

# DATA SHEET

## 18 FRAME BLOCK-STYLE PLUNGER PUMPS



**Stainless Steel  
Model:**

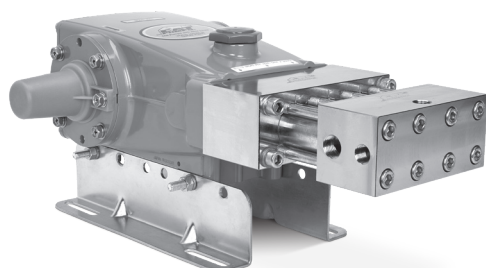
**1810**

**Stainless Steel  
Flushed Model:**

**1810K**

Manifolds and cylinders are 17-4SS stainless steel. Discharge valve assemblies are made from 17-4SS stainless steel with a ceramic ball. Internal packing assembly includes bronze cylinder supports and UHMW V-packings.

See Parts List to confirm material compatibility with the fluid pumped before use.



Model 1810 Shown  
(Mounting rails sold separately)

### FEATURES

- Triplex plunger design ensures high efficiency and low pulsation.
- V-packings and low-pressure seals are completely lubricated and cooled, greatly increasing service life.
- Special UHMW or PTFE V-packings with bronze cylinder supports provide extra stability at high-pressure and extend seal life.
- Low upswept volume maximizes volumetric efficiency.
- Model 1810K offers external flush for higher temperature or low-lubricity liquids.
- Special high-density, polished, concentric ceramic plungers provide a true wear surface and extended seal life.

### SPECIFICATIONS

	U.S. Measure	Metric Measure
Flow	3.0 gpm	11.4 lpm
Pressure Range	100–10,000 psi	6.9–689 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

Alternative seals available for higher temperatures up to 200°F

Bore	0.433"	11 mm
Stroke	1.181"	30 mm
Crankcase Capacity	42 oz	1.26 l
Inlet Ports (2)	½" NPT(F)	½" NPT(F)
Flushing Ports (2) "C"	¼" NPT(F)	¼" NPT(F)
Discharge Ports (3)	⅜" NPT(F)	⅜" NPT(F)
Shaft Diameter	1.181"	30 mm
Pulley Mounting	Either Side	Either Side
Weight	60 lbs	27.2 kg
Dimensions	19.53 x 12.99 x 6.45"	496 x 330 x 164 mm

\*Pump minimum is 100 RPM.

### 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 **Tech Bulletin 002** for inlet conditions and RPM at high-temperature.

<b>DETERMINING THE PUMP RPM</b>	Rated gpm Rated rpm	=	Desired gpm Desired rpm
<b>DETERMINING THE REQUIRED HP</b>	hp (Electric Brake)	=	gpm x psi 1460
<b>DETERMINING MOTOR PULLEY SIZE</b>	Motor Pulley OD Pump rpm	=	Pump Pulley OD Motor rpm

