

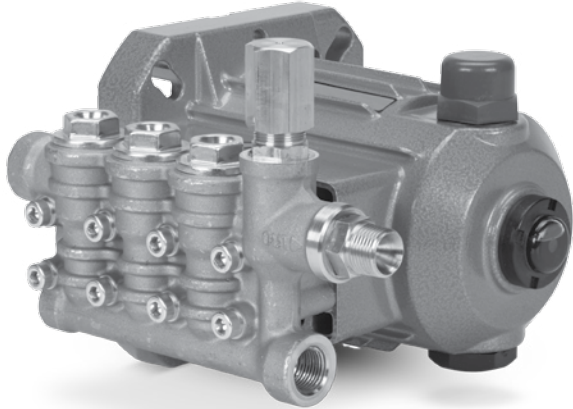
DATA SHEET

DIRECT DRIVE PLUNGER PUMPS



**Brass Electric
Model:**

4SP21ELR, 4SP29ELR



Model 4SP21ELR

FEATURES

- Triplex plunger design provides a smooth liquid flow.
- Specially formulated high pressure seals and concentric, polished ceramic plungers assure maximum seal life.
- Compact, direct mounting to NEMA 56C motor with 5/8" shaft.
- Stacked valve design for ease in servicing.
- Integral pressure regulator with built-in by-pass.
- Includes crankcase oil.

COMMON SPECIFICATIONS

	U.S.	Metric
Pump RPM	1750 rpm	1750 rpm
Inlet Pressure Range	Flooded to 60 psi	Flooded to 4.1 bar
Max. Liquid Temperature	140°F	60°C
Above 130°F call Cat Pumps for inlet conditions and elastomer recommendations.		
Bore	0.708"	18 mm
Crankcase Capacity	10.1 oz.	0.30 l
Inlet Port (1)	3/8" NPT(F)	3/8" NPT(F)
Accessory Port (1)	1/4" NPT(F)	1/4" NPT(F)
Discharge Port (1)	3/8" NPT(M)	3/8" NPT(M)
Discharge Port (1)	3/8" NPT(F)	3/8" NPT(F)
Shaft Diameter (Hollow - Electric)	5/8"	15.9 mm
Weight	11.7 lbs.	5.3 kg
Dimensions	7.8 x 7.5 x 6.3"	198 x 190 x 160 mm

SPECIFICATIONS

	U.S. Measure	Metric Measure
4SP21ELR		
Flow	2.1 gpm	7.9 lpm
Pressure Range	100 - 2000 psi	6.9 - 138 bar
Stroke	0.319"	8.1 mm
4SP29ELR		
Flow	2.85 gpm	10.8 lpm
Pressure Range	100 - 1200 psi	6.9 - 83 bar
Stroke	0.335"	8.5 mm

ELECTRIC HORSEPOWER REQUIREMENTS

MODELS	FLOW		PRESSURE			RPM
			psi 800	psi 1000	psi 1200	
	gpm	lpm	bar 55	bar 69	bar 83	
4SP21ELR	2.1	7.9	1.2	1.4	1.7	1750
4SP29ELR	2.85	10.8	1.6	1.9	2.3	1750

