

TorqMax

Enhanced-geometry pumping unit

APPLICATIONS

- High-load wells that benefit from a fast downstroke with a slower upstroke
- Unconventional shale reservoirs
- Oil wells with large variations in production
- Automation applications
- Conventional oil wells

BENEFITS

- Delivers easy installation and maintenance
- Provides long service life of over 25 years with proper maintenance
- Lowers year-over-year operational cost
- Enables downsizing the unit and prime mover compared to conventional units, saving cost initially and in day-to-day operations

FEATURES

- Advanced geometry creating a larger allowable load range and more efficient operation
- Phased crank design with more torque available for the upstroke
- High-load, easily serviced center bearing based on proven railway bearing design
- Dual-axis hinge pin style equalizer bearing for long life and reduced stress in assembly
- High-capacity gear reducer designed far beyond API requirements
- Large, low-speed shaft for long life and increased counterbalance support
- Field-serviceable gear reducer design with bolt-on cranks
- Fully enclosed horsehead for maximum strength

The TorqMax* enhanced-geometry pumping unit is an alternative to conventional pumping units. For certain rod pump applications, the TorqMax pumping unit can help reduce torque and lower prime mover horsepower requirements, thus reducing lifting costs.

The primary differences between TorqMax pumping units and conventional units are:

- The structure of the TorqMax pumping unit is shifted forward from the gear reducer toward the wellhead, whereas the center of the equalizer bearing shaft sits directly over the center of the slow-speed shaft of the gear reducer on conventional pumping units.
- The crankpin holes are placed at an offset angle on the crank arm of the TorqMax pumping unit but run parallel to the crank arm on a conventional unit.
- The TorqMax pumping unit must always rotate clockwise to maximize effects, while a conventional unit can run in either direction of rotation.



Main Specifications

Specifications Model	Basic Parameters		Gear Reducer			
	Rated Polished Rod Capacity, lbf	Stroke Length, in	Rated Torque, in.lbf	Reducer Gear Ratio	Oil Storage Quantity, galUS	Lubricant
TM456D-365-120	36,500	120	456,000	28.84	110	
TM456D-305-144	30,500	144	456,000	28.84	110	ISO VG 150 winter
TM640-365-144	36,500	144	640,000	29.32	106	ISO VG 200 summer
TM640-427-144	42,700	144	640,000	29.32	106	
TM640D-365-168	36,500	168	640,000	29.32	106	
TM640-427-168	42,700	168	640,000	29.32	106	ISO VG 150 winter
TM912D-365-168	36,500	168	912,000	28.79	180	ISO VG 200 summer
TM912-427-168	42,700	168	912,000	28.79	180	
TM912-427-192	42,700	192	912,000	28.79	180	ISO VG 150 winter
TM1280-427-192	42,700	192	1,280,000	28.672	185	ISO VG 200 summer

