



Pump and Motor sold separately

Axial Plunger Pumps

Direct-Drive Models 1LX100
1LX125
1LXXC100

Belt-Drive Model 1LXB100

FEATURES

- Low amp draw for compatibility with portable machines.
- Smooth, quiet operation for sound sensitive areas.
- Special Hi-Pressure and Lo-Pressure Seals offer exceptional life.
- RTP heat resistant liquid-end and Regulator.
- Mechanically actuated plungers offer greater efficiency.
- Optional direct-coupled motors for compact, easy assembly or convenient belt-drive mounting.
- Ready for initial start-up with oil in the crankcase.

INSTALLATION

Each pump comes with oil in the crankcase ready for start-up. CAT PUMPS special premium grade, multi-viscosity crankcase oil should be used.

It is recommended to install this pump in a horizontal position with the oil filler cap at the top. It is permissible to rotate the oil filler cap to the right or left, however, some oil spitting may occur. A rubber plug is inserted into the oil filler cap for shipping. This should be removed before operation. **Do not operate pump with plug in cap.**

Flexible hose should be installed at the unloader ports. Connect a hose equal to or one size larger than the inlet port at the **bottom** of the pump body. Connect a high pressure hose to the regulator discharge port at the **side of the regulator**. Connect a by-pass hose to the bottom port of the regulator or unloader and run to drain or back to a "T" in the inlet line.

CAUTION: Do not over tighten the RTP pump or regulator body.

OPERATION

Once the inlet water supply is turned on and the pump is started, adjust the regulator at the top with an allen wrench or turn adjusting cap on the unloader to set system pressure. Do this in small increments until the desired system operating pressure is reached.

The 1LX pumps are axial plunger pumps. Special direct-drive motors are secured to the pump with a V-Clamp Mounting. **The optional Drive Mount Assembly is required for the belt drive 1LXB100 model.**

SPECIFICATIONS

U.S. Measure

Metric Measure

MODELS 1LX100, 1LXB100, 1LXXC100

Flow1.0 GPM (3.8 L/M)
Stroke.....0.29" (7.4 mm)

MODEL 1LX125

Flow.....1.25 GPM (4.75 L/M)
Stroke.....0.35" (8.9 mm)

COMMON SPECIFICATIONS

Max. Discharge Pressure500 PSI (35 BAR)
Inlet Pressure RangeFlooded to +20 PSI (Flooded to +1.4 BAR)
RPM1725 RPM (1725 RPM)
Bore.....0.47" (12 mm)
Crankcase Capacity2.23 oz. (66 ml)
Max. Liquid Temperature160°F (71°C)
Inlet Fitting (1).....3/8" NPTF (3/8" NPTF)
By-Pass Ports (1).....1/4" NPTF (1/4" NPTF)
Discharge Ports (1).....1/4" NPTF (1/4" NPTF)
Discharge Fitting (1LXXC100 Only).....3/8" NPTF (3/8" NPTF)
Weight.....2.65 lbs. (1.2 kg)
Dimensions.....4.4 x 3.2 x 8.4" (112 x 81 x 212 mm)

ELECTRIC HORSEPOWER REQUIREMENTS

MODEL	FLOW		PRESSURE			RPM
			PSI 100	PSI 300	PSI 500	
	U.S. GPM	L/M	BAR 7	BAR 21	BAR 35	
1LX100, 1LXB100, 1LXXC100	1.0	3.8	.05	.20	.34	1725
1LX125	1.25	4.75	.08	.24	.42	1725

The motor rotates the offset cam and guide plate which is connected to the three plungers. Each plunger moves forward at a different stage of the cam rotation, providing a smooth, forward, liquid flow through the pump.

On the back stroke, the liquid enters the inlet chamber and flows through each inlet valve. As the forward stroke begins, the inlet valve closes.

On the forward stroke, the liquid goes through the seat and forces the discharge valve open to allow the liquid out the regulator discharge port.