**DETERMINING
THE PUMP R.P.M.**

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

**DETERMINING
THE REQUIRED H.P.**

$$\text{Hp (Electric Brake)} = \frac{\text{gpm} \times \text{psi}}{1460}$$

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

PARTS LIST

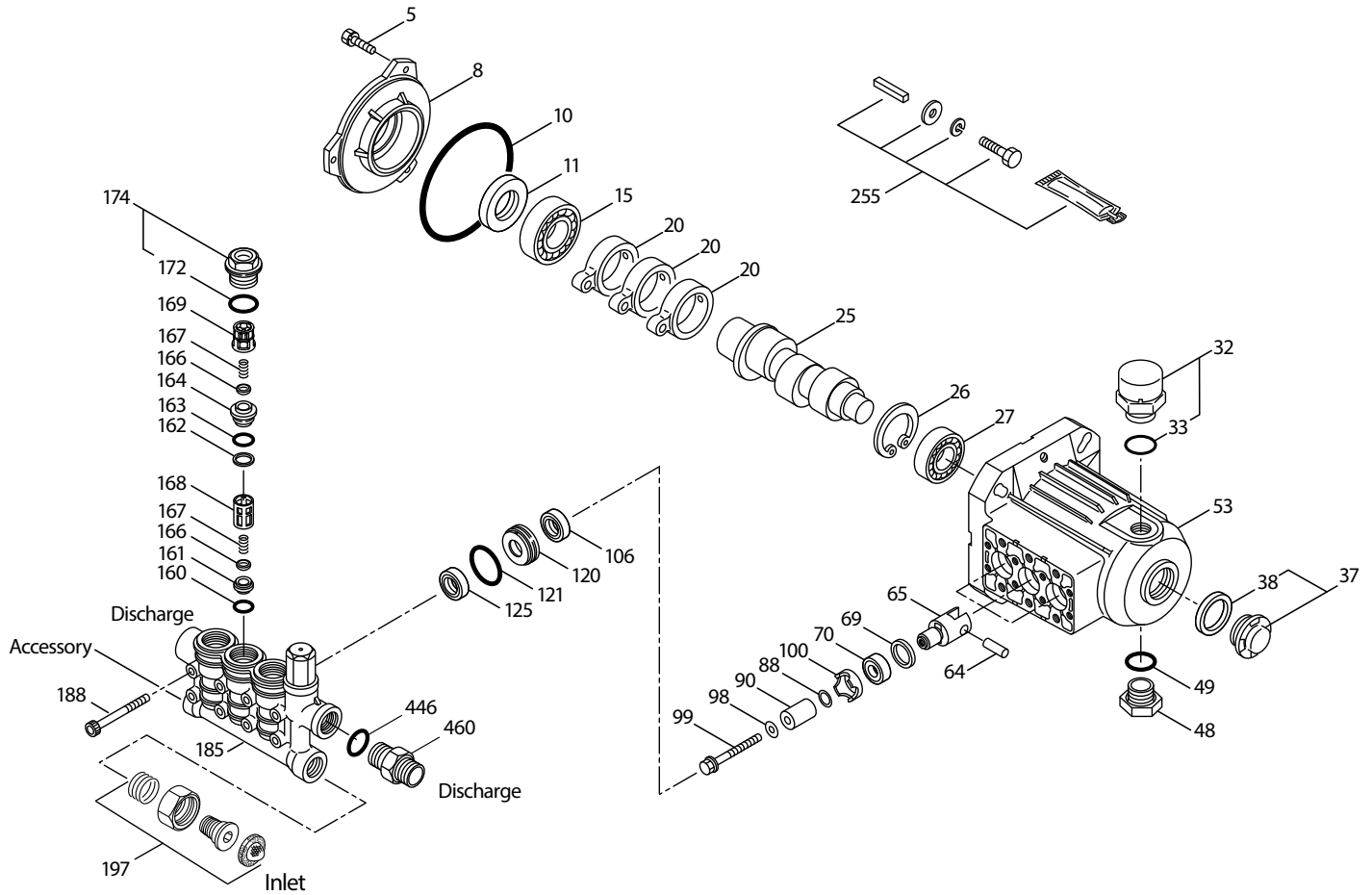
ITEM	P/N	MATL	DESCRIPTION	QTY
5	549360	STCP R	Screw, HHC Sems (M6x14)	3
8	547153	AL	Cover, Bearing	1
10	14041	NBR	O-Ring, Bearing Cover - 70D	1
11	55337	NBR	Seal, Oil	1
15	14488	STL	Bearing, Ball, Inner	1
20	547020	TNM	Rod, Connecting Assy	3
25	132605	CM	Crankshaft, 1750 RPM, (8.1 mm) (Model 4SP21ELR)	1
	133987	CM	Crankshaft, 1750 RPM, (8.5 mm) (Model 4SP29ELR)	1
26	12385	STL	Ring, Retaining	1
27	15710	STL	Bearing, Ball, Outer	1
32	549726	—	Cap, Vented w/O-Ring	1
33	14179	NBR	O-Ring, Oil Filler Cap - 70D	1
37	92241	—	Gauge, Oil, Bubble w/Gasket - 80D	1
38	44428	NBR	Gasket, Flat, Oil Gauge - 80D	1
48	44842	NY	Plug, Drain	1
49	14179	NBR	O-Ring, Drain Plug - 70D	1
53	547099	AL	Crankcase	1
64	16948	CM	Pin, Crosshead	3
65	49982	BB	Rod, Plunger	3
69	126259	STCP R	Washer, Oil Seal	3
70	25301	NBR	Seal, Oil - 80D	3
88	132607	S	Washer	3
90	133988	CC	Plunger (M18x24.6)	3
98	46730	NBR	Washer, Seal - 90D	3
99	542405	S	Retainer, Plunger (M6x35)	3
100	133989	PVDF	Retainer, Seal	3
106	43243	NBR	Seal, LPS w/S-SPG	3
120	133990	BB	Case, Seal	3
121	13978	NBR	O-Ring, Seal Case - 70D	3
125	43245	SNG	Seal, HPS	3
160	17428	NBR	O-Ring, Inlet Seat - 80D	3
161	547077	S	Seat, Inlet	3
162	48361	D	Back-up-Ring, Discharge Seat	3
163	43358	NBR	O-Ring, Discharge Seat - 70D	3
164	547076	S	Seat, Discharge	3
166	547098	S	Valve	6
167	46865	S	Spring	6
168	543988	PVDF	Retainer, Spring, Inlet	3
169	49764	PVDF	Retainer, Spring, Discharge	3
172	142807	NBR	O-Ring, Valve Plug - 90D	3
174	547104	BB	Plug, Valve (M20)	3
185	133991	FBB	Head, Manifold	1
188	549357	STCP R	Screw, HSH (M6x60)	8
197	941516	BB	Assembly, GH 3/8"	1
255	30516	STZPR	Mount, Bolt Assy.	1
300	76295	NBR	Kit, Seal (Incls: 98,106,121,125)	1
310	76976	NBR	Kit, Valve (Incls: 160,161,162,163,164,166,167,168,169,172)	1
—	6107	—	Oil, Bottle (21 oz.) ISO 68 Hydraulic (Fill to specific crankcase capacity prior to start up)	1

