

# MANUFACTURING TECHNOLOGIES



well stimulation & fracturing | cementing | well intervention & coiled tubing | rig systems | power generation | drive systems & switchgear  
railcar movers | specialty manufacturing | remanufacturing | training & support

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# MANUFACTURING TECHNOLOGIES

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Stewart & Stevenson, headquartered in Houston, Texas since 1902, serves global markets with equipment and service. The Manufacturing Technologies Division of Stewart & Stevenson designs, engineers, manufactures, packages and services durable equipment that meets world-class standards.

Equipment produced by Stewart & Stevenson's first class manufacturing facilities is utilized by customers involved in producing oil and gas from the ocean floor, from hard shale formations and from rich reserves in the globe's coldest and hottest regions. Multiple individual units form systems for which Stewart & Stevenson is a single source provider:

- Well stimulation systems: fully integrated fracturing equipment packages including fracturing pumpers and blenders, chemical additive and hydration equipment, acidizing units, and data acquisitions and control centers.
- Cementing units, in single and dual pump configurations with recirculating or jet mixing systems and automatic or manual controls, provide high performance in hot and cold weather locations.
- Well intervention systems: coiled tubing units, nitrogen and industrial gas units, fluid pumping equipment and masted coiled tubing drilling rigs.
- Custom built drilling, well servicing and workover rigs that meet the performance and certification requirements of each rig's final service destination.
- Generator systems that power deepwater semi-submersibles and drillships, land based drilling rigs, and offshore platforms.
- Drive Systems and Switchgear packages.
- Specialty equipment that includes customer-branded seismic vehicles, trademarked Rail King railcar movers utilized by the rail industry and customized jumbo forklifts.

Stewart & Stevenson Manufacturing Technologies Division, headquartered in Houston, Texas, has manufacturing operations in Texas and in Calgary, Alberta, Canada.

# WELL STIMULATION & FRACTURING

Stewart & Stevenson's fully integrated stimulation equipment works as a system to perform the fracturing treatment.

It includes:

- Fracturing Pumps
- Blenders
- Chemical Additive and Hydration Systems
- Acidizing Equipment
- Proppant Units
- Data Acquisition
- Control Centers
- Support Equipment

Combining more than 60 years of fracturing equipment experience with in-house engineering, software development and quality control expertise, Stewart & Stevenson develops leading edge stimulation equipment that offers maximum reliability.

We tailor equipment to meet each operating region's specific environment with advanced control systems to serve as a single control platform for multiple pieces of equipment. Our data vans have controls, data acquisition software and communication technology that makes complete control of field operations possible. Quality control in all phases of equipment design and construction ensures consistent quality that minimizes maintenance requirements.

Stewart & Stevenson's fully integrated stimulation systems offer simplified operation and improved job quality while requiring fewer trained operators to perform a fracturing treatment.





# RING





# FRACTURING PUMPS

- Optimal horsepower
- Maneuverable package
- Intelligent Pump Control
- Triplex or quintuplex pumps
- Industry leader in emissions reduction technologies with Tier 4 engines
- EU/TUV compliant and CE marked equipment available



FT-2251 Trailer Mounted Fracturing Unit

Fracturing Pumps						
MODEL	FT-2251 Trailer Mounted	FT-2501 Trailer Mounted	SRP-2500 Trailer Mounted	FC-2251 Chassis Mounted	FC-3001 Chassis Mounted	FS-2251 Skid Mounted
<b>Carrier Type</b>	Stewart & Stevenson trailer	Stewart & Stevenson trailer	Canadian Tri-axle	Kenworth, Mercedes Benz or other truck chassis	Kenworth, Mercedes Benz or other truck chassis	Stewart & Stevenson oilfield skid
<b>Carrier Drive Configuration</b>	Tandem or Tridem Air Ride	Tandem or Tridem Air Ride	Tridem Air Ride	6x4, 6x6, 8x4, 8x6, or 8x8	8x4 or 8x8	-
<b>Size: L x W x H</b>	42'0" x 8'6" x 13'6"	45' x 8'6" x 13'6"	42' x 8'6" x 10'9"	37'7" x 8'6" x 13'2"	40' x 8'6" x 13'6"	27'0" x 8'0" x 10'6"
<b>Engine Rating</b>	2250 bhp	2500 bhp	2500 bhp	2250 bhp	3000 bhp (2500 optional)	2250 bhp (2500 and 3000 optional)
<b>Maximum Ambient Operating Temperature</b>	122 °F / 50 °C (55 °C optional)	122 °F / 50 °C (55 °C optional)	112 °F / 44 °C (55 °C optional)	122 °F / 50 °C (55 °C optional)	122 °F / 50 °C (55 °C optional)	122 °F / 50 °C (55 °C optional)
<b>Pump</b>	Triplex or Quintuplex	Triplex or Quintuplex	Triplex or Quintuplex	Triplex or Quintuplex	Triplex or Quintuplex	Triplex or Quintuplex
<b>Control System</b>	Stewart & Stevenson IPC™	Stewart & Stevenson IPC™	Stewart & Stevenson IPC™	Stewart & Stevenson IPC™	Stewart & Stevenson IPC™	Stewart & Stevenson IPC™
<b>Cold Weather Package</b>	Optional	Optional	Included	Optional	Optional	Optional
<b>CE, TUV Other Certifications Available</b>	Optional	Optional	-	Optional	-	Optional

# FRACTURING BLENDERS

- Mix complex slurries with varying densities
- AccuFrac<sup>+</sup>™ automated density and chemical controls
- Concentric mixing chamber
- Liquid and Dry Chemical Additive Systems
- Industry leader in emissions reduction technologies with Tier 4 engines
- EU/TUV compliant and CE marked equipment available



MT-132 Trailer Mounted Fracturing Blender

Fracturing Blenders							
MODEL	MT-132 Trailer Mounted Blender	MT-102 Trailer Mounted Blender	MC-100 Chassis Mounted Blender	MC-60 Chassis Mounted Blender	STL-70 Chassis Mounted Blender	MS-60 Skid Mounted Blender	MS-30 Skid Mounted Blender
<b>Maximum Discharge Rate</b>	130+ bbl/min	100 bbl/min	100 bbl/min	60 bbl/min (75 bbl/min optional)	70 bbl/min	60 bbl/min	30 bbl/min
<b>Maximum Discharge Density</b>	21 lb/gal	21 lb/gal	21 lb/gal	21 lb/gal	21 lb/gal	21 lb/gal	21 lb/gal
<b>Maximum Proppant input Rate</b>	21,250 lb/min (optional higher rates available)	21,250 lb/min (optional higher rates available)	16,000 lb/min (optional higher rates available)	16,000 lb/min (optional higher rates available)	16,000 lb/min (optional higher rates available)	16,000 lb/min (optional higher rates available)	6,000 lb/min (optional higher rates available)
<b>Carrier Type</b>	Stewart & Stevenson trailer	Stewart & Stevenson trailer	Kenworth, Mercedes Benz or other truck chassis	Kenworth, Mercedes Benz or other truck chassis	Kenworth, Mercedes Benz or other truck chassis	Oilfield Skid	Oilfield Skid
<b>Size: L x W x H</b>	48'0" x 8'6" x 13'6"	48'0" x 8'6" x 13'6"	36'8" x 8'6" x 13'2"	34'8" x 8'6" x 13'2"	38' x 8'6" x 12'8"	24'8" x 8'6" x 12'0"	19'6" x 8'6" x 8'0"
<b>Mixing Chamber</b>	Concentric tub with automatic level control	Concentric tub with automatic level control	Concentric tub with automatic level control	Pressurized mixing chamber or concentric tub	Pressurized mixing chamber	Pressurized mixing chamber or concentric tub	Hydrojet tub
<b>Drive System*</b>	(2) Deck engines	(2) Deck engines	(1) Truck engine and (1) deck engine	(1) Truck engine	(1) Truck Engine	(1) Deck engine	(1) Deck engine
<b>Total Horsepower</b>	1550 bhp	1260 bhp	1050 bhp	500 bhp	550 bhp	600 bhp	330 bhp
<b>Number of Liquid Additive Systems</b>	6 or more	6 or more	6 or more	6 or more	6 or more	6 or more	6 or more
<b>Number of Dry Additive Systems</b>	Up to 2	Up to 2	Up to 2	Up to 2	Up to 2	Up to 2	Up to 2
<b>Discharge Pump</b>	14x12	14x12	14x12	-	-	-	6x5
<b>Suction Pump</b>	12x12	12x10	12x10	10x8	10x8	10x8	6x5
<b>Automated Control System</b>	Stewart & Stevenson AccuFrac <sup>+</sup>	Stewart & Stevenson AccuFrac <sup>+</sup>	Stewart & Stevenson AccuFrac <sup>+</sup>	Stewart & Stevenson AccuFrac <sup>+</sup>	Stewart & Stevenson AccuFrac <sup>+</sup>	Stewart & Stevenson AccuFrac <sup>+</sup>	Stewart & Stevenson AccuFrac <sup>+</sup>
<b>Cold Weather Package</b>	Optional	Optional	Optional	Optional	Optional	Optional	Optional

