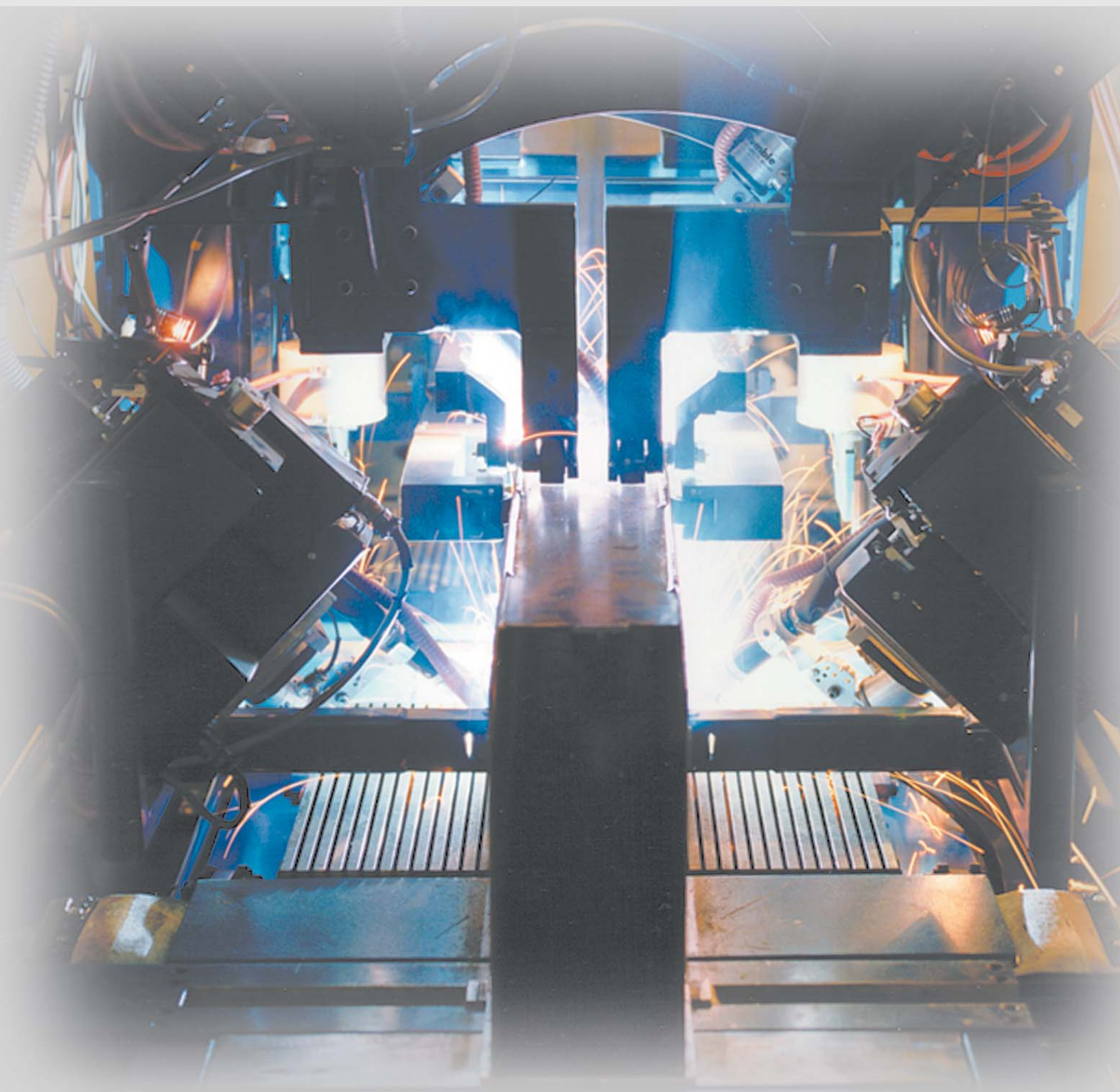


PANDJIRIS®

#1 in Fixed Welding Automation



5151 Northrup Ave., St. Louis, MO 63110, 314-776-6893, Fax: 314-776-8763
web site: www.pandjiris.com



MISSION STATEMENT

This mission statement is the beginning of personal and organizational leadership. It is our vision. It provides overall direction and clarifies purpose and meaning. By referring to it, and internalizing its meaning, we are more likely to choose behavior that serves our values, and reject behavior that opposes them. It is congruent with our Total Quality Management philosophy.

PANDJIRIS IS A TEAM OF HIGHLY MOTIVATED INDIVIDUALS dedicated to the sales, design, manufacture, service, and installation of automatic arc welding systems and positioning equipment characterized by superb quality and economic viability. Our *strategy* is to thoroughly understand our customers' needs and respond to them with flexibility and commitment.

Our People

We are committed to the recruitment and development of the best individuals in our industry. We strive to provide our people personal and economic security, physical safety, and a high quality of work life. We provide them with opportunities to grow and learn, and to take pride in the successes of the organization. We maintain an open-door policy at all levels, encouraging the flow of communication and exchange of ideas. We foster an atmosphere of clear expectations and proactive involvement. We recognize the effort and importance of each team member and his or her active role in the success of the entire company. We expect Pandjiris people will be known for their character, commitment, competence, integrity, and teamwork.

Our Customers

We are committed to providing our customers with products and services of superior quality. We seek to exchange guidance and training. We strive to exceed our customers' expectations in terms of quality, innovation, service, delivery, and price. We serve our customers in a manner that is fair, honest, courteous, dependable, and professional. We are responsive to our customers and dedicated to their satisfaction. We seek to earn and deserve our customers' loyalty.

Our Suppliers

We are committed to identifying and developing long-term relationships with the best providers of materials and services. We promote cooperation, involvement, and mutual benefit through clearly defined expectations and understanding. We expect our suppliers as partners and team members to be dependable and fair, and to provide superior products and services on-time.

Our Industry

We are committed to leading the "Positioning and Automated Welding Solutions" field through integrity, innovation, flexibility, and dedication to customer satisfaction. We will maintain an active leadership role in the welding industry by promoting research to improve technology applicable to our products and by promoting safety throughout industry. We strive for shared growth and mutually profitable relationships with leading welding equipment manufacturers.

Our Communities

We are committed to the enhancement of the communities in which we are a part, through the economic vitality and aesthetic value of our property, and by our leadership and active participation in community affairs.

Through following this mission statement, Pandjiris has become

#1 in Fixed Welding Automation

Pandjiris Provides Solutions!

For over 50 years, Pandjiris has provided efficient, safe, consistent, and reliable automated welding and positioning solutions. During this time, Pandjiris' primary focus has been meeting and exceeding our customer's expectations. With a wide range of standard equipment combined with engineering expertise Pandjiris has the flexibility to design and manufacture automated systems for almost any application across a wide range of industries: aerospace, aviation, shipbuilding, HVAC, transportation, truck and trailer body building, pressure vessels, and pipe fabrication among others. Pandjiris application engineers take the time to get to know a customer's unique situation and work with the company to develop a system that meets its needs.

As a result Pandjiris is recognized in North America and in many countries around the world as #1 in providing Fixed MIG (GMAW) and Subarc (SAW) Automated Welding Solutions and its expertise in developing solutions for TIG and plasma applications. Pandjiris continues to work harder and smarter to meet or exceed customers' expectations. By working smarter Pandjiris has been able to hold prices down despite labor and materials increases. This was accomplished through improved productivity. Similar solutions can help you do the same.

Can you buy cheaper? Yes, you may be able to purchase individual components for less, but you will find it very difficult to buy more economical Fixed Automated Welding Solutions generating a quicker payback. No one packs more value for the dollar into their Automation Systems. Besides steel, electrical and mechanical components, Pandjiris solutions include years of design experience across a wide range of applications, the expertise of our welding technicians, the skill of our fully trained fabricators, welders, and electricians, the watchful eye of our quality assurance department, support from customer service and parts departments, and the dedication and commitment of all our team members to bring our customers the best solutions possible.

While Pandjiris celebrates over 50 years of growth, it looks toward even greater opportunities for service to welding, joining and positioning industries in the 21st century.

