

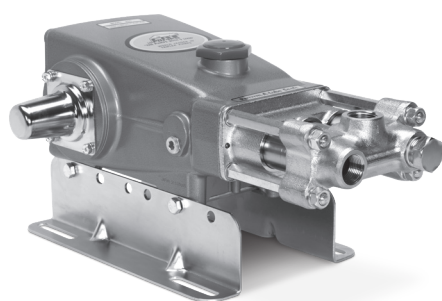
# DATA SHEET

## 10 FRAME PISTON PUMPS



**Brass Models: 623, 820, 1010**

**Stainless Steel Models: 621, 821, 1011**



Model 820 Shown  
(Shaft protector and mounting rails sold separately)

### FEATURES

- Triplex Uniflow design provides continuous forward liquid flow for smooth operation.
- Wetted cups and floating pistons are lubricated and cooled by pumped liquid, resulting in longer cup life.
- Mechanically-actuated inlet valves create a strong lift, helping to prime the pump.
- Optional 316 stainless steel manifolds provide added corrosion resistance.
- Pump comes standard with NBR seals. Alternative seal materials are available for higher temperature or chemical compatibility.

### COMMON

SPECIFICATIONS	U.S.	Metric
Crankcase Capacity	40 oz	1.181 l
Max. Liquid Temperature (NBR)	160° F	71° C

### Alternative seals available for higher temperatures up to 180° F

Inlet Pressure Range	-8.5 to +40 psi	-0.6 to +2.8 bar
Inlet Ports (1)	1" NPT(F)	1" NPT(F)
Discharge Ports (3)	3/4" NPT(F)	3/4" NPT(F)
Shaft Diameter	0.984"	25 mm
Weight	27.0 lbs	12.25 kg
Dimensions	17.28 x 11.42 x 6.30"	439 x 290 x 160 mm

### SPECIFICATIONS

	U.S. Measure	Metric Measure
<b>Models 623, 621</b>		
Flow	6.0 gpm	23 lpm
Pressure Range	100–1200 psi	6.9–83 bar
Pump RPM*	850 rpm	850 rpm
Bore	0.787"	20 mm
Stroke	1.122"	28.5 mm
<b>Models 820, 821</b>		
Flow	10.0 gpm	38 lpm
Pressure Range	100–1000 psi	6.9–69 bar
Pump RPM*	940 rpm	940 rpm
Bore	0.984"	25 mm
Stroke	1.102"	28 mm
<b>Models 1010, 1011</b>		
Flow	13 gpm	49 lpm
Pressure Range	100–700 psi	6.9–48 bar
Pump RPM*	900 rpm	900 rpm
Bore	1.122"	28.5 mm
Stroke	1.102"	28 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)
HT	.3000	180° F	(82° C)

