WR 500 with Anti-Drift



1600 MT, Irizar Model Anti-Drift Power WR 1600



3000 MT, Irizar Anti-Drift Welding Rotator Model AD-WR 3000



1600 MT Irizar Model Anti-Drift Idler IR 1600



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TRACK Welding Rotator, TWR Series

NEW! Track Welding Rotators are essential for constructing vessels with thin stainless steel or aluminum walls. They are commonly found in brewing, dairy, cosmetics, and pharmaceutical industries. The vessels are placed on a track covered with heavy-duty rubber, which prevents surface indentations from contact with the roller's wheels. Some customers have reported successfully using our rollers for welding vessels of 5.0 meters diameter and 2.5 mm wall thickness.



In stock, one set of rollers Model TWR-5: Fixed frame.



In stock, two sets of rollers Model TWR-20. It has idler bogies on the frame bottom. They allow easy tank length adjustment and mobility.

Stainess Steel Vessel on TWR-20

Model	Load & Rotation Capacity	Speed	Power	Vessel Diameter		neel m)		nsions H (mm)	Weight
	(MT)	(mm/min)	(kW)	(mm)	Diameter	Width	Power Roll	Idler Roll	(MT)
TWR-5	5	150 -1500	2 @ 0.37	500 - 2,500	320	150	2800 *600*500	2500*500*500	1.50
<u>TWR-20</u>	20	100-1000	2 @ 1.50	1,000 - 5,000	420	240	4200*1000*660	3700*1000*660	3.50

Features

TWR-5: Fix frame 1 TWR-20: Idler 2. Bogies on power and idler rotator. Center to center distance between wheels: 2,250 mm. 3. Motors and Control Box IP54

Standard Package

- One Power Roll with Control Box and 1 Remote-Control Box with 6 m cable. Forward/Stop/Reverse/Variable speed adjustment with a digital display in mm/min 2
 - One Idler Roll

3.

4.

5.

- Operation Manual
- Electric Diagram
- One year Warranty

Optional

- For Fit Up we can supply additional two idler rotators. 1. Therefore, the first shell sits on one power and one idler; the second shell sits on two extra idlers.
- Wireless Remote Control: With 60 m reach and 128 channels. 2 Control: Forward/Stop/Reverse/Variable speed adjustment with a digital display in mm/min
- Foot Pedal with 6.0 m cable. Forward/Stop/Reverse 3.



<u>TWR-20</u>

I Beam Rotators



Track Welding Rotator Model TWR-20

Roller Beds







Track Welding Rotator Model TWR-5

Custom Built Rolls

- Roller Beds 1.
- 2. Cone Rotators,
- 3. I Beam Rotators Rotators with Idler or Motorized Bogies 4.
- 5. Rollers w/screw adjustment device
- 6. Rotators for Shot Blasting & Painting
- 7. Turbine Rotator

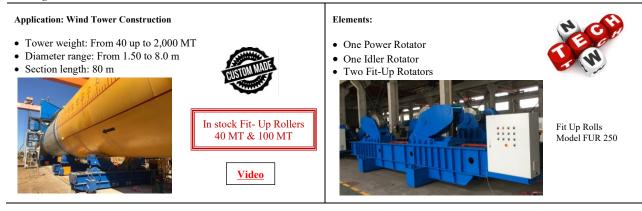


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Fit-Up Rollers, FUR Series

Fit Up Rollers are used to assemble -tack weld- the shells to conform up to a 30 m section of a Wind Tower or a Large Pressure Vessel/Tank/Pipe. Then, the section is moved parallel to a Welding Station by Transfer Cars. If required, two sections can be assembled and welded by a larger set of Fit-Up Rolls or assembled by flanges and bolts at the job site. Fit-Up Rolls, also known as Tank Fit-Up Rollers, Fit-Up Rotators, Fit Up Turning Rolls, Fit-Up Turning Rolls, Fit-Up Bed Rollers, Tank Fit Up Line, Vessel Fit-Up Rollers, Welding Fit Up System and Tank Growing Line.



Specifications	Model	<u>FUR 40</u>	<u>FUR 80</u>	<u>FUR 150</u>	<u>FUR 250</u>	<u>FUR 350</u>
Power Roll rotation capacity, MT		40	80	150	250	350
Power Roll load capacity, MT		20	40	75	125	175
Idler Roll load capacity, MT		20	40	75	125	175
Fit-Up-Roll load capacity, MT		20 x 2 units	40 x 2 units	75 x 2 units	125 x 2 units	175 x 2 units
Tower/Vessel diameter range, m		1.0 to 6.0	1.0 to 6.0	1.50 to 7.0	1.5 to 8.0	1.5 to 8.0
Tower/Vessel length, m		Up to 30 m	Up to 30 m	Up to 30 m	Up to 30 m	Up to 30 m
Power Roll rotation speed, mm/min		100 -1000	100 -1000	100 -1000	100 -1000	100 -1000
Power Roll translation speed, mm/min mounted on motorized bogie with		1000-6000	100-6000	1000-6000	100-6000	100-6000
Idler Roll mounted on idler bogie		Yes	Yes	Yes	Yes	Yes
Fit-Up Roll mounted on idler bogie With hydraulic fixture (up & down, left	& right)	Yes	Yes	Yes	Yes	Yes
Power Rotation, kW		2 x 1.5	2 x 3	2 x 4	2 x 5.5	2 x 7.5
Power Translation, kW		2 x1.1	2 x 2.2	2 x 3	2 x 5.5	2 x 5.5
Wheel diameter, covered with PU, mm		400	500	500	600	650
Wheel width on P & I Rolls, mm		220	350	500	600	650
Wheel width on Fit Up Rolls, mm		200	320	400	600	650
Bogies bolted to the frame		Yes	Yes	Yes	Yes	Yes
Rail G-G, mm		2,500	2,500	2,500	2,500	2,500
Estimated Weight/set, MT		7.0	12.0	18.0	34.0	43.0

Quality: 1. Gearbox's shells made of cast iron ASTM-A48-A48M or equivalent. 2. Open gears made of Q235 steel or equivalent. 6. Shafts made of ANSI-1045 or equivalent; 3. Motors and control box with IP 54 protection against dust and heavy rain. 4. Frequency driver made by TECO Westinghouse or Delta; 9. Shot blasted on frame ISO 8501-SA2.5



NEW! Fit Up Roll Model FUR 2000 MT



8.0 m Ø, 80.0 m length



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Pipe Rotators, PR Series

<u>Pipe Rotators</u> are used for positioning and welding pipes with concentric loads. It comes with variable speed.

Video

<u>Video</u>



Power: 0.18 kW, DC motor

Load & Rotation Cap: 1 MT Pipe diameter: From 20 up to 1,000 mm Variable speed: From 80-2,400 mm/minute Input power: 110V, 50/60Hz, 1P

NEW! Pipe Rotator Model PR-3

Load and Rotation Capacity: 3 MT Pipe diameter: From 20 up to 1,000 mm Variable speed: From 100 - 2,000 mm/minute Input power: 110V, 50/60Hz, 1P Power: 0.55 kW, DC motor Control box: forward/stop/reverse/analog speed control. Rollers: PU, 200 mm Ø, 50 mm (W)



Load and Rotation Capacity: 5 MT Pipe diameter: From 50 up to 600 mm Variable speed: From 100 - 1,000 mm/minute Screw device: Adjust distance between wheels Input power: 240V, 60Hz, 3P Power: 0.75 kW, AC motor



Control box: forward/stop/reverse/analog speed control.

Foot control: Included Power (L*W*H): 850*335*450 mm Idler (L*W*H): 850*230*450 mm Weight: 180 kilos

Rollers: PU, 200 mm Ø, 50 mm (W)

Power (L*W*H): 500*400*370 mm

Idler (L*W*H): 500*250*370 mm

Foot control: Included



In stock PR-1, PR-3 & PR 5

Note! Irizar pipe rotators transmission is made of Q235 steel gear train and pinons. Our competitors use rubber-coated shafts that do not last.

Control box: forward/stop/reverse/analog speed control. Wheel diameter: 200 mm Wheel width: 50 mm Dim: (L*W*H): 1500*1200*550 mm Weight: 820 kilos Foot control (optional): Forward/Stop/Reverse

<u>Pipe Positioners</u> **PP Series**. It provide quick positioning and welding pipes with elbows or tee pieces; and, pipes with eccentric (offset) loads. It comes with variable speed, $\pm 45^{\circ}$ tilt angle, and assisting pressure column for pipe clamping without chuck.

