TECHNICAL BULLETIN

PROGRESSING CAVITY PUMPS | LS-TB-015

LIFTING SOLUTIONS

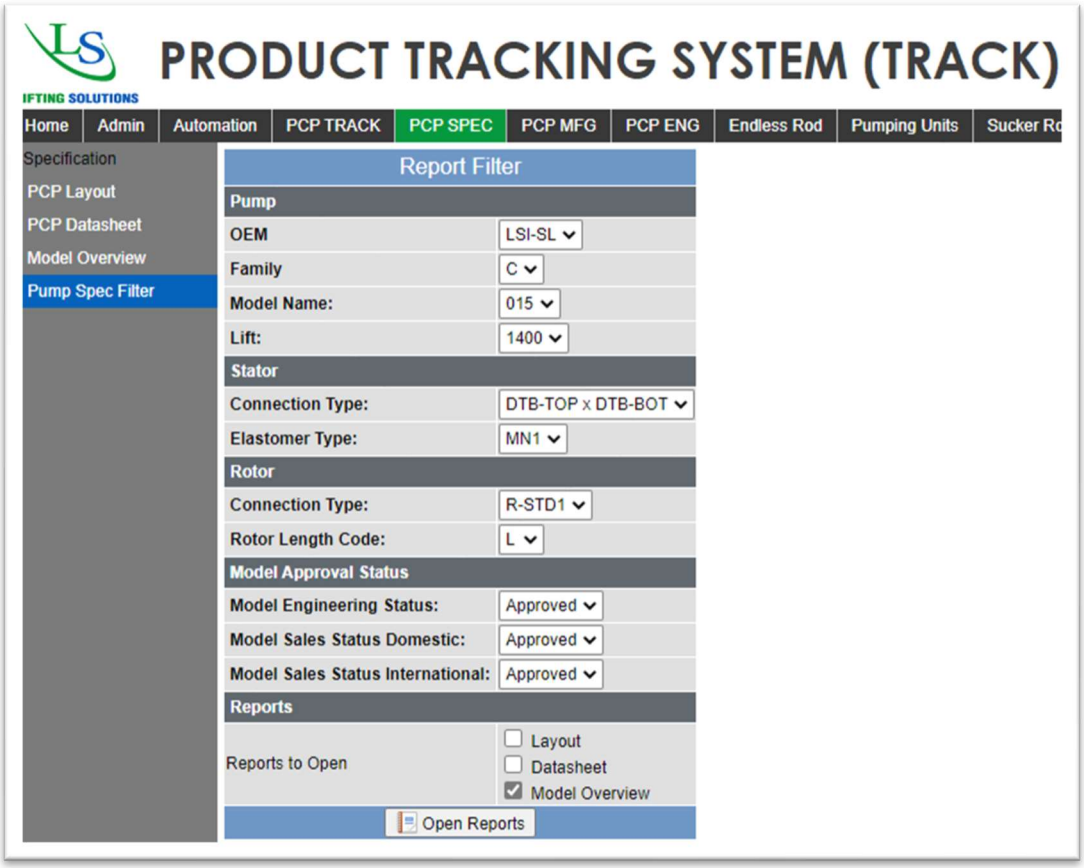
BULLETIN NO.	TOPIC	ISSUE DATE	ISSUED BY
LS-TB-015 V1	PC PUMP LAYOUTS, OVERVIEW AND ISO DATASHEET	MARCH 9 2020	ENGINEERING

BACKGROUND

In effort to digitize the flow of information about our Progressing Cavity Pump (PCP) Product Line a Specification Configurator has been setup in the Product Tracking System. This self-serve module is designed to provide specification information to internal users. PDF versions can be printed and emailed to Clients/End Users if required.