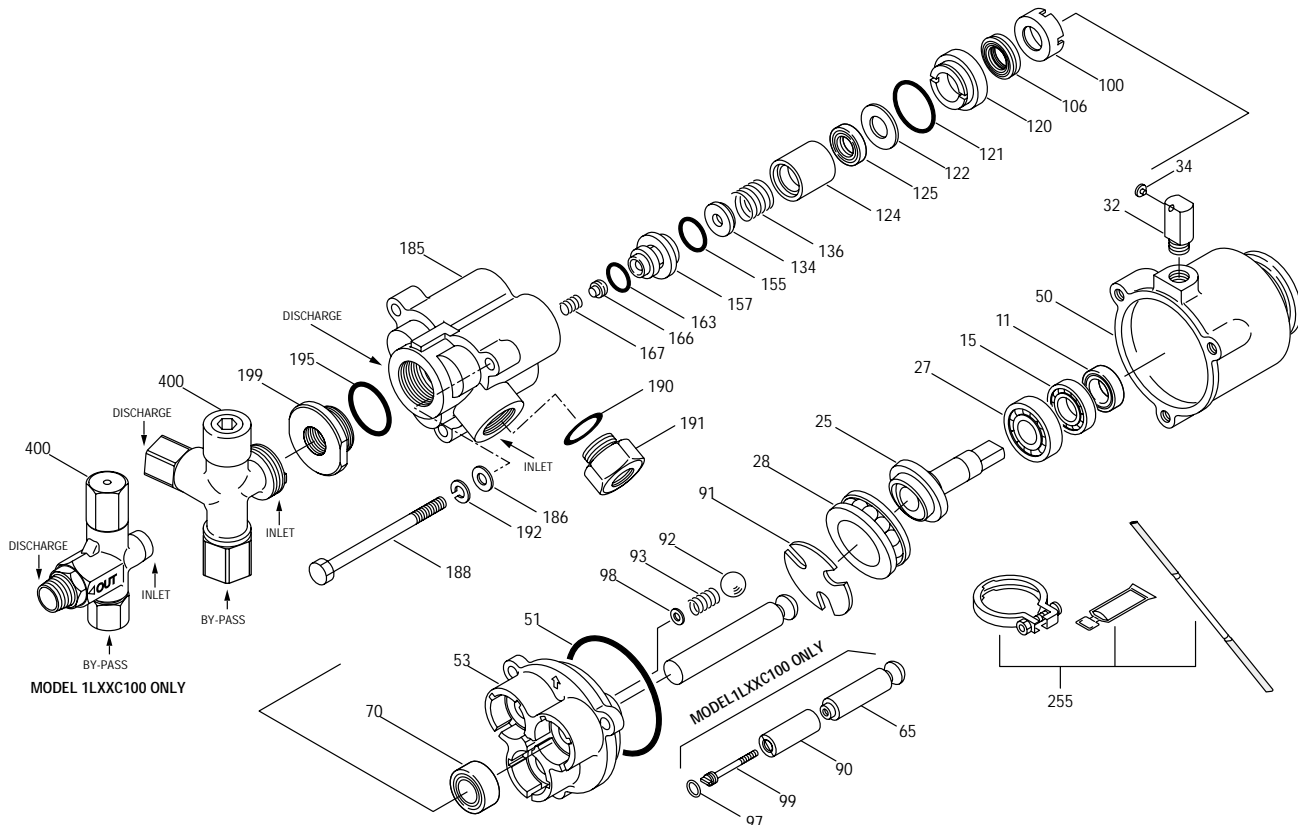
"Customer confidence is our greatest asset"

EXPLODED VIEW

July 2006

1LX PLUNGER PUMP MODELS

Direct Drive: 1LX100, 1LX125 (w/Regulator)
 Direct Drive: 1LXXC100 (w/FPM Seals and O-Rings, No Unloader)
 Belt Drive: 1LB100 (w/Regulator)



