



Model 1810 shown rails not included.

18 Frame Plunger Pump

Standard Model

1810

Flushed Model

1810K

FEATURES

- Triplex plunger design delivers high efficiency and low pulsation.
- V-Packings and low pressure seals are completely lubricated and cooled by pumped liquid.
- Special UHMW or PTFE supported V-Packings for high pressure stability, chemical compatibility and extended life.
- Low upswept volume maximizes volumetric efficiency.
- Special high-density, polished, concentric ceramic plungers provide a true wear surface and extended seal life.
- Wet-end is easily serviced without entering crankcase.

SPECIFICATIONS

	U.S. Measure	Metric Measure
Flow.....	3.0 gpm	11.4 lpm
Pressure Range.....	100 to 10,000 psi	7 to 689 bar
Inlet Pressure Range.....	Flooded to 60 psi	Flooded to +4 bar
RPM.....	1500 RPM	1500 RPM
Bore.....	0.433"	11 mm
Stroke.....	1.181"	30 mm
Crankcase Capacity.....	42 oz.	1.24 l
Maximum Liquid Temperature.....	160°F	71°C
Above 130F call Cat Pumps for inlet conditions and elastomer recommendations.		
Inlet Ports (2).....	1/2" NPT(F)	1/2" NPT(F)
Flushed Ports (2).....	1/4" NPT(F)	1/4" NPT(F)
Discharge Ports (3).....	3/8" NPT(F)	3/8" NPT(F)
Pulley Mounting.....	Either Side	Either Side
Shaft Diameter.....	1.181"	30 mm
Weight.....	60 lbs.	27.2 kg
Dimensions.....	19.53 x 12.99 x 6.44"	496 x 330 x 164 mm

ELECTRIC HORSEPOWER REQUIREMENTS

FLOW		PRESSURE			RPM
		psi 5000	psi 7500	psi 10,000	
U.S. gpm	lpm	bar 345	bar 517	bar 689	
3.0	11.4	10.3	15.4	20.5	1500
2.0	7.6	6.8	10.3	13.7	1000
1.0	3.8	3.4	5.1	6.8	500

DETERMINING THE PUMP RPM	$\frac{\text{Rated gpm}}{\text{Rated rpm}}$	=	$\frac{\text{"Desired" gpm}}{\text{"Desired" rpm}}$
DETERMINING THE REQUIRED H.P.	$\frac{\text{gpm} \times \text{psi}}{1460}$	=	Electric Brake H. P. Required
DETERMINING MOTOR PULLEY SIZE	$\frac{\text{Motor Pulley O.D.}}{\text{Pump rpm}}$	=	$\frac{\text{Pump Pulley O.D.}}{\text{Motor rpm}}$

See complete Drive Packages (Incls: Pulleys, Belts, Hubs, Key) Tech Bulletin 003.
Refer to pump **Service Manual** for repair procedure and additional technical information.

⚠ CAUTIONS AND WARNINGS

All High Pressure Systems require a primary pressure regulating device (i.e. regulator, unloader) and a secondary pressure relief device (i.e. pop-off valve, relief valve). Failure to install such relief devices could result in personal injury or damage to pump or property. CAT PUMPS does not assume any liability or responsibility for the operation of a customer's high pressure system.

Read all CAUTIONS and WARNINGS before commencing service or operation of any high pressure system. The CAUTIONS and WARNINGS are included in each service manual and with each Accessory Data sheet. CAUTIONS and WARNINGS can also be viewed online at www.catpumps.com/cautions-warnings or can be requested directly from CAT PUMPS.

WARRANTY

View the Limited Warranty on-line at www.catpumps.com/warranty.