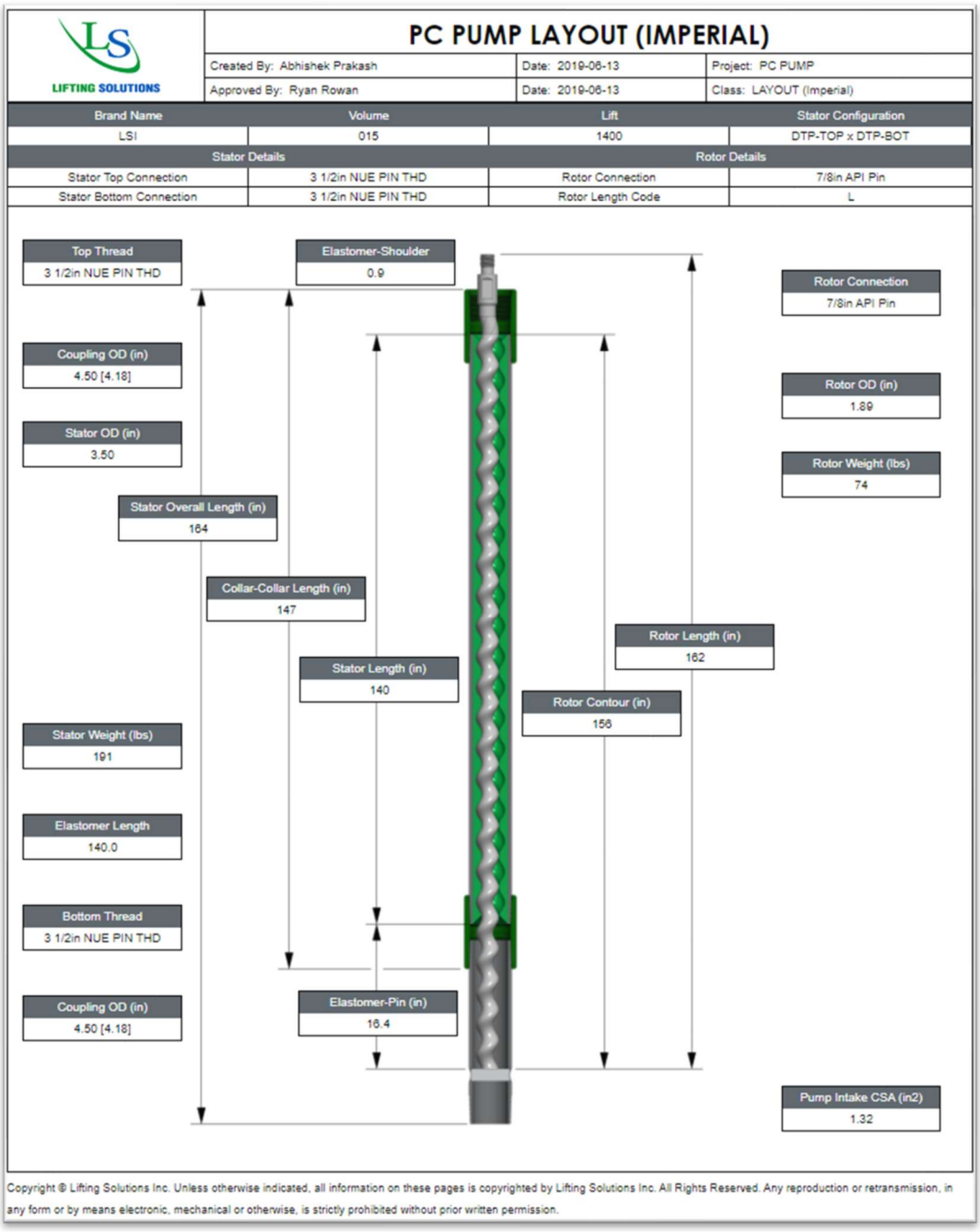
FILTERING INTERFACE

The filtering interface allows you to narrow the selection to a single pump configuration as required. It can be found under the PCP SPEC Tab then in the right-hand menu item under Pump Spec Filter as shown below.



PCP LAYOUT

The PCP Layout graphically represents overall dimensions and connection specifics for each model returned in the filter results. The image rendering is representative of the specified connection configuration and true PCP geometry. These reports can be generated for any PCP model configuration currently available.



PCP DATASHEET

The PCP Datasheet gives you a tabular view of relevant PCP geometry and configuration information based on ISO 15136 requirements. It builds a chart for each model that shows the power requirements (W, hp) and flow rate (Q, m3/day) at different speeds as well as the theoretical torque requirement (T, ft*lbs).