	Load & Rotation	Rotation	Tilt	Pipe	Col	lumn	Dimensions	Power	Weight
Model	Capacity (MT)	Speed (mm/min)	Angle	Diameter (mm)	Assisting Pressure (kg)	Lifting Speed (mm/min)	L*W*H (mm)	(kW)	(MT)
PP-1	1	70-1700	$\pm 45^{\circ}$	50-426	≤ 450	300	1200*800*1800	0.75	1.00
PP-2	2	70-1700	$\pm 45^{o}$	50-630	\leq 450	300	1200*800*1800	1.10	1.25
PP-3	3	70-1700	$\pm 45^{o}$	50-800	\leq 450	300	1300*800*1800	1.10	1.50





Standard Package

- Power Roll with 12 m control box. Include: Forward / Stop / Reverse / Variable speed adjustment with a digital display in mm/minute
- Operation Manual
- 3. Electric Diagram
- 4. One year Warranty

Optional: Foot Pedal

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Welding Positioners, WP Series

Welding Positioner, also called Weld Positioner, moves the workpiece under the welding process equipment; instead, the Welding Manipulators move the equipment over the workpiece. The Positioner provides powered 360° variable speed rotation and table tilt from horizontal (0°) to 120°.



WP Series, Fixed height Irizar Model WP 5



AH-WP Series, Adjustable height



88,000 # @ 47.25" C.G, Irizar Model CWP 40

		Р	ower		y		Tab	ole		0	То	que			
	Load	(1	kW)	DC I	centricity nm)	Speed (F	RPM)	ce (mm)	-	ark Piece 90° Tilt m)		m)	de (°)	Dimensions	Weight
Model	Cap (MT)	Rotation	Tilt	Max G (mm)	Max Eccent (mm)	Rotation	Tilt	Surface rotation ç (1	Diameter (mm)	Max Work Dia. @ 90° (mm)	Rotation	Tilt	Tilt Angle	L*W*H (mm)	(MT)
WP 0.3	0.30	0.37	N/A	200	150	0.10~1.0	N/A	150	600	800	1286	N/A	0-90°	930*660*720	0.3
<u>WP 0.6</u>	0.60	0.75	0.75	200	150	0.10~1.0	1.09	210	1000	1500	2600	2676	0-90°	1200*900*850	0.7
<u>WP 1</u>	1	1.10	1.50	250	200	0.05~0.5	0.80	240	1200	2000	8345	7257	0-120°	1400*1200*1200	1.0
<u>WP 3</u>	3	1.50	2.20	300	200	0.05~0.5	0.23	250	1400	2100	8519	37617	0-120°	2100*1500*1350	2.5
<u>WP 5</u>	5	2.20	3.00	300	200	0.05~0.5	0.16	280	1500	2500	14913	71119	0-120°	2200*1500*1450	3.7
<u>WP 10</u>	10	3.00	5.50	400	200	0.05~0.5	0.24	280	2000	3200	71720	91029	0-120°	2700*2000*1850	5.8
WP 20	20	4.00	7.50	450	200	0.05~0.5	0.10	290	2300	3200	90000	315000	0-135°	3300*2230*2000	11
<u>WP 30</u>	30	7.50	11.0	500	200	0.05~0.5	0.10	290	3000	3400	120000	420000	0-135°	3675*3000*2750	18
WP 40	40	11.0	11.0	500	200	0.05~0.5	0.10	300	3500	3400	142000	500000	0-135°	4000*3000*3300	22
<u>WP 50</u>	50	11.0	15.0	500	200	0.05~0.5	0.10	300	3500	4200	163000	550000	0-135°	4525*3500*4100	27
<u>3D: V</u>	VP 0.6 - '	WP 1	<u>3</u>	D: WP 3 -	- WP 10	Pl	<u>10tos</u>		/ <mark>ideo</mark>	Stand	lard Pac	kage: 1. V	Velding Pos	itioner with 🛛 🔎	

Features

- Designed and engineered in Canada. 1.
- Main Control Box controls tilt rotation (*): Forward/Stop/Reverse 2
- Remote Control Box with 6 m cable. Control: Forward/Stop/Reverse 3. /Variable speed adjustment on table rotation with a digital display in mm/min
- 4. Tilt with electric brake motor
- "T" shaped channels on the table surface 5.
- Octagonal Table on WP 30 and larger. Octagon size has an inscribed 6. circumference of 2.3 m Ø.
- 7. Quality: 1. Gearbox's shells are made of cast iron ASTM-A48-A48M or equivalent; 2. Open gears made of Q235 steel or equivalent; 3. Shafts made of ANSI 1045 or equivalent; 4. Motors and control box with IP 54 protection against dust and heavy rain; 5. Frequency driver made by TECO Westinghouse or Delta;
- 8. Shot blasted: Ensure the paint holds longer
- 9. WP 20 and larger adopt for safety double motor and double gear on tilt

Standard Package: 1. Welding Positioner with Control Box and Remote Control Box, 2. Operation Manual with Electric Diagram, 3. One year Warranty



In stock Positoners

from 0.3 MT to 20 MT

Optional

- 1. Foot Pedal with 6.0 cable. Forward/Stop/Reverse
- 2. Variable speed on tilt
- 3. Wireless remote control: With 60 m reach and 128 channels. Control table rotation: Forward/Stop/Reverse/ Variable speed adjustment with digital display.
- 4. Table extension arms to reach larger work pieces. Available on WP 30 and larger.
- Synchronized Device: Synchronize rotation speed of two WP 5. of same model. Increase capacity 100% when both positioners have tables at 90° (vertical position)
- CE mark 6.

Model					W	Vork Piec	e GC (mm)* '	VS Loa	d Cap	acity (k	g or MT	`) **					Max Eccentricit y	(*) Max GC
	(mm)	200	250	300	350	400	450	500	600	700	800	900	1000	1200	1400	1600	1800	(mm)	measured from
WP 0.3	Kgs	300	240	200	171	150	133	120	100									150	the table
WP 0.6	Kgs	600	480	400	342	300	266	240	200									150	surface
WP 1	Kgs		1000	833	714	625	555	500	416	357	312	277						200	
WP 3	Kgs			3000	2571	2250	2000	1800	1500	1285	1125	1000						200	(**) Max load
WP 5	Kgs			5000	4285	3750	3333	3000	2500	2142	1870	1666						200	capacity when
WP 10	MT					10	8.8	8.0	6.6	5.7	5.0	4.4	4.0	3.3	2.8	2.5	2.2	200	the positioner's
WP 20	MT								20	17.1	15	13.3	12	10	8.5	7.5	6.6	200	table is at 90°
WP 30	MT								30	25.7	22.5	20	18	15	12.8	11.2	10	200	tilt
WP 40	MT									40	35	31.1	28	23.3	20	17.5	15.5	200	
WP 50	MT										50	44.4	40	33.3	28.5	25	22.2	200	



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1 MT (2,200 #) @ 250 mm GC on Irizar Model WP 1



0.6 MT (1,320 #) @ 200 mm GCon Irizar Model WP 0.6



10 MT (22,000 #) @ 400 mm GC on Irizar Model WP 10 At Work in Edmonton, AB, Canada



Adjustable heigh AH-WP 5



5 MT (11,000 #) @ 300 mm GC on Irizar Model WP 5



20 MT (44,000 #) @ 600 mm GC on Irizar Model WP 20 Shipped to Topeka, Kansas USA & Tatsumo, Japan



40 MT @ 1,200 mm GC on Irizar Model CWP 40 At work Portland, Oregon, USA



88,000 # @ 47.25" GC on Irizar Model CWP 40 At work Portland, Oregon, USA

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Cradle Welding Positioners, CWP Series

Gear Drive Positioners are used for lifting, tilting and turning extra-large and wide workpieces