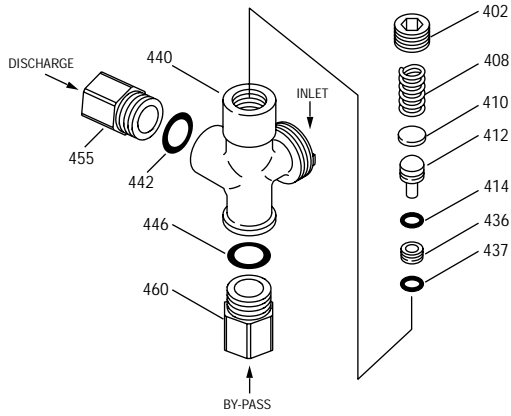
PARTS LIST

ITEM	1LX100		1LX125		1LXB100		1LXXC100		DESCRIPTION	QTY
	MATL	PART NUMBER	MATL	PART NUMBER	MATL	PART NUMBER	MATL	PART NUMBER		
11	NBR	100552	NBR	100552	NBR	100552	NBR	100552	Seal, Oil, Crankcase - 70D	1
15	STL	19585	STL	19585	STL	19585	STL	19585	Bearing, Inner	1
25	STL	48455	STL	48336	STL	48619	STL	48455	Cam, Offset	1
27	STL	12693	STL	12693	STL	12693	STL	12693	Cam, Offset, Solid	1
28	STL	48346	STL	48346	STL	48346	STL	48346	Bearing, Outer	1
32	RTP	48330	RTP	48330	RTP	48330	RTP	48330	Bearing, Thrust	1
34	NBR		NBR		NBR	48591	NBR	48591	Cap, Oil Filler/Drain	1
50	AL	48314	AL	48314	AL	48314	AL	48314	Plug	1
51	NBR	14029	NBR	14029	NBR	14029	NBR	14029	Cover, Crankcase	1
53	RTP	48317	RTP	48317	RTP	48317	RTP	48317	O-Ring, Crankcase - 70D	1
65							STCP	547733	Crankcase	1
70	NBR	29250	NBR	29250	NBR	29250	NBR	29250	Rod, Plunger	3
90	STCP	48333	STCP	48333	STCP	48333	CC	547735	Seal, Oil, Crankcase - 70D	3
91	STL	48316	STL	48316	STL	48316	STL	48316	Plunger (M12x78)	3
92	STCP	48337	STCP	48337	STCP	48337	STCP	48337	Plate, Guide	1
93	STL	48338	STL	48338	STL	48338	STL	48338	Ball	1
97							FPM	14194	Coil Spring	1
98	STL	20020	STL	20020	STL	20020	STL	20020	O-Ring, Plunger Retainer - 70D	3
99							SS	547736	Washer	2
100	RTP	48318	RTP	48318	RTP	48318	RTP	48318	Retainer, Plunger	3
106	NBR	547682	NBR	547682	NBR	547682	FPM	547738	Retainer, Seal	3
120	RTP	48320	RTP	48320	RTP	48320	RTP	48320	Seal, LPS	3
121	NBR	13977	NBR	13977	NBR	13977	FPM	547742	Case, Seal	3
122	S	48324	S	48324	S	48324	S	547739	O-Ring, Seal Case - 70D	3
124	RTP	48321	RTP	48321	RTP	48321	RTP	48321	Washer, HPS	3
125	STG	48322	STG	48322	STG	48322	STG	48322	Cylinder	3
134	D	48325	D	48325	D	48325	D	48325	Seal, HPS	3
136	S	48339	S	48339	S	48339	SS	547740	Valve, Inlet	3
155	NBR	17549	NBR	17549	NBR	17549	FPM	547743	Spring, Coil, Inlet	3
157	RTP	48326	RTP	48326	RTP	48326	RTP	48326	O-Ring, Cylinder - 70D	3
163	NBR	48348	NBR	48348	NBR	48348	FPM	547744	Seat, Inlet/Discharge	3
166	D	48327	D	48327	D	48327	D	48327	O-Ring, Seat - 70D	3
167	STZP	48340	STZP	48340	STZP	48340	SS	547741	Valve	3
185	RTP	48319	RTP	48319	RTP	48319	RTP	48319	Spring, Coil	3
186	-STCP	126572	-STCP	126572	-STCP	126572	-STCP	126572	Manifold	1
188	STZP	82195	STZP	82195	STZP	82195	STZP	82195	Washer, Flat (M6)	3
190	NBR	13973	NBR	13973	NBR	13973	NBR	13973	Screw, HH (M6x90)	3
191	BB	48580	BB	48580	BB	48580	BB	48580	O-Ring, Mfid, I.F. - 70D	1
192	-STCP	126569	-STCP	126569	-STCP	126569	-STCP	126569	Fitting, Inlet (1/2 NPSM x 3/8 NPTF*)	1
195	NBR	13982	NBR	13982	NBR	13982	FPM	14331	Lockwasher (M6)	3
199	BB	48574	BB	48574	BB	48574	BB	48574	O-Ring, Mfid, D.F. - 70D	1
255		35950		35950		35950		35950	Fitting, Discharge (3/4 NPSM x 3/8 NPTF*)	1
275									Kit, Mounting (Incls: 34924, 6106, 31827)	1
300	NBR	33451	NBR	33451	NBR	33451	FPM	31751	Drive/Mount Package (Incls: Pulleys, Belt, Bearing, Plate, Hardware)	1
310	NBR	33452	NBR	33452	NBR	33452	FPM	31752	Kit, Seal (Incls: 106, 121, 125)	1
400	RTP	7550	RTP	7550	RTP	7550	RTP	7550	Kit, Valve (Incls: 134, 136, 155, 157, 163, 166, 167)	1
									Pressure Regulator	1
									Unloader, Regulating (w/FPM O-Rings)	1

