LIFTING SOLUTIONS

PCP OSCAR
CABEZAL PARA BOMBAS DE CAVIDAD PROGRESIVA

Transportes OSCAR S.R.L.

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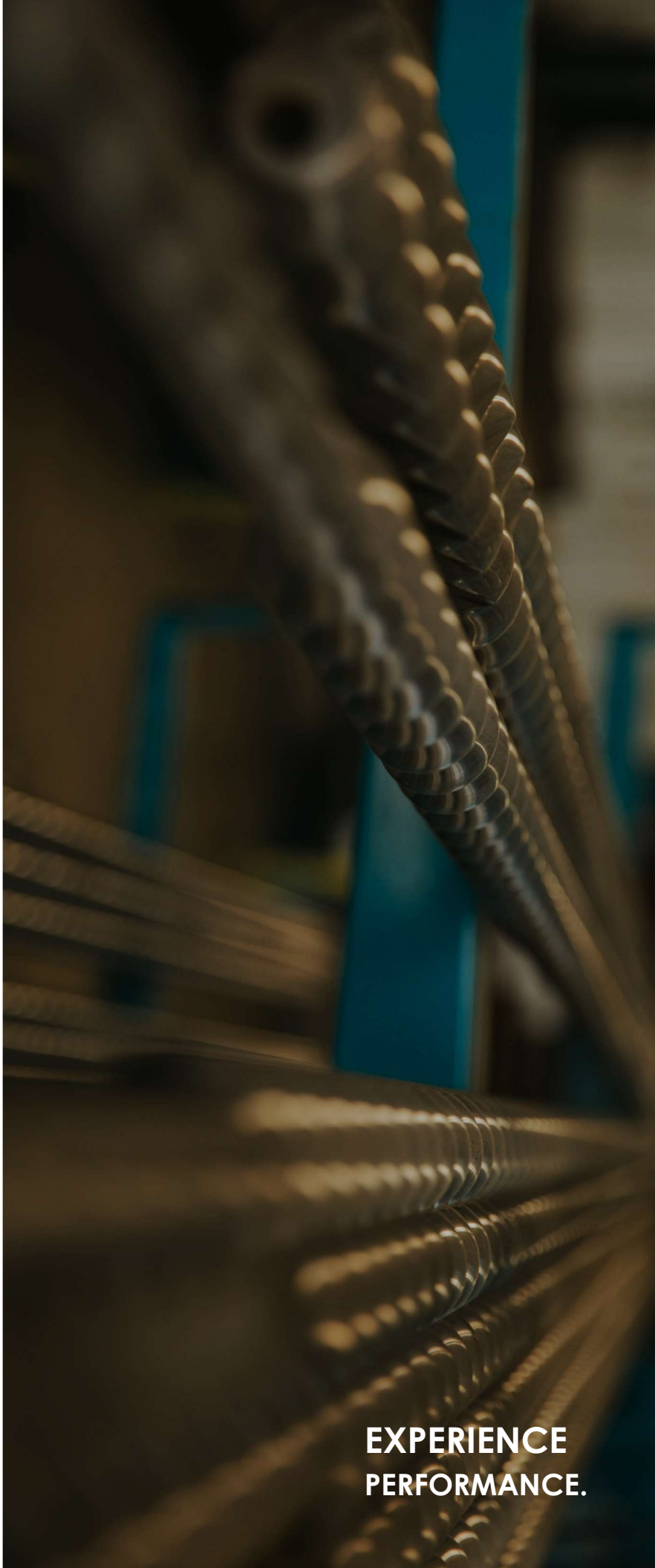
PCP PivotAI Price List

Quote Number: SQ001045

Quote Date: Jun 13, 2024



EXPERIENCE
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INSERTABLE PROGRESSING CAVITY PUMPS (iPCP) SPECIFICATIONS

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INSERTABLE PROGRESSING CAVITY PUMPS

The Lifting Solutions (LS) Insertable Progressing Cavity Pump (iPCP) is a thru-tubing pump that is installed with the rod string inside the production tubing and landed in the production zone. The main advantage of using an iPCP is to eliminate the need to pull tubing on pump-related workovers. This significantly reduces the cost associated with pulling the tubing and downtime during workovers.

Most iPCP completions are installed with a pre-existing Pump Seating Nipple (PSN) on the tubing string, in some cases, the iPCP can be combined with different downhole seating tools that eliminate the requirement of a Pump Seating Nipple (PSN).

KEY FEATURES

HAMMER TAIL

- This feature is located at the bottom of the rotor and allows for the entire rotor to be pulled to the top of the stator before unseating.
- The hammer tail engages with a "unseating ring" in the seating mandrel assembly that acts as a "no-go" during uninstallation or flush-by work-over.
- This design eliminates the requirement for any "flush tubes" and reduces the entire length of the iPCP assembly.
- The hammer tail is designed to safely drift the stator and locate the rotor in the stator during landing/seating.

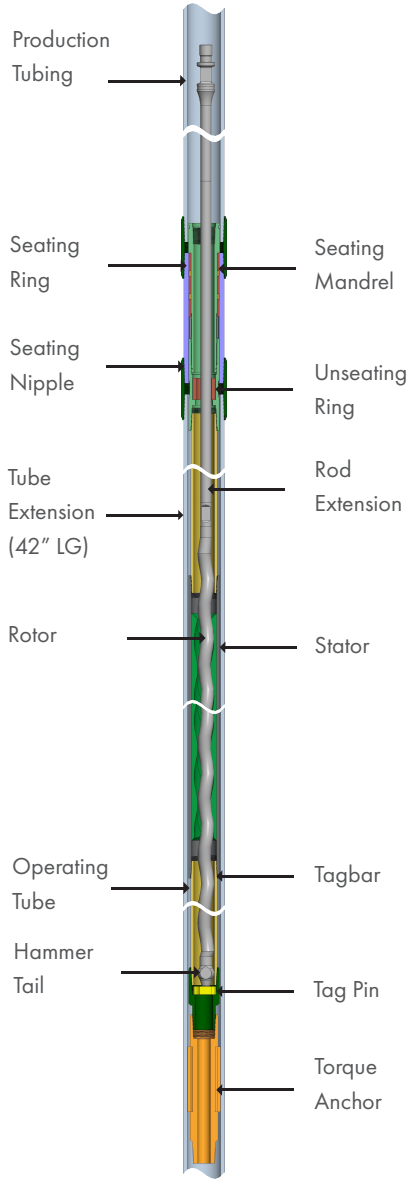
MULTI-SIZE SEATING RINGS

- The Artificial Lift sector has multiple PSNs that are utilized in the industry with a range of inside diameters (IDs).
- The LS iPCP is designed with three different sizes of seating rings to accommodate the PSN ID tolerances in the market.
- The design gives operators the added advantage of using existing PSN already installed in the tubing completions, especially for artificial lift conversions.