60 MT @ 1,800 mm C.G, Irizar Model CWP 60



132,000 # @ 70.86" **C.G**, Irizar Model CWP 60



60 MT @ 1,800 mm C.G, Irizar Model CWP 60

		Po	ower				Table			То	rque			
	Load		(W)	(uuu)	Eccentricity (mm)	Speed	(RPM)	face to (mm)	: Piece ° Tilt		-m)	e (°)	Dimensions	
Model	Cap (MT)	Rotation	Tilt	Max GC	Max Eccent (mm)	Rotation	Tilt	Table Surface rotation ç (m	Max Work Dia. @ 90° (mm)	Rotation	Tilt	Tilt Angle	L*W*H (mm)	Weight (MT)
CWP 30	30	11	2*5.5	1200	400			200	4000	120000	420000	0-90°	6370*2800*2300	33
<u>CWP 40</u>	40	11	2*7.5	1200	400			200	4000	142000	500000	0-90°	6370*2800*2300	34
<u>CWP 50</u>	50	15	2*7.5	1200	400	50		350	4000	163000	550000	0-90°	6370*2800*2300	35
<u>CWP 60</u>	60	18.50	2*11	1800	300	c 0.	~ 0.	400	5500	195000	670000	0-90°	8100*4000*3100	65
<u>CWP 70</u>	70	22	2*11	1800	300	5.	0.01	450	5500	250000	950000	0-90°	8100*4000*3100	67
<u>CWP 80</u>	80	22	2*15	1800	300	0.05	0.0	500	5500	335000	1460000	0-90°	8100*4000*3100	68
<u>CWP 90</u>	90	2*15	2*18.5	2000	300			500	6000	425000	1700000	0-90°	9300*4300*3500	72
<u>CWP 100</u>	100	2*15	2*18.5	2000	300			550	6000	470000	1900000	0-90°	9300*4300*3500	75

Features

- 1. Designed and engineered in Canada.
- 2. Control Box with emergency stop
- 3. Remote Control Box with 12 m cable. Forward/Stop/Reverse/Variable
 - speed adjustment on table rotation and tilt. Digital display in RPM
- 4. Rotation variable speed from 0.02 to 0.20 RPM
- 5. Tilt variable speed from 0.01 to 0.10 RPM
- 6. Self-lock worm gearboxes with electric brake motor
- 7. Octagon table within an inscribed circumference from $2.20 \text{ up to } 3.00 \text{ m } \emptyset$.
- 8. Include "T" shaped channels at 45° on the table surface

Quality

- 1. Intertek label SPE 1000 on main control box. Optional
- 2. <u>CE Mark</u> Certificate of Conformity No 181108/JIR/05; issue by Consultants Europe BV in The Netherlands

Model	Work Piece $C.G~(\mathrm{mm})^*$ VS. Load Capacity $(\mathrm{MT})^{**}$											
moder	(mm)	1200	1400	1600	1800	2000	2200	2400	2600	2800	3000	
CWP 30	MT	30.0	25.7	22.5	20,0	18.0	16.3	15.0	13.8	12.8	12.0	
CWP 40	MT	40.0	34.2	30.0	26.6	24.0	21.8	20.0	18.4	17.1	16.0	
CWP 50	MT	50.0	42.8	37.5	33.3	30.0	27.2	25.0	23.0	21.4	20.0	
CWP 60	MT				60.0	54.0	49.0	45.0	41.5	38.5	36.0	
CWP 70	MT				70.0	63.0	57.2	52.5	48.4	45.0	42.0	
CWP 80	MT				80.0	72.0	65.4	60.0	55.3	51.4	48.0	
CWP 90	MT					90.0	81.8	75.0	69.2	64.2	60.0	
CWP 100	MT					100.0	91.0	83.3	76.9	71.4	66.6	

- 3. Gearbox's shells made of cast iron ASTM-A48-A48M or equivalent
- 4. Open gears made of Q235 steel or equivalent.
- 5. Shafts made of ANSI-1045 or equivalent.
- Motors and control box with IP 54 protection against dust and heavy rain
- 7. Frequency driver made by TECO Westinghouse or Delta
- 8. Shot blasted ISO 8501-SA2.5
- 9. Safety tilt device composed of a gas cylinder support on gear to prevent table tilt in case a gearbox brake

Standard Package

- 1. Welding Positioner w Control Box and Remote-Control
- 2. Operation Manual with Electric Diagram
- 3. One year Warranty

Optional: 1. Table extension arms to reach larger work pieces. Arm's length: work piece OD + 0.70 m, 2. Tilt angle from 0° to 135° forward

Max
Eccentricity
(mm)
400
400
400
300
300
300

300 300 Notes:

(*) Max GC measured from the table surface.

(**) Max load capacity when the positioner's table is at 90° tilt

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Photos/Video



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Head & Tail Stock, HT Series





Head & Tailstock Positioner rotates long rectangular steel structures supported from both ends. Headstock Positioner is fixed to the floor and has 360° variable powered rotation speed and adjustable center rotation height (up/down). Tailstock has idler rotation and adjustable height-powered center rotation. The unit is mounted over idler bogies to adjust the workpiece length. The set allows the welder to have ergonomic accessibility to the workpiece welds. Headstock and Tailstock Welding Positioner, also known as Headstock Positioner, Tailstock Positioner

Model	Load & Rotation Cap. (MT)	Table Diameter (mm)	Adjustable Rotation Center (mm)	Rotation Speed (RPM)	Elevation Speed (m/min)	(*) Max ECC (mm)	Torque (Kg-m)	Power (kW)	Weight (MT)
HT 1	1.0	800	800~1,500	0.15~1.50	1.0	150	210	2.00	1.50
<u>HT 3</u>	3.0	800	800~1,500	$0.10 \sim 1.00$	1.0	150	640	3.70	4.50
<u>HT 5</u>	5.0	1,000	800~1,800	0.10~1.00	0.6	200	900	4.40	6.60
<u>HT 10</u>	10	1,000	1,100~2,100	$0.10 \sim 1.00$	0.6	200	1,880	7.00	10.00
<u>HT 15</u>	15	1,200	1,350~2,350	0.10~1.00	0.6	200	3,360	12.00	13.0
<u>HT 20</u>	20	1,700	1,350~2,350	0.10~1.00	0.5	250	6,700	16.50	15.0
<u>HT 30</u>	30	1,700	1,350~2,350	0.10~1.00	0.5	250	8,500	24.00	25.0
<u>HT 40</u>	40	1,700	1,350~2,350	0.05~0.50	0.5	250	12,000	30.00	35.0
<u>HT 50</u>	50	1,700	1,350~2,350	0.05~0.50	0.5	250	15,000	32.00	50.0
<u>HT 75</u>	75	1,700	1,350~2,350	0.05~0.50	0.5	250	23,000	35.00	65.0
<u>HT 100</u>	100	1,700	1,350~2,350	0.05~0.50	0.5	250	31,000	45.00	80.0



HT-20

Model	Overhung Load Capacity (\mbox{MT}) vs Work Piece $GC~(\mbox{mm})$)	
	(mm)	250	350	450	550	650	750	850	950	1000
HT 1	MT	0.5	0.4	0.3	0.2	0.2				
HT 3	MT	1.5	1.0	0.8	0.7	0.6	0.5			
HT 5	MT	2.5	1.7	1.4	1.1	0.9	0.8	0.7		
HT 10	MT	5.0	3.5	2.7	2.2	1.9	1.6	1.4		
HT 15	MT	7.5	5.0	4.0	3.5	2.8	2.5	2.0		
HT 20	MT	10.0	7.0	5.5	4.5	3.5	3.3	3.0	2.5	
HT 30	MT	15.0	10.0	8.3	6.5	5.5	5.0	4.3	4.0	
HT 40	MT	20.0	14.0	11.0	9.0	7.0	6.0	5.5	5.0	
HT 50	MT	25.0	17.0	14.0	11.0	9.5	8.3	7.0	6.5	6.0
HT 75	MT	37.5	26.0	20.0	17.0	14.0	12.0	11.0	10.0	9.0
HT 100	MT	50.0	35.0	27.0	22.0	19.0	16.0	14.0	13.0	12.0

ECC (mm) must NOT exceed above table (*)

Load capacity (MT) of Head stock only (overhung) must NOT exceed this table.

GC (mm) measured from the Headstock table surface.

