PROGRESSING CAVITY PUMPING SYSTEMS

Progressing Cavity Pump Systems Specifications & Capacities

Version 4

April, 2019

Weatherford®

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Preface

Foreword

The information, specifications, and illustrations in this publication are up to date at time of printing. Our policy is one of continued development; therefore; we reserve the right to amend any or all of the information contained in this document without prior notification.

Disclaimer

This catalogue is intended to provide users basic information regarding product specifications. It is not intended to be a complete source of information. Weatherford gives no other warranty with respect to the reliability, accuracy, validity, of fitness of the information, analysis, and recommendations contained in this manual. Any and all implied or statutory of merchantability or fitness for any purpose are expressly excluded. Weatherford acknowledges that any use or interpretation of the information, analysis, or conclusions contained in this report is at its own risk.

For assistance, contact your nearest Weatherford representative.

PC Pumping Systems Division of Weatherford Canada Ltd. Manufacturing Warranty

This shall be the sole and exclusive warranties given by the PC Pumping Systems Division of Weatherford Canada Ltd., ("Weatherford") on its **PROGRESSING CAVITY PUMPS, DRIVE HEADS and STUFFING BOXES for PROGRESSING CAVITY PUMPING SYSTEMS** where such **PROGRESSING CAVITY PUMPS, DRIVE HEADS and STUFFING BOXES for PROGRESSING CAVITY PUMPING SYSTEMS** are of its own manufacture ("Weatherford Products"), and **WEATHERFORD HEREBY EXPRESSLY DISCLAIMS ANY AND ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING WARRANTIES OF MERCHANTIBILITY, FITNESS FOR USE OR PURPOSE.**

Subject to the limitations and conditions herein, Weatherford warrants to customer that Weatherford Products supplied to customer pursuant to an Order:

(a) Shall conform in all respects to Weatherford's published Product specifications (and any additional specifications stipulated in the Order therefore); and

(b) Shall be and remain free of defects in materials and workmanship, under normal use twelve (12) months from the date of delivery to the customer (hereinafter referred to as the "Warranty Period").

(c) "date of delivery" refers to the first time the original equipment was delivered to the customer.

Weatherford's obligations under this warranty shall be limited to repairing, replacing with Products of like or comparable quality or issuing credit, at Weatherford's sole discretion, any Product or parts it finds to be defective in material or workmanship; provided that customer has notified Weatherford of the non-conformity within the applicable Warranty Period. Weatherford must be given a reasonable opportunity to investigate the root causes of the failure before recognizing any warranty claim. Shipping and handling in connection with this warranty will be at customer's expense. Products sold by Weatherford, but manufactured by a third party, will carry only the warranty of the third party manufacturer, and the customer will rely solely on that warranty.

Exclusions

The foregoing Weatherford Products warranties do not apply to (i) Weatherford Products that have been modified or altered by customer group or third parties after their delivery; (ii) Weatherford Products subjected to improper handling, storage, installation, removal, use, operation or maintenance by customer group or third parties, including use of unauthorized replacement parts or operation outside of the manufacturer's recommended guidelines, accident, abuse or negligence; (iii) Weatherford Products requiring replacement because of normal wear and tear; (iv) the design of Weatherford Products which were modified according to specifications furnished by customer group; or (v) customer's failure to implement any update or upgrade to the Weatherford Products recommended by Weatherford.

In addition, the warranties will not apply and will be void if the Weatherford Product fails as a result of surface or downhole corrosion; non compatibility of produce fluid with the stator and/or rotor; general wear abrasion. Hydraulic wellhead drives and hydraulic power transmission units sold individually for use with equipment not manufactured by Weatherford will not be covered under this warranty.

Weatherford does not warrant that any of the Products sold by it, if used or sold in combination with other equipment or used in the practice of methods or processes, will not, by virtue of such combination or use, infringe patents of other, and Weatherford shall not be liable for any patent infringement arising from, or by reason of, any such use or sale. Furthermore, Weatherford shall not be liable for any patent infringement arising from, or by reason of, any use or sale of any materials, equipment or products not of Weatherford's manufacture or for the use or sale of any materials, equipment or products, or other goods specially made, in whole or in part, to the customer's design specifications.

Progressing Cavity Pumps Introduction

Simplified Comparison, Complete Solutions

Weatherford is the industry leader in Progressing Cavity Pump (PCP) manufacturing, technical expertise, sales, and service extending across (40) countries. Our PCP service capabilities include dedicated research & development facilities, (3) manufacturing locations, (43) test bench locations, (19) Autoclave (fluid compatibility, bond validation) locations and (4) drive head test bench locations.

Since its introduction into the oil & gas industry in the 1980's the PCP technology has grown to over 50,000 installations word wide across a diverse range of applications such as Cold Heavy Oil with up to 70% sand , light and medium oil, Coal Seam Gas and Coalbed Methane dewatering. Weatherford PCP technologies are distinctly positioned to support this rapidly growing market and boast the largest and most versatile product line in the industry with over (50) unique PCP series, (200) PCP models, (7) elastomers and (10) drive heads models. We are committed to continually refining and expanding our comprehensive portfolio of value-added PCPs and services.

ISO 15136.1 – Petroleum and Natural Gas Industries – Progressing Cavity Pump Systems for Artificial Lift

The design, design verification, manufacturing and performance rating of Weatherford PCP's are governed by ISO 15136.1. Intended for use in the petroleum and natural gas industry, ISO 15136.1 specifies requirements for the selection, manufacturing, testing and use of PCPs. ISO 15136.1 also provides specifications for the design, design verification, manufacturing, data control, performance ratings, functional testing, handling and storage of progressing cavity pumps. There are (3) grades of design validation, (3) grades of quality control and (2) grades of functional evaluation the end-user may choose from to ensure the PCP meets the technical specifications for a given application. ISO 15136.1 eliminates the guesswork and provides a 'side by side' comparison between different manufacturers, saving valuable time and money. Weatherford manufacturing plants have the ability to meet all functional, validation and quality standards for ISO 15136.1

'Fit for Purpose' Products

Weatherford's capabilities enable the product line to develop 'fit for purpose' products that include several technology differentiators such as DuraSeal® stuffing boxes, Fat Boy® pumps, Arrowhead® Insertable pumps, Flexisert® insert pump anchor, G-Series® drive heads and Hi-Per™ elastomer.

Weatherford rightfully owns the trademarks and all design aspects of the Progressing Cavity Pump product line consisting of: Arrowhead®, Fat Boy®, Flexisert®, G-Series® and DuraSeal®. With intent to register, Weatherford has trademarked the Progressing Cavity Pump products consisting of: Cloverleaf™, Hi-Per™, Metal Lock™, Rotor Lock™, TopTier™ and HTD™. Any other products represented as Arrowhead®, Fat Boy®, Flexisert®, G-Series®, DuraSeal®, Cloverleaf™, Hi-Per™, Metal Lock™, Rotor Lock™, TopTier™ and HTD™ are strictly copies, duplications or approximations of the Weatherford designs and ARE NOT guaranteed to provide the same level of performance, durability or longevity in a PCP service.

Weatherford manufactures the mentioned registered and trademarked Progressing Cavity Pump products at our wholly owned facilities. Our manufacturing facilities provide supporting, sustaining and engineering functions for the Progressing Cavity Pump product line. The ISO 9001:2008 certification for the design and manufacturing of progressing cavity pumps at our Edmonton facility emphasizes our culture and dedication to quality assurance.

Progressing Cavity (PC) Pump Concept

Two primary components make up the downhole PC pump: a single helical, steel rotor connected to a rod string and a double helical, elastomer-lined stator attached to the tubing string. Using the latest manufacturing technology, rotors are kept to tight tolerances and treated with a chemical and abrasion-resistant coating, typically hard chrome. Stators comprise a steel tube with a molded elastomer bonded inside to provide internal geometry. Each combination of rotor/stator is matched to downhole conditions to provide highly efficient operation and optimum production enhancement.

As the rotor turns eccentrically in the stator, a series of sealed cavities forms and progresses from the intake to the discharge end of the pump. The result is a nonpulsating, positive displacement flow with a discharge rate proportional to the rotational speed of the rotor and the differential pressure across the pump.

Theoretical pump capacity for a conventional single-lobe-geometry PC pump = $4ED_R \bullet 2P_R \bullet RPM$

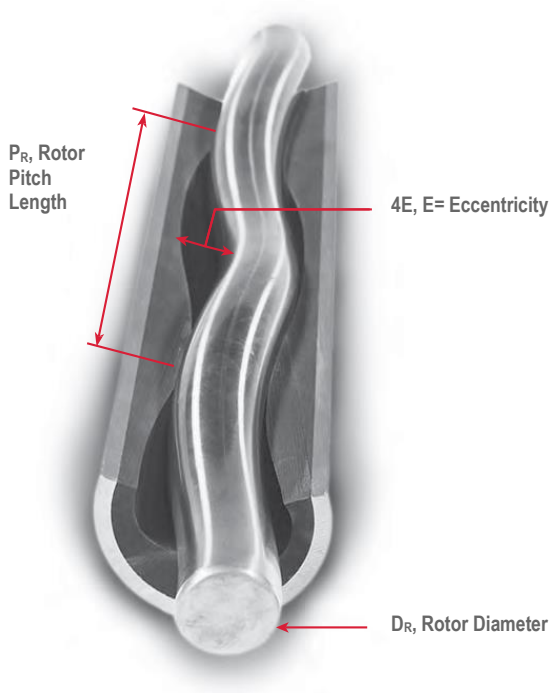


Fig. 1. PC pump traverse section view.

Advantages of a PC Pumping System

- Low capital investment
- High system efficiency
- Low surface profile for visual- and height-sensitive areas
- Simple installation
- Pumps oil and water with solids
- No internal valves to clog or gas lock
- Low power consumption
- Portable, lightweight surface equipment
- Minimal maintenance costs

Alphanumeric Identification System for Rotors and Stators

An alphanumeric serial number is stamped on each component of a Weatherford PCP to identify its major characteristics.

For a complete PC pump, the stator and rotor have been flow- and pressure-tested together and are a matched set. The rotor serial number is stamped on the top connection of the rotor and must correspond to serial number stamped on the stator.

The serial number of the pump is always stamped on the top of the stator. Within this serial number are alphabetical identifiers that distinguish the unique characteristics and/or makeup of each pump. Refer to the chart below.

Pumps are tested to provide the required efficiency for the application. Pump test reports provide useful information such as pump efficiency and torque. Follow-up testing on used pumps can help determine whether or not they can be reused.

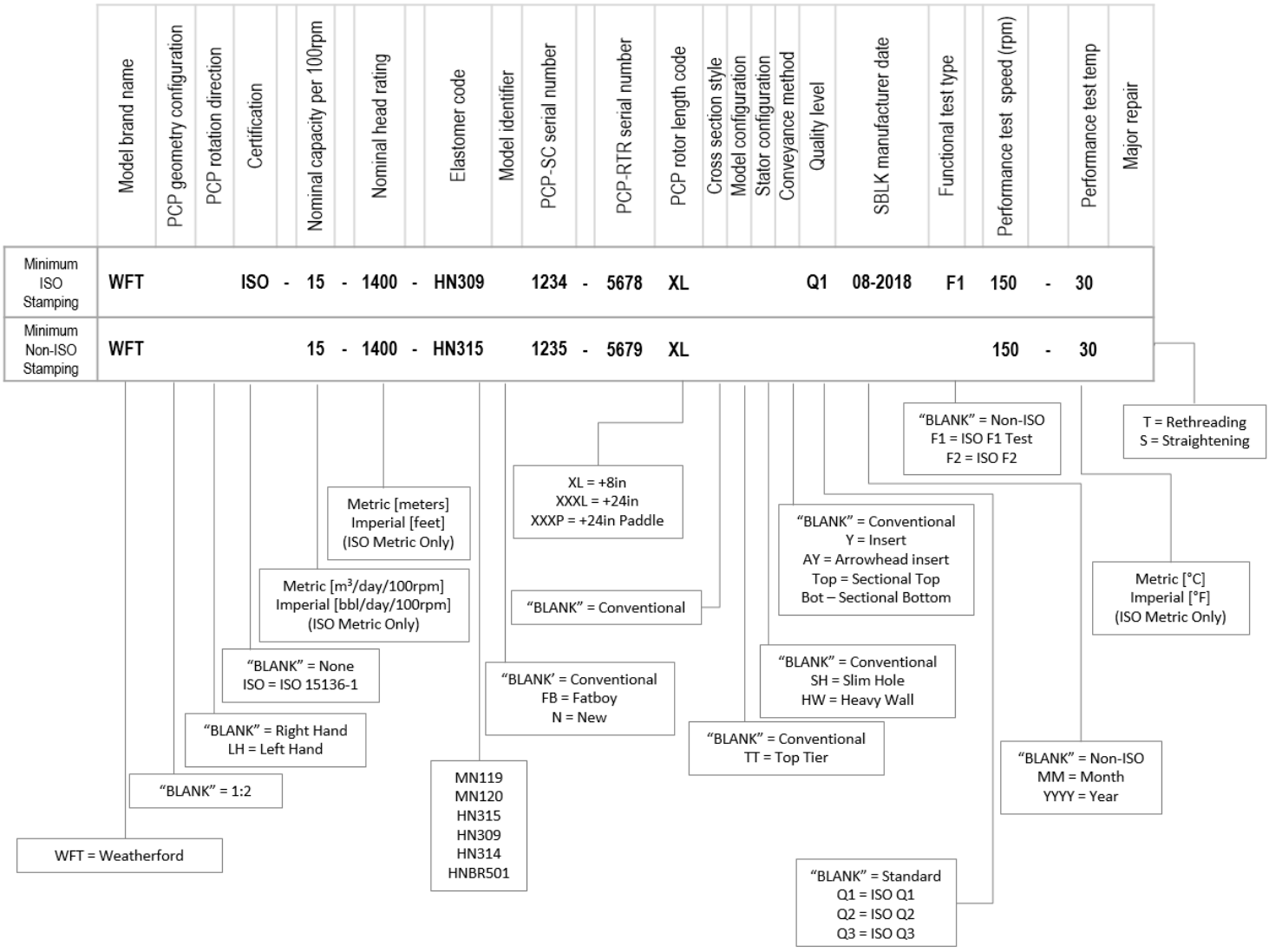


Fig. 2. Alphanumeric Identification system for rotor and stator example.

PCP STAMPING EXAMPLES

ISO Product		
Product Type	**Nomenclature**	**Description**
Complete Pump	WFT ISO-15-1400-HN309 1234-5678 XL Q1 08-2018 F1 300-50	WFT ISO 15136-1 PC Pump, 15 m³/day/100 rpm Nominal Capacity per 100 rpm, 1400 m Nominal lift, High Nitrile Elastomer, PCP Stator Serial Number, PCP Rotor Serial Number, XL Rotor Length, Q1 Quality Level, August 2018 Manufacturing Date, ISO F1 Functional Test, 300 rpm Performance Test Speed, 50°C Performance Test Temp.
Stator Only	WFT ISO-15-1400-HN309 1234 Q1 08-2018	WFT ISO 15136-1 PC Stator, 15 m³/day/100 rpm Nominal Capacity per 100 rpm, 1400 m Nominal lift, High Nitrile Elastomer, PCP Stator Serial Number, Q1 Quality Level, August 2018 Manufacturing Date.
Rotor Only	WFT ISO-15-1400-ST01 5678 XL Q1	WFT ISO 15136-1 PC Rotor, 15 m³/day/100 rpm Nominal Capacity per 100 rpm, 1400 m Nominal lift, ST01 Rotor Size Code, PCP Rotor Serial Number, XL PCP Rotor Length, Q1 Quality Level.

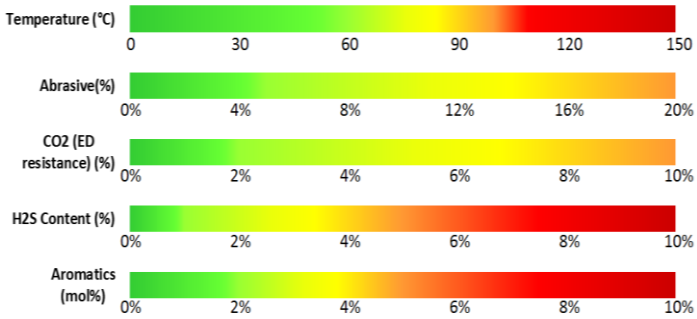
Non-ISO Product		
Product Type	**Nomenclature**	**Description**
Complete Pump	WFT 15-1400-HN315 1235-5679 XL 300-50	WFT PC Pump, 15 m³/day/100 rpm Nominal Capacity per 100 rpm, 1400 m Nominal lift, High Nitrile Elastomer, PCP Stator Serial Number, PCP Rotor Serial Number, XL Rotor Length, 300 rpm Performance Test Speed, 50°C Performance Test Temp.
Stator Only	WFT 15-1400-HN315 1235	WFT PC Stator, 15 m³/day/100 rpm Nominal Capacity per 100 rpm, 1400 m Nominal lift, High Nitrile Elastomer, PCP Stator Serial Number.
Rotor Only	WFT 15-1400-ST01 5679 XL	WFT PC Rotor, 15 m³/day/100 rpm Nominal Capacity per 100 rpm, 1400 m Nominal lift, ST01 Rotor Size Code, PCP Rotor Serial Number, XL PCP Rotor Length.

