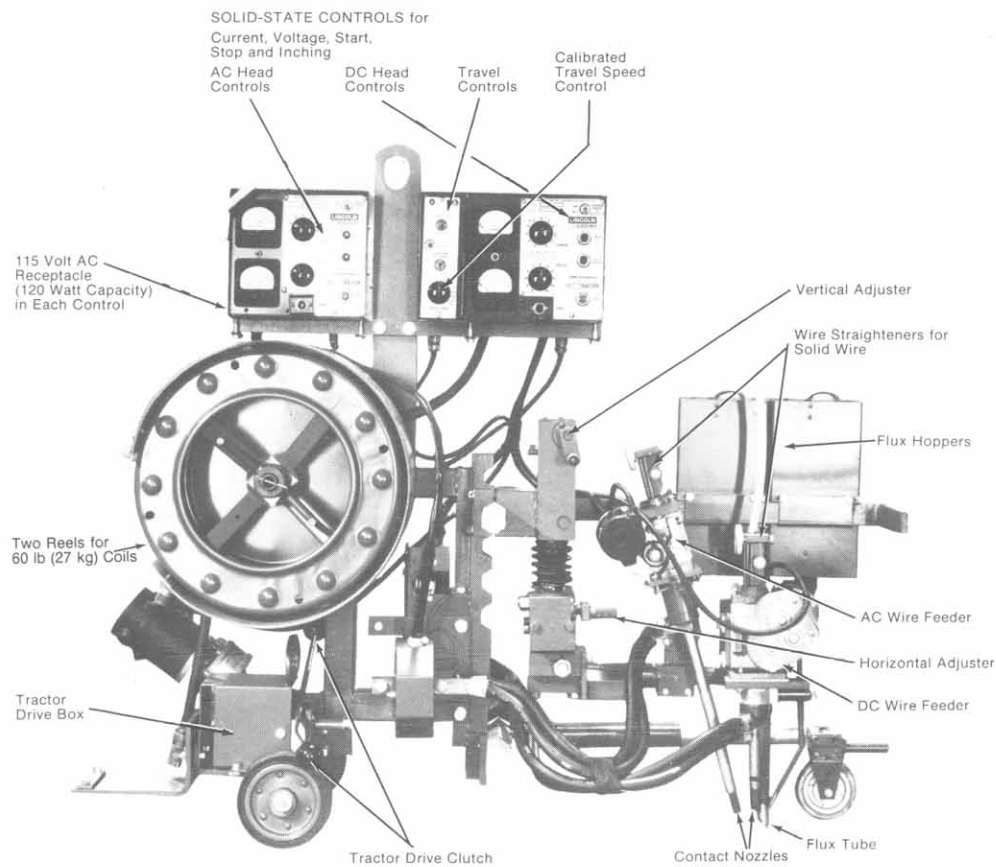


LT-56 AND LT-5T6 TANDEM ARC TRACTORS FOR SUBMERGED ARC WELDING



Model LT-56 Tractor, Type K286

Designed for high deposition rate submerged arc welding on downhand applications such as butt, fillet, lap and trough welds on heavy plate or steel as light as 10 gauge.

The LT-56 Tandem Arc Tractor utilizes a DC lead arc and an AC trail arc to optimize the advantages of penetration with DC and deposition rates with AC. Additional penetration and/or deposition rates can be obtained with an LT-5T6 Tractor which uses DC Twinarc[®] on the lead arc.

These self-propelled units have continuously adjustable travel speeds from 6 to 100 in./min (.15 to 2.5 m/min).

