

DATA SHEET

38 FRAME BLOCK-STYLE PLUNGER PUMPS

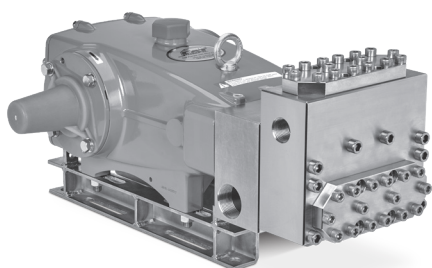


**Stainless Steel
Model:**

3821HS

**Stainless Steel
Flushed Model:**

3821KHS



Model 3821HS Shown
(Shaft protector included and mounting rails not included)

FEATURES

- Triplex plunger design ensures high efficiency and low pulsation.
- Advanced connecting rod and plunger rod materials optimize drive-end operation for continuous-duty applications.
- V-packings and low-pressure seals are completely lubricated and cooled by pumped liquid, greatly increasing service life.
- Model 3821KHS offers an external flush for high-temperature or low-lubricity liquids.
- Pump comes standard with NBR seals. Alternative seal materials are available for higher temperature or chemical compatibility.

SPECIFICATIONS

	U.S. Measure	Metric Measure
Flow	25 gpm	95 lpm
Pump Pressure Range	100–2000 psi	6.9–138 bar
Pump RPM*	870 rpm	870 rpm
Inlet Pressure Range	Flooded to 70 psi	Flooded to 4.8 bar
Max. Liquid Temp. (NBR)	160° F	71° C

Alternative seals available for higher temperatures up to 180° F

Bore	1.260"	32 mm
Stroke	1.890"	48 mm
Crankcase Capacity	4.2 qts	4 l
Inlet Ports (2)	1½" NPT(F)	1½" NPT (F)
Flush Ports (2)	½" NPT (F)	½" NPT (F)
Discharge Ports (2)	1" NPT (F)	1" NPT (F)
Shaft Diameter	1.378"	35 mm
Pulley Mounting	Either Side	Either Side
Weight	167 lbs	75 kg
Dimensions	24.84 x 18.11 x 9.88"	631 x 460 x 251 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)
EPDM	.0220	160° F	(71° C)

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

DETERMINING THE PUMP RPM	$\frac{\text{Rated gpm}}{\text{Rated rpm}} = \frac{\text{Desired gpm}}{\text{Desired rpm}}$
DETERMINING THE REQUIRED HP	$\frac{\text{hp}}{\text{(Electric Brake)}} = \frac{\text{gpm} \times \text{psi}}{1460}$
DETERMINING MOTOR PULLEY SIZE	$\frac{\text{Motor Pulley OD}}{\text{Pump rpm}} = \frac{\text{Pump Pulley OD}}{\text{Motor rpm}}$