PARTS LIST

ITEM	P/N	MATL	DESCRIPTION	QTY
2	30067	STL	Key (M8x7.5x25)	1
5	92538	S	Screw, HHC Sems (M6x16)	8
8	43496	AL	Cover, Bearing	2
9	815281	FBR	Split Shim, Bearing Cover, 2 Pc.	2
	814800	S	Split Shim, Bearing Cover, 2 Pc.	2
10	11340	NBR	O-Ring, Bearing Case - 70D	2
11	43495	NBR	Seal, Oil, Crankshaft - 70D	2
15	39060	STL	Bearing, Roller	2
20	48600	TNM	Rod Assy, Connecting	3
25	43494	FCM	Crankshaft - Dual End	1
31	828710	PE	Protector, Oil Cap w/Foam Gasket	1
32	43211	ABS	Cap, Oil Filler	1
33	14177	NBR	O-Ring, Filler Cap - 70D	1
37	92241	—	Gauge, Oil, Bubble w/Gasket - 80D	1
38	44428	NBR	Gasket, Flat, Oil Gauge - 80D	1
40	92542	S	Screw, HHC Sems (M6x20)	4
48	25625	STCP	Plug, Drain (1/4"x19BSP)	1
49	23170	NBR	O-Ring, Drain Plug - 70D	1
50	43491	AL	Cover, Rear	1
51	44834	NBR	O-Ring, Rear Cover - 70D	1
53	115471	AL	Crankcase (Incls: 54)	1
54	27488	S	Pin, Guide	2
64	43507	CM	Pin, Crosshead	3
65	48892	SSHB	Rod, Plunger, Short	3
69	126592	STCP R	Washer, Seal	3
70	43500	NBR	Seal, Oil, Crankcase - 80D	3
75	43506	S	Slinger, Barrier	3
90	76595	CC	Assembly, Plunger, M11 w/S Holder	3
95	31585	S	Stud, Plunger (M6 x 20)	3
100	855018	POP	Retainer, Seal	3
106	76120	ST	Seal, LPS w/S-Spg	3
110	76840	S	Block, Housing	1
—	76850	S	Block, Housing (Model 1810K)	1
116	31545	S	Washer, Flat (M10)	4
117	31695	S	Screw, HSH (M10 x 100)	4
121	31565	PTFE	Ring, Cylinder Sealing	9
122	31485	NBR	O-Ring, Front Cylinder - 70D	3
123	31475	NBR	O-Ring, Rear Cylinder - 70D	3
124	76490	S	Cylinder	3
—	76495	S	Cylinder (Model 1810K)	3
127	76310	UHMW*	Assembly, V-Packing w/BZ Cylinder Support	3
—	76431	PTFE*	Assembly, V-Packing w/BZ Cylinder Support	3
134	76350	S	Valve, Inlet	3
135	76115	PET	Retainer, Inlet Spring	3
136	31575	S	Spring, Inlet Valve	3
164	76510	S	Seat, Ball Assembly w/Ceramic Ball	3
185	76885	S	Manifold, Inlet/Discharge, Block-Style	1
188	31692	S	Screw, HSH (M10 x 140)	8
250	30764	<i>NY R</i>	<i>Protector, Shaft w/Two Screws</i>	<i>1</i>
	30764S	<i>NY</i>	<i>Protector, Shaft w/Two SS Screws</i>	<i>1</i>
255	30264	<i>STZP</i>	<i>Mount, Direct</i>	<i>1</i>
260	30613	<i>STZP R</i>	<i>Mount, Rail Assy</i>	<i>1</i>
	990550	<i>STZP R</i>	<i>Mount, Rail (Required on Diesel/Gas)</i>	<i>1</i>
269	30206	<i>F</i>	<i>Pulley (10") AB [See Tech Bulletin 003]</i>	<i>1</i>
274	30059	<i>STL</i>	<i>Hub, "H" (M30) (Keyway M8) [See Tech Bulletin 003]</i>	<i>1</i>
283	34334	—	<i>Kit, Oil Drain (3/8" x 24") (See Tech Bulletin 077)</i>	<i>1</i>
299	992810	S	<i>Head, Complete, w/Plungers</i>	<i>1</i>
—	992820	S	<i>Head, Complete, w/Plungers (Model 1810K)</i>	<i>1</i>
300	76810	<i>NBR*</i>	<i>Kit, Seal (Incls: 106, 121, 122, 123, 127)</i>	<i>1</i>
310	76820	<i>NBR</i>	<i>Kit, Valve (Incls: 121, 122, 123, 134, 136, 164)</i>	<i>1</i>
350	30696	<i>STZP</i>	<i>Plier, Reverse</i>	<i>1</i>
352	44050	<i>STZP</i>	<i>Tool, Oil Gauge Removal</i>	<i>1</i>
400	9920	<i>SS</i>	<i>Assembly, Rupture Disc (Relief Valve) (Includes 3 discs)</i>	<i>1</i>
—	76010	<i>SS</i>	<i>Rupture Disc, 15K</i>	<i>1</i>
—	6107	—	<i>Oil, Bottle (21 oz.) ISO-68 Hydraulic</i>	<i>2</i>
—	6119	—	<i>(Fill to specified crankcase capacity prior to start-up)</i> <i>Lubricant, Antiseize (1 oz.) (See Tech Bulletin 095)</i>	<i>1</i>