Available Elastomer Options

Elastomers

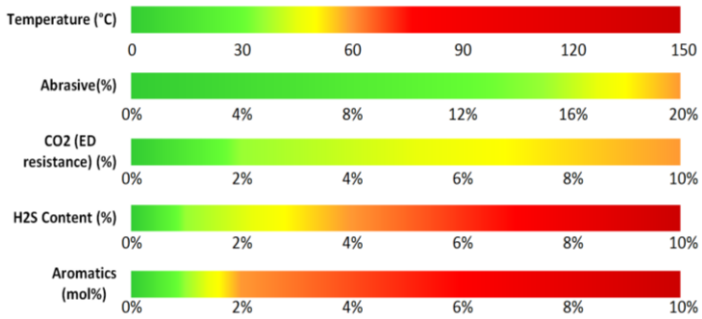
The elastomer/bond matrix table is provided as an initial guide to aid in the selection of the best elastomer/elastomer bond system for your specific application. Matching the elastomer/elastomer bond system to the well conditions is essential to achieving the maximum run life and performance from your PC pump. Subsequently the final selection should be based on a combination of elastomer and bond validation tests conducted with the reservoir fluid.

ISO HN309



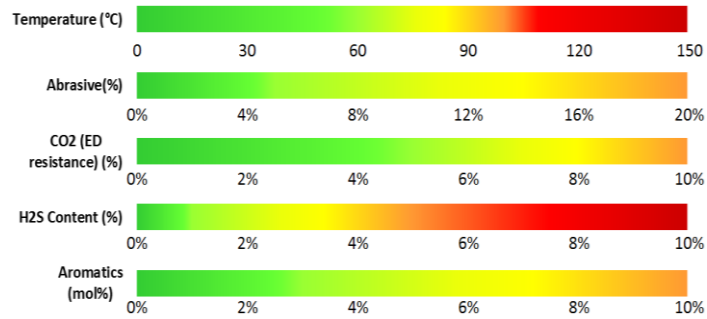
Very good resistance to aromatics. Good wear and mechanical properties. Recommended for medium and light oils and nonaggressive chemicals.

MN120



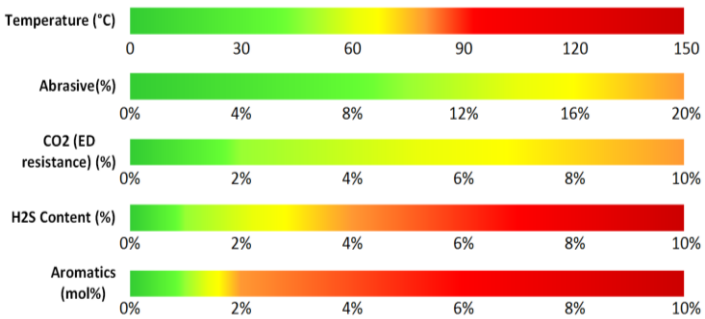
Excellent resistance to aromatics, gas, explosive decompression and many chemicals. Good wear and mechanical properties. Recommended for coal seam gas, light, medium and heavy oil.

ISO HN314 Hi-Per™



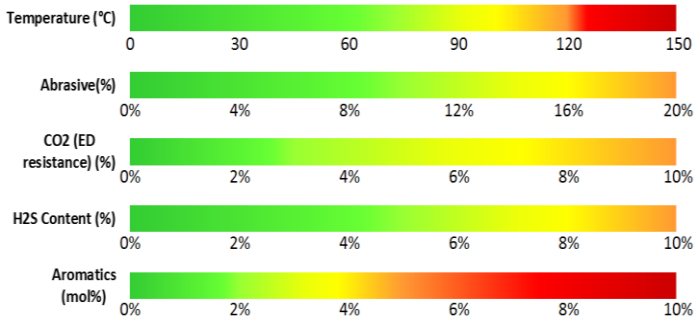
Excellent resistance to aromatics, gas, explosive decompression and many chemicals. Good wear and mechanical properties. Recommended for coal seam gas, light, medium and heavy oil.

MN119



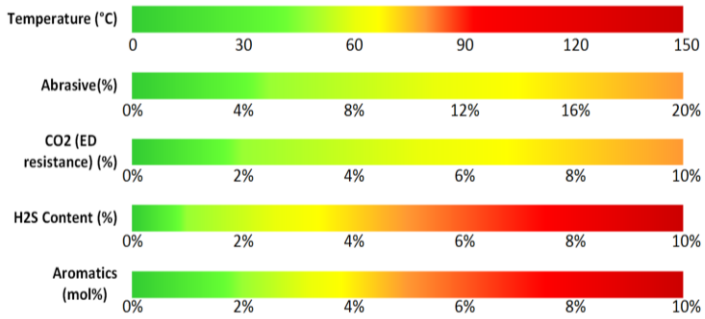
Very good wear and mechanical properties. Recommended for heavy oil, coal bed methane and water source wells.

ISO HNBR501



Excellent resistance to water and good resistance to aromatics. Recommended for elevated temperatures, wells with H2S, light, medium and heavy oil including coalbed methane dewatering.

HN315



Very good resistance to aromatics and water swell. Good wear and mechanical properties. Recommended for medium and light oils and nonaggressive chemicals.

Legend — Recommended — Caution — Not Recommended

Customize Your PC Pump

With the largest PC pump configurations available in the market, Weatherford PCP has the capability to manufacture a PC pump that best fits your operational and/or downhole requirements. Some manufacturing options are illustrated here:

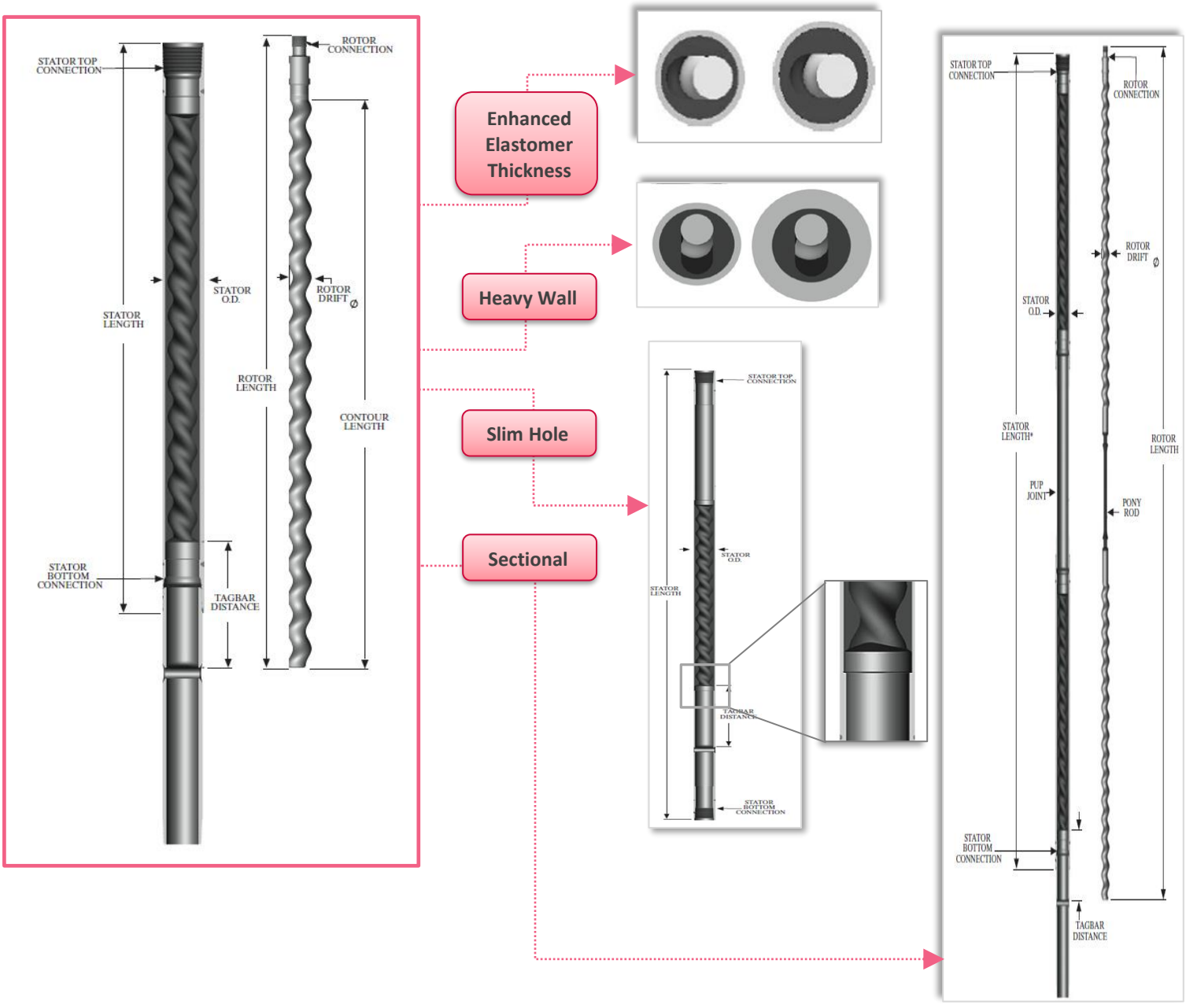
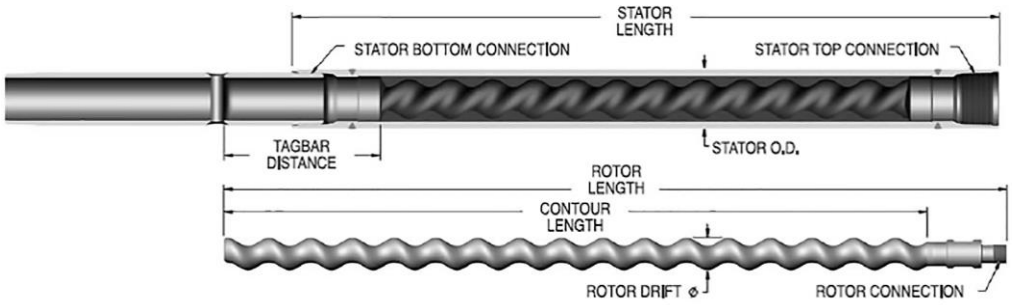


Fig. 4. Weatherford PC pump manufacturing options available.

Weatherford PC Pump Specifications

The illustration of a PC pump identifies dimensional parameters to consider when ordering a progressing cavity pump.



PCP Family Code

PCP Family code

190 LRG

- 1.900 in. tubing
- 2.25 in. maximum stator tube OD
- 4 in. minimum CSG for pump drift
- 2 7/8-in. insertable

238 STD

- 2 3/8-in. tubing
- 2.8 in. maximum stator tube OD
- 4 1/2-in. minimum CSG for pump drift
- 3 1/2-in. insertable

238 LRG

- 2 3/8-in. tubing
- 3 1/2-in. maximum stator tube OD
- 4 1/2-in. minimum CSG for pump drift
- 4 1/2-in. insertable

278 STD

- 2 7/8-in. tubing
- 3.75 in. maximum stator tube OD
- 4 1/2-in. minimum CSG for pump drift
- 4 1/2-in. insertable

278 LRG

- 2 7/8-in. tubing
- 4 1/4-in. maximum stator tube OD
- 5 1/2-in. minimum CSG for pump drift
- 5 1/2-in. insertable

312 STD

- 3 1/2-in. tubing
- 4 1/2-in. maximum stator tube OD
- 5 1/2-in. minimum CSG for pump drift
- 5 1/2-in. insertable

312 LRG

- 3 1/2-in. tubing
- 5 in. maximum stator tube OD
- 7 in. minimum CSG for pump drift
- N/A insertable

412 STD

- 4 1/2-in. tubing
- 5 1/2-in. maximum stator tube OD
- 7 in. minimum CSG for pump drift
- N/A insertable

412 LRG

- 4 1/2-in. tubing
- 6 in. maximum stator tube OD
- 7 5/8-in. minimum CSG for pump drift
- N/A insertable

Weatherford PC Pump Specifications

Conventional Pump Series: Metric Units

Pump					Stator					Rotor			
PC Pump Series		Displacement [m³/day/100 rpm]	Lift Capacities		Top Connection [mm]	Length[a] [m]	Max OD[b] [mm]	Tag bar Distance[c] [mm]	Weight [kg]	Top Connection [mm]	Length[a] [m]	Drift Dia. [mm]	Weight [kg]
Metric	Imperial		[kPa]	[m]									
2-1800	13-6000	2	17582	1800	60.3mm EUE Box	2.21	73.9	587	16	15.9mm SR Pin	2.49	31.75	6
2-3600	13-12000	2	35163	3600	60.3mm EUE Box	4.19	73.9	587	31	15.9mm SR Pin	4.47	31.75	11
4-1200 N	25-4100 N	4	11721	1200	73.0mm EUE Pin	2.06	79.4	587	33	19.1mm SR Pin	2.51	38.10	14
4-2400 N	25-8000 N	4	23442	2400	73.0mm EUE Pin	4.11	79.4	587	67	19.1mm SR Pin	4.57	38.10	26
4-3600 N	25-12000 N	4	35163	3600	73.0mm EUE Pin	6.17	79.4	587	101	19.1mm SR Pin	6.63	38.10	37
7-1000	45-3200	7	9653	1000	73.0mm EUE Pin	2.62	79.4	574	42	22.2mm SR Pin	3.51	41.28	22
7-1400	45-4600	7	13790	1400	73.0mm EUE Pin	3.51	79.4	574	57	22.2mm SR Pin	3.99	41.28	25
7-2000	45-6500	7	19650	2000	73.0mm EUE Pin	5.26	79.4	574	85	22.2mm SR Pin	5.74	41.28	36
7-2800	45-9200	7	27579	2800	73.0mm EUE Pin	7.01	79.4	574	114	22.2mm SR Pin	7.49	41.28	47
10-1200[d]	60-4100[d]	10	11721	1200	73.0mm EUE Box	3.38	88.9	574	62	22.2mm SR Pin	3.84	48.90	40
10-1800	60-6000	10	17582	1800	73.0mm EUE Box	4.93	88.9	574	78	22.2mm SR Pin	5.18	48.90	55
10-2400	60-8000	10	23442	2400	73.0mm EUE Box	6.76	88.9	574	125	22.2mm SR Pin	7.21	48.90	76
10-3000	60-9800	10	29303	3000	73.0mm EUE Box	8.43	88.9	574	156	22.2mm SR Pin	8.89	48.90	94
15-900[d]	95-3100[d]	15	8963	900	73.0mm EUE Box	2.84	88.9	574	52	22.2mm SR Pin	3.30	48.64	29
15-1400	95-4600	15	13790	1400	73.0mm EUE Box	4.27	88.9	574	79	22.2mm SR Pin	4.72	48.64	41
15-1800	95-6000	15	17582	1800	73.0mm EUE Box	5.64	88.9	574	104	22.2mm SR Pin	6.07	48.64	53
15-2100	95-6800	15	20684	2100	73.0mm EUE Box	6.40	88.9	574	118	22.2mm SR Pin	6.86	48.64	60
15-2800	95-9200	15	27579	2800	73.0mm EUE Box	8.53	88.9	574	158	22.2mm SR Pin	8.99	48.64	79
24-1200	151-4100	24	11721	1200	73.0mm EUE Box	4.27	88.9	445	80	22.2mm SR Pin FS	4.67	46.23	32
24-1500	151-5100	24	14824	1500	73.0mm EUE Box	5.28	88.9	445	99	22.2mm SR Pin FS	5.79	46.23	40
24-1800	151-6000	24	17582	1800	73.0mm EUE Box	6.40	88.9	445	120	22.2mm SR Pin FS	6.86	46.23	47
24-2400	151-8000	24	23442	2400	73.0mm EUE Box	8.53	88.9	445	160	22.2mm SR Pin FS	8.89	46.23	61
24-3000	151-9800	24	29303	3000	73.0mm EUE Box	10.67	88.9	445	200	22.2mm SR Pin FS	11.07	46.23	76
27-1200[d]	170-4100[d]	27	11721	1200	88.9mm EUE Box	5.56	104.9	579	86	25.4mm SR Pin	5.79	51.97	55
27-1500	170-5100	27	14824	1500	88.9mm EUE Box	6.88	104.9	579	107	25.4mm SR Pin	7.11	51.97	68
27-1800	170-6000	27	17582	1800	88.9mm EUE Box	8.23	104.9	579	128	25.4mm SR Pin	8.46	51.97	80
27-2400	170-8000	27	23442	2400	88.9mm EUE Box	10.90	104.9	579	170	25.4mm SR Pin	11.13	51.97	106
27-3000	170-9800	27	29303	3000	88.9mm EUE Box	13.56	104.9	579	212	25.4mm SR Pin	13.79	51.97	131
32-900	200-3100	32	8963	900	1219mm x 73.0mm EUE Box WE	6.38	88.9	574	99	22.2mm SR Pin	5.59	47.83	37
32-1200	200-4100	32	11721	1200	1219mm x 73.0mm EUE Box WE	8.08	88.9	574	126	22.2mm SR Pin	7.29	47.83	48
32-1600	200-5200	32	15858	1600	1219mm x 73.0mm EUE Box WE	9.78	88.9	574	154	22.2mm SR Pin	8.99	47.83	59
32-1800	200-6000	32	17582	1800	1219mm x 73.0mm EUE Box WE	11.51	88.9	574	182	22.2mm SR Pin	10.72	47.83	71
33-1200	208-4100	33	11721	1200	88.9mm EUE Box	4.42	104.8	409	104	25.4mm SR Pin MS	4.85	54.28	38
33-1500	208-5100	33	14824	1500	88.9mm EUE Box	5.51	104.8	409	130	25.4mm SR Pin MS	5.94	54.28	46
33-1800	208-6000	33	17582	1800	88.9mm EUE Box	6.63	104.8	409	156	25.4mm SR Pin MS	7.06	54.28	55

[a] Rotor and stator lengths are for XL tag bar, lengths may vary depending on connection type.
[b] Maximum stator ODs are listed with connection. Welds may increase the Maximum OD listed.
[c] Tag bar distance is for XL, for XXXL refer to table on page 31 (Tag bar distance table).
[d] Complete series can be ordered with a heavy wall.
[e] Series available with TopTier™ Tag System.

