



# 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	Standard Rotor	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)	Drift in (mm)		
2-3/8 Series	2 XS	2	13 B	900, 1200, 1500, 1800, 2400 (3000, 4000, 5000, 6000, 7900)	LP	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)	LP	MN, HN						1.50 (38.1)					0.42 (271)	
	7 XS	7	44 B	900, 1200, 1500, 1800, 2400 (3000, 4000, 5000, 6000, 7900)	LP	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)	LP	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)	LP	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)	LP	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)	LP	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)	LP	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)	LP	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)	LP	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)	LP	SN, MN, HN						2.10 (53.3)					1.61 (1039)	
	54	54	340 B	900, 1200, 1500, 1800, 2400 (3000, 4000, 5000, 6000, 7900)	LP	SN, MN, HN						2.10 (53.3)					1.71 (1103)	
	68	68	428 B	900, 1200, 1500, 1800 (3000, 4000, 5000, 6000)	LP	MN, HN						2.10 (53.3)					1.68 (1084)	
	85	85	535 B	750, 1000, 1250, 1500 (2500, 3300, 4100, 5000)	LP	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 <sup>4</sup> (88.9 EUE) <sup>4</sup>	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)					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)					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 <sup>2</sup> (88.9 EUE WEX) <sup>2</sup>	4.75 <sup>3</sup> (120.7) <sup>3</sup>	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)					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	64 CH	64	403 B	900, 1200, 1500, 1800, 2400 (3000, 4000, 5000, 6000, 7900)	L,P	MN, HN	5.00 (127.0)	5 STC Pin (127.0 STC Pin)	5.56 (141.2)	3-1/2 EUE WEX <sup>2</sup> (88.9 EUE WEX) <sup>2</sup>	5.00 <sup>3</sup> (127.0) <sup>3</sup>	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, 4000, 5200)	L	MN, HN						2.85 (72.5)					3.47 (2239)
	215	215	1352 B	500, 750, 1000 (1600, 2500, 3300)	L	MN, HN						2.85 (72.5)					3.47 (2239)

## Footnotes

<sup>1</sup> API special clearance coupling OD<sup>2</sup> WEX = Welded Extension; WHC = Welded Half Collar<sup>3</sup> Shaved weld (add 0.25 in. if unshaved)<sup>4</sup> 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 <sup>1</sup>	H <sub>2</sub> S	CO <sub>2</sub>
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) <sup>2</sup>	Very Good	Very Good	Good	Good	Good
HN	Medium to light oil, high CO <sub>2</sub> /free gas, chemical injection, deeper/hotter wells	45 to 50	70 to 75	100°C (212°F)	Up to 35 API (Max 40 API) <sup>2</sup>	Very Good	Good	Very Good	Good	Very Good Excellent <sup>3</sup>

<sup>1</sup> Gas & explosive-decompression resistance is a concern primarily with CO<sub>2</sub> since methane (CH<sub>4</sub>) permeability is significantly lower in elastomers

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

<sup>3</sup> HN-ED Explosive Decompression elastomer formulation is available for high CO<sub>2</sub> applications. This elastomer is custom order.