

Red-D-Arc Welderentals

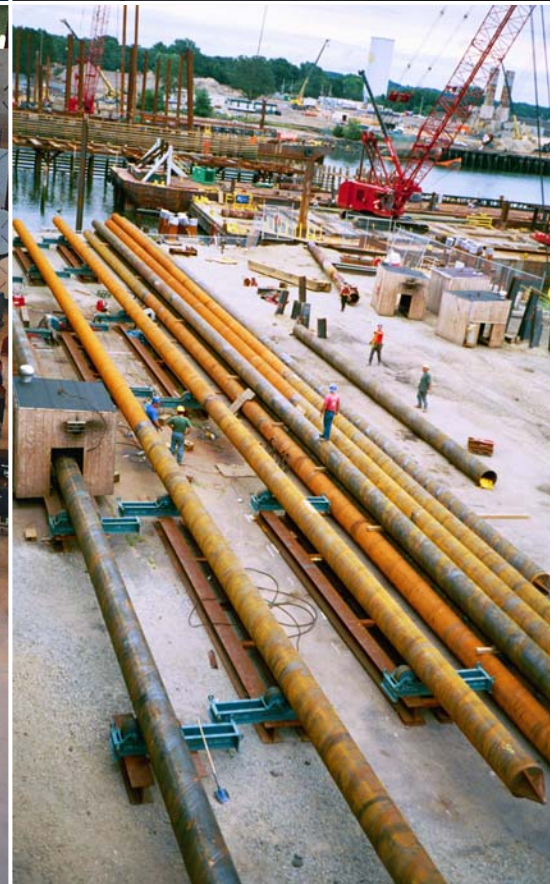
When you're ready to weld.

Red-D-Arc Welderentals, an Airgas company, is North America's leading provider of rental welding products and services, with over 30,000 units in a fleet that includes welders, welding positioners and other welding-related equipment, for almost any type of welding process and application.



POSITIONERS
MANIPULATORS
TURNING ROLLS
SUBMERGED-ARC EQUIPMENT

PMT Rental Equipment



Airgas

1-866-733-3272
Rental Centers Across North America

PMT Rental Equipment

Red-D-Arc rents a variety of positioning equipment for both manual and automated welding and cutting processes including:

Positioners with rotating/tilting tables and optional scroll chucks and gripper chucks, available in capacities from ranging from 100 lb to 85,000 lb

Manipulators from 4 X 4 to 12 X 12 available with optional NA3 automatic welding heads/controls and travel carriages with track

Turning Rolls for tank and vessel rotation including both drive and idler rolls, from 1,500 lb to 400 ton capacity

Submerged-Arc Welding Packages for use with positioning equipment to provide a turn-key, fully-automated welding system. LT7 tractors (track or trackless) and LN9 Squirtmobiles are also available.

Flux-Recovery Systems for use with submerged-arc packages for recovery and recirculation of flux

High-Amperage DC and AC Power Sources to provide welding power for positioning-equipment welding packages