STATOR DISCHARGE SEAL

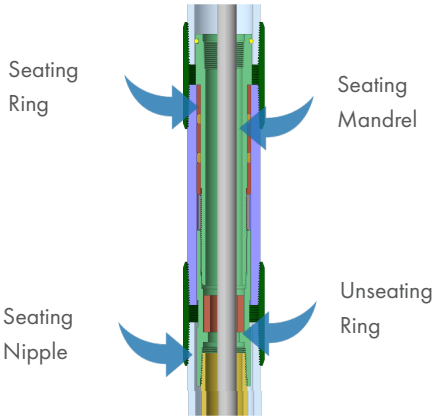
- The LS iPCP discharge seal and seating assembly are located at the top of the insert pump assembly. This enables use in applications with sand/abrasive production.
- The discharge seal isolates the pump discharge from the PSN and seating ring annulus to avoid any "sand packing" that would otherwise present unseating challenges and affect the normal operation of the PCP.
- When the sand is kept above the discharge of the pump, it is either produced or flushed back through the pump during flush-bys.

iPCP INSERT ASSEMBLY

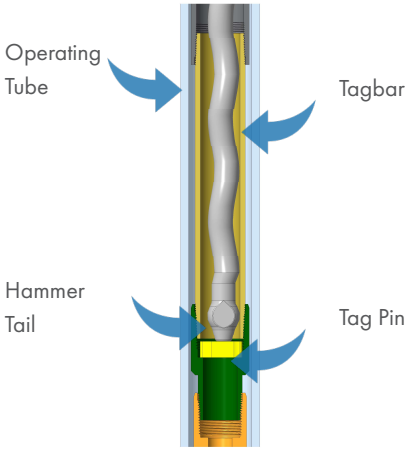


INSERTABLE PROGRESSING CAVITY PUMPS

SEATING ASSEMBLY TOP DETAIL



SEATING ASSEMBLY BOTTOM DETAIL



BENEFITS

- iPCPs reduce workover time and associated costs of pulling the tubing during bottom hole pump replacement.
- Insertable PCPs reduce downtime associated with lost or deferred production during workovers iPCPs have the ability to be flushed by pulling the hammer tail on the rotor up above the stator to allow reverse fluid flow without unseating the pump.
- An integrated torque anchor at the bottom of the stator assembly contains torque and prevents backoff of the iPCP assembly components.
- Pulling the tubing requires a high-capacity service rig. With iPCPs, workovers can be limited to smaller flush-by and/or rod rigs thereby reducing service and maintenance costs.
- iPCPs allow for volume/lift changes without pulling the tubing to permit well optimization with minimal downtime or associated workover costs.
- When combined with other specialized downhole seating/sealing tools, the modified assembly allows for pump landing depth changes and well optimization without a seating nipple located in the tubing string.
- When tubing is kept in place during pump changes, all associated downhole monitoring systems and associated cabling can be kept in place during workovers.
- iPCP component reusability allows for additional cost savings associated with the initial investment.

APPLICATION AND TECHNICAL SPECIFICATIONS

2-7/8" INSERT PC PUMP SPECIFICATIONS

LS 2-7/8" Insert PC Pump Specifications								Stator Details						Rotor & Rod Details											
Volume (/day/100rpm)		Rated Lift		Pump Torque		Overall Length		Stator Connection		Weight		Max. OD		Rod Connection	Max. Torque		Contour Length		Rod Stickup		Weight		Max. OD	
(m3)	(bbls)	(m)	(ft)	(Nm)	(ft*lbs)	(m)	(in)	Top	Bottom	(kg)	(lbs)	(mm)	(in)		(Nm)	(ft*lbs)	(m)	(in)	(mm)	(in) 19.0	(kg)	(lbs)	(mm)	(in)
2	13	900	3000	24	18	1.17	46	1.660-in. EUE BOX	1.660-in. EUE PIN	11.3	25	57.2	2.25	5/8-in. API Pin or 7/8-in. API Box	273	201	2.13	84	483	19.0	10.0	22	27.5	1.08
		1200	3900	33	24	1.57	62			15.4	34	57.2	2.25				2.54	100			10.9	24	27.5	1.08
		1500	4900	41	30	1.96	77			19.5	43	57.2	2.25				2.92	115			12.2	27	27.5	1.08
		1800	6000	49	36	2.36	93			23.1	51	57.2	2.25				3.33	131			13.2	29	27.5	1.08
		2400	7900	65	48	3.15	124			31.3	69	57.2	2.25				4.11	162			15.4	34	27.5	1.08
4	25	900	3000	49	36	1.98	78	1.660-in. EUE BOX	1.660-in. EUE PIN	19.5	43	57.2	2.25	5/8-in. API Pin or 7/8-in. API Box	273	201	2.95	116	483	19.0	12.2	27	27.5	1.08
		1200	3900	65	48	2.64	104			26.3	58	57.2	2.25				3.61	142			14.1	31	27.5	1.08
		1500	4900	81	60	3.30	130			32.7	72	57.2	2.25				4.27	168			15.9	35	27.5	1.08
		1800	6000	98	72	3.96	156			39.0	86	57.2	2.25				4.93	194			17.7	39	27.5	1.08
		2400	7900	130	96	5.28	208			52.2	115	57.2	2.25				6.25	246			21.3	47	27.5	1.08
7	44	900	3000	85	63	2.97	117	1.660-in. EUE BOX	1.660-in. EUE PIN	29.5	65	57.2	2.25	5/8-in. API Pin or 7/8-in. API Box	273	201	3.94	155	483	19.0	15.0	33	28.1	1.11
		1200	3900	114	84	3.96	156			39.0	86	57.2	2.25				4.93	194			17.7	39	28.1	1.11
		1500	4900	142	105	4.95	195			49.0	108	57.2	2.25				5.92	233			20.4	45	28.1	1.11
		1800	6000	171	126	5.94	234			58.5	129	57.2	2.25				6.91	272			23.1	51	28.1	1.11
		2400	7900	228	168	7.92	312			78.0	172	57.2	2.25				8.89	350			28.6	63	28.1	1.11
11	69	900	3000	134	99	3.96	156	1.660-in. EUE BOX	1.660-in. EUE PIN	39.0	86	57.2	2.25	5/8-in. API Pin or 7/8-in. API Box	327	241	4.93	194	483	19.0	19.1	42	29.1	1.15
		1200	3900	179	132	5.28	208			51.7	114	57.2	2.25				6.25	246			23.1	51	29.1	1.15
		1500	4900	224	165	6.60	260			64.9	143	57.2	2.25				7.57	298			27.2	60	29.1	1.15
		1800	6000	268	198	7.92	312			77.6	171	57.2	2.25				8.89	350			31.3	69	29.1	1.15
18	113	600	2000	146	108	3.96	156	1.660-in. EUE BOX	1.660-in. EUE PIN	39.0	86	57.2	2.25	5/8-in. API Pin or 7/8-in. API Box	327	241	4.93	194	483	19.0	19.1	42	29.1	1.15
		900	3000	220	162	5.94	234			58.1	128	57.2	2.25				6.91	272			25.4	56	29.1	1.15
		1200	3900	293	216	7.92	312			77.6	171	57.2	2.25				8.89	350			31.3	69	29.1	1.15
23	145	500	1600	156	115	3.96	156	1.660-in. EUE BOX	1.660-in. EUE PIN	39.0	86	57.2	2.25	5/8-in. API Pin or 7/8-in. API Box	327	241	4.93	194	483	19.0	19.1	42	29.1	1.15
		750	2500	235	173	5.94	234			58.1	128	57.2	2.25				6.91	272			25.4	56	29.1	1.15
		1000	3300	312	230	7.92	312			77.6	171	57.2	2.25				8.89	350			31.3	69	29.1	1.15