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PC PUMP DATASHEET (IMPERIAL)

Created By: Abhishek Prakash		Date: 2019-06-13	Project: PC PUMP
Approved By: Ryan Rowan		Date: 2019-06-13	Class: DATA SHEET

Brand Name	Model	Lift	Elastomer	Geometry	Length Code	Stator Configuration
LSI	015	1400	NBR-MN1	1:2	L	DTP-TOP x DTP-BOT

Pump Specifications

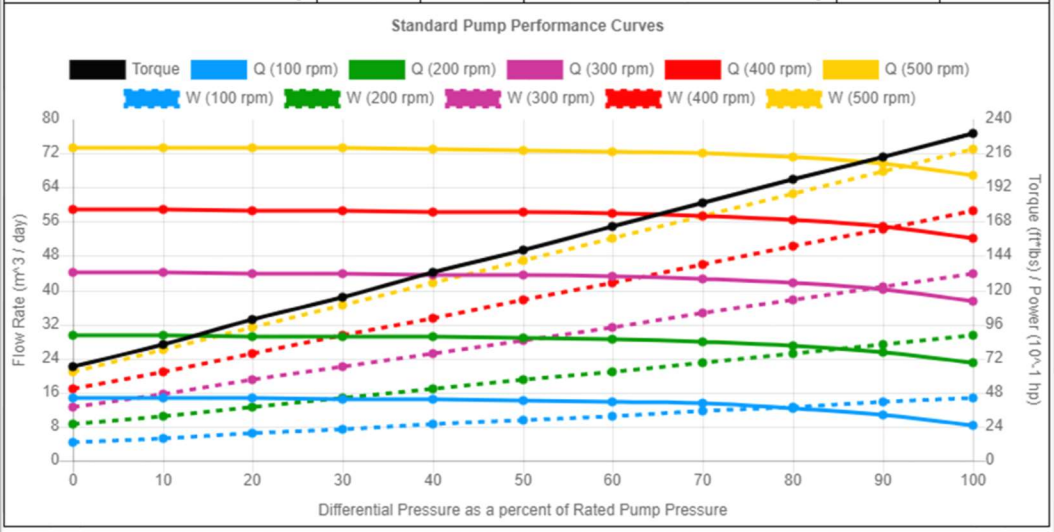
Nominal Capacity	15	m^3/day/100rpm	Conveyance Method	Tubing Deployed	
Validated Capacity	14.7	m^3/day/100rpm	Maximum Intake Gas Volume Fraction	40	%
Rated Pump Pressure	1991	psi	Maximum Speed	500	rpm
Pressure per Cavity	71	psi	No. of Engaged Cavities	28	
Est. Frictional Torque	66	ft*lbs	Est. Pump Torque at Rated Pressure	230	ft*lbs

Stator Details

Stator Top Connection	3 1/2in NUE PIN THD		Stator Top Collar	3 1/2in NUE BOX x 3 1/2in EUE BOX COL	
Stator Bottom Connection	3 1/2in NUE PIN THD		Stator Bottom Collar	3 1/2in NUE BOX x 3 1/2in EUE BOX COL	
Threaded Tagbar	3 1/2in EUE PIN x 3 1/2in EUE PIN TTB		Stator Tube OD	3.50	in.
Stator Phase Welded	No		Weld OD (if Unshaved)	N/A	in.
SH Coupling OD	4.18	in.	Standard Coupling OD	4.50	in.
Casing Size - 0.25 in. Clearance (SH)	Casing API 5 1/2in STC 15.5lbs/ft		Casing Size - 0.25 in. Clearance	Casing API 5 1/2in STC 15.5lbs/ft	
Cavity Intake Cross-Section Area	1.32	in^2.	Elastomer Length	140.0	in.
Elastomer to Tag Pin Distance	16.4	in.	Stator Length	140	in.
Stator Weight	147	lbs.	Stator Overall Length	164	in.