500 lb to 85,000 lb Capacity Positioners

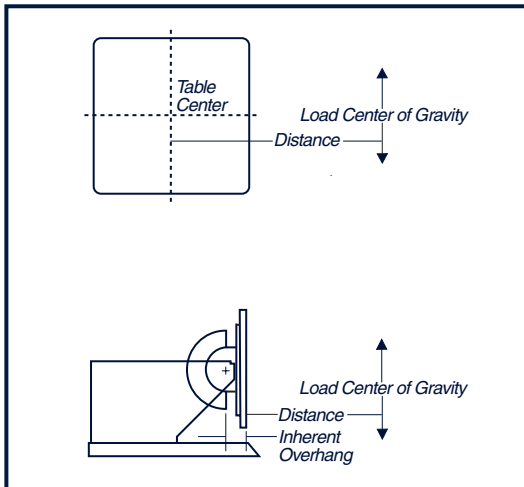


Positioner Load Capacity Table

MODELS AVAILABLE	LB-IN Max. Rotation	Torque Tilt	INH.* O.H.	C.G. @4"	C.G. @6"	C.G. @12"	C.G. @18"	C.G. @24"	C.G. @30"	C.G. @36"	C.G. @42"	C.G. @48"	C.G. @54"	C.G. @60"
PA-5MT	2,000	4,000	3.81	500	400	250	180	140	115	100	85	75	69	63
PA-15 HD4	6,000	18,100	4.25	1,500	1,500	1,110	810	640	525	450	390	340	310	280
PA-30 HD6	18,000	29,735	6.00	3,000	2,475	1,650	1,240	990	825	705	620	550	495	450
PA-45 HD12	54,000	91,900	7.00	4,500	4,500	4,500	3,675	2,965	2,485	2,135	1,875	1,670	1,500	1,370
PA-60 HD12	72,000	124,500	8.75	6,000	6,000	6,000	4,655	3,800	3,210	2,780	2,450	2,195	1,985	1,810
PA-100 HD12	120,000	163,300	9.00	10,000	10,000	7,775	6,045	4,945	4,185	3,630	3,200	2,865	2,590	2,365
PA-160 HD12	192,000	344,000	9.50	16,000	16,000	16,000	12,500	10,265	8,700	7,560	6,680	5,980	5,415	4,950
PA-240 HD12	288,000	510,000	9.25	24,000	24,000	24,000	18,715	15,340	12,995	11,270	9,950	8,900	8,065	7,365
PA-300	360,000	705,000	11.50	30,000	30,000	30,000	23,898	19,859	16,988	14,842	13,178	11,849	10,763	9,860
HD-400	480,000	840,000	9.00	-	-	40,000	31,000	25,000	21,500	18,500	16,400	14,600	13,200	12,000
HD-600	720,000	1,260,000	9.00	-	-	60,000	46,500	38,000	32,000	28,000	24,500	22,000	20,000	18,000
G-850	1,020,000	1,800,000	9.00	-	-	85,000	66,600	54,500	48,000	42,000	37,000	32,000	29,000	26,000

* Inherent Overhang

Selecting the Proper Positioner



Rotational Torque Calculation

1. Determine the total weight of the work piece, including fixtures.
2. Calculate the load center of gravity distance (LOAD C.G.), in inches from the center of the table.
3. Multiply information from step 1 times the information in step 2 to determine required rotational-torque.
4. Compare the required rotational-torque with the rated rotational-torque from the above table.
5. Select a positioner with a rotational-torque rating equal to, or greater than, the required rotational-torque.

$$\text{Load X Distance} = \text{Rotational-Torque Requirement}$$

$$(\text{LB}) \times (\text{inches}) = (\text{LB-Inches})$$

Tilt Torque Calculation

1. Determine the total weight of the work piece, including fixtures.
2. Calculate the load center of gravity distance (LOAD C.G.) in inches from the table face, including fixtures.
3. Add inherent overhang distance (INH. O.H) in inches to step 2.
4. Multiply information from step 1 times the sum of step 2 and step 3 to determine the required tilt-torque.
5. Compare the required tilt-torque with the rated tilt-torque from the above table.
6. Select a positioner with a tilt torque-rating equal to, or greater than, the required tilt-torque.

$$\text{Load X (Distance + Inherent Overhang)} = \text{Torque Rating}$$

$$(\text{LB}) \times ((\text{inches}) + (\text{INH. O.H.})) = (\text{LB-Inches})$$

Turning Roll Sets

Designed and constructed to provide safe and dependable operation. On rubber-tired models the rollers absorb shock during loading and cushion the load during welding. A steel overload-disc (on larger models) protects the rubber tires from excessive overloads. The final-drive gearcase is totally enclosed and constructed entirely of steel, and aluminum-bronze worm gears provide maximum strength and durability to the final drive.



Turning Roll Alignment

The best turning roll setup uses only one driver and one idler to support the work. The two units are easier to align than three or more sets of drivers and idlers. When setting up the rolls, the wheel axle centerlines must be parallel to the centerline of the workpiece and rolls must be set on a flat, level floor. If any of these conditions are neglected, a condition commonly known as "end creep" will result where the workpiece threads and spirals as it rotates. End creep requires constant adjustments of the welding arc to track the seam as it rotates. Assuming the rolls are located on a level floor so that the roll bases are on the same plane, the quickest way to check alignment is to measure the diagonal distance between the four corners of the setup to square them with each other. Each diagonal measurement must be of equal length for the rolls to be square. If roll alignment is accurate and end creep is still experienced during rotation, then the work, itself, might not be straight.

Six Basic Rules to Follow When Using Turning Rolls

1. Drivers and idlers should all be of the same make, style and wheel diameter.
2. Install drivers and idlers on a smooth, level hard floor and preferably on a flat steel plate.
3. Obtain the best possible alignment during setup.
4. Do not anchor the driver and idler to the floor. Let them "float" into best alignment.
5. Use as few idlers as possible to support the load. Multiple idlers absorb power.
6. Always use the closest wheel-spacing possible that will safely handle the load and provide sufficient traction.

