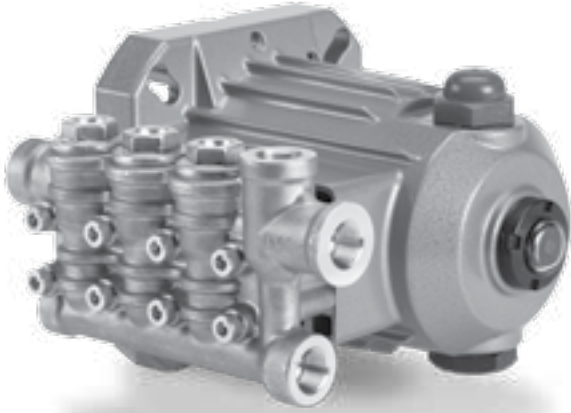


# DATA SHEET

## DIRECT DRIVE PLUNGER PUMPS



**Brass Models: 4SP21EL, 4SP21ELR**



Model 4SP21EL Shown

SPECIFICATIONS	U.S. Measure	Metric