Weatherford PC Pump Specifications

Conventional Pump Series: Imperial Units

Pump					Stator					Rotor			
PC Pump Series		Displacement [bbl/day/100 rpm]	Lift Capacities		Top Connection [in.]	Length[a] [in.]	Max. OD[b] [in.]	Tag bar Distance[c] [in.]	Weight [lb]	Top Connection [in.]	Length[a] [in.]	Drift Dia. [in.]	Weight [lb]
Imperial	Metric		[psi]	[ft]									
13-6000	2-1800	13	2550	6000	2-3/8in EUE Box	87	2.910	23.1	36	5/8in SR Pin	98	1.250	14
13-12000	2-3600	13	5100	12000	2-3/8in EUE Box	165	2.910	23.1	69	5/8in SR Pin	176	1.250	25
25-4100 N	4-1200 N	25	1700	4100	2-7/8in EUE Pin	81	3.125	23.1	73	3/4in SR Pin	99	1.500	31
25-8000 N	4-2400 N	25	3400	8000	2-7/8in EUE Pin	162	3.125	23.1	148	3/4in SR Pin	180	1.500	56
25-12000 N	4-3600 N	25	5100	12000	2-7/8in EUE Pin	243	3.125	23.1	223	3/4in SR Pin	261	1.500	82
45-3200	7-1000	45	1400	3200	2-7/8in EUE Pin	103	3.125	22.6	93	7/8in SR Pin	138	1.625	49
45-4600	7-1400	45	2000	4600	2-7/8in EUE Pin	138	3.125	22.6	125	7/8in SR Pin	157	1.625	56
45-6500	7-2000	45	2850	6500	2-7/8in EUE Pin	207	3.125	22.6	187	7/8in SR Pin	226	1.625	80
45-9200	7-2800	45	4000	9200	2-7/8in EUE Pin	276	3.125	22.6	250	7/8in SR Pin	295	1.625	104
60-4100[d]	10-1200[d]	60	1700	4100	2-7/8in EUE Box	133	3.500	22.6	137	7/8in SR Pin	151	1.925	89
60-6000	10-1800	60	2550	6000	2-7/8in EUE Box	194	3.500	22.6	171	7/8in SR Pin	204	1.925	120
60-8000	10-2400	60	3400	8000	2-7/8in EUE Box	266	3.500	22.6	275	7/8in SR Pin	284	1.925	167
60-9800	10-3000	60	4250	9800	2-7/8in EUE Box	332	3.500	22.6	343	7/8in SR Pin	350	1.925	206
95-3100[d]	15-900[d]	95	1300	3100	2-7/8in EUE Box	112	3.500	22.6	115	7/8in SR Pin	130	1.915	64
95-4600	15-1400	95	2000	4600	2-7/8in EUE Box	168	3.500	22.6	173	7/8in SR Pin	186	1.915	91
95-6000	15-1800	95	2550	6000	2-7/8in EUE Box	222	3.500	22.6	229	7/8in SR Pin	239	1.915	117
95-6800	15-2100	95	3000	6800	2-7/8in EUE Box	252	3.500	22.6	260	7/8in SR Pin	270	1.915	132
95-9200	15-2800	95	4000	9200	2-7/8in EUE Box	336	3.500	22.6	348	7/8in SR Pin	354	1.915	173
151-4100	24-1200	151	1700	4100	2-7/8in EUE Box	168	3.500	17.5	175	7/8in SR Pin FS	184	1.820	70
151-5100	24-1500	151	2150	5100	2-7/8in EUE Box	208	3.500	17.5	218	7/8in SR Pin FS	228	1.820	87
151-6000	24-1800	151	2550	6000	2-7/8in EUE Box	252	3.500	17.5	264	7/8in SR Pin FS	270	1.820	103
151-8000	24-2400	151	3400	8000	2-7/8in EUE Box	336	3.500	17.5	352	7/8in SR Pin FS	350	1.820	134
151-9800	24-3000	151	4250	9800	2-7/8in EUE Box	420	3.500	17.5	441	7/8in SR Pin FS	436	1.820	167
170-4100[d]	27-1200[d]	170	1700	4100	3-1/2in EUE Box	219	4.130	22.8	190	1in SR Pin	228	2.046	121
170-5100	27-1500	170	2150	5100	3-1/2in EUE Box	271	4.130	22.8	236	1in SR Pin	280	2.046	149
170-6000	27-1800	170	2550	6000	3-1/2in EUE Box	324	4.130	22.8	283	1in SR Pin	333	2.046	177
170-8000	27-2400	170	3400	8000	3-1/2in EUE Box	429	4.130	22.8	376	1in SR Pin	438	2.046	233
170-9800	27-3000	170	4250	9800	3-1/2in EUE Box	534	4.130	22.8	468	1in SR Pin	543	2.046	289
200-3100	32-900	200	1300	3100	4ft x 2 7/8in EUE Box WE	251	3.500	22.6	217	7/8in SR Pin	220	1.883	81
200-4100	32-1200	200	1700	4100	4ft x 2 7/8in EUE Box WE	318	3.500	22.6	278	7/8in SR Pin	287	1.883	106
200-5200	32-1600	200	2300	5200	4ft x 2 7/8in EUE Box WE	385	3.500	22.6	339	7/8in SR Pin	354	1.883	131
200-6000	32-1800	200	2550	6000	4ft x 2 7/8in EUE Box WE	453	3.500	22.6	401	7/8in SR Pin	422	1.883	156
208-4100	33-1200	208	1700	4100	3-1/2in EUE Box	174	4.125	16.1	229	1in SR Pin MS	191	2.137	84
208-5100	33-1500	208	2150	5100	3-1/2in EUE Box	217	4.125	16.1	286	1in SR Pin MS	234	2.137	102
208-6000	33-1800	208	2550	6000	3-1/2in EUE Box	261	4.125	16.1	344	1in SR Pin MS	278	2.137	122

[a] Rotor and stator lengths are for XL tag bar, lengths may vary depending on connection type.
[b] Maximum stator ODs are listed with connection. Welds may increase the Maximum OD listed.
[c] Tag bar distance is for XL, for XXXL refer to table on page 31 (Tag bar distance table).
[d] Complete series can be ordered with a heavy wall.
[e] Series available with TopTier™ Tag System.

Weatherford PC Pump Specifications

Conventional Pump Series: Metric Units

Pump					Stator					Rotor			
PC Pump Series		Displacement [m³/day/100 rpm]	Lift Capacities		Top Connection [mm]	Length[a] [m]	Max OD[b] [mm]	Tag bar Distance[c] [mm]	Weight [kg]	Top Connection [mm]	Length[a] [m]	Drift Dia. [mm]	Weight [kg]
Metric	Imperial		[kPa]	[m]									
33-2400	208-8000	33	23442	2400	88.9mm EUE Box	8.84	104.8	409	209	25.4mm SR Pin MS	9.27	54.28	72
43-1200	270-4100	43	11721	1200	88.9mm EUE Box	4.42	104.8	409	102	25.4mm SR Pin	4.85	57.15	49
43-1500	270-5100	43	14824	1500	88.9mm EUE Box	5.51	104.8	409	127	25.4mm SR Pin	5.94	57.15	61
43-1800	270-6000	43	17582	1800	88.9mm EUE Box	6.63	104.8	409	153	25.4mm SR Pin	7.06	57.15	72
43-2400	270-8000	43	23442	2400	88.9mm EUE Box	8.84	104.8	409	205	25.4mm SR Pin	9.27	57.15	95
43-3000	270-9800	43	29303	3000	88.9mm EUE Box	11.05	104.8	409	256	25.4mm SR Pin	11.48	57.15	117
47-1200	296-4100	47	11721	1200	1219mm x 73.0mm EUE Box WE	8.59	95.3	572	143	25.4mm SR Pin	6.88	52.58	55
47-1500	296-5100	47	14824	1500	1219mm x 73.0mm EUE Box WE	10.21	95.3	572	172	25.4mm SR Pin	8.48	52.58	68
47-1800	296-6000	47	17582	1800	1219mm x 73.0mm EUE Box WE	11.58	95.3	577	197	25.4mm SR Pin	10.08	52.58	81
53-1200	333-4100	53	11721	1200	1219mm x 88.9mm EUE Box WE	7.06	108.0	572	125	25.4mm SR Pin	5.54	59.69	54
53-1800	333-6000	53	17582	1800	1219mm x 88.9mm EUE Box WE	9.60	108.0	572	173	25.4mm SR Pin	8.08	59.69	79
53-2400	333-8000	53	23442	2400	1219mm x 88.9mm EUE Box WE	12.14	108.0	572	221	25.4mm SR Pin	10.62	59.69	104
53-3000	333-9800	53	29303	3000	1219mm x 88.9mm EUE Box WE	14.68	108.0	572	270	25.4mm SR Pin	13.16	59.69	129
59-600	371-2100	59	5861	600	88.9mm EUE Box	3.43	104.8	409	81	25.4mm SR Pin FS	3.89	55.55	29
59-1200	371-4100	59	11721	1200	88.9mm EUE Box	6.86	104.8	409	162	25.4mm SR Pin FS	7.32	55.55	55
59-1500	371-5100	59	14824	1500	88.9mm EUE Box	8.56	104.8	409	203	25.4mm SR Pin FS	9.02	55.55	68
59-1800	371-6000	59	17582	1800	88.9mm EUE Box	10.29	104.8	409	244	25.4mm SR Pin FS	10.74	55.55	81
59-2400	371-8000	59	23442	2400	88.9mm EUE Box	13.72	104.8	409	326	25.4mm SR Pin FS	14.17	55.55	107
68-1000	427-3200	68	9653	1000	101.6mm NUE Pin	5.08	104.8	572	116	25.4mm SR Pin	5.54	59.77	54
68-1250	427-4100	68	12411	1250	101.6mm NUE Pin	6.35	104.8	572	145	25.4mm SR Pin	6.81	59.77	66
68-1500	427-5100	68	14824	1500	101.6mm NUE Pin	7.62	104.8	572	175	25.4mm SR Pin	8.08	59.77	79
68-1750	427-5700	68	17237	1750	101.6mm NUE Pin	8.89	104.8	572	204	25.4mm SR Pin	9.35	59.77	91
68-2000	427-6500	68	19650	2000	101.6mm NUE Pin	10.16	104.8	572	233	25.4mm SR Pin	10.62	59.77	104
68-2250	427-7400	68	22063	2250	101.6mm NUE Pin	11.43	104.8	572	262	25.4mm SR Pin	11.89	59.77	116
75-575	472-1900	75	5516	575	88.9mm EUE Box	3.43	104.8	409	79	25.4mm SR Pin FS	3.89	56.64	35
75-1200	472-4100	75	11721	1200	88.9mm EUE Box	6.86	104.8	409	159	25.4mm SR Pin FS	7.32	56.64	66
75-1500	472-5100	75	14824	1500	88.9mm EUE Box	8.56	104.8	409	199	25.4mm SR Pin FS	9.02	56.64	81
75-1800	472-6000	75	17582	1800	88.9mm EUE Box	10.29	104.8	409	240	25.4mm SR Pin FS	10.74	55.88	98
75-2400	472-8000	75	23442	2400	88.9mm EUE Box	13.72	104.8	409	320	25.4mm SR Pin FS	14.17	56.64	127
80-800	500-2800	80	7929	800	1219mm x 88.9mm EUE Box WE	7.32	114.3	572	179	25.4mm SR Pin	5.79	64.29	71
80-1200	500-4100	80	11721	1200	1219mm x 88.9mm EUE Box WE	9.98	114.3	572	248	25.4mm SR Pin	8.46	64.29	103
80-1600	500-5200	80	15858	1600	1219mm x 88.9mm EUE Box WE	12.65	114.3	572	317	25.4mm SR Pin	11.13	64.29	136
83-601	520-2101	83	5861	601	1219mm x 73.0mm EUE Box WE	8.59	95.3	577	139	25.4mm SR Pin	6.88	57.66	81
83-900	520-3100	83	8963	900	1219mm x 73.0mm EUE Box WE	11.81	95.3	572	194	25.4mm SR Pin	10.08	57.66	119
83-1200	520-4100	83	11721	1200	1219mm x 73.0mm EUE Box WE	14.99	95.3	572	249	25.4mm SR Pin	13.28	57.66	157

[a] Rotor and stator lengths are for XL tag bar, lengths may vary depending on connection type.
[b] Maximum stator ODs are listed with connection. Welds may increase the Maximum OD listed.
[c] Tag bar distance is for XL, for XXXL refer to table on page 31 (Tag bar distance table).
[d] Complete series can be ordered with a heavy wall.
[e] Series available with TopTier™ Tag System.

Weatherford PC Pump Specifications

Conventional Pump Series: Imperial Units

Pump					Stator					Rotor			
PC Pump Series		Displacement [bbl/day/100 rpm]	Lift Capacities		Top Connection [in.]	Length[a] [in.]	Max. OD[b] [in.]	Tag bar Distance[c] [in.]	Weight [lb]	Top Connection [in.]	Length[a] [in.]	Drift Dia. [in.]	Weight [lb]
Imperial	Metric		[psi]	[ft]									
208-8000	33-2400	208	3400	8000	3-1/2in EUE Box	348	4.125	16.1	460	1in SR Pin MS	365	2.137	160
270-4100	43-1200	270	1700	4100	3-1/2in EUE Box	174	4.125	16.1	224	1in SR Pin	191	2.250	109
270-5100	43-1500	270	2150	5100	3-1/2in EUE Box	217	4.125	16.1	280	1in SR Pin	234	2.250	134
270-6000	43-1800	270	2550	6000	3-1/2in EUE Box	261	4.125	16.1	338	1in SR Pin	278	2.250	159
270-8000	43-2400	270	3400	8000	3-1/2in EUE Box	348	4.125	16.1	451	1in SR Pin	365	2.250	208
270-9800	43-3000	270	4250	9800	3-1/2in EUE Box	435	4.125	16.1	565	1in SR Pin	452	2.250	258
296-4100	47-1200	296	1700	4100	4ft x 2 7/8in EUE Box WE	338	3.750	22.5	315	1in SR Pin	271	2.070	122
296-5100	47-1500	296	2150	5100	4ft x 2 7/8in EUE Box WE	402	3.750	22.5	378	1in SR Pin	334	2.070	150
296-6000	47-1800	296	2550	6000	4ft x 2 7/8in EUE Box WE	456	3.750	22.7	434	1in SR Pin	397	2.070	179
333-4100	53-1200	333	1700	4100	4ft x 3 1/2in EUE Box WE	278	4.250	22.5	276	1in SR Pin	218	2.350	120
333-6000	53-1800	333	2550	6000	4ft x 3 1/2in EUE Box WE	378	4.250	22.5	382	1in SR Pin	318	2.350	175
333-8000	53-2400	333	3400	8000	4ft x 3 1/2in EUE Box WE	478	4.250	22.5	488	1in SR Pin	418	2.350	230
333-9800	53-3000	333	4250	9800	4ft x 3 1/2in EUE Box WE	578	4.250	22.5	595	1in SR Pin	518	2.350	285
371-2100	59-600	371	850	2100	3-1/2in EUE Box	135	4.125	16.1	178	1in SR Pin FS	153	2.187	65
371-4100	59-1200	371	1700	4100	3-1/2in EUE Box	270	4.125	16.1	358	1in SR Pin FS	288	2.187	122
371-5100	59-1500	371	2150	5100	3-1/2in EUE Box	337	4.125	16.1	448	1in SR Pin FS	355	2.187	151
371-6000	59-1800	371	2550	6000	3-1/2in EUE Box	405	4.125	16.1	539	1in SR Pin FS	423	2.187	180
371-8000	59-2400	371	3400	8000	3-1/2in EUE Box	540	4.125	16.1	718	1in SR Pin FS	558	2.187	237
427-3200	68-1000	427	1400	3200	4in NUE Pin	200	4.125	22.5	256	1in SR Pin	218	2.353	119
427-4100	68-1250	427	1800	4100	4in NUE Pin	250	4.125	22.5	320	1in SR Pin	268	2.353	146
427-5100	68-1500	427	2150	5100	4in NUE Pin	300	4.125	22.5	385	1in SR Pin	318	2.353	174
427-5700	68-1750	427	2500	5700	4in NUE Pin	350	4.125	22.5	449	1in SR Pin	368	2.353	201
427-6500	68-2000	427	2850	6500	4in NUE Pin	400	4.125	22.5	514	1in SR Pin	418	2.353	228
427-7400	68-2250	427	3200	7400	4in NUE Pin	450	4.125	22.5	578	1in SR Pin	468	2.353	256
472-1900	75-575	472	800	1900	3-1/2in EUE Box	135	4.125	16.1	175	1in SR Pin FS	153	2.230	77
472-4100	75-1200	472	1700	4100	3-1/2in EUE Box	270	4.125	16.1	351	1in SR Pin FS	288	2.230	145
472-5100	75-1500	472	2150	5100	3-1/2in EUE Box	337	4.125	16.1	439	1in SR Pin FS	355	2.230	178
472-6000	75-1800	472	2550	6000	3-1/2in EUE Box	405	4.125	16.1	529	1in SR Pin FS	423	2.200	215
472-8000	75-2400	472	3400	8000	3-1/2in EUE Box	540	4.125	16.1	705	1in SR Pin FS	558	2.230	280
500-2800	80-800	500	1150	2800	4ft x 3 1/2in EUE Box WE	288	4.500	22.5	394	1in SR Pin	228	2.531	156
500-4100	80-1200	500	1700	4100	4ft x 3 1/2in EUE Box WE	393	4.500	22.5	547	1in SR Pin	333	2.531	227
500-5200	80-1600	500	2300	5200	4ft x 3 1/2in EUE Box WE	498	4.500	22.5	700	1in SR Pin	438	2.531	299
520-2101	83-601	520	850	2101	4ft x 2 7/8in EUE Box WE	338	3.750	22.7	307	1in SR Pin	271	2.270	179
520-3100	83-900	520	1300	3100	4ft x 2 7/8in EUE Box WE	465	3.750	22.5	428	1in SR Pin	397	2.270	262
520-4100	83-1200	520	1700	4100	4ft x 2 7/8in EUE Box WE	590	3.750	22.5	548	1in SR Pin	523	2.270	345

[a] Rotor and stator lengths are for XL tag bar, lengths may vary depending on connection type.
[b] Maximum stator ODs are listed with connection. Welds may increase the Maximum OD listed.
[c] Tag bar distance is for XL, for XXXL refer to table on page 31 (Tag bar distance table).
[d] Complete series can be ordered with a heavy wall.
[e] Series available with TopTier™ Tag System.