Major Industries Served:

- Aerospace**
- Aviation**
- HVAC**
- Pipe Fabrication**
- Pressure Vessels**
- Railroad Car Manufacturing**
- Shipbuilding**
- Truck & Trailer Building**

PANDJIRIS® POSITIONERS

Features:

- Heavy duty integral tilt gear and king pin housing at the heart of Pandjiris positioners ensures smooth turning and tilting.
- Tilt motors are electrically activated mechanical AC brake motors
- High quality worm gear reducers for smooth operation
- Minimal backlash
- Solid state controls with dynamic braking on the rotation drives
- Universal plug allows for easy installation and changeout of footswitches, hand pendants, and tachometers.
- 360 degree rotation, 135 degree tilt on most cantilevered models
- High frequency protected
- Fixed base and adjustable base models available
- Powered elevation available on most models

Benefits:

- Built to last! Many Pandjiris positioners are still in production for 20 years or more!
- Optimal welding position produces more consistent, better quality welds
- Worm gears provide smooth operation even under heavy loads for consistent welds at all speeds and loads

Available options:

- Forward/stop/reverse footswitch
- Fast/slow footswitch
- Digital tachometer
- Dial Weld
- Tach feedback
- Welding grounds
- Grippers

PANDJIRIS HAS A FULL LINE OF POSITIONERS in numerous standard models. Cantilevered models range from 300-pound units up and include adjustable and fixed based models on the smaller positioners, and power elevating models on the larger units. Various models and types can be custom manufactured to fit nearly every requirement, such as drop center positioners and gas chambered positioners. Our positioners are often combined with a manipulator to produce a work cell for high quality, efficient, automated welding applications.



60 Ton Positioner



Mini Pro

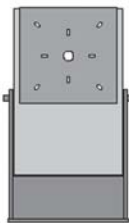
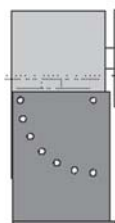
If you have special applications, contact our distributor or representative nearest you or Pandjiris directly. We manufacture positioners to fit your exacting needs at a reasonable cost and payback schedule.

Whether used as a stand-alone unit or as part of a complete system, Pandjiris positioners provide years of reliable, productive service.

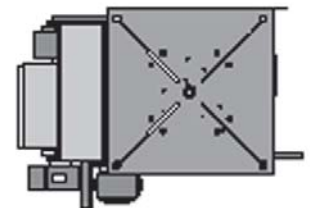
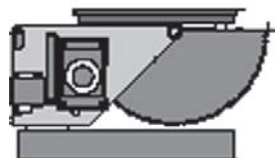
Model	Load Cap.	Load Ecc.	Table Diameter	Tilt Range	RPM	Height
Mini Pro	350 lbs.	N/A	8" Diam. 3 Jaw Chuck	0 - 90	0.65 to 13.00	14-1/2"
Alpha 5-3	500 lbs.	3 in.	12 in.	0 - 90 (1)	0.27 to 6.70	26-3/4"
Beta 12.5-5	1,250 lbs.	5 in.	24 in.	0 - 90 (1)	0.05 to 1.52	40"
15-4 AB	1,500 lbs.	4 in.	24 in.	0 - 135 (2)	0.08 to 1.60	23-1/2" to 37-1/2"
30-6 AB	3,000 lbs.	6 in.	30 in.	0 - 135	0.07 to 1.40	33" to 53"
30-12 AB	3,000 lbs.	12 in.	42 in.	0 - 135	0.03 to 1.10	35-1/2" to 55-1/2"
45-12 AB	4,500 lbs.	12 in.	48 in.	0 - 135	0.03 to 0.97	39" to 57"
60-12 AB	6,000 lbs.	12 in.	48 in.	0 - 135	0.04 to 0.80	44" to 68"
100-12 AB	10,000 lbs.	12 in.	54 in.	0 - 135	0.025 to 0.75	48-1/8" to 78-1/8"
120-12 AB	12,000 lbs.	12 in.	54 in.	0 - 135	0.02 to 0.73	58-1/2" to 87-7/8"
200-12 AB	20,000 lbs.	12 in.	59-1/2 in.	0 - 135	0.18 to 0.54	58" to 88"
400-12 AB	40,000 lbs.	12 in.	84 in. sq.	0 - 135	0.01 to 0.50	70" to 114"
600-12 AB	60,000 lbs.	12 in.	96 in sq.	0 - 135	0.017 to 0.50	80" to 120"

Models 15-4 through 30-12 available in either fixed base or adjustable base models. Specifications given are for the adjustable base models.

* manual tilt standard; (1) pinned tilt positions; (2) fixed base model has manual tilt.



Alpha & Beta Models



Model 15-4 through 600-12



45-12 VPL

PANDJIRIS® QUICKSET GRIPPERS

Features:

- Self-centering
- Can't be clogged by splatter and steel chips
- Quick-change reversible jaws

Benefits:

- Easy change out of workpieces
- Safety device prevents gripper from being overtorqued

Available Options:

- Hardened, serrated jaws for maximum gripping capacity
- Circular, knurled jaws for rectangular, oval, and odd-shaped workpieces
- Extended length jaws
- Light gauge jaws
- Grippers to handle heavier weights are available

PANDJIRIS QUICKSET GRIPPERS ARE SPECIALLY DESIGNED and built for the welding industry. These grippers incorporate many features that make them especially suitable for the welding environment. These features include single point cam operation of the jaws and adjustable quick change reversible jaws that can be positioned for small and large diameter workpieces. Heavy duty construction and a completely enclosed face prevents flux and weld splatter from impairing the operation of the gripper.



TJ-20 Gripper and Model A Gripper

The self-centering mechanism makes changing parts quick and easy. The three standard jaws and three ball lock pins provided with the gripper ensure quick location of the approximate diameter of the part. A few turns of the handle moves the jaws simultaneously and equally to self center and lock the part in place. A safety device prevents the gripper from being overtorqued.



Gripper with Workpiece

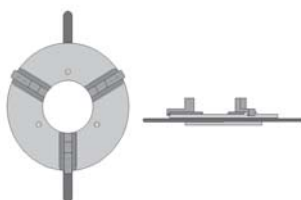


Jaws: Standard, HE, Serrated and Hardened

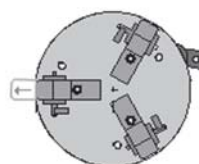


100-12 Positioner with C-48 Gripper

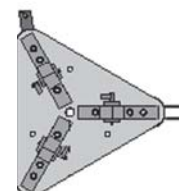
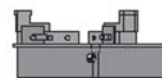
Model	Clamping Range	Wt. Capacity	Allowable Overhang	Length	Width	Height	Recommended Positioner*
J-15	3/8" to 15"	250 lb.	1"	9-1/2"	6"	2-3/8"	Alpha & Beta only
TJ-20	1" to 20"	1,000 lb.	5"	10-1/4"	9"	6-7/16"	15-4
A	1-1/2" to 31-1/4"	3,000 lb.	5"	15-1/2"	15-1/8"	7-3/16"	15-4 thru 30-12
B	1-1/2" to 44-3/8"	3,000 lb.	5"	22"	20-7/16"	7-3/16"	15-4 AB thru 30-12
B-60	1-1/2" to 68"	3,000 lb.	5"	29-13/16"	20-7/16"	7-3/16"	30-6 AB thru 30-12
C-48	3" to 52"	7,500 lb.	5"	26-1/8"	24-7/8"	9-1/2"	30-12 thru 60-12
C-60	3" to 68"	7,500 lb.	5"	32-1/8"	24-7/8"	9-1/2"	30-12 thru 60-12



J-15 Gripper



T-J 20 Gripper



Models A through C

PANDJIRIS® TURNING ROLLS

Constant Centerline

Features:

All Models

- Hand pendant with forward/stop/reverse, speed potentiometer, and fast button is standard
- Universal plug allows for easy installation and changeout of footswitches, hand pendants, and tachometers.
- Variable speed controls
- Heavy-duty construction for longer service life
- High quality worm gear reducers for smooth operation
- Solid state controls with dynamic braking on the rotation drives

MM Series:

- Constant centerline
- Superior worm gears
- Quick, accurate roll center changes
- Positively driven drive roll connection

Benefits:

All Models:

- Consistent quality

MM Series:

- Increased productivity: quick turnover minimizes downtime, increases productivity
- Versatile: accommodates workpieces with projections and overhung loads
- Accurate: precision roll adjustment settings
- Space saving: requires less floor space than other rolls their size.

Available Options:

- Forward/stop/reverse footswitch
- Fast/slow footswitch
- Preset digital tachometer
- Steel wheels
- Overload discs
- Thrust rolls
- Anti-skewing system
- Spring loaded casters

PANDJIRIS MANUFACTURES A COMPLETE LINE OF CONSTANT CENTERLINE TURNING ROLLS.