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

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

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

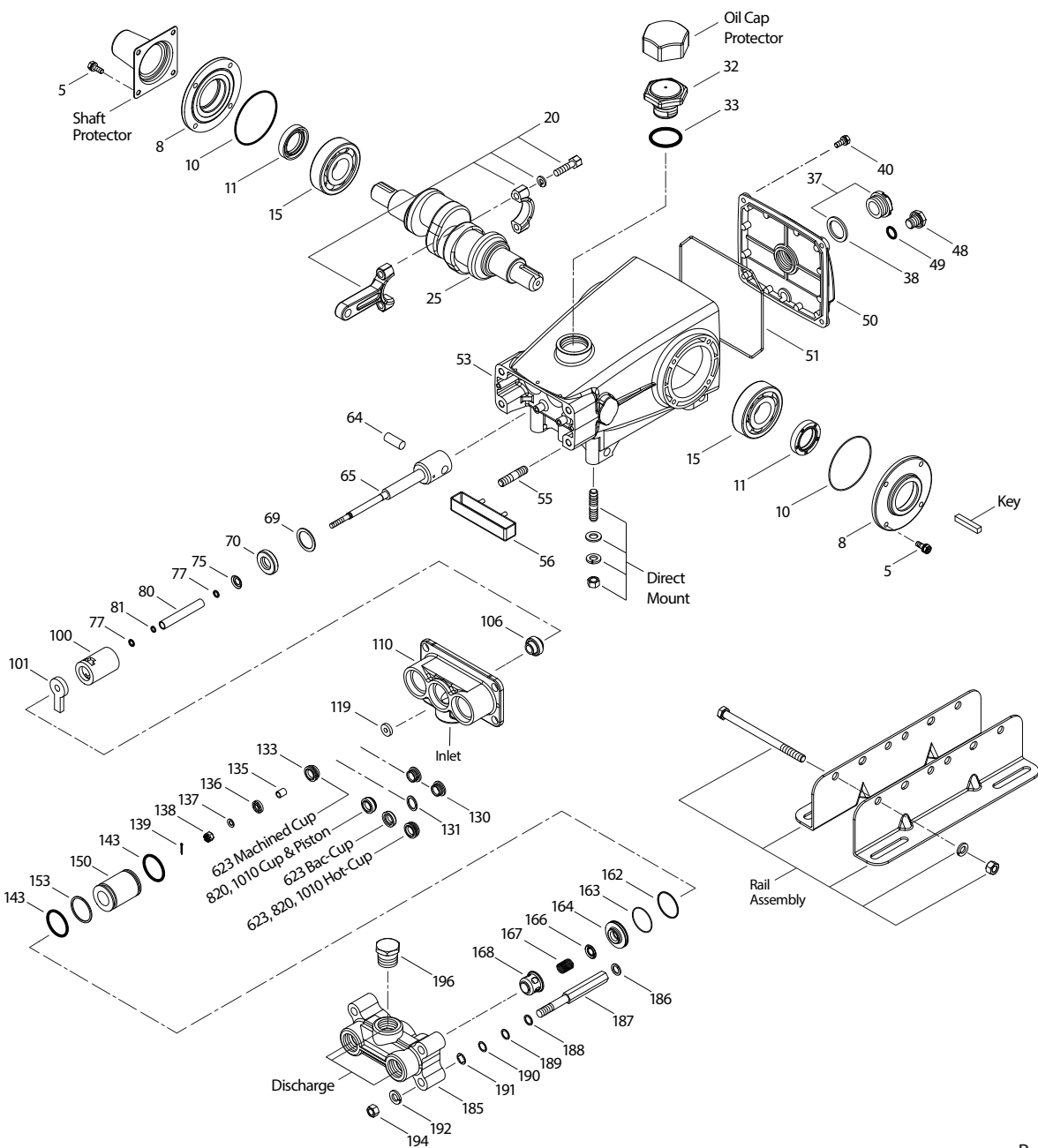
## PARTS LIST

ITEM	PART NUMBER						DESCRIPTION	QTY
	623, 621	MATL	820, 821	MATL	1010,1011	MATL		
5	125824	STCP R	125824	STCP R	125824	STCP R	Screw, HHC Sems (M6 x 16) (See Tech Bulletin 074)	8
8	27331	AL	27331	AL	27331	AL	Cover, Bearing	2
10	26965	NBR	26965	NBR	26965	NBR	O-Ring, Bearing Cover	2
11	27330	NBR	27330	NBR	27330	NBR	Seal, Oil, Crankshaft	2
15	47080	STL	47080	STL	47080	STL	Bearing, Ball	2
20	48733	TNM	48733	TNM	48733	TNM	Rod, Connecting, Assembly (See Tech Bulletin 074)	3
25	27329	FCM	27329	FCM	27329	FCM	Crankshaft, Dual End (M28.5)	1
32	43211	ABS	43211	ABS	43211	ABS	Cap, Oil Filler	1
33	14177	NBR	14177	NBR	14177	NBR	O-Ring, Oil Filler Cap	1
37	92241	PC	92241	PC	92241	PC	Gauge, Oil Bubble with Gasket (See Tech Bulletin 074)	1
38	44428	NBR	44428	NBR	44428	NBR	Gasket, Flat, Oil Gauge	1
40	126541	STCP R	126541	STCP R	126541	STCP R	Screw, HHC Sems (M6 x 20) (See Tech Bulletin 074)	4
48	25625	STCP	25625	STCP	25625	STCP	Plug, Drain (1/4" x 19 BSP)	1
49	23170	NBR	23170	NBR	23170	NBR	O-Ring, Drain Plug	1
50	49712	AL	49712	AL	49712	AL	Cover, Rear	1
51	14070	NBR	14070	NBR	14070	NBR	O-Ring, Cover	1
53	49710	AL	49710	AL	49710	AL	Crankcase with Guide Pins	1
55	126545	STCP R	126545	STCP R	126545	STCP R	Stud (M10 x 45)	4
56	27911	POP	27911	POP	27911	POP	<i>Pan, Oil (Use with Items 100, 101, 106) for Blue-Dot Seals</i>	1
64	20251	CM	20251	CM	20251	CM	Pin, Crosshead	3
65	27337	SZZ	27337	SZZ	27337	SZZ	Rod, Piston	3
69	126585	STCP R	126585	STCP R	126585	STCP R	Washer, Oil Seal	3
70	27339	NBR	27339	NBR	27339	NBR	Seal, Oil, Crankcase	3
75	25327	S	25327	S	25327	S	Slinger, Barrier	3
77	25392	NBR	25392	NBR	25392	NBR	O-Ring, Sleeve	6
80	<b>27340</b>	SCP	<b>27340</b>	SCP	<b>27340</b>	SCP	Sleeve	3
	<b>28782</b>	S	<b>28782</b>	S	<b>28782</b>	S	<i>Sleeve (Unchromed)</i>	3
81	29003	PTFE	29003	PTFE	29003	PTFE	Backup Ring, Sleeve	3
100	27341	PVDF	27341	PVDF	27341	PVDF	Retainer, Seal	3
101	27910	—	27910	—	27910	—	<i>Wick, Long Tab (Use with Items 56, 100, 106) for Blue-Dot Seals</i>	3
