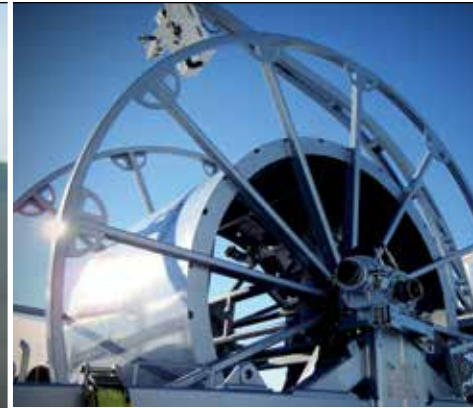


Manufacturing Technologies



Well Stimulation & Fracturing | Cementing | Well Intervention & Coiled Tubing | Power Generation | Drive Systems & Switchgear
Railcar Movers | Specialty Manufacturing | Remanufacturing | Training & Support

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Manufacturing Technologies

Stewart & Stevenson, headquartered in Houston, Texas since 1902, serves global markets with system solutions 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 acquisition and control centers.
- Cementing units: 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.
- 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, and trademarked Rail King railcar movers utilized by the rail industry.

Stewart & Stevenson Manufacturing Technologies' facilities are located in Houston, Texas.

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
- 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.



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	FT-3001 Trailer Mounted	FS-2251 Skid Mounted
Carrier Type	Stewart & Stevenson trailer	Stewart & Stevenson trailer	Canadian Tri-axle	Kenworth, Mercedes Benz or other truck chassis	Stewart & Stevenson trailer	Stewart & Stevenson oilfield skid
Carrier Drive Configuration	Tandem or Tridem Air Ride	Tandem or Tridem Air Ride	Tridem Air Ride	6x4, 6x6, 8x4, 8x6, or 8x8	Tridem Air Ride	-
Size: L x W x H	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"	48' x 8'6" x 13'6"	27'0" x 8'0" x 10'6"
Engine Rating	2250 bhp	2500 bhp	2500 bhp	2250 bhp (2500 and 3000 optional)	3000 bhp (2500 optional)	2250 bhp (2500 and 3000 optional)
Maximum Ambient Operating Temperature	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)
Pump	Triplex or Quintuplex	Triplex or Quintuplex	Triplex or Quintuplex	Triplex or Quintuplex	Triplex or Quintuplex	Triplex or Quintuplex
Control System	Stewart & Stevenson IPC™	Stewart & Stevenson IPC™	Stewart & Stevenson IPC™	Stewart & Stevenson IPC™	Stewart & Stevenson IPC™	Stewart & Stevenson IPC™
Cold Weather Package	Optional	Optional	Included	Optional	Optional	Optional
CE, TUV Other Certifications Available	Optional	Optional	-	Optional	Optional	Optional

Fracturing Blenders

- Mix complex slurries with varying densities
- AccuFrac+™ 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
Maximum Discharge Rate	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
Maximum Discharge Density	21 lb/gal	21 lb/gal	21 lb/gal	21 lb/gal	21 lb/gal	21 lb/gal	21 lb/gal
Maximum Proppant input Rate	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)
Carrier Type	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
Size: L x W x H	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"
Mixing Chamber	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
Drive System*	(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
Total Horsepower	1550 bhp	1260 bhp	1050 bhp	500 bhp	550 bhp	600 bhp	330 bhp
Number of Liquid Additive Systems	6 or more	6 or more	6 or more	6 or more	6 or more	6 or more	6 or more
Number of Dry Additive Systems	Up to 2	Up to 2	Up to 2	Up to 2	Up to 2	Up to 2	Up to 2
Discharge Pump	14x12	14x12	14x12	-	-	-	6x5
Suction Pump	12x12	12x10	12x10	10x8	10x8	10x8	6x5
Automated Control System	Stewart & Stevenson AccuFrac+	Stewart & Stevenson AccuFrac+	Stewart & Stevenson AccuFrac+	Stewart & Stevenson AccuFrac+	Stewart & Stevenson AccuFrac+	Stewart & Stevenson AccuFrac+	Stewart & Stevenson AccuFrac+
Cold Weather Package	Optional	Optional	Optional	Optional	Optional	Optional	Optional