The constant centerline models include:

THE PIPER SERIES with a capacity range of 1,500 lbs. to 10,000 lbs.: Mini Pipers, Piper 3, and Super Piper. Designed for the smaller capacity applications, these turning rolls are no light weights when it comes to providing the same reliability and endurance of the larger models.

THE TANKER SERIES with a capacity range of 8,000 to 15,000 lbs.: Tanker 80/40 and Tanker 150/75. Pandjiris designed these Turning Rolls to meet the needs of the weld shop that handles a wide range of diameter sizes. Since there are no wheel adjustments for different diameters, they maintain a

constant centerline, providing a quick change over from one size workpiece to another.

THE MISSOURI MULE (MM) SERIES with a capacity range of 30,000 lbs to 180,000 lbs. or more. These turning rolls are the true work horses of the industry. Designed for heavy-duty use and quick change-over from one size workpiece to another, these turning rolls provide high quality, reliability, and economy by minimizing down time. Since they maintain a constant centerline, they are an excellent choice to use in combination with a manipulator for applications that require both circumferential and longitudinal automated welding.



Tanker 80 Turning Rolls

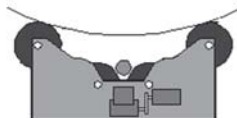


MM-60/30-T

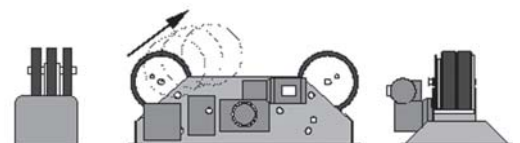
Model	Turning Capacity (Power Roll)	Load Capacity (Each Unit)	Diameter Range	Wheel Diameter	Combined Wheel Face	Speed Range	Length	Width	Overall Height
Mini Piper	1,500 lbs.	750 lbs.	2" to 16"	6"	2"	1.0 to 50 ipm	15-3/8"	7-3/8"	8-1/2"
Piper 3	6,000 lbs.	2,000 lbs.	3-1/2" to 40"	12"	2-1/2"	3.3 to 66 ipm	35-5/8"	18-1/16"	15"
Super Piper 10/5	10,000 lbs.	5,000 lbs.	10" to 48"	12"	1-7/8"	9 to 180 ipm	39"	17"	15"
Tanker 80/40	8,000 lbs.	4,000 lbs.	4" to 144"	12"	10-7/8"	5.0 to 105 ipm	58-7/8"	17"	26-11/16"
Tanker 150/75	15,000 lbs.	7,500 lbs.	3.5" to 144"	16"	4"	4.4 to 88 ipm	64"	20"	26"
MM-15/5-T	30,000 lbs.	10,000 lbs.	4" to 144"	16"	4"	2.1 to 63.5 ipm	61.25"	29.25"	32.11"
MM-30/15-T	60,000 lbs.	30,000 lbs.	12" to 16'	20"	10"	1.7 to 50.2 ipm	94"	40.25"	42.16"
MM-60/30-T	120,000 lbs.	60,000 lbs.	12" to 16'	20"	15"	2.0 to 61.4 ipm	94"	42"	42.16"
MM-90/45-T	180,000 lbs.	90,000 lbs.	12" to 16'	20"	32"	2.0 to 61.4 ipm	94"	47"	42.16"



Piper Series



Tankers



MM Rolls

PANDJIRIS® TURNING ROLLS

Features:

PR Series:

- Hand pendant with forward/stop/reverse, speed potentiometer, and fast button is standard
- Universal plug allows for easy installation and changeout of footswitches, hand pendants, and tachometers.
- High quality worm gear reducers for smooth operation
- Solid state controls with dynamic braking on the rotation drives
- Variable speed controls
- Heavy-duty construction for longer service life
- Torque-tube wheel design
- Sealed bearings
- Alloy shafts
- TEFC motors with electronic drives
- "Dead shaft" axle imposes no torque load
- Close coupled load reactions reduce bending moment.
- Low position of reduction gearing allows maximum clearance
- Gear is rigidly connected to torque tube
- Single reduction worm gearing delivers more power less heat

Benefits:

- Consistent quality
- Increased productivity
- Cost savings: efficient power

Available Options:

- Forward/stop/reverse footswitch
- Fast/slow footswitch
- Preset digital tachometer
- Steel wheels
- Modified wheel materials
- Modified wheel spacing
- Overload discs
- Anti-skewing mechanism
- Spring-loaded caster mounts
- Thrust rolls
- Travel cars

PANDJIRIS PR SERIES HAS THE TORQUE-TUBE WHEEL DESIGN. PR Rolls are ideal for turning varying diameter cylindrical work pieces.

These large capacity (10,000 lbs to 480,000 lbs. or more), heavy duty turning rolls are manufactured by Pandjiris to exceed industry standards for performance and reliability while being priced competitively. Use them in job shop applications or integrated custom systems.

Torque-Tube Wheel Design



PR-100 Turning Rolls

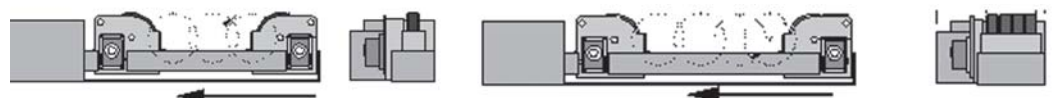


Track Tread Turning Rolls



PR-270 Turning Rolls

Model	Turning Capacity (Power Roll)	Load Capacity (Each Unit)	Diameter Range	Wheel Diameter	Combined Wheel Face	Speed Range (ipm)	Tractive Effort (lbs.)	Motor (HP)
PR-10/5	10,000 lbs.	5,000 lbs.	8" to 144"	12"	4"	3.0 to 80.0	462	1/3
PR-30/10	30,000 lbs.	10,000 lbs.	6" to 180"	16"	4"	2.1 to 63.0	1,385	1
PR-50/17	50,000 lbs.	17,000 lbs.	6" to 180"	16"	8"	2.1 to 63.0	2,310	1.5
PR-100/34	100,000 lbs.	34,000 lbs.	12" to 252"	20"	10"	2.8 to 66.2	4,619	3
PR-180/60	180,000 lbs.	60,000 lbs.	12" to 252"	20"	15"	3.0 to 75.0	8,314	5
PR-270/90	270,000 lbs.	90,000 lbs.	12" to 252"	20"	20"	2.0 to 48.0	12,471	3
PR-400/200	400,000 lbs.	200,000 lbs.	12" to 252"	20"	24"	5.0 to 40.0	18,476	5
PR-480/120	480,000 lbs.	120,000 lbs.	12" to 252"	20"	25"	4.5 to 39.0	22,171	5



PANDJIRIS® MANIPULATORS

Features:

- Heavy duty box beam construction
- Remote pendant with joystick
- Precisely-machined anti-fall device
- 360 degree rotation
- Rack and pinion drive system for boom movement
- Precision machined ways

Benefits:

- Consistent quality
- Increased productivity
- Cost savings

Available Options:

- Free-standing base
- Forward/stop/reverse footswitch
- Fast-slow footswitch
- Preset digital tachometer
- Tach feedback
- Variable speed hoist
- "Step-Over" overlay control
- Flashing red lights for column top and boom end
- Operator seats
- Welding support platform
- Remote mounting of wire reels
- Bulk wire systems
- Flux delivery and recovery systems
- Power track for cable
- Operator catwalk and ladder
- Power column rotation
- Wiper brushes
- Weld current grounds
- Screw lift
- Slides and swivels
- Travel cars
- Weld head mountings
- Tilting boom
- Remote operator stations
- Programmable operation
- Small ID weld heads
- Fume exhaust mounting

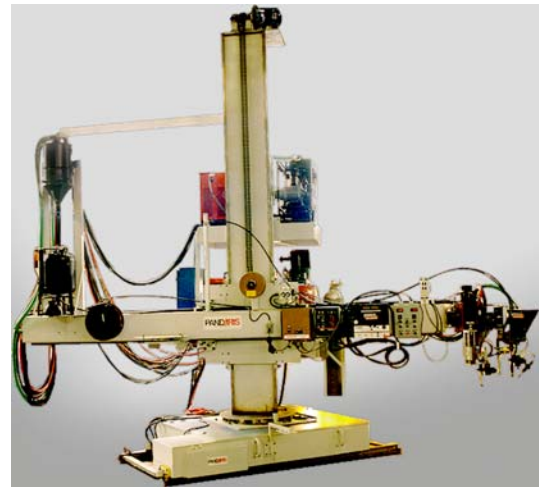
PANDJIRIS OFFERS MANIPULATORS to handle any positioning job from our small manual manipulators to systems with 35' stroke and more. Whether you need a basic manipulator or a fully integrated system, Pandjiris can meet your needs. When your application calls for long continuous welds or torch placement for hard-to-reach parts, call Pandjiris or your Pandjiris Representative for a quote on a system to meet your specifications.