Notes: HT applicable for use on SAW/positioning. Table play tolerance of 5 mm on 1.70 m Ø



<u>Turntables</u>, <u>TT Series</u>

Photos-Video





Welding Turntable is used to rotate 360° a workpiece around a vertical axis in a flat (horizontal position). They come with variable speeds and use for welding, flame cutting, X-ray and machining. Welding Turntable, also known as Welding Floor Turntable and Horizontal Welding Turntable

Model	Load Cap. (MT)	Table Diameter (mm)	Rotation Speed (RPM)	Max Eccentricity (mm)	Dimensions L*W*H (mm)	Torque (Nm)	Power (kW)	Weight (MT)
<u>TT 0.5</u>	0.5	800	0.10~1.00	200	800*800*400	80	0.18	0.90
<u>TT 1</u>	1	1000	0.10~1.00	200	1000*1000*500	100	0.25	1.00
<u>TT 3</u>	3	1500	0.05~0.50	200	1500*1500*600	400	0.55	1.10
<u>TT 5</u>	<u>5</u>	1500	0.05~0.50	200	1500*1500*650	600	0.75	1.30
<u>TT 10</u>	10	1800	0.05~0.50	200	1800*1800*650	1200	1.10	1.50
<u>TT 20</u>	20	2000	0.02~0.20	200	2000*2000*750	2400	1.50	2.50
TT 50	50	2500	0.015~0.15	200	2500*2500*750	6000	2.20	4.50
<u>TT 75</u>	75	2800	0.015~0.15	200	2600*2600*850	9000	3.00	6.00
<u>TT 100</u>	100	2800	0.010~0.10	200	2800*2800*1000	12000	4.00	7.80



Features

1. Designed and engineered in Canada.

Remote Control Box with 6 m cable: 1) On Head Stock Model HT. Includes: Variable speed on table rotation: Forward / Stop / Reverse; Digital display in RPM; and, adjustable center rotation height: Up / Down; 2) On Turntable Model TT: Variable speed on table rotation: Forward / Stop / Reverse; Digital display in RPM; 3) On Welding Positioner Model PL. Includes: Variable speed on table rotation: Forward / Stop / Reverse; Digital display in RPM; and, tilt speed control, and height adjustment: Up / Down

3. "T" shaped channels on the table surface

Standard Package: 1. Welding Positioner PL or Head & Tail Stock or Turntable, 2. Control Box and Remote-Control Box, 3. Operation Manual with Electric Diagram, 4. One year <u>Warranty</u>

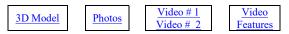
Optional: 1. Foot control pedal. Control: Forward/Stop/Reverse, 2. Extension arms on Turntable for increase table diameter, 3. <u>CE mark</u>



Welding Manipulator is used for automated SAW / MIG / FACAW / TIG welding on pipe, tank and pressure vessels combined with Tank Turning Rolls, Welding Positioners or Head & Tailstock Positioners. Irizar manipulators mainly comprise a column, boom and motorized trolley (travelling car). We supply the manipulator itself or equipped with a power source, welding head, welding controller, flux recovery system, motorized cross slide & seam tracker. Welding Manipulators are also known as Welding Booms, Welding Columns or Welding Column and Boom (C&B)

		Boom				Column Trolley or Base Self Stand						Column Trolley or Base Self Stand								
Model WM YYXX	Ve	A) rtical sion (m)	Hori	B) zontal sion (m)	n //min)	own (m/min) t (m/min)		a/min) a/min) g Precision 6)		00 5/		l at boom / (Kilos @	Angle	it (m)	Dimension 30	ç to ç (mm)	(m/min)	(kW)	d Packing Dim. ioom (L*W*H)	(MT)
	Effective	Min-Max	Effective	Min-Max	Up–Down Speed (m/i In–Out Speed (m/i	Traveling Speed (%	C lo lo	Rotation $\pm 180^{\circ}$	(C) height	Packing] D*E*0.3 (m)	(F) Rail ç	Speed (n	Power (k	Estimatec Colum-B. (m)	Weight (
WM 3030	3.0	0.75~3.75	3.0	1.0~4.0	1.00	0.12		200		5.50	2.40*1.90*0.3	1600		2.75	5.50*1.40*0.70	3.00				
<u>WM 4040</u>	4.0	0.75~4.75	4.0	1.0~5.0	1.00	0.12 to		200		6.50	2.40*1.90*0.3	1600	1.50	2.75	6.50*1.50*0.80	4.00				
WM 5050	5.0	1.10~6.10	5.0	1.0~6.0	0.90	1.2		300		7.80	2.40*2.10*0.3	1798	1.50	3.35	7.80*1.60*0.90	5.00				
<u>WM 6060</u>	6.0	1.10~7.10	6.0	1.0~7.0	0.90	1.2	± 2%	300	motorized	9.00	2.40*2.10*0.3	1798		3.35	9.80*1.70*1.00	6.50				
HD WM 7060	7.0	1.10~8.64	6.0	2.0~8.0	0.80	0.20		400		10.35	3.15*3.00*0.3	2000		6.00	10.80*1.70*1.3	12.00				
HD WM 8060	8.0	1.10~9.34	6.0	2.0~8.0	0.80	to		400		11.35	3.15*3.00*0.3	2000	2.00	6.00	11.80*1.70*1.3	14.50				
HD WM 9060	9.0	1.10-10.24	6.0	2.0 -8.0	0.80	1.50		400		12.25	3.15*3.00*0.3	2000		6.00	11.80*1.70*1.3	17.00				

Standard Package: 1) Welding Manipulator mounted on motorized trolley; 2) Control Box & Remote-Control Box, 3) <u>Operation Manual</u> with Electrical Diagram. 4) One year <u>Warranty</u>



Features

- 1. Engineered in Canada
- 2. Boom expansion speed (in-out): From 0.12 to 1.20 m/min
- 3. Boom lifting (up-down) speed: Constant
- 4. Trolley motorized travel speed
- 5. Column rotation angle: $\pm 180^{\circ}$
- 6. Column rotation speed: Approx. 0.30 RPM
- 7. Main Control Box fixed on the trolley: Control column rotation & Forward/Stop/Reverse.
- Remote Control Box with 12 m cable length. Control: Variable speed on boom in-out: Forward/Stop/Reverse. Digital display in mm/min Also control boom lifting: Up/Stop/Down
- 9. Boom Features:
 - Standard: For Min 1.50 m ID.
 - Custom Built: Min 20" ID using WM 3030
 - Counterweight system to ensure smooth vertical travel
 - Cable organizer: Included
- Power Source Platforms: Available on the trolley. Max load capacity of 1.5 MT. Platforms can handle: Lincoln Power Waves AC/DC 1000, or DC-1500/AC-1200, or equivalent

- 11. Gearbox's shells made of cast iron ASTM-A48-A48M or equivalent
- 12. Open gears made of Q235 steel or equivalent
- 13. Shafts made of ANSI 1045 or equivalent
- 14. Motors and control box with IP 54 protection against dust and heavy rain
- 15. Frequency driver made by TECO Westinghouse or Delta
- 16. Stress Relieved on Column and Boom
- 17. Shot blasted ISO 8501-SA2.5
- 18. Welding Cables NOT included.

Guide Selection: 1) Determine the largest tank diameter to be fabricated, 2) Determine the largest longitudinal seam to be weld, 3) Select the WM YYXX, 4) Y = Maximum effective boom vertical expansion (up-down) in m, 5) X = Maximum effective boom horizontal expansion (in-out) in m, 6) Check if the column height of the selected WM fits below your overhead crane; otherwise, we can custom-built the column height

Safety: 1) Boom anti-fall safety device on WM 3030 and up, 2) Trolley anti-fall safety device, 3) Limit switches in all directions

Quality: 1) Engineered in Canada, 2) Intertek label SPE 1000 on main control box. Available under request, 3) <u>CE Mark</u> Certificate of Conformity No 181108/JIR/05; issue by Consultants Europe BV in The Netherlands

Custom Built: 1) Self-Stand Welding Manipulator (Fixed base): SS WM, 2) <u>WM</u> 4040 for welding Steel Box Columns, 3) For TIG applications: a) WM with linear drive. b) Welding rotator with servomotors, c) Arc Length Controller, 4) <u>Welding Gantry</u>

Product Catalog



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Custom Built Set up Configuration. for Longitudinal and Circumferential (SAW) Including Seam Tracker



3D Model for Single Head



3D Model for Tandem Head

Seam Tracker Video Model 100





Welding Manipulator with SAW Lincoln Welding Head and Controller; Wire Reel, Seam Tracker Model 100 & Flux Recovery Model FRU-50.

Minimum ID 25" (63.5 mm) with boom effective horizontal stroke from 3 up to 6 m (10' up to 20') 3D Model for Welding Small Diameters

Note: Mounting brackets for the welding head, welding controller and wire reel are **NOT** included in our supply scope. There are many possible configurations; each user should decide the best suit for their application.

Standard Welding Manipulator:

- 1. Lincoln PowerPlus 1000HD
- 2. Welding Head Controller & Wire Feeder
- Flux hopper & 50 lbs wire rail
 Manual cross slide Single Head
- Manual cross slide Single Her Stroke (mm) 80 x 80. Max load 50 kilos @ 6" GC
- 5. Mounting Brackets
- 6. Boom Wireless Remote Control
- 7. <u>Flux Recovery FRU-50</u> itself
- Welding cable of 23 m*2 Nos of 120 mm² Ø
 Communication and interface cables (only with Irizar Rollers)
- 10. WhatsApp Tech Support

Welding Cross Slide. Position welding head up/down & left/right. Also known as Manual Welding Cross Slide, Motorized Welding Cross Slide and Powered Welding Cross Slide

Models

- 1. <u>Motorized Single Head Cross Slide</u> Stroke (mm) 80 x 80 Max load 50 kilos @ 12" GC
- Motorized Tandem Head Cross Slide
 Main Cross Slide, one unit
- Max load 300 kilos @ 23" GC Stroke (mm) 200 x 200
- Horizontal Manual Cross Slide, one unit 200 kilos @ 12" GC Stroke (mm) 200 with pivot

Seam Tracker, Self position welding head up/down & left /right. Also known as Welding Seam Tracking, Weld Tracking, and Welding Seam Tracker.

