

CONVENTIONAL PROGRESSING CAVITY PUMP SPECIFICATIONS

**EXPERIENCE
PERFORMANCE.**

PROGRESSING CAVITY PUMP MODELS

Series Name	Model Name		Nominal Capacity (units/day/100rpm)		Lifts	Rotor Length Code Availability	Elastomer Availability	Stator Tube	Standard Stator Connection		Optional Stator Connection		Rotor Drift Diameter	Rotor Connection	Min. Tubing Size for Rotor		Min. Tubing Size for 3/4 (19.1) Coil	Cavity Inflow CSA
			m³	bbls	m (ft)			OD in (mm)	Size in (mm)	OD in (mm)	Size in (mm)	OD in (mm)	in (mm)	in (mm)	Drift in (mm)	Orbit in (mm)	in (mm)	in² (mm²)
2-3/8 Series		2 XS	2	13 B	900, 1200, 1500, 1800, 2400 (3000, 4000, 5000, 6000, 7900)	L,P	MN, HN	2.38 (60.3)	2-3/8 NUE Pin (60.3 NUE Pin)	2.88 (73.0)	n/a	n/a	1.50 (38.1)	3/4 API Pin (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, 4000, 5000, 6000, 7900)	L,P	MN, HN						1.50 (38.1)					0.42 (271)
		7 XS	7	44 B	900, 1200, 1500, 1800, 2400 (3000, 4000, 5000, 6000, 7900)	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 (4000, 5000, 6000, 7900, 9800, 11800)	L,P	MN, HN	3.13 (79.4)	2-7/8 EUE Pin³ (73.0 EUE Pin)³	3.46¹ (87.9)¹	2-3/8 EUE WEX² (60.3 EUE WEX)²	3.13³ (79.4)³	1.63 (41.3)	7/8 API Pin (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 (4000, 5000, 6000, 7900, 9800, 11800)	P	SN						1.65 (41.9)					0.96 (619)
		7	7	44 B	1200, 1500, 1800, 2400, 2700, 3000 (4000, 5000, 6000, 7900, 8900, 9800)	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 (4000, 5000, 6000, 7900, 8900, 9800)	L,P	SN, MN, HN	3.50 (88.9)	2-7/8 EUE Box (73.0 EUE Box)	3.50 (88.9)	3-1/2 NUE Pin (88.9 NUE Pin)	4.18¹ (106.2)¹	1.88 (47.7)	7/8 API Pin (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)
		15	15	94 B	1200, 1400, 1800, 2400, 2700, 3000 (4000, 4600, 6000, 7900, 8900, 9800)	L,P	SN, MN, HN						1.89 (47.9)					1.32 (852)
		20	20	126 B	1200, 1500, 1800, 2400, 2700, 3000 (4000, 5000, 6000, 7900, 8900, 9800)	L,P	SN, MN, HN						1.89 (47.9)					1.32 (852)
		30	30	189 B	1200, 1500, 1800, 2400, 2700, 3000 (4000, 5000, 6000, 7900, 8900, 9800)	L,P	MN, HN						1.89 (47.9)					1.32 (852)
		41	41	258 B	800, 1200, 1500, 1800, 2400 (2600, 4000, 5000, 6000, 7900)	L	MN, HN						1.89 (47.9)					1.32 (852)
		55	55	346 B	800, 1000, 1200, 1600 (2600, 3300, 3900, 5200)	L	MN, HN						1.89 (47.9)					1.32 (852)
		70	70	440 B	600, 900, 1200 (2000, 3000, 3900)	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 (4000, 5000, 6000, 7900, 9800, 11800)	P	SN	3.75 (95.3)	3-1/2 EUE Pin (88.9 EUE Pin)	4.18¹ (106.2)¹	2-7/8 EUE WEX² (73.0 EUE WEX)²	3.75³ (95.3)³	2.09 (53.0)	1 API Pin (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)
		13 CH	13	82 B	1200, 1500, 1800, 2400, 3000 (4000, 5000, 6000, 7900, 9800)	P	SN						2.11 (53.6)					1.62 (1045)
		18 CH	18	113 B	1200, 1500, 1800, 2400 (4000, 5000, 6000, 7900)	P	SN						2.09 (53.2)					1.69 (1090)
		28	28	176 B	1200, 1500, 1800, 2400, 2700, 3000 (4000, 5000, 6000, 7900, 8900, 9800)	L,P	SN, MN, HN						2.10 (53.3)					1.71 (1103)
		36	36	226 B	900, 1200, 1500, 1800, 2400 (3000, 4000, 5000, 6000, 7900)	L	MN, HN						2.11 (53.5)					1.49 (961)
		43	43	270 B	900, 1200, 1500, 1800, 2400 (3000, 4000, 5000, 6000, 7900)	L,P	SN, MN, HN						2.10 (53.3)					1.61 (1039)
		54	54	340 B	900, 1200, 1500, 1800, 2400 (3000, 4000, 5000, 6000, 7900)	L,P	SN, MN, HN						2.10 (53.3)					1.71 (1103)
		68	68	428 B	900, 1200, 1500, 1800 (3000, 4000, 5000, 6000)	L,P	MN, HN						2.10 (53.3)					1.68 (1084)
		85	85	535 B	750, 1000, 1250, 1500 (2500, 3300, 4100, 5000)	L,P	MN, HN						2.09 (53.1)					1.73 (1116)
		102	102	642 B	600, 900, 1200 (2000, 3000, 4000)	L	MN, HN						2.10 (53.3)					1.71 (1103)
		120	120	755 B	600, 900, 1200 (2000, 3000, 4000)	L	SN, MN, HN						2.10 (53.3)					1.71 (1103)