6x6-M Manual Manipulator

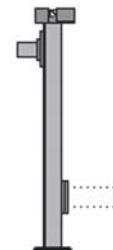
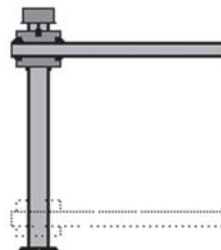


1400 Manipulator with SAW



Series 1600 Manipulator

Model	Boom Stroke	Vert. Boom Travel	Overall Wt. Capacity	Height
4X4-M	48"	10" to 58"	300 lbs.	66"
6X6-M	72"	10" to 82"	300 lbs.	90"
Double 8	8'	20-5/8" to 112"	500 lbs.	11' 10-3/4"
1100	11'	16-7/8" to 11' 9-7/8"	1000 lbs.	15' 1-5/16"
1400	14'	21-1/8" to 14' 9-1/8"	1500 lbs.	18' 10-1/2"
1600	16'	26-3/8" to 16' 8-3/8"	2200 lbs.	21' 8-3/4"



PANDJIRIS® SLIDES & SWIVELS

Features:

- Precision, hardened guide rods
- Horizontal or vertical movement
- Compound easily

Benefits:

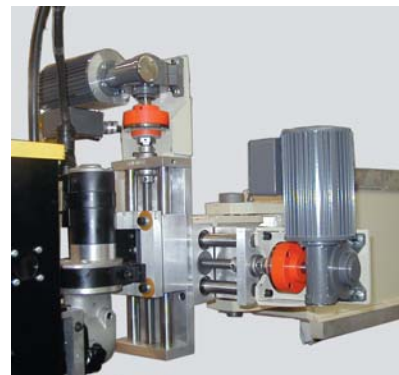
- Precise torch placement

Options:

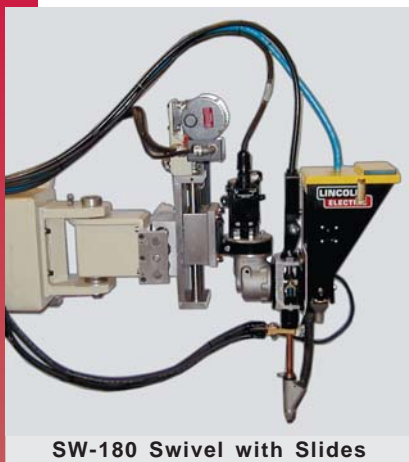
- Additional stroke lengths
- Screw covers
- Bellows to cover guide rods & screw
- Universal torch mounting brackets

A QUALITY SLIDE IS ESSENTIAL for the proper alignment of the torch to the weld area. Pandjiris slides assure you that the torch will be accurately positioned with a smooth easy stroke. Both manual and power slides may be used vertically or horizontally so they can be easily compounded. Few slides can match the weight capacity or superior operation of Pandjiris slides.

Mounted on Pandjiris manipulators, side beams, or other torch articulation equipment, these heavy-duty slides are ideal for fine horizontal and vertical adjustments to the torch. Varying lengths of stroke are available to meet nearly all weld requirements, either powered or manual.



Compound 61-P Slides



SW-180 Swivel with Slides

MODEL 21 & 61 SLIDES are available either in a manual or powered style. 1" diameter precision, hardened and ground guide rods provide a perfect path for the sealed linear ball bushings. This provides easy and accurate movement of the weld head.

MODEL 615 SLIDE comes with the same precision as the 21 and 61 slides, but is built for heavy-duty applications with a 1-1/2" diameter guide rod.

Pneumatic Slides are available in both 1" and 1-1/2" guide rod versions.



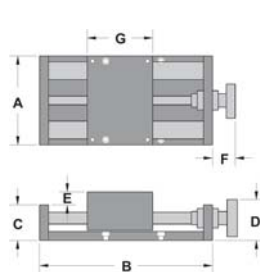
Swivel

PANDJIRIS SW180 SWIVEL is ideal for mounting all welding head apparatus. It swings at +90°, 0°, -90° about a vertical axis. It allows orientation of the welding torch, flux pick-up and seamtracker probes without disassembly or remounting. The SW 180 is ideal for side beam carriages or manipulators to allow both circumferential and longitudinal welds.

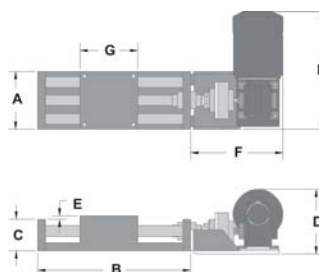
A rotary swivel for rotation about a horizontal axis is also available.

Additional head adjustments for lead/lag and impingement angles are offered through the universal torch mounting brackets.

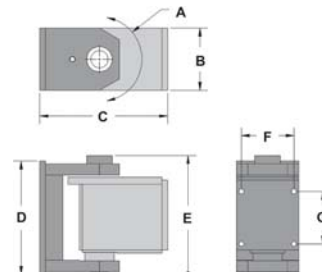
Model	Load Capacity	Ship Weight (lbs.)	A	B	C	D	E	F	G	H
21-M/61-M	200 LBS @ 6"	18/34	5.5	8-1/2 Plus Stroke	3	4	0.3125	3.5	5.5	-
21&61-P	200 LBS @ 6"	22/38	5.5	8-1/2 Plus Stroke	3	6.25	0.3125	8.88	5.5	10.19
615-M	500 LBS @ 12"	164	10	13-9/16 Plus Stroke	3.5	4.5	1.06	3.5	10	-
615-P	500 LBS @ 12"	184	10	13-9/16 Plus Stroke	3.5	6.19	1.06	8.75	10	12.44
SW-180	-	60	180	5.5	11.25	10	10.5	4.625	4.625	-



Manual Slides



Power Slides



SW-180 Swivel

PANDJIRIS® SEAMERS

Features:

- Copper back-up bar with back-up groove machined to customer specifications
- Water-cooled mandrel
- Two seam alignment gauges
- Variable pressure aluminum finger clamping system
- Safety air interlock on mandrel latch
- Machined side beam track
- Rack and pinion carriage travel

Benefits:

- Consistent quality
- Increased productivity
- Cost savings

Optional Accessories

- Replaceable copper tip fingers
- Replaceable stainless steel tipped fingers
- Stainless steel back-up bar
- Water cooler
- Powered elevation
- Side beam track extension
- Power cable support track
- Powered end latch
- Automatic pneumatic seam alignment gauges
- Vertical seamers
- Cars and conveyors
- Computerized controls
- Rotating mandrels
- Oscillation
- Automatic voltage control
- Wire feeding
- Video
- Seam tracking
- Slides
- Carriages
- Remote mounting of reels or flux delivery and recovery systems
- Torch lead/lag brackets
- Weld head mountings
- Gas backup bars
- Fume exhaust mounting
- Solid strip fingers
- Adjustable mandrels
- Pneumatic torch lift
- Patented rocking back up bar

OUR STANDARD LONGITUDINAL SEAMERS ARE AVAILABLE as either external or internal/flat sheet models. They are specifically designed for making 100% penetration, single pass welds on cylinders and flat sheets while minimizing or eliminating heat distortion to the material.

Through a unique engineering design, buildup of magnetism is minimized which reduces or eliminates arc blow.

Pandjiris' standard external seamers are cantilevered from one end to allow

loading and unloading of cylinders and other closed sections requiring a longitudinal seam. Pandjiris seamers provide exceptional visibility around the weld head and work area. Typical seamers are used to perform butt welds, but with slight modifications, certain corner joints and lap welds can also be welded efficiently such as cones and bowed shapes.

Pandjiris has designed a quick-change rocking back up bar. This patented design minimizes down time when changing back up bars. It is ideal for situations where seamers are run continuously, different materials are being welded, or in applications where materials of different thicknesses are being welded.

