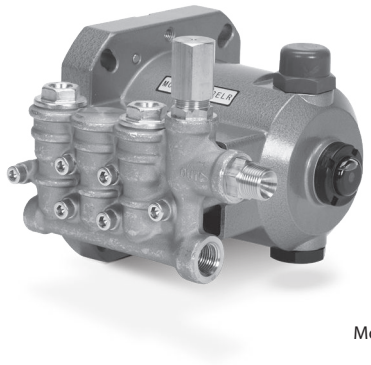
DATA SHEET
DIRECT DRIVE PLUNGER PUMP

The Pumps with Nine Lives

Brass Model: **4DX03ELR**



Model 4DX03ELR

FEATURES

- Fits standard 56C face motors.
- Compact, direct mounting reduces space requirement.
- Dual plunger design provides a smooth liquid flow.
- Stacked stainless steel valve design promotes long life and easy servicing.
- Integral pressure regulator with built-in bypass ensures system pressure control and pump protection.
- Includes crankcase oil.

SPECIFICATIONS	U.S. Measure	Metric Measure
Flow	0.3 gpm	1.14 lpm
Maximum Discharge Pressure	2000 psi	138 bar
Pump RPM	1750 rpm	1750 rpm
Inlet Pressure Range	Flooded to 60 psi	Flooded to 4.1 bar
Maximum Liquid Temperature	140° F	60° C
Above 130°F call Cat Pumps for inlet conditions and elastomer recommendations.		
Bore	0.630"	16 mm
Stroke	0.078"	2.0 mm
Crankcase Capacity	8.5 oz	0.25 l
Inlet Port	⅜" NPT(F)	⅜" NPT(F)
Discharge Port	⅜" NPT(M)	⅜" NPT(M)
Shaft Diameter	⅝"	15.8 mm
Weight	10.7 lbs	4.9 kg
Dimensions	7.17 x 7.72 x 6.22"	182 x 196 x 158 mm

ELECTRIC HORSEPOWER REQUIREMENTS

FLOW		PRESSURE				PUMP RPM
GPM	LPM	PSI	BAR	PSI	BAR	
		1000	69	2000	138	
		Horsepower				
0.3	1.14	0.28 hp		0.56 hp		1750

DETERMINING THE PUMP RPM

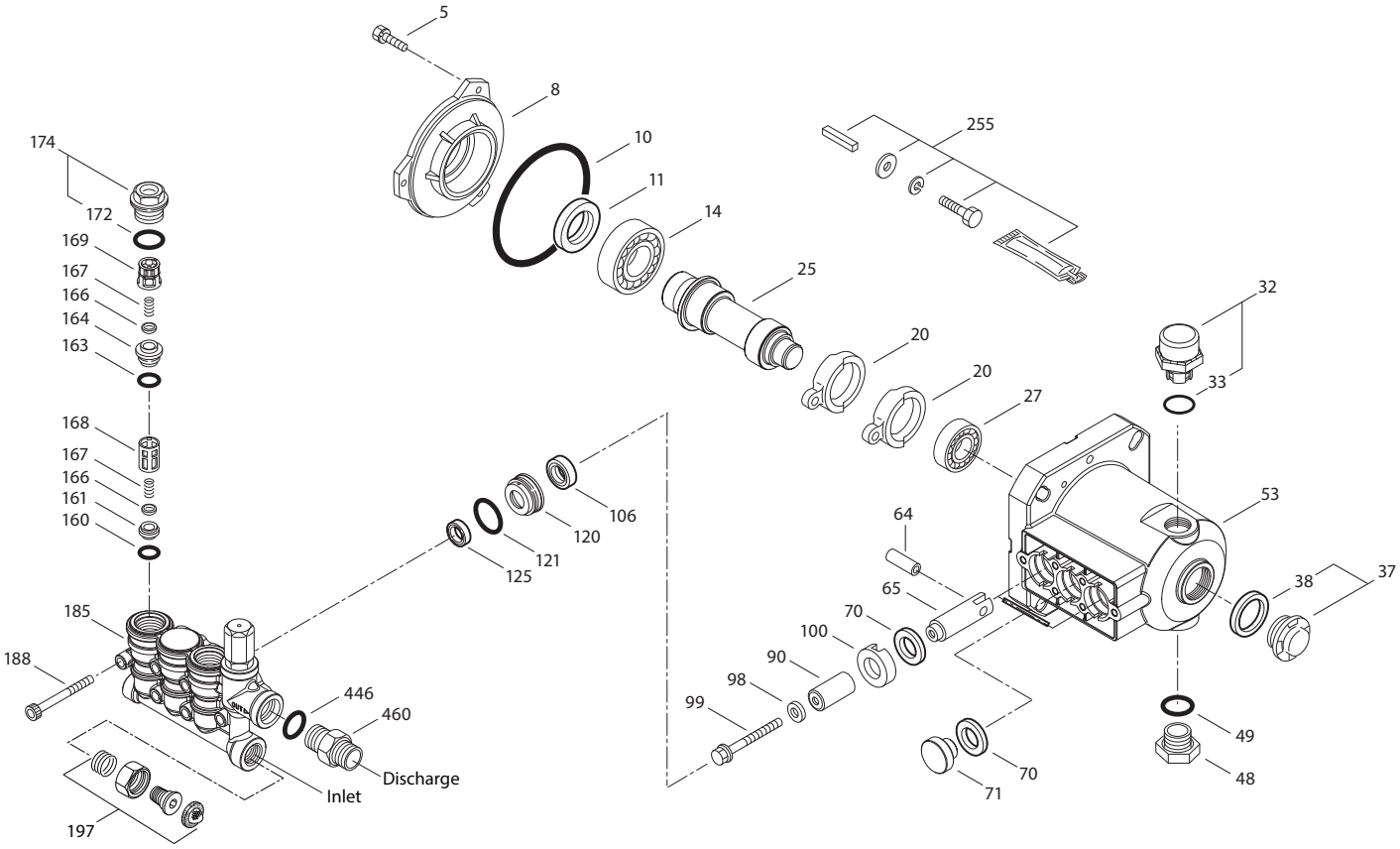
$$\frac{\text{Rated gpm}}{\text{Rated rpm}} = \frac{\text{Desired gpm}}{\text{Desired rpm}}$$