Integral Regulator

ITEM	P/N	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	—	—	Assy, 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, Discharge Fitting - 80D	1
460	107681	BB	Fitting, Discharge (3/8"NPT(M))	1
468	76254	NBR	Kit, O-Ring (Incls: 414, 415, 424, 428, 429, 437)	1
470	76031	NBR	Kit, Repair (Incls: 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

EXPLODED VIEWS



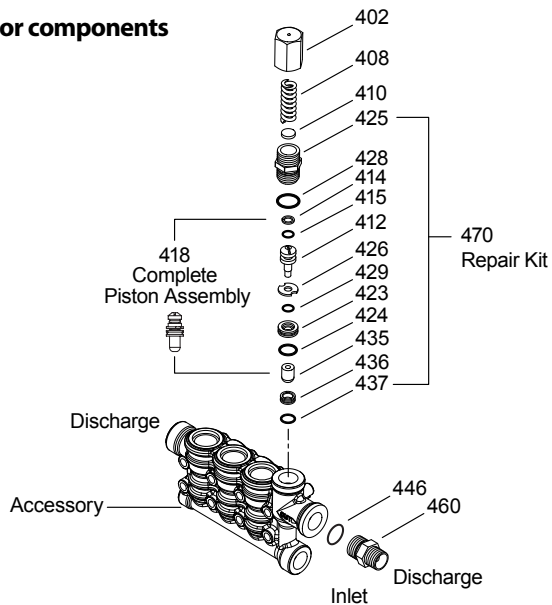
Italics are optional items. [] Date of latest production change. R Components comply with RoHS Directive.

See Tech Bulletins 002, 024, 036, 043, 055, 074 and 083 for additional information. MATERIAL CODES (Not Part of Part Number): AL=Aluminum BB=Brass CC=Ceramic CM=Chrome-Moly D=Acetal FBB=Forged Brass NBR=Medium Nitrile (Buna-N) NY=Nylon PVDF=Polyvinylidene Fluoride S=304SS SNG=Special Blend (Buna) STCP=Steel/Chrome Plated STL=Steel STZP=Steel/Zinc Plated TNM=Special High Strength.

