

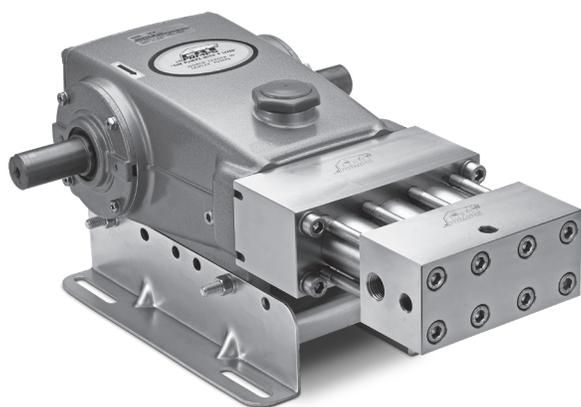
# DATA SHEET

## 18 FRAME BLOCK-STYLE PLUNGER PUMP



**Stainless Steel Model: 1810**

**Stainless Steel Flushed Model: 1810K**



Model 1810 Shown  
(Mounting rails sold separately)

### 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	6.9 to 689 bar
Pump RPM*	1500 rpm	1500 rpm
Inlet Pressure Range	Flooded to 60 psi	Flooded to 4.1 bar
Max. Liquid Temp. (NBR)	160° F	71° C
<b>Alternative seals available for high temperature up to 200° F</b>		
Bore	0.433"	11 mm
Stroke	1.181"	30 mm
Crankcase Capacity	42 oz.	1.26 l
Inlet Ports (2)	1/2" NPT(F)	1/2" NPT(F)
Flushing 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

\*Pump minimum is 100 RPM.

\*\*Flushed K Models: Special ported inlet manifold permits an external flush liquid providing cooling for hi-temp liquids and lubrication for low lubricity liquids.

### ALTERNATIVE SEAL CONFIGURATION

MATERIAL	SUFFIX CODE	MAXIMUM TEMPERATURE
NBR	—	160° F (71° C)
FPM	.0110	180° F (82° C)
PTFE	.0710	200° F (93° C)

See Reference Document 99REF017 for inlet conditions and RPM at high temperature.

$$\text{DETERMINING THE PUMP R.P.M.} \quad \frac{\text{Rated gpm}}{\text{Rated rpm}} = \frac{\text{"Desired" gpm}}{\text{"Desired" rpm}}$$

$$\text{DETERMINING THE REQUIRED H.P.} \quad \frac{\text{Hp (Electric Brake)}}{1460} = \frac{\text{gpm x psi}}{1460}$$

$$\text{DETERMINING MOTOR PULLEY SIZE} \quad \frac{\text{Motor Pulley O.D.}}{\text{Pump rpm}} = \frac{\text{Pump Pulley O.D.}}{\text{Motor rpm}}$$

Refer to pump **Service Manual** for repair procedure and additional technical information.

# PARTS LIST

ITEM	PART NUMBER	MATL	DESCRIPTION	QTY
2	30067	STL	Key (M8x7.5x25)	1
5	49651	S	Screw, HHC Sems (M8x20) (See Tech Bulletin 128)	8
8	134805	ALE	Cover, Bearing (See Tech Bulletin 118, 128)	2
9	855043	FBR	Split Shim, Bearing Cover, 2 Pc. (See Tech Bulletin 128)	2
10	11340	NBR	O-Ring, Bearing Case - 70D	2
11	43495	NBR	Seal, Oil, Crankshaft	2
12	855044	S	Split Shim, Bearing Cover, 2 Pc. (See Tech Bulletin 128)	2
15	39060	STL	Bearing, Roller	2
20	48600	TNM	Rod Assy, Connecting	3
25	43494	FCM	Crankshaft - Dual End (M30)	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	PC	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	133576	ALE	Cover, Rear (See Tech Bulletin 118, 128)	1
51	44834	NBR	O-Ring, Rear Cover - 70D	1
53	134848	ALE	Crankcase (Incls: 54) (See Tech Bulletin 118, 128)	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	3
75	43506	S	Slinger, Barrier	3
90	76595	CC	Assembly, Plunger, M11x80, w/S Holder	3
95	31585	S	Stud, Plunger (M6 x 20)	3
100	995590	POP	Retainer, Seal	3
106	76111	ST2	Seal, LPS	3
110	<b>76840</b>	S	Block, Housing	1
—	<b>76850</b>	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
—	76113	FPM	O-Ring, Front Cylinder - 70D	3
123	31475	NBR	O-Ring, Rear Cylinder - 70D	3
—	31476	FPM	O-Ring, Rear Cylinder - 70D	3
124	<b>76490</b>	S	Cylinder	3
—	<b>76495</b>	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	855046	NY	Protector, Shaft w/Two SS Screws (See Tech Bulletin 128)	1
255	30264	STZP	Mount, Direct	1
260	30613	STZPR	Mount, Rail Assy	1
—	990550	STZPR	Mount, Rail (Required on Diesel/Gas)	1
—	76513	STZPR	Mount, Rail Assy	1
269	30206	F	Pulley (10") AB [See Tech Bulletin 003]	1
274	30059	STL	Hub, "H" (M30) (Keyway M8) [See Tech Bulletin 003]	1
283	34334	—	Kit, Oil Drain (3/8" x 24")	1
299	<b>992810</b>	S	Head, Complete, w/Plungers	1
—	<b>992820</b>	S	Head, Complete, w/Plungers (Model 1810K)	1
300	76810	NBR*	Kit, Seal (Incls: 106, 121, 122, 123, 127) – <b>Standard</b>	1
—	76811	FPM*	Kit, Seal (Incls: 106, 121, 122, 123, 127) – <b>0110</b>	1
310	76820	NBR	Kit, Valve (Incls: 121, 122, 123, 134, 136, 164)	1
400	9920	SS	Assembly, Rupture Disc (Relief Valve) (Includes 3 discs)	1
—	76010	SS	Rupture Disc, 15K	1
—	6107	—	Oil, Bottle (21 oz.) ISO-68 Hydraulic (Fill to specified crankcase capacity prior to start-up)	2
—	6119	—	Lubricant, Antiseize (2 oz.) (See Tech Bulletin 095)	1