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

PARTS LIST

ITEM	PN	MATL	PN	MATL	DESCRIPTION	QTY
	3821HS		3821KHS			
5	96049	S	96049	S	Screw, HH Sems (M10x25) (See Tech Bulletin 074)	8
8	134604	ALE	134604	ALE	Cover, Bearing	2
9	815279	FBR	815279	FBR	Shim, Split 2-Piece	4
10	12398	NBR	12398	NBR	O-Ring, Bearing Cover-70D	2
11	13296	NBR	13296	NBR	Seal, Oil, Crankshaft	2
12	855049	S	855049	S	Shim, Split 2-Piece	0-2
15	29326	STL	29326	STL	Bearing, Roller	2
20	126725	BZ R	126725	BZ R	Rod, Connecting Assembly (Includes: 21, 22, 23) (See Tech Bulletin 074)	3
21	126749	STCP R	126749	STCP R	Washer, Locking (M10)	3
22	126593	STCP R	126593	STCP R	Washer, Flat (M10)	6
23	122045	STZP	122045	STZP	Screw, HH (M10 x 55)	6
25	29325	FCM	29325	FCM	Crankshaft, Dual-End (M48)	1
31	828710	PE	828710	PE	Protector, Oil Cap with Foam Gasket	1
32	43211	ABS	43211	ABS	Cap, Oil Filler	1
33	14177	NBR	14177	NBR	O-Ring, Oil Filler Cap-70D	1
34	126743	STCP R	126743	STCP R	Bolt, Eye (M12 x 1.75) (For Lifting Pump Only)	1
37	92241	PC	92241	PC	Gauge, Oil Bubble with Gasket	1
38	44428	NBR	44428	NBR	Gasket, Flat, Oil Gauge-80D	1
40	125753	S	125753	S	Screw, HH Sems (M8 x 25) (See Tech Bulletin 074)	8
48	25625	STCP	25625	STCP	Plug, Drain (1/4" x 19 BSP)	1
49	23170	NBR	23170	NBR	O-Ring, Drain Plug-70D	1
50	45936	ALE	45936	ALE	Cover, Rear	1
51	16612	NBR	16612	NBR	O-Ring, Cover-70D	1
53	134784	ALE	134784	ALE	Crankcase Assembly (Includes: 54)	1
54	27488	S	27488	S	Pins, Guide	2
56	27790	POP	27790	POP	Pan, Oil	1
59	92538	S	92538	S	Screw, HH Sems (M6 x 16)	2
64	43864	CM	43864	CM	Pin, Crosshead	3
65	49166	SSHB	49166	SSHB	Rod, Plunger	3
69	126587	STCP R	126587	STCP R	Washer, Oil Seal	3
70	100488	NBR	100488	NBR	Seal, Oil, Crankcase	3
75	43865	S	43865	S	Slinger, Barrier	3
88	45676	S	45676	S	Washer, Keyhole (M16)	3
90	43957	CC	43957	CC	Plunger (M32 x 145)	3
95	89778	SS	89778	SS	Stud, Plunger Retainer (M10 x 135)	3
96	20189	PTFE	20189	PTFE	Backup Ring, Plunger Retainer	3
97	11345	NBR	11345	NBR	O-Ring, Plunger Retainer-70D	3
98	44085	SS	44085	SS	Gasket, Plunger Retainer	3
99	44084	SS	44084	SS	Retainer, Plunger (M10)	3
100	814279	PVDF	814279	PVDF	Retainer, Seal, 2-Piece	3
101	44106	—	44106	—	Wick, Long Tab	3
104	43875	NBR	43875	NBR	O-Ring, Inlet Adapter-70D	3
105	45562	SS	45562	SS	Adapter, Inlet	3
106	44098	NBR	44098	NBR	Seal, Low-Pressure with SS-Spring	3
107	44101	SS	44101	SS	Washer, Low-Pressure Seal	3
110	701286	SS	—	—	Manifold, Inlet	1
	—	—	701408	SS	Manifold, Inlet Flushed	1
111	701116	SS	701116	SS	Plug, Inlet (1½" NPT[M])	1
112	701794	NBR	701794	NBR	O-Ring, Inlet Spacer-70D	6
113	701319	PTFE	701319	PTFE	Backup Ring, Inlet Spacer	6
114	701317	SS	701317	SS	Spacer, Inlet	3
117	701252	SS	701252	SS	Screw, HSH (M14 x 100) (See Tech Bulletin 074)	4
118	701077	SS	—	—	Plug (1/4" NPT[M])	1
122	49782	SS	49782	SS	Spacer, V-Packing	3
123	12391	NBR	12391	NBR	O-Ring, V-Packing Cylinder-70D	3
124	49783	SS	49783	SS	Cylinder, V-Packing	3
126	48390	D	48390	D	Adapter, Female	3
127	44608	STG	44608	STG	V-Packing	6
128	45565	SS	45565	SS	Adapter, Male	3
141	49743	SS	49743	SS	Springs, Coil	3
158	48362	D	48362	D	Backup Ring, V-Packing Cylinder	3
159	48860	NBR	48860	NBR	O-Ring, V-Packing Cylinder-90D	3
162	48363	D	48363	D	Backup Ring, Seat	6
163	26142	NBR	26142	NBR	O-Ring, Seat-80D	6
164	44612	SS	44612	SS	Seat, Stepped	6
166	44108	SS	44108	SS	Valve	6
167	44109	SS	44109	SS	Spring	6
168	44728	PVDF	44728	PVDF	Retainer, Spring	6
170	44729	SS	44729	SS	Washer, Spring Retainer	6
171	44644	SS	44644	SS	Spring, Coil (70 kg), Valve Plug	6
172	89827	NBR	89827	NBR	O-Ring, Valve Plug-90D	6
173	48364	D	48364	D	Backup Ring, Valve Plug	6
174	701278	SS	701278	SS	Plug, Valve	6
176	701316	SS	701316	SS	Cover, Valve	2
177	87951	S	87951	S	Screw, HSH (M10 x 30) (See Tech Bulletin 074)	32
185	701315	SS	701315	SS	Manifold, Discharge	1
188	701279	S	701279	S	Screw, HSH (M12 x 100) (See Tech Bulletin 074)	12
196	701342	SS	701342	SS	Plug, Discharge (1" NPT[M]) Not Shown	1
250	855042	NY	855042	NY	Protector, Shaft with Two (2) Screws, Lockwashers and Washers	1