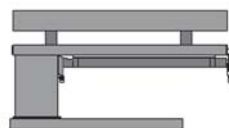


264-I/50-FS Internal/Flat Sheet Seamer

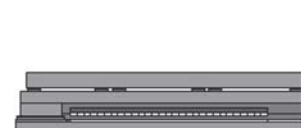
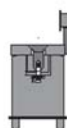


6-Foot External Seamer

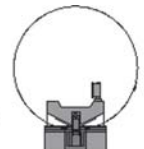
Model	Weld Length	Clamping Length	Workpiece Dimensions	Material Thickness	Overall Length	Overall Width	Overall Height	Mandrel Height	Approx. Shipping Weight
External Seamers									
24E3.5-30	24"	30"	3.5" I.D. to 30" O.D.	.020" to 3/8"	73"	33-5/16"	65-1/16"	37"	2,400 lbs.
36E3.5-30	36"	42"	3.5" I.D. to 30" O.D.	.020" to 3/8"	86"	33-5/16"	65-1/16"	37"	2,500 lbs.
48E4.2-30	48"	54"	4.2" I.D. to 30" O.D.	.020" to 3/8"	98"	34-5/16"	65-7/16"	37"	2,800 lbs.
60E5.2-30	60"	66"	5.2" I.D. to 30" O.D.	.020" to 3/8"	110"	34-5/16"	65-7/16"	37"	3,600 lbs.
72E6-36	72"	78"	6" I.D. to 36" O.D.	.020" to 3/8"	122"	34-7/16"	71-7/16"	43"	4,000 lbs.
96E8-36	96"	102"	8" I.D. to 36" O.D.	.020" to 3/8"	149"	34-7/16"	71-1/2"	43"	5,500 lbs.
120E9-36	120"	126"	9" I.D. to 36" O.D.	.020" to 3/8"	168-1/4"	34-7/16"	73-7/16"	45"	6,500 lbs.
144E6-36	144"	150"	11" I.D. to 36" O.D.	.020" to 3/8"	192-1/4"	34-7/16"	73-7/16"	45"	8,500 lbs.
168E14-36	168"	174"	14" I.D. to 36" O.D.	.020" to 3/8"	22' 2"	34-7/16"	73-7/16"	45"	9,750 lbs.
192E14-36	192"	198"	14" I.D. to 36" O.D.	.020" to 3/8"	22' 6-1/2"	45-3/8"	81"	47-3/8"	11,000 lbs.
Internal Seamers									
120-I/50 FS	120"	126"	Min. 50" I.D.	.020" to 3/8"	17' 7-1/4"	43"	59-9/16"	21-5/16"	9,450 lbs.
144-I/50-FS	144"	150"	Min. 50" I.D.	.020" to 3/8"	19' 7-1/4"	43"	59-9/16"	21-15/16"	10,490 lbs.
168-I/50FS	168"	174"	Min. 50" I.D.	.020" to 3/8"	14' 6"	43"	59-9/16"	21-15/16"	11,780 lbs.
192-I/50-FS	192"	198"	Min. 50" I.D.	.020" to 3/8"	23' 9-3/4"	43"	60-1/16"	23-15/16"	13,865 lbs.
216-I/50-FS	216"	222"	Min. 50" I.D.	.020" to 3/8"	26' 1-1/4"	43"	60-1/16"	23-15/16"	15,950 lbs.
240-I/50-FS	240"	246"	Min. 50" I.D.	.020" to 3/8"	28' 1-1/4"	43"	60-1/16"	23-15/16"	17,520 lbs.



External Seamers



Internal Seamers



PANDJIRIS® SIDE BEAMS & CARRIAGES

Basic Carriage Control Functions:

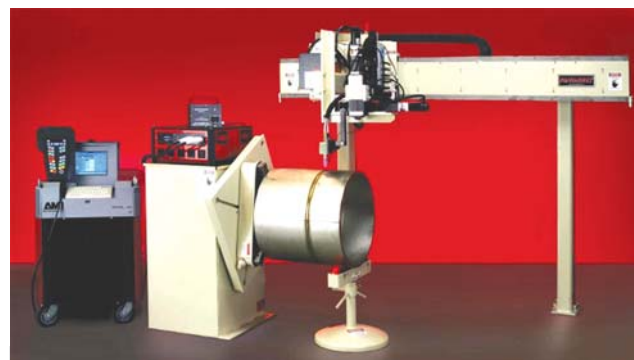
- Power on/off switch and light
- Auto/manual switch and light
- Forward/off/reverse
- Speed potentiometer
- Rapid pushbutton
- Socket for auto travel

Optional Carriage Controls & Accessories

- Limit switch and return home
- Digital speed indicator
- Weld start/stop
- Torch lift circuit
- Weld head mountings
- Slides and swivels
- Tach feedback
- Manual disengage
- Manual carriage
- Pneumatic torch lift
- Automatic voltage control
- Oscillation
- Seam tracking
- Video
- Fume exhaust mounting
- Torch lead/lag brackets
- Remote mounting of reels or flux delivery and recovery systems
- Fixed and elevating stanchions
- Power cable support track
- "Step over" overlay control
- Bulk wire systems

Variable Speed Carriages

Pandjiris offers three sizes of heavy-duty side beam carriages of welded steel construction. Pandjiris travel carriages provide maximum tracking accuracy of the arc, while requiring minimum power for efficiency. These precision machined welding carriages roll on hardened, anti-friction bearing-equipped rollers. All drives are positive rack and pinion type to eliminate slippage, and feature SCR-Solid State Control. Power driven rapid traverse is standard, allowing the operator to return the carriage quickly without disturbing the preset welding speed. Pandjiris carriages are compatible with all major welding processes.



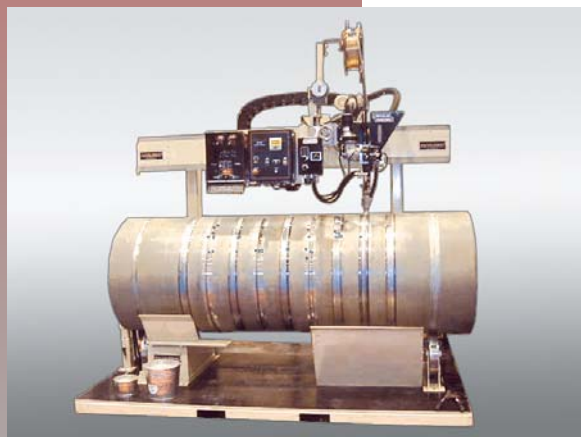
Side Beam and Carriage System

Side Beam Track

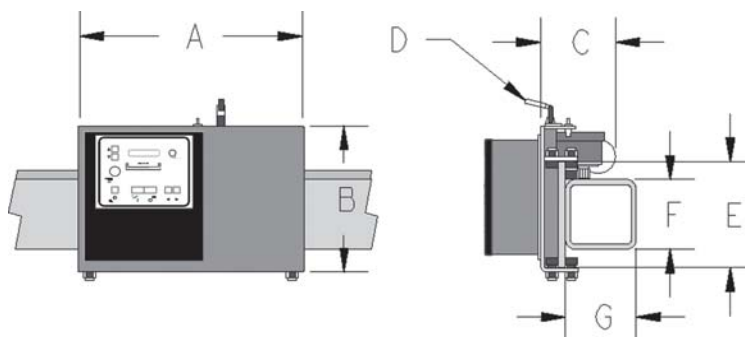
Pandjiris also manufactures two precision built models of side beam track to provide a complete side beam track welding system. The heavy-duty box beam and precision track blade assembly is adjustable and repeatable for accurate alignment of carriage and welding torch. There are two sizes of side beams. A 12-inch blade is designed to support the Pandjiris 1,500 lb. and 2,100 lb. capacity carriages. The 15-inch blade is also available for extremely heavy-duty applications using the VSC 40-12 Carriage with a 4,000 lb. weight capacity at 12 inches off the face of the carriage.

Stanchions to support the side beam are available as either a standard five-foot height or with manual or powered adjustable height.

	A	B	C	D	E	F	G
VSC-15-3	26-1/4"	17"	8-1/2"	Disengage Lever	12"	8"	6"
VSC-21-12	26-1/4"	17"	10"	Optional	12"	8"	6"
VSC-40-12	48-3/4"	20"	6-5/8"	N/A	14-1/2"	10"	10"



Side Beam and Carriage System



PANDJIRIS® EZ LINK® SERIES CONTROLLERS

Features

- PLC-based control technology
- Controls most Pandjiris DC motors
- For longitudinal welding and circumferential welding
- Solid-state circuitry
- Easy-to-read digital display
- User-friendly front panel layout
- Heavy-duty industrial pushbuttons
- Large mushroom head emergency stop switch increases safety
- Additional "Arc Start" outputs allow for multiple and tandem arc or starting ancillary equipment such as oscillators and flux recovery units.