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

## PARTS LIST

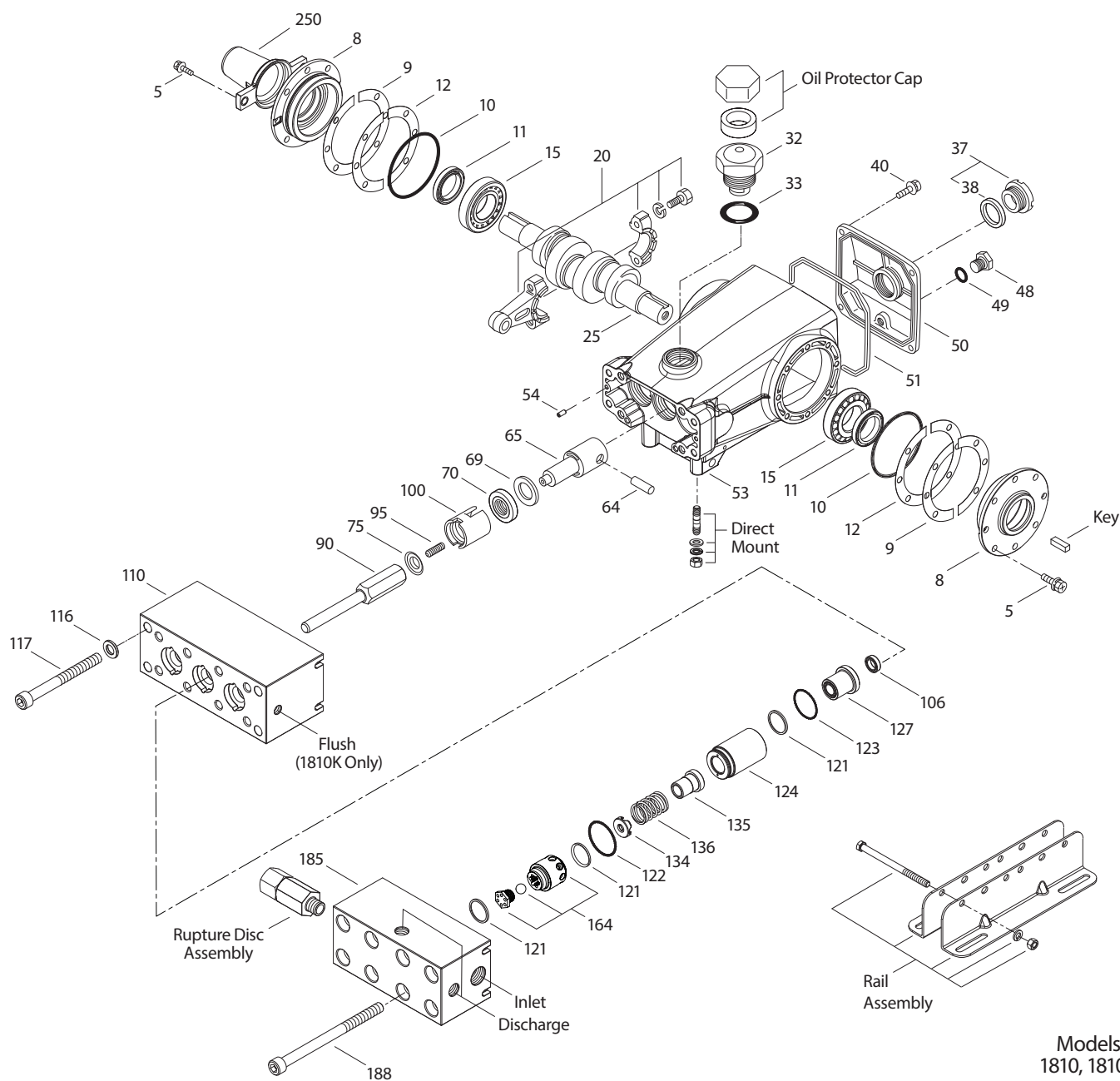
ITEM	PART NUMBER	MATL	DESCRIPTION	QTY
5	49651	S	Screw, HHC Sems (M8 x 20) (See Tech Bulletins 074, 128)	8
8	134805	ALE	Cover, Bearing (See Tech Bulletins 118, 128)	2
9	855043	FBR	Split Shim, Bearing Cover, 2-Piece (See Tech Bulletin 128)	2
10	11340	NBR	O-Ring, Bearing Case–70D	2
11	43495	NBR	Seal, Oil, Crankshaft	2
12	855044	SS	Split Shim, Bearing Cover, 2-Piece (See Tech Bulletin 128)	2
15	39060	STL	Bearing, Roller	2
20	48600	TNM	Rod Assembly, Connecting (See Tech Bulletin 074)	3
25	43494	FCM	Crankshaft – Dual End (M30)	1
32	43211	ABS	Cap, Oil Filler	1
33	14177	NBR	O-Ring, Filler Cap–70D	1
37	92241	PC	Gauge, Oil, Bubble with Gasket–80D (See Tech Bulletin 074)	1
38	44428	NBR	Gasket, Flat, Oil Gauge–80D	1
40	92542	S	Screw, HHC Sems (M6 x 20) (See Tech Bulletin 074)	4
48	25625	STCP	Plug, Drain (¼" x 19 BSP)	1
49	23170	NBR	O-Ring, Drain Plug–70D	1
50	133576	ALE	Cover, Rear (See Tech Bulletins 118, 128)	1
51	44834	NBR	O-Ring, Rear Cover–70D	1
53	134889	ALE	Crankcase, Assembly (Includes: 54) (See Tech Bulletins 118, 128)	1
54	27488	S	Pin, Guide	2
64	43507	CM	Pin, Crosshead	3