# CHEMICAL ADDITIVE & HYDRATION UNITS

- Continuous mix polymer injection and hydration
- Combination units with additional chemical additive systems
- AccuFrac<sup>+</sup>™ automates injection rates
- Quick change-out tanks
- Industry leader in emissions reduction technologies with Tier 4 engines
- EU/TUV compliant and CE marked equipment available



CT-5CAS/BT-200



CT-10CAS

## Chemical Additive & Hydration Units

MODEL	CT-5CAS/BT-200	HT-200D (Dry Gel)	CT-10CAS	CC-6CAS	CS-10CAS/S-200
<b>Carrier Type</b>	Stewart & Stevenson trailer	Stewart & Stevenson trailer	Stewart & Stevenson trailer	Kenworth, Mercedes Benz or other truck chassis	Oilfield skid
<b>Carrier Drive Configuration</b>	Tandem Air Ride	Tandem Air Ride	Tandem Air Ride	6x4, 6x6, 8x4, 8x6, or 8x8	-
<b>Size: L x W x H</b>	48'0" x 8'6" x 13'6"	44'0" x 8'6" x 13'6"	46'0" x 8'6" x 13'6"	37'6" x 8'6" x 12'6"	39'6" x 11'0" x 25'0"
<b>Engine Rating</b>	600 bhp	600 bhp	Dual 110 bhp (each)	400 bhp (minimum)	500 bhp
<b>Number of Chemical Injection Circuits</b>	5 or more	5 or more	10	6	10
<b>Pump Type</b>	Progressive cavity, lobe, piston or gear	Progressive cavity, lobe, piston or gear	Progressive cavity, lobe, piston or gear	Progressive cavity, lobe, piston or gear	Progressive cavity, lobe, piston or gear
<b>Hydration Tank Volume</b>	200 bbl	200 bbl	-	-	200 bbl
<b>Maximum Hydration Tank Pump Inlet Rate</b>	100 bbl/min	100 bbl/min	-	-	100 bbl/min
<b>Control System</b>	Stewart & Stevenson AccuFrac <sup>+</sup>	Stewart & Stevenson AccuFrac <sup>+</sup>	Stewart & Stevenson AccuFrac <sup>+</sup>	Stewart & Stevenson AccuFrac <sup>+</sup>	Stewart & Stevenson AccuFrac <sup>+</sup>
<b>Transfer Pump System</b>	Standard	Standard	Standard	Standard	Standard
<b>Environmental Enclosure</b>	Optional	Optional	Optional	Optional	Optional



# ACIDIZING UNITS

- High horsepower utility pumping and acidizing
- DaqPaq™ real time monitoring and recording
- Mixing tub with feed auger systems
- Acid transportation tanks
- Industry leader in emissions reduction technologies with Tier 4 engines
- EU/TUV compliant and CE marked equipment available



AT-1001 Trailer Mounted Acidizing Unit

Acidizing Units				
MODEL	AT-601 Trailer Mounted Unit	AT-851 Trailer Mounted Unit	AT-1001 Trailer Mounted Unit	AC-501 Chassis Mounted Unit
<b>Carrier Type</b>	Stewart & Stevenson trailer	Stewart & Stevenson trailer	Stewart & Stevenson trailer	Kenworth, Mercedes Benz or other truck chassis
<b>Carrier Drive Configuration</b>	Tandem Air Ride	Tandem Air Ride	Tandem Air Ride	6x4, 6x6, 8x4, 8x6, or 8x8
<b>Size: L x W x H</b>	37'11" x 8'6" x 13'6"	41'6" x 8'6" x 13'6"	41'6" x 8'6" x 13'6"	37'7" x 8'6" x 13'2"
<b>Engine Rating</b>	600 bhp	850 bhp	1000 bhp and 1200 bhp	500 bhp
<b>Transmission</b>	Allison 4700 OFS	Allison S8610	Allison S8610	Truck chassis transmission
<b>Pump</b>	Triplex	Quintuplex	Quintuplex	Triplex
<b>Acid Transportation Capability</b>	1500 gal	1500 gal	1500 gal	1000 gal
<b>Mixing Tub</b>	Optional	Optional	Optional	Optional
<b>Cold Weather Package</b>	Optional	Optional	Optional	Optional
<b>Data Acquisition System</b>	Optional	Optional	Optional	Optional
<b>Dry Additive Feeder</b>	Optional	Optional	Optional	Optional

# DATA ACQUISITION & CONTROL CENTERS

- Centralized monitoring and control of fracturing treatment
- IPC controls up to 24 units at single workstation
- AccuFrac<sup>+</sup>™-PC controls multiple units
- UPS and CPU for reliable operation and backup



ET-33EXP Trailer Mounted Data Acquisition and Control Center

Data Acquisition & Control Centers				
MODEL	ET-44EXP	ET-33EXP	EC-26ACD	EC-22ACD
<b>Control Cabin Size L x W x H</b>	44'0" x 8'6" x 13'6"	33'0" x 8'6" x 13'6"	26'0" x 8'0" x 7'8"	22'0" x 8'0" x 7'8"
<b>Carrier Type</b>	Stewart & Stevenson trailer	Stewart & Stevenson trailer	Kenworth, Mercedes Benz or other truck chassis	Kenworth, Mercedes Benz or other truck chassis
<b>Carrier Drive Configuration</b>	Tandem Air Ride	Tandem Air Ride	4x2, 4x4, 6x4, or 6x6	4x2, 4x4, 6x4, or 6x6
<b>Maximum Number of Fracturing Unit Controls</b>	24	24	24	24
<b>Maximum Number of Blender Controls</b>	2 or more	2 or more	2 or more	2 or more
<b>Maximum Number of Chemical Additive/Hydration Controls</b>	2 or more	2 or more	2 or more	2 or more
<b>Number of Discrete Physical Data Channels</b>	16-24	16-24	16-24	16-24
<b>Number of Data Channels</b>	500	500	500	500
<b>Fracturing Pump Control System</b>	IPC - PC	IPC - PC	IPC - PC	IPC - PC
<b>Blender, Chemical Additive and Hydration Control System</b>	AccuFrac - PC	AccuFrac - PC	AccuFrac - PC	AccuFrac - PC
<b>Touchscreen IPC - PC Interfaces</b>	3	3	3	3
<b>Industrial Computers</b>	3	3	3	3
<b>ACCUFAC<sup>+</sup> - PC and Modeling Software Screens</b>	7	6	7	6
<b>Printers</b>	2	2	2	2
<b>Generator System</b>	20-40 kW stand alone diesel engine	20 kW stand alone diesel engine driven	20 kW chassis engine driven	10 kW stand alone diesel engine
<b>Communication System</b>	5-station internal intercom, 18 external radios	3-station internal intercom, 18 external radios	5-station internal intercom, 18 external radios	4-station internal intercom, 12 external radios



# SUPPORT UNITS

- CO<sub>2</sub> boost pump
- Proppant transport
- Manifold and iron transport



Truck Mounted Manifold and Iron Transport



# CEMENTING

Stewart & Stevenson is a leading manufacturer of cementing units for the oil and gas industry. Our units are custom designed for specific applications to meet the industry's rigorous operational demands for our customers around the globe.

Stewart & Stevenson's advanced equipment designs include:

- Truck, trailer, or skid mounted
- Automatic or manual density controls
- Recirculating or jet mixing systems
- Single or dual pump configurations
- High temperature and cold weather packages







# WELL INTERVENTION & COILED

Stewart & Stevenson, manufacturer of well intervention equipment since 1989, was an early leader in manufacturing coiled tubing units (CTU). Keeping pace with technology, CTUs today feature the highest pull-to-weight injector heads, steel tubing reels and control cabins, from which the operator can smoothly and efficiently direct all well site operations. Nitrogen units and high-pressure fluid pumping units complete the well intervention system, which can be tailored to specific customer needs and geographic locale.