Weatherford PC Pump Specifications

Conventional Pump Series: Metric Units

Pump					Stator					Rotor			
PC Pump Series		Displacement [m³/day/100 rpm]	Lift Capacities		Top Connection [mm]	Length[a] [m]	Max OD[b] [mm]	Tag bar Distance[c] [mm]	Weight [kg]	Top Connection [mm]	Length[a] [m]	Drift Dia. [mm]	Weight [kg]
Metric	Imperial		[kPa]	[m]									
90-1000	566-3200	90	9653	1000	88.9mm EUE Box	6.86	104.8	409	159	25.4mm SR Pin FS	7.32	57.43	70
90-1250	566-4100	90	12411	1250	88.9mm EUE Box	8.56	104.8	409	213	25.4mm SR Pin FS	9.02	57.43	86
90-1500	566-5100	90	14824	1500	88.9mm EUE Box	10.29	104.8	409	239	25.4mm SR Pin FS	10.74	57.43	103
90-1750	566-5700	90	17237	1750	88.9mm EUE Box	11.99	104.8	409	278	25.4mm SR Pin FS	12.45	57.43	119
90-2000	566-6500	90	19650	2000	88.9mm EUE Box	13.72	104.8	409	319	25.4mm SR Pin FS	14.17	57.43	135
98-1600	615-5200	98	15858	1600	114.3mm EUE Box	8.89	139.7	584	416	28.6mm SR Pin	9.37	73.63	141
98-1800	615-6000	98	17582	1800	114.3mm EUE Box	9.98	139.7	584	467	28.6mm SR Pin	10.46	73.63	158
106-800	667-2800	106	7929	800	88.9mm EUE Box	6.86	104.8	577	159	25.4mm SR Pin	7.32	57.15	75
106-1200	667-4100	106	11721	1200	88.9mm EUE Box	10.29	104.8	577	238	25.4mm SR Pin	10.74	57.15	110
106-1600	667-5200	106	15858	1600	88.9mm EUE Box	13.72	104.8	577	318	28.6mm SR Pin	14.17	57.15	145
120-600	750-2100	120	5861	600	1219mm x 73.0mm EUE Box WE	11.53	95.3	572	192	25.4mm SR Pin	9.83	55.50	98
120-775	750-2750	120	7584	775	1219mm x 73.0mm EUE Box WE	13.77	95.3	572	231	25.4mm SR Pin	12.07	55.50	121
120-900	750-3100	120	8963	900	1219mm x 73.0mm EUE Box WE	16.18	95.3	572	273	25.4mm SR Pin	14.50	55.50	145
123-600	774-2100	123	5861	600	88.9mm EUE Box	5.89	104.8	577	136	25.4mm SR Pin	6.35	57.15	65
123-900	774-3100	123	8963	900	88.9mm EUE Box	8.84	104.8	577	205	25.4mm SR Pin	9.30	57.15	95
123-1200	774-4100	123	11721	1200	88.9mm EUE Box	11.79	104.8	577	273	25.4mm SR Pin	12.24	57.15	125
130-800	820-2800	130	7929	800	139.7mm STC pin	4.83	139.7	572	182	28.6mm SR Pin	5.31	81.03	96
130-1200	820-4100	130	11721	1200	139.7mm STC pin	7.24	139.7	572	274	28.6mm SR Pin	7.72	81.03	140
130-1600	820-5200	130	15858	1600	139.7mm STC pin	9.65	139.7	572	366	28.6mm SR Pin	10.13	81.03	183
144-600	906-2100	144	5861	600	88.9mm EUE Box	6.86	104.8	577	158	25.4mm SR Pin	7.32	57.15	80
144-900	906-3100	144	8963	900	88.9mm EUE Box	10.29	104.8	577	238	25.4mm SR Pin	10.74	57.15	118
144-1200	906-4100	144	11721	1200	88.9mm EUE Box	13.72	104.8	577	318	25.4mm SR Pin	14.17	57.15	156
150-900	944-3100	150	8963	900	1219mm x 88.9mm EUE Box WE	9.04	127.0	572	290	28.6mm SR Pin	7.32	71.45	102
150-1200	944-4100	150	11721	1200	1219mm x 88.9mm EUE Box WE	11.33	127.0	572	367	28.6mm SR Pin	9.60	71.45	134
150-1500	944-5100	150	14824	1500	1219mm x 88.9mm EUE Box WE	13.61	127.0	572	444	28.6mm SR Pin	11.89	71.45	166
160-600	1000-2100	160	5861	600	1219mm x 88.9mm EUE Box WE	9.98	114.3	572	248	25.4mm SR Pin	8.46	64.29	103
160-800	1000-2800	160	7929	800	1219mm x 88.9mm EUE Box WE	12.65	114.3	572	317	25.4mm SR Pin	11.13	64.29	136
160-1000	1000-3200	160	9653	1000	1219mm x 88.9mm EUE Box WE	15.32	114.3	572	387	25.4mm SR Pin	13.79	64.29	168
161-1200	1010-4100	161	11721	1200	139.7mm LTC Box	7.11	152.4	602	300	28.6mm SR Pin	7.62	90.50	171
161-1500	1010-5100	161	14824	1500	139.7mm LTC Box	8.89	152.4	602	376	28.6mm SR Pin	9.40	90.50	211
161-1800	1010-6000	161	17582	1800	139.7mm LTC Box	10.67	152.4	602	452	28.6mm SR Pin	11.18	90.50	251
175-1200	1100-4100	175	11721	1200	139.7mm LTC Box	8.38	152.4	602	354	28.6mm SR Pin	8.89	90.50	200
175-1600	1100-5200	175	15858	1600	139.7mm LTC Box	11.18	152.4	602	474	28.6mm SR Pin	11.68	90.50	263
190-900	1195-3100	190	8963	900	1219mm x 88.9mm EUE Box WE	10.34	127.0	572	333	28.6mm SR Pin	8.61	71.88	125
190-1200	1195-4100	190	11721	1200	1219mm x 88.9mm EUE Box WE	13.06	127.0	572	425	28.6mm SR Pin	11.33	71.88	165

[a] Rotor and stator lengths are for XL tag bar, lengths may vary depending on connection type.
[b] Maximum stator ODs are listed with connection. Welds may increase the Maximum OD listed.
[c] Tag bar distance is for XL, for XXXL refer to table on page 31 (Tag bar distance table).
[d] Complete series can be ordered with a heavy wall.
[e] Series available with TopTier™ Tag System.

Weatherford PC Pump Specifications

Conventional Pump Series: Imperial Units

Pump					Stator					Rotor			
PC Pump Series		Displacement [bbl/day/100 rpm]	Lift Capacities		Top Connection [in.]	Length[a] [in.]	Max. OD[b] [in.]	Tag bar Distance[c] [in.]	Weight [lb]	Top Connection [in.]	Length[a] [in.]	Drift Dia. [in.]	Weight [lb]
Imperial	Metric		[psi]	[ft]									
566-3200	90-1000	566	1400	3200	3-1/2in EUE Box	270	4.125	16.1	350	1in SR Pin FS	288	2.261	154
566-4100	90-1250	566	1800	4100	3-1/2in EUE Box	337	4.125	16.1	469	1in SR Pin FS	355	2.261	190
566-5100	90-1500	566	2150	5100	3-1/2in EUE Box	405	4.125	16.1	526	1in SR Pin FS	423	2.261	226
566-5700	90-1750	566	2500	5700	3-1/2in EUE Box	472	4.125	16.1	613	1in SR Pin FS	490	2.261	262
566-6500	90-2000	566	2850	6500	3-1/2in EUE Box	540	4.125	16.1	702	1in SR Pin FS	558	2.261	298
615-5200	98-1600	615	2300	5200	4-1/2in EUE Box	350	5.500	23.0	917	1-1/8in SR Pin	369	2.899	311
615-6000	98-1800	615	2550	6000	4-1/2in EUE Box	393	5.500	23.0	1030	1-1/8in SR Pin	412	2.899	348
667-2800	106-800	667	1150	2800	3-1/2in EUE Box	270	4.125	22.7	350	1in SR Pin	288	2.250	165
667-4100	106-1200	667	1700	4100	3-1/2in EUE Box	405	4.125	22.7	526	1in SR Pin	423	2.250	242
667-5200	106-1600	667	2300	5200	3-1/2in EUE Box	540	4.125	22.7	701	1-1/8in SR Pin	558	2.250	319
750-2100	120-600	750	850	2100	4ft x 2 7/8in EUE Box WE	454	3.750	22.5	423	1in SR Pin	387	2.185	217
750-2750	120-775	750	1100	2750	4ft x 2 7/8in EUE Box WE	542	3.750	22.5	509	1in SR Pin	475	2.185	266
750-3100	120-900	750	1300	3100	4ft x 2 7/8in EUE Box WE	637	3.750	22.5	601	1in SR Pin	571	2.185	320
774-2100	123-600	774	850	2100	3-1/2in EUE Box	232	4.125	22.7	300	1in SR Pin	250	2.250	143
774-3100	123-900	774	1300	3100	3-1/2in EUE Box	348	4.125	22.7	451	1in SR Pin	366	2.250	210
774-4100	123-1200	774	1700	4100	3-1/2in EUE Box	464	4.125	22.7	602	1in SR Pin	482	2.250	276
820-2800	130-800	820	1150	2800	5-1/2in STC Pin	190	5.500	22.5	401	1-1/8in SR Pin	209	3.190	211
820-4100	130-1200	820	1700	4100	5-1/2in STC Pin	285	5.500	22.5	604	1-1/8in SR Pin	304	3.190	308
820-5200	130-1600	820	2300	5200	5-1/2in STC Pin	380	5.500	22.5	806	1-1/8in SR Pin	399	3.190	404
906-2100	144-600	906	850	2100	3-1/2in EUE Box	270	4.125	22.7	349	1in SR Pin	288	2.250	177
906-3100	144-900	906	1300	3100	3-1/2in EUE Box	405	4.125	22.7	525	1in SR Pin	423	2.250	261
906-4100	144-1200	906	1700	4100	3-1/2in EUE Box	540	4.125	22.7	701	1in SR Pin	558	2.250	344
944-3100	150-900	944	1300	3100	4ft x 3 1/2in EUE Box WE	356	5.000	22.5	640	1-1/8in SR Pin	288	2.813	226
944-4100	150-1200	944	1700	4100	4ft x 3 1/2in EUE Box WE	446	5.000	22.5	809	1-1/8in SR Pin	378	2.813	296
944-5100	150-1500	944	2150	5100	4ft x 3 1/2in EUE Box WE	536	5.000	22.5	980	1-1/8in SR Pin	468	2.813	367
1000-2100	160-600	1000	850	2100	4ft x 3 1/2in EUE Box WE	393	4.500	22.5	547	1in SR Pin	333	2.531	227
1000-2800	160-800	1000	1150	2800	4ft x 3 1/2in EUE Box WE	498	4.500	22.5	700	1in SR Pin	438	2.531	299
1000-3200	160-1000	1000	1400	3200	4ft x 3 1/2in EUE Box WE	603	4.500	22.5	853	1in SR Pin	543	2.531	371
1010-4100	161-1200	1010	1700	4100	5-1/2in LTC Box	280	6.000	23.7	662	1-1/8in SR Pin	300	3.563	378
1010-5100	161-1500	1010	2150	5100	5-1/2in LTC Box	350	6.000	23.7	829	1-1/8in SR Pin	370	3.563	466
1010-6000	161-1800	1010	2550	6000	5-1/2in LTC Box	420	6.000	23.7	996	1-1/8in SR Pin	440	3.563	554
1100-4100	175-1200	1100	1700	4100	5-1/2in LTC Box	330	6.000	23.7	781	1-1/8in SR Pin	350	3.563	440
1100-5200	175-1600	1100	2300	5200	5-1/2in LTC Box	440	6.000	23.7	1044	1-1/8in SR Pin	460	3.563	579
1195-3100	190-900	1195	1300	3100	4ft x 3 1/2in EUE Box WE	407	5.000	22.5	735	1-1/8in SR Pin	339	2.830	276
1195-4100	190-1200	1195	1700	4100	4ft x 3 1/2in EUE Box WE	514	5.000	22.5	937	1-1/8in SR Pin	446	2.830	363

[a] Rotor and stator lengths are for XL tag bar, lengths may vary depending on connection type.
[b] Maximum stator ODs are listed with connection. Welds may increase the Maximum OD listed.
[c] Tag bar distance is for XL, for XXXL refer to table on page 31 (Tag bar distance table).
[d] Complete series can be ordered with a heavy wall.
[e] Series available with TopTier™ Tag System.

Weatherford PC Pump Specifications

Conventional Pump Series: Metric Units

Pump					Stator					Rotor			
PC Pump Series		Displacement [m^3/day/100 rpm]	Lift Capacities		Top Connection [mm]	Length[a] [m]	Max OD[b] [mm]	Tag bar Distance[c] [mm]	Weight [kg]	Top Connection [mm]	Length[a] [m]	Drift Dia. [mm]	Weight [kg]
Metric	Imperial		[kPa]	[m]									
200-750	1258-2500	200	7239	750	139.7mm LTC Box	5.59	152.4	592	236	28.6mm SR Pin	6.10	90.50	137
200-1125	1258-3700	200	11032	1125	139.7mm LTC Box	8.38	152.4	592	354	28.6mm SR Pin	8.89	90.50	200
205-400	1290-1400	205	3792	400	1219mm x 88.9mm EUE Box WE	7.52	127.0	572	240	28.6mm SR Pin	5.79	69.72	77
205-600	1290-2100	205	5861	600	1219mm x 88.9mm EUE Box WE	10.19	127.0	572	331	28.6mm SR Pin	8.46	69.72	113
205-800	1290-2800	205	7929	800	1219mm x 88.9mm EUE Box WE	12.85	127.0	572	421	28.6mm SR Pin	11.13	69.72	148
205-1000	1290-3200	205	9653	1000	1219mm x 88.9mm EUE Box WE	15.52	127.0	572	512	28.6mm SR Pin	13.79	69.72	184
302-800	1900-2800	302	7929	800	114.3mm EUE Box	11.33	133.4	584	377	28.6mm SR Pin	11.53	72.39	175

[a] Rotor and stator lengths are for XL tag bar, lengths may vary depending on connection type.
[b] Maximum stator ODs are listed with connection. Welds may increase the Maximum OD listed.
[c] Tag bar distance is for XL, for XXXL refer to table on page 31 (Tag bar distance table).
[d] Complete series can be ordered with a heavy wall.
[e] Series available with TopTier™ Tag System.

Weatherford PC Pump Specifications

Conventional Pump Series: Imperial Units

Pump					Stator					Rotor			
PC Pump Series		Displacement [bbl/day/100 rpm]	Lift Capacities		Top Connection [in.]	Length[a] [in.]	Max. OD[b] [in.]	Tag bar Distance[c] [in.]	Weight [lb]	Top Connection [in.]	Length[a] [in.]	Drift Dia. [in.]	Weight [lb]
Imperial	Metric		[psi]	[ft]									
1258-2500	200-750	1258	1050	2500	5-1/2in LTC Box	220	6.000	23.3	520	1-1/8in SR Pin	240	3.563	302
1258-3700	200-1125	1258	1600	3700	5-1/2in LTC Box	330	6.000	23.3	781	1-1/8in SR Pin	350	3.563	440
1290-1400	205-400	1290	550	1400	4ft x 3 1/2in EUE Box WE	296	5.000	22.5	529	1-1/8in SR Pin	228	2.745	170
1290-2100	205-600	1290	850	2100	4ft x 3 1/2in EUE Box WE	401	5.000	22.5	729	1-1/8in SR Pin	333	2.745	249
1290-2800	205-800	1290	1150	2800	4ft x 3 1/2in EUE Box WE	506	5.000	22.5	929	1-1/8in SR Pin	438	2.745	327
1290-3200	205-1000	1290	1400	3200	4ft x 3 1/2in EUE Box WE	611	5.000	22.5	1129	1-1/8in SR Pin	543	2.745	406
1900-2800	302-800	1900	1150	2800	4-1/2in EUE Box	446	5.250	23.0	831	1-1/8in SR Pin	454	2.850	385

[a] Rotor and stator lengths are for XL tag bar, lengths may vary depending on connection type.
[b] Maximum stator ODs are listed with connection. Welds may increase the Maximum OD listed.
[c] Tag bar distance is for XL, for XXXL refer to table on page 31 (Tag bar distance table).
[d] Complete series can be ordered with a heavy wall.
[e] Series available with TopTier™ Tag System.

TopTier™ Tag System

The TopTier tag system can be used with Weatherford Fat Boy PCPs, selected PCP models in cold heavy oil production with sand (CHOPS), and any other applications where sand presence restricts the intake.

TopTier tag system enables the operator to land the rotor easily using the same operation completed with conventional tag bars.