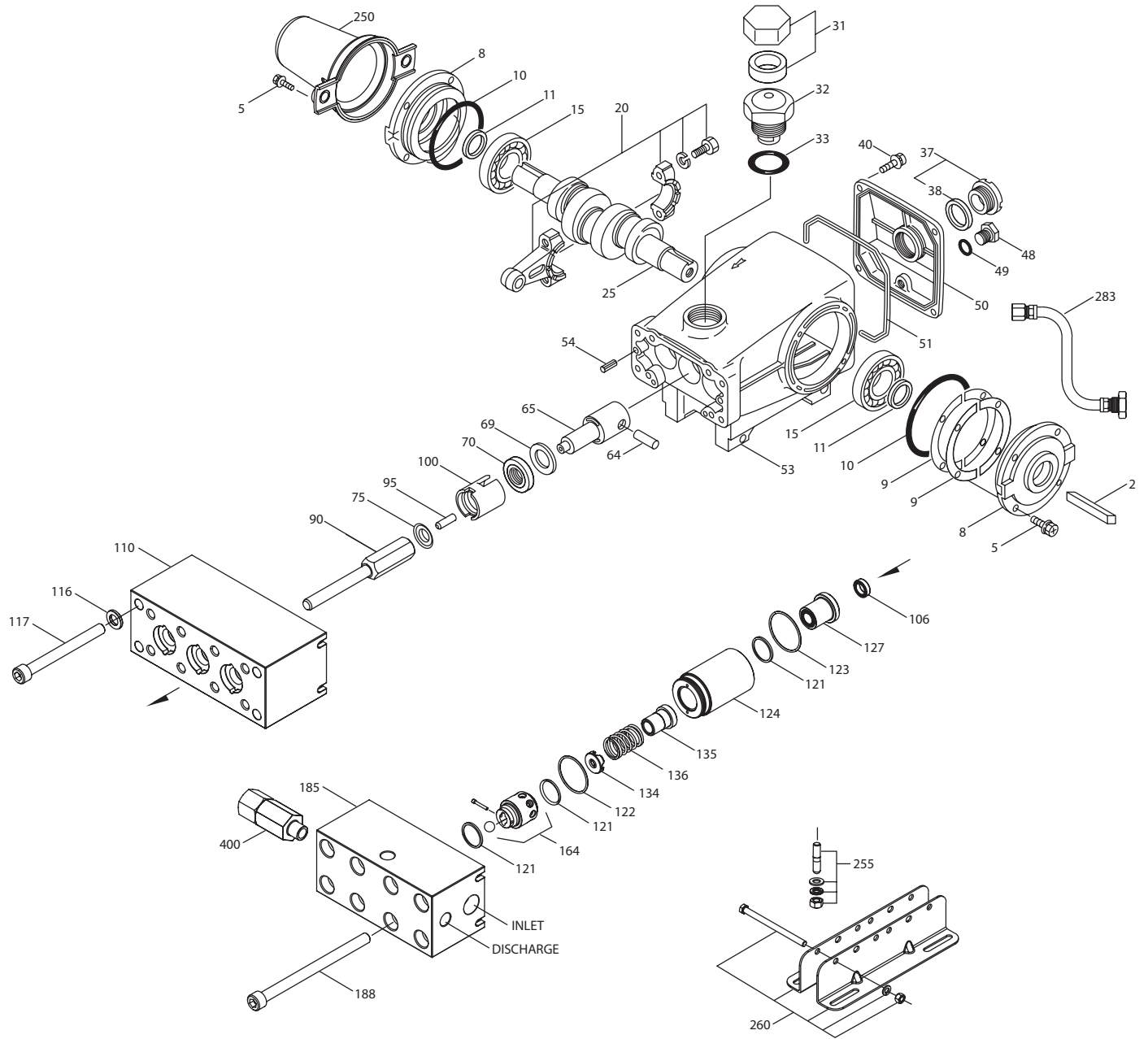
Bold Part numbers are unique to a particular pump model. Italics are optional items.