**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 003, 024, 035, 036, 043, 074, 083, 095, 118 and 128 for additional information.

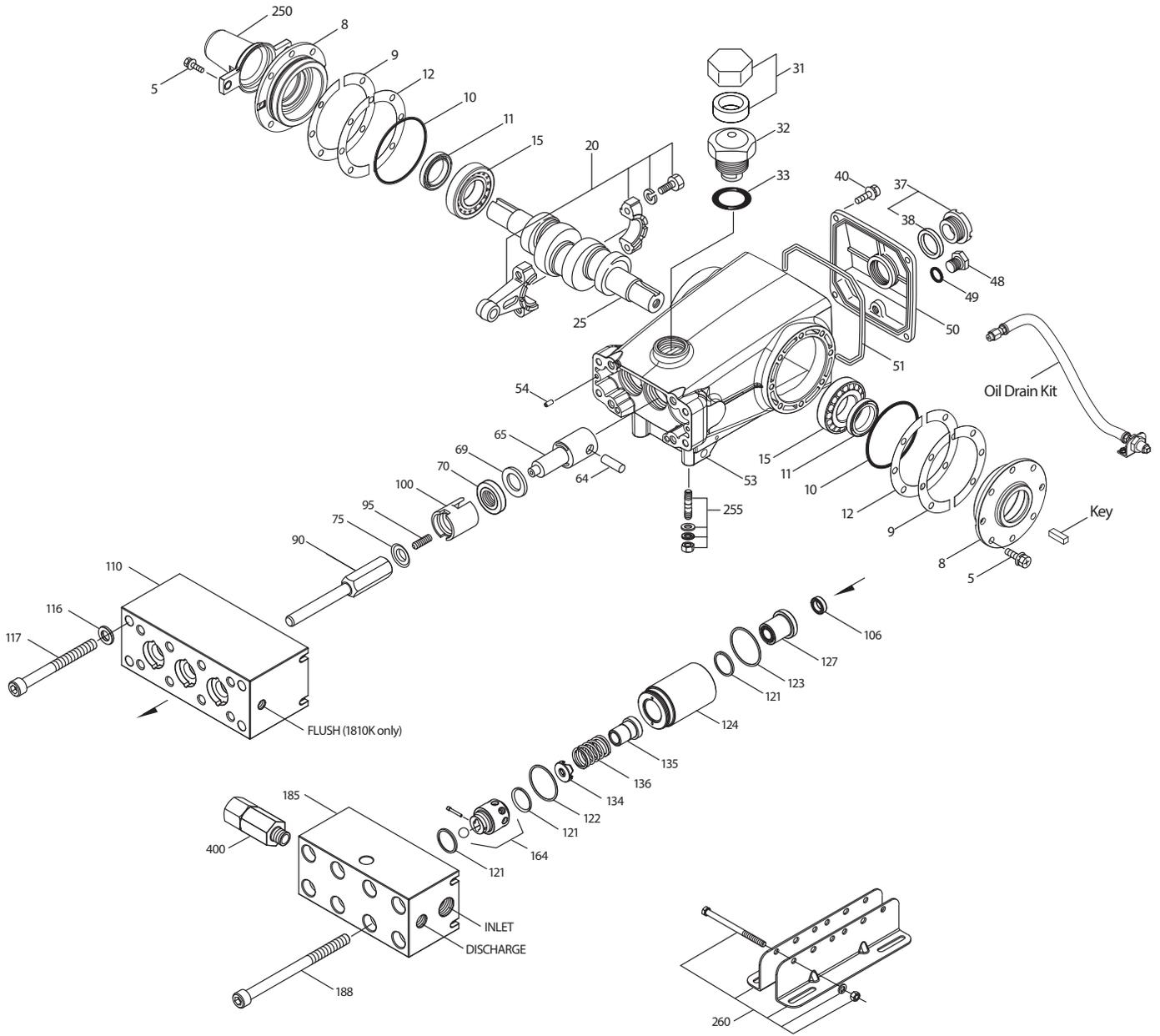
MATERIAL CODES (Not Part of Part Number): ABS=ABS Plastic ALE=Aluminum Epoxy CC=Ceramic CM=Chrome-Moly F=Cast Iron FBR=Fiber FCM=Forged Chrome-Moly FPM=Fluorocarbon

