PCP MODEL & ELASTOMER

SPECIFICATIONS

CDI OILFIELD SERVICES

LS LIFTING SOLUTIONS

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PROGRESSING CAVITY PUMP MODELS

Series	Model Name	Nominal Capacity		Lifts	Rotor Length Code Availability	Elastomer Availability	Stator Tube OD	Standard Stator Connection		Optional Stator Connection		Rotor Drift Diameter	Standard Rotor Connection	Min. Tubing Size for Rotor		Min. Tubing Size for 3/4 (19.1) Coil	Cavity Inflow CSA
		m3/ day/100rpm	bbls/ day/100rpm	m (ft)			in. (mm)	Size in. (mm) Top x Bottom	OD in. (mm)	Size in. (mm) Top x Bottom	OD in. (mm)	in. (mm)	in. (mm)	Drift in. (mm)	Orbit in. (mm)	in. (mm)	in.^{2} mm^2
2-3/8 Series	2 XS	2	13 B	900, 1200, 1500, 1800, 2400 (3000, 3900, 4900, 6000, 7900)	S,L,P	MN, HN	2.38 (60.3)	2-3/8 NUE PIN x 2-3/8 NUE PIN (60.3 NUE PIN x 60.3 NUE PIN)	2.88 (73.0)	N/A	N/A	1.50 38.1	3/4 (19.1) API PIN	2-3/8 EUE (60.3 EUE)	2-3/8 EUE (60.3 EUE)	2-7/8 EUE (73.0 EUE)	0.42 271
	4 XS	4	25 B	900, 1200, 1500, 1800, 2400 (3000, 3900, 4900, 6000, 7900)	S,L,P	MN, HN						1.50 38.1					0.42 271
	7 XS	7	44 B	900, 1200, 1500, 1800, 2400 (3000, 3900, 4900, 6000, 7900)	S,L,P	MN, HN						1.50 38.1					0.46 297
3-1/8 Series	4	4	25 B	1200, 1500, 1800, 2400, 3000, 3600 (3900, 4900, 6000, 7900, 9800, 11800)	S,L,P	MN, HN	3.13 (79.4)	2-7/8 EUE PIN x 2-7/8 EUE PIN (73.0 EUE PIN x 73.0 EUE PIN)	3.46[1] (87.9)[1]	2-3/8 EUE BOX WEX[2] x 2-3/8 EUE BOX WTB[2] (60.3 EUE BOX WEX[2] x 60.3 EUE BOX WTB[2])	3.13[3] (79.4)	1.63 41.3	7/8 (22.2) API PIN	2-3/8 EUE (60.3 EUE)	2-7/8 EUE (73.0 EUE)	2-7/8 EUE (73.0 EUE)	0.76 490
	5 CH	5	31 B	1200, 1500, 1800, 2400, 3000, 3600 (3900, 4900, 6000, 7900, 9800, 11800)	P	SN						1.65 41.9					0.96 619
	7	7	44 B	1200, 1500, 1800, 2400, 2700, 3000 (3900, 4900, 6000, 7900, 8900, 9800)	S,L,P	MN, HN						1.63 41.3					0.84 542
3-1/2 Series	10	10	63 B	1200, 1500, 1800, 2400, 2700, 3000 (3900, 4900, 6000, 7900, 8900, 9800)	S,L,P	SN, MN, HN	3.50 (88.9)	2-7/8 EUE BOX WHC[2] x 2-7/8 EUE BOX (73.0 EUE BOX WHC[2] x 73.0 EUE BOX)	3.67 (93.17)	3-1/2 NUE PIN x 3-1/2 NUE PIN (88.9 NUE PIN x 88.9 NUE PIN)	4.18[1] (106.2)[1]	1.88 47.7	7/8 (22.2) API PIN	2-3/8 EUE (60.3 EUE)	2-7/8 EUE (73.0 EUE)	3-1/2 EUE (88.9 EUE)	1.11 716