Seam Tracker Model 100

Includes:

Max load capacity	100 kg @ 12" GC
Weight	70 kg
Slide Stroke	X & Y 200 mm ea
Slide Speed	170 mm/min
Accuracy	$\pm 0.25 \text{ mm}$
Welding Method	SAW
Motors Style	DC
Unit Weight	50 kg
Packing (mm)	Four boxes 400*270*210
Input Power	240/60/1P

1) Main control box, 2) Left/Right cross slide, 3) Up/Down cross slide, 4) Cables, 5) Finger probe, 6) brackets & Tracking probes.



since 1999

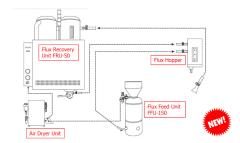
Flux Recovery System is used for recycling flux in SAW (Submerged Arc Welding) operations. It reduces operational costs for recovering and re-using flux before being contaminated with dust. It also prevents the flux from getting wet because of its heating device, avoiding welding porosity. It is also known as Flux Vacuum, Flux Recycling System, Submerged Arc Flux Recovery and SAW Flux Recovery



Models:

- 1. Flux Recovery System FRU-50, 50 kilos.
- 2. Flux Recovery System FRU-100, 100 kilos.
- 3. Flux Recovery System FRU-150, 150 kilos.

	Flux capacity	50 kg
	Air pressure	80 to 90 psi
.=	Air flow	20 cfm
- 9	Heat	0-150°C
₽5	Motor Power	3 kW
Flux Recovery Unit Model - FRU-50	Flux recovery	8 to 15 Kg/min
- I-	Flux feeding	2 to 20 kg/min
R de	Flux delivery	Up to 9 m
Mc	Bottom flux valve	Included
Ц	Pulse dust removal	Included
	Weight	200 kg
	Input Power	240/60/3
0	Flux capacity	150 kg
nit 15	Air pressure	80 to 90 psi
D I D	Air flow	20 cfm
E	Heat	0-150°C
Flux Feed Unit Model - FFU-150	Flux low level alarm	Included
lod	Weight	300 kg
- Z	Input Power	240/60/3
it	Air pressure	80 to 90 psi
Un L	Air flow	20 cfm
Ai er	Weight	180 kg
Air Dryer Unit	Input Power	240/60/3
_	input i owei	210/00/5



Advantages FRU-150: 1. Air Dryer removes water and humidity from the air supply. 2. Heated Flux prevents porosity in welding. 3. Flux is supplied to the boom top at the ground label. 4. Flux level alarm prevents low flux.



IRIZAR HEAVY INDUSTRIES INC Head Office: 1512 Adamson View, Edmonton, Alberta T6W 0V4, Canada Factory: 464014 RR 235, County of Wetaskiwin, AB, T0C 1Z0, Canada Phone: 1 780 450 6695, Fax: 1 780 485 6677

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Automatic Girth Welder, AGW Series

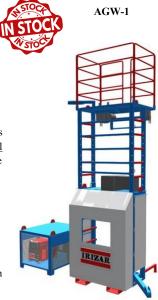
Automatic Girth Welder (AGW) is a self-propelled frame with variable speed that applies efficient circumferential Submerged Arc Welding (SAW) on Field Erected Tanks (Vertical Tanks). It is compatible with Conventional Construction Method (Down-Top) and Jack up Method (Top-Down). SAW is mostly used on carbon steels, stainless steels and some nickel alloys; it improves productivity and consistently enables high-quality welds. The AGW reduces the manual welding process up to 25 times. The AGW comes with Power Source, Welding Head, Welding Controller, Flux Belt and Flux Recovery System. Girth Welder, also know as 3 O'Clock Welder, Automatic Girth Welder, AGW Welding, Automatic Tank Welder and Soldadura Arco Sumergido

Application

1. Girth Welder Model AGW-1 (Single Side)

<u>3D AGW-1 Traditional Method</u> & <u>3D AGW-1 Tank Jacking Method</u> <u>3D Jacking Method Set Up</u> & <u>Video clip</u>

Compatible with **Traditional Construction Method** [Bottom to Top]. In this method, a single circumferential seam can be applied using Submerged Arc Welding (SAW) inside or outside the tank. The AGW-1 is suspended from the tank's upper edge. The AGW-1 is compatible with the **Tank Jacking Construction Method** [Top to Bottom]. In this case, the AGW-1 applies circumferential SAW seams exclusively from the outside of the tank, using a temporary rail for support. Input power: 120/240/1P/50/60. If circumferential seams are required to be welded from the inside of the tank, use a <u>Girth Welder Model AGW-1-C</u> (Single Side-Compact). **Included**: One <u>Lincoln PowerPlus 1000 HD</u> (380/480/3/50/60), one Lincoln Welding Controller, one wire feeder, one wire reel, one flux recovery unit. **Not included** welding cables. Required: One cable of 120 mm² x 60 m for welding up to 600 amps; two cables for welding up to 800 amps; and three cables for welding up to 1000 amps. For other items, read the next page.



2. Girth Welder Model AGW-1-C (Single Side - Compact)

<u>3D AGW-1-C</u> & <u>3D Jacking Method Set Up</u> & <u>Video</u>. Compatible with **Traditional Construction Method** (Bottom to Top) and **Tank Jacking Construction Method** (Top to Bottom). Apply single circumferential SAW (Submerged Arc Welding) seams inside or outside the tank. It drives on a 1/2" x 4" flat bar rail hanging on <u>brackets</u> (not

included). The unit can be used on LNG tanks; it fits 750 mm of space between inner and outer tanks. Input power of 120/240/1P/50/60. Included: One Lincoln PowerPlus 1000 HD (380/480/3/50/60), one Lincoln Welding Controller, one wire feeder, one wire reel, one recovery unit. Not included welding cables. Required: One cable of 120 mm² x 60 m for welding up to 600 amps. Two cables for welding up to 800 amps. Three cables for welding up to 1000 amps. For other items, read the next page.

3. Girth Welder Model AGW-2 (Double Side)

<u>3D AGW-2: Traditional Method</u>. Compatible with **Traditional Construction Method** (Bottom to Top). Apply DOUBLE circumferential SAW (Submerged Arc Welding) seams inside and outside the tank simultaneously. It drives hanging on the tank's upper edge. Input power: 120/240/1P/50/60. **Included**: Two Lincoln PowerPlus 1000 HD (380/480/3/50/60) with Intertek certification SPE-1000; plus, two welding head controllers and two wire feeders. **Not included** welding cables. Required: Two cables of 120 mm² x 60 m for welding up to 600 amps. Four cables for welding up to 800 amps. Six cables for welding up to 1000 amps. For other items, read the next page.