DETERMINING THE REQUIRED HP

$$\text{hp (Electric Brake)} = \frac{\text{gpm x psi}}{1060}$$

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

EXPLODED VIEW



PARTS LIST

ITEM	P/N	MATL	DESCRIPTION	QTY
5	549360	STCP R	Screw, HH (M6 x 14) (See Tech Bulletin 074)	3
8	547153	AL	Cover, Bearing	1
10	14041	NBR	O-Ring, Bearing Cover–70D	1
11	55337	NBR	Seal, Oil	1
15	14488	STL	Bearing, Ball, Inner	1
20	547048	TNM	Rod, Connecting	2
25	133148	CM	Crankshaft, ⅝", (2.0 mm)	1
27	15710	STL	Bearing, Ball, Outer	1
32	549726	—	Cap, Vented with O-Ring (Rain Cap)	1
33	14179	NBR	O-Ring, Oil Filler Cap–70D	1
37	92241	PC	Gauge, Bubble Oil with Gasket (See Tech Bulletin 074)	1
38	44428	NBR	Gasket, Flat Flex, Oil Gauge–80D	1
48	44842	NY	Plug, Drain	1
49	14179	NBR	O-Ring, Drain Plug–70D	1
53	49801	AL	Crankcase	1
64	46229	CM	Pin, Crosshead	2
65	132190	BB	Rod, Plunger	2
70	47215	NBR	Seal, Oil	3
71	133150	BB	Retainer, Oil Seal	1
90	542403	CC	Plunger (M16 x 27)	2
98	46730	NBR	Washer, Seal–90D	2
99	542405	S	Retainer, Plunger (M6 x 35) (See Tech Bulletin 074)	2
100	46233	D	Retainer, Seal	2

ITEM	P/N	MATL	DESCRIPTION	QTY
106	† 48222	NBR	Seal, Low-Pressure with S-Spring	2
120	547357	BB	Case, Seal	2
121	13976	NBR	O-Ring, Seal Case–70D	2
125	46240	NBR	Seal, High-Pressure	2
160	13965	NBR	O-Ring, Seat, Inlet–70D	2
161	545177	S	Seat, Inlet	2
163	19285	NBR	O-Ring, Seat, Discharge–70D	2
164	545178	S	Seat, Discharge	2
166	547098	S	Valve	4
167	134579	S	Spring	4
168	543988	PVDF	Retainer, Spring, Inlet	2
169	49764	PVDF	Retainer, Spring, Discharge	2
172	142807	NBR	O-Ring, Plug–90D	2
174	547104	BB	Plug, Valve (M20 x 1.5) with O-Ring (See Tech Bulletin 074)	2
185	133149	BB	Head, Manifold with Integral Regulator Body	1
188	549357	STCP R	Screw, HSH (M6 x 60) (See Tech Bulletin 074)	6
197	*941516*	*BB*	*Assembly, Garden Hose (⅜" NPT[M] x ¾" GH[F])*	*1*
255	30516	STZP R	Assembly, Bolt Mount	1
300	*76054*	*NBR*	*Kit, Seal (Includes: 98, 106, 121, 125)*	*1*
310	*77032*	*NBR*	*Kit, Valve (Includes: 160, 161, 163, 164, 166–169, 172)*	*1*
400	—	—	Regulator, Integral (See Individual Parts)	1
460	107681	BB	Fitting, Discharge (⅜" NPT[M])	1