Typical applications include:

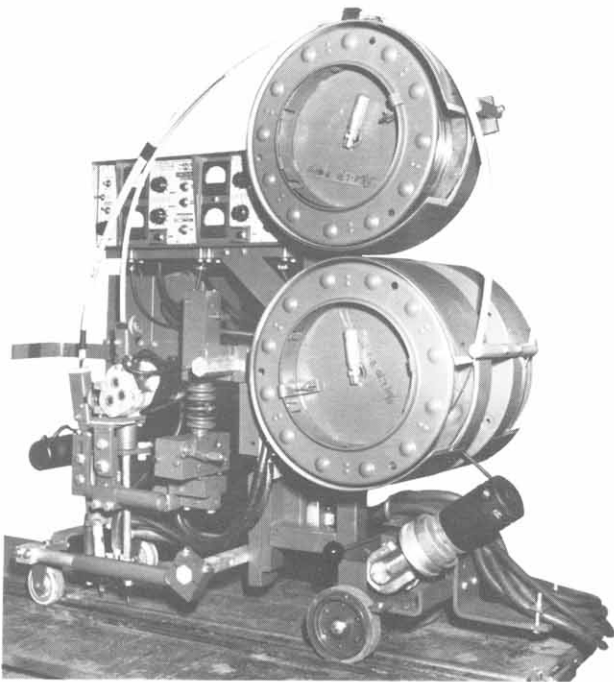
- Ship and barge building
- Submarine hull fabrication
- Spherical storage tank erection
- Bridge deck installation
- Kiln fabrication
- Beam, girder or column fabrication
- Long seams on heavy weldments
- Fill passes — one side welding

MULTIPLE WIRE SUBMERGED ARC FOR

High Deposit Rates Fast Travel Speeds Minimum Distortion

Most applications that can be successfully welded with single wire automatic equipment can be more economically welded with multiple wire methods. The reason is simple: Two electrodes feeding into the same weld carry higher total current than a single wire. Higher total current increases deposit rates and/or speeds and reduces welding costs. Also, high travel speeds minimize distortion. The LT-56 tractor is ideal for most of these applications.

The One Side System was developed for welding plates from one side. (For details, request bulletin S610.) This system eliminates the need and cost of turning heavy plates and welding from both sides. The LT-5T6 Tractor is ideal for fill passes in the One Side Welding System, for heavier weldments on $\frac{3}{8}$ " (9.5 mm) and up fillet welds, deep bevel joints, and where increased travel speeds help control angular distortion.



Model LT-5T6 Tractor, Type K324

ADVANTAGES

Solid-State Control Systems precisely regulate procedures for reliable starting and economical welding to exacting requirements.

Automatic Compensation for input voltage and tractor loading variations minimizes wire feed and tractor speed changes while welding.

All Controls are Conveniently Located on the tractor, eliminating the need to return to the power source for routine procedure changes.

Close Mechanical Alignment between wire and joint maximizes weld quality and economy with no fixturing costs.

Exceptional Tracking Control and self-steering in most applications leave the operator free for quality control, joint cleaning and flux handling. Track can be used when convenient.

LT-56 — Welds Butt, Horizontal Fillet and Lap Joints to the left or right side of the tractor frame as convenient. Also welds 30° or 45° positioned fillets. **LT-5T6 —** butt welds and flat fillet welds.

Operator Quickly Adjusts the electrode stickout or welding angles as needed or changes the tractor configuration and installs optional guides for different joints in minutes.

Rugged Wire Feeder is built for worry-free, hard-working operation with only simple routine maintenance. Function lights built into the solid-state printed circuit boards and the plug-in components simplify troubleshooting to minimize down-time.

COMPLETE CONTROLS

Meters indicate current and voltage while welding.

Current and Voltage Controls adjust weld procedure at the tractor.

Control Power Switch turns 115 volt AC power to the tractor controls on and off.

Inch Buttons to feed the electrode up and down at a fixed inch speed.

Push Buttons to Start and Stop the arc and travel.

Two 115 Volt AC Receptacles provide 120 watts of power from each for work lights.

Travel Speed Control sets speed of travel in inches per minute.

Direction of Travel Switch sets forward or reverse tractor direction. (Reverse travel used for setup purposes.)

Travel Switch controls the tractor travel for automatic starting and stopping when welding, travel without welding during setup and travel off.

Set CV-CC Switch inside DC control box for constant current or constant voltage DC power source.

FEATURES

Two Flux Hoppers with 30 lb (13.6 kg) total capacity. Includes manual flux flow rate control valves. Mounts to the left and right side as convenient.