Bold print part numbers are unique to a particular pump model.

R Components comply with RoHS Directive. For additional technical information see www.catpumps.com/literature/tech-bulletins.

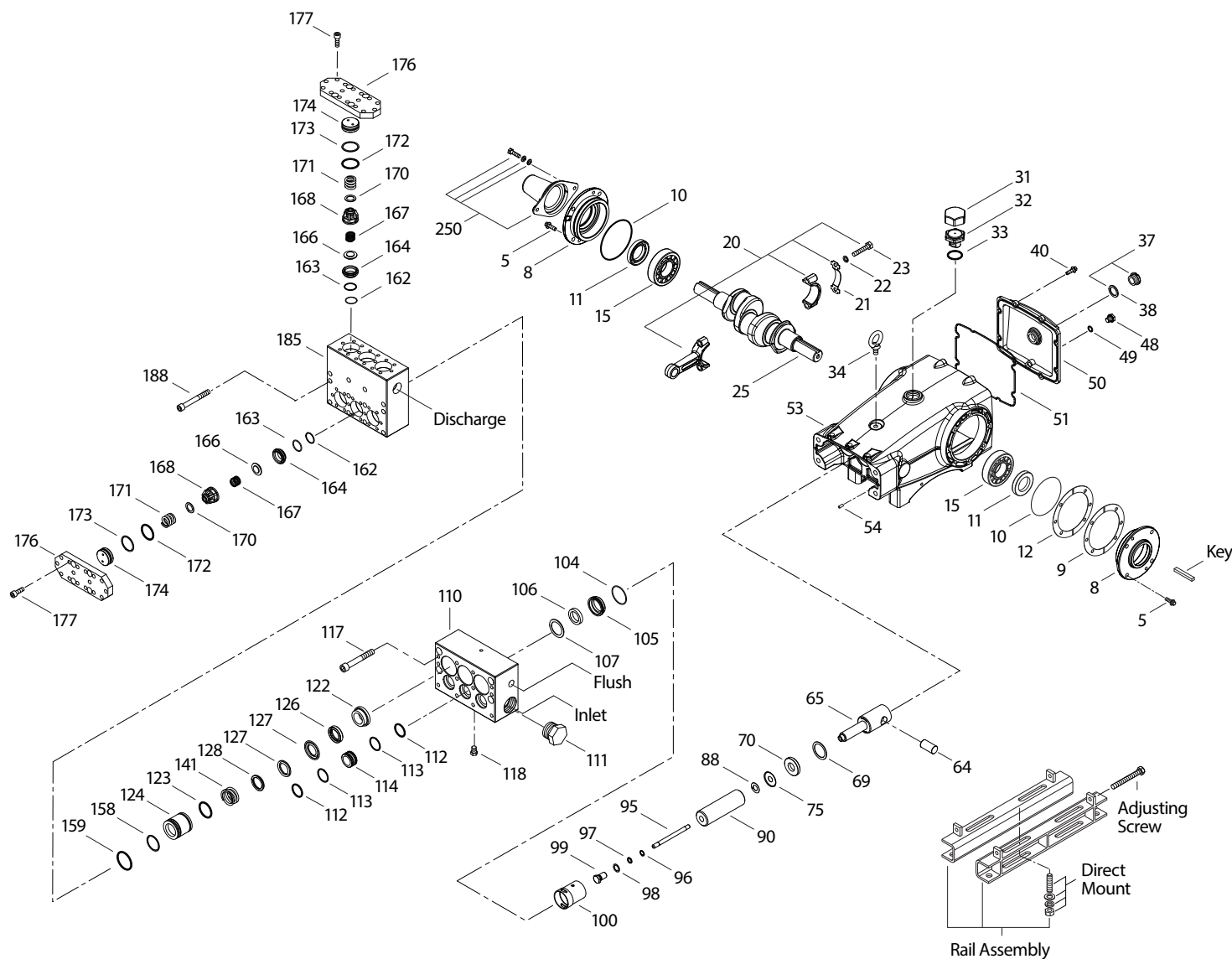
MATERIAL CODES (Not Part of Part Number): ABS=ABS Plastic ALE=Aluminum Epoxy BZ=Bronze CC=Ceramic CM=Chrome-Moly D=Acetal EPDM=Ethylene Propylene Diene Monomer