The tag system maximizes inflow of fluids at the PCP intake. During a flushby, the TopTier tag system allows the flushing fluid to flow directly out of the bottom of the stator, which achieves a focused, high-pressure flush.

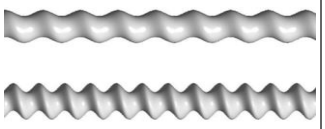
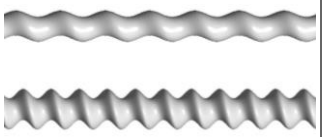
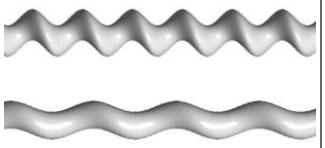
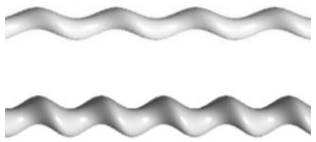
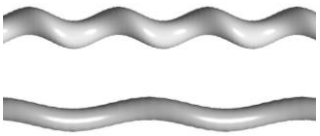
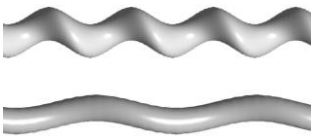
Fig. 6. TopTier tag system PC pump configuration.

PC Pump Model [m³/d/100 rpm *bbl/d/100 rpm]*	Rotor[f]			Stator	
	Rotor Connection[g] [mm, *in.*]	Min. Tubing Size for Rotor Orbit [mm, *in.*]	Min. Tubing Size for Rotor Drift [mm, *in.*]	Protective Ring OD [mm, *in.*]	Default Top Connection[h] [mm, *in.*]
5 FB *31 FB*	22.2 FS[i] PIN *7/8 FS[i] PIN*	73.0 *2 7/8*	60.3 *2 3/8*	95.3 *3 3/4*	73.0 EUE Box *2 7/8 EUE Box*
8 FB *50 FB*	25.4 FS PIN *1 FS PIN*	88.9 *3 1/2*	73.0 *2 7/8*	108.0 *4 1/4*	88.9 EUE Box *3 1/2 EUE Box*
13 FB *82 FB*	25.4 FS PIN *1 FS PIN*	88.9 *3 1/2*	73.0 *2 7/8*	120.7 *4 3/4*	88.9 EUE Box *3 1/2 EUE Box*
23 FB *145 FB*	25.4 FS PIN *1 FS PIN*	101.6 *4*	73.0 *2 7/8*	127 *5*	88.9 EUE Box x 1219.2 mm WE *3 1/2 EUE Box x 48-in. WE*
35 FB *220 FB*	25.4 XS[j] PIN *1 XS[j] PIN*	101.6 *4*	88.9 *3 1/2*	133.4 *5 1/4*	88.9 EUE Box x 1219.2 mm WE *3 1/2 EUE Box x 48-in. WE*
52 FB *327 FB*	25.4 XS[k] PIN *1 XS[k] PIN*	101.6 *4*	88.9 *3 1/2*	133.4 *5 1/4*	88.9 EUE Box x 1219.2 mm WE *3 1/2 EUE Box x 48-in. WE*

[f] Standard rotor configuration for TopTier tag system is XXXL Paddle. Other configurations are available upon request.
[g] For all models in the above table, the TopTier tag system requires a specific rotor connection. The system may not work with all existing rotor inventory.
[h] Other stator connections are available upon request.
[i] FS: Full Size Connection.
[j] XS: eXtra Size Connection.
For all other pump dimensions, please use standard lengths and dimensions.

Fat Boy® Series

Compared to the Conventional series pumps, Fat Boy series pumps improve movement of heavy oil and sand, and they improve the ability to pump large particles. With shorter pump length, Fat Boy series (denoted in RED in the table below) has an increased pump cavity cross-sectional area, more aggressive rotor pitch angle, and decreased pitch length.

Pump Model		Cavity Opening			Cross Sectional View[k]	Rotor Pitch View[k]
Metric	Imperial	[mm^2]	[in.^{2}]	% Increase		
4 N	25 N	406	0.63	47		
5 FB	31 FB	600	0.93			
7	45	477	0.74	83		
8 FB	50 FB	871	1.35			
13 FB	82 FB	1103	1.71	35		
15	95	819	1.27			
23 FB	145 FB	1452	2.25	69		
24	151	858	1.33			
33	208	1264	1.96	40		
35 FB	220 FB	1767	2.74			
52 FB	327 FB	1839	2.85	51		
59	371	1219	1.89			
72 FB	453 FB	2897	4.49	108		
75	472	1387	2.15			

[k] View to scale.

Weatherford PC Pump Specifications

Fat Boy Pump Series: Metric Units

Pump					Stator					Rotor			
PC Pump Series		Displacement [m³/day/100 rpm]	Lift Capacities		Top Connection [mm]	Length[a] [m]	Max OD[b] [mm]	Tag bar Distance[c] [mm]	Weight [kg]	Top Connection [mm]	Length[a] [m]	Drift Dia. [mm]	Weight [kg]
Metric	Imperial		[kPa]	[m]									
5-1200 FB[e]	31-4100 FB[e]	5	11721	1200	73.0mm EUE Pin	1.85	79.4	574	29	22.2mm SR Pin FS	2.31	46.02	13
5-1500 FB	31-5100 FB	5	14824	1500	73.0mm EUE Pin	2.34	79.4	574	37	22.2mm SR Pin FS	2.79	46.02	16
5-1800 FB	31-6000 FB	5	17582	1800	73.0mm EUE Pin	2.79	79.4	574	45	22.2mm SR Pin FS	3.25	46.02	19
5-3000 FB	31-9800 FB	5	29303	3000	73.0mm EUE Pin	4.67	79.4	574	75	22.2mm SR Pin FS	5.13	46.02	29
8-1200 FB[e]	50-4100 FB[e]	8	11721	1200	88.9mm NUE pin	2.11	88.9	574	38	25.4mm SR Pin MS	2.59	54.28	25
8-1500 FB	50-5100 FB	8	14824	1500	88.9mm NUE pin	2.64	88.9	574	48	25.4mm SR Pin MS	3.12	54.28	31
8-1800 FB	50-6000 FB	8	17582	1800	88.9mm NUE pin	3.18	88.9	574	58	25.4mm SR Pin MS	3.66	54.28	36
8-3000 FB	50-9800 FB	8	29303	3000	88.9mm NUE pin	5.28	88.9	574	96	25.4mm SR Pin MS	5.79	54.28	57
13-1200 FB[e]	82-4100 FB[e]	13	11721	1200	88.9mm EUE Box	2.74	104.8	577	63	25.4mm SR Pin MS	3.23	54.28	33
13-1500 FB	82-5100 FB	13	14824	1500	88.9mm EUE Box	3.43	104.8	577	80	25.4mm SR Pin MS	3.91	54.28	40
13-1800 FB	82-6000 FB	13	17582	1800	88.9mm EUE Box	4.11	104.8	577	96	25.4mm SR Pin MS	4.60	54.28	47
13-3000 FB	82-9800 FB	13	29303	3000	88.9mm EUE Box	6.86	104.8	409	161	25.4mm SR Pin MS	7.34	54.28	75
23-1200 FB[e]	145-4100 FB[e]	23	11721	1200	1219mm x 88.9mm EUE Box WE	4.80	120.7	574	105	25.4mm SR Pin FS	4.04	57.15	36
23-1500 FB	145-5100 FB	23	14824	1500	1219mm x 88.9mm EUE Box WE	5.69	120.7	574	126	25.4mm SR Pin FS	4.95	57.15	44
23-1800 FB	145-6000 FB	23	17582	1800	1219mm x 88.9mm EUE Box WE	6.58	120.7	574	147	25.4mm SR Pin FS	5.84	57.15	52
23-3000 FB	145-9800 FB	23	29303	3000	1219mm x 88.9mm EUE Box WE	10.11	120.7	574	229	25.4mm SR Pin FS	9.45	57.15	85
35-1200 FB[e]	220-4100 FB[e]	35	11721	1200	1219mm x 88.9mm EUE Box WE	5.54	120.7	574	136	25.4mm SR Pin XS	4.72	64.31	58
35-1500 FB	220-5100 FB	35	14824	1500	1219mm x 88.9mm EUE Box WE	6.60	120.7	574	164	25.4mm SR Pin XS	5.79	64.31	71
35-1800 FB	220-6000 FB	35	17582	1800	1219mm x 88.9mm EUE Box WE	7.67	120.7	574	192	25.4mm SR Pin XS	6.86	64.31	84
35-3000 FB	220-9800 FB	35	29303	3000	1219mm x 88.9mm EUE Box WE	11.94	120.7	574	303	25.4mm SR Pin XS	11.13	64.31	136
52-1200 FB[e]	327-4100 FB[e]	52	11721	1200	1219mm x 88.9mm EUE Box WE	7.32	114.3	572	179	25.4mm SR Pin XS	5.79	64.31	66
52-1500 FB	327-5100 FB	52	14824	1500	1219mm x 88.9mm EUE Box WE	8.64	114.3	572	213	25.4mm SR Pin XS	7.11	64.31	81
52-1800 FB	327-6000 FB	52	17582	1800	1219mm x 88.9mm EUE Box WE	9.98	114.3	572	249	25.4mm SR Pin XS	8.46	64.31	96
52-2400 FB	327-8000 FB	52	23442	2400	1219mm x 88.9mm EUE Box WE	12.65	114.3	572	318	25.4mm SR Pin XS	11.13	64.31	126
72-1500 FB	453-5100 FB	72	14824	1500	139.7mm STC pin	5.38	139.7	602	203	28.6mm SR Pin	5.87	80.98	106
72-3000 FB	453-9800 FB	72	29303	3000	139.7mm STC pin	10.77	139.7	602	408	28.6mm SR Pin	11.25	80.98	202

[a] Rotor and stator lengths are for XL tag bar, lengths may vary depending on connection type.
[b] Maximum stator ODs are listed with connection. Welds may increase the Maximum OD listed.
[c] Tag bar distance is for XL, for XXXL refer to table on page 31 (Tag bar distance table).
[d] Complete series can be ordered with a heavy wall.
[e] Series available with TopTier™ Tag System.

Weatherford PC Pump Specifications

Fat Boy Pump Series: Imperial Units

Pump					Stator					Rotor			
PC Pump Series		Displacement [bbl/day/100 rpm]	Lift Capacities		Top Connection [in.]	Length[a] [in.]	Max. OD[b] [in.]	Tag bar Distance[c] [in.]	Weight [lb]	Top Connection [in.]	Length[a] [in.]	Drift Dia. [in.]	Weight [lb]
Imperial	Metric		[psi]	[ft]									
31-4100 FB[e]	5-1200 FB[e]	31	1700	4100	2-7/8in EUE Pin	73	3.125	22.6	65	7/8in SR Pin FS	91	1.812	29
31-5100 FB	5-1500 FB	31	2150	5100	2-7/8in EUE Pin	92	3.125	22.6	82	7/8in SR Pin FS	110	1.812	35
31-6000 FB	5-1800 FB	31	2550	6000	2-7/8in EUE Pin	110	3.125	22.6	98	7/8in SR Pin FS	128	1.812	41
31-9800 FB	5-3000 FB	31	4250	9800	2-7/8in EUE Pin	184	3.125	22.6	166	7/8in SR Pin FS	202	1.812	65
50-4100 FB[e]	8-1200 FB[e]	50	1700	4100	3-1/2in NUE Pin	83	3.500	22.6	84	1in SR Pin MS	102	2.137	56
50-5100 FB	8-1500 FB	50	2150	5100	3-1/2in NUE Pin	104	3.500	22.6	105	1in SR Pin MS	123	2.137	67
50-6000 FB	8-1800 FB	50	2550	6000	3-1/2in NUE Pin	125	3.500	22.6	127	1in SR Pin MS	144	2.137	79
50-9800 FB	8-3000 FB	50	4250	9800	3-1/2in NUE Pin	208	3.500	22.6	212	1in SR Pin MS	228	2.137	125
82-4100 FB[e]	13-1200 FB[e]	82	1700	4100	3-1/2in EUE Box	108	4.125	22.7	140	1in SR Pin MS	127	2.137	72
82-5100 FB	13-1500 FB	82	2150	5100	3-1/2in EUE Box	135	4.125	22.7	176	1in SR Pin MS	154	2.137	88
82-6000 FB	13-1800 FB	82	2550	6000	3-1/2in EUE Box	162	4.125	22.7	211	1in SR Pin MS	181	2.137	103
82-9800 FB	13-3000 FB	82	4250	9800	3-1/2in EUE Box	270	4.125	16.1	354	1in SR Pin MS	289	2.137	165
145-4100 FB[e]	23-1200 FB[e]	145	1700	4100	4ft x 3 1/2in EUE Box WE	189	4.750	22.6	232	1in SR Pin FS	159	2.250	80
145-5100 FB	23-1500 FB	145	2150	5100	4ft x 3 1/2in EUE Box WE	224	4.750	22.6	278	1in SR Pin FS	195	2.250	98
145-6000 FB	23-1800 FB	145	2550	6000	4ft x 3 1/2in EUE Box WE	259	4.750	22.6	324	1in SR Pin FS	230	2.250	115
145-9800 FB	23-3000 FB	145	4250	9800	4ft x 3 1/2in EUE Box WE	398	4.750	22.6	505	1in SR Pin FS	372	2.250	187
220-4100 FB[e]	35-1200 FB[e]	220	1700	4100	4ft x 3 1/2in EUE Box WE	218	4.750	22.6	300	1in SR Pin XS	186	2.532	127
220-5100 FB	35-1500 FB	220	2150	5100	4ft x 3 1/2in EUE Box WE	260	4.750	22.6	361	1in SR Pin XS	228	2.532	156
220-6000 FB	35-1800 FB	220	2550	6000	4ft x 3 1/2in EUE Box WE	302	4.750	22.6	422	1in SR Pin XS	270	2.532	184
220-9800 FB	35-3000 FB	220	4250	9800	4ft x 3 1/2in EUE Box WE	470	4.750	22.6	668	1in SR Pin XS	438	2.532	299
327-4100 FB[e]	52-1200 FB[e]	327	1700	4100	4ft x 3 1/2in EUE Box WE	288	4.500	22.5	394	1in SR Pin XS	228	2.532	145
327-5100 FB	52-1500 FB	327	2150	5100	4ft x 3 1/2in EUE Box WE	340	4.500	22.5	470	1in SR Pin XS	280	2.532	178
327-6000 FB	52-1800 FB	327	2550	6000	4ft x 3 1/2in EUE Box WE	393	4.500	22.5	548	1in SR Pin XS	333	2.532	212
327-8000 FB	52-2400 FB	327	3400	8000	4ft x 3 1/2in EUE Box WE	498	4.500	22.5	701	1in SR Pin XS	438	2.532	278
453-5100 FB	72-1500 FB	453	2150	5100	5-1/2in STC Pin	212	5.500	23.7	448	1-1/8in SR Pin	231	3.188	233
453-9800 FB	72-3000 FB	453	4250	9800	5-1/2in STC Pin	424	5.500	23.7	900	1-1/8in SR Pin	443	3.188	446

[a] Rotor and stator lengths are for XL tag bar, lengths may vary depending on connection type.
[b] Maximum stator ODs are listed with connection. Welds may increase the Maximum OD listed.
[c] Tag bar distance is for XL, for XXXL refer to table on page 31 (Tag bar distance table).
[d] Complete series can be ordered with a heavy wall.
[e] Series available with TopTier™ Tag System.

Notes

Insertable Pump Series

Weatherford manufactures two types of insertable PC pumps: a cloverleaf design and an arrowhead design.

The Cloverleaf series pumps are identified with an *Y*. The Arrowhead series pumps are identified with an *AY*.

For more information on Weatherford insertable PC pumps, please refer to the brochure on this product or the Insertable PC Pump Manual.

The following drawing illustrates the length references in the specification tables.

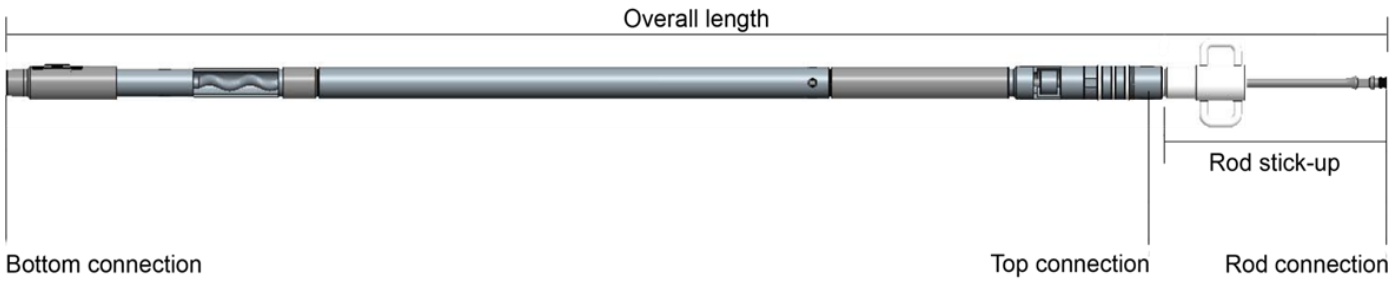


Fig. 7. Insertable PC pump configuration.

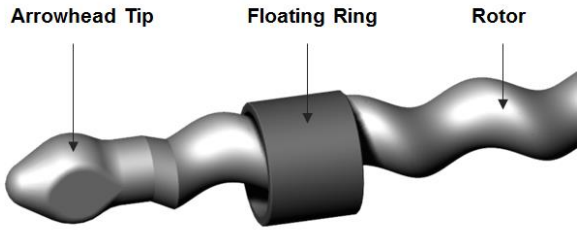


Fig. 8. Arrowhead I-PCP System.