Applications include workover, cleanouts, jetting/lifting, acid spotting, fishing, frac through coil, drilling and logging. Products can be certified for areas requiring Zone 2, ATEX, Norsok, and CE compliance.





# TUBING





# COILED TUBING UNITS







Land and offshore coiled tubing units are configured in standard trailer, truck, skid-mounted and masted versions that can be tailored to meet specific needs. Masted coiled tubing units perform conventional operations and are available in multiple configurations customized for specific drilling and intervention applications.

Trailerized coiled tubing units utilize injector heads with pull capacity in excess of 100,000 lb and feature a choice of stand-alone diesel hybrid power pack or wet kit style power pack. Trailer-mounted units are available with and without a crane. Reel trailers for large tubing sizes are also available.

Truck-mounted coiled tubing units are designed to fit the chassis of the truck model that meets customer needs and operating conditions. The unit can be provided with or without an integral crane.

Offshore CTUs consist of skidded equipment for use on offshore platforms or purpose-built well intervention vessels. Units are split into multiple skids/lifts. For faster rig up, the control cabin and power pack can be combined into a single skid/lift. Options include containerization/sound attenuation, exhaust gas-cooling system with integral flame traps, gas detection system, explosion-proof wiring and certified lifting frames.

# SKID MOUNTED SPACE SAVER COILED TUBING UNITS







Space Saver Coiled Tubing Units are designed for use on offshore platforms, custom trailers, or on purpose-built well intervention vessels. Units are split into multiple skids/lifts. The control cabin and power pack can be combined into a single skid/lift for faster rig up.

Options include:

- Hazardous Area Classification
- Exhaust gas-cooling system with integral flame traps
- Certified lifting frames
- Multiple cabin lengths from 4' to 8'

# MASTED COILED TUBING UNITS







Masted coiled tubing units feature a mast that conveys the injector up and down and side-to-side over the well, simplifying the rig-in process, adding a significant measure of safety, speeding the process and removing the expense of the crane.

Masted coiled tubing units are utilized for different types of intervention, including cleanouts, plug milling, setting tools, fracturing, and are especially adept at well completions requiring multiple perforations and fracturing of the zones. With a masted CTU, the time consuming process of using a crane to lift the injector head from the back of the CTU while rigging into the wellhead is avoided. Safety is significantly improved in windy conditions when compared to a conventional unit.

# COILED TUBING UNITS

- Land, Offshore and Masted CTUs
- Injector Heads
- Reels and Reel Trailers



TT-100-XC Coiled Tubing Unit

Coiled Tubing Units									
CARRIER	SKID	SKID	TRAILER	TRAILER	TRAILER	MASTED TRAILER	TRUCK CHASSIS	TRUCK CHASSIS	
<b>MODEL</b>	<b>3-Piece SS Series</b>	<b>4-Piece OFS Series</b>	<b>TT-80-DR Crane</b>	<b>TT-100-XC High Capacity</b>	<b>TCR-15000</b>	<b>TCM-10000</b>	<b>1-Truck</b>	<b>2-Truck</b>	
<b>Hydraulic Power Source</b>	Stand-alone	Stand-alone	Stand-alone or wet kit	Stand-alone or wet kit	Wet kit or stand alone	Wet kit or stand alone	Wet kit	Wet kit	
<b>Truck</b>	-	-	-	Kenworth, Western Star or Peterbilt	Kenworth, Western Star or Peterbilt	Kenworth, Western Star or Peterbilt	Kenworth, Western Star or Mercedes Benz	Kenworth, Western Star or Mercedes Benz	
<b>Injector Head (lb pull)</b>	80k, 100k	80k, 100k	80k, 100k	80k, 100k	80k, 100k	80k, 100k	80k, 100k	80k, 100k	
<b>Reel</b>	RS-09, 19, 20	RS-09, 19, 20	RS-09, 19	RS-20, 24	100,000 lbs (45,400kg) dry weight of coil	85,000 lbs (53,440kg) dry weight of coil	RS-09, 11	RS-09, 11	
<b>Well Control</b>	3.06", 4.06"	3.06", 4.06"	3.06", 4.06"	3.06", 4.06" or 5.12"	3.06, 4.06, 5.12, 7.625	4.06	3.06" or 4.06"	3.06" or 4.06"	
<b>Working Pressure</b>	10m or 15m	10m or 15m	10m or 15m	10m or 15m	5m, 10m or 15m	5m, 10m or 15m	10m or 15m	10m or 15m	
<b>Cabin Size</b>	4.5' (1.37m) x 6' (1.82m)	4.5' (1.37m) x 6' (1.82m)	4.5' (1.37m) x 6' (1.82m)	4.5' (1.37m) x 6' (1.82m)	10' (3.05m) x 10' (3.05m)	78" W x 92" H	4.5' (1.37m) x 6' (1.82m)	4.5' (1.37m) x 6' (1.82m)	
<b>Accumulators</b>	2, 3 or 4	2, 3 or 4	2, 3 or 4	4	4	4	2	2	
<b>BOP Controls</b>	4, 6, 8	4, 6, 8	4, 6, 8	6, 8, 10	6 or 8	6 or 8	4 or 6	4 or 6	
<b>Crane</b>	-	-	National 638 or 647	-	-	-	National 638	National 638 or 647	

Tubing, downhole tools, data acquisition, tubing fatigue software, modeling software and special certification (CE, ATEX, NORSOK, ZONE 2 DNV 2.7-1) are quoted upon request.

Jeep and booster provisions for heavy haul applications.



# INJECTOR HEADS

Stewart & Stevenson's injector head features:

- Industry leading pull-to-weight ratio
- VBill Chain and Traction System
- Balanced Drive System
- Gooseneck in 72", 90", 108" and 120" sizes



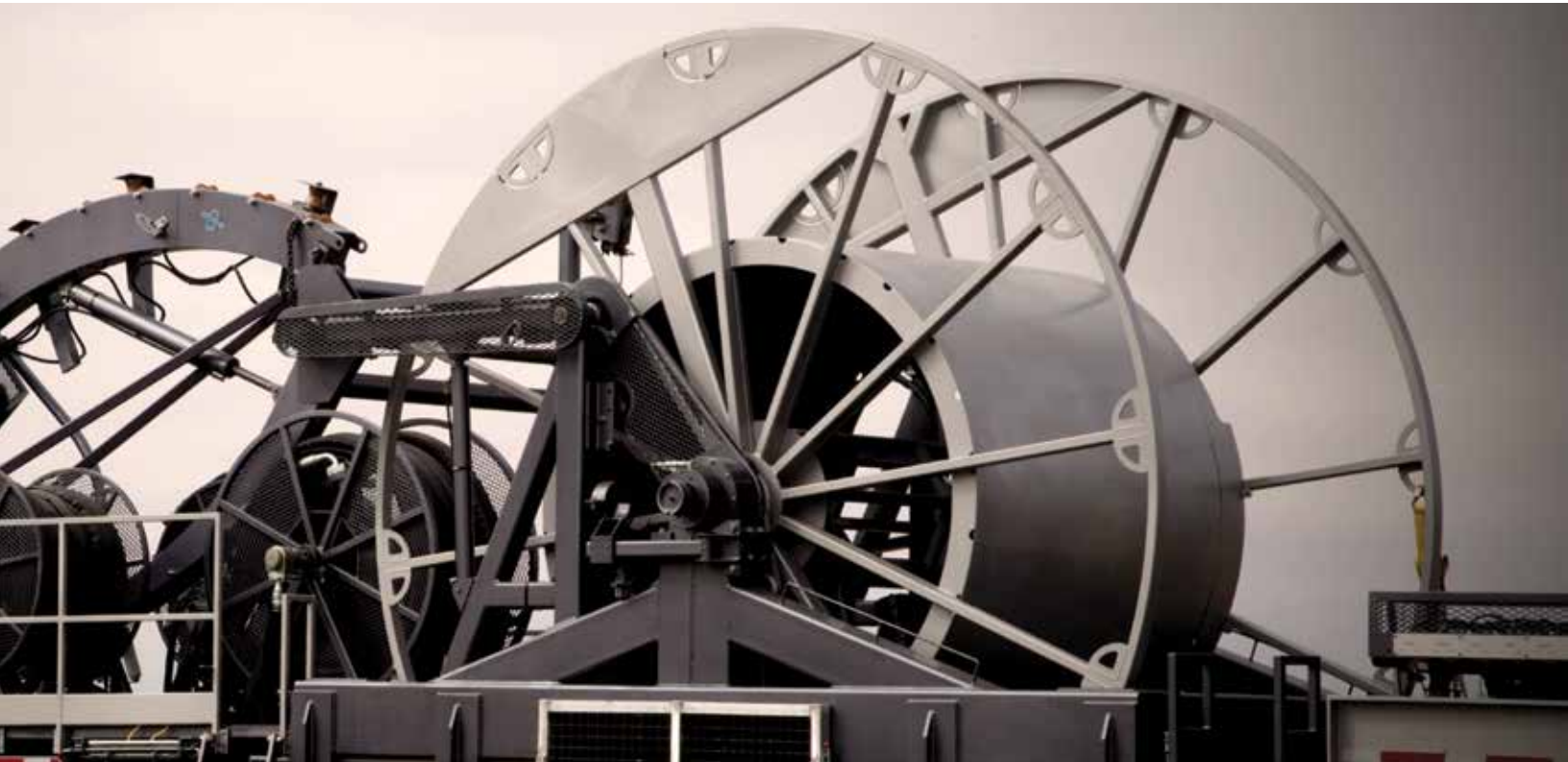
Injector Heads							
MODEL	Pull Capacity (lb)	Snub Capacity (lb)	Speed (ft/min)	L (in)	W (in)	H (in)	Weight (lb)
<b>M-80 MK IV</b>	80,000	40,000	200	50	52	82	7,000
<b>M-80L MK IV</b>	80,000	40,000	200	50	52	96	8,500
<b>M-100 MK IV</b>	100,000	40,000	200	50	52	82	7,000
<b>M-100L MK IV</b>	100,000	40,000	200	50	52	96	8,500
<b>D-100</b>	100,000	50,000	200	55	57	116	10,750
<b>D-145</b>	145,000	72,500	125	65	71	136	17,500
<b>D-175</b>	175,000	87,500	125	65	71	150	20,000
<b>D-200</b>	200,000	100,000	85	70	75	165	22,000