Horizontal Adjuster speeds setup and lets operator track irregular joint while welding. Provides 2" (51 mm) hand-crank adjustment.

Vertical Lift Adjuster provides 4" (102 mm) head adjustment for quick alignment adjustments. Adjustments can be locked once head is properly positioned.

Strain Clamp for input cables.

Two Wire Reels for 60 lb (27 kg) Coils (three wire reels are provided with the LT-5T6 tractor).

Travel Clutch operates from either side of the tractor.

Calibrated Tractor Drive adjusts continuously from 6 to 100 in./min (.15 to 2.5 m/min) travel speed. Once set, travel speed has minimum variation with input voltage fluctuations or cable drag.

Tractor Steering snaps back to a preset position for following a straight seam or preset curve.

Standard Cable Assemblies up to 100 feet (30 m) are available for connecting tractor to power sources.

Versatile Head Mounting is designed for easy adjustment to meet various procedure requirements.

Heads feed $\frac{3}{32}$ " (2.4 mm) thru $\frac{3}{16}$ " (4.8 mm) electrode diameters [twin $\frac{5}{64}$ " (2.0 mm) or $\frac{3}{32}$ " (2.4 mm) electrodes for lead head of LT-5T6] using up to 1500 amps depending on power source.

Convenient Control Boxes face either left or right.

OPTIONAL FEATURES

V-Butt Guide Kit (K230) — Guide wheels that mount in place of the standard front wheel ride in any V-groove or open [$\frac{1}{8}$ " (3.2 mm) to $\frac{3}{8}$ " (9.5 mm)] butt joint to keep the wire in required alignment.

Horizontal Fillet-Lap Guide (K288) — Includes guide wheel for riding in the joint to maintain correct alignment and electrode angle (for LT-56 only).

Flat Fillet Adapter Kit (K287) — Includes front and rear guide wheels that ride in 30° or 45° trough joints while the heads remain vertical.

Magnetic Separator (K58) — Removes foreign magnetic particles from re-used submerged arc welding flux.

Flux Screen (K310) — Designed to fit the top of either the standard fill funnel of a continuous flux feed system or a K58 magnetic separator. The unit has a steel screen with .065" (1.6 mm) to .075" (1.9 mm) openings and an air vibrator attached to the frame. The vibrator can be used with air line pressures ranging from 20 thru 100 psi (137 thru 689 kPa).

TECHNICAL SPECIFICATIONS

Dimensions:

H × W × D:

45.5 × 17.5 × 54⁽¹⁾ inches
(1155.7 × 444.5 × 1371.6⁽¹⁾ mm)

⁽¹⁾ 59.5 in. (1511.3 mm) with front arm extended.

Weight:

LT-56 — 384 lbs (174 kg)

LT-5T6 — 437 lbs (198 kg)

Mechanical:

- Versatile heavy duty steel frame.
- Travel clutch can be engaged and disengaged from either side of the tractor.
- Travel can be forward or backward via 6 inch (152 mm) wheels driven by a common axle.
- Non-fluid lubrication is used throughout.
- Feed $\frac{3}{32}$ " (2.4 mm) thru $\frac{3}{16}$ " (4.8 mm) wire in both heads, plus twin $\frac{5}{64}$ " (2.0 mm) or $\frac{3}{32}$ " (2.4 mm) wire for LT-5T6.

Joint Versatility:

1. *Butt welds* — in line or on either side of the tractor for prepared deep grooves, tight butts or open joint unprepared butts.
2. *Horizontal fillets or laps* — both right and left with electrode to joint angles between 40° and 50° (LT-56 only).
3. *Flat fillets* — may be positioned for either 30° or 45° flat fillets with minimum flange height of 5.5" (140 mm) and minimum web height of 18.75" (476 mm).