APPLICATION AND TECHNICAL SPECIFICATIONS

3-1/2" INSERT PC PUMP SPECIFICATIONS

LS 3-1/2" Insert PC Pump Specifications								Stator Details						Rotor & Rod Details											
Volume (/day/100 rpm)		Rated Lift		Pump Torque		Overall Length		Stator Connection		Weight		Max. OD		Rod Connection	Max. Torque		Contour Length		Rod Stickup		Weight		Max. OD		
(m3)	(bbls)	(m)	(ft)	(Nm)	(ft*lbs)	(m)	(in)	Top	Bottom	(kg)	(lbs)	(mm)	(in)		(Nm)	(ft*lbs)	(m)	(in)	(mm)	(in)	(kg)	(lbs)	(mm)	(in)	
7	44	1000	3300	95	70	2.44	96	1.900-in. EUE BOX	1.900-in. EUE PIN	28.6	63	69.9	2.75	7/8-in. API Pin	556	410	3.4	134	582	22.9	27.2	60	37.7	1.49	
		1500	4900	142	105	3.66	144			42.6	94	69.9	2.75				4.62	182			34	75	37.7	1.49	
		2000	6600	190	140	4.88	192			56.7	125	69.9	2.75				5.84	230			41.3	91	37.7	1.49	
		2250	7400	214	158	5.49	216			64	141	69.9	2.75				6.45	254			44.9	99	37.7	1.49	
		2500	8200	237	175	6.1	240			71.2	157	69.9	2.75				7.06	278			48.5	107	37.7	1.49	
		3000	9800	285	210	7.32	288			85.3	188	69.9	2.75				8.28	326			55.3	122	37.7	1.49	
9	57	900	3000	110	81	2.74	108	1.900-in. EUE BOX	1.900-in. EUE PIN	32.2	71	69.9	2.75	7/8-in. API Pin	556	410	3.71	146	582	22.9	29	64	37.7	1.49	
		1200	3900	146	108	3.66	144			42.6	94	69.9	2.75				4.62	182			34	75	37.7	1.49	
		1500	4900	183	135	4.57	180			53.5	118	69.9	2.75				5.54	218			39.5	87	37.7	1.49	
		1800	6000	220	162	5.49	216			64	141	69.9	2.75				6.45	254			44.9	99	37.7	1.49	
		2400	7900	293	216	7.32	288			85.3	188	69.9	2.75				8.28	326			55.3	122	37.7	1.49	
17	107	900	3000	207	153	3.96	156	1.900-in. EUE BOX	1.900-in. EUE PIN	46.3	102	69.9	2.75	7/8-in. API Pin	556	410	4.93	194	582	22.9	35.8	79	38.4	1.51	
		1200	3900	277	204	5.28	208			61.2	135	69.9	2.75				6.25	246			43.5	96	38.4	1.51	
		1500	4900	346	255	6.6	260			76.7	169	69.9	2.75				7.57	298			51.3	113	38.4	1.51	
		1800	6000	415	306	7.92	312			92.1	203	69.9	2.75				8.89	350			59	130	38.4	1.51	
24	151	750	2500	244	180	4.27	168	1.900-in. EUE BOX	1.900-in. EUE PIN	49.4	109	69.9	2.75	7/8-in. API Pin	556	410	5.23	206	582	22.9	37.6	83	38.4	1.51	
		1000	3300	325	240	5.69	224			66.2	146	69.9	2.75				6.65	262			45.8	101	38.4	1.51	
		1250	4100	407	300	7.11	280			82.6	182	69.9	2.75				8.08	318			54.4	120	38.4	1.51	
		1500	4900	488	360	8.53	336			99.3	219	69.9	2.75				9.50	374			62.6	138	38.4	1.51	
29	182	600	2000	236	174	4.27	168	1.900-in. EUE BOX	1.900-in. EUE PIN	49.4	109	69.9	2.75	7/8-in. API Pin	556	410	5.23	206	582	22.9	37.6	83	38.4	1.51	
		900	3000	354	261	6.40	252			74.4	164	69.9	2.75				7.37	290			49.9	110	38.4	1.51	
		1200	3900	472	348	8.53	336			99.3	219	69.9	2.75				9.50	374			62.6	138	38.4	1.51	
39	245	500	1600	264	195	4.27	168	1.900-in. EUE BOX	1.900-in. EUE PIN	49.4	109	69.9	2.75	7/8-in. API Pin	556	410	5.23	206	582	22.9	37.6	83	38.4	1.51	
		750	2500	397	293	6.40	252			74.4	164	69.9	2.75				7.37	290			49.9	110	38.4	1.51	
		1000	3300	529	390	8.53	336			99.3	219	69.9	2.75				9.50	374			62.6	138	38.4	1.51	
50	315	400	1300	271	200	4.27	168	1.900-in. EUE BOX	1.900-in. EUE PIN	49.4	109	69.9	2.75	7/8-in. API Pin	556	410	5.23	206	582	22.9	37.6	83	38.4	1.51	
		600	2000	407	300	6.40	252			74.4	164	69.9	2.75				7.37	290			49.9	110	38.4	1.51	
		800	2600	542	400	8.53	336			99.3	219	69.9	2.75				9.50	374			62.6	138	38.4	1.51	

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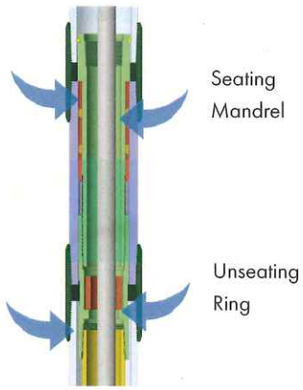
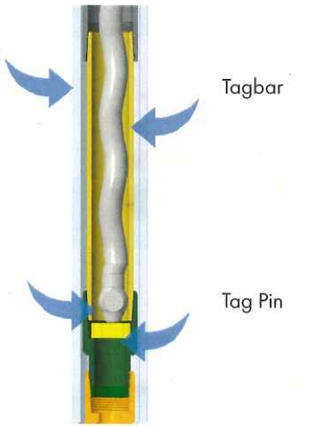
SEATING ASSEMBLY TOP DETAIL