Ratings and dimensions subject to change. Gooseneck sizes available: 72-, 90-, 108- and 120-inch. Hydraulic folding option available. Tubing Arch and Inserts not included in weight estimate.

# COILED TUBING REELS

Coiled tubing reels are available in sizes to fit any application. Our reels feature high torque, high speed motors to handle faster tripping speeds and a bearing system with steel roller and tapered roller bearings for smooth, efficient operation under the heaviest loads. We offer the newest technology in tubing reels:

- Rapid replacement drum systems
- Cartridge style swivels
- Stand-alone spooling bases



## Standard Reel Sizes

MODEL	Tubing Capacity 1	Tubing Capacity 2	Flange Diameter	Core Diameter	Drum Width
RS-09	22,000 ft–1.25 in	16,000 ft–1.50 in	109 in	68 in	69 in
RS-19	25,000 ft–1.25 in	18,000 ft–1.50 in	121 in	70 in	69 in
RS-20	21,000 ft–1.75 in	15,000 ft–2.00 in	144 in	80 in	69 in
RS-24	25,000 ft–1.75 in	19,300 ft–2.00 in	154 in	80 in	69 in
RS-40	25,000 ft–2.00 in	20,000 ft–2.375 in	175 in	96 in	84 in

Other reel sizes are available.



# REEL TRAILERS

Reel trailers to support coiled tubing units with specialty strings are available in both conventional and oversized loads for many different applications.



## Reel Trailers

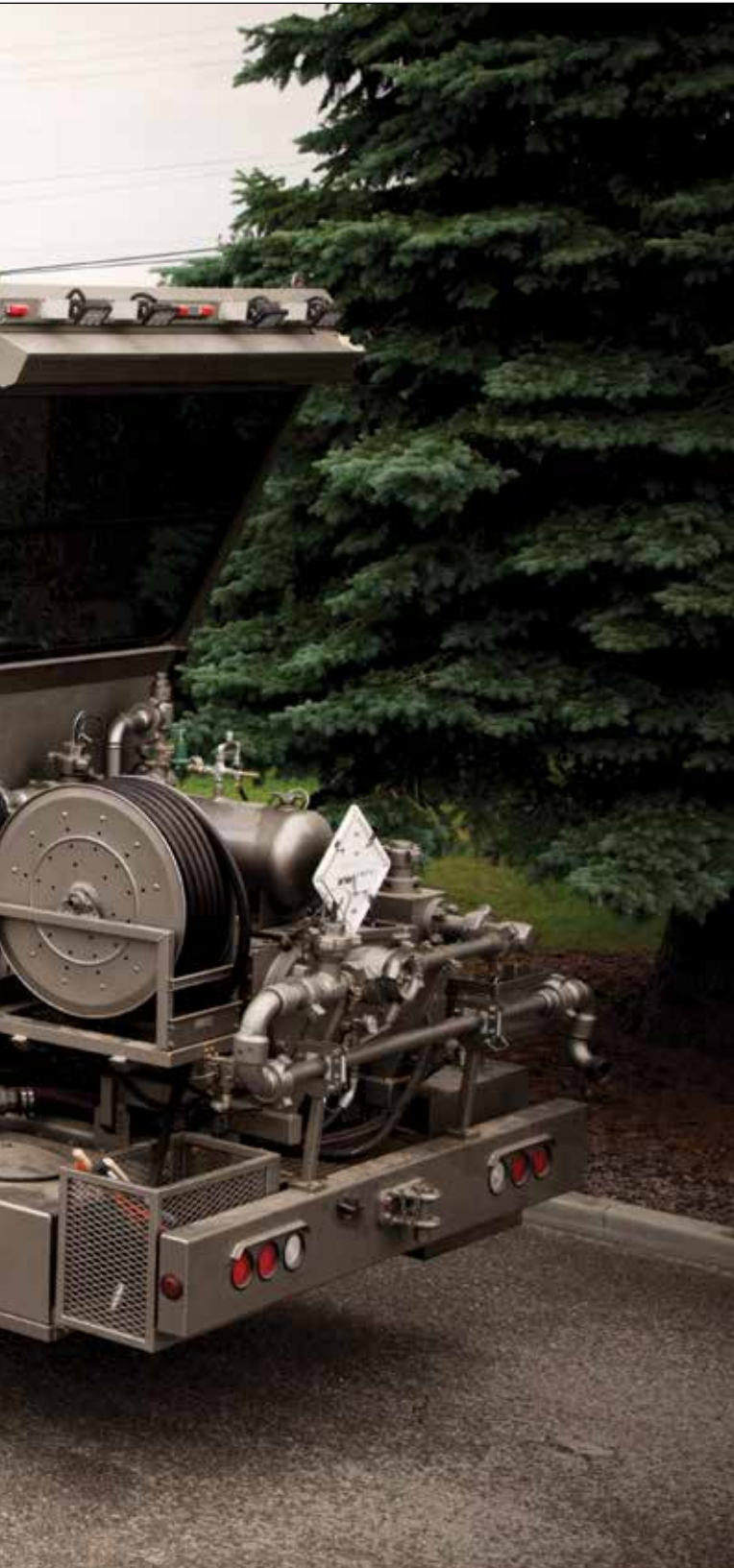
MODEL	TRR 20500	TRR 11000
<b>Hydraulic Power Source</b>	Remote or stand alone	Remote or stand alone
<b>Reel Capacity</b>	20,050 ft (6,250m) of 2-7/8 in (73mm) or 28,600 ft (8700m) of 2-3/8 in (60.3mm)	11,000 ft (3200m) of 2-7/8 in (73mm) or 14,800 ft (4500m) of 2-3/8 in (60.3mm)
<b>Reel Drive</b>	Direct or Chain	Direct or Chain
<b>Overall Width</b>	12 ft (144 inches)	11 ft (132 inches)

Jeep and booster provisions for heavy haul applications.  
Other reel sizes available.

# FLUID PUMPING EQUIPMENT







Fluid pumping equipment performs high-pressure well service treatments. High efficiency horizontal triplex and quintuplex pumps equipped with hard surface plungers pump cement slurries, inhibited acid, sand-laden fluids, water, drilling or other well servicing fluids in extreme conditions. Support fluid handling systems provide boost and transfer pumps with displacement tanks. Our fluid pumping units deliver high flow rates at high pressure while providing excellent turndown for low rate applications.