Rotor Details

Rotor Top Connection	7/8in API Pin		Rotor Bottom Connection	N/A	
Rotor Major Diameter	1.89	in.	Rotor Drift Diameter	1.89	in.
Rotor Minor Diameter	1.43	in.	Rotor Orbit Diameter	2.35	in.
Rotor Coupling OD (SH)	1.63	in.	Rotor Coupling OD (FS)	1.81	in.
Rotor Head Orbit Diameter (SH)	2.09	in.	Rotor Head Orbit Diameter (FS)	2.29	in.
Min. Tubing Size for Rotor Drift (SH)	Tubing API 2 3/8in EUE 4.7lbs/ft		Min. Tubing Size for Rotor Drift (FS)	Tubing API 2 3/8in EUE 4.7lbs/ft	
Min. Tubing Size for Rotor Orbit (SH)	Tubing API 2 7/8in EUE 6.5lbs/ft		Min. Tubing Size for Rotor Orbit (FS)	Tubing API 2 7/8in EUE 6.5lbs/ft	
Rotor Shoulder to Elastomer	0.9	in.	Rotor Contour Length	156	in.
Rotor Coating Type	Hard Chromium Plating		Rotor Bottom to Shoulder	158	in.
Rotor Weight	74	lbs.	Rotor Overall Length	162	in.



THD = Direct Threaded; DTP = Direct Threaded Pin; DTB = Direct Threaded Box; WEX = Weld Extension; WTB = Welded Tagbar; SH = Slim-Hole; FS = Full-Size

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PCP OVERVIEW

The PCP Overview gives a general overview of a specific PCP geometry. This report requires you to select a model name, stator connection type, stator elastomer type, rotor connection type and rotor length code as a minimum to generate the model overview report. Lift is optional and if left blank, the report will return all the available lifts for that specific model as shown below.

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MODEL OVERVIEW (IMPERIAL)

Created By: Abhishek Prakash	Date: 2019-06-13	Project: PC PUMP
Approved By: Ryan Rowan	Date: 2019-06-13	Class: LAYOUT (Imperial)

PC Pump Series		Stator Details				Rotor Details				
Volume (m^3)	Lift (m)	Stator Connections	Length (in)	Tube OD (in)	Max OD (in)	Rotor Connections	RLC	Length (in)	Drift OD (in)	Orbit OD (in)
8	1200	3 1/2in EUE PIN THD	76	3.75	4.5	1in API Pin	L	98	2.09	2.52
8	1500	3 1/2in EUE PIN THD	95	3.75	4.5	1in API Pin	L	117	2.09	2.52
8	1800	3 1/2in EUE PIN THD	114	3.75	4.5	1in API Pin	L	136	2.09	2.52
8	2400	3 1/2in EUE PIN THD	152	3.75	4.5	1in API Pin	L	174	2.09	2.52
8	3000	3 1/2in EUE PIN THD	190	3.75	4.5	1in API Pin	L	212	2.09	2.52
8	3600	3 1/2in EUE PIN THD	228	3.75	4.5	1in API Pin	L	250	2.09	2.52

Pump Model Series Decription

CHOPS (Sandy Heavy Oil)

Family Scope

Direct Thread Pin 3.500in EUE Pump Family (Tube 3.750in OD).

Coilable with 3/4in Coil inside 3 1/2" EUE Tubing (With 0.125" Clearance Minimum).

STD1, 278-512MM, Rotor Drifts 2 7/8" Tubing (2.347" Drift ID), Stator Drifts 5 1/2" Casing (4.825" Drift ID).

OPT2, 278-412SM, Rotor Drifts 2 7/8" Tubing (2.347" Drift ID), Stator Drifts 4 1/2" Casing (3.927" Drift ID).

OPT3, Not Available.

Stator Configuration

STD1, Stator Connection, 3 1/2" EUE Direct Thread Pin with 3 1/2" EUE Coupling (4.180" Max OD).

OPT2, Stator Connection, 2 7/8" EUE Welded Extension with Welded Tagbar (3.750" Max OD).

OPT3, Not Available.

Rotor Configuration

STD1, Rotor Connection, 1" API Pin.

OPT2, Not Available.

OPT3, Not Available.

Available in STD + 0in (S), Extended +8in (L) and Paddled +24in (P) Rotor Length Codes (RLC).

Tagbar Configuration

STD1, Tagbar, 3 1/2in EUE.

OPT2, Not Available.

OPT3, Not Available.

Available in SOLID (No Slots) or SLOTTED (1.500in Slots) Tagbar Configurations.

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