

MUD PUMPS



**Bentec MUD PUMPS stand for new technology,
enhanced reliability and reduced maintenance.**



Bentec completely redeveloped the concept of Mud Pumps. Being equipped its Mud Pumps with a direct-driven gearbox, Bentec AC-Motors and a state of the art pump housing. This is no need for an internal gear coming with many disadvantages and no more belt tensioning. Bentec Mud Pumps are reduced to the task they are actually intended for: pump operations.

Bentec Mud Pumps provide a light weight and a small footprint. The Bentec AC-Motor is top or rear mounted – suitable for any drilling rig arrangement. The pump is available with 5,000 or 7,500 PSI fluid ends and all of its parts meet latest API standards and are available worldwide.

A jib crane makes it easy to handle the liner and fluid end components. Furthermore, Bentec uses a patented liner and valve clamping technology to reduce the maintenance time significantly. A quick-change liner and piston system serves for easy maintenance. A special feature of the Bentec Mud Pump is the side-mounted gear drive. This design eliminates the need for chain or belt tensioning systems. The two stage helical gear feeds directly into a forged/welded crankshaft, which is balanced and provides quiet and vibration reduced operation.

Liner cooling and gear lubrication systems are included; a supercharge pump and a noise reduction package can be installed upon request.

The Bentec Mud Pump is the right choice especially when it comes to noise-sensitive environments such as offshore or densely populated environments. Beyond the supply of Mud Pumps, Bentec acts as system supplier. The pumps can be delivered together with a Bentec Variable Frequency Drive.

Furthermore the efficiency of Bentec Pumps can be improved by adding available Bentec Drilling Enhancement Software. For example Bentec Soft Pump System de-synchronizes strokes of multiple Mud Pumps in order to reduce wear and tear on high pressure equipment and improves response time for MWD tools.

Bentec AC-Motors

Bentec provides own designed AC-Motors dedicated for continuous Mud Pump operation. These motors provide best-in class electrical performance and insulation classes with superior mechanical durability. High-end quality materials, state of the art technology and design according to ISO 9001 standards ensure the highest degree of performance and uptime in harshest environment.

Bentec Gearboxes

Every Mud Pump has its unique designed Gearbox. The transmission has been simplified to the natural purpose and all unnecessary components have been removed to simplify the Mud Pump and to remove the internal gear with all associated reaction forces reducing lifetime of the Mud Pump components.

Bentec Smart Fluid Ends

Since the development of the Bentec Mud Pump back in 2009, Bentec has continuously improved the AC Gearbox-Driven Mud Pump in terms of increasing reliability and reducing its total cost of ownership. With the latest development Bentec designed a new leading edge technology using a Smart Fluid End to reduce the total cost of ownership of Mud Pumps. In principle Bentec designed out of the 2-piece fluid end a 3-piece fluid end. The fluid end body is divided from the valve body itself and can be used as a suction or discharge module. These modules are identical and mounted on one carrier unit. Both, the suction and the discharge module are mounted on the carrier unit. This enables drilling contractors and operators to reduce significantly the need of Mud Pump spare parts as well as overhaul costs.

Bentec Quick Liner Clamping System

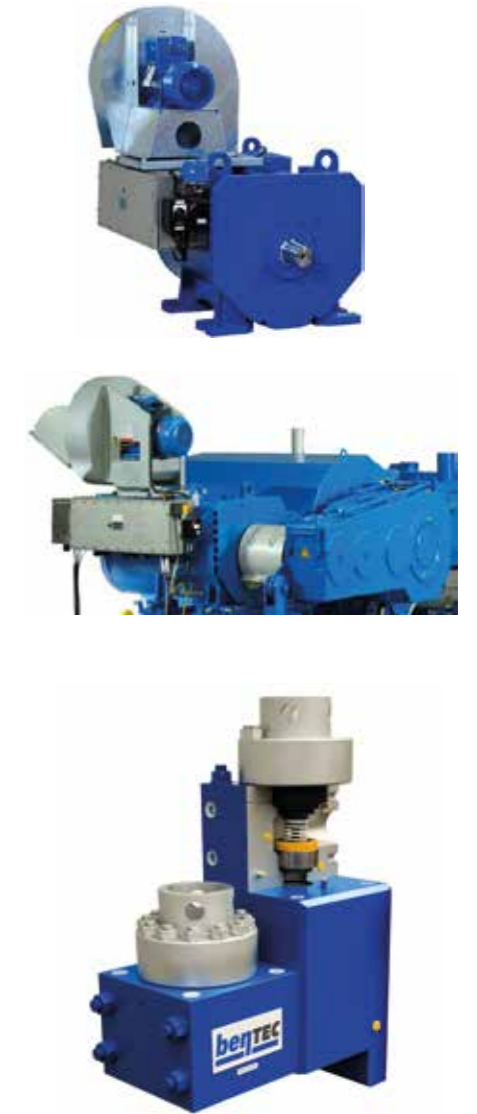
Changing liners at Mud Pumps is always a time consuming task, should be well planned and also requires special tools at other Mud Pumps.