SEATING ASSEMBLY BOTTOM DETAIL



BENEFITS

- iPCPs reduce workover time and associated costs of pulling the tubing during bottom hole pump replacement.
- Insertable PCPs reduce downtime associated with lost or deferred production during workovers iPCPs have the ability to be flushed by pulling the hammer tail on the rotor up above the stator to allow reverse fluid flow without unseating the pump.
- An integrated torque anchor at the bottom of the stator assembly contains torque and prevents backoff of the iPCP assembly components.
- Pulling the tubing requires a high-capacity service rig. With iPCPs, workovers can be limited to smaller flush-by and/or rod rigs thereby reducing service and maintenance costs.
- iPCPs allow for volume/lift changes without pulling the tubing to permit well optimization with minimal downtime or associated workover costs.
- When combined with other specialized downhole seating/sealing tools, the modified assembly allows for pump landing depth changes and well optimization without a seating nipple located in the tubing string.
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LS 2-7/8" Insert PC Pump Specifications								Stator Details							Rotor & Rod Details									
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(m3)	(bbls)	(m)	(ft)	(Nm)	(ft*lbs)	(m)	(in)	Top	Bottom	(kg)	(lbs)	(mm)	(in)		(Nm)	(ft*lbs)	(m)	(in)	(mm)	(in) 19.0	(kg)	(lbs)	(mm)	(in)
2	13	900	3000	24	18	1.17	46	1.660-in. EUE BOX	1.660-in. EUE PIN	11.3	25	57.2	2.25	5/8-in. API Pin or 7/8-in. API Box	273	201	2.13	84	483	19.0	10.0	22	27.5	1.08
		1200	3900	33	24	1.57	62			15.4	34	57.2	2.25				2.54	100			10.9	24	27.5	1.08
		1500	4900	41	30	1.96	77			19.5	43	57.2	2.25				2.92	115			12.2	27	27.5	1.08
		1800	6000	49	36	2.36	93			23.1	51	57.2	2.25				3.33	131			13.2	29	27.5	1.08
		2400	7900	65	48	3.15	124			31.3	69	57.2	2.25				4.11	162			15.4	34	27.5	1.08
4	25	900	3000	49	36	1.98	78	1.660-in. EUE BOX	1.660-in. EUE PIN	19.5	43	57.2	2.25	5/8-in. API Pin or 7/8-in. API Box	273	201	2.95	116	483	19.0	12.2	27	27.5	1.08
		1200	3900	65	48	2.64	104			26.3	58	57.2	2.25				3.61	142			14.1	31	27.5	1.08
		1500	4900	81	60	3.30	130			32.7	72	57.2	2.25				4.27	168			15.9	35	27.5	1.08
		1800	6000	98	72	3.96	156			39.0	86	57.2	2.25				4.93	194			17.7	39	27.5	1.08
		2400	7900	130	96	5.28	208			52.2	115	57.2	2.25				6.25	246			21.3	47	27.5	1.08
7	44	900	3000	85	63	2.97	117	1.660-in. EUE BOX	1.660-in. EUE PIN	29.5	65	57.2	2.25	5/8-in. API Pin or 7/8-in. API Box	273	201	3.94	155	483	19.0	15.0	33	28.1	1.11
		1200	3900	114	84	3.96	156			39.0	86	57.2	2.25				4.93	194			17.7	39	28.1	1.11
		1500	4900	142	105	4.95	195			49.0	108	57.2	2.25				5.92	233			20.4	45	28.1	1.11
		1800	6000	171	126	5.94	234			58.5	129	57.2	2.25				6.91	272			23.1	51	28.1	1.11
		2400	7900	228	168	7.92	312			78.0	172	57.2	2.25				8.89	350			28.6	63	28.1	1.11
11	69	900	3000	134	99	3.96	156	1.660-in. EUE BOX	1.660-in. EUE PIN	39.0	86	57.2	2.25	5/8-in. API Pin or 7/8-in. API Box	327	241	4.93	194	483	19.0	19.1	42	29.1	1.15
		1200	3900	179	132	5.28	208			51.7	114	57.2	2.25				6.25	246			23.1	51	29.1	1.15
		1500	4900	224	165	6.60	260			64.9	143	57.2	2.25				7.57	298			27.2	60	29.1	1.15
		1800	6000	268	198	7.92	312			77.6	171	57.2	2.25				8.89	350			31.3	69	29.1	1.15
18	113	600	2000	146	108	3.96	156	1.660-in. EUE BOX	1.660-in. EUE PIN	39.0	86	57.2	2.25	5/8-in. API Pin or 7/8-in. API Box	327	241	4.93	194	483	19.0	19.1	42	29.1	1.15
		900	3000	220	162	5.94	234			58.1	128	57.2	2.25				6.91	272			25.4	56	29.1	1.15
		1200	3900	293	216	7.92	312			77.6	171	57.2	2.25				8.89	350			31.3	69	29.1	1.15
23	145	500	1600	156	115	3.96	156	1.660-in. EUE BOX	1.660-in. EUE PIN	39.0	86	57.2	2.25	5/8-in. API Pin or 7/8-in. API Box	327	241	4.93	194	483	19.0	19.1	42	29.1	1.15
		750	2500	235	173	5.94	234			58.1	128	57.2	2.25				6.91	272			25.4	56	29.1	1.15
		1000	3300	312	230	7.92	312			77.6	171	57.2	2.25				8.89	350			31.3	69	29.1	1.15

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LS LIFTING SOLUTIONS

INSERTABLE PROGRESSING CAVITY PUMPS

The Lifting Solutions (LS) Insertable Progressing Cavity Pump (iPCP) is a thru-tubing pump that is installed with the rod string inside the production tubing and landed in the production zone. The main advantage of using an iPCP is to eliminate the need to pull tubing on pump-related workovers. This significantly reduces the cost associated with pulling the tubing and downtime during workovers.

Most iPCP completions are installed with a pre-existing Pump Seating Nipple (PSN) on the tubing string, in some cases, the iPCP can be combined with different downhole seating tools that eliminate the requirement of a Pump Seating Nipple (PSN).

KEY FEATURES

HAMMER TAIL

- This feature is located at the bottom of the rotor and allows for the entire rotor to be pulled to the top of the stator before unseating.
- The hammer tail engages with a "unseating ring" in the seating mandrel assembly that acts as a "no-go" during uninstallation or flush-by work-over.
- This design eliminates the requirement for any "flush tubes" and reduces the entire length of the iPCP assembly.
- The hammer tail is designed to safely drift the stator and locate the rotor in the stator during landing/seating.