MODELS AVAILABLE	LOAD - CARRYING CAPACITY (SET)	LOAD -TURNING CAPACITY (DRIVE ROLL)	DIAMETER RANGE	ROLLER SPEED	MOTOR HP	TRACTIVE PULL	ROLLER TYPE
TRS-1500 *	3/4 ton (1,500 lb)	3/4 ton (1,500 lb)					
TDRA-3	3 ton (6,000 lb)	4.5 ton (9,000 lb)	6" to 5'	1.4 - 45 IPM	1/4	1,250	rubber
TDRA-5	5 ton (10,000 lb)	7.5 ton (15,000 lb)	6" to 12'	1.4 - 45 IPM	1/2	2,100	rubber
TDRA-10	10 ton (20,000 lb)	15 ton (30,000 lb)	6" to 12'	1.4 - 45 IPM	3/4	3,400	rubber
TDRA-20	20 ton (40,000 lb)	30 ton (60,000 lb)	6" to 14'	1.9 - 57 IPM	1.5	5,500	rubber
TDRA-60	60 ton (120,000 lb)	90 ton (180,000 lb)	8" to 15'	1.5 - 43 IPM	3	14,200	rubber
TDRA-120	120 ton (240,000 lb)	180 ton (360,000 lb)	8" to 16'	1.4 - 42 IPM	5	24,300	rubber
TDSA-200	200 ton (400,000 lb)	300 ton (600,000 lb)	8" to 15'	1.4 - 42 IPM	5	25,300	steel
250 Ton Model *	250 ton (500,000 lb)	375 ton (750,000 lb)					
300 Ton Model *	300 ton (600,000 lb)	450 ton (900,000 lb)					
400 Ton Model *	400 ton (800,000 lb)	600 ton (1,200,000 lb)					

* Call for Specifications

Calculating Turning Roll Capacity Requirements

Rated Load-CARRYING Capacity of Turning Rolls

Since the load CARRIED by the drive roll and idler roll (in a set) is split equally between both rolls, the actual load-CARRYING capacity of each roll is equal to one half the combined load-CARRYING capacity of the set. For example, in a 20-ton drive-roll/idler-roll set, each roll has a rated load-CARRYING capacity of 10 tons, but together they have a COMBINED load-CARRYING capacity of 20 tons.

Rated Load-TURNING Capacity of Turning Rolls

A drive roll has a load-TURNING capacity of one and one half times its rated load-CARRYING capacity while idler rolls have a load-TURNING capacity of zero. This means that the actual load-CARRYING capacity of a drive-roll/idler-roll set can be increased either by adding one or more idler rolls (of the same capacity) or by replacing the idler roll in the set with a larger load-CARRYING capacity idler roll.

For example, a 20-ton drive roll and two 20-ton idler rolls combined as a set have a total load-CARRYING capacity of 30 tons (1/2 of 20 tons multiplied by 3) and a load-TURNING capacity of 30 tons (20 tons multiplied by 1.5). This means that a load of 30 tons can be CARRIED (supported) and ROTATED by this combination of drive and idler rolls. This information is helpful for calculating load-turning/carrying capacities when the length of a tank to be supported is such that an additional idler roll is necessary to prevent deflection of the tank as a result of its own weight.

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Manipulators

Manipulators are singularly the most versatile pieces of equipment directly associated with automatic welding. They can be designed to duplicate the same procedure without variation as well as weld sequentially different procedures on the same weldment. A manipulator performs these functions on a distance and weight scale that man alone cannot achieve. It provides a consistency and accuracy by bringing the welding head to the weldment. Manipulators can be adapted to operate in pick and place applications as well as plate burning, painting and air carbon arc gouging.

Red-D-Arc rents and leases manipulators that can duplicate the functions of a highly-skilled welder... only better and with more consistency. Each manipulator can be customized for specific applications like simple straight-line or circumferential welding. The ram ends can be outfitted with small I.D. single- or multiple-arc automatic welding-heads for long seam and circumferential welding. Custom designs are available for long reach and heavy loads. All manipulators are available as pedestal mounted, motorized- or fixed-boom machines and can be mounted on a free-standing base or motorized travel-carriage for mobility.

MODELS AVAILABLE	VERTICAL TRAVEL	HORIZONTAL TRAVEL	MOTOR HP LIFT	RAM	BOLT CIRCLE BASE	X	Y	TRAVEL CAR
MA-44LD	4 ft.	4 ft.	1/4	1/4 or manual	---	97"	6' 6"	Standard
MA-66LD	6 ft.	6 ft.	1/4	1/4 or manual	---	121"	8' 6"	Standard
MA-99MD	9 ft.	9 ft.	1/2	1/2	13"	157"	12' 0"	Optional
MA-1212HD	12 ft.	12 ft.	3/4	3/4	22-1/8"	205"	16' 0"	Optional

Benefits of Manipulators

360 degree mast rotation

Speeds welding operations

Cost efficient, easy to operate

Eliminates the fatigue of hand operations

Ideal for fabrication or maintenance applications

Available as free-standing, self-supported fixture or mounted on a mobile carriage and track

Controls include up/down, in/out travel switch, speed potentiometer and variable-speed carriage travel

Welding controls include current, voltage, wire speed, start/stop weld, manual cross-seam adjustment, in/out adjustment of electrode and cylinder switch

Precise x-ray quality welds free from undercut and slag inclusion

Power source platform and all cables are optional. No special power source required.

Complete with reliable Red-D-Arc submerged-arc equipment

Optional travel cars with track, NA3 automatic welding-heads, flux-recovery systems and DC600, AC1200 and DC1500 power sources are available with all our manipulators