Bold print part numbers are unique to a particular pump model. Italics are optional items. -Components comply with RoHS Directive.

MATERIAL CODES (Not Part of Part Number): AL=Aluminum BB=Brass CC=Ceramic D=Acetal FPM=Fluorocarbon NBR=Medium Nitrile (Buna-N) RTP=Reinforced Composite S=304SS SS=316SS STG=Special Blend PTFE White STL=Steel STCP=Steel/Chrome Plated STZP=Steel/Zinc Plated

7550 REGULATOR EXPLODED VIEW



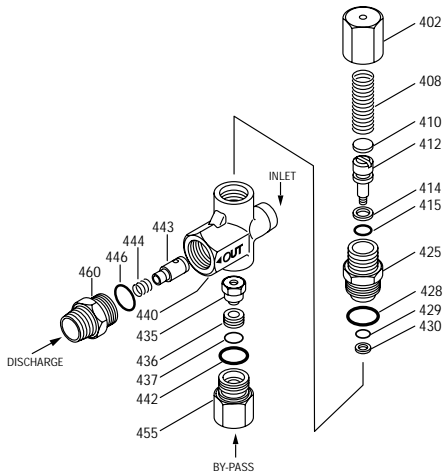
7550 REGULATOR PARTS LIST

ITEM	P/N	MATL	DESCRIPTION	QTY
400	7550	RTP	Regulator Assembly	1
402	48329	RTP	Screw, Adjustment, Allen	1
408	48341	STZP	Spring, Coil	1
410	45862	STZP	Retainer, Spring	1
412	48342	S	Stem, Piston	1
415	14160	FPM	O-Ring, Stem - 70D	1
436	48343	S	Seat	1
437	14196	FPM	O-Ring, Seat	1
440	48328	RTP	Body	1
442	11343	NBR	O-Ring, Fitting Discharge	1
446	11343	NBR	O-Ring, Fitting By-Pass	1
455	25144	BB	Fitting, By-Pass (1/4" NPTF)	1
460	25144	BB	Fitting, Discharge (1/4" NPTF)	1
468	33418	FPM	Kit, Repair, (Incls: 415, 436, 437)	1

Italics are optional items.