F=Cast Iron FBR=Fiber FCM=Forged Chrome-moly FPM=Fluorocarbon NBR=Medium Nitrile (Buna-N) NBRs=Buna, Silicone Free NY=Nylon PC=Poly Carbonate

PE=Polyethylene POP=Polypropylene PTFE=Pure Polytetrafluoroethylene PVDF=Polyvinylidene Fluoride S=304SS SFG=Special Blend FPM SS=316SS

SSHB=316SS/High-Strength Brass STG=Special Blend PTFE White STL=Steel STCP=Steel/Chrome Plated STZP=Steel/Zinc Plated

Optional Parts and Accessories and Service Parts listed on page 3. Standard and Optional Seal and Valve Kits listed on page 4.

EXPLODED VIEW

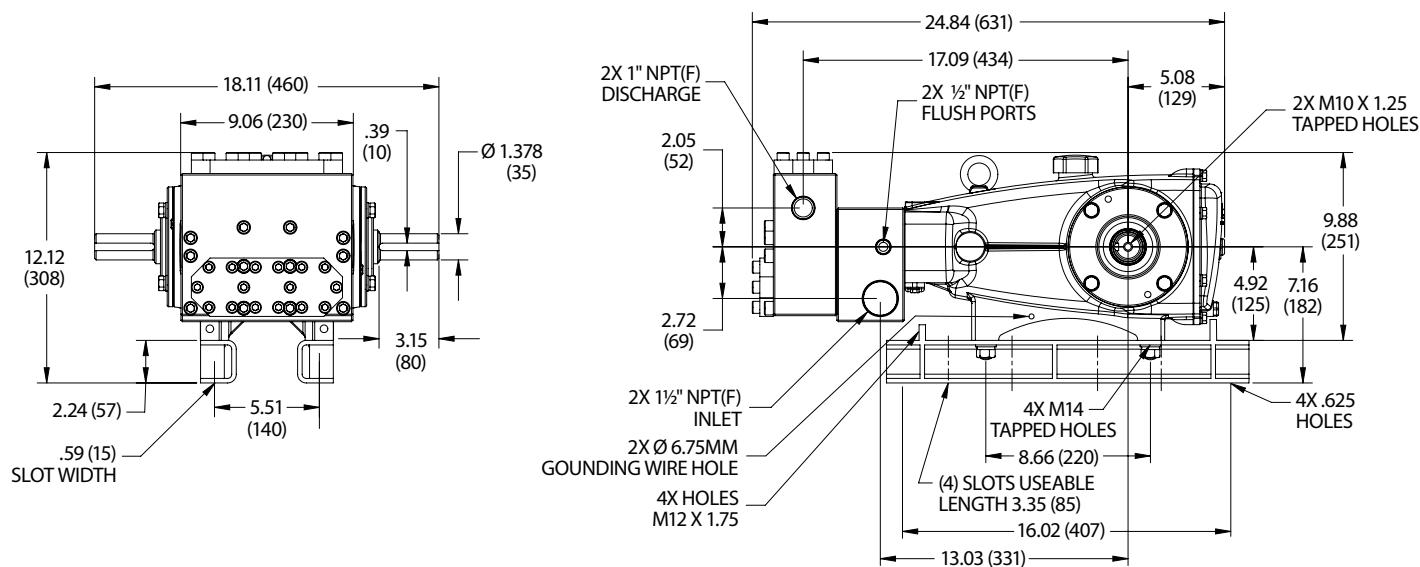
Models
3821HS
3821KHS
November 2023

OPTIONAL PARTS AND ACCESSORIES

PART	DESCRIPTION	QTY
34021	Key (M10 x 8 x 70)	1
76514	Mount, Rail Assembly (S) (Includes: 34039)	1
34039	Mount, Direct (S)	1
92674	Mount, Rail Assembly (STZP R) (Includes: 34018)	1
34018	Mount, Direct (STZP R)	1
80540	Screw, HH (M12 x 100) (Rail Adjusting Screw)	2
30278	Oiler, 1 oz (Not Shown)	3
34314	Kit, Oil Drain ($\frac{3}{8}$ " x 48") (Not Shown)	1
990663	Assembly, Flushing, 5 gal, 115V, 1.1 Amp, $\frac{1}{2}$ " NPT (Model 3821KHS) (Not Shown)	1
819000	Assembly, Crankcase, Cast Iron Conversion (Not Shown)	1

SERVICE PARTS

PART	DESCRIPTION	QTY
701699	Kit, Seal-Standard NBR	1
34017	Kit, Valve-Standard NBR	2
6100	Oil, Case (12-21 oz bottles) (Fill to Specific Crankcase Capacity Prior to Start-up)	1
6139	Lubricant, Anti-seize (8 oz) (See Tech Bulletin 095)	1
6124	Gasket, Liquid (3 oz)	1
32273	Crankcase Oil Seal Removal and Installation Kit (Not Shown) (Includes: Oil Seals, Guide Tool, Screws, Washers, Driver)	1
30696	Reverse Pliers (Not Shown)	1
901401	Head, Complete, with NBR Seals and O-Rings (Model 3821HS)	1