Chemical Additive & Hydration Units

- Dry and liquid polymer injection and hydration
- Combination units with additional chemical additive systems
- AccuFrac+™ automates controls
- 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
Carrier Type	Stewart & Stevenson trailer	Stewart & Stevenson trailer	Stewart & Stevenson trailer	Kenworth, Mercedes Benz or other truck chassis	Oilfield skid
Carrier Drive Configuration	Tandem Air Ride	Tandem Air Ride	Tandem Air Ride	6×4, 6×6, 8×4, 8×6, or 8×8	-
Size: L × W × H	48'0" × 8'6" × 13'6"	44'0" × 8'6" × 13'6"	46'0" × 8'6" × 13'6"	37'6" × 8'6" × 12'6"	39'6" × 11'0" × 25'0"
Engine Rating	600 bhp	600 bhp	Dual 110 bhp (each)	400 bhp (minimum)	500 bhp
Number of Chemical Injection Circuits	5 or more	5 or more	10	6	10
Pump Type	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
Hydration Tank Volume	200 bbl	200 bbl	-	-	200 bbl
Maximum Hydration Tank Pump Inlet Rate	100 bbl/min	100 bbl/min	-	-	100 bbl/min
Control System	Stewart & Stevenson AccuFrac+	Stewart & Stevenson AccuFrac+	Stewart & Stevenson AccuFrac+	Stewart & Stevenson AccuFrac+	Stewart & Stevenson AccuFrac+
Transfer Pump System	Standard	Standard	Standard	Standard	Standard
Environmental Enclosure	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
Carrier Type	Stewart & Stevenson trailer	Stewart & Stevenson trailer	Stewart & Stevenson trailer	Kenworth, Mercedes Benz or other truck chassis
Carrier Drive Configuration	Tandem Air Ride	Tandem Air Ride	Tandem Air Ride	6×4, 6×6, 8×4, 8×6, or 8×8
Size: L × W × H	37'11" × 8'6" × 13'6"	41'6" × 8'6" × 13'6"	41'6" × 8'6" × 13'6"	37'7" × 8'6" × 13'2"
Engine Rating	600 bhp	850 bhp	1000 bhp and 1200 bhp	500 bhp
Transmission	Allison 4700 OFS	Allison S8610	Allison S8610	Truck chassis transmission
Pump	Triplex	Quintuplex	Quintuplex	Triplex
Acid Transportation Capability	1500 gal	1500 gal	1500 gal	1000 gal
Mixing Tub	Optional	Optional	Optional	Optional
Cold Weather Package	Optional	Optional	Optional	Optional
Data Acquisition System	Optional	Optional	Optional	Optional
Dry Additive Feeder	Optional	Optional	Optional	Optional

Data Aquisition & Control Centers

- Centralized monitoring and control of fracturing treatment
- IPC controls up to 24 units at single workstation
- AccuFrac+™ -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
Control Cabin Size L x W x H	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"
Carrier Type	Stewart & Stevenson trailer	Stewart & Stevenson trailer	Kenworth, Mercedes Benz or other truck chassis	Kenworth, Mercedes Benz or other truck chassis
Carrier Drive Configuration	Tandem Air Ride	Tandem Air Ride	4x2, 4x4, 6x4, or 6x6	4x2, 4x4, 6x4, or 6x6
Maximum Number of Fracturing Unit Controls	32	32	32	32
Maximum Number of Blender Controls	2 or more	2 or more	2 or more	2 or more
Maximum Number of Chemical Additive/Hydration Controls	2 or more	2 or more	2 or more	2 or more
Number of Discrete Physical Data Channels	16-24	16-24	16-24	16-24
Number of Data Channels	500	500	500	500
Fracturing Pump Control System	IPC - PC	IPC - PC	IPC - PC	IPC - PC
Blender, Chemical Additive and Hydration Control System	AccuFrac - PC	AccuFrac - PC	AccuFrac - PC	AccuFrac - PC
Touchscreen IPC - PC Interfaces	3+	3+	3+	3+
Industrial Computers	3	3	3	3
ACCUFAC+ - PC and Modeling Software Screens	7+	6+	7+	6+
Printers	2	2	2	2
Generator System	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
Communication System	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

- CO₂ 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 Tubing

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.