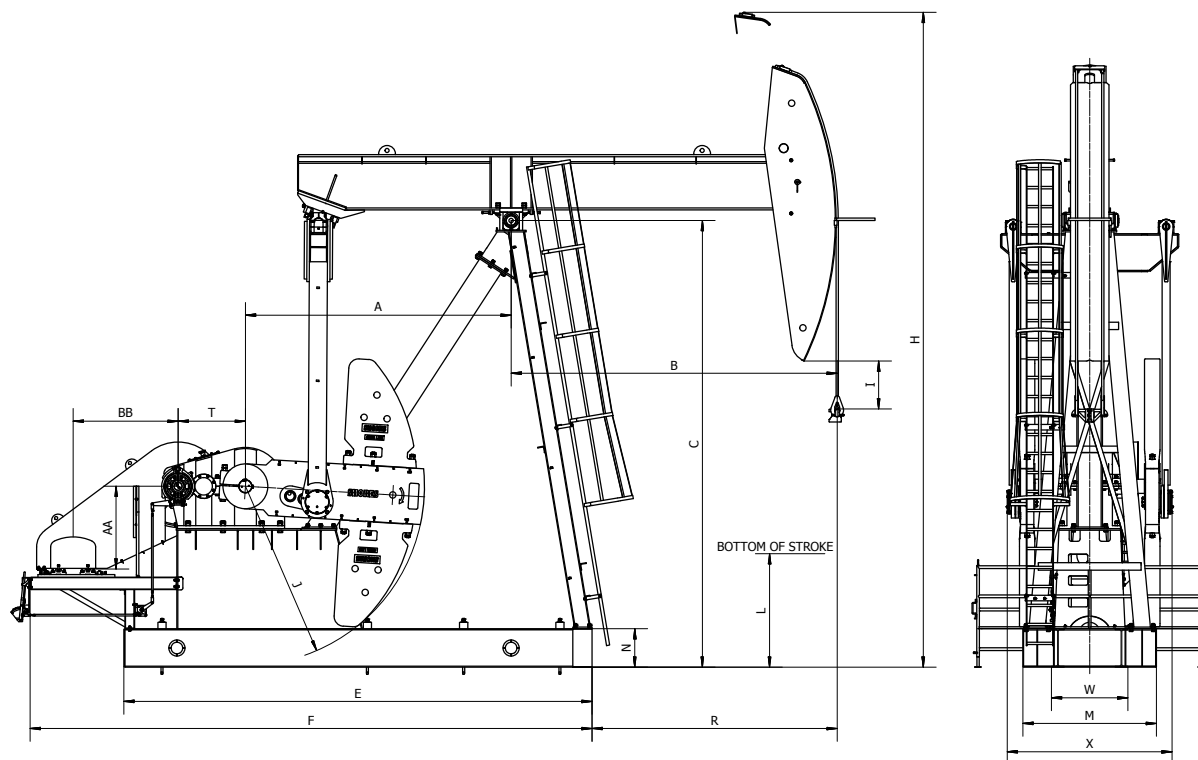
Pumping units can be manufactured with T base and low or high prime as well as with wide base and low prime.

Counterbalance Data

	Model						
	TM456D-365-120	TM456D-305-144	TM640D-365-144 TM640D-427-144	TM640D-365-168 TM912D-365-168	TM640D-427-168 TM912D-427-168	TM912D-427-192	TM1280D-427-192
Structural unbalance, lbf	590	-500	230	-900	-940	-2,610	-2,510
Cranks	GRC150	GRC150	GRC160	GRC160	GRC160	GRC160	GRC160
Effective counterbalance (ECB) cranks only, lbf	9,679	7,090	10,302	7,745	7,705	4,962	5,062
Max. ECB, lbf	30,020	24,076	35,702	29,544	29,504	24,056	24,516

Dimensional Data, in

Model	A	B	C	E	F	H	I	J	L	M	N	R	T	W	X	AA	BB
TM456D-365-120	141.93	144.49	237.99	255.75	313.15	309.21	27.36	95.08	81.10	81.89	23.62	102.95	39.37	46.85	104.02	35.79	63.94
TM456D-305-144	141.93	173.03	237.99	255.75	313.15	321.46	26.77	95.08	57.87	81.89	23.62	131.50	39.37	46.85	104.02	35.79	63.94
TM640D-365-144	118.11	171.65	274.00	287.17	344.65	357.44	26.57	109.84	94.09	81.89	23.62	122.05	41.34	46.85	101.14	50.75	64.33
TM640D-427-144	118.11	171.65	274.00	287.17	344.65	357.44	26.57	109.84	94.09	81.89	23.62	122.05	41.34	46.85	101.14	50.75	64.33
TM640D-365-168	118.11	200.00	274.00	287.17	344.65	368.70	27.17	109.84	69.68	81.89	23.62	150.39	41.34	46.85	101.14	50.75	64.33
TM640D-427-168	118.11	200.00	274.00	287.17	344.65	368.70	27.17	109.84	69.68	81.89	23.62	150.39	41.34	46.85	101.14	50.75	64.33
TM912D-365-168	118.11	200.00	274.00	295.12	352.60	368.70	27.17	109.84	69.68	81.89	23.62	150.39	48.43	46.85	105.12	50.75	65.20
TM912D-427-168	118.11	200.00	274.00	295.12	352.60	368.70	27.17	109.84	69.68	81.89	23.62	150.39	48.43	46.85	105.12	50.75	65.20
TM912D-427-192	118.11	228.35	274.00	295.12	352.60	379.92	27.95	109.84	46.06	86.61	23.62	178.74	48.43	46.85	105.12	50.75	65.20
TM1280-427-192	118.11	228.35	274.00	301.61	352.60	379.92	27.95	109.84	46.06	86.61	23.62	178.74	56.69	46.85	119.29	59.02	63.43



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