4-1/8 Series		23 CH	23	145 B	1200, 1500, 1800, 2400 (4000, 5000, 6000, 7900)	P	SN	4.13 (104.8)	3-1/2 EUE Box (88.9 EUE Box)	4.13 (104.8)	4 NUE Pin (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 (4000, 5000, 6000, 7900, 8900, 9800)	L,P	SN, MN, HN						2.21 (56.0)					2.10 (1355)
		42	42	264 B	1200, 1600, 2000, 2400, 2800, 3200 (4000, 5200, 6600, 7900, 9200, 10500)	L	MN, HN						2.26 (57.4)					2.09 (1348)
		50	50	315 B	900, 1200, 1500, 1800, 2400 (3000, 4000, 5000, 6000, 7900)	L	MN, HN						2.26 (57.4)					2.09 (1348)
		61	61	384 B	900, 1200, 1500, 1800, 2400 (3000, 4000, 5000, 6000, 7900)	L	MN, HN						2.26 (57.4)					2.09 (1348)
		72	72	453 B	900, 1200, 1500, 1800 (3000, 4000, 5000, 6000)	L	MN, HN						2.26 (57.4)					2.09 (1348)
		87	87	547 B	900, 1200, 1500, 1800 (3000, 4000, 5000, 6000)	L	MN, HN						2.26 (57.4)					2.09 (1348)
		105	105	660 B	800, 1000, 1200, 1600 (2600, 3300, 4000, 5200)	L	MN, HN						2.28 (58.0)					2.08 (1342)
		123	123	774 B	600, 900, 1200 (2000, 3000, 4000)	L	MN, HN						2.32 (59.0)				4-1/2 EUE (114.3 EUE)	2.07 (1335)
		145	145	912 B	600, 900, 1200 (2000, 3000, 4000)	L	MN, HN						2.31 (59.0)					2.07 (1335)
		167	167	1050 B	450, 600, 750, 900 (1500, 2000, 2500, 3000)	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)	L	MN, HN						2.33 (59.1)					2.24 (1445)
4-3/4 Series		35 CH	35	220 B	1200, 1500, 1800, 2400 (4000, 5000, 6000, 7900)	P	SN	4.75 (120.7)	4-1/2 EUE Pin (114.3 EUE Pin)	5.56 (141.2)	3-1/2 EUE WEX ² (88.9 EUE WEX) 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 CH	47	296 B	1200, 1500, 1800, 2400, 2700, 3000 (4000, 5000, 6000, 7900, 8900, 9800)	L,P	SN, MN, HN						2.78 (70.6)					3.12 (2013)
		88	88	554 B	900, 1200, 1500, 1800, 2400 (3000, 4000, 5000, 6000, 7900)	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, 1500 (2500, 3300, 4100, 5000)	L,P	SN, MN, HN						2.82 (71.5)					3.27 (2110)
		280	280	1761 B	400, 600, 800 (1300, 2000, 2600)	L	MN, HN						2.82 (71.5)					3.27 (2110)
5 Series		56	56	352 B	800, 1200, 1600, 2000, 2400 (2600, 3900, 5200, 6600, 7900)	L,P	MN, HN	5.00 (127.0)	5 STC/LTC Pin (127.0 STC Pin)	5.56 (141.2)	3-1/2 EUE WEX ² (88.9 EUE WEX) 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)	3.34 (2155)
		64	64	403 B	900, 1200, 1500, 1800, 2400 (3000, 3900, 4900, 6000, 7900)	L,P	MN, HN											3.47 (2239)
		101	101	635 B	900, 1200, 1500, 1800 (3000, 3900, 4900, 6000)	L	MN, HN											3.47 (2239)
		118	118	742 B	800, 1000, 1200, 1600 (2600, 3300, 3900, 5200)	L	MN, HN											3.47 (2239)
		130	130	818 B	900, 1200, 1500, 1800 (3000, 3900, 4900, 6000)	L	MN, HN											3.47 (2239)
		150	150	944 B	800, 1000, 1200, 1600 (2600, 3300, 3900, 5200)	L	MN, HN											3.47 (2239)
		215	215	1352 B	500, 750, 1000 (1600, 2500, 3300)	L	MN, HN											3.47 (2239)

 Denotes PCP Models with extended lead times. Typically used in Global Applications with build to order lead times. Models have limited inventory availability in Canadian Markets.