106	30315	NBR	30315	NBR	30315	NBR	Seal, Low-Pressure (Greased)	3
110	<b>27344</b>	NABC	<b>27344</b>	NABC	<b>27344</b>	NABC	Manifold, Inlet (Models 623, 820, 1010)	1
	<b>30247</b>	SS	<b>30247</b>	SS	<b>30247</b>	SS	<i>Manifold, Inlet (Models 621, 821, 1011)</i>	1
119	<b>27347</b>	S	<b>27497</b>	S	<b>27813</b>	S	Valve, Inlet	3
130	—	—	<b>27820</b>	S	<b>27814</b>	S	Piston	3
133	<b>30340</b>	NBR	<b>27821</b>	FPM	<b>27815</b>	FPM	Cup, Piston (Models 623 – Machined)	3
135	<b>27348</b>	S	<b>27499</b>	S	<b>27499</b>	S	Spacer, Piston	3
136	<b>27002</b>	S	<b>27500</b>	S	<b>20324</b>	S	Retainer, Piston	3
137	27006	S	—	—	—	—	Washer, Conical (M6)	6
	—	—	27006	S	27006	S	Washer, Conical (M6)	3
138	27000	S	27000	S	27000	S	Nut, Slotted (M6) (See Tech Bulletin 074)	3
139	14158	S	14158	S	14158	S	Cotterpin (M1.6 x 10)	3
143	26969	NBR	26969	NBR	26969	NBR	O-Ring, Cylinder	6
150	<b>28342</b>	SCP	<b>28340</b>	SCP	<b>28341</b>	SCP	Cylinder (M50)	3
	<b>28776</b>	S	<b>28778</b>	S	<b>28780</b>	S	<i>Cylinder (M50) (Unchromed)</i>	3
153	<b>28204</b>	PTFE	<b>28204</b>	PTFE	—	—	Backup Ring, Cylinder (Models 621, 623, 820, 821)	3
162	43062	PTFE	43062	PTFE	43062	PTFE	Backup Ring, Seat	3
163	26966	NBR	26966	NBR	26966	NBR	O-Ring, Seat	3
164	43428	S	43428	S	43428	S	Seat	3
166	43721	S	43721	S	43721	S	Valve	3
167	43251	S	43251	S	43251	S	Spring	3
168	43429	S	43429	S	43429	S	Retainer, Spring	3
185	<b>43046</b>	BBCP	<b>43046</b>	BBCP	<b>43046</b>	BBCP	Manifold, Discharge (Models 623, 820, 1010)	1
	<b>30248</b>	SS	<b>30248</b>	SS	<b>30248</b>	SS	<i>Manifold, Discharge (Models 621, 821, 1011)</i>	1
186	126593	STCP R	126593	STCP R	126593	STCP R	Washer, Shim (M10.5 x 1.5)	4–8
187	43047	STCP	43047	STCP	43047	STCP	Stud, Hex, Manifold "B"	4
188	126582	STCP R	126582	STCP R	126582	STCP R	Washer, Shim (M10.5 x 1.0)	4–8
189	126583	STCP R	126583	STCP R	126583	STCP R	Washer, Shim (M10 x 0.5)	4–8
190	126584	STCP R	126584	STCP R	126584	STCP R	Washer, Shim (M10 x 0.3)	4–8
191	27357	STZP	27357	STZP	27357	STZP	Retainer, Shim (M10)	4
192	126231	STCP R	126231	STCP R	126231	STCP R	Lockwasher (M10)	4
194	126522	STCP R	126522	STCP R	126522	STCP R	Nut, Hex (M10 x 1.5) (See Tech Bulletin 074)	4
196	20326	BBCP	20326	BBCP	20326	BBCP	Plug, Discharge Manifold (3/4" NPT[M]) (Models 623, 820, 1010)	1