- 4. LNG AGW-1: Apply circumferential SAW seams on LNG Double Wall Tanks. The unit fits in a 1,000 mm space between the inner and outer tanks.
- 5. Shell Buggy: It is a self-propelled basket. It provides quick access to vertical and horizontal welding seams without a need for scaffolding. It is helpful for install vertical up FCAW Welding Oscillator Tractor. It also provides quick access for welding inspection and repairs, installation and remove tank fittings tools. Compatible with Traditional Construction Method (Down to Top) and Tank Jacking Construction Method (Top to Down)
- <u>FCAW Welding Oscillator Tractor</u>: Apply Flux Cored Arc Welding on vertical welding seams up to 3,000 mm and circumferential seams on pipes diameter ≥ 1,200 mm. It is recommended to use with <u>Shell Buggy</u> for quick access on vertical seams outside the tank.
- 7. <u>SAW Welding Tractor:</u> It is a self-propelled Tractor. Apply SAW Butt or Fillet welds on the Tank's Floor and/or circumferential Fillet welds on Annular-Plate to Tank-Shell Bottom, both inside and outside the tank. <u>Magnetic Device</u>, <u>3D Model</u> & <u>Video</u>



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Specifications

	Model	<u>AGW-1</u>	<u>AGW-2</u>	<u>AGW-1- C</u>	LNG AGW-1	<u>Shell Buggy</u>
Application		Traditional Method & Jacking Method	Traditional Method	Traditional Method & Jacking Method	Traditional	Traditional Method & Jacking Method
Туре		Single Side	Double Side	Single Side	Single Side	Single Side
Trolley motor	rized speed (mm/min)	200 to 2,900	200 to 2,900	200 to 2,900	200 to 2,900	200 to 2,900
Trolley manu	al with clutch lever	Yes	Yes	Yes	Yes	Yes
Plate Height (m)		1.50 to 3.0	1.50 to 3.0	(*) Min 0.80 m	1.50 to 3.0	1.50 to 3.0
Tank Diameter (m)		Min 5.0	Min 8.0	Min 2.50	Min 8.0	Min 5.0
Plate Thickne	ess (mm)	8 to 50	8 to 50	4.76 to 50	8 to 50	8 to 50
	Fixture Itself	680	1,360	208	580	380
Waight (Irog)	Storage Box & Cables	150 + 70 = 220	150 @ 2 + 140 = 440	150 + 180 + 70 = 400	150 + 70 = 220	NA
Weight (kgs)	FlexTec 650X / DC 1000	75 / 372	(75 / 372) x 2	75 / 372	372	NA
	Total Weight Sum	975 / 1,272	1,950 / 2,544	683 / 980	1,172	380
Dimensions	Unit Package	1.55 x 1.20 x 2.65	3.10 x 2.50 x 2.65	1.10 x 0.62 x 1.73	1.55 x 0.85 x 2.65	1.55 x 1.10 x 2.65
L*W*H (m)	Power Source Storage Box	1.30 x 1.10 x 1.30	1.30 x 1.10 x 1.30 @ 2	NA	1.30 x 1.10 x 1.30	NA
Input Power A	AGW	120/240 V, 50/60 Hz, 1P	120/240 V, 50/60 Hz, 1P	120/240 V, 50/60 Hz, 1P	120/240 V, 50/60 Hz, 1P	120/240 V, 50/60 Hz, 1P
AGW Power	(kW)	0.19	0.19	0.19	0.19	0.19

Notes

- 1. Designed and engineered in Canada.
- 2. (*) AGW-1-C plate height: Minimum 0.8 m; only on the first/top shell. Storage box included.
- 3. The AGWs and the Shell Buggy include an arm support for lifting a maximum load of 100 kilos. Electric winch is not included.
- 4. The Welding Procedure Specifications (WPS) and the Procedure Qualifications Records (PQR) must qualify by the user, taking into consideration the applicable Codes and Standards. It should be designed by a welding engineer who selects the essential welding parameters such as plate bevelling, wire and flux specifications, amperes and voltage, welding speed, etc. The user is responsible for certifying WPS & PQR before deploying the equipment at the job site.
- 5. The Welder Qualification Test (WQT) remains the user's responsibility. Irizar does not train welder operators; the Girth Welders must be operated by an experienced user operator with an update ticket.

Standard Package

Item	Description	AGW-1 Single Side	AGW-2 Double Side	AGW-1-C Single Side Compact
1	Electric Power Source Lincoln PowerPlus 1000HD, 480/3/60 or 380/3/50	1 set	2 sets	1 set
2	Lincoln Welding Head Controller and Irizar Wire Feeder. Includes: 1) Wire reel for 60 lbs coil, 2) One contact nozzle assembly for 3/32" (2.4 mm), for 1/8" (3.2 mm), 5/32" (4 mm), 3) One contact tip 3/32" (2.4 mm).	1 set	2 sets	1 set
3	Heavy-duty motorized carriage	1 unit	1 unit	1 unit
4	Control Box: Forward/Stop/Reverse/Speed Adjustment with display in mm/min.	1 unit	1 unit	1 unit
5	Flux recovery & delivery system. Include: Flux belt 4" width x 40". Flux assembly 150 mm wheel's diameter. Flux hopper of 25 kg capacity on AGW-1/AGW-2; and 20 kg capacity on AGW-1-C	1 set	2 sets	1 set
6	Manual welding head (X-Y) cross slide with 6" stroke	1 unit	2 units	1 unit
7	Operator seat with toolbox	1 unit	2 units	N/A
8	TECO Westinghouse frequency driver	1 unit	1 unit	1 unit
9	Power source steel storage box	1 unit	2 units	1 unit
10	Cables included: 1) Power cable 2.5 mm ² *4 wires* 60 m; 2) Control cable 1.5 mm ² *10 wires* 60 m.	1 set	2 sets	1 set
11	Electric control panel	1 unit	1 unit	1 unit
12	Operation Manual & Electric Diagram	1 set	1 set	1 set
13	Warranty	1 year	1 year	1 year
Notes	 Welding cables are NOT included and required: One cable of 120 mm² x 60 m for welding up to 600 amps. Two cables for welding up to 800 amps. Three cables for welding up to 1000 amps. Item # 9: Power Source Storage Box keeps the power source and cables free from rain, snow, and thieves Irizar AGW-1, AGW-2 & AGW-1-C are designed and fabricated to be powered by Lincoln Power Source; nevertheless, some customers have modified our brackets to fit welding heads and welding controllers made by ESAB, Miller, and other brands. 	1 set	2 sets	1 set



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Notes

- 1. Item # 9: Power Source Storage Box keeps the power source and cables free from rain, snow, and thieves
- 2. Irizar AGW-1, AGW-2 & AGW-1-C are designed and fabricated to be powered by Lincoln Power Source; nevertheless, some customers have modified our brackets to fit welding heads and welding controllers made by ESAB, Miller, and other brands.
- 3. Optional:
 - 3- Slide Pre-heating Torch Adjustment Device: Adjustment: 1 3/8" (35 mm) left/right, 1 3/8" (up/down), 1 3/4" (44 mm) deep. Torch diameter range: 5/8" to 1 3/8". Torch angle adjustment: 90 degrees. Capacity: 10 lbs. Torch and LPG cylinder and rack are not included.
 - <u>3D Stand Frame</u>: Required for the qualification of WPS, PQR and WQT; also, for hanging the unit when it is not in service at jobsite.
 - Conversion Kit: Split one AGW-2 into two AGW-1; or to convert one AGW-2 in two AGW-1

Features

- 1. Control Box: a) Forward/Stop/Reverse with Digital display with variable speed, b) Flux recovery: On/Off, c) Emergency Stop
- 2. Motors & Control Box: IP 54 protection; against dust and heavy rain
- 3. Frequency Driver: Made by <u>TECO Westinghouse or Delta</u>

Quality, Safety & Liability Insurance

- 1. Irizar AGW-Fixture: Engineered in Canada
- 2. Assemble and Tested in Canada
- 3. Intertek Certification label SPE-1000 on main control box. Available under request
- 4. <u>CE Mark</u> Certificate of Conformity No 181108/JIR/05; issued by Consultants Europe BV Netherlands
- 5. Safety: Meets OSHA and CAN/CSAS269.2-M87 standards

Power source and cables Storage steel box: Included



Girth Welder Model <u>3D AGW-1-C</u> <u>Video</u>





AGW-1-C Welding from Inside a Tank Scaffolding for welding inside (not included) Approx. scaffolding platform height: 4.50 m



AGW-1-C Welding Outside a Tank Flux Recovery System included



AGW-1-C Storage Box



AGW-1 (Traditional Method) Circumferential Welding for Outside the Tank



AGW-2 (Traditional Method) Circumferential Seam Inside/Outside simultaneously



AGW-1 (Compatible with Lifting Jacks) Circumferential Welding for Outside the Tank



<u>3D AGW-2: Traditional</u> <u>Construction Method</u>



Shell Buggy

The Motorized Shell Buggy [Self-Propelled Basket] provides quick access to vertical and horizontal welding seams on API field-erected tanks without scaffolding. It facilitates welding inspections, repairs, and removal of tank fitting tools. It also allows the installation of FCAW welding oscillators for vertical welds. The Shell Buggy is compatible with the Traditional Construction Method (Down to Top) and the Tank Jacking Construction Method (Top to Down). Shell Buggy is also known as Platform Shell Buggy or Shell Work Platform Buggy.



<u>3D Shell Buggy for Traditional</u> <u>Construction Method</u>



3D Shell Buggy for Jacking Method



Video clip



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FCAW Welding Oscillator Tractor

Welding Oscillator Tractor, also known as Welding Carriage, Welding Automation Carriage, Welding Oscillator Carriage and Track Welding Carriage with Oscillator.