901405	Head, Complete, Flushed with NBR Seals and O-Rings (Model 3821KHS)	1



Models 3821HS, 3821KHS

SEAL KITS

One (1) seal kit required per pump

PUMP MODELS	NBR (STD)	FPM (.0110)	EPDM (.0220) ♦
3821HS, 3821KHS	701699*	33269	701714*

ITEM (Included in Seal Kits)				DESCRIPTION	QTY
97	11345	11375	701490	O-Ring, Plunger Retainer	3
104	43875	44826	701656	O-Ring, Inlet Adapter	3
106	44098	44827	48244	Seal, Low-Pressure with SS-Spring	3
112	701794	701318	701495	O-Ring, Inlet Spacer	6
113	701319	701319	701319	Backup Ring, Inlet Spacer	6
123	12391	13266	701657	O-Ring, V-Packing Cylinder	3
127	44608	44829	44608	V-Packing	6
158	48362	48362	48362	Backup Ring, V-Packing Cylinder	3
159	48860	20137	701492	O-Ring, V-Packing Cylinder	3

♦ Silicone oil/grease required *Review material codes for individual items (STG generally may be used as alternative)

VALVE KITS

Two (2) valve kits required per pump

PUMP MODELS	NBR (STD)	FPM (.0110)	EPDM (.0220) ♦
3821HS, 3821KHS	34017	31955	31952

ITEM (Included in Valve Kits)				DESCRIPTION	QTY
162	48363	48363	48363	Backup Ring, Valve Seat	3
163	26142	14330	701493	O-Ring, Valve Seat	3
164	44612	44612	44612	Seat, Stepped	3
166	44108	44108	44108	Valve	3
167	44109	44109	44109	Spring	3
168	44728	44728	44728	Retainer, Spring	3
170	44729	44729	44729	Washer, Spring Retainer	3
172	89827	11747	701494	O-Ring, Valve Plug	3
173	48364	48364	48364	Backup Ring, Valve Plug	3

♦ Silicone oil/grease required

⚠ 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 or can be requested directly from Cat Pumps.

WARRANTY

View the Limited Warranty online at www.catpumps.com/literature/cat-pumps-limited-warranty