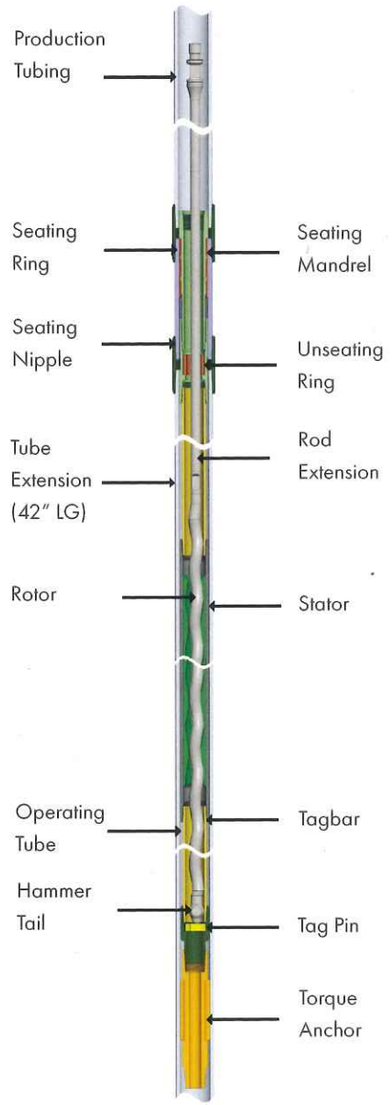
MULTI-SIZE SEATING RINGS

- The Artificial Lift sector has multiple PSNs that are utilized in the industry with a range of inside diameters (IDs).
- The LS iPCP is designed with three different sizes of seating rings to accommodate the PSN ID tolerances in the market.
- The design gives operators the added advantage of using existing PSN already installed in the tubing completions, especially for artificial lift conversions.

STATOR DISCHARGE SEAL

- The LS iPCP discharge seal and seating assembly are located at the top of the insert pump assembly. This enables use in applications with sand/abrasive production.
- The discharge seal isolates the pump discharge from the PSN and seating ring annulus to avoid any "sand packing" that would otherwise present unseating challenges and affect the normal operation of the PCP.
- When the sand is kept above the discharge of the pump, it is either produced or flushed back through the pump during flush-bys.

iPCP INSERT ASSEMBLY



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CABEZAL PARA BOMBAS DE CAVIDAD PROGRESIVA

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LS LIFTING SOLUTIONS

APPLICATION AND TECHNICAL SPECIFICATIONS

3-1/2" INSERT PC PUMP SPECIFICATIONS

LS 3-1/2" Insert PC Pump Specifications								Stator Details						Rotor & Rod Details									
Volume (/day/100 rpm)		Rated Lift		Pump Torque		Overall Length		Stator Connection		Weight		Max. OD		Rod Connection	Max. Torque		Contour Length		Rod Stickup		Weight		Max. OD	
(m3)	(bbls)	(m)	(ft)	(Nm)	(ft*lbs)	(m)	(in)	Top	Bottom	(kg)	(lbs)	(mm)	(in)		(Nm)	(ft*lbs)	(m)	(in)	(mm)	(in)	(kg)	(lbs)	(mm)	(in)
7	44	1000	3300	95	70	2.44	96	1.900-in. EUE BOX	1.900-in. EUE PIN	28.6	63	69.9	2.75	7/8-in. API Pin	556	410	3.4	134	582	22.9	27.2	60	37.7	1.49
		1500	4900	142	105	3.66	144			42.6	94	69.9	2.75				4.62	182			34	75	37.7	1.49
		2000	6600	190	140	4.88	192			56.7	125	69.9	2.75				5.84	230			41.3	91	37.7	1.49
		2250	7400	214	158	5.49	216			64	141	69.9	2.75				6.45	254			44.9	99	37.7	1.49
		2500	8200	237	175	6.1	240			71.2	157	69.9	2.75				7.06	278			48.5	107	37.7	1.49
		3000	9800	285	210	7.32	288			85.3	188	69.9	2.75				8.28	326			55.3	122	37.7	1.49
9	57	900	3000	110	81	2.74	108	1.900-in. EUE BOX	1.900-in. EUE PIN	32.2	71	69.9	2.75	7/8-in. API Pin	556	410	3.71	146	582	22.9	29	64	37.7	1.49
		1200	3900	146	108	3.66	144			42.6	94	69.9	2.75				4.62	182			34	75	37.7	1.49
		1500	4900	183	135	4.57	180			53.5	118	69.9	2.75				5.54	218			39.5	87	37.7	1.49
		1800	6000	220	162	5.49	216			64	141	69.9	2.75				6.45	254			44.9	99	37.7	1.49
		2400	7900	293	216	7.32	288			85.3	188	69.9	2.75				8.28	326			55.3	122	37.7	1.49
17	107	900	3000	207	153	3.96	156	1.900-in. EUE BOX	1.900-in. EUE PIN	46.3	102	69.9	2.75	7/8-in. API Pin	556	410	4.93	194	582	22.9	35.8	79	38.4	1.51
		1200	3900	277	204	5.28	208			61.2	135	69.9	2.75				6.25	246			43.5	96	38.4	1.51
		1500	4900	346	255	6.6	260			76.7	169	69.9	2.75				7.57	298			51.3	113	38.4	1.51
		1800	6000	415	306	7.92	312			92.1	203	69.9	2.75				8.89	350			59	130	38.4	1.51
24	151	750	2500	244	180	4.27	168	1.900-in. EUE BOX	1.900-in. EUE PIN	49.4	109	69.9	2.75	7/8-in. API Pin	556	410	5.23	206	582	22.9	37.6	83	38.4	1.51
		1000	3300	325	240	5.69	224			66.2	146	69.9	2.75				6.65	262			45.8	101	38.4	1.51
		1250	4100	407	300	7.11	280			82.6	182	69.9	2.75				8.08	318			54.4	120	38.4	1.51
		1500	4900	488	360	8.53	336			99.3	219	69.9	2.75				9.50	374			62.6	138	38.4	1.51
29	182	600	2000	236	174	4.27	168	1.900-in. EUE BOX	1.900-in. EUE PIN	49.4	109	69.9	2.75	7/8-in. API Pin	556	410	5.23	206	582	22.9	37.6	83	38.4	1.51
		900	3000	354	261	6.40	252			74.4	164	69.9	2.75				7.37	290			49.9	110	38.4	1.51
		1200	3900	472	348	8.53	336			99.3	219	69.9	2.75				9.50	374			62.6	138	38.4	1.51
39	245	500	1600	264	195	4.27	168	1.900-in. EUE BOX	1.900-in. EUE PIN	49.4	109	69.9	2.75	7/8-in. API Pin	556	410	5.23	206	582	22.9	37.6	83	38.4	1.51
		750	2500	397	293	6.40	252			74.4	164	69.9	2.75				7.37	290			49.9	110	38.4	1.51
		1000	3300	529	390	8.53	336			99.3	219	69.9	2.75				9.50	374			62.6	138	38.4	1.51
50	315	400	1300	271	200	4.27	168	1.900-in. EUE BOX	1.900-in. EUE PIN	49.4	109	69.9	2.75	7/8-in. API Pin	556	410	5.23	206	582	22.9	37.6	83	38.4	1.51
		600	2000	407	300	6.40	252			74.4	164	69.9	2.75				7.37	290			49.9	110	38.4	1.51
		800	2600	542	400	8.53	336			99.3	219	69.9	2.75				9.50	374			62.6	138	38.4	1.51