MATERIAL CODES (Not Part of Part Number): BB=Brass FPM=Fluorocarbon
NBR=Medium Nitrile (Buna-N) RTP=Reinforced Composite S=304SS
STZP=Steel/Zinc Plated

7550S.0110 UNLOADER EXPLODED VIEW



7500S.0110 UNLOADER PARTS LIST

ITEM	P/N	MATL	DESCRIPTION	QTY
402	540081	BB	Cap, Hex Adjusting	1
408	32094	STZP	Spring, Coil	1
410	107672	BB	Retainer, Spring	1
412	45694	S	Stem, Piston (M5)	1
414	20184	PTFE	Back-up-Ring, Piston Stem	1
415	14161	FPM	O-Ring, Piston Stem - 70D	1
425	107673	BB	Retainer, Piston	1
428	14320	FPM	O-Ring, Piston Retainer - 70D	1
429	14160	FPM	O-Ring, Body - 70D	1
430	107675	PTFE	Back-up-Ring, Body	1
435	45696	BB	Valve and Ball Assembly (M5)	1
436	107680	S	Seat	1
437	14303	FPM	O-Ring, Seat - 70D	1
440	—	BB	Body	1
442	14320	FPM	O-Ring, By-Pass Fitting - 70D	1
443	541060	BB	Valve, Check w/O-Ring	1
444	45924	S	Spring - 85G	1
446	14320	FPM	O-Ring, Discharge Fitting - 70D	1
455	45695	BB	Fitting, By-Pass (3/8" NPTF)	1
460	107681	BB	Fitting, Discharge (3/8" NPTM)	1
468	31627	FPM	Kit, O-Ring (Incls: 414, 415, 428, 429, 430, 437, 442, 446)	1

Italics are optional items.

MATERIAL CODES (Not Part of Part Number): BB=Brass FPM=Fluorocarbon
PTFE=Pure Polytetrafluoroethylene S=304SS STZP=Steel/Zinc Plated

SERVICE

This pump is designed for use with clean water. The seals and valves should last the life of the pump or 500 hour intervals. The Regulator or Unloader is a separate item and can be replaced/repared as needed.

Lubrication

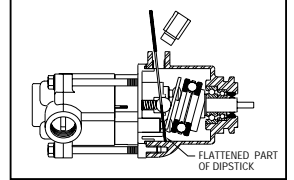
Changing Crankcase Oil:

1. Shut down pump and remove from power source.
2. Remove black oil filler cap. Turn pump body over and drain.
3. Fill with exactly 2.23 oz. (66 ml) of CAT PUMPS crankcase oil and replace black oil filler cap.

NOTE: Change oil after each 500 hour interval.

Checking Oil Level:

1. Shut down pump and remove from power source.
2. Remove black oil filler cap.
3. Place dipstick in pump with one (1) flattened end into crankcase and the other flattened edge flush with top of the port.
NOTE: All models come with a dipstick.
4. Remove dipstick. Oil level should be at the top of the lower flattened rod.
5. Adjust oil level as needed. Replace black oil filler cap.



Seals and Valves

Disassembly:

1. Remove all hoses from the pump.
2. Remove oil filler cap and drain the oil from the crankcase.
3. Remove three manifold screws.
4. Remove manifold and crankcase from the crankcase cover.
NOTE: Cam and bearings will remain in crankcase cover. Thrust bearing will be a loose part.
5. Separate the manifold from the crankcase.
NOTE: Guide plate, plunger, plunger rod, plunger retainer, ball, spring, washer and oil seal will remain in crankcase.
6. Remove seal retainer from each crankcase chamber.
7. Remove the Lo-Pressure Seal (LPS) and then seal case from each manifold chamber.
8. Remove washer and Hi-Pressure Seal (HPS) from each cylinder.
9. Using a reverse pliers, remove the cylinder from each manifold chamber.
CAUTION: Exercise caution as the reverse pliers may score HPS surface.
10. Separate the inlet/discharge seat from the cylinder.
11. Remove the inlet valve, o-ring and inlet spring from the each cylinder.
12. Using a pliers, remove discharge valve and spring from each manifold chamber.