Bentec has designed a patented and simplified Quick Liner Clamping System to eliminate the requirement of special tools and keeping the same accuracy of tightening the liner clamp bolts.

The system requires only a manual torque wrench. Each liner clamp bolt contains two mechanical check rings to indicate visually if the connection is under- or overtightened or in the right range.

This system is the most simplified solution to clamp a liner in a safest and quickest way with most reliable torque precision.

The Bentec Quick Liner Clamping System enables therefore frequent tightening torque checks at no additional time consumption and enabling extended liner lifetime.





1300hp - 2200hp

Mud Pump

Technical Data	MP-T-1300-AC-R	MP-T-1600-DC-R	MP-T-1600-AC	MP-T-1600-AC-R	MP-T-2200-AC
Power Rating	1,300 hp / 970 kW	1,600 hp / 1,200 kW	1,600 hp / 1,200 kW	1,600 hp / 1,200 kW	2,200 hp / 1,641 kW
Number of Motors	Single AC, forced ventilated	Double DC, forced ventilated	Single AC, forced ventilated	Single AC, forced ventilated	Double AC, forced ventilated
Motor Orientation	Rear Mount	Rear Mount	Top Mount	Rear Mount	Top Mount
Transmission	External Gearbox	External Gearbox	External Gearbox	External Gearbox	External Gearbox
Max. Pressure	5,000 PSI / 345 bar	7,500 PSI / 517 bar	7,500 PSI / 517 bar	7,500 PSI / 517 bar	7,500 PSI / 517 bar
Stroke	12" / 304.8 mm	12" / 304.8 mm	12" / 304.8 mm	12" / 304.8 mm	14" / 355.6 mm
Max. Stroke Speed	120 spm	120 spm	120 spm	120 spm	110 spm
Min. Liner Size	5" / 127 mm	4-1/2" / 114.3 mm	4-1/2" / 114.3 mm	4-1/2" / 114.3 mm	5" / 127 mm
Max. Liner Size	7-1/2" / 190.5 mm	7-1/2" / 190.5 mm	7-1/2" / 190.5 mm	7-1/2" / 190.5 mm	9" / 228.6 mm
Max. Discharge Flow	826 gpm / 3,127 l/min	826 gpm / 3,127 l/min	826 gpm / 3,127 l/min	826 gpm / 3,127 l/min	1,272 gpm / 4,816 l/min
Length	241" / 6,121 mm	275" / 7,000 mm	196" / 5,050 mm	241" / 6,110 mm	204" / 5,180 mm
Width	100" / 2,530 mm	118" / 2,991 mm	116" / 2,950 mm	100" / 2,530 mm	125" / 3,170 mm
Height	1159" / 4,040 mm	154" / 3,930 mm	169" / 4,290 mm	159" / 4,040 mm	163" / 4,130 mm
Weight (dry)*	76,059 lbs / 34.5 t	87,082 lbs / 39.5 t	97,003 lbs / 44 t	81,571 lbs / 37 t	101,854 lbs / 46.2 t

*Weight is based on 5,000 PSI fluid ends

Key Features

- direct-driven external gearbox
- no internal gear
- patented simplified liner clamping
- compact footprint
- main motor cooling is VFD-controlled
- fast change valve cover
- patented smart fluid ends
- further fluid end solutions available
- available drilling enhancement software:
 - Soft Pump System

Benefits

- extended crankshaft lifetime due to no internal reaction forces
- extended lifetime of main bearings
- shorter duration for liner change
- safer liner change
- less special transport permits required
- extended lifetime of main motors
- shorter duration for valve change
- smart fluid ends enable significant savings in stocking less fluid ends