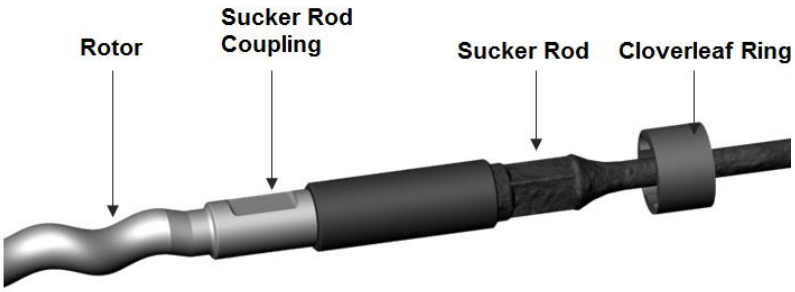


Fig. 9. Cloverleaf I-PCP System.

Weatherford PC Pump Specifications

Insertable Pump Series: Metric Units

The 73.025 mm AY is insertable inside of 73.025 mm EUE x 9.67 kg/m or lighter tubing. The 6.675 mm API polished rod pin requires a polished rod coupling. The Pump Seating Nipple ID is from 59.03mm to 59.06 mm.

Pump					PC Pump Assembly					
PC Pump Series		Displacement [m³/day/100 rpm]	Lift Capacities		Overall Length [m]	Max. OD[m] [mm]	Top Connection [mm]	Bottom Connection [mm]	Tag bar Distance[c] [mm]	Pull Rod Connection[n] [mm]
Metric	Imperial		[kPa]	[m]						
2-1800 XL Y	13-6000 XL Y	2	17582	1800	6.43	59.6	50.45-14 H1 Pin	42.2 EUE Pin	401	15.9 PR Pin
2-3600 XL Y	13-12000 XL Y	2	35163	3600	10.26	59.6	50.45-14 H1 Pin	42.2 EUE Pin	401	15.9 PR Pin
6-1500 XL AY	38-5100 XL AY	6	14824	1500	6.32	59.6	50.45-14 H1 Pin	42.2 EUE Pin	401	15.9 PR Pin
6-2250 XL AY	38-7400 XL AY	6	22063	2250	8.31	59.6	50.45-14 H1 Pin	42.2 EUE Pin	401	15.9 PR Pin
6-3000 XL AY	38-9800 XL AY	6	29303	3000	10.29	59.6	50.45-14 H1 Pin	42.2 EUE Pin	401	15.9 PR Pin
11-1200 XL AY	69-4100 XL AY	11	11721	1200	7.44	59.6	50.45-14 H1 Pin	42.2 EUE Pin	401	15.9 PR Pin
11-1800 XL AY	69-6000 XL AY	11	17582	1800	9.98	59.6	50.45-14 H1 Pin	42.2 EUE Pin	401	15.9 PR Pin
18-1200 XL AY	113-4100 XL AY	18	11721	1200	10.29	59.6	50.45-14 H1 Pin	42.2 EUE Pin	401	15.9 PR Pin
18-1800 XL AY	113-6000 XL AY	18	17582	1800	14.25	59.6	50.45-14 H1 Pin	42.2 EUE Pin	401	15.9 PR Pin
23-500 XL AY	145-1600 XL AY	23	4826	500	6.32	59.4	50.45-14 H1 Pin	42.2 EUE Pin	401	15.9 PR Pin
23-1000 XL AY	145-3200 XL AY	23	9653	1000	10.31	59.4	50.45-14 H1 Pin	42.2 EUE Pin	401	15.9 PR Pin

The 88.9 mm AY is insertable inside of 88.9 mm EUE x 13.84 kg/m or lighter tubing. The Pump Seating Nipple ID is from 71.88 mm to 71.91 mm.

Pump					PC Pump Assembly					
PC Pump Series		Displacement [m³/day/100 rpm]	Lift Capacities		Overall Length [m]	Max. OD[m] [mm]	Top Connection [mm]	Bottom Connection [mm]	Tag bar Distance[c] [mm]	Pull Rod Connection [mm]
Metric	Imperial		[kPa]	[m]						
9-1800 XL AY	57-6000 XL AY	9	17582	1800	6.50	72.8	60.3mm EUE Box	48.3 EUE Pin	399	22.8 PR Pin
9-3600 XL AY	57-12000 XL AY	9	35163	3600	10.62	72.8	60.3mm EUE Box	48.3 EUE Pin	399	22.8 PR Pin
14-1200 XL AY N	88-4100 XL AY N	14	11721	1200	6.50	72.8	60.3mm EUE Box	48.3 EUE Pin	399	22.2 PR Pin
14-2400 XL AY N	88-8000 XL AY N	14	23442	2400	10.62	72.8	60.3mm EUE Box	48.3 EUE Pin	399	22.2 PR Pin
17-1000 XL AY N	107-3200 XL AY N	17	9653	1000	6.50	72.8	60.3mm EUE Box	48.3 EUE Pin	399	22.2 PR Pin
17-1500 XL AY N	107-5100 XL AY N	17	14824	1500	8.56	72.8	60.3mm EUE Box	48.3 EUE Pin	399	22.2 PR Pin
17-2000 XL AY N	107-6500 XL AY N	17	19650	2000	10.62	72.8	60.3mm EUE Box	48.3 EUE Pin	399	22.2 PR Pin
17-2500 XL AY N	107-8200 XL AY N	17	24476	2500	12.67	72.8	60.3mm EUE Box	48.3 EUE Pin	399	22.2 PR Pin
30-900 XL AY	189-3100 XL AY	30	8963	900	8.20	72.8	60.3mm EUE Box	48.3 EUE Pin	399	22.2 PR Pin
30-1200 XL AY	189-4100 XL AY	30	11721	1200	10.16	72.8	60.3mm EUE Box	48.3 EUE Pin	399	22.2 PR Pin
30-1500 XL AY	189-5100 XL AY	30	14824	1500	12.09	72.8	60.3mm EUE Box	48.3 EUE Pin	399	22.2 PR Pin
30-1800 XL AY	189-6000 XL AY	30	17582	1800	14.05	72.8	60.3mm EUE Box	48.3 EUE Pin	399	22.2 PR Pin
57-600 XL AY	359-2100 XL AY	57	5861	600	8.56	72.8	60.3mm EUE Box	48.3 EUE Pin	399	22.2 PR Pin
57-800 XL AY	359-2800 XL AY	57	7929	800	10.62	72.8	60.3mm EUE Box	48.3 EUE Pin	399	22.2 PR Pin
57-1000 XL AY	359-3200 XL AY	57	9653	1000	12.67	72.8	60.3mm EUE Box	48.3 EUE Pin	399	22.2 PR Pin

[c] Tag bar distance is for XL, for XXXL refer to table on page 31 (Tag bar distance table).
[m] Maximum stator OD's are listed with connection. Welds may increase the Maximum OD listed.
[n] 15.9 mm API polished rod pin requires a polished rod coupling.

Weatherford PC Pump Specifications

Insertable Pump Series: Imperial Units

The 2 7/8-in. AY is insertable inside of 2 7/8-in. EUE x 6.50 lb/ft or lighter tubing. The 2 5/8-in. API polished rod pin requires a polished rod coupling. The Pump Seating Nipple ID is from 2.324 in to 2.325 in.

Pump					PC Pump Assembly					
PC Pump Series		Displacement [bbl/day/100 rpm]	Lift Capacities		Overall Length [in.]	Max. OD[m] [in.]	Top Connection [in.]	Bottom Connection [in.]	Tag bar Distance[c] [in.]	Pull Rod Connection[n] [in.]
Imperial	Metric		[psi]	[ft]						
13-6000 XL Y	2-1800 XL Y	13	2550	6000	253	2.347	1.9864-14 H1 Pin	1.660 EUE Pin	15.8	5/8 PR Pin
13-12000 XL Y	2-3600 XL Y	13	5100	12000	404	2.347	1.9864-14 H1 Pin	1.660 EUE Pin	15.8	5/8 PR Pin
38-5100 XL AY	6-1500 XL AY	38	2150	5100	249	2.347	1.9864-14 H1 Pin	1.660 EUE Pin	15.8	5/8 PR Pin
38-7400 XL AY	6-2250 XL AY	38	3200	7400	327	2.347	1.9864-14 H1 Pin	1.660 EUE Pin	15.8	5/8 PR Pin
38-9800 XL AY	6-3000 XL AY	38	4250	9800	405	2.347	1.9864-14 H1 Pin	1.660 EUE Pin	15.8	5/8 PR Pin
69-4100 XL AY	11-1200 XL AY	69	1700	4100	293	2.347	1.9864-14 H1 Pin	1.660 EUE Pin	15.8	5/8 PR Pin
69-6000 XL AY	11-1800 XL AY	69	2550	6000	393	2.347	1.9864-14 H1 Pin	1.660 EUE Pin	16	5/8 PR Pin
113-4100 XL AY	18-1200 XL AY	113	1700	4100	405	2.347	1.9864-14 H1 Pin	1.660 EUE Pin	16	5/8 PR Pin
113-6000 XL AY	18-1800 XL AY	113	2550	6000	561	2.347	1.9864-14 H1 Pin	1.660 EUE Pin	15.8	5/8 PR Pin
145-1600 XL AY	23-500 XL AY	145	700	1600	249	2.340	1.9864-14 H1 Pin	1.660 EUE Pin	15.8	5/8 PR Pin
145-3200 XL AY	23-1000 XL AY	145	1400	3200	406	2.340	1.9864-14 H1 Pin	1.660 EUE Pin	15.8	5/8 PR Pin

The 3 1/2-in. AY is insertable inside of 3 1/2-in. EUE x 9.30 lb/ft or lighter tubing. The Pump Seating Nipple ID is from 2.830 in to 2.831 in.

Pump					PC Pump Assembly					
PC Pump Series		Displacement [bbl/day/100 rpm]	Lift Capacities		Overall Length [in.]	Max. OD[m] [in.]	Top Connection [in.]	Bottom Connection [in.]	Tag bar Distance[c] [in.]	Pull Rod Connection [in.]
Imperial	Metric		[psi]	[ft]						
57-6000 XL AY	9-1800 XL AY	57	2550	6000	256	2.867	2-3/8in EUE Box	1.900 EUE Pin	15.7	7/8 PR Pin
57-12000 XL AY	9-3600 XL AY	57	5100	12000	418	2.867	2-3/8in EUE Box	1.900 EUE Pin	15.7	7/8 PR Pin
88-4100 XL AY N	14-1200 XL AY N	88	1700	4100	256	2.867	2-3/8in EUE Box	1.900 EUE Pin	15.7	7/8 PR Pin
88-8000 XL AY N	14-2400 XL AY N	88	3400	8000	418	2.867	2-3/8in EUE Box	1.900 EUE Pin	15.7	7/8 PR Pin
107-3200 XL AY N	17-1000 XL AY N	107	1400	3200	256	2.867	2-3/8in EUE Box	1.900 EUE Pin	15.7	7/8 PR Pin
107-5100 XL AY N	17-1500 XL AY N	107	2150	5100	337	2.867	2-3/8in EUE Box	1.900 EUE Pin	15.7	7/8 PR Pin
107-6500 XL AY N	17-2000 XL AY N	107	2850	6500	418	2.867	2-3/8in EUE Box	1.900 EUE Pin	15.7	7/8 PR Pin
107-8200 XL AY N	17-2500 XL AY N	107	3550	8200	499	2.867	2-3/8in EUE Box	1.900 EUE Pin	15.7	7/8 PR Pin
189-3100 XL AY	30-900 XL AY	189	1300	3100	323	2.867	2-3/8in EUE Box	1.900 EUE Pin	15.7	7/8 PR Pin
189-4100 XL AY	30-1200 XL AY	189	1700	4100	400	2.867	2-3/8in EUE Box	1.900 EUE Pin	15.7	7/8 PR Pin
189-5100 XL AY	30-1500 XL AY	189	2150	5100	476	2.867	2-3/8in EUE Box	1.900 EUE Pin	15.7	7/8 PR Pin
189-6000 XL AY	30-1800 XL AY	189	2550	6000	553	2.867	2-3/8in EUE Box	1.900 EUE Pin	15.7	7/8 PR Pin
359-2100 XL AY	57-600 XL AY	359	850	2100	337	2.867	2-3/8in EUE Box	1.900 EUE Pin	15.7	7/8 PR Pin
359-2800 XL AY	57-800 XL AY	359	1150	2800	418	2.867	2-3/8in EUE Box	1.900 EUE Pin	15.7	7/8 PR Pin
359-3200 XL AY	57-1000 XL AY	359	1400	3200	499	2.867	2-3/8in EUE Box	1.900 EUE Pin	15.7	7/8 PR Pin

[c] Tag bar distance is for XL, for XXXL refer to table on page 31 (Tag bar distance table).
[m] Maximum stator OD's are listed with connection. Welds may increase the Maximum OD listed.
[n] 5/8-in. API polished rod pin requires a polished rod coupling

Weatherford PC Pump Specifications

Insertable Pump Series: Metric Units

The 114.3 mm AY is insertable inside of 114.3 mm EUE x 18.75 kg/m or 114.3 mm LTC and STC x 18.75 kg/m or lighter tubing. The Pump Seating Nipple ID is from 96.75 mm to 96.77 mm.

Pump					PC Pump Assembly					
PC Pump Series		Displacement [m³/day/100 rpm]	Lift Capacities		Overall Length [m]	Max. OD[m] [mm]	Top Connection [mm]	Bottom Connection [mm]	Tag bar Distance[c] [mm]	Pull Rod Connection [mm]
Metric	Imperial		[kPa]	[m]						
15-900 XL AY	95-3100 XL AY	15	8963	900	5.54	97.4	73.0mm EUE Box	73.0 EUE Pin	574	22.2 PR Pin
15-1400 XL AY	95-4600 XL AY	15	13790	1400	7.21	97.4	73.0mm EUE Box	73.0 EUE Pin	574	22.2 PR Pin
15-1800 XL AY	95-6000 XL AY	15	17582	1800	8.33	97.4	73.0mm EUE Box	73.0 EUE Pin	574	22.2 PR Pin
15-2800 XL AY	95-9200 XL AY	15	27579	2800	11.28	97.4	73.0mm EUE Box	73.0 EUE Pin	574	22.2 PR Pin
32-900 XL AY	200-3100 XL AY	32	8963	900	7.65	97.4	73.0mm EUE Box	73.0 EUE Pin	574	22.2 SR Pin
32-1200 XL AY	200-4100 XL AY	32	11721	1200	9.35	97.4	73.0mm EUE Box	73.0 EUE Pin	574	22.2 SR Pin
32-1600 XL AY	200-5200 XL AY	32	15858	1600	11.20	97.4	73.0mm EUE Box	73.0 EUE Pin	574	22.2 SR Pin
32-1800 XL AY	200-6000 XL AY	32	17582	1800	12.78	97.4	73.0mm EUE Box	73.0 EUE Pin	574	22.2 SR Pin
83-601 XL AY	520-2101 XL AY	83	5861	601	9.40	97.4	73.0mm EUE Box	73.0 EUE Pin	572	25.4 SR Pin
83-900 XL AY	520-3100 XL AY	83	8963	900	12.60	97.4	73.0mm EUE Box	73.0 EUE Pin	572	25.4 SR Pin
83-1200 XL AY	520-4100 XL AY	83	11721	1200	15.80	97.4	73.0mm EUE Box	73.0 EUE Pin	572	25.4 SR Pin
120-600 XL AY	750-2100 XL AY	120	5861	600	12.34	97.4	73.0mm EUE Box	73.0 EUE Pin	572	22.2 SR Pin
120-775 XL AY	750-2750 XL AY	120	7584	775	14.58	97.4	73.0mm EUE Box	73.0 EUE Pin	572	22.2 SR Pin
120-900 XL AY	750-3100 XL AY	120	8963	775	17.02	97.4	73.0mm EUE Box	73.0 EUE Pin	572	25.4 SR Pin
185-600 XL AY	1164-2100 XL AY	185	5861	600	12.34	100.5	73.0mm EUE Box	73.0 EUE Pin	572	25.4 SR Pin
185-900 XL AY	1164-3100 XL AY	185	8963	900	17.02	100.5	73.0mm EUE Box	73.0 EUE Pin	572	25.4 SR Pin

[c] Tag bar distance is for XL, for XXXL refer to table on page 31 (Tag bar distance table).
[m] Maximum stator OD's are listed with connection. Welds may increase the Maximum OD listed.

Weatherford PC Pump Specifications

Insertable Pump Series: Imperial Units

The 4 1/2-in. AY is insertable inside of 4 1/2-in. EUE x 12.75 lb/ft or 4 1/2-in. LTC and STC x 12.60 lb/ft or lighter tubing. The Pump Seating Nipple ID is from 3.809 in to 3.810 in.