Reassembly:

1. Examine the discharge valves and springs for wear and replace as needed. Snap spring to each discharge valve.
2. Using a pliers, insert the discharge valve/spring assembly into the notches at the bottom of the manifold.
3. Examine the inlet/discharge seats for wear and replace as needed. Install new o-rings onto both ends of the inlet/discharge seats.
4. Examine the inlet valves and springs for wear and replace as needed.
5. Examine cylinders for wear and replace as needed.
6. Install inlet spring, then valve into each cylinder.
7. Lubricate the outer surface of both o-rings on each inlet/discharge seat, then press inlet/discharge seat into each cylinder.
8. Press inlet/discharge seat and cylinder assembly into manifold chamber.
9. Examine HPS and replace as needed. Press HPS into each cylinder with groove down.
10. Examine washer and replace as needed. Press washer into each cylinder with beveled edge down.
11. Examine seal case and replace as needed. Press seal case into each manifold chamber.
12. Examine LPS and replace as needed. Press LPS into each seal case with groove down.
13. Examine seal retainer for wear and replace as needed. Install seal retainer into each crankcase chamber.
14. Place hand over the end of the plunger guide plate to keep the ball, spring and washer contained within the crankcase. Press crankcase into manifold.
15. Place manifold and crankcase assemblies into the crankcase cover.
16. Insert the three manifold screws and torque to 30 in/lbs.
17. Fill per instructions under CHANGING CRANKCASE OIL, Step 3.

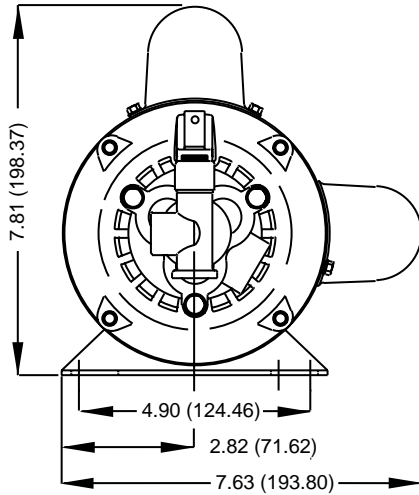
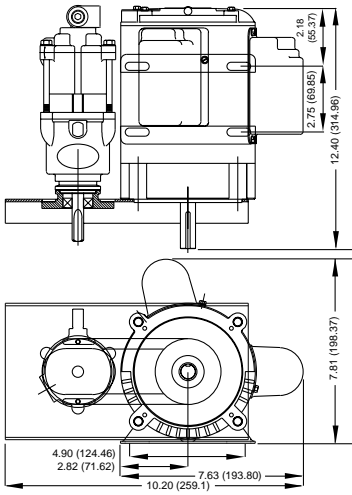
TORQUE CHART

Item	Size	in.lbs.	Nm
Pump Inlet	1/2"	25	3
Unloader Discharge	1/4"	50	6
Unloader By-Pass	1/4"	25	3
Manifold Screw	M6x90	31	3.5
Clamp Screw	10-32	20	2.4

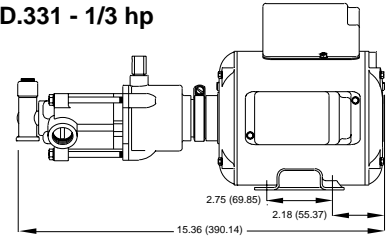
6 MONTH WARRANTY

Refer to complete CAT PUMPS Warranty for further information.