Performance Chart MP-T-1300-AC

Liner size		inch	7½**	7,0	6½	6¼	6,0	5¾	5½	5,0
		mm	190,5	177,8	165,1	158,8	152,4	146,1	139,7	127,0
Max. discharge pressure	psi		2428	2787	3232	3496	3793	4130	4514	5000*
	bar		167	192	223	241	262	285	311	344
Volume per stroke	gal (US)		6,88	6,00	5,17	4,78	4,41	4,05	3,70	3,06
	litre		26,1	22,7	19,6	18,1	16,7	15,3	14,0	11,6
Pump Speed SPM	Max Input HP	Max Input kW	gal / min	gal / min	gal / min	gal / min	gal / min	gal / min	gal / min	gal / min
			l / min	l / min	l / min	l / min	l / min	l / min	l / min	l / min
120	1300	969	826	720	621	574	529	486	444	367
			3127	2724	2349	2172	2002	1838	1682	1390
110	1192	889	757	660	569	526	485	445	407	337
			2867	2497	2153	1991	1835	1685	1542	1274
100	1083	808	688	600	517	478	441	405	370	306
			2606	2270	1958	1810	1668	1532	1402	1158
90	975	727	620	540	465	430	397	364	333	275
			2346	2043	1762	1629	1501	1379	1261	1042
80	867	646	551	480	414	382	353	324	296	245
			2085	1816	1566	1448	1334	1226	1121	927
70	758	565	482	420	362	335	308	283	259	214
			1824	1589	1370	1267	1168	1072	981	811
60	650	485	413	360	310	287	264	243	222	184
			1564	1362	1175	1086	1001	919	841	695
50	542	404	344	300	259	239	220	202	185	153
			1303	1135	979	905	834	766	701	579
40	433	323	275	240	207	191	176	162	148	122
			1042	908	783	724	667	613	561	463

Stroke 12" (304,8mm) based on 90% mechanical efficiency SPM = strokes per minute * max working pressure
 based on 100% volumetric efficiency gal = US standard ** not preferred size

Performance Chart MP-T-1600-AC/DC

Liner size		inch	7½	7,0	6¾**	6½	6¼**	6,0	5¾**	5½
		mm	190,5	177,8	171,5	165,1	158,8	152,4	146,1	139,7
Max. discharge pressure	psi		2988	3430	3689	3978	4303	4669	5000*	5000*
	bar		206	236	254	274	297	322	345	345
Volume per stroke	gal (US)		6,88	6,00	5,58	5,17	4,78	4,41	4,05	3,70
	litre		26,1	22,7	21,1	19,6	18,1	16,7	15,3	14,0
Pump Speed SPM	Max Input HP	Max Input kW	gal / min	gal / min	gal / min	gal / min	gal / min	gal / min	gal / min	gal / min
			l / min	l / min	l / min	l / min	l / min	l / min	l / min	l / min
120	1600	1193	826	720	669	621	574	529	486	444
			3127	2724	2533	2349	2172	2002	1838	1682
110	1467	1094	757	660	613	569	526	485	445	407
			2867	2497	2322	2153	1991	1835	1685	1542
100	1333	994	688	600	558	517	478	441	405	370
			2606	2270	2111	1958	1810	1668	1532	1402
90	1200	895	620	540	502	465	430	397	364	333
			2346	2043	1900	1762	1629	1501	1379	1261
80	1067	795	551	480	446	414	382	353	324	296
			2085	1816	1689	1566	1448	1334	1226	1121
70	933	696	482	420	390	362	335	308	283	259
			1824	1589	1478	1370	1267	1168	1072	981
60	800	597	413	360	335	310	287	264	243	222
			1564	1362	1267	1175	1086	1001	919	841
50	667	497	344	300	279	259	239	220	202	185
			1303	1135	1056	979	905	834	766	701
40	533	398	275	240	223	207	191	176	162	148
			1042	908	844	783	724	667	613	561

Stroke 12" (304,8mm) based on 90% mechanical efficiency SPM= strokes/min *Max PSI
 based on 100% volumetric efficiency gal= US standard ** not preferred Liner size