	13	13	82 B	1300, 2000, 2600 (4300, 6600, 8600)	S,L,P	MN, HN						1.84 46.7					1.25 806
	15	15	94 B	1200, 1500, 1800, 2400, 2700, 3000 (3900, 4900, 6000, 7900, 8900, 9800)	S,L,P	SN, MN, HN						1.89 47.9					1.32 852
	20	20	126 B	1200, 1500, 1800, 2400, 2700, 3000 (3900, 4900, 6000, 7900, 8900, 9800)	S,L,P	SN, MN, HN						1.89 47.9					1.32 852
	30	30	189 B	1200, 1500, 1800, 2400, 2700, 3000 (3900, 4900, 6000, 7900, 8900, 9800)	S,L,P	MN, HN						1.89 47.9					1.32 852
	41	41	258 B	800, 1200, 1500, 1800 (2600, 3900, 4900, 6000)	S,L	MN, HN						1.89 47.9					1.32 852
	55	55	346 B	800, 1000, 1200, 1600 (2600, 3300, 3900, 5200)	S,L	MN, HN						1.89 47.9					1.32 852
	70	70	440 B	600, 900, 1200 (2000, 3000, 3900)	S,L	MN, HN						1.89 47.9					1.32 852
3-3/4 Series	8 CH	8	50 B	1200, 1500, 1800, 2400, 3000, 3600 (3900, 4900, 6000, 7900, 9800, 11800)	P	SN	3.75 (95.3)	3-1/2 EUE PIN x 3-1/2 EUE PIN (88.9 EUE PIN x 88.9 EUE PIN)	4.18[1] (106.2)[1]	2-7/8 EUE BOX WEX[2] x 2-7/8 EUE BOX WTB[2] (73.0 EUE BOX WEX[2] x 73.0 EUE BOX WTB[2])	3.75[3] (95.3)[3]	2.09 53.0	1 (25.4) API PIN	2-7/8 EUE (73.0 EUE)	3-1/2 EUE (88.9 EUE)	3-1/2 EUE (88.9 EUE)	1.42 916
	18 CH	18	113 B	1200, 1500, 1800, 2400 (3900, 4900, 6000, 7900)	P	SN						2.09 53.2					1.69 1090
	28	28	176 B	1200, 1500, 1800, 2400, 2700, 3000 (3900, 4900, 6000, 7900, 8900, 9800)	S,L,P	SN, MN, HN						2.10 53.3					1.71 1103
	36	36	226 B	900, 1200, 1500, 1800, 2400 (3000, 3900, 4900, 6000, 7900)	S,L	MN, HN						2.11 53.5					1.49 961
	43	43	270 B	900, 1200, 1500, 1800, 2400 (3000, 3900, 4900, 6000, 7900)	S,L,P	SN, MN, HN						2.10 53.3					1.61 1039
	54	54	340 B	900, 1200, 1500, 1800 (3000, 3900, 4900, 6000)	S,L,P	SN, MN, HN						2.10 53.3					1.71 1103
	68	68	428 B	900, 1200, 1500 (3000, 3900, 4900)	S,L,P	MN, HN						2.10 53.3					1.68 1084
	85	85	535 B	750, 1000, 1250 (2500, 3300, 4100)	S,L,P	MN, HN						2.09 53.1					1.73 1116
	102	102	642 B	600, 900, 1200 (2000, 3000, 3900)	S,L	MN, HN						2.10 53.3					1.71 1103
	120	120	755 B	600, 900 (2000, 3000)	S,L	SN, MN, HN						2.10 53.3					1.71 1103