Video Tractor Model 3000	Video Tractor Model 150-1000
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Features

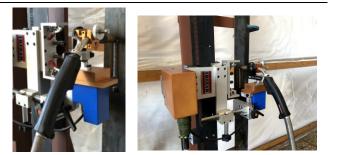
Description	<u>FCAW Welding Oscillator</u> <u>Tractor Model 3000</u>	FCAW Welding Oscillator Tractor Model 150-1000
Application	Vertical welding Up 3000 mm & Circumferential on pipe diameters ≥ 1,200 mm	Circumferential welding on pipe diameters from 150 up to 1,000 mm
On/Off Switch	Included	Included
Control box	Forward, Stop, Reverse, Variable Speed with digital display	Forward, Stop, Reverse, Variable Speed with digital display
Variable speed	From 100 to 1,040 mm/min	From 0 to 700 mm/minute
Flexible rail track	Two pcs of 1.8 m each	3.7 m of rail included Use only on pipe diameters from 600 to 1,000 mm
Magnets	Twelve pieces	NA
Power Supply	110 AC, 50/60 Hz. 1P	110 AC, 50/60 Hz. 1P
Gun clamping torch holder	Included	Included
Torch adjustment		
Up/Down	\pm 50 mm	\pm 60 mm
Left/Right	$\pm 100 \text{ mm}$	\pm 85 mm
Angle	$\pm 45^{\circ}$	$\pm 45^{\circ}$
Oscillation adjustment		
Left/Right (stroke)	$\pm 17 \text{ mm}$	$\pm 15 \text{ mm}$
Angle	$\pm 10^{\circ}$	$\pm 10^{\circ}$
Pattern Selection Knob Mode		
Dimensions and Weight		
Tractor (L x W x H) mm	580 x 250 x 345 @ 11 kgs	410 x 360 x 430 @ 22 kgs
Tracks (L x W x H) mm	1600 x 50 x 50 @ 8 kgs	540 x 420 x 140 @ 5 kgs
Magnets (L x W x H) mm	500 x 200 x 200 @ 25 kgs	NA
Total Weight	44 kgs	27 kgs

Tractors Welding Control



FCAW Vertical Seams with Tractor Model 3000

The tractor is recommended to apply vertical welding seams on API tanks. It can be used in combo with <u>Shell Buggy</u>. It provides quick access for welding, repair and inspection of vertical seams without scaffolding.



FCAW Welding Tractor Model 3000

For Vertical Seams on API Tanks up to 3,000 mm For Circumferential Seams on pipe diameters \geq 1,200 mm



FCAW Welding Tractor Model 150-1000 For Circumferential Seams on pipe diameters from 150 up to 1,000 mm

On pipe diameters	On pipe diameters
from 150 to 600 mm	from 600 up to 1,000 mm
with Tractor Magnet	on rail truck

Full-Set ready to work.

- 1. Oscillator Tractor Model 3000 or Model 150-1000
- 2. Lincoln PowerPlus II 650: Rated Output: 500 A/39 V @ 100%
- 3. Wire Feeder: Speed: 1.5-22 m/min, four drive rolls, wire size on solid wire (0.8-1.6 mm) & flux core wire (1.6 to 2.0), wire spool of 20 kg
- 4. Wire feed roller 1.2-1.6 mm x 2 pcs
- 5. Welding torch long neck with 5 m cable length
- $6. \quad Welding \ earth \ cable \ 70 \ mm^2, \ 30 \ m$
- 7. Control cable, 40 m
- 8. Remote Voltage Control, 15 m length

Optional: Consumables

- 1. Contact Tipes
- 2. Drive Rolls Kit
- 3. Welding Torch Spare
- 4. Wire Feeder Spare

IRIZAR

IRIZAR HEAVY INDUSTRIES INC

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SAW Welding Tractor

SAW Welding Tractor is a self-propelled Tractor with Electric Flux Recovery System and Magnetic Device. The Tractor applies Submerged Arc Welding, more commonly abbreviated to SAW or Sub Arc Welding. SAW is mostly used on carbon steels, stainless steels and some nickel alloys; it improves productivity and consistently enables high-quality welds. SAW Welding Tractor, also known as Submerged Arc Welding Tractor, SAW Tractor, LT-7 Tractor, LT-7 Submerged Arc Welding Tractor, and Lincoln LT-7 Tractor

Applications:

- 1. Apply SAW Butt or Fillet welds on API Tank's Floors
- 2. Apply SAW circumferential Fillet welds on Annular-Plate vs API Tank-Shell Bottom
- 3. Apply circumferential SAW Butt weld on Tanks or Pressure Vessels while the tank rotates in the opposite direction then Tank Welding Rotators.



Scope:

1. Irizar SAW Welding Tractor

- 2. <u>Lincoln PowerPlus 1000HD</u>
- 3. Welding Control
- 4. Welding Head
- 5. Electric Flux Recovery System
- 6. Magnetic Device

Welding Tractor, Specs:

- Tractor variable speed: From 0.20 to 2.20 m/minute
- Controls: ON/OFF, FWD/REV & speed potentiometer
- Cross slide: 100 mm (up/down) x 100 mm (left/right)
- Vertical head lifting adjustment: 70 mm
- Head rotation: ± 90°
- Head inclination: $\pm 45^{\circ}$
- Torch inclination: $\pm 45^{\circ}$
- Wire reel for 60 lbs coil. ID: 300 mm x 5" width
- Guide Rail: 1 m/each x 3 units
- Control Cable 14 Pins, male/female w/quick connectors: 30 m



- Consumables:
 - o Contact Tips, one each: 1.6, 2.0, 2.4, 4.0 & 5.0 mm
 - Nozzles, one each: Nozzle Assembly & 10 mm Nozzle Extender.
- Electric Input Power: 110 V, 50/60 Hz, 1P
- Packing (mm): 480 (L) x 740 (W) x 1008 (H) @ 55 kgs

Note: Welding cable(s) **NOT** included. Required: 30 m of welding cable 120 mm² x 1 wire; rated up to 600 amps. Two cables required for 800 amps. Three cables required for 1000 amps

Electric Flux Recovery System, Specs:

- Flux hopper with 4 liters capacity & heater
- Electric Input Power: 110 V, 50/60 Hz, 1P
- Packing (mm): 260 (L) x 220 (W) x 550 (H) @ 6.20 kgs

Magnetic Device, Specs:

This device is required to apply circumferential **Fillet welds on Annular-Plate vs Tank-Shell Bottom**. The magnetic device upholds vertical SAW Welding Tractor while one wheel is floating, and it runs fastened by magnets to the Tank-Shell, either inside or outside the tank.

Features

- Minimum Tank OD: 9 m
- Outside annular-plate: Min 50.8 mm (2")
- Device can roll over vertical tank welding seams with a maximum crown of 3 mm (1/8")
- Packing (m): 0.60 (L) x 0.40 (W) x 0.28 (H) @ 17 kg





Video



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Tank Lifting Jacks

Tank Jacking, also known as Tank Erection, Hydraulic Tank Jacks



Constanta Romania LNG Tank, 76 m diameter, 490,000 barrels

Applications

I) <u>3D Tank-Construction</u>

- 1. API 650 Welded Tanks for Oil Storage
- 2. API 620 Welded Low-Pressure LNG Double Wall Storage Tanks
- 3. API 653 Tank Repair and Maintenance
- 4. UL STD 142 Tanks for Flammable and Combustible Liquids
- 5. ANSI/AWWA D100 Water Welded Tanks
- 6. ANSI/AWWAD D103 Water Bolted Tanks
- 7. Grain Bin & Corrugated Bolted Tanks

II) Modifications & Alterations

- 1. Dismantling & Removal (Lowering Tanks)
- 2. Tank Floor & Bottom Shell Replacement
- 3. Tank Capacity Expansion

Industry Segments: Oil refineries, petrochemical plants, fertilizer plants, power generating stations, petroleum product installations & depots, and liquid storage terminals ports.

Experience: Irizar lifting jacks have been used worldwide for the construction of over five thousand field erected tanks. The maximum tank lifted until now is 2,650 MT.