Single and twin configurations:

- Skid, trailer and truck
- 500 to 2,000 horsepower
- Automatic transmissions

Twin pumping unit features:

- Rugged oilfield trailer
- Two high-pressure pumping systems, fluid handling system and operator's control console
- Two engines, two powershift transmissions, two triplex pumps with gear reducers and 2-speed gearboxes for low rate pumping
- Quintuplex pumps can be installed for greater flow rates

# FLUID PUMPING UNITS

- High pressure well service treatments
- Low flow rate, capability with auxillary transmission
- Single or twin configurations
- High efficiency horizontal triplex pumps
- Skid, trailer or truck mounted versions



WT-1202 Twin Pumper

## Fluid Pumping Units

CARRIER	Trailer	Trailer	Trailer	Trailer (combination fluid and nitrogen pump)
MODEL	WT-601	WT-1202	PRW-2000	WNT-601-181-NF
Truck	-	-	-	-
Engine (standard)	600 bhp	600 - 1,100 bhp	1 x 300 hp 2 x 800 hp	2 each 600 bhp
LN <sup>2</sup> System	-	-	-	180,000 SCFA Heat Recovery
Transmission	Allison 4700 OFS	2 each Allison 4700-9805 OFS	2 each Allison S6620	Allison 4700 OFS
Auxiliary Transmission	Eaton Fuller 2:1 Transmission	2 each Eaton Fuller 2:1 Transmission	2 each Eaton Fuller 2:1 Transmission	Eaton Fuller 2:1 Transmission
Positive Displacement Pump	Triplex or quintuplex	2 each triplex or quintuplex	2 each triplex or quintuplex	1 each triplex
Power End Lube	Pressurized lubrication system	Pressurized lubrication system	Pressurized lubrication system	Pressurized lubrication system
Fluid End Lube	Automatic grease injection	Automatic grease injection	Automatic grease injection	Automatic grease injection
Suction Connections	2 each 4" FIG 206	2 each 4" FIG 206	2 each 4" FIG 206	2 each 4" FIG 206
Discharge Line	2" 1502	2" 1502	2" 1502	2" 1502
Controls	Platform mount	Platform mount	Cab Mount	Platform mount
Climatized Control Cabin	Optional	Optional	Standard	Optional
Displacement Tank	22 bbl, two compartment	22 bbl, two compartment	19 bbl, two compartment	11 bbl, two compartment
Centrifugal Pumps (fill, boost)	2 each Mission 5 x 4	2 each Mission 5 x 4	3 each Mission 4 x 3	2 each Mission 5 x 4





PRW-2000 Twin High Rate Pumper

Skid	Skid	Truck Chassis	Truck Chassis	Truck Chassis
<b>WS-601</b>	<b>WS-1202</b>	<b>WC-601</b>	<b>WC-1202</b>	<b>PTP-600</b>
-	-	Kenworth, Western Star or Mercedes Benz	Kenworth, Western Star or Mercedes Benz	Kenworth or Western Star
600 bhp	600 bhp	Chassis Engine	2 each 600 bhp	Chassis Engine
-	-	-	-	-
Allison 4700 OFS	Allison 4700 OFS	Allison 4700 OFS	Allison 4700 OFS	Allison 4700 OFS
Eaton Fuller 2:1 Transmission	2 each Eaton Fuller 2:1 Transmission	Eaton Fuller 2:1 Transmission	Eaton Fuller 2:1 Transmission	Namco 2:1 Transmission
Triplex or quintuplex	2 each triplex or quintuplex	Triplex or quintuplex	2 each triplex or quintuplex	2 each triplex or quintuplex (optional small volume high pressure triplex pump)
Pressurized lubrication system	Pressurized lubrication system	Pressurized lubrication system	Pressurized lubrication system	Pressurized lubrication system
Automatic grease injection	Automatic grease injection	Automatic grease injection	Automatic grease injection	Automatic grease or pressurized oil
2 each 4" FIG 206	2 each 4" FIG 206	2 each 4" FIG 206	2 each 4" FIG 206	2 each 4" FIG 206
2" 1502	2" 1502	2" 1502	2" 1502	2" 1502
Side mount	Platform mount	Platform mount	Platform mount	Cab Mount
-	-	Optional	Optional	Included
Optional	22 bbl, two compartment	22 bbl, two compartment	22 bbl, two compartment	14 & 37 bbl enclosed, two compartment enclosed tank. Optional mix system and chemical additives available.
Mission 5 x 4	2 each Mission 5 x 4	2 each Mission 5 x 4	2 each Mission 5 x 4	1 each Mission 4 x 3

# NITROGEN & INDUSTRIAL GAS SYSTEMS







Nitrogen and Industrial Gas Systems, packaged with high quality cryogenic components, include a wide range of nitrogen pumping equipment for both onshore and offshore use:

Heat recovery versions provide heat to vaporize liquid nitrogen

- Available in 90K and 180K SCFH units
- Capable of pumping pressures to 15,000 psi

Direct-fired units deliver nitrogen gas at high rates and pressures

- Available in 540K, 660K and 1.2MM SCFH units
- Equipped with high horsepower engines, electronic controls and advanced hydraulics
- Provide maximum performance in stimulation treatments

# NITROGEN UNITS

- Direct fired or Heat Recovery
- Tier 4 emissions compliant available
- High quality cryogenics
- High horsepower
- Onshore and Offshore



NRF-3000-DF Direct Fired High Rate Nitrogen Unit

## Nitrogen Units

MODEL	NS-181-NF	NT-181-NF	WNT-601-181-NF-Combo	NC-181-NF
<b>Vaporization Type</b>	Heat recovery	Heat recovery	Heat recovery	Heat recovery
<b>Maximum Discharge Rate</b>	180,000 scfh (5.097 m <sup>3</sup> /h)	180,000 scfh (5.097 m <sup>3</sup> /h)	180,000 scfh (5.097 m <sup>3</sup> /h)	180,000 scfh (5.097 m <sup>3</sup> /h)
<b>Maximum Discharge Pressure</b>	10,000 psi (15,000 optional)	10,000 psi (15,000 optional)	10,000 psi (15,000 optional)	10,000 psi (15,000 optional)
<b>Carrier Type</b>	Stewart & Stevenson oilfield skid	Stewart & Stevenson trailer	Stewart & Stevenson trailer	Kenworth, Mercedes Benz or other truck chassis
<b>Carrier Drive Configuration</b>	N/A	Tandem or Tridem Air Ride	Tandem or Tridem Air Ride	6×4, 6×6, 8×4, 8×6, or 8×8
<b>Size: L x W x H</b>	14'0" x 8'0" x 8'6"	40'0" x 8'6" x 13'6"	44'6" x 8'6" x 13'5"	39'6" x 8'6" x 12'2"
<b>Engine Rating</b>	600 bhp	600 bhp	600 bhp	550 bhp
<b>Maximum Ambient Operating Temperature</b>	122 °F / 50 °C	122 °F / 50 °C	122 °F / 50 °C	122 °F / 50 °C
<b>LN<sup>2</sup> Tank</b>	-	3,000 gallon	2,000 gallon	2,000 gallon
<b>Pump Drive</b>	Closed loop hydraulic	Closed loop hydraulic	Closed loop hydraulic	Closed loop hydraulic
<b>Cryogenic Pump</b>	Triplex	Triplex	Triplex	Triplex
<b>Data Acquisition System</b>	Optional - Stewart & Stevenson DaqPaq	Optional - Stewart & Stevenson DaqPaq	Optional - Stewart & Stevenson DaqPaq	Optional - Stewart & Stevenson DaqPaq



NT-181-NF Nitrogen Unit

NC-362-NF	NT-661-DF	NC-661-DF	NRF-3000-DF
Heat recovery	Direct fired	Direct fired	Direct fired
360,000 scfh (10.194 m <sup>3</sup> h)	660,000 scfh (20.388 m <sup>3</sup> h)	660,000 scfh (20.388 m <sup>3</sup> h)	1,270,000 scfh (36.000 m <sup>3</sup> h)
10,000 psi (15,000 optional)	10,000 psi (15,000 optional)	10,000 psi (15,000 optional)	10,000 psi (15,000 optional)
Kenworth, Mercedes Benz or other truck chassis	Stewart & Stevenson trailer	Kenworth, Mercedes Benz or other truck chassis	Stewart & Stevenson trailer
6×4, 6×6, 8×4, 8×6, or 8×8	Tandem or Tridem Air Ride	6×4, 6×6, 8×4, 8×6, or 8×8	Tandem or Tridem Air Ride
39'6" × 8'6" × 13'2"	39'0" × 8'6" × 13'6"	39'6" × 8'6" × 12'2"	45'0" × 8'6" × 13'6"
1150 bhp	630 bhp and 110 bhp	550 bhp and 110 bhp	1500 bhp and 110 bhp
122 °F / 50 °C	122 °F / 50 °C	122 °F / 50 °C	122 °F / 50 °C
2,000 gallon	2,000 gallon	2,000 gallon	-
Closed loop hydraulic	Direct Drive via transmission	Direct Drive via transmission	Direct Drive via transmission
Two (2) Triplex	Triplex	Triplex	Quintuplex
Optional - Stewart & Stevenson DaqPac	Optional - Stewart & Stevenson DaqPac	Optional - Stewart & Stevenson DaqPac	Optional - Stewart & Stevenson DaqPac



# RIG SYSTEMS

Stewart & Stevenson's Crown model drilling, workover and well servicing rigs integrate the latest advances in oilfield technology to make the recovery of oil and gas safer and more efficient. Featuring Stewart & Stevenson designed masts, drawworks, controls and substructures with custom-engineered power generation and quality partner components, our turnkey rigs are rigged-up and fully tested to meet customer requirements.

Manufactured completely in the company's Canadian and U.S. manufacturing facilities, Stewart & Stevenson rigs meet the rigorous industry standards established by the American Petroleum Institute (API) and the International Standards Organization (ISO). Major operators around the globe rely on the superior quality of Stewart & Stevenson rigs.







# DRILLING RIGS

- Self-propelled, trailer or skid
- Freestanding or externally guyed mast
- SCR/DC, VFD/AC, Mechanical
- Up to 1000 hp





# WORKOVER & WELL SERVICING RIGS

- Self-propelled, trailer or skid
- Freestanding or externally guyed mast
- Drawworks, self-supporting modular units
- Singles, doubles and slant rigs
- Up to 750 hp



# FLUSHBY RAPID SERVICE RIGS

- Carrier, truck or trailer built
- Freestanding mast
- 10,000 psi hydraulic triplex pump
- 200 or 500 hp drawworks
- 50 bbl aluminum tank
- Lightweight



## Drilling, Workover, Well Servicing & Flushby Rigs

Drawworks MODEL (power)	Hookload		Mast MODEL	Nominal Depth Ratings			Configuration		
	(lb)	(metric ton)		Well Service ft (m)	Workover ft (m)	Drilling ft (m)	Mobile	Skid	VFD/ SCR
200 Flushby	65,000	29	72'-65K	10,000 (3,048)			✓	✓	
500 Flushby	65,000	29	72'-65K 76'-65K	10,000 (3,048)			✓	✓	
200	100,000	45	65'-100K	6,000 (1,829)			✓	✓	
	160,000	63	72'-160K	8,000 (2,438)			✓	✓	
250	120,000	54	64'-120K slant	8,500 (2,591)	7,000 (2,134)		✓	✓	
	160,000	63	72'-160K	9,000 (2,738)	7,500 (2,286)		✓	✓	
350	160,000	63	72'-160K 79'-160K	10,000 (3,048)	8,000 (2,438)		✓	✓	
450	180,000	81	96'-180K	12,000 (3,657)	9,000 (2,743)		✓	✓	
	205,000	92	104'-205K	13,000 (3,962)	10,000 (3,048)	6,500 (1,286)	✓	✓	
550	225,000	103	96'-225K	14,000 (4,267)	11,000 (3,353)	7,500 (2,286)	✓	✓	
	265,000	113	104'-265K	17,000 (5,182)	12,000 (3,657)	8,000 (2,438)	✓	✓	
			107'-250K 110'-250K						
600	300,000	136	110'-300K 116'-300K	19,000 (5,791)	13,000 (3,962)	8,500 (2,591)	✓	✓	
650	300,000	136	108'-300K 118'-300K	20,000 (6,096)	15,000 (4,572)	9,000 (2,743)	✓	✓	✓
750	350,000	158	118'-350K	22,000 (6,706)	16,000 (4,877)	10,000 (3,084)	✓	✓	✓
	375,000	170	118'-375K		16,500 (5,029)	10,500 (3,200)	✓	✓	✓
900	400,000	181	118'-400K 124'-400K		17,000 (5,182)	11,000 (3,353)	✓	✓	✓
1000	440,000	199	118'-440K		18,000 (5,486)	12,000 (3,657)	✓	✓	✓
	500,000	227	124'-500K			14,000 (4,267)	✓	✓	✓



# RIG MASTS





Stewart & Stevenson manufactures telescopic masts of alloy steel in a full selection of working heights and hookloads to meet any service or drilling requirement. Designed for mobility and ease of assembly, our masts ensure quick rig up and rig down and can be installed on other OEM carriers. Our rugged configurations stand up to the most arduous working conditions and climates.



# SINGLE MASTS

## Single Mast Specifications

MODEL	Clear Height (ft)	Clear Height (m)	Number of Lines	Hook Load (lb)	Hook Load (metric ton)
50'-80K Swabbing	50	15.2	1	80,000	36
65'-62K Telescopic Pole Mast	65 (extended)	19.8	3	55,000	25
	55 (retracted)	16.8	3	62,000	28
59'-65K Stiff	59	17.9	2	65,000	29
65'-100K Stiff	65	19.8	4	100,000	45
72'-100K Stiff	72	21.9	2	65,000	29
72'-160K Telescopic	72	21.9	4	100,000	45
79'-160K Telescopic	79	24.1	6	160,000	68
73'-300K Stiff	73	22.3	8	300,000	136
86'-240K Stiff	86	26.2	6	240,000	109

All single masts are offered in freestanding, externally guyed or slanted patterns.





# DOUBLE MASTS

Double Telescopic Mast Specifications					
MODEL	Clear Height (ft)	Clear Height (m)	Number of Lines	Hookload (lb)	Hookload (metric ton)
96'-180K	96	29.3	4	160,000	73
			6	180,000	82
96'-240K	96	29.3	4	200,000	91
			6	225,000	101
			8	240,000	109
104'-180K	104	31.7	4	160,000	73
			6	180,000	82
104'-205K	104	31.7	4	140,000	64
			6	205,000	93
104'-265K	104	31.7	4	210,000	95
			6	250,000	113
			8	265,000	120
107'-285K	107	32.6	4	210,000	95
			6	250,000	102
			8	285,000	109
110'-250K	110	33.5	4	210,000	95
			6	250,000	113
			8	250,000	113
116'-300K	116	35.4	6	250,000	113
			8	300,000	136
112'-300K	112	34.1	6	270,000	122
			8	300,000	136
118'-350K	118	36.0	6	275,000	124
			8	350,000	159
118'-375K	118	36.0	4	200,000	91
			6	300,000	136
			8	375,000	170
118'-440K	118	36.0	6	300,000	136
			8	375,000	170
			10	440,000	200
124'-500K	124	37.8	6	300,000	136
			8	400,000	181
			10	500,000	226

All double masts are offered in freestanding or externally guyed patterns.

# DRAWWORKS SPECIFICATIONS

Stewart & Stevenson designs and manufactures a full line of AC, DC and mechanical drawworks for drilling, workover and well servicing rigs. Designed in light-weight, compact modules, our drawworks provide optimal performance, control and safety under the most extreme climate conditions. The modular design allows for easy maintenance and repair.



CE1000E AC Gear Driven Drawworks

## Mobile Rig Drawworks

MODEL	Single Line Pull (lb)	Maindrum Options	Maindrum Clutch Options	Maindrum Brake Options	Brake Cooling Options
CE200	30,000	15-7/8" x 36-3/4"	PO-318	38" x 8"	Air Splash
	34,000	13-7/8" x 36-3/4"		40" Disc x 2	
CE250	48,000	13-7/8" x 36-3/4"	PO-224	38" x 8"	Splash
CE350	48,000	13-7/8" x 36-3/4"	PO-224	38" x 8"	Splash
CE450	48,000	13-7/8" x 36-3/4"	PO-224	38" x 10"	Air Splash
	46,000	15-7/8" x 36-3/4"		48" Disc x 2	
CE550	46,000	15-7/8" x 36-3/4"	PO-224	42" x 12" 52" Disc x 2	Splash or Circulating Air or Water-cooled
CE600	48,000	15-7/8" x 36-3/4" 17-7/8" x 36-3/4" 19-7/8" x 36-3/4"	PO-324	42" x 12"	Splash or Circulating
CE650	50,000	17-7/8" x 35-1/2"	PO-324	42" x 12"	Circulating
CE750	50,000	19-7/8" x 35-1/2"	37VC650	44" x 11" 236 WCSB	Circulating
CE1000	60,000	21-7/8" x 37-1/4"	32VC1000	44" x 11" 336 WCSB	Circulating

All mobile rig drawworks can be furnished with an emergency/auto-driller system.



Drill Line Options	Sandline Brake Options	Sandline Clutch	Sandline Capacity 9/16" Line	Auxiliary Brake Options*
3/4" 7/8"	34" x 7" 40" Disc x 1	PO-218 PO-218	8000' 8000'	-
7/8"	34" x 7"	PO-218	8000'	Single 36" Disc
7/8"	34" x 7"	PO-218	8000'	Single 40" Disc
7/8" 1"	38" x 8" 48" Disc x 1	PO-218	8000' 13,000'	Single 40" Disc
1" 1-1/8"	42" x 8" 48" Disc x 1	PO-218	14,000' 17,000'	Double 48" Disc 224 WCSB
1" 1-1/8"	42" x 8"	PO-218 PO-318	17,000'	Double 48" Disc 224 WCSB
1" 1-1/8"	42" x 8"	PO-218 PO-318	17,000'	324 WCBD
1-1/8" 1-1/4"	42" x 8"	26CB525	17,000'	424 WCBD
1-1/4"	42" x 8"	26CB525	17,000'	236 WCBD

Hydromatic brakes optional.



# DRAWWORKS SPECIFICATIONS

DC Chain Driven Drawworks		
MODEL	CE750E	CE1000E
Horsepower (hp)	750	1000
Drilling Depth (ft)	6,000–10,000	8,000–12,000
Wireline Size (in)	1-1/8	1-1/4
Drum Size (in)	22 x 46	25 x 50
Single Line Pull (lb)	45,000	50,000
Hoisting Speed	4	4
Brake Rim Size (in)	44 x 11	46 x 10-3/8
Drum Drive Chain	140-3	140-3
Transmission Chain	120-3	120-3
Low Clutch	PO-230	PO-330
High Clutch	PO-324	PO-324
Eddy Current Brake	3630	3550 or 5032
Water-cooled Disc Brake	236WCBD	336WCBD
DC Motors	1	1

Drawworks can be furnished with either a water cooled brake or Eddy current brake.

AC & DC Gear Driven Drawworks			
MODEL	CE550E	CE750E	CE1100E
Horsepower (hp)	550	750	1100
Drilling Depth (ft)	3,000–7,500	6,000–10,000	8,000–13,000
Wireline Size (in)	1	1-1/8	1-1/4
Drum Size (in)	18 x 37	22 x 49	25 x 62
Single Line Pull (lb)	40,000	45,000	55,000
Gear Box	Single Speed	Single Speed	Single Speed or Double
Main Brake	AC or DC Motor	AC or DC Motor	AC or DC Motor
Parking/Emergency Disc Brake	Disc Brake	238 DBBS	338 DBBS or 336 WCSB
Drilling Motors	1	1	1

Options: Auto-driller motor and Eddy Current Brake.

Actual hook load depends on the number and capacity of motors used. Drawworks can be furnished with an emergency/auto-driller system.

# SUPPORT UNITS

Stewart & Stevenson designs and manufactures a complete line of support equipment for mobile and skidded well servicing and drilling rig packages.

- Pumping equipment (mobile or skidded)
- Transporters
- Doghouse/Crew Quarters (mobile or skidded)
- Mud tanks
- Substructures
- Catwalk/pipe rack packages
- Pipe handling packages

Distributors for some of the best brands in the industry, Stewart & Stevenson has the OEM replacement components and operational accessories you need and can deliver them to you quickly. Parts and service are available for most major brands. Parts and components:

- McKissick Blocks
- Elevator links
- Handling tools
- Crown model B&C and CHD spiders
- Crown model tongs
- Crown drawworks
- Right angle gear boxes

Distributors for:

- MTU/MTU Onsite Energy
- Daimler
- DETROIT
- DEUTZ
- Electro-Motive Diesel
- Allison Transmission
- Hyster
- McKissick
- Silverline
- BVM Handling
- CTW Brake Rims
- Hawk Industries
- Guiberson Well Service
- O'Bannon
- Crown Power Tongs
- Crown Rod Tongs
- A full line of other rig components



# QMS CERTIFICATIONS







All Stewart & Stevenson rigs meet the rigorous industry standards established by the American Petroleum Institute (API) and the International Standards Organization (ISO).

Certifications:

- API Q1, ISO 9001  
Quality Management System



- API 4F: Drilling and Well Servicing Structures



- API 7K: Drilling and Well Servicing Equipment



- API 8C: Production Hoisting Equipment



- API RP 500 and 505: Practice for Classification of Locations for Electrical Installations
- Australian Standards
- CCC: China Compulsory Certificate



- CE/ATEX for Rigs: Europe and International



- GOST R and GOST Ex for Rigs: Russia



- IEC 60079-14

# POWER GENERATION

Stewart & Stevenson manufactures power generation packages featuring high-performance MTU and Electro-Motive Diesel engines that provide power for workover and well servicing, onshore and offshore drilling, production facilities, pipelines and marine propulsion for offshore tugboats and supply vessels.







# ONSHORE PACKAGES

Onshore power generation packages feature MTU Series 60, 2000 and 4000 engines. We offer:

- 7 models offering 685 to 2425 bhp (420 to 1633 kW)
- 1800, 1500 and 1200 rpm
- 60 Hz and 50 Hz applications
- Latest emissions standards available on most applications
- Essential rig power packages
  - Prime rig power
  - SCR systems
  - VFD systems
- Emergency and auxiliary power
- Options that allow customer tailoring for each application
- Additional Stewart & Stevenson units:
  - Pump packages
  - Pump drivers
  - Natural gas power packs



DL1000M



DL1600M

MODEL	DL700M		DL900M		DL1000M		DL1200M		DL1250M		DL1600M		DX420M
<b>Ratings</b>	60 Hz	50 Hz	60 Hz	50 Hz	60 Hz	60 Hz	50 Hz	60 Hz	60 Hz	50 Hz	60 Hz	60 Hz	60 Hz
<b>Drilling (prime) kWe output<sup>1</sup></b>	687	564	912	727	997	1223	1088	1254	1633	1445	1633	1445	420/525
<b>Prime Power output (bhp)</b>	1020	838	1354	1080	1481	1817	1616	1863	2425	2146	2425	2146	685
<b>Speed, rated (rpm)</b>	1800	1500	1800	1500	1200	1800	1500	1200	1800	1500	1800	1500	1800
<b>Engine Manufacturer</b>	MTU		MTU		MTU	MTU		MTU		MTU		MTU	MTU
<b>Engine Model</b>	12V2000		16V2000		12V4000	12V4000		16V4000		16V4000		16V4000	Series 60
<b>Rated Voltage</b>													480/277 VAC
<b>Rated Power Factor (lagging)</b>													0.8

<sup>1</sup>At rated voltage, frequency and PF according to ISO 3046/1 conditions. All data is subject to change without notice.

# OFFSHORE PACKAGES

Offshore power generation units, manufactured with MTU 2000, MTU 4000 and EMD 710 series engines, include:

- Nine 60 Hz models offering 932 to 5000 bhp (661 to 3581 kW)
- Nine 50 Hz models offering 771 to 4155 bhp (546 to 2976 kW)
- Essential vessel power packages
  - Prime rig power
  - SCR systems
  - VFD systems
  - Dredge power
  - Emergency and auxiliary power
- Generators oversized to meet low power factor requirements
- Latest emissions standards available on most applications
- Generator sets certified to ABS, DNV and IMO/US EPA standards



EMD 20-710 Offshore Generator

MODEL	DM600M		DM800M		DM1500M		DM2000M		DM2500M	
<b>Ratings</b>	60 Hz	50 Hz	60 Hz	50 Hz	60 Hz	50 Hz	60 Hz	50 Hz	60 Hz	50 Hz
<b>Drilling (prime) kWe output<sup>1</sup></b>	661	546	884	732	1520	1254	2129	1977	2661	2471
<b>Prime Power output (bhp)</b>	932	771	1247	1033	2145	1770	3004	2789	3755	3487
<b>Speed, rated (rpm)</b>	1800	1500	1800	1500	1800	1500	1800	1500	1800	1500
<b>Engine Manufacturer</b>	MTU		MTU		MTU		MTU		MTU	
<b>Engine Model</b>	12V2000		16V2000		12V4000		16V4000		20V4000	
<b>MTU features:</b>	<ul style="list-style-type: none"> <li>• High power to weight ratio</li> <li>• Compact footprint</li> </ul>		<ul style="list-style-type: none"> <li>• Increased variable deck load capabilities</li> <li>• Series 4000 with common rail fuel system for enhanced performance and reduced emissions</li> </ul>							

<sup>1</sup>At rated voltage, frequency and PF according to ISO 3046/1 conditions. All data is subject to change without notice.

MODEL	DM1440E		DM2150E		DM2865E		DM3580E	
<b>Ratings</b>	60 Hz	50 Hz	60 Hz	50 Hz	60 Hz	50 Hz	60 Hz	50 Hz
<b>Continuous kWe output<sup>1</sup></b>	1432	1200	2148	1787	2865	2381	3581	2976
<b>Continuous Power output (bhp)</b>	2000	1675	3000	2495	4000	3325	5000	4155
<b>Speed, rated (rpm)</b>	900	750	900	750	900	750	900	750
<b>Engine Manufacturer</b>	EMD		EMD		EMD		EMD	
<b>Engine Model</b>	8-710		12-710		16-710		20-710	
<b>EMD features:</b>	<ul style="list-style-type: none"> <li>• Proven offshore reliability</li> <li>• Durable medium speed engines</li> </ul>		<ul style="list-style-type: none"> <li>• EPA Certification for ratings</li> <li>• Extended TBO intervals</li> </ul>		<ul style="list-style-type: none"> <li>• Less maintenance = higher availability</li> <li>• Powerful, responsive two-cycle design</li> </ul>			

<sup>1</sup>According to ISO 3046/1 conditions and based on generator efficiencies 95-97%. All data is subject to change without notice.

# MTU ONSITE ENERGY POWER SYSTEMS







Stewart & Stevenson provides the comprehensive power generation product portfolio of MTU Onsite Energy, a global manufacturing organization with more than 100 years of innovative engine manufacturing and 60 years of power generation packaging. Power generation systems from MTU Onsite Energy are ideal for emergency standby and prime power in the most demanding commercial and industrial applications.

#### Products:

- Diesel-powered generator sets 30 kW to 3,250 kW
- Natural Gas-powered generator sets 30 kW to 400 kW
- Natural gas-fueled continuous duty generator sets 128 kWe to 2,055 kWe
- Combined Heat and Power (CHP) cogeneration power plants
- Automatic transfer switches 30 amps to 4,000 amps
- Paralleling switchgear and digital master control systems

#### Features:

- 50 Hz and 60 Hz diesel-engine systems
- Digital engine controls
- Advanced monitoring and communications technology
- Best-in-class reliability and availability
- One-step rated load acceptance per NFPA 110
- Industry-leading average load factor
- UL2200 listing available on most models
- IBC seismic certification and OSHPD approval available

# DRIVE SYSTEMS, SWITCHGEAR &

Stewart & Stevenson manufactures electrical power systems that drive Stewart & Stevenson manufactured equipment. These drive systems and switchgear serve as the “brain” controlling land-based and offshore drilling rig operations, power generation and marine propulsion.

## Variable Frequency Drive Systems

- With generator controls, MCC, transformers, receptacles and Power Control Rooms (PCR)
- 600 VAC – Up to 2000 hp
- Regulates mud pumps, drawworks and top drive
- Driller’s Cabin

## SCR DC Drive Systems

- With generator controls, MCC, transformers, receptacles and Power Control Rooms (PCR)
- 6 pulse, 1800/2200 DC, 750 VDC
- Driller’s Console

## Medium Voltage Switchgear

- 5 kV to 15 kV
- Up to 3000 amp rating, 63 kA
- Paralleling switchgear
- Vacuum contactors and circuit breakers
- Metal clad construction
- Indoor or outdoor enclosures

## Medium Voltage Soft Starter

- Distribution and paralleling
- Synchronizing to line
- Manual bypass to line
- Pump and compressor pipeline applications

## Standards and Approvals

- ABS, ANSI, CSA, DNV, IEEE, NEC, NEMA, USCG, Lloyds Register



# SERVICES





# RAIL KING™ RAILCAR MOVERS

Stewart & Stevenson manufactures a line of Rail King mobile railcar movers that supports railcar switching operations throughout North America and in international locations. Class 1 Railroads, along with frac sand operations, warehousing companies, petrochemical and refining plants, cement facilities and the grain and feed industry all utilize the power of Rail King mobile railcar movers to increase productivity in their railcar switching operations. Engineered to maximize safety, efficiency and operator comfort, Rail King is manufactured in three side-mount cab models offering tractive effort ratings to 46,550 lbs, and two full-width cab models offering tractive effort ratings to 50,000 lbs.

#### All Rail Kings feature:

- Heavy-duty, emission-compliant, 6-cylinder engines
- Four-speed automatic transmission
- Royalglide operator comfort system
- Patented cushioned coupler system
- Friction roadwheel drive
- Full-width bumpers to protect powertrain
- Fabricated steel couplers
- Ergonomically designed cab layout
- Unsurpassed operator visibility
- Easy-to-use push button controls with color LCD display







# RAIL KING™ MODELS

Rail King™ Models					
Model	Weight (lbs.)	Tractive Effort (lbs., single coupled)	Cab Style	Engine (Cummins QSB)	Controls
<b>RK285</b>					
G4	37,000	28,250	Side Mount	Tier 3 - 173 hp	Analog
G5	37,000	28,250	Side Mount	Tier 4i - 173 hp	Digital
<b>RK290</b>					
G4	39,500	29,100	Side Mount	Tier 3 - 173 hp	Analog
G5	39,500	29,100	Side Mount	Tier 4i - 173 hp	Digital
<b>RK300</b>					
G4	43,250	30,300	Side Mount	Tier 3 - 173 hp	Analog
G5	43,250	30,300	Side Mount	Tier 4i - 173 hp	Digital
<b>RK320</b>					
G4 (export)	49,000	32,400	Full Width	Tier 3 - 190 hp	Analog
G5	49,000	32,400	Full Width	Tier 4f - 195 hp	Digital
<b>RK330</b>					
G4 (export)	51,500	33,000	Full Width	Tier 3 - 204 hp	Analog
G6	52,500	33,825	Full Width	Tier 4f - 195 hp	Digital





# SPECIALTY MANUFACTURING

Stewart & Stevenson utilizes its engineering, design and manufacturing capabilities to custom design and manufacture specialty equipment for clients.

A sampling of these products include:

- Specialty vehicles
- Proppant trucks
- Rig substructures, enclosures and support units:  
masts, drawworks

## Material Handling

- Hyster RS45-27CH, with custom quick tool changer system composed of a variety of spreader bars and a hook attachment to lift riser pipe, blowout preventers, shipping containers and structural components, supports the worldwide fleet of offshore drilling rigs
- Jumbo Hysters provide heavy hauling and handling in pipe yards and on rig sites
- Full line of Hyster forklifts ranging from 2,000 to 120,000 lbs capacity, provide handling of components and parts in oil and gas company warehouse and distribution facilities.









# REMANUFACTURING

Committed to extending the life cycle of the equipment we manufacture, Stewart & Stevenson provides remanufacturing service that restores each unit's reliability, durability and performance. We specialize in the rebuilding and remanufacturing of most engine, transmission and oilfield platform configurations, upgrading unit controls and designated components, and servicing cooling, hydraulic and pumping systems.

Remanufacturing support is provided for these equipment platforms:

- Fracturing Pumping Units
- Blenders
- Hydration Units
- Pump Trucks
- Tractors
- Trailers
- Nitrogen Units
- Coiled Tubing Units
- Drilling, Workover and Well Servicing Rigs
- Masts





# TRAINING & SUPPORT

At Stewart & Stevenson's dedicated Training Center in Houston, Texas, technicians stay current in their equipment operation, service and repair knowledge and skills to better serve customers. Aftermarket Support is the value-added promise fulfilled on every unit of Stewart & Stevenson branded equipment, wherever it is put into service around the globe.

Our staff of licensed technicians and parts specialists is available to provide:

- Commissioning
- Training: Operation & Maintenance
- Warranty Repair
- Scheduled Maintenance
- Parts
- Field Service







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