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		m3/ day/100rpm	bbls/ day/100rpm	m (ft)			in. (mm)	Size in. (mm) Top x Bottom	OD in. (mm)	Size in. (mm) Top x Bottom	OD in. (mm)	in. (mm)	in. (mm)	Drift in. (mm)	Orbit in. (mm)	in. (mm)	in.[2] mm[2]
4-1/8 Series	23 CH	23	145 B	1200, 1500, 1800, 2400 (3900, 4900, 6000, 7900)	P	SN	4.13 (104.8)	3-1/2 EUE BOX WHC[2] x 3-1/2 EUE BOX (88.9 EUE BOX WHC[2] x 88.9 EUE BOX)	4.5 (114.3)	4 NUE PIN x 4 NUE PIN (101.6 NUE PIN x 101.6 NUE PIN)	4.75 (120.7)	2.27 57.5	1 (25.4) API PIN	2-7/8 EUE (73.0 EUE)	3-1/2 EUE[4] (88.9 EUE)[4]	3-1/2 (88.9) EUE Special Coil Joint	2.08 1342
	31	31	195 B	1200, 1500, 1800, 2400, 2700, 3000 (3900, 4900, 6000, 7900, 8900, 9800)	S,L,P	SN, MN, HN						2.21 56.0					2.10 1355
	42	42	264 B	1200, 1600, 2000, 2400, 2800, 3200 (3900, 5200, 6600, 7900, 9200, 10500)	S,L	MN, HN						2.26 57.4					2.09 1348
	50	50	315 B	900, 1200, 1500, 1800 (3000, 3900, 4900, 6000)	S,L	MN, HN						2.26 57.4					2.09 1348
	61	61	384 B	900, 1200, 1500, 1800, 2400 (3000, 3900, 4900, 6000, 7900)	S,L	MN, HN						2.26 57.4					2.09 1348
	72	72	453 B	900, 1200, 1500, 1800 (3000, 3900, 4900, 6000)	S,L	MN, HN						2.26 57.4					2.09 1348
	87	87	547 B	900, 1200, 1500 (3000, 3900, 4900)	S,L	MN, HN						2.26 57.4					2.09 1348
	105	105	660 B	800, 1000, 1200 (2600, 3300, 3900)	S,L	MN, HN						2.28 58.0					2.08 1342
	122	122	767 B	600, 900, 1200 (2000, 3000, 3900)	S,L	MN, HN						2.32 59.0				4-1/2 EUE (114.3 EUE)	2.07 1335
	145	145	912 B	600, 900 (2000, 3000)	S,L	MN, HN						2.31 59.0					2.07 1335
	167	167	1050 B	450, 600, 750, 900 (1500, 2000, 2500, 3000)	S,L	MN, HN						2.32 58.9	1-1/8 (28.6) API PIN				2.07 1335
	190	190	1195 B	400, 600, 800 (1300, 2000, 2600)	S,L	MN, HN						2.33 59.1					2.24 1445
4-3/4 Series	35 CH	35	220 B	1200, 1500, 1800, 2400 (3900, 4900, 6000, 7900)	P	SN	4.75 (120.7)	4-1/2 EUE PIN x 4-1/2 EUE PIN (114.3 EUE PIN x 114.3 EUE PIN)	5.56 (141.2)	3-1/2 EUE BOX WEX[2] x 3-1/2 EUE BOX WTB[2] (88.9 EUE BOX WEX[2] x 88.9 EUE BOX WTB[2]	4.75[3] (120.7)[3]	2.71 68.8	1 (25.4) API PIN	3-1/2 EUE (88.9 EUE)	4-1/2 EUE (114.3 EUE)	4-1/2 EUE (114.3 EUE)	2.81 1813
	47	47	296 B	1200, 1500, 1800, 2400, 2700, 3000 (3900, 4900, 6000, 7900, 8900, 9800)	S,L,P	SN, MN, HN						2.78 70.6					3.12 2013
	88	88	554 B	900, 1200, 1500, 1800 (3000, 3900, 4900, 6000)	S,L,P	MN, HN						2.82 71.5	1-1/8 (28.6) API PIN				3.27 2110
	165	165	1038 B	750, 1000, 1250 (2500, 3300, 4100)	S,L,P	SN, MN, HN						2.82 71.5					3.27 2110
	280	280	1761 B	400, 600, 800 (1300, 2000, 2600)	S,L	MN, HN						2.82 71.5					3.27 2110
5 Series	64	64	403 B	900, 1200, 1500, 1800, 2400 (3000, 3900, 4900, 6000, 7900)	S,L,P	MN, HN	5.00 (127.0)	5 STC PIN x 5 STC PIN (127.0 STC PIN x 127.0 STC PIN)	5.56 (141.2)	3-1/2 EUE BOX WEX[2] x 3-1/2 EUE BOX WTB[2] (88.9 EUE BOX WEX[2] x 88.9 EUE BOX WTB[2]	5.00[3] (127.0)[3]	2.85 72.5	1-1/8 (28.6) API PIN	3-1/2 EUE (88.9 EUE)	4-1/2 EUE (114.3 EUE)	4-1/2 EUE (114.3 EUE)	3.47 2239
	118	118	742 B	800, 1000, 1200, 1600 (2600, 3300, 3900, 5200)	S,L	MN, HN						2.85 72.5					3.47 2239
	215	215	1352 B	500, 750, 1000 (1600, 2500, 3300)	S,L	MN, HN						2.85 72.5					3.47 2239
5 (LG) Series	101	101	635 B	900, 1200, 1500, 1800 (3000, 3900, 4900, 6000)	S,L	MN, HN	5.00 (127.0)	5 STC PIN x 5 STC PIN (127.0 STC PIN x 127.0 STC PIN)	5.56 (141.2)	4-1/2 EUE BOX WHC[2] X 4-1/2 EUE BOX WHC[2] (114.3 EUE BOX WHC[2] X 114.3 EUE BOX WHC[2])	5.13[3] (130.2)[3]	2.94 74.7	1-1/8 (28.6) API PIN	4-1/2 EUE (114.3 EUE)	4-1/2 EUE (114.3 EUE)	4-1/2 EUE (114.3 EUE)	3.60 2323
	130	130	818 B	900, 1200, 1500, 1800 (3000, 3900, 4900, 6000)	S,L	MN, HN						2.94 74.7					3.60 2323
	150	150	944 B	800, 1000, 1200, 1600 (2600, 3300, 3900, 5200)	S,L	MN, HN						2.94 74.7					3.60 2323