LIFTING SOLUTIONS

PCP OSCAR
CABEZAL PARA BOMBAS DE CAVIDAD PROGRESIVA

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PROGRESSING CAVITY PUMP DIMENSIONS

PC Pump Series				Stator Details					Rotor Details			
Volume (m^3/day/100 RPM)	Lift (m)	Cavity Inflow CSA (mm^2)	Coilability with 88.9 mm Tubing	Stator Connections	Elastomer	Length (m)	Tube OD (mm)	Cavity Pressure Rating (kPa/pitch)	Rotor Connections	Rotor Length Code	Length (m)	Head OD (mm)
4	900	490	Yes	73.0 mm. EUE Pin	SN1, MN1, HN1	1.37	79.4	445 to 465	22.2 mm. API Pin	L,P	1.93, 2.34	41.3
	1200					1.83					2.39, 2.79	
	1500					2.29					2.84, 3.25	
	1800					2.74					3.30, 3.71	
5	900	619	Yes	73.0 mm. EUE Pin	SN1	1.37	79.4	403 to 424	22.2 mm. API Pin	P	2.3	41.3
	1200					1.83					2.8	
	1500					2.29					3.3	
	1800					2.74					3.71	
7	900	542	Yes	73.0 mm. EUE Pin	SN1, MN1, HN1	1.73	79.4	486 to 507	22.2 mm. API Pin	L,P	2.29, 2.69	41.3
	1200					2.29					2.84, 3.25	
	1500					2.87					3.43, 3.84	
	1800					3.43					3.99, 4.39	
8 CH	900	916	Yes	88.9 mm. EUE Pin	SN1	1.45	95.3	424 to 438	25.4 mm. API Pin	P	2.4	50.8
	1200					1.93					2.90	
	1500					2.41					3.38	
	1800					2.90					3.86	
10	900	716	Yes	73.0 mm. EUE Box	SN1, MN1, HN1	1.83	88.9	500 to 541	22.2 mm. API Pin	L,P	2.39, 2.79	41.3
	1200					2.44					3.00, 3.40	
	1500					3.05					3.61, 4.01	
	1800					3.66					4.22, 4.62	
13 CH	900	1045	Yes	88.9 mm. EUE Pin	SN1	1.83	95.3	438 to 452	25.4 mm. API Pin	P	2.79	50.8
	1200					2.44					3.40	
	1500					3.05					4.01	
	1800					3.66					4.62	
15	900	852	Yes	73.0 mm. EUE Box	SN1, MN1, HN1	2.29	88.9	500 to 534	22.2 mm. API Pin	L,P	2.84, 3.25	41.3
	1200					3.05					3.61, 4.01	
	1400					3.56					4.11, 4.52	
	1800					4.57					5.13, 5.54	
18 CH	900	1090	Yes	88.9 mm. EUE Pin	SN1	1.83	95.3	431 to 452	25.4 mm. API Pin	P	2.79	50.8
	1200					2.44					3.40	
	1500					3.05					4.01	
	1800					3.66					4.62	

LIFTING SOLUTIONS

PCP OSCAR
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PC Pump Series				Stator Details					Rotor Details			
Volume (m^3/day/100 RPM)	Lift (m)	Cavity Inflow CSA (mm^2)	Coilability with 88.9 mm Tubing	Stator Connections	Elastomer	Length (m)	Tube OD (mm)	Cavity Pressure Rating (kPa/pitch)	Rotor Connections	Rotor Length Code	Length (m)	Head OD (mm)
120	600	1103	Yes	88.9 mm. EUE Pin	SN1, MN1, HN1	6.50	95.3	700 to 727	25.4 mm. API Pin	L	7.06	50.8
	900					9.75					10.31	
	1200					13.00					13.56	
145	600	1335	No	88.9 mm. EUE Box	MN1, HN1	6.65	104.8	714 to 741	25.4 mm. API Pin	L	7.21	50.8
	900					9.98					10.54	
	1200					13.31			28.6 mm. API Pin		13.87	
165	750	2110	No	114.3 mm. EUE Pin	SN1, MN1, HN1	6.65	120.7	617 to 645	28.6 mm. API Pin	L	7.21	57.2
	1000					8.86					9.42	
	1250					11.07					11.66	
	1500					13.31					13.87	
167	450	1335	Coil Joint	88.9 mm. EUE Box	MN1, HN1	5.59	104.8	686 to 720	25.4 mm. API Pin	L	6.15	50.8
	600					7.44					8.00	
	750					9.32			28.6 mm. API Pin		9.88	
	900					11.18					11.73	
190	400	1445	No	88.9 mm. EUE Box	MN1, HN1	5.59	104.8	679 to 707	28.6 mm. API Pin	P	6.15	57.2
	600					8.38					8.94	
	800					11.18					11.73	
280	400	2110	No	114.3 mm. EUE Pin	MN1, HN1	5.59	120.7	672 to 714	28.6 mm. API Pin	L	6.15	57.2
	600					8.38					8.94	
	800					11.18					11.73	