**Bold print part numbers are unique to a particular pump model. Italics are optional items.**

R Components comply with RoHS Directive. For additional technical information see [www.catpumps.com/literature/tech-bulletins](http://www.catpumps.com/literature/tech-bulletins).  
 When replacing Greased Low-Pressure Seals with Blue-Dot Seals, wick must be installed. MATERIAL CODES (Not Part of Part Number):  
 ABS=ABS Plastic AL=Aluminum BB=Brass BBCP=Brass/Chrome Plated CM=Chrome-Moly F=Cast Iron FCM=Forged Chrome-moly  
 FPM=Fluorocarbon NABC=Nickel Aluminum Bronze Chrome Plated NBR=Medium Nitrile (Buna-N) NY=Nylon PC=Poly Carbonate  
 POP=Polypropylene PTFE=Pure Polytetrafluoroethylene PVDF=Polyvinylidene Fluoride S=304SS SCP=304SS/Chrome Plated  
 SNG=Special Blend (Buna) SS=316SS STL=Steel STCP=Steel/Chrome Plated STZP=Steel/Zinc Plated  
 SZZ=304SS/Zamak ST4=Special PTFE 4 TNM=Special High Strength

## EXPLODED VIEW



Brass Models  
623, 820, 1010  
Stainless Steel Models  
621, 821, 1011  
January 2025

### OPTIONAL PARTS AND ACCESSORIES

PART	DESCRIPTION	QTY
50146	Key (M7 x 7 x 40)	1
30613	Assembly, Rail	1
30653	Assembly, Mount (Not Shown)	1
30264	Mount, Direct	1
828710	Protector, Oil Cap	1
43139	Protector, Shaft	1
34334	Kit, Oil Drain (3/8" x 24") (Not Shown)	1
30284	Hub and Key Assembly (Not Shown)	1