Pump					PC Pump Assembly					
PC Pump Series		Displacement [bbl/day/100 rpm]	Lift Capacities		Overall Length [in.]	Max. OD[m] [in.]	Top Connection [in.]	Bottom Connection [in.]	Tag bar Distance[c] [in.]	Pull Rod Connection [in.]
Imperial	Metric		[psi]	[ft]						
95-3100 XL AY	15-900 XL AY	95	1300	3100	218	3.835	2-7/8in EUE Box	2 7/8 EUE Pin	22.6	7/8 SR Pin
95-4600 XL AY	15-1400 XL AY	95	2000	4600	284	3.835	2-7/8in EUE Box	2 7/8 EUE Pin	22.6	7/8 SR Pin
95-6000 XL AY	15-1800 XL AY	95	2550	6000	328	3.835	2-7/8in EUE Box	2 7/8 EUE Pin	22.6	7/8 SR Pin
95-9200 XL AY	15-2800 XL AY	95	4000	9200	444	3.835	2-7/8in EUE Box	2 7/8 EUE Pin	22.6	7/8 SR Pin
200-3100 XL AY	32-900 XL AY	200	1300	3100	301	3.835	2-7/8in EUE Box	2 7/8 EUE Pin	22.6	7/8 SR Pin
200-4100 XL AY	32-1200 XL AY	200	1700	4100	368	3.835	2-7/8in EUE Box	2 7/8 EUE Pin	22.6	7/8 SR Pin
200-5200 XL AY	32-1600 XL AY	200	2300	5200	441	3.835	2-7/8in EUE Box	2 7/8 EUE Pin	22.6	7/8 SR Pin
200-6000 XL AY	32-1800 XL AY	200	2550	6000	503	3.835	2-7/8in EUE Box	2 7/8 EUE Pin	22.6	7/8 SR Pin
520-2101 XL AY	83-601 XL AY	520	850	2101	370	3.833	2-7/8in EUE Box	2 7/8 EUE Pin	22.5	1 SR Pin
520-3100 XL AY	83-900 XL AY	520	1300	2300	496	3.833	2-7/8in EUE Box	2 7/8 EUE Pin	22.5	1 SR Pin
520-4100 XL AY	83-1200 XL AY	520	1700	4100	622	3.833	2-7/8in EUE Box	2 7/8 EUE Pin	22.5	1 SR Pin
750-2100 XL AY	120-600 XL AY	750	850	2100	486	3.835	2-7/8in EUE Box	2 7/8 EUE Pin	22.5	1 SR Pin
750-2750 XL AY	120-775 XL AY	750	1100	2750	574	3.835	2-7/8in EUE Box	2 7/8 EUE Pin	22.5	1 SR Pin
750-3100 XL AY	120-900 XL AY	750	1300	3100	670	3.835	2-7/8in EUE Box	2 7/8 EUE Pin	22.5	1 SR Pin
1164-2100 XL AY	185-600 XL AY	1164	850	2100	486	3.958	2-7/8in EUE Box	2 7/8 EUE Pin	22.5	1 SR Pin
1164-3100 XL AY	185-900 XL AY	1164	1300	3100	670	3.958	2-7/8in EUE Box	2 7/8 EUE Pin	22.5	1 SR Pin

[c] Tag bar distance is for XL, for XXXL refer to table on page 31 (Tag bar distance table).
[m] Maximum stator OD's are listed with connection. Welds may increase the Maximum OD listed.

Coiled Tubing-Accessible PC Pumps

Coiled (endless) tubing has become a popular alternative for producers to free sanded progressive cavity pumps in 3 1/2-in. production tubing. Coiling means running continuous tubing inside the production tubing to the depth where sand has accumulated and is preventing the extraction of the rotor via flush-by or service rig. Fluid is circulated down the continuous tubing and reduces the compactness of the sand, eventually allowing extraction of the rotor via a flush-by.

In the applications where coiling has become popular, the typical completion is 3 1/2-in. tubing with 1 in. sucker rods. To enable the 3/4-in. continuous tubing to drift past the rod string, down to the top, and eventually through the stator, the rotor must be small enough to allow the 3/4-in. tubing to pass between the rotor and tubing.

Not all rotors are small enough to allow the endless tubing to pass by the rotor inside of 3 1/2-in. tubing. The models below are Weatherford progressing cavity pumps that are coiled tubing-accessible.

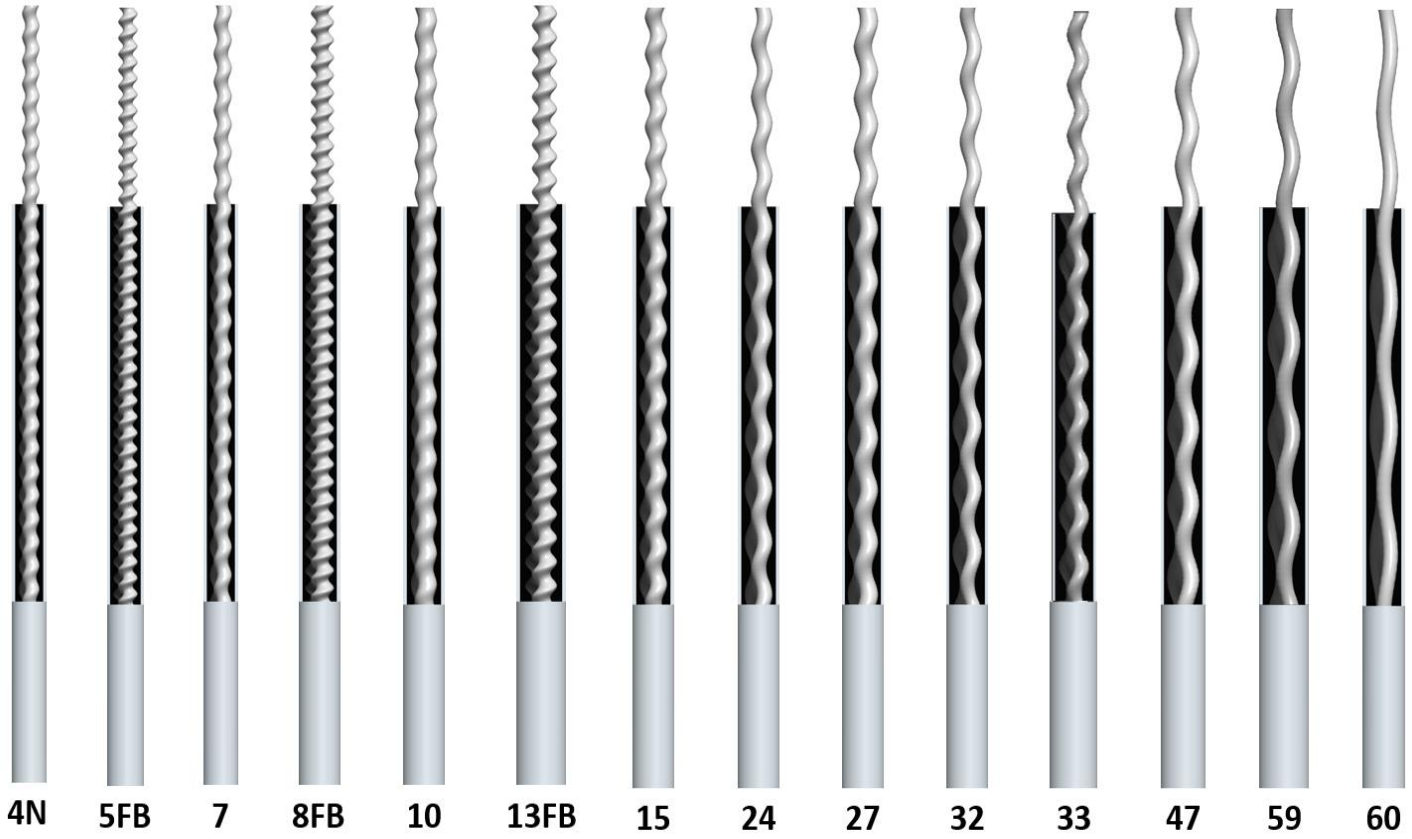


Fig. 10. Coiled Tubing-Accessible PC pumps

Please note that in some situations in which coiling in 89-mm tubing with 19-mm coil may be unsuccessful. To improve probability of success, a coil joint above the stator can be used.

Charge/Recirculating Pumps Series

When producing problem wells that slug sand, water, and/or gas, the use of a charge/recirculating pump can be an advantage. The charge/recirculating pump comprises three main parts:

- A high-volume, low-pressure bottom pump that helps to maintain wellbore fluid consistency by mixing the fluid before it can enter the production pump.
- A pup joint located between the two pumps and usually having slots or holes added to it depending on the application.
- The production pump, which determines the final volume and lift capacity.

Please consult with your Weatherford distributor when considering the use of a Charge/Recirculating Pump.

Production Pump Series	Charge Pump series
8 FB	32-150
8 FB	60-200
10	32-150
10	60-200
13 FB	32-150
13 FB	60-200
15	32-150
15	60-200
23 FB	32-150
23 FB	60-200
33	60-200
33	120-150
35 FB	60-200
35 FB	120-150
52 FB	144-150
59	144-150
72 FB	300-100
75	144-150
90	144-150
98	120-150
130	205-200
130	300-100
161	205-200
161	300-100

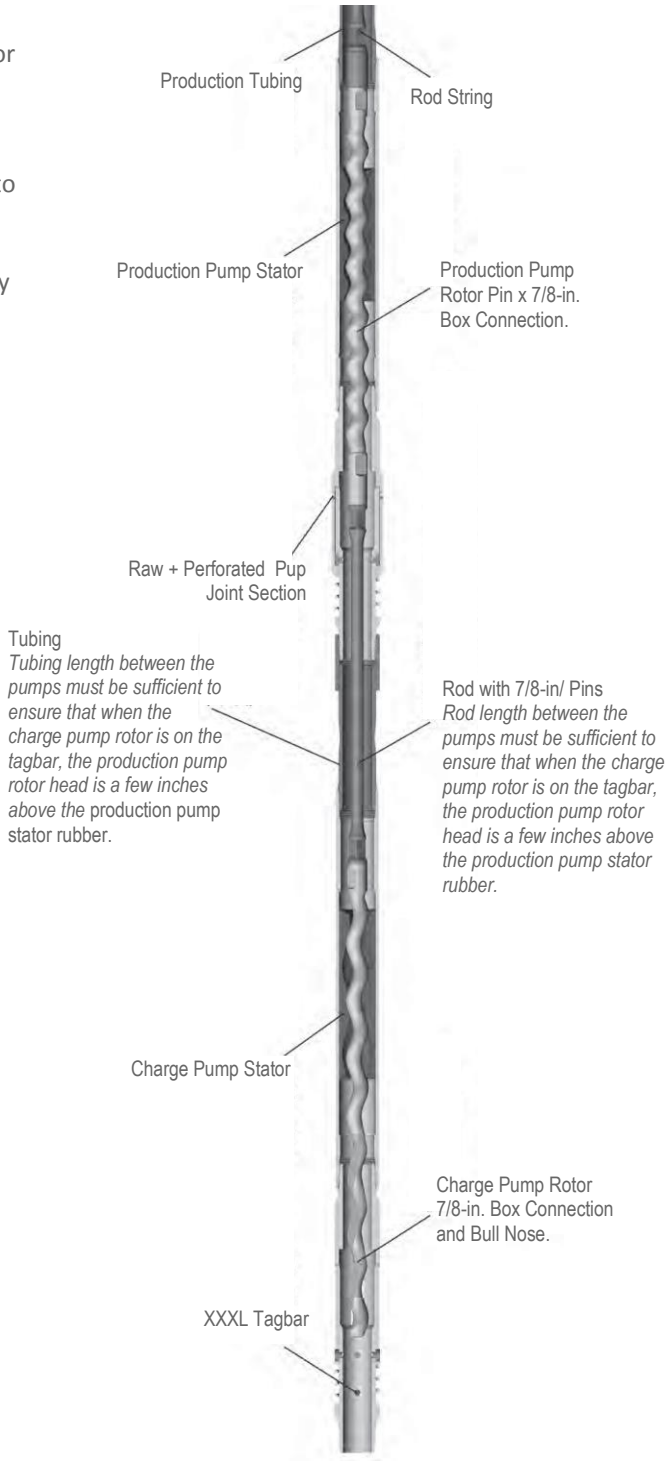


Fig. 11. Weatherford charge/recirculating PC pump configuration.

Extended Rotor Lengths

All pumps included in this catalogue are available with the extended rotor lengths indicated in the table. Longer extended lengths are available upon request.

Extended-length rotors perform two functions:

- They help to break up obstructions at the pump intake.
- They enable the producer to have a rod lift program and still use all stages of the PC pump.

Length Designation	Length added to XL Rotor	Length added to XL Rotor
XXXL	+16 in.*	+406 mm.*

*This length must be added to XL tag bar distance.

Tag bar distance table.

Fig. 12. Tag bar distance from elastomer to pin diagram.

Paddle Rotor

Pumps built in this configuration would be in the XXXL length would be accompanied by a slotted tag bar in the corresponding length. During operation, the paddle portion of the rotor landed optimally in the slotted tag bar generates a mixing action at the pump intake. This is ideal for heavy oil and/or high sand-cut applications.

Fig. 13. Paddle rotor PC pump technology.

Exclusion Tag bar

The exclusion tag bar is available as an alternative for use with all XXXL rotor configurations. The exclusion tag bar limits potential elastomer-damaging debris from entering the PC pump, while providing twice the inflow area and particle exclusion of a conventional slotted tag bar.

Fig. 14. Exclusion tag bar technology.

Tag Bar Slotting

Slotted tag bars are typically used in sand laden fluid applications. The slots maximize the inflow area at the pump intake and help improve agitation of the fluid when combined with a paddle rotor.

Tag bars are available in both slotted and non-slotted configurations for XL tag bars. XXXL tag bars are only available as slotted.

Tag Bar Thread Size		Slot Width	
[in.]	[mm]	[in.]	[mm]
1.900	48.2	1.00	25.4
2 3/8	60.3	1.00	25.4
2 7/8	73.0	1.50	38.1
3 1/2	88.9	1.50	38.1
4	101.6	2.00	50.8
4 1/2	114.3	2.00	50.8
5 1/2	139.7	2.00	50.8

Slotted Tag bar table

Fig. 15. Tag bar slotting options/configurations.

Weatherford PC Pump Specifications

Recommended Pup Joint and Pony Rod Connections: Metric Units

PC Pump Series		Product Family	Rotor Drift Diameter[n] [mm]	Minimum Tubing Size for Rotor Installation[o,p] [mm]	Rotor Orbit Diameter[o] [mm]	Minimum Pup Joint Size & Length for Stator Top Connection[o, p, q] [mm]	Minimum Pony Length for Rotor Top Connection[r] [m]	Seating Nipple Compatibility[o, s]		
Metric	Imperial							73.0 mm STD 58.2 mm ID	73.0 mm O/S 59.1 mm ID	88.9 mm STD 70.6 mm ID
2	13	190 LRG	38	48.2 EUE	39	1.22 m of 60.3 tubing required	2.44	Yes	Yes	Yes
4 N	25 N	238 STD	38	60.3 EUE	45	1.22 m of 60.3 tubing required	2.44	Yes	Yes	Yes
5 FB	31 FB	238 LRG	46	60.3 EUE	56	1.22 m of 73.0 tubing required	2.44	Yes	Yes	Yes
7	45	238 STD	38	60.3 EUE	46	1.22 m of 60.3 tubing required	2.44	Yes	Yes	Yes
8 FB	50 FB	278 LRG	54	73.0 EUE	66	1.22 m of 88.9 tubing required	2.44	Yes	Yes	Yes
10	60	238 LRG	48	60.3 EUE	56	1.22 m of 73.0 tubing required	2.44	Yes	Yes	Yes
13 FB	82 FB	278 LRG	54	73.0 EUE	68	1.22 m of 88.9 tubing required	2.44	Yes	Yes	Yes
15	95	238 LRG	48	60.3 EUE	59	1.22 m of 73.0 tubing required	2.44	Yes	Yes	Yes
23 FB	145 FB	278 LRG	57	73.0 EUE	76	1.22 m of 88.9 tubing required	2.44	Yes	Yes	Yes
24	151	238 LRG	46	60.3 EUE	59	1.22 m of 73.0 tubing required	2.44	Yes	Yes	Yes
27	170	278 STD	52	73.0 EUE	65	1.22 m of 88.9 tubing required	2.44	Yes	Yes	Yes
32	200	238 LRG	47	60.3 EUE	63	1.22 m Weld Ext. Included	2.44	Yes	Yes	Yes
33	208	278 LRG	54	73.0 EUE	73	1.22 m of 88.9 tubing required	2.44	Yes	Yes	Yes
35 FB	220 FB	312 STD	64	88.9 EUE	84	1.22 m Weld Ext. Included	2.44	No	No	Yes
43	270	278 LRG	57	73.0 EUE	74	1.22 m of 88.9 tubing required	2.44	Yes	Yes	Yes
47	296	278 LRG	52	73.0 EUE	69	1.22 m Weld Ext. Included	2.44	Yes	Yes	Yes
52 FB	327 FB	312 STD	64	88.9 EUE	86	1.22 m Weld Ext. Included	2.44	No	No	Yes
53	333	278 LRG	60	88.9 EUE	80	1.22 m Weld Ext. Included	2.44	No	No	Yes
59	371	312 STD	54	73.0 EUE	73	1.22 m of 88.9 tubing required	2.44	Yes	Yes	Yes
68	427	278 LRG	60	88.9 EUE	80	1.22 m Weld Ext. Included	2.44	No	No	Yes
72 FB	453 FB	412 LRG	80	101.6 EUE	108	1.22 m of 139.7 tubing required	2.44	No	No	No
75	472	278 LRG	57	73.0 EUE	75	1.22 m of 88.9 tubing required	2.44	Yes	Yes	Yes
80	500	312 STD	64	88.9 EUE	84	1.22 m Weld Ext. Included	2.44	No	No	Yes
83	520	278 LRG	57	73.0 EUE	71	1.22 m of 88.9 tubing required	2.44	Yes	Yes	Yes
90	566	278 LRG	57	73.0 EUE	75	1.22 m of 88.9 tubing required	2.44	Yes	Yes	Yes
98	615	412 STD	74	101.6 EUE	98	1.22 m of 114.3 tubing required	2.44	No	No	No
106	667	278 LRG	57	73.0 EUE	74	1.22 m of 88.9 tubing required	2.44	Yes	Yes	Yes
120	750	278 LRG	56	73.0 EUE	71	1.22 m of 88.9 tubing required	2.44	Yes	Yes	Yes
123	774	278 LRG	57	73.0 EUE	74	1.22 m of 88.9 tubing required	2.44	Yes	Yes	Yes

(o) All information in the table is calculated for rotor only and does not include couplings or additional connections directly above rotor.
(p) Minimum tubing sizes are based on the following tubing weights:

Tubing Size	Grade	ID	Drift ID	Drift Lined	Std. Cplg. OD	Shaved Cplg. OD
2 3/8-in. EUE x 4.70	J55	50.7	43.3	38.1	77.8	73.9
2 7/8-in. EUE x 6.50	J55	62.0	59.6	50.8	93.2	87.9
3 1/2-in. EUE x 9.30	J55	76.0	72.8	63.5	114.3	106.2
4-in. EUE x 9.50	J55	90.1	86.9	-	127	-
4 1/2-in. EUE x 12.75	J55	100.5	97.4	88.9	141.3	-

For all other tubing weights, check the tubing drift ID versus the rotor drift diameter for rotor installation, and the tubing ID versus the rotor orbit diameter for the stator top connection.
(q) This pup joint is required above the pump to allow for rotor movement during operation. If the pup diameter is smaller than recommended diameter, the rotor will wear into or through the pup or will cause the rotor to fail.
(r) If possible, connect the rotor directly to the rod string, eliminating all pony rods.
(s) The ability of rotor (drift diameter) to pass through the seating nipple located in tubing string.