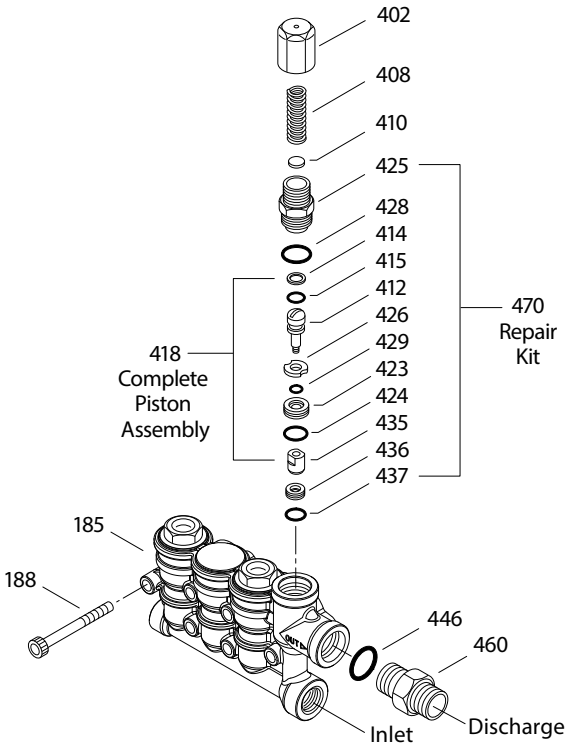
Italics are optional items. R Components comply with RoHS Directive.
† Production parts are different than repair parts. For additional technical information see www.catpumps.com/literature/tech-bulletins.
MATERIAL CODES (Not Part of Part Number): AL=Aluminum BB=Brass CC=Ceramic CM-Chrome-moly D=Acetal NBR=Medium Nitrile (Buna-N) NY=Nylon PC=Poly Carbonate PVDF=Polyvinylidene Fluoride S=304SS STL=Steel STCP=Steel/Chrome Plated STZP=Steel/Zinc Plated TNM=Special High Strength

NOTE: Discard Key which may come standard with most motors and **use only the key included in this kit.**

Note: Pump is shipped with two black caps with O-rings for shipping purposes. Remove black cap with O-ring on top of pump and replace with loose red cap with O-ring as supplied in box.

INTEGRAL REGULATOR

SPECIFICATIONS	U.S.	Metric
Flow	0.3 gpm	1.14 lpm
PSI Range	100–2000 psi	6.9–138 bar
Inlet Port	⅜" NPT(F)	⅜" NPT(F)
Discharge Port	⅜" NPT(M)	⅜" NPT(M)



PARTS LIST

ITEM	PN	MATL	DESCRIPTION	QTY
401	*32088*	*NY*	*Handle, Adjustable (Not Shown)*	*1*
402	46570	BB	Cap, Adjusting	1
408	33394	STZP R	Spring, Pressure	1
410	549352	STCP R	Retainer, Spring	1
412	46251	BB	Stem, Piston	1
414	28338	PTFE	Backup Ring, Piston Stem	1
415	22056	NBR	O-Ring, Piston Stem–70D	1
418	—	—	*Assembly, Piston (Included In Repair Kit)*	*1*
423	46249	BB	Retainer, Valve	1
424	13966	NBR	O-Ring, Valve Retainer (Outer)–70D	1
425	46248	BB	Retainer, Piston	1
426	46250	S	Washer	1
428	26133	NBR	O-Ring, Piston Retainer–80D	1
429	17399	NBR	O-Ring, Valve Retainer (Inner)–80D	1
435	548193	S	Valve	1
436	46253	S	Seat	1
437	13963	NBR	O-Ring, Seat–70D	1
446	26133	NBR	O-Ring, Body–80D	1
460	107681	BB	Fitting, Discharge (⅜" NPT[M])	1
468	*76754*	*NBR*	*Kit, O-Ring (Includes: 414, 415, 424, 428, 429, 437)*	*1*
470	*76031*	*NBR*	*Kit, Repair (Includes: 418, 425, 428, 436, 437)*	*1*

Italics are optional items. R Components comply with RoHS Directive.
MATERIAL CODES (Not Part of Part Number): BB=Brass NBR=Medium Nitrile (Buna-N)
NY=Nylon PTFE=Pure Polytetrafluoroethylene S=304SS
STCP=Steel/Chrome Plated STZP=Steel/Zinc Plated

INSTALLATION

An integral regulator with built-in bypass is part of the discharge manifold to provide system pressure regulation and pump protection.