### SERVICE PARTS

PART	DESCRIPTION	QTY
<b>30305</b>	Kit, Seal – Standard NBR	1
<b>30687</b>	Kit, Valve – Standard NBR	1
6107	Oil, Bottle (21 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) (Models 621, 821, 1011) (See Tech Bulletin 095)	1

## SEAL KITS One (1) seal kit required per pump

PUMP MODELS	NBR (STD)	Blue Dot*	PTFE		
621, 623, 820, 821, 1010, 1011	<b>30305</b>	<b>30226</b>	<b>32212</b>		
ITEM (Included in Seal Kits)			DESCRIPTION	QTY	
106	30315**	25153**	701384	Seal, Low-Pressure	3
139	14158	14158	14158	Cotterpin	3
101	N/A	27910	N/A	Wick	3

\*Use with oil pan PN 27911, \*\*Use PN 30325 for FPM (Greased) or PN100015 for FPM (Ungreased)

## SLEEVE AND SEAL KIT One (1) sleeve and seal kit required per pump

PUMP MODELS	NBR (STD)	Blue Dot*			
621, 623, 820, 821, 1010, 1011	<b>30397</b>	<b>30227</b>			
ITEM (Included in Sleeve and Seal Kits)			DESCRIPTION	QTY	
75	25327	25327		Slinger, Barrier	3
77	25392**	25392**		O-Ring, Sleeve	6
80	27340	27340		Sleeve	3
101	N/A	27910		Wick	3
106	30315***	25153***		Seal, Low-Pressure	3
139	14158	14158		Cotterpin	3

\*Use with oil pan PN 27911, \*\*Use PN 28771 for FPM, \*\*\*Use PN 30325 for FPM (Greased) or use PN 100015 for FPM (Ungreased)

## CUP KITS One (1) cup kit required per pump

Pump Models	623	623	623	623	623	820	820	820	1010	1010	1010		
	621	621	621	621	621	821	821	821	1011	1011	1011		
	NBR (STD)	NBR (HOT)	NBR (BAC)	FPM (BAC)	NBR (ST4-CUP)	NBR (STD)	NBR (HOT)	NBR (ST4-CUP)	NBR (STD)	NBR (HOT)	NBR (ST4-CUP)		
	30220	76238	30822	43474	32384	30222	30437	32385	30224	30300	32386		
ITEM (Included in Cup Kits)											DESCRIPTION	QTY	
130	—	—	—	30543	—	—	—	—	—	—	—	Piston (Bac-Cup)	3
131	—	—	—	30544	—	—	—	—	—	—	—	Bac-Cup Ring	3
133	30340	29089	43172	43172	76515*	27821	29091	76333*	27815	29092	76189**	Cup	3
139	14158	14158	14158	—	14158	14158	14158	14158	14158	14158	14158	Cotterpin	3
143	26969	26969	26969	—	26969	26969	26969	26969	26969	26969	26969	O-Ring, Cylinder	6
153	28204	28204	—	—	28204	28204	—	28204	—	—	—	Backup Ring, Cylinder	3
355	—	—	22130	—	—	16981	—	—	15770	—	—	Insertor, Cup	1