Footnotes

[1] API special clearance coupling OD

[2] WEX = Welded Extension; WHC = Welded Half Collar; WTB = Welded Tagbar

[3] Shaved weld (add 0.25 in. if unshaved)

[4] Model 190 requires 3-1/2" EUE Custom Handling Pup (CHP) for orbit. The CHP is also recommended for other Models in this series.

ELASTOMERS

SOFT MEDIUM NITRILE (SN1)

- Low-hardness, medium-nitrile elastomer with excellent mechanical properties including tear and elongation
- Resilient elastomer capable of handling abrasives including large solids while minimizing associated damage
- Enables a higher interference rotor fit that prevents or delays decline in volumetric efficiency, even after significant stator material loss from abrasive wear

MEDIUM NITRILE (MN1)

- General-purpose, abrasive resistant, medium nitrile elastomer with excellent mechanical properties
- Very good water resistance, and ability to handle moderate aromatic content in the produced fluid

HIGH NITRILE (HN2)

- Augmented high-nitrile elastomer with significant enhancements to mechanical properties, oil and chemical resistance
- Offers the best combination of oil and water resistance
- Superior stator-tube bonding, with high retention of bond strength even after exposure to high temperature & aggressive fluids

- Our organization has an elastomer datasheet fully compliant to ISO 15136-1 Annex A, technical bulletins/summaries targeted at specific application types and/or downhole scenarios (ex. high gas, water TDS, high swell fluids, low water cuts), and a database containing hundreds of field fluid test results offering enhanced predictive capabilities for new applications.
- Additionally, CDI/Lifting Solutions can conduct new field fluid evaluation simulating downhole conditions, utilizing standard ASTM procedures or at more representative conditions, to offer advanced elastomer and pump sizing recommendations.
- For additional information on Lifting Solutions elastomers please contact a CDI representative.

Elastomer Code	Typical Applications	Nitrile Level (% ACN)	Hardness (Shore A)	Maximum Temperature	Maximum API Gravity	Water Resistance	Abrasive Resistance	H2S Resistance	Gas Resistance*
SN1	Heavy oil (CHOPS), high abrasives	32 to 36	55 to 60	60°C (140°F)	15	Very Good	Excellent	Fair	Fair
MN1	Heavy to moderate oil, moderate abrasives, CSG/CBM	32 to 36	65 to 70	80°C (176°F)	20** (25**)	Very Good	Very Good	Good	Good
HN2	Medium to light oil, high CO2/free gas, chemical injection, deeper/hotter wells	45 to 50	70 to 75	100°C (212°F)	35** (40**)	Very Good	Good	Good	Very Good

* Gas & explosive-decompression resistance is a concern primarily with CO2 since methane (CH4) permeability is significantly lower in elastomers
** Suitability of upper API gravity depends on specific application conditions including oil chemistry, water cut, and temperature

Lifting Solutions and CDI Oilfield Services have partnered together to deliver industry's highest quality progressing cavity pumps to the energy sector.

Lifting Solutions is a privately held engineering and manufacturing company delivering high-performance artificial lift and production products and services in the energy sector. Founded on a commitment to innovation, customer experience and results, Lifting Solutions tackles industry challenges head on to deliver products and services that consistently outperform the market – increasing production, decreasing field spend and driving sustainability.

CDI Oilfield Services, the Romanian subsidiary of US based Endurance Lift Solutions, supplies downhole pumps, fiberglass rods and equipment along with the related maintenance services to OMV Petrom, major Romanian oil company, as well as to other local and international operators. CDI Oilfield Services manufactures and services Sucker Rod Pumps and Progressing Cavity Pumps under a quality control system that meets or exceeds QA/QC guidelines. The pumps and parts portfolio covers the whole range of pump sizes and specialty pumps encompassing many innovative concepts. Its extended manufacturing facilities and highly qualified staff are available to support any completion design needs aimed to optimize the performance of pumping wells under the most critical downhole conditions thus ensuring for an extended run life while increasing the pumping system efficiency.