LIFTING SOLUTIONS

PCP OSCAR
CABEZAL PARA BOMBAS DE CAVIDAD PROGRESIVA

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PC Pump Series				Stator Details					Rotor Details			
Volume (m³/day/100 RPM)	Lift (m)	Cavity Inflow CSA (mm²)	Collobility with 88.9 mm Tubing	Stator Connections	Elastomer	Length (m)	Tube OD (mm)	Cavity Pressure Rating (kPa/psi/psi)	Rotor Connections	Rotor Length Code	Length (m)	Head OD (mm)
20	900	852	Yes	73.0 mm. EUE Box	SN1, MN1, HN1	3.05	88.9	493 to 536	22.2 mm. API Pin	LP	3.61, 4.01	41.3
	1200					4.06					4.62, 5.03	
	1500					5.08					5.64, 6.05	
	1800					6.10					6.65, 7.06	
23 CH	1200	1342	Coil Joint	88.9 mm. EUE Box	SN1	3.25	104.8	472 to 500	25.4 mm. API Pin	P	4.22	50.8
	1500					4.06					5.03	
	1800					4.88					5.84	
28	900	1103	Yes	88.9 mm. EUE Pin	SN1, MN1, HN1	3.25	95.3	479 to 514	25.4 mm. API Pin	LP	3.81, 4.22	50.8
	1200					4.34					4.90, 5.31	
	1500					5.44					5.99, 6.40	
	1800					6.50					7.09, 7.49	
30	900	852	Yes	73.0 mm. EUE Box	MN1, HN1	3.96	88.9	576 to 610	22.2 mm. API Pin	LP	4.52, 4.93	41.3
	1200					5.28					5.84, 6.25	
	1500					6.60					7.16, 7.57	
	1800					7.92					8.74, 8.89	
31 CH	1200	1342	Coil Joint	88.9 mm. EUE Box	SN1	4.06	104.8	486 to 514	25.4 mm. API Pin	P	5.03	50.8
	1500					5.08					6.05	
	1800					6.10					7.06	
35 CH	1200	1813	No	114.3 mm. EUE Pin	SN1	3.33	120.7	493 to 507	25.4 mm. API Pin	P	4.29	50.8
	1500					4.17					5.13	
	1800					4.98					5.94	
36	900	1103	Yes	88.9 mm. EUE Pin	SN1, MN1, HN1	4.09	95.3	576 to 610	25.4 mm. API Pin	LP	4.65, 5.05	50.8
	1200					5.44					5.99, 6.40	
	1500					6.81					7.37, 7.77	
	1800					8.15					8.71, 9.12	
41	800	852	Yes	73.0 mm. EUE Box	MN1, HN1	4.39	88.9	624 to 651	22.2 mm. API Pin	LP	4.95, 5.36	41.3
	1000					5.49					5.97, 6.45	
	1200					6.60					7.16, 7.57	
	1500					8.26					8.81, 9.22	
	1800					9.91					10.46, 10.87	
43	900	1039	Yes	88.9 mm. EUE Pin	SN1, MN1, HN1	4.34	95.3	610 to 645	25.4 mm. API Pin	LP	4.90, 5.31	50.8
	1200					5.79					6.35, 6.76	
	1500					7.24					7.80, 8.20	
	1800					8.69					9.25, 9.65	
47 CH	1200	2013	No	114.3 mm. EUE Pin	SN1	3.96	120.7	500 to 541	25.4 mm. API Pin	P	4.93	50.8
	1500					4.98					5.94	
	1800					5.97					6.93	

LIFTING SOLUTIONS

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PC Pump Series				Stator Details					Rotor Details			
Volume (m^3/day/100 RPM)	Lift (m)	Cavity Inflow CSA (mm^2)	Coilability with 88.9 mm Tubing	Stator Connections	Elastomer	Length (m)	Tube OD (mm)	Cavity Pressure Rating (kPa/pitch)	Rotor Connections	Rotor Length Code	Length (m)	Head OD (mm)
54	900	1103	Yes	88.9 mm. EUE Pin	SN1, MN1, HN1	4.88	95.3	610 to 645	25.4 mm. API Pin	L,P	5.44, 5.84	50.8
	1200					6.50					7.06, 7.47	
	1500					8.13					8.69, 9.09	
	1800					9.75					10.31, 10.72	
55	800	852	Yes	73.0 mm. EUE Box	MN1, HN1	5.79	88.9	638 to 672	22.2 mm. API Pin	L	6.35	41.3
	1000					7.24					7.80	
	1200					8.69					9.25	
	1400					10.13					10.69	
	1600					11.58					12.14	
61	900	1348	Coil Joint	88.9 mm. EUE Box	MN1, HN1	4.80	104.8	603 to 645	25.4 mm. API Pin	L, P	5.36, 5.77	50.8
	1200					6.40					6.96, 7.37	
	1500					8.00					8.56, 8.97	
	1800					9.60					10.16, 10.57	
68	900	1084	Yes	88.9 mm. EUE Pin	MN1, HN1	6.50	95.3	617 to 651	25.4 mm. API Pin	L, P	7.06, 7.47	50.8
	1200					8.66					9.22, 9.63	
	1500					10.82					11.38, 11.79	
	1800					13.00					13.56, 13.97	
70	600	852	Yes	73.0 mm. EUE Box	MN1, HN1	5.28	88.9	686 to 714	22.2 mm. API Pin	L	5.84	41.3
	900					7.92					8.48	
	1200					10.57					11.13	
85	750	1116	Yes	88.9 mm. EUE Pin	MN1, HN1	6.50	95.3	617 to 645	25.4 mm. API Pin	L,P	7.06, 7.47	50.8
	1000					8.69					9.25, 9.65	
	1250					10.82					11.38, 11.79	
	1500					13.00					13.56, 13.97	
88	900	2110	No	114.3 mm. EUE Pin	MN1, HN1	4.98	120.7	534 to 569	28.6 mm. API Pin	P	5.94	57.2
	1200					6.65					7.62	
	1500					8.31					9.27	
	1800					9.98					10.95	
102	600	1103	Yes	88.9 mm. EUE Pin	SN1, MN1, HN1	5.59	95.3	700 to 727	25.4 mm. API Pin	L	6.15	50.8
	900					8.38					8.94	
	1200					11.18					11.73	
105	800	1342	Coil Joint	88.9 mm. EUE Box	MN1, HN1	6.65	104.8	686 to 720	25.4 mm. API Pin	L	7.21	50.8
	1000					8.31					8.86	
	1200					9.98					10.54	
	1400					11.63			28.6 mm. API Pin		12.19	
	1600					13.31					13.87	

LIFTING SOLUTIONS

PCP OSCAR

Transportes OSCAR S.R.L.

EXPERIENCE
PERFORMANCE.