 Denotes PCP Models with standard lead times. Typically used in Canadian Applications with inventory availability. Models are available Globally.

¹ API special clearance coupling OD

² WEX = Welded Extension; WHC = Welded Half Collar

³ Shaved weld (add 0.25 in. if unshaved)

⁴ A 3-1/2 EUE Custom Handling Pup (CHP) is required for rotor orbit with all 4-1/8 Series pump models.



ELASTOMERS

SOFT MEDIUM NITRILE (SN) - THE ABRASIVE RESISTANT WORKHORSE

- Low-hardness, medium-nitrile elastomer with excellent mechanical properties including tear and elongation.
- Resilient elastomer capable of handling high amounts of abrasives including large solids while minimizing damage.
- Requires a higher compression rotor fit that delays decline in volumetric efficiency associated with abrasive wear.
- Ideal for CHOPS (Cold Heavy Oil Production with Sand) applications in with low API gravity, viscous oil.

MEDIUM NITRILE (MN) - THE GENERAL PURPOSE ELASTOMER

- General-purpose, aromatic, water and abrasive resistant medium nitrile elastomer with excellent mechanical properties.
- Wear resistant elastomer capable of handling moderate amounts of abrasives with good overall flexibility.
- Offers excellent oil resistance in applications with heavy-medium crude oil up to 20 (25*) API gravity.
- Very good water resistance, and the ability to handle a wide range of aromatic content in the produced fluid.

HIGH NITRILE (HN) - FOR HIGH AROMATIC CONTENT, LIGHT OIL APPLICATIONS

- Augmented high-nitrile elastomer with significant enhancements to mechanical properties, oil and chemical resistance
- Offers the best resistance to aromatic content in the produced fluid while maintaining excellent mechanical properties.
- Offers superior aromatic resistance in light oil applications up to 30 (35*) API gravity.
- Superior stator-tube bonding, with high retention of bond strength even after exposure to high temperature and aggressive fluids

ELASTOMER QUALIFICATION AND TESTING

- Lifting Solutions elastomers are fully compliant and tested to the specifications of ISO 15136-1:2009E, Annex A.
- A detailed Progressing Cavity Pump Elastomer Datasheet is available on request with enhanced detail on our elastomers.
- Technical bulletins targeted at specific application types and various downhole scenarios (ex. high gas, water TDS, high swell fluids, low water cuts) are available in our Library.
- Our advanced materials laboratory enables testing of field fluids with specific elastomers utilizing ASTM procedures to offer consistent elastomer and pump sizing recommendations.
- A digital tracking database containing hundreds of field fluid test results and thousands of installation/inspection records offers enhanced predictive capabilities for new applications.
- For additional information on our elastomers please contact a Lifting Solutions representative.

Elastomer Code	Typical Applications	Nitrile Level (% ACN)	Hardness (Shore A)	Maximum Downhole Temperature	Resistance Guide					
					Oil	Water	Abrasive	Gas ¹	H ₂ S	CO ₂
SN	Heavy oil (CHOPS), high abrasives	32 to 36	55 to 60	60°C (140°F)	Up to 15 API	Very Good	Excellent	Fair	Fair	Fair
MN	Heavy to moderate oil, moderate abrasives, dewatering (CSG/CBM)	32 to 36	65 to 70	80°C (176°F)	Up to 20 API (Max 25 API) ²	Very Good	Very Good	Good	Good	Good
HN	Medium to light oil, high CO ₂ /free gas, chemical injection, deeper/hotter wells	45 to 50	70 to 75	100°C (212°F)	Up to 35 API (Max 40 API) ²	Very Good	Good	Very Good	Good	Very Good Excellent ³

¹ Gas & explosive-decompression resistance is a concern primarily with CO₂ since methane (CH₄) permeability is significantly lower in elastomers

² Suitability of upper API gravity depends on specific application conditions including oil chemistry, water cut, and temperature

³ HN-ED Explosive Decompression elastomer formulation is available for high CO₂ applications. This elastomer is custom order.