\*76515, 76333 cups include a FPM O-ring

\*\*76189 cups include an FPM O-ring. Use PN 76189.0220 for an EPDM O-ring

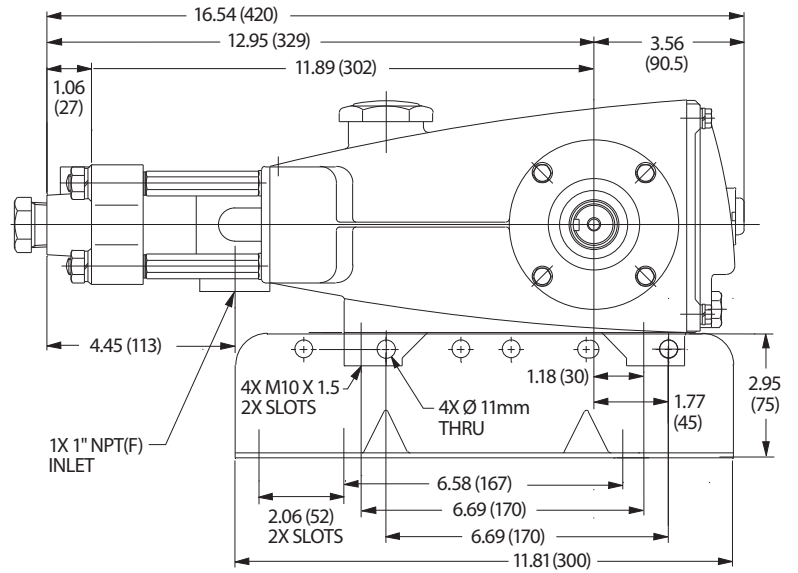
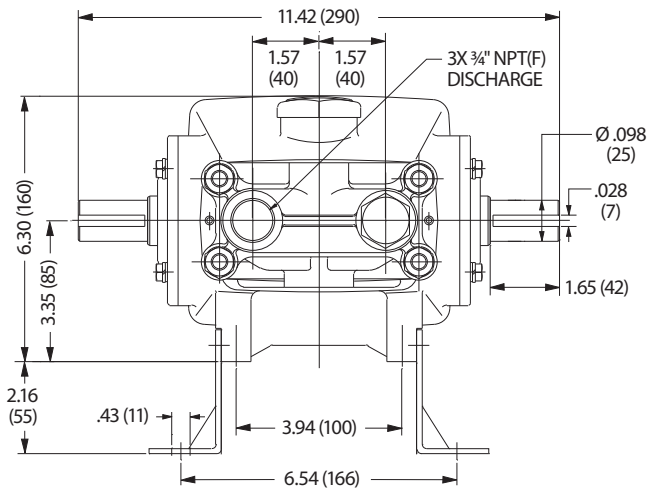
## PISTON KITS One (1) piston kit required per pump

PUMP MODELS	621, 623	621, 623	820, 821	1010, 1011			
	NBR (STD)	FPM (BAC-CUP)	NBR (STD)	NBR (STD)			
	30219	30843	30221	30223			
ITEM (Included in Piston Kits)						DESCRIPTION	QTY
119	27347	—	27497	—	27813	Valve, Inlet	3
130	N/A	—	27820	—	27814	Piston	3
133	30340	43474	27821	—	27815	Cup	3
135	27348	—	27499	—	27499	Spacer, Piston	3
136	27002	—	27500	—	20324	Retainer, Piston	3
137	27006*	—	27006	—	27006	Washer, Conical	3
138	27000	—	27000	—	27000	Nut, Slotted	3
139	14158	14158	14158	—	14158	Cotterpin	3
143	26969	26969	26969	—	26969	O-Ring, Cylinder	6
153	28204	28204	28204	—	N/A	Backup Ring, Cylinder	3
355	—	22130	16981	—	15770	Insertor, Cup	1

\*Models 621 and 623 require a quantity of six (6) conical washers

## VALVE KITS One (1) valve kit required per pump

PUMP MODELS	NBR (STD)	NBR (FLAT)	FPM (STD)		
621, 623, 820, 821, 1010, 1011	<b>30687</b>	<b>30449</b>	<b>32213</b>		
ITEM (Included in Valve Kits)			DESCRIPTION	QTY	
143	26969	26969	28459	O-Ring, Cylinder	6
153	28204	28204	28204	Backup Ring, Cylinder	3
162	43062	43062	43062	Backup Ring, Seat	3
163	26966	26966	28458	O-Ring, Seat	3
164	43428	43063	43428	Seat	3
166	43721	20262	43721	Valve	3
167	43251	20265	43251	Spring	3
168	43429	43135	43429	Retainer, Spring	3



Models 623, 820, 1010

**⚠ 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)