Operator Manual Functions

- Jog Fwd/Rev (at preset jog speeds)
- Jog Rapid Fwd/Rev (at preset rapid speed)
- Maintained Fwd/Rev Rapid Movement
- Dedicated torch up/down buttons
- Weld Start/Stop

Programmed Sequence Functions

- Travel Speed
- Weld Timer On/Off
- Weld Counter on/off
- Weld Time
- Weld Distance
- Travel Start Delay
- Travel Stop Delay
- Pass Counter (PVSC-C Only, Requires Limit Switch)
- Diameter (PVSC-C Only)
- Auto Torch Lift On/Off
- Torch Lower Time
- Torch Lift Time and Delay Time
- Return Home On/Off
- Home Delay Time
- Rapid Speed %
- Jog Speed %
- Auto finger unclamp on/off
- Finger unclamp time and delay time

PLC-BASED CONTROLS

Pandjiris' EZ LINK® Series Controllers are user-friendly, PLC-based controllers designed to provide flexibility for the operator. The EZ LINK® Controllers put automated equipment control functions at your fingertips. Welding and motion functions are coordinated in an easy-to-use package.

EZ LINK® Series Controllers are perfect for upgrades and retrofitting your existing equipment, whether it's Pandjiris or another manufacturer.

The front panel layout includes a large graphic 132 x 64 pixels display. Custom-designed PLC program permits a wide range of programmed sequence configurations.

APPLICATIONS

Longitudinal Welding: The PVSC-L controller is standard on all Pandjiris travel carriages. Speed control, travel start and stop delays can be preset. The PVSC-L will control both the travel carriage and initiation of the weld sequence. Weld length can be controlled by a timer distance sensing encoder or limit switch. An automatic home sequence can also be programmed.

Circumferential Welding: The PVSC-C controller is designed for circumferential systems, including precision lathes, positioners, and head-and-tailstock systems. Like the PVSC-L, the controller includes speed control, travel start and stop delays, and the ability to initiate the weld sequence. The PVSC-C controller automatically adjusts surface travel speed based on the part diameter input by the operator. A pass counter permits multi-pass welding with an optional pass counting limit switch arrangement. Weld degrees can also be preset and counted with our optional distance sensing encoder.

Contact your local Pandjiris representative or our St. Louis office to find out how the EZ LINK® Series Controller will make your life EZ'er!



Specifications:

PLC Based Control

115 VAC, 10 Amp Input

Graphical display, 132 x 64 pixels

24 Digital Inputs (Internal PLC)

10 Relay Outputs (Internal PLC)

1 Analog Output (Internal PLC)

* Up to (10) Input Isolation relays

* Up to (8) Inputs: (8) Isolation relays

Dimensions: 15-1/2" T x 13" W x 8-5/8" D

*Based on options purchased

PANDJIRIS® HEAD & TAIL STOCKS

Features:

- Rigid box section frames
- Oversize anti-friction bearings
- Ball bearing motors are totally enclosed and fan cooled
- Worm gear reducers for smooth operation under heavy loads
- Minimal backlash
- Solid state controls with dynamic braking on variable speed models
- Pendants are amphenol plug type which are field installable and interchangeable
- High frequency protection
- Constant speed or variable speed rotation drives

Benefits:

- High productivity: heavy-duty design
- Safety

Options:

- Forward/stop/reverse footswitch
- Fast/slow footswitch
- Preset digital tachometer
- Dial weld
- Tach feedback
- Special voltages
- Copper welding ground
- Grippers
- Drop center to offset eccentric loads

PANDJIRIS HEAD AND TAIL STOCKS are designed to withstand high production cycles yet are cost justifiable at low cycle rates. A variety of Head and Tail Stocks are available including standard units with customized fixturing: power elevation, pinned elevation, rail style, and rail car rotators. In addition, Head Stocks work well with idler rolls and/or out-board support stands for rotating and capturing large bulky parts.

The frames for the Head and Tail Stocks are rigid box section, all-welded construction. Additional rigidity is accomplished by utilizing oversize anti-friction bearings

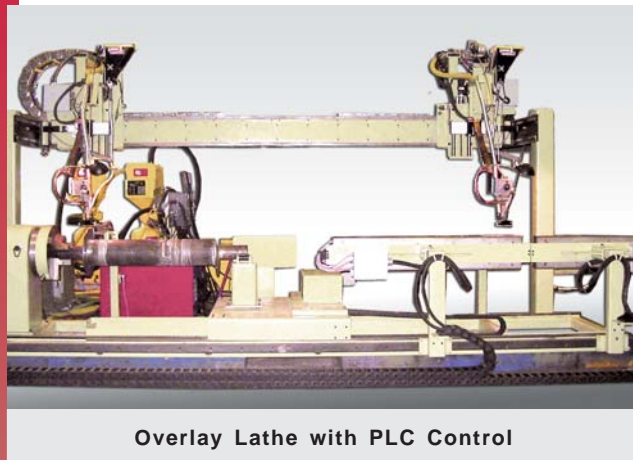


Power Elevating Head & Tail Stock

and by having a welded connection between table and kingpin. The table is driven by an A.C. Brakemotor, through roller chain and sprockets to a high efficiency worm reducer and a final spur gear stage.

Combined with a manipulator or side beam and carriage, our head and tail stocks can provide a semi-automated or fully automated system.

For specific applications, contact your Pandjiris Representative or call us direct. We have a large variety of engineered Head and Tail Stocks available to meet your exacting needs.

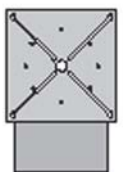
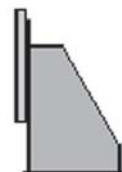
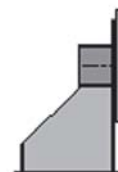
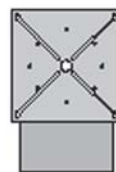


Overlay Lathe with PLC Control

Model	Total Weight Capacity	Rotation Torque (in. lbs.)	Overhung CG	Rotation Centerline	Table	Pilot Hole	Table Thickness
HTS-60	6,000 lbs.	15,000	5"	31-1/4"	30"	2-5/16"x3/16"	5/8"
HTS-120	12,000 lbs.	72,000	12"	36"	48"	3-15/16"x1/4"	5/8"
HTS-200	20,000 lbs.	120,000	12"	36"	48"	5-1/4"x1/4"	5/8"
HTS-320	32,000 lbs.	192,000	12"	50"	59"	5-5/8"x1/4"	3/4"
HTS-400	40,000 lbs.	240,000	12"	50"	59"	5-5/8"x1/4"	3/4"
HTS-500	50,000 lbs.	300,000	12"	58"	60"	6"x1/4"	3/4"
HTS-600	60,000 lbs.	360,000	12"	63-3/4"	59-1/2"	6"x1/4"	3/4"



Longitudinal Overlay Systems



PANDJIRIS® TURNTABLES

Features:

- Constant speed and variable speed models available
- Smooth variable speed table rotation in forward and reverse
- Standard round table equipped with (4) radial tee slots.
- Standard hand pendant with speed control and forward/stop/reverse

Benefits:

- Consistent weld speed for high quality welds

Options:

- Forward/stop/reverse footswitch
- Fast/slow footswitch
- Preset digital tachometer
- Dial weld
- Tach feedback
- Welding grounds
- Modified tables
- Weld fixturing

PANDJIRIS TURNTABLES HAVE LOW PROFILES and provide rotation of parts on heavy steel plate tables. Turning capacities are available for nearly every application up to 150 tons or more. Variable rotation speeds in both forward and reverse are standard with remote pendants housing the speed control and forward/reverse buttons.



250Ton Turntable



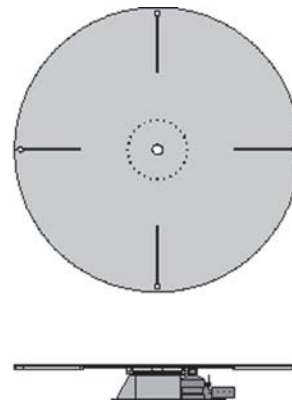
MT-120-4.5-VS 6 Ton Turntable

With options added or as part of a system, Pandjiris turntables can be used in numerous applications: inspection, painting, flame cutting, welding, and much more. Indexing turntables have been designed to meet the exacting needs of robotic applications including a 40,000 lb. capacity model with a 20' diameter that rotated 180° in 15 seconds and positioned itself within $\pm 0.100''$ on the outside perimeter of the table.