Electrical

- Input Power: 115 Volt AC, 50 or 60 Hertz (available from recommended power sources).
- Tractor Welding Current Rating is 1500 amps — AC and DC.
- K215 Cable assembly rating is 1000 amps, 80% duty cycle (for higher currents or duty cycle add additional welding cable).
- Easy troubleshooting with LED's on PC boards.
- CV or CC switch on the DC control constant current PC board. Dual nameplates.
- Circuit breakers for overload protection.
- Cold or hot starting, built-in Linc-Fill starting.
- Cold inching up and down.
- Start and stop buttons.
- Calibrated control of travel speed from 6 to 100 in./min (.15 to 2.5 m/min).

THE SYSTEM

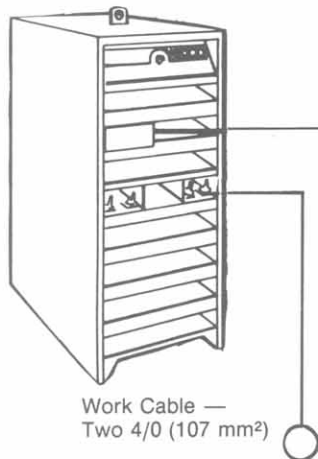
DC POWER SOURCE

Constant Current
or
Constant Voltage Submerged Arc

* Cable Assembly (K215) —
Includes Multi-Conductor
Control Cable and two
4/0 (107 mm²) Electrode Cables

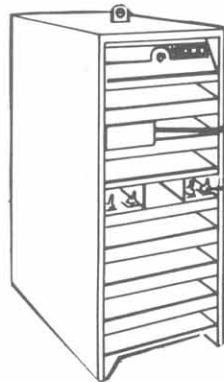
AC POWER SOURCE

Constant Current

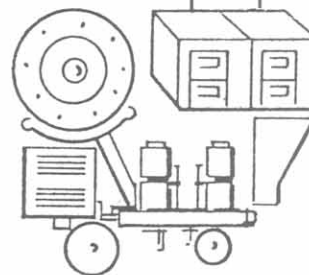


Work Cable —
Two 4/0 (107 mm²)

* Cable Assembly (K215) —
Includes Multi-Conductor
Control Cable and two
4/0 (107 mm²) Electrode Cables



Work Cable —
Two 4/0 (107 mm²)



TRACTOR
LT-56 (K286) DC-AC Tandem Arc
LT-5T6 (K324) DC (Twinarc) —
AC Tandem Arc

Power Sources Recommended:

- DC-1000, DC-1500
- Paralleled DC-600, DC-1000

- AC-1200

* Available in standard lengths of 30, 50, 75 or 100 ft (9, 15, 23 or 30 m).

PRODUCT DETAILS

Model LT-56 Tractor, Type K286

DC single wire, AC single wire tandem tractor. Heavy duty DC-AC tandem arc tractor. Includes wire feed controls for DC constant current or constant voltage power sources and controls for AC constant current power sources. Also includes two single wire feed heads with straighteners for solid wire, a vertical and a horizontal adjustment for head positioning, two wire reel assemblies and two flux hoppers with manual flux valves all mounted on a self propelled tractor. Also includes a K231 type contact nozzle assembly (less flux cone) for each head. Travel speed continuously adjustable from 6 to 100 in./min (.15 to 2.5 m/min). For 115 volt 60 or 50 hertz power.

For wire size:

$\frac{3}{32}$ to $\frac{3}{16}$ in. (2.4 to 4.8 mm) solid wire. Specify wire size for each head. (e.g. K286- $\frac{5}{32}$ — $\frac{3}{16}$).

Model LT-5T6 Tractor, Type K324

DC Twinarc®, AC single wire tandem tractor. Same as LT-56 except lead head is equipped with straightener, guide tubes and drive rolls for twin wires and a K129 Tiny Twinarc nozzle. Also includes extra wire reel and its mounting and a stabilizing wheel.

For wire sizes:

Lead — $\frac{5}{64}$ " (2.0 mm) or $\frac{3}{32}$ " (2.4 mm) Twinarc

Trail — $\frac{3}{32}$ " (2.4 mm) to $\frac{3}{16}$ " (4.8 mm) solid wire.

Specify wire size for each head (e.g. K324- $\frac{5}{64}$ — $\frac{3}{16}$)



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