LIFTING SOLUTIONS

PCP MODEL & ELASTOMER SPECIFICATIONS

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PROGRESSING CAVITY PUMP MODELS

Series	Model Name	Nominal Capacity m3/day/100rpm	Nominal Capacity bbls/day/100rpm	Lift m (ft)	Rotor Length Code Availability	Elastomer Availability	Stator Tube OD in. (mm)	Standard Stator Connection Size in. (mm)	Standard Stator Connection OD in. (mm)	Optional Stator Connection Size in. (mm)	Optional Stator Connection OD in. (mm)	Rotor Drift Diameter in. (mm)	Standard Rotor Connection in. (mm)	Min. Tubing Size For Rotor Drift in. (mm)	Min. Tubing Size For Rotor Orbit in. (mm)	Min. Tubing Size for 3/4 (19.1) Coil in. (mm)	Cavity Inflow CSA in.²/mm²
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 (19.1) API Pin	2-3/8 EUE (60.3 EUE)	2-3/8 IUE (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						1.63 41.3					0.76 490
	5 CH	5	31 B	1200, 1500, 1800, 2400, 3000, 3600 (4000, 5000, 6000, 7900, 9800, 11800)	P	SN	3.13 (79.4)	2-7/8 EUE Pin[2] (73.0 EUE Pin)[2]	3.46[1] (87.9)[1]	2-3/8 EUE WEX[2] (60.3 EUE WEX)[2]	3.13[1] (79.4)[1]	1.65 41.9	7/8 (22.2) API Pin	2-3/8 EUE (60.3 EUE)	2-7/8 IUE (73.0 EUE)	2-7/8 EUE (73.0 EUE)	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)	4.18[1] (106.2)[1]	1.88 47.7	7/8 (22.2) API Pin	2-3/8 EUE (60.3 EUE)	2-7/8 IUE (73.0 EUE)	3-1/2 EUE (88.9 EUE)	1.21 776
	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	900, 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						2.09 53.0					1.62 916
	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					1.68 961
	43	43	270 B	900, 1200, 1500, 1800, 2400 (3000, 4000, 5000, 6000, 7900)	LP	SN, MN, HN	3.75 (95.3)	3-1/2 EUE Pin (88.9 EUE Pin)	4.18[1] (106.2)[1]	2-7/8 EUE WEX[2] (73.0 EUE WEX)[2]	3.75[1] (95.3)[1]	2.10 53.3	1 (25.4) API Pin	2-7/8 EUE (73.0 EUE)	3-1/2 IUE (88.9 EUE)	3-1/2 EUE (88.9 EUE)	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
	66	66	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

LIFTING SOLUTIONS

Transportes OSCAR S.R.L.

4-1/8 Series	23 CH	23	165 lb	1200, 1500, 1800, 2400 (4000, 5000, 6000, 7900)	P	SN						2.27 57.5					2.08 1342
	31	31	195 lb	1200, 1500, 1800, 2400, 2700, 3000 (4000, 5000, 6000, 7900, 8900, 9800)	LP	SN, MN, HN						2.21 56.0					2.10 1355
	42	42	264 lb	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 lb	900, 1200, 1500, 1800, 2400 (3000, 4000, 5000, 6000, 7900)	L	MN, HN						2.26 57.4					2.09 1348
	61	61	384 lb	900, 1200, 1500, 1800, 2400 (3000, 4000, 5000, 6000, 7900)	L	MN, HN						2.26 57.4				3-1/2 (88.9) EUE Special Coil Joint	2.09 1348
	72	72	453 lb	900, 1200, 1500, 1800 (3000, 4000, 5000, 6000)	L	MN, HN	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)	2.26 57.4	1 (25.4) API Pin	2-7/8 EUE (73.0 EUE)	3-1/2 EUE* (88.9 EUE)*		2.09 1348
	87	87	547 lb	900, 1200, 1500, 1800 (3000, 4000, 5000, 6000)	L	MN, HN						2.26 57.4					2.09 1348
	105	105	660 lb	800, 1000, 1200, 1600 (2600, 3300, 4000, 5200)	L	MN, HN						2.28 58.0					2.08 1342
	125	125	774 lb	600, 900, 1200 (2000, 3000, 4000)	L	MN, HN						2.32 59.0					2.07 1335
	145	145	912 lb	600, 900, 1200 (2000, 3000, 4000)	L	MN, HN						2.31 59.0				4-1/2 EUE (114.3 EUE)	2.07 1335
	167	167	1050 lb	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 lb	400, 600, 800 (1300, 2000, 2600)	L	MN, HN						2.33 59.1					2.24 1445
4-3/4 Series	35 CH	35	230 lb	1200, 1500, 1800, 2400 (4000, 5000, 6000, 7900)	P	SN						2.71 68.8					2.81 1803
	47	47	296 lb	1200, 1500, 1800, 2400, 2700, 3000 (4000, 5000, 6000, 7900, 8900, 9800)	LP	SN, MN, HN						2.78 70.6	1 (25.4) API Pin				3.12 2013
	88	88	554 lb	900, 1200, 1500, 1800, 2400 (3000, 4000, 5000, 6000, 7900)	LP	MN, HN	4.75 (120.7)	4-1/2 EUE Pin (114.3 EUE Pin)	5.56 (141.2)	3-1/2 EUE WEB† (88.9 EUE WEB)†	4.75† (120.7)†	2.82 71.5		3-1/2 EUE (88.9 EUE)	4-1/2 EUE (114.3 EUE)	4-1/2 EUE (114.3 EUE)	3.27 2110
	165	165	1038 lb	750, 1000, 1250, 1500 (2500, 3300, 4100, 5000)	LP	SN, MN, HN						2.82 71.5	1-1/8 (28.6) API Pin				3.27 2110
	280	280	1761 lb	400, 600, 800 (1300, 2000, 2600)	L	MN, HN						2.82 71.5					3.27 2110
5 Series	64	64	403 lb	900, 1200, 1500, 1800, 2400 (3000, 4000, 5000, 6000, 7900)	LP	MN, HN						2.85 72.5					3.47 2239
	118	118	742 lb	800, 1000, 1200, 1600 (2600, 3300, 4000, 5200)	L	MN, HN	5.00 (127.0)	5 STC Pin (127.0 STC Pin)	5.56 (141.2)	3-1/2 EUE WEB† (88.9 EUE WEB)†	5.00† (127.0)†	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
	215	215	1352 lb	500, 750, 1000 (1600, 2300, 3300)	L	MN, HN						2.85 72.5					3.47 2239
5 (SG) Series	101	101	635 lb	900, 1200, 1500, 1800 (3000, 4000, 5000, 6000)	L	MN, HN						2.94 74.7					3.60 2323
	130	130	818 lb	900, 1200, 1500, 1800 (3000, 4000, 5000, 6000)	L	MN, HN	5.00 (127.0)	5 STC Pin (127.0 STC Pin)	5.56 (141.2)	4-1/2 EUE WHC† (114.3 EUE WHC)†	5.13† (130.2)†	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
	150	150	964 lb	800, 1000, 1200, 1600 (2600, 3300, 4000, 5200)	L	MN, HN						2.94 74.7					3.60 2323

Footnotes:

* API connection clearance coupling OD

† WEB = Welded Extension; WHC = Welded Hoff Collar

‡ Shoulder weld (add 0.25 in / 6 millimeters)

§ Model 190 requires 5-1/2" Full Gamma Handling Pup (CHP); for other 5in CHP's also recommended for other Models in the series

LS
LIFTING SOLUTIONS

PCP OSCAR

Transportes
OSCAR S.R.L.

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 and aggressive fluids

- LS 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, LS 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 LS elastomers please contact an LS 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