Performance Chart MP-T-1600-AC/DC

Fluid End size		7500 PSI FLUID END										
Liner size		inch	7½**	7,0	6¾**	6½	6¼**	6,0	5¾**	5½	5,0	4½
		mm	190,5	177,8	171,5	165,1	158,8	152,4	146,1	139,7	127,0	114,3
Max. discharge pressure	psi		2988	3430	3689	3978	4303	4669	5083	5556	6723	7500*
	bar		206	236	254	274	297	322	350	383	464	517
Volume per stroke	gal (US)		6,88	6,00	5,58	5,17	4,78	4,41	4,05	3,70	3,06	2,48
	litre		26,1	22,7	21,1	19,6	18,1	16,7	15,3	14,0	11,6	9,4
Speed SPM	Max input HP	Max input kW	gal / min	gal / min	gal / min	gal / min	gal / min	gal / min	gal / min	gal / min	gal / min	gal / min
			l / min	l / min	l / min	l / min	l / min	l / min	l / min	l / min	l / min	l / min
120	1600	1193	826	720	669	621	574	529	486	444	367	297
			3127	2724	2533	2349	2172	2002	1838	1682	1390	1126
110	1467	1094	757	660	613	569	526	485	445	407	337	273
			2867	2497	2322	2153	1991	1835	1685	1542	1274	1032
100	1333	994	688	600	558	517	478	441	405	370	306	248
			2606	2270	2111	1958	1810	1668	1532	1402	1158	938
90	1200	895	620	540	502	465	430	397	364	333	275	223
			2346	2043	1900	1762	1629	1501	1379	1261	1042	844
80	1067	795	551	480	446	414	382	353	324	296	245	198
			2085	1816	1689	1566	1448	1334	1226	1121	927	751
70	933	696	482	420	390	362	335	308	283	259	214	174
			1824	1589	1478	1370	1267	1168	1072	981	811	657
60	800	597	413	360	335	310	287	264	243	222	184	149
			1564	1362	1267	1175	1086	1001	919	841	695	563
50	667	497	344	300	279	259	239	220	202	185	153	124
			1303	1135	1056	979	905	834	766	701	579	469
40	533	398	275	240	223	207	191	176	162	148	122	99
			1042	908	844	783	724	667	613	561	463	375

Stroke 12" (304,8mm) based on 90% mechanical efficiency SPM = strokes per minute * max working pressure
 based on 100% volumetric efficiency gal = US standard ** not preferred size

Performance Chart MP-T-2200-AC

Liner size		inch	9*	8,0	7,0	6½	6,0	5½	5,0
		mm	228,6	203,2	177,8	165,1	152,4	139,7	127,0
Max. discharge pressure	psi		2668	3376	4410	5114	6002	7143	7500*
	bar		184	233	304	353	414	493	517
Volume per stroke	gal (US)		11,57	9,14	7,00	6,03	5,14	4,32	3,57
	litre		43,8	34,6	26,5	22,8	19,5	16,4	13,5
Pump Speed SPM	Max Input HP	Max Input kW	gal / min	gal / min	gal / min	gal / min	gal / min	gal / min	gal / min
			l / min	l / min	l / min	l / min	l / min	l / min	l / min
110	2200	1641	1272	1005	770	664	565	475	393
			4816	3806	2914	2512	2141	1799	1487
100	2000	1491	1157	914	700	603	514	432	357
			4378	3460	2649	2284	1946	1635	1351
90	1800	1342	1041	823	630	543	463	389	321
			3941	3114	2384	2055	1751	1472	1216
80	1600	1193	925	731	560	483	411	346	286
			3503	2768	2119	1827	1557	1308	1081
70	1400	1044	810	640	490	422	360	302	250
			3065	2422	1854	1599	1362	1145	946
60	1200	895	694	548	420	362	308	259	214
			2627	2076	1589	1370	1168	981	811
50	1000	746	578	457	350	302	257	216	178
			2189	1730	1324	1142	973	818	676
40	800	597	463	366	280	241	206	173	143
			1751	1384	1059	914	778	654	541

based on 90% mechanical efficiency based on 100% volumetric efficiency
 SPM= strokes/min gal= US standard
 * 9" Liners special arrangement ** max. discharge pressure

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Bentec GmbH Drilling & Oilfield Systems
Deilmannstraße 1
48455 Bad Bentheim
Germany
Phone: +49 (0)5922 72 80
Fax: +49 (0)5922 72 457
Internet: www.bentec.com
E-Mail: sales@bentec.com

LLC Bentec Tyumen, Russia
2 km from Stary Tobolsky Trakt 8 a
625014 Tyumen
Russia
Phone: +7 (0)3452 6839 00
Fax: +7 (0)3452 6839 26
Internet: www.bentec.ru
E-Mail: tyumen@bentec.com

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