OPERATION

Pump should be purged of air before commencing with operation. Liquid must flow through the pump without discharge restriction to ensure full system pressure is reached. Install a pressure gauge close to the manifold head of the pump to assist in setting system pressure and to periodically monitor system pressure.
Setting and adjusting the regulator pressure must be done with the system turned on. Start the system with the regulator backed off to the lowest pressure setting (counterclockwise direction). Squeeze the trigger and read the pressure on the gauge at the pump. Do not read pressure at the gun or nozzle. If more pressure is desired, release the trigger, turn adjusting cap one quarter turn in a clockwise direction. Squeeze the trigger and read the pressure. Repeat this process until the desired system pressure is reached. **NOTE:** Pressure is not set at the factory.

SERVICE

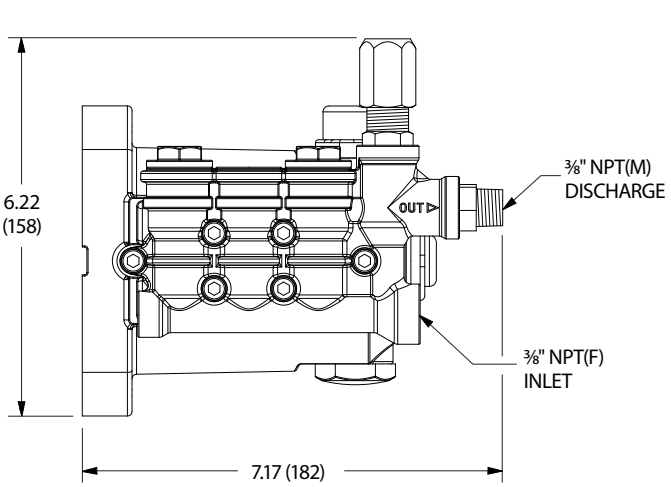
The regulator should be serviced on the same schedule as the seals in the pump.

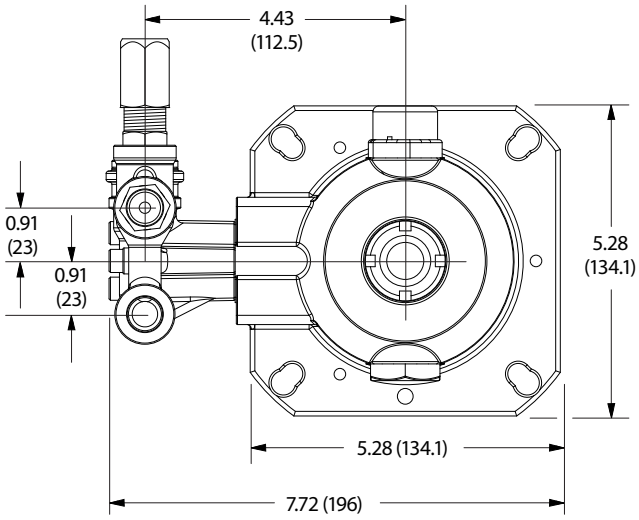
1. Remove hex adjusting cap, spring and spring retainer.
2. Using a socket or wrench, remove piston retainer from the regulator body. **NOTE:** Loctite® 242® is used in the assembly process.
3. Using a needle nose pliers, pull the complete piston assembly from the regulator body.
4. Grasp the valve with a pliers on the flat surface near the top next to the valve retainer and unthread the piston stem using a flat head screwdriver.
5. Remove O-rings from valve retainer, and backup ring and O-ring from piston stem. Examine O-rings and backup ring for cuts or wear and replace as needed.
6. Examine the valve, valve retainer and piston stem for wear and replace as needed.
   NOTE: The seat will be damaged during removal and must be replaced.
7. Replace seat with tapered surface facing down and piston stem from repair kit.
8. Lubricate all O-rings for ease of installation.
9. Press complete piston assembly into chamber with valve facing down.
10. Apply Loctite® 242® to threads of piston retainer with O-ring. Thread into body and tighten using a wrench.
11. Insert spring retainer and spring into the body.
12. Thread the adjusting cap into the body and set for system pressure.

NOTE: If unit is infrequently used or periodically stored, O-rings may become dry and will need to be replaced.

NOTE: This pump has an internally bypassed regulator and if the pump is operated with no flow out the nozzles (100% bypass), heat damage will occur to the seals and valve retainers in a short period of time, requiring premature replacement.

Loctite and 242 are registered trademarks of the Henkel Corporation.





Model 4DX03ELR

⚠ 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

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