R Components comply with RoHS Directive. *Review individual parts in each kit for material code identification.

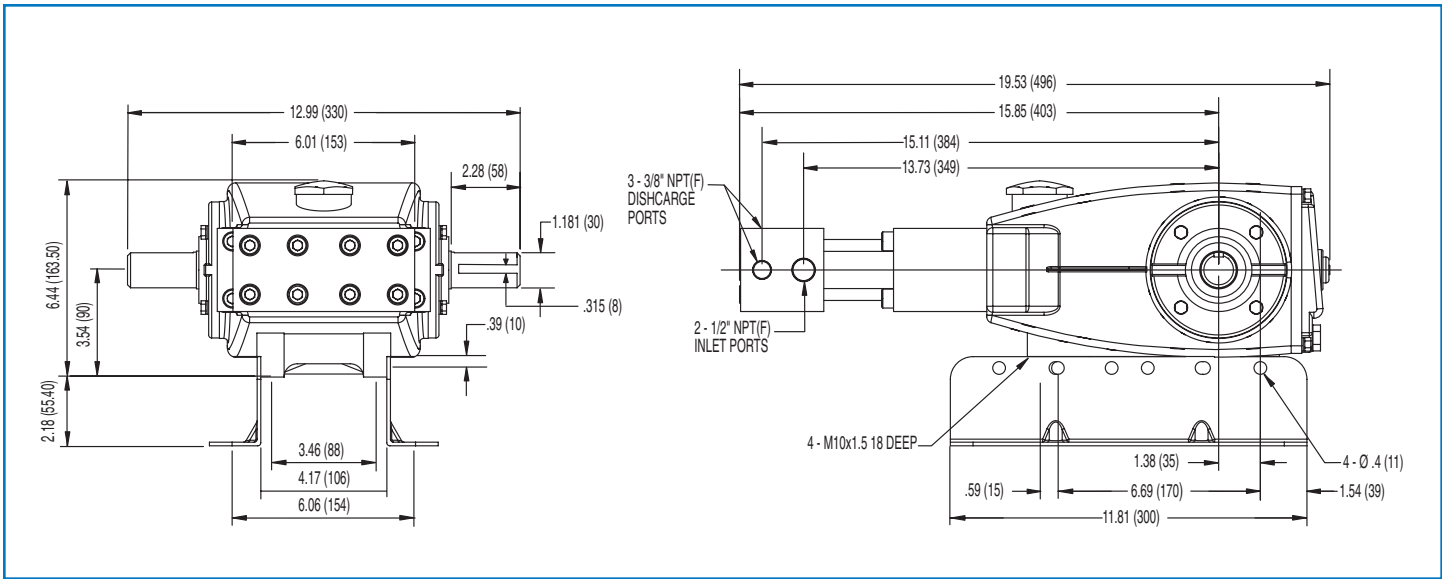
See Tech Bulletins 002, 003, 024, 035, 036, 043, 074, 077, 083 and 095 for additional information.