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

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

Regulator components



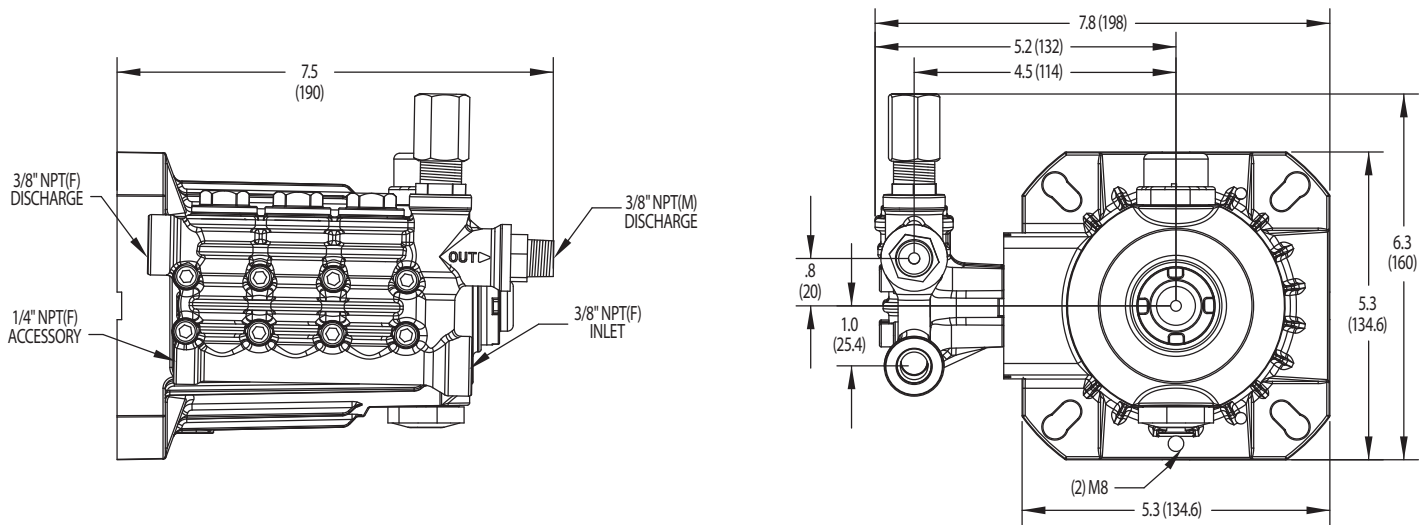
SPECIFICATIONS

U.S. Measure

Metric Measure

Integral Regulator

Flow	2.85 gpm	10.8 lpm
Pressure Range	100 - 1200 psi	6.9 - 83 bar
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Base Models 4SP21ELR, 4SP29ELR

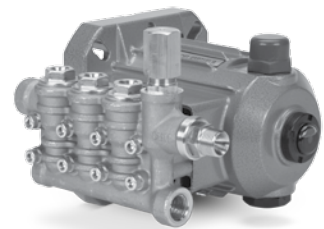
4SP Pump Series Selection Chart

Pump Series								Pump Flow/RPM	
4	S	P						gpm	rpm
			2	1				2.1	1750
			2	9				2.9	1750
					E	L		Electric, 5/8" Hollow Shaft	
						R		Regulating Device = Regulator	
						U		Regulating Device = Unloader	
							I	Fixed Chemical Injector	
							F	Garden Hose Fitting	

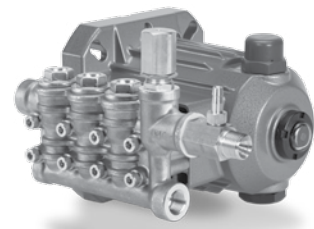
Examples:

4SP21ELR = 2.1 gpm (1750 rpm), Regulator, Standard Inlet - 3/8" NPT(F)

4SP29EUIF = 2.9 gpm (1750 rpm), Unloader, Chemical Injector, Garden Hose Inlet Fitting



Model 4SP21ELR



Model 4SP21ELUI

CAUTIONS AND WARNINGS

All High-Pressure Systems require a primary pressure regulating device (i.e. regulator, unloader) and a secondary pressure relief device (i.e. 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/cautions-warnings or can be requested directly from Cat Pumps.

WARRANTY

View the Limited Warranty on-line at www.catpumps.com/warranty.



CAT PUMPS

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