Standard Package:

- 1. Jacks with Trestles
- 2. Power Pack
- 3. Operation Manual and Electrical Diagram
- 4. One year Warranty

Specifications

Jack Model Concept	<u>12 MT-3000</u>	<u>25 MT-3000</u>	<u>6 MT-2500</u>
Application	Welded & Bolted Tanks Lifting	Welded Tanks Lifting	Welded & Bolted Tanks Dismantling
Working capacity (MT)	12	25	6
Double action jack	Yes	Yes	Yes
Minimum OD tank (m)	5.00	5.00	5.0
Minimum shell thickness (mm)	3.175 (1/8")	3.175 (1/8")	3.175 (1/8")
Min shell height (mm) (1)	1,600 (1)	1,600 (1)	NA
Max shell height (mm)	3,000	3,000	2,500
Max arc-dis between jacks (m) (2)	3.0	3.0	3.0
Unitary climb/descend (mm/stroke)	100	100	500
Lifting time (minute/stroke)	2.0	1.0	# jacks x 1.5
Jack weight (kg)	60	90	86
Accessories weight (kg)	260	430	260
Packing weight (kg)	40	50	40
Total weight (kg/jack)	360	570	386

Notes:

- 1. (¹) The minimum shell height applies **only** for the top ring
- (²) For stability reasons, the maximum distance between two consecutive jacks **must** not exceed 3.0 m. In practice, the actual distance is always less due to wind, seismic, and snow loads. Request Irizar Tank Lifting Certificate before lifting a tank.
- Jack's Model 12 MT-3000 is selected on 95% of liftings. Select Jack Model 25 MT-3000 when lifting weight cannot be reached with 12 MT jack with an arc-distance of 1.60 m between consecutive jacks.
- <u>Tank Dismantling Jacks</u> Model 6 MT-2500 are designed ONLY for dismantling (lowering) tanks. **Do not** use it for lifting. Notes:
 Labour required: operator and helper;
 Do not include labour for setting up jacks, cutting rings, and welding lifting & pulling hooks.
- 5. The minimum bearing capacity of the tank floor under the jack column base is 247 lb/in² for 12 MT jacks and 515 lb/in² for 25 MT jacks. Before installing the jacks, the user **must**: 1) Verify the floor-bearing capacity with a professional geotechnical engineer. Irizar Heavy Industries Inc. is not liable for any accident caused by an inappropriate foundation. 2) Get from Irizar a crew training certificate. Minimum shell height of 1,350 mm applies only on the top ring.
- Temporary Tank Supports: Required for lifting API 650 Tanks. They provide access for workers, power cables and tools; also, airflow to avoid toxic welding fumes and ventilation in hot weather. We do not supply temporary supports. Required: one per jack of 500 mm height.



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Power Pack Specifications

Description	Tank Capacity (Liters)	Pump Flow (LPM)	Working Pressure (PSI)	Weight (Kilos)
Power Pack for Jack 12				
10 HP, Max 34 jacks	330	22	1,750	350
20 HP, Max 65 jacks	350	45	1,700	445
40 HP, Max 115 jacks	500	96	1,750	575
60 HP, Max 150 jacks	800	96	2,500	700
Power Pack for Jack 25				
40 HP, Max 38 jacks	500	96	1,750	575
60 HP, Max 150 jacks	800	96	2,500	700
Power Pack for Jack 6				
20 HP. Max 65 jacks	800	96	1,750	600

Quality

- 1. Trestle Box Indentations: Made to match the jack's grip jaw pitch, which is the mechanism that holds the tank weight mechanically
- 2. Grip Jaws: Heat treated with 48 to 50 RC hardness; avoid premature wearing
- Finishing: Shot blasted ISO 8501-SA2.5 before been prime and painted. A coating thickness of 150 microns on trestles & stay pipes; 250 microns on jacks & power packs.



Bolted Tanks Lifting Jacks TPI Autofagasta Chile

Jack Test with Universal Testing Machine





Warranty

It is valid only if: a) The user holds Tank Lifting Certificate [for a particular job site], b) The user holds an updated Training Certificate, c) The user holds an updated Operation Manual, available every six months. d) The Tank Lifting Jacks are operated and maintained according to the latest Operation Manual. Failure to comply with the above voids the warranty.

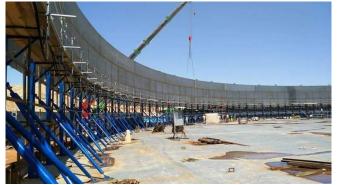
Irizar Heavy Industries Inc is **not liable** for any accident caused by inappropriate use or selection, overload, or misuse of tank lifting jacks, which may cause property damage, bodily injuries, or even death.

Spare Parts

- 1. Available in stock. Customer can order by using *3-D Exploded* Solidworks Drawing available in our Operation Manual
- 2. Payment by Wire Transfer or Credit Card (Visa, Master or American Express)
- 3. Parts are shipped within 24/48 hours by FedEx

Delivery Time

- 1. Within Canada: Three to five business days
- 2. USA & US-Mexican border: One week
- 3. Latino America.: Four weeks
- 4. World-Wide: Five to six weeks



Location: Middle East Tank Diameter: 91.50 m , Tank Height: 17 m Capacity: 705,000 barrels



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TPI Autofagasta Chile



Columns Roof Lifting



Bolted Tanks Lifting Jacks

Location: Constanta Romania LNG Tank (Double Wall) Inner Tank: 76 m Ø Outer Tank 81 m Ø Tank Height: 17 m Capacity: 490,000 barrels



Hydraulic Power Pack for Lifting Jacks





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Double Wall Tank Lifting



Tank Capacity Expansion Jacks

Remarks:

1. Increase the tank's volume capacity by adding one or more shell rings to the bottom.

2. Lift the tank with its roof or with roof column(s) support(s). For this, use Irizar Jacks Model 12 MT-3000 or 25 MT-3000.

3. Irizar jacks can lift the tank to add shells up to 3,000 mm in height by lifting weights over 3,000 MT. The jacks are installed from inside the tank.



Tank Volume Increase

Bolted Tanks



Some customers using Irizar tank lifting jacks have reported building tanks with a height-to-diameter ratio 5:1



Bolted Tanks Lifting Jacks



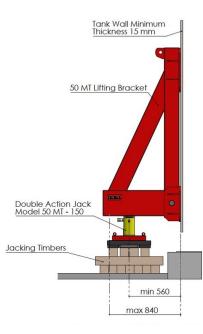


Tank Dismantling Jacks



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Tank Floor Replacement Jacks

Tank Floor Replacement, also known as Tank Bottom Plate Replacement, Tank Annular Plate Replacement, Tank Foundation Removal or Restoration, Tank Repair and Maintenance

Standard Package:

1. Double Action Hydraulic Jack Model 50 MT-150

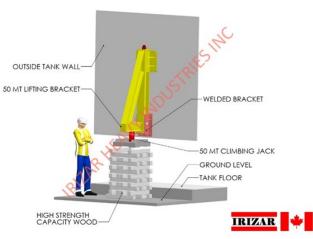
Max lifting capacity: 50 MT Max working capacity: 40 MT, for SF Max arc-distance between consecutive jacks: 5.50 m Stroke: 150 mm Max working pressure: 10,000 PSI Lifting bracket: 50 MT Hydraulic hose: 7.50 m length with quick couples Weight: 369 kilos

2. 10 HP Double Action Power Pack

Model 10K-150-16 Maximum: Sixteen (16) Jacks Model 50 MT-150 / power pack Max working pressure: 10,000 PSI Pump Flow Rate @ 10,000 PSI: 4.2 LPM Pump Flow Rate @ Lower Pressure: 20 LPM Tank size: 60 liters Oil heater: 5.5 Kw Master Controller: required only when two or more power packs are synchronized Dual input power: 380/480V, 50/60Hz, 3P

3. Operation Manual and Electrical Diagram

4. One year <u>Warranty</u>



Note:

Jacking timbers are not included. Sixty timbers are required for lifting a height of 1.20 m. Dimensions (mm): 1000 x 100 x 100.

Facts:

Reparation work is performed without obstructions inside the tank.

Features:

- Quick couples: Prevent oil leaks while testing, assembling, or desassembling the jacking system
- Safety release valve included on Power Pack
- Jacks perform at extreme temperatures: From -40°C in the Canadian Arctic or the Russian Siberia; or, up to + 60°C in Saudi Arabia or the Middle East
- For the safety of your employees, always follows the rules and standards of <u>OSHA Act of 1970</u>

Warning:

- Before setting up the jacks the Footing Subgrade must be evaluated by a Professional Geotechnical Engineer. The Footing Subgrade *must comply* with the minimum Assessed Geotechnical Parameter provided by us. Take into consideration local or federal foundation regulations.
- Irizar Heavy Industries Inc *is not liable* for any accidents caused by inappropriate foundations which may lead to property damage, bodily injuries or deaths.
- Max arc-dis between two consecutive jacks *must never exceed* 5.50 m for stability reasons.
- Max jacks working capacity must never exceed 40 MT. The user must take an account the tank lifting weight and snow load at the Jobsite.