65	48892	SSBZ	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, M11 x 80, with Stainless Steel Holder	3
95	31585	S	Stud, Plunger (M6 x 20)	3
100	995590	POP	Retainer, Seal	3
106	76111	ST2	Seal, Low-Pressure	3
110	<b>76840</b>	SFSS	Block, Housing	1
—	<b>76850</b>	SFSS	Block, Housing (Model 1810K)	1
116	31545	S	Washer, Flat (M10)	4
117	31695	S	Screw, HSH (M10 x 100) (See Tech Bulletin 074)	4
121	31565	PTFE	Ring, Cylinder Sealing	9
122	31485	NBR	O-Ring, Front Cylinder, Smaller–70D	3
123	31475	NBR	O-Ring, Rear Cylinder, Larger–70D	3
124	<b>76490</b>	SFSS	Cylinder	3
—	<b>76495</b>	SFSS	Cylinder (Model 1810K)	3
127	76310	UHMW	Assembly, V-Packing with Bronze Cylinder Support	3
134	76350	S455	Valve, Inlet	3
135	76115	PET	Retainer, Inlet Spring	3
136	31575	S	Spring, Inlet Valve	3
164	76915	SFSS	Seat, Ball Assembly with Ceramic Ball	3
185	76885	SFSS	Manifold, Inlet/Discharge, Block-Style	1
188	31692	S	Screw, HSH (M10 x 140) (See Tech Bulletin 074)	8
250	855046	NY	Protector, Shaft with 2–Stainless Steel Screws (See Tech Bulletin 128)	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. For additional technical information see [www.catpumps.com/literature/tech-bulletins](http://www.catpumps.com/literature/tech-bulletins).