Model	Load Capacity	Rotation Torque (in. lbs.)	Rotation Speed (RPM)	Table	Pilot Hole	Table Thickness	Table Height
MT-60-6-VS	6,000 lbs.	4,200	0.05 to 1.06	36"	2-3/8"	1/2"	15-7/8"
MT-120-4.5-VS	12,000 lbs.	18,500	0.043 to .425	48"	2-3/8"	5/8"	16-13/16"
MT-200-12-VS	20,000 lbs.	31,000	0.05 to 1.0	48"	6"	1-3/4"	24-7/32"
MT-400-12-VS	40,000 lbs.	53,500	0.03 to .63	60"	6"	1-3/4"	24-1/4"
MT-800-12-VS	80,000 lbs.	107,000	0.03 to 1.0	72"	6"	2"	19-1/8"
MT-1200-12-VS	120,000 lbs.	107,000	0.007 to 0.20	72"	6"	1-7/8"	18-5/8"



150 Ton Nuclear Turntable



MISCELLANEOUS EQUIPMENT

Pandjiris can design special systems to meet the needs of manufacturers.

PLANISHERS are designed to quickly finish weld joints which would otherwise require grinding to produce a smooth finish.

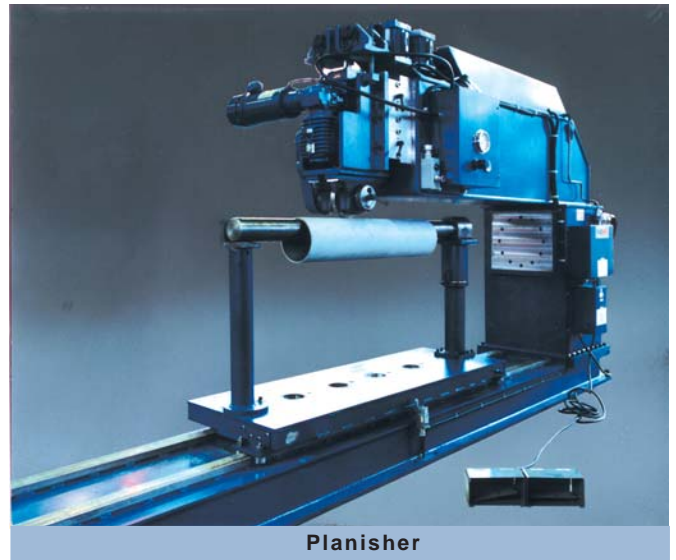
3 O'CLOCK WELDERS are lightweight, self-propelled welding carriages designed to weld horizontal seams on field erected storage tanks. The car performs butt welds inside or outside the tank in either direction. Vertical seams can be produced with special options. Full units weld inside and outside simultaneously.

Pandjiris **WELD LADDERS AND WELD-EVATORS** provide safety and maximum efficiency for welders. They conform to OSHA standards and are constructed of heavy gauge steel.

SPECIAL ELEVATING WORK PLATFORMS AND ROBOTIC LOADER/UNLOADERS are examples of other systems that can be designed for specific applications.



Elevating Work Platform



Planisher



6-axis loader/unloader



Weldevator



Longitudinal Gantry Planisher



Storage Tank / 3 O'Clock Welder

Pandjiris has designed systems to meet the exacting needs of stainless steel applications for many industries ranging from truck manufacturers to food service. Whether laying down a precision weld on stainless steel as thin as .005 or planishing a weld to a smooth finish, Pandjiris' engineering capabilities have designed components that meet the demands of our customers. Pandjiris weld technicians can develop weld procedures for your applications and integrate welding process equipment with our positioning equipment to provide a winning combination for consistent, high quality welds on variety of material thicknesses and sizes.



24' Elevating External Seamer for Stainless Steel Tankers



120" Flat Sheet Seamer with Control Panel



Planishing of Sink Corners

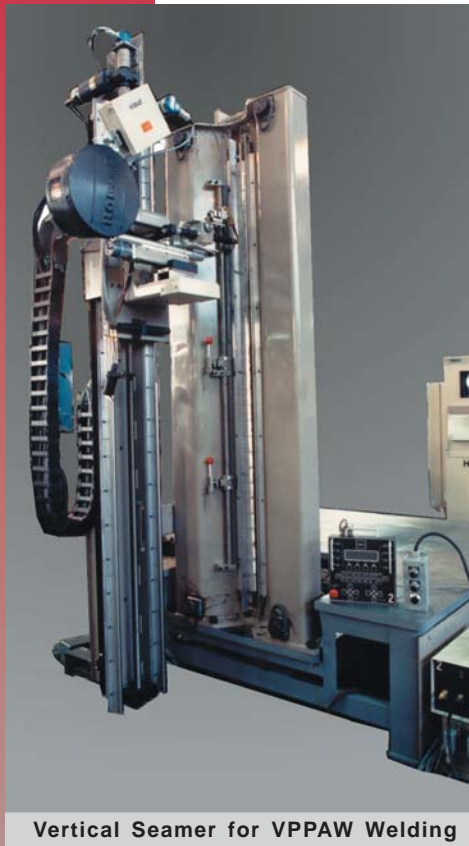


Double-ended seamer for flat sheet and corner welding of stainless steel sinks

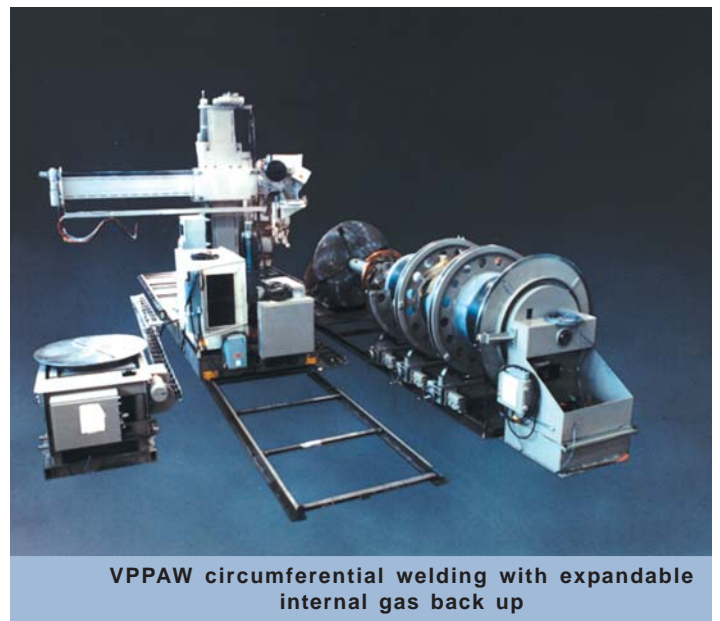
Pandjiris has designed systems to meet the exacting needs of aluminum applications for many industries ranging from small tank manufacturers to aerospace. Whether laying down a precision weld on aluminum tanks or doing multipass welding on aluminum hull sections up to an inch thick, Pandjiris' engineering capabilities have designed components that meet the demands of our customers. Pandjiris weld technicians can develop weld procedures for your applications and integrate welding process equipment with our positioning equipment to provide a winning combination for consistent, high quality welds on variety of material thicknesses and sizes.



Weld Lathe for Aluminum Fuel Tank Welding



Vertical Seamer for VPPAW Welding



VPPAW circumferential welding with expandable internal gas back up



Longitudinal Seamer for GMAW welding of aluminum panels and tanks

Pandjiris' involvement in the history of the aerospace industry spans several decades and has included all the major space programs since the Mariner Project: Ariane (European), Titan, Atlas, the space station, and Delta. This involvement includes providing precision tooling, welding and positioning equipment for high quality welding of the special aluminum alloys often used in these applications.



540" Internal/Flat Sheet Seamer for Delta II



Delta Launch Vehicle Circumferential Welding Cell



Delta III Elevating Work Platform



Precision Rolls for Space Station



Resistance Welding Gantry for Atlas Centaur

Pandjiris manufactures a wide range of standard equipment and special systems for manufacturers of heavy construction equipment. These range in levels of automation from power elevating positioners, special tooling on head and tailstocks, drop center positioners with two axes of rotation, to fully automated boom welders controlled by computer based control systems.

Whatever the system, the end result is increased productivity, quality, and safety for your operation.