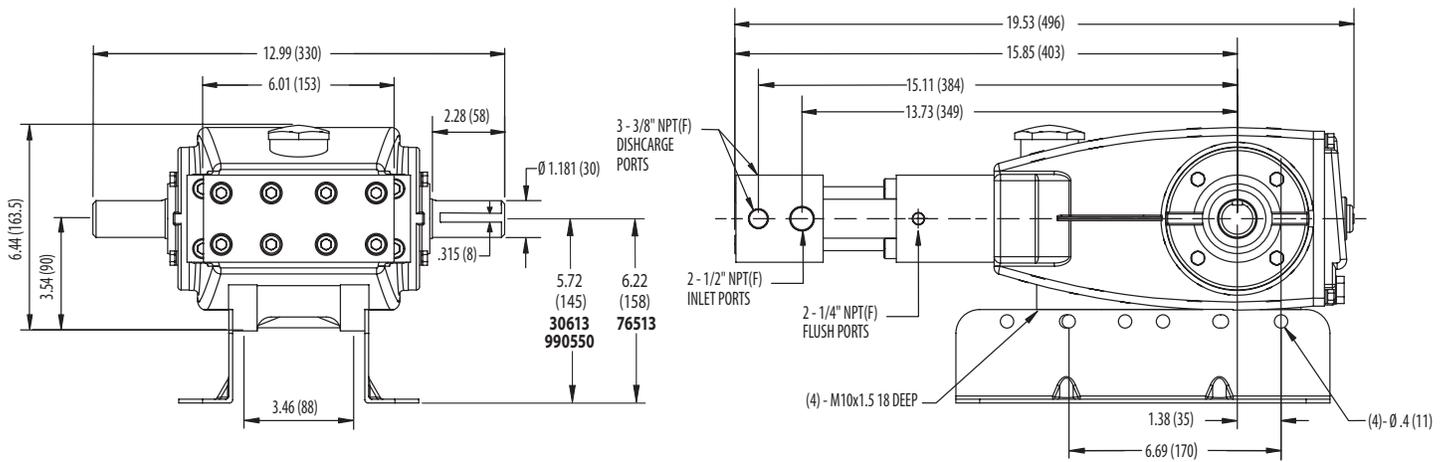
NBR=Medium Nitrile (Buna-N) NY=Nylon PC=Poly Carbonate PE=Polyethylene PET=Polyethylene Terephthalate POP=Polypropylene PTFE=Pure Polytetrafluoroethylene S=304SS

SSHB=316SS w/High Strength Brass SS=316SS ST=Polyetheretherketon ST2=Special PTFE STCP=Steel/Chrome Plated STL=Steel STZP=Steel/Zinc Plated

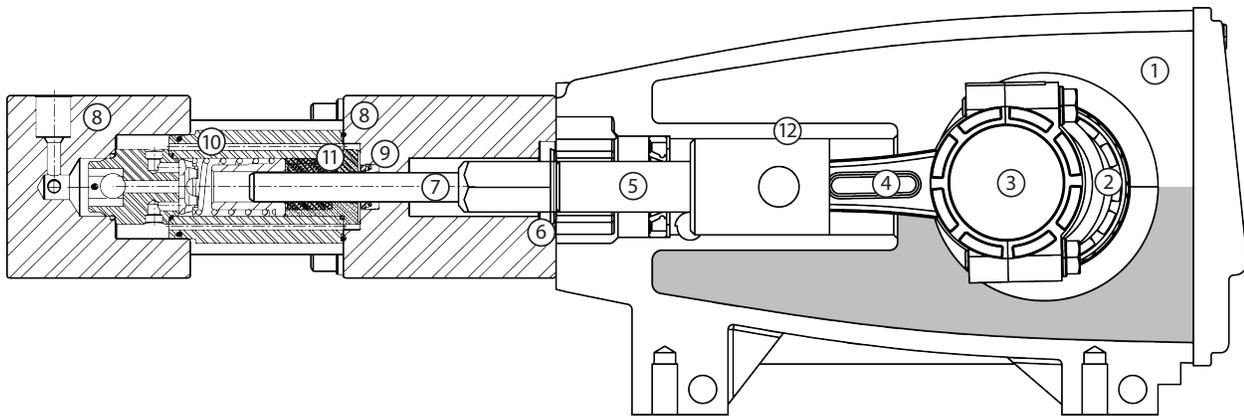
TNM=Special High Strength UHMW=Ultra High Molecular Weight Polyethylene

# EXPLODED VIEW





Models 1810, 1810K



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.

**⚠ 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](http://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](http://www.catpumps.com/warranty).