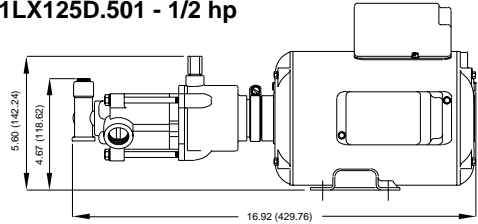
1LXB100D.331 - 1/3 hp



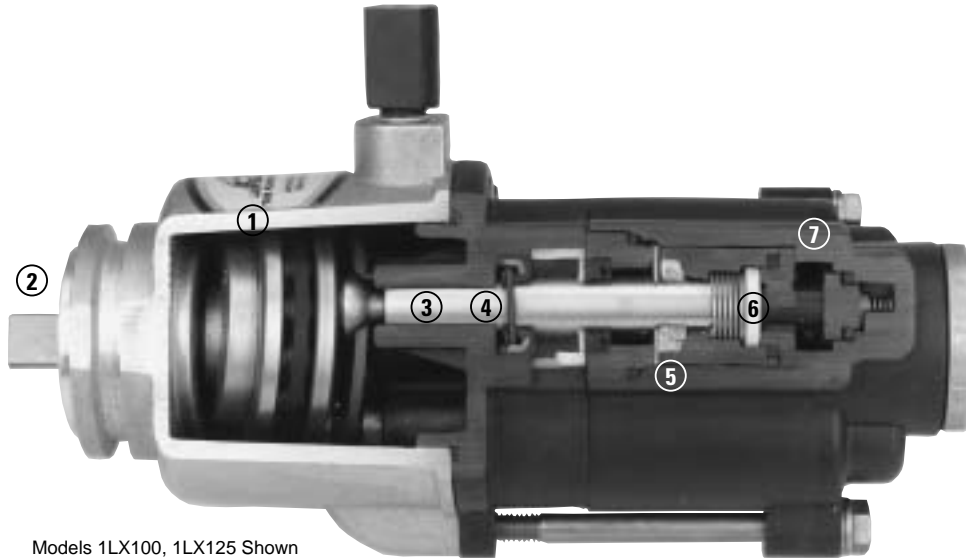
1LX100D.331 - 1/3 hp



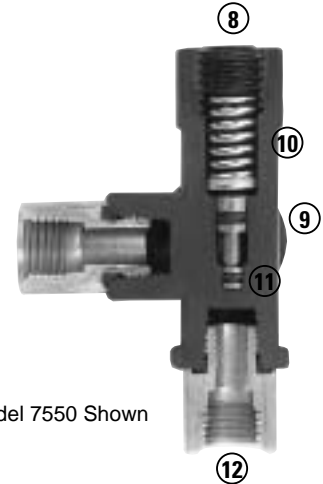
1LX125D.501 - 1/2 hp



Models 1LX100, 1LX125, 1LXB100, 1LXXC100



Models 1LX100, 1LX125 Shown



Model 7550 Shown

- 1 High strength, lightweight, die cast aluminum **crankcase**.
- 2 Direct coupled, **clamp mounting** for easy, compact assembly and disassembly.
- 3 360° guided, mechanically actuated **plungers** offer precise flow with greater efficiency.
- 4 Spring reinforced **oil seal** separates crankcase from liquid end and allows easy maintenance of Lo-Pressure and Hi-Pressure Seals.
- 5 CAT PUMP exclusive, **Hi-Pressure Seals** offer exceptional performance and unmatched seal life with high temperature liquids.
- 6 Spring guided **inlet valve** design offers positive seating and a smooth, consistent flow.
- 7 Lightweight, heat-resistant RTP **liquid end** and **Regulator** offer extended life.
- 8 Easy access **adjusting screw** for precise pressure adjustment and servicing.
- 9 Ultra **compact design** and threaded back port permits direct mounting on manifold head.
- 10 RTP heat and chemical resistant **body**.
- 11 Stainless Steel **piston and seat** for multiple cycle durability.
- 12 Bottom **by-pass port** redirects liquid if discharge line becomes blocked protecting pump from over pressure.

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