Boom Welder



Multi-torch Welding



Touch Screen PLC Control
with Video Monitoring
of Four Torches



Drop Center Positioner with Two Axes of Rotation



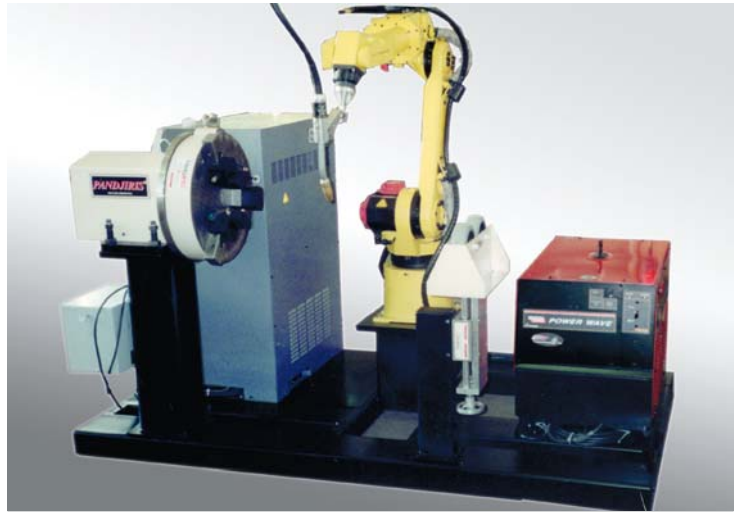
Head and Tail Stock with Specialty Tooling



Power Elevating Positioner

PIPE FABRICATION & PRESSURE VESSELS

Since pipes and pressure vessels come in a multitude of sizes and shapes, Pandjiris' engineers have designed systems to facilitate the welding of various applications from simple pipe fabrication jobs to those meeting the most stringent ASME standards. Whether manually welding a circumferential weld, welding longitudinal external seams, or fitting a weld head in a small diameter pipe 45' long, Pandjiris has met the challenge and improved the manufacturer's productivity and quality.



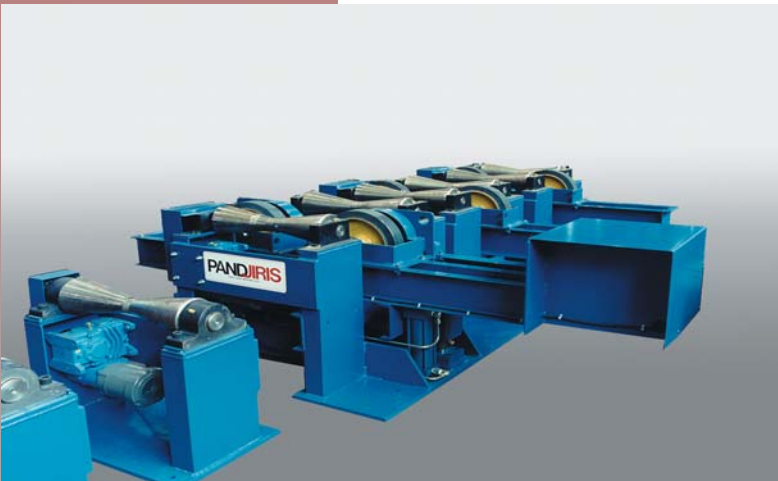
Robotic Pipe Welding Cell with Robotic Head Stock



21" ID Circumferential Welder with 45' Boom



Delta MIG Pipe Welding System



Special Turning & Endo Rolls for Pipe Mill Application



Pipe Shop Applications

Pandjiris has been working closely for many years with several of the large manufacturers of heating and air conditioning equipment to design automated systems that enable them to quickly and accurately weld various workpieces. Pandjiris has met the challenge of designing systems to accommodate the various sizes of elliptical boxes, small ID seam welders, multi-station production cells, and using the same system for longitudinal and circumferential welds.

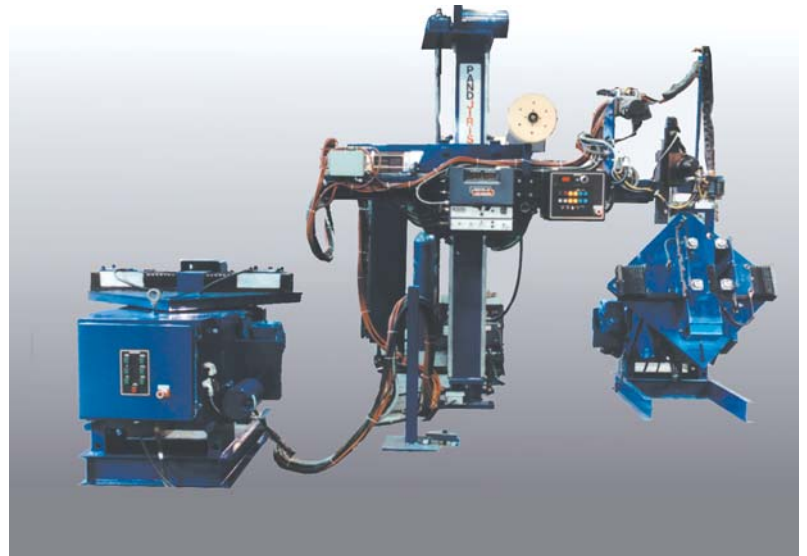
This ability to work with a customer to meet their specific application needs is why these customers keep returning to Pandjiris for their automated positioning needs.



Elliptical Welding System with PLC Multi-Axis Controller



Special 1400 Series Manipulator for Longitudinal & Circumferential Welding



Fully Integrated Multi-Station Automated Production Cell



Small ID Internal/External Longitudinal Seam Welder with Tandem SAW



Side Beam and Carriage System for Longitudinal & Circumferential Welding

RAILROAD CAR, TRUCK, & TRAILER MANUFACTURING

Railroad car, truck, and trailer manufacturers turn to Pandjiris to solve their particular positioning needs. Using weld lathes, head and tail stocks, drop center positioners, and specially designed systems such as the Upper Coupler Welding System, these companies more efficiently, economically and safely manufacture the parts for their products including flat sheets, fuel tank, axles, upper coupler assemblies, and adding stiffeners to side sheets and cross members to floor sheets. The improved quality of the weld enhances the overall integrity of the unit.



Fuel Tank Welder



30-Ton Railroad Car Rotator



Seamer for Flat Sheet Welding



Elevating Head and Tailstock with Flatbed



Trailer Upper Coupler Welding System



Headstock with Outboard Support Stand with Rear Axle Assembly

Pandjiris has provided seamers for several ship design facilities to meet the demanding needs of high quality welds on large, thick plates of steel. These seamers have ranged in size from 10' to 40' and have included specially designed conveyor tables that eliminate the need for pre-tacking by accurately aligning the edges of plates and clamping them.

By working closely with the customer, Pandjiris has developed automated systems that meet the high demands of the shipbuilding industry.



10-Meter Seamer with Tandem SAW and conveyors for shipyard panel line.



Shaft Overlay System with SAW



PARTS — ON-SITE SERVICE — RETROFITS — UPGRADES

PARTS

Besides selling high quality new products, Pandjiris has a well-trained parts department to keep your equipment running at its best. Call **314-776-6893** and ask for the **Parts Department**.

CUSTOMER SERVICE AND ON-SITE SERVICE

To ensure maximum uptime and dependability, our Customer Service Department is trained to serve you in the least amount of time and expense. Many times we can trouble shoot over the phone. If a visit is needed, we will schedule trained technicians to come to your facility and get you up and running as quickly as possible. Call **314-776-6893** and ask for the **Customer Service Department**.

RETROFITS AND UPGRADES

For 60 years, Pandjiris has been the leader in the Sales, Design, Manufacturing, Service, Installation, and Retrofitting of Automatic Arc Welding Systems. Besides selling high quality new products, Pandjiris has a team of highly trained technicians and service specialist to retrofit, upgrade, and refurbish your used automated systems that have been in service many years. We can replace and update the new

welding processes, welding controllers, wiring and safety devices that are the latest technology to add years and optimum productivity to the life of your existing automation system. Whether it is a Pandjiris system or others, find out how easy it is to incorporate today's new technology into your existing used equipment. Call **314-776-6893** and ask for the **Customer Support Department**.

How to CONTACT Us

For more information on any of our standard products or to discuss your specific application, there are several ways to contact us:

1. Contact Pandjiris local rep or distributor.
2. Call Pandjiris at **314-776-6893** and ask for new equipment sales or the parts department.
3. Fax an inquiry to **314-776-8763**.
4. Mail an inquiry to:
Pandjiris, Inc.
5151 Northrup Ave.
St. Louis, MO 63110
5. Visit our web site: **www.pandjiris.com**



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