Weatherford PC Pump Specifications

Recommended Pup Joint and Pony Rod Connections: Imperial Units

PC Pump Series		Product Family	Rotor Drift Diameter[n] [in.]	Minimum Tubing Size for Rotor Installation[o,p] [in.]	Rotor Orbit Diameter[o] [in.]	Minimum Pup Joint Size & Length for Stator Top Connection[o, p, q] [in.]	Minimum Pony Length for Rotor Top Connection[r] [ft]	Seating Nipple Compatibility[o, s]		
Metric	Imperial							2 7/8 in. STD 2.290 in. ID	2 7/8 in. O/S 2.325 in. ID	3 1/2 in. STD 2.780 in. ID
2	13	190 LRG	1.250	1.900 EUE	1.513	4ft of 2-3/8 tubing required	8	Yes	Yes	Yes
4 N	25 N	238 STD	1.500	2-3/8 EUE	1.764	4ft of 2-3/8 tubing required	8	Yes	Yes	Yes
5FB	31FB	238 LRG	1.812	2-3/8 EUE	2.200	4ft of 2-7/8 tubing required	8	Yes	Yes	Yes
7	45	238 STD	1.513	2-3/8 EUE	1.821	4ft of 2-3/8 tubing required	8	Yes	Yes	Yes
8 FB	50 FB	278 LRG	2.137	2-7/8 EUE	2.587	4ft of 3-1/2 tubing required	8	Yes	Yes	Yes
10	60	238 LRG	1.893	2-3/8 EUE	2.198	4ft of 2-7/8 tubing required	8	Yes	Yes	Yes
13 FB	82 FB	278 LRG	2.137	2-7/8 EUE	2.689	4ft of 3-1/2 tubing required	8	Yes	Yes	Yes
15	95	238 LRG	1.877	2-3/8 EUE	2.318	4ft of 2-7/8 tubing required	8	Yes	Yes	Yes
23 FB	145 FB	278 LRG	2.230	2-7/8 EUE	2.990	4ft of 3-1/2 tubing required	8	Yes	Yes	Yes
24	151	238 LRG	1.812	2-3/8 EUE	2.322	4ft of 2-7/8 tubing required	8	Yes	Yes	Yes
27	170	278 STD	2.046	2-7/8 EUE	2.548	4ft of 3-1/2 tubing required	8	Yes	Yes	Yes
32	200	238 LRG	1.863	2-3/8 EUE	2.471	4ft Weld Ext. Included	8	Yes	Yes	Yes
33	208	278 LRG	2.137	2-7/8 EUE	2.837	4ft of 3-1/2 tubing required	8	Yes	Yes	Yes
35 FB	220 FB	312 STD	2.522	3-1/2 EUE	3.309	4ft Weld Ext. Included	8	No	No	Yes
43	270	278 LRG	2.250	2-7/8 EUE	2.900	4ft of 3-1/2 tubing required	8	Yes	Yes	Yes
47	296	278 LRG	2.070	2-7/8 EUE	2.720	4ft Weld Ext. Included	8	Yes	Yes	Yes
52 FB	327 FB	312 STD	2.532	3-1/2 EUE	3.376	4ft Weld Ext. Included	8	No	No	Yes
53	333	278 LRG	2.350	3-1/2 EUE	3.130	4ft Weld Ext. Included	8	No	No	Yes
59	371	312 STD	2.137	2-7/8 EUE	2.875	4ft of 3-1/2 tubing required	8	Yes	Yes	Yes
68	427	278 LRG	2.353	3-1/2 EUE	3.141	4ft Weld Ext. Included	8	No	No	Yes
72 FB	453 FB	412 LRG	3.169	4 EUE	4.241	4ft of 5-1/2 tubing required	8	No	No	No
75	472	278 LRG	2.260	2-7/8 EUE	2.960	4ft of 3-1/2 tubing required	8	Yes	Yes	Yes
80	500	312 STD	2.538	3-1/2 EUE	3.315	4ft Weld Ext. Included	8	No	No	Yes
83	520	278 LRG	2.253	2-7/8 EUE	2.801	4ft of 3-1/2 tubing required	8	Yes	Yes	Yes
90	566	278 LRG	2.250	2-7/8 EUE	2.960	4ft of 3-1/2 tubing required	8	Yes	Yes	Yes
98	615	412 STD	2.908	4 EUE	3.856	4ft of 4-1/2 tubing required	8	No	No	No
106	667	278 LRG	2.250	2-7/8 EUE	2.900	4ft of 3-1/2 tubing required	8	Yes	Yes	Yes
120	750	278 LRG	2.190	2-7/8 EUE	2.790	4ft of 3-1/2 tubing required	8	Yes	Yes	Yes
123	774	278 LRG	2.250	2-7/8 EUE	2.900	4ft of 3-1/2 tubing required	8	Yes	Yes	Yes

(o) All information in the table is calculated for rotor only and does not include couplings or additional connections directly above rotor.

(p) Minimum tubing sizes are based on the following tubing weights:

Tubing Size	Grade	ID	Drift ID	Drift Lined	Std. Cplg. OD	Shaved Cplg. OD
2 3/8-in. EUE x 4.70	J55	1.995	1.902	1.500	3.063	2.910
2 7/8-in. EUE x 6.50	J55	2.441	2.346	2.000	3.668	3.460
3 1/2-in. EUE x 9.30	J55	2.992	2.867	2.500	4.500	4.180
4-in. EUE x 9.50	J55	3.548	3.423	-	5.000	-
4 1/2-in. EUE x 12.75	J55	3.958	3.833	3.500	5.563	-

For all other tubing weights, check the tubing drift ID versus the rotor drift diameter for rotor installation, and the tubing ID versus the rotor orbit diameter for the stator top connection.

(q) This pup joint is required above the pump to allow for rotor movement during operation. If the pup diameter is smaller than recommended diameter, the rotor will wear into or through the pup or will cause the rotor to fail.

(r) If possible, connect the rotor directly to the rod string, eliminating all pony rods.

(s) The ability of rotor (drift diameter) to pass through the seating nipple located in tubing string.

Weatherford PC Pump Specifications

Recommended Pup Joint and Pony Rod Connections: Metric Units

PC Pump Series		Product Family	Rotor Drift Diameter[o] [mm]	Minimum Tubing Size for Rotor Installation[o,p] [mm]	Rotor Orbit Diameter[o] [mm]	Minimum Pup Joint Size & Length for Stator Top Connection[o, p, q] [mm]	Minimum Pony Length for Rotor Top Connection[r] [m]	Seating Nipple Compatibility[o, s]		
Metric	Imperial							73.0 mm STD 58.2 mm ID	73.0 mm O/S 59.1 mm ID	88.9 mm STD 70.6 mm ID
130	820	412 STD	81	101.6 EUE	108	1.22 m of 139.7 tubing required	2.44	No	No	No
144	906	278 LRG	57	73.0 EUE	72	1.22 m of 88.9 tubing required	2.44	Yes	Yes	Yes
150	944	312 STD	71	88.9 EUE	95	1.22 m Weld Ext. Included	2.44	No	No	No
160	1000	312 STD	64	88.9 EUE	84	1.22 m Weld Ext. Included	2.44	No	No	Yes
161	1010	412 LRG	90	114.3 EUE	121	1.22 m of 139.7 tubing required	2.44	No	No	No
175	1100	412 LRG	91	114.3 EUE	121	1.22 m of 139.7 tubing required	2.44	No	No	No
190	1195	312 LRG	72	88.9 EUE	95	1.22 m Weld Ext. Included	2.44	No	No	No
200	1258	412 LRG	91	114.3 EUE	121	1.22 m of 139.7 tubing required	2.44	No	No	No
205	1290	312 LRG	70	88.9 EUE	93	1.22 m Weld Ext. Included	2.44	No	No	Yes
300	1887	312 LRG	60	88.9 EUE	83	1.22 m of 101.6 tubing required	2.44	No	No	Yes
302	1900	312 LRG	72	88.9 EUE	95	1.22 m of 114.3 tubing required	2.44	No	No	No

(o) All information in the table is calculated for rotor only and does not include couplings or additional connections directly above rotor.

(p) Minimum tubing sizes are based on the following tubing weights:

Tubing Size	Grade	ID	Drift ID	Drift Lined	Std. Cplg. OD	Shaved Cplg. OD
2 3/8-in. EUE x 4.70	J55	50.7	43.3	38.1	77.8	73.9
2 7/8-in. EUE x 6.50	J55	62.0	59.6	50.8	93.2	87.9
3 1/2-in. EUE x 9.30	J55	76.0	72.8	63.5	114.3	106.2
4-in. EUE x 9.50	J55	90.1	86.9	-	127	-
4 1/2-in. EUE x 12.75	J55	100.5	97.4	88.9	141.3	-

For all other tubing weights, check the tubing drift ID versus the rotor drift diameter for rotor installation, and the tubing ID versus the rotor orbit diameter for the stator top connection.

(q) This pup joint is required above the pump to allow for rotor movement during operation. If the pup diameter is smaller than recommended diameter, the rotor will wear into or through the pup or will cause the rotor to fail.

(r) If possible, connect the rotor directly to the rod string, eliminating all pony rods.

(s) The ability of rotor (drift diameter) to pass through the seating nipple located in tubing string.

Weatherford PC Pump Specifications

Recommended Pup Joint and Pony Rod Connections: Imperial Units

PC Pump Series		Product Family	Rotor Drift Diameter[n] [in.]	Minimum Tubing Size for Rotor Installation[o,p] [in.]	Rotor Orbit Diameter[o] [in.]	Minimum Pup Joint Size & Length for Stator Top Connection[o, p, q] [in.]	Minimum Pony Length for Rotor Top Connection[r] [ft]	Seating Nipple Compatibility[o, s]		
Metric	Imperial							2 7/8 in. STD 2.290 in. ID	2 7/8 in. O/S 2.325 in. ID	3 ½ in. STD 2.780 in. ID
130	820	412 STD	3.190	4 EUE	4.250	4ft of 5-1/2 tubing required	8	No	No	No
144	906	278 LRG	2.250	2-7/8 EUE	2.838	4ft of 3-1/2 tubing required	8	Yes	Yes	Yes
150	944	312 STD	2.813	3-1/2 EUE	3.751	4ft Weld Ext. Included	8	No	No	No
160	1000	312 STD	2.531	3-1/2 EUE	3.312	4ft Weld Ext. Included	8	No	No	Yes
161	1010	412 LRG	3.562	4-1/2 EUE	4.749	4ft of 5-1/2 tubing required	8	No	No	No
175	1100	412 LRG	3.563	4-1/2 EUE	4.751	4ft of 5-1/2 tubing required	8	No	No	No
190	1195	312 LRG	2.830	3-1/2 EUE	3.750	4ft Weld Ext. Included	8	No	No	No
200	1258	412 LRG	3.563	4-1/2 EUE	4.751	4ft of 5-1/2 tubing required	8	No	No	No
205	1290	312 LRG	2.745	3-1/2 EUE	3.660	4ft Weld Ext. Included	8	No	No	Yes
300	1887	312 LRG	2.375	3-1/2 EUE	3.250	4ft of 4 tubing required	8	No	No	Yes
302	1900	312 LRG	2.850	3-1/2 EUE	3.750	4ft of 4-1/2 tubing required	8	No	No	No

(o) All information in the table is calculated for rotor only and does not include couplings or additional connections directly above rotor.

(p) Minimum tubing sizes are based on the following tubing weights:

Tubing Size	Grade	ID	Drift ID	Drift Lined	Std. Cplg. OD	Shaved Cplg. OD
2 3/8-in. EUE x 4.70	J55	1.995	1.902	1.500	3.063	2.910
2 7/8-in. EUE x 6.50	J55	2.441	2.346	2.000	3.668	3.460
3 1/2-in. EUE x 9.30	J55	2.992	2.867	2.500	4.500	4.180
4-in. EUE x 9.50	J55	3.548	3.423	-	5.000	-
4 1/2-in. EUE x 12.75	J55	3.958	3.833	3.500	5.563	-

For all other tubing weights, check the tubing drift ID versus the rotor drift diameter for rotor installation, and the tubing ID versus the rotor orbit diameter for the stator top connection.

(q) This pup joint is required above the pump to allow for rotor movement during operation. If the pup diameter is smaller than recommended diameter, the rotor will wear into or through the pup or will cause the rotor to fail.

(r) If possible, connect the rotor directly to the rod string, eliminating all pony rods.

(s) The ability of rotor (drift diameter) to pass through the seating nipple located in tubing string.

Abbreviations

AY	Identifier for Arrowhead insertable progressing cavity pump
FB	Identifier for Fat Boy progressing cavity pump model
FS	Full size OD coupling
HN	High nitrile elastomer
HNBR	Hydrogenated nitrile butadiene rubber elastomer
HW	Heavy-wall stator configuration
ID	Inside diameter
I-PCP	Insertable progressing cavity pump
MN	Medium nitrile elastomer
MS	Mid size OD coupling
N	Identifier for new progressing cavity pump model
OD	Outside diameter
O/S	Over Size
PSN	Pump seating nipple
PR	Polished rod coupling
S	Sectional progressing cavity pump
SH	Slimhole progressing cavity pump
SHS	Slimhole outside diameter sectional pump
SR	Sucker rod coupling
XL, XXXL, etc.	Extended length added to standard rotor
XS	Extra size OD coupling
TT	TopTier tag system
Y	Identifier for Cloverleaf insertable progressing cavity pump

Design Form for Weatherford PC Pump System

Weatherford offers to analyze and recommend the most efficient and effective PC pumping system for each application. Please provide all production and well data information as completely and accurately as possible on a Weatherford data sheet like the one shown. The quality of the information provided to us is critical to the surface equipment design, the PCP, and the elastomer selection. If key information is missing, inaccuracy and delays in quotations may result. Please circle unit of measure where applicable.

To receive this Data Sheet or an electronic copy, please contact your local Weatherford distributor.

Company Name:				Contact:				
Well Name:				Phone:		Fax:		
Location:				e-mail:				
Country:				Date:				
WELL DATA			Units Circle One	**PRODUCTION AND FLUID DATA**				
Vertical: ❑ Horizontal: ❑ Slant: ❑				Current Production:				m^3pd - bfpd
Total Depth:			mkb-ftkb	Projected Production:				m^3pd - bfpd
Perforations:				Water Cut:				%
Top:			mkb-ftkb	Abrasive Cut:				%
Bottom:			mkb-ftkb	Gas/Oil Ratio (G.O.R.):				m^3/m^3 - bbls/scf
Pump Landing Depth:			mkb-ftkb	Total Fluid Viscosity:		cp		°C - °F
Producing Fluid Level from Surface				Viscosity Correlation:		cp		°C - °F
Current:			mkb-ftkb			cp		°C - °F
Projected:			mkb-ftkb			cp		°C - °F
Flowline Pressue:			kpa-psi	API Oil Gravity:		Degrees		
Casing Pressue:			kpa-psi	H_2S:		ppm	Water S.G.:	
Tubing Size:			mm-in	CO_2:		ppm	Water Salinity:	ppm
Casing Size:			mm-in	Aromatics (Benzene, Toluene, Xylene):				vol%
Rod Size:			mm-in	Bottomhole Temperature:				°C - °F
Rod Grade				Temperature Gradient:				C/m-F/ft
Rod Type: Conventional Rod ❑ Continuous Rod ❑				*Treating Chemicals*				
Rod Couplings: Full Size ❑ Slimhole ❑								
IPR DATA				**SURFACE EQUIPMENT**				
Static Reservoir Pressure:			Kpa - Psi	Electric Prime Mover: ❑		rpm		hp
Bubble Point Pressure:			Kpa - Psi	Gas Prime Mover: ❑		Brand		Size
	Test Point #1		Test Point #2	Surface Drive:	Direct ❑		Hydraulic ❑	
Producing Pressure(s): Kpa - Psi				Belt & Sheave Ratio:		Gear Box Ratio:		
Fluid Rate(s): m^3pd - bfpd				Operating Frequency:		Line Voltage:		
Productivity Index: (M^3/Kpa - Bbl/Psi)				Hydraulic Pump & Motor:				
Please attach the following if available:				Flow-Tee to Drivehead Connection:				
Directional Survey: ❑ Fluid Analysis: ❑				Flow Tee Style & Size:				
Pertinent Information:								

Fig. 16. Design data sheet for Weatherford PC pump system.

Notes

Notes

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