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  
 SFSS=17-4SS SS=316SS SSBZ=316SS/Bronze 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



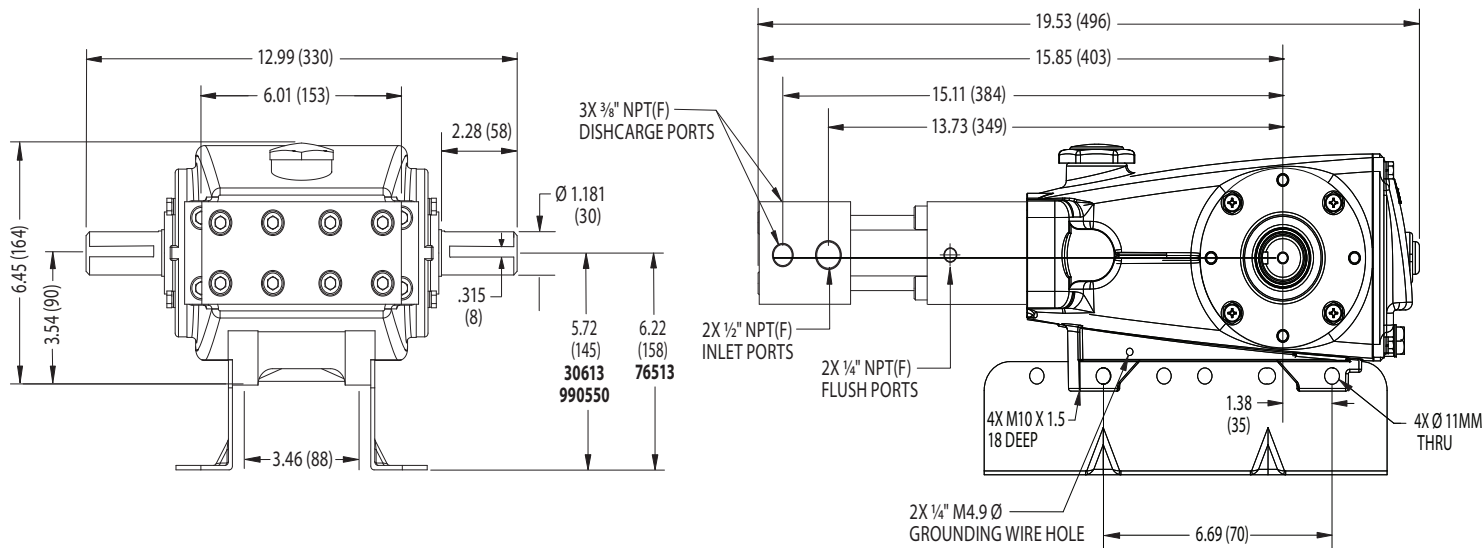
Models  
1810, 1810K  
June 2023

### OPTIONAL PARTS AND ACCESSORIES

PART	DESCRIPTION	QTY
30067	Key (M8 x 7.5 x 25)	1
30613	Assembly, Rail (5.72" See Dimensional Drawing)	1
990550	Assembly, Rail (5.72" See Dimensional Drawing)	1
76513	Assembly, Rail (6.22" See Dimensional Drawing)	1
30264	Mount, Direct	1
828710	Protector, Oil Cap	1
30059	Hub, "H", 30 mm (Not Shown)	1
30206	Pulley, 10" 2-Groove H (Not Shown)	2
34334	Kit, Oil Drain (3/8" x 24") (Not Shown)	1
9920	Assembly, Rupture Disc (3/8" NPT[M] x 3/8" NPT[F])	1

### SERVICE PARTS

PART	DESCRIPTION	QTY
<b>76810</b>	Kit, Seal – Standard NBR	1
<b>76820</b>	Kit, Valve – Standard NBR	1
6107	Oil, Bottle (21.0 oz) ISO-68 Hydraulic (Fill to Specified Crankcase Capacity Prior to Start-up)	2
6124	Gasket, Liquid (3 oz)	1
6139	Lubricant, Anti-Seize (8 oz) (See Tech Bulletin 095)	1
<b>992810</b>	Head, Complete with NBR Seals and O-Rings (Model 1810)	1
<b>992820</b>	Head, Complete with NBR Seals and O-Rings (Model 1810K)	1



Models 1810, 1810K

## SEAL KITS

One (1) seal kit required per pump

PUMP MODEL	NBR (STD)	FPM (.0110)	PTFE (.0710)
1810, 1810K	<b>76810*</b>	<b>76811*</b>	<b>76827*</b>

ITEM (Included in Seal Kits)	DESCRIPTION			QTY
106	76111	76111	Seal, Low-Pressure with S-Spring	3
121	31565	31565	Ring, Cylinder Sealing	9
122	31485	76113	O-Ring, Front Cylinder	3
123	31475	31476	O-Ring, Rear Cylinder	3
127	76310	76310	Assembly, V-Packing with Bronze Cylinder Support	3

\* Review material codes for individual items (UHMW generally may be used as alternative)

## VALVE KITS

One (1) valve kits required per pump

PUMP MODEL	NBR (STD)	FPM (.0110)	PTFE (.0710)
1810, 1810K	<b>76820</b>	<b>76852</b>	<b>76852</b>

ITEM (Included in Valve Kits)	DESCRIPTION			QTY
121	31565	31565	Ring, Cylinder Sealing	6
122	31485	76113	O-Ring, Front Cylinder	3
123	31475	31476	O-Ring, Rear Cylinder	3
134	76350	76350	Valve, Inlet	3
136	31575	31575	Spring	3
164	76915	76915	Seat, Ball Assembly with Ceramic Ball	3

### ⚠ CAUTIONS AND WARNINGS

All high-pressure systems require a primary pressure regulating device (e.g. regulator, unloader) and a secondary pressure relief device (e.g. 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/dynamic-literature/cautions-and-warnings](http://www.catpumps.com/dynamic-literature/cautions-and-warnings) or can be requested directly from Cat Pumps.

### WARRANTY

View the Limited Warranty online at [www.catpumps.com/literature/cat-pumps-limited-warranty](http://www.catpumps.com/literature/cat-pumps-limited-warranty)