MATERIAL CODES (Not Part of Part Number): ABS=ABS Plastic AL=Aluminum BZ=Bronze CC=Ceramic CM=Chrome-Moly F=Cast Iron FBR=Fiber
FCM=Forged Chrome-Moly NBR=Medium Nitrile (Buna-N) NY=Nylon PE=Polyethylene PET=Polyethylene Terephthalate POP=Polypropylene
PTFE=Pure Polytetrafluoroethylene S=304SS SSHB=316SS w/High Strength Brass ST=Polyetheretherketon STCP=Steel/Chrome Plated STL=Steel
STZP=Steel/Zinc Plated TNM=Special High Strength UHMW=Ultra High Molecular Weight Polyethylene

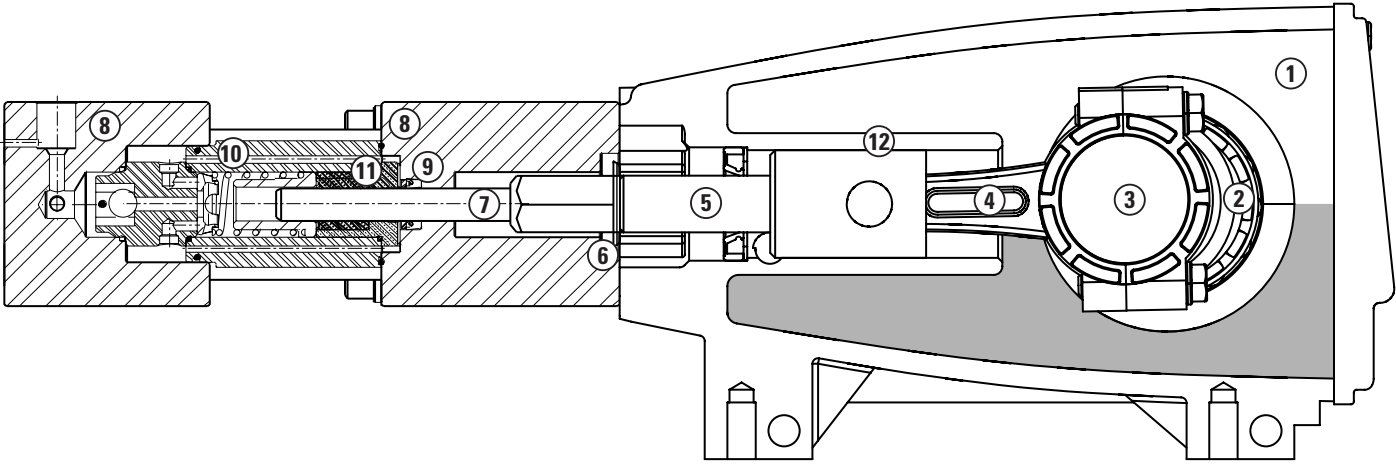
EXPLODED VIEW



Models
1810, 1810K
September 2014



Model 1810, 1810K



- 1 Die cast aluminum **crankcase** means high strength, lightweight, and excellent tolerance control.
- 2 Oversized crankshaft **bearings** provide extended bearing life and pump performance.
- 3 Chrome-moly **crankshaft** provides unmatched strength and surface hardness for long life.
- 4 Matched oversized TNM **connecting rods** noted for superior tensile strength and bearing quality.
- 5 Special stainless steel high strength **plunger rods** for high load bearing and longevity.
- 6 The stainless steel **slinger** provides back-up protection for the crankcase seal, keeping pumped liquids out of the crankcase.
- 7 Special concentric, high-density, polished, solid ceramic **plungers** provide a true wear surface and extended seal life.
- 8 **Manifolds** are a high tensile strength stainless steel for long term, continuous duty and corrosion resistance.
- 9 100% wet **seal** design adds to service life by allowing pumped liquids to cool and lubricate on both sides.
- 10 Precision stainless steel **seat and ceramic ball** provide true sphericity and extended life.
- 11 Special UHMW or PTFE supported **V-Packings** for high pressure stability, chemical compatibility and extended life.
- 12 **Crossheads** are 360° supported for uncompromising alignment.



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