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
Model	3-Piece SS Series	4-Piece OFS Series	TT-80-DR Crane	TT-100-XC High Capacity	TCR-15000	TCM-10000	1-Truck	2-Truck
Hydraulic Power Source	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
Truck	-	-	-	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
Injector Head (lb pull)	80k, 100k	80k, 100k	80k, 100k	80k, 100k	80k, 100k	80k, 100k	80k, 100k	80k, 100k
Reel	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
Well Control	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"
Working Pressure	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
Cabin Size	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)
Accumulators	2, 3 or 4	2, 3 or 4	2, 3 or 4	4	4	4	2	2
BOP Controls	4, 6, 8	4, 6, 8	4, 6, 8	6, 8, 10	6 or 8	6 or 8	4 or 6	4 or 6
Crane	-	-	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
- VBIII 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)
M-80 MK IV	80,000	40,000	200	50	52	82	7,000
M-80L MK IV	80,000	40,000	200	50	52	96	8,500
M-100 MK IV	100,000	40,000	200	50	52	82	7,000
M-100L MK IV	100,000	40,000	200	50	52	96	8,500
D-100	100,000	50,000	200	55	57	116	10,750
D-145	145,000	72,500	125	65	71	136	17,500
D-175	175,000	87,500	125	65	71	150	20,000
D-200	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



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
Hydraulic Power Source	Remote or stand alone	Remote or stand alone
Reel Capacity	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)
Reel Drive	Direct or Chain	Direct or Chain
Overall Width	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 ² 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 × 4	2 each Mission 5 × 4	3 each Mission 4 × 3	2 each Mission 5 × 4



PRW-2000 Twin High Rate Pumper

Skid	Skid	Truck Chassis	Truck Chassis	Truck Chassis
WS-601	WS-1202	WC-601	WC-1202	PTP-600
-	-	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				
Model	NS-181-NF	NT-181-NF	WNT-601-181-NF-Combo	NC-181-NF
Vaporization Type	Heat recovery	Heat recovery	Heat recovery	Heat recovery
Maximum Discharge Rate	180,000 scfh (5.097 m ³ /h)	180,000 scfh (5.097 m ³ /h)	180,000 scfh (5.097 m ³ /h)	180,000 scfh (5.097 m ³ /h)
Maximum Discharge Pressure	10,000 psi (15,000 optional)	10,000 psi (15,000 optional)	10,000 psi (15,000 optional)	10,000 psi (15,000 optional)
Carrier Type	Stewart & Stevenson oilfield skid	Stewart & Stevenson trailer	Stewart & Stevenson trailer	Kenworth, Mercedes Benz or other truck chassis
Carrier Drive Configuration	N/A	Tandem or Tridem Air Ride	Tandem or Tridem Air Ride	6×4, 6×6, 8×4, 8×6, or 8×8
Size: L × W × H	14'0" × 8'0" × 8'6"	40'0" × 8'6" × 13'6"	44'6" × 8'6" × 13'5"	39'6" × 8'6" × 12'2"
Engine Rating	600 bhp	600 bhp	600 bhp	550 bhp
Maximum Ambient Operating Temperature	122 °F / 50 °C	122 °F / 50 °C	122 °F / 50 °C	122 °F / 50 °C
LN ² Tank	-	3,000 gallon	2,000 gallon	2,000 gallon
Pump Drive	Closed loop hydraulic	Closed loop hydraulic	Closed loop hydraulic	Closed loop hydraulic
Cryogenic Pump	Triplex	Triplex	Triplex	Triplex
Data Acquisition System	Optional - Stewart & Stevenson DaqPac	Optional - Stewart & Stevenson DaqPac	Optional - Stewart & Stevenson DaqPac	Optional - Stewart & Stevenson DaqPac

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

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 ³ h)	660,000 scfh (20.388 m ³ h)	660,000 scfh (20.388 m ³ h)	1,270,000 scfh (36.000 m ³ 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

Power Generation

Stewart & Stevenson manufactures power generation packages featuring high-performance 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
Ratings	60 Hz	50 Hz	60 Hz	50 Hz	60 Hz	60 Hz	50 Hz	60 Hz	60 Hz	50 Hz	60 Hz	50 Hz	60 Hz
Drilling (prime) kW output ¹	687	564	912	727	997	1223	1088	1254	1633	1445	1633	1445	420/525
Prime Power output (bhp)	1020	838	1354	1080	1481	1817	1616	1863	2425	2146	2425	2146	685
Speed, rated (rpm)	1800	1500	1800	1500	1200	1800	1500	1200	1800	1500	1800	1500	1800
Engine Manufacturer	MTU		MTU		MTU		MTU		MTU		MTU		MTU
Engine Model	12V2000		16V2000		12V4000		12V4000		16V4000		16V4000		Series 60
Rated Voltage													480/277 VAC
Rated Power Factor (lagging)													0.8

¹At 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	
Ratings	60 Hz	50 Hz	60 Hz	50 Hz	60 Hz	50 Hz	60 Hz	50 Hz	60 Hz	50 Hz
Drilling (prime) kWe output¹	661	546	884	732	1520	1254	2129	1977	2661	2471
Prime Power output (bhp)	932	771	1247	1033	2145	1770	3004	2789	3755	3487
Speed, rated (rpm)	1800	1500	1800	1500	1800	1500	1800	1500	1800	1500
Engine Manufacturer	MTU		MTU		MTU		MTU		MTU	
Engine Model	12V2000		16V2000		12V4000		16V4000		20V4000	
MTU features:	<ul style="list-style-type: none"> • High power to weight ratio • Compact footprint 		<ul style="list-style-type: none"> • Increased variable deck load capabilities • Series 4000 with common rail fuel system for enhanced performance and reduced emissions 							

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

Model	DM1440E		DM2150E		DM2865E		DM3580E	
Ratings	60 Hz	50 Hz	60 Hz	50 Hz	60 Hz	50 Hz	60 Hz	50 Hz
Continuous kWe output¹	1432	1200	2148	1787	2865	2381	3581	2976
Continuous Power output (bhp)	2000	1675	3000	2495	4000	3325	5000	4155
Speed, rated (rpm)	900	750	900	750	900	750	900	750
Engine Manufacturer	EMD		EMD		EMD		EMD	
Engine Model	8-710		12-710		16-710		20-710	
EMD features:	<ul style="list-style-type: none"> • Proven offshore reliability • Durable medium speed engines 		<ul style="list-style-type: none"> • EPA Certification for ratings • Extended TBO intervals 		<ul style="list-style-type: none"> • Less maintenance = higher availability • Powerful, responsive two-cycle design 			

¹According 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



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
RK285					
G4	37,000	28,250	Side Mount	Tier 3 - 173 hp	Analog
G5	37,000	28,250	Side Mount	Tier 4i - 173 hp	Digital
RK290					
G4	39,500	29,100	Side Mount	Tier 3 - 173 hp	Analog
G5	39,500	29,100	Side Mount	Tier 4i - 173 hp	Digital
RK300					
G4	43,250	30,300	Side Mount	Tier 3 - 173 hp	Analog
G5	43,250	30,300	Side Mount	Tier 4i - 173 hp	Digital
RK320					
G4 (export)	49,000	32,400	Full Width	Tier 3 - 190 hp	Analog
G6	49,000	32,400	Full Width	Tier 4f - 195 hp	Digital
RK330					
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



Drive Systems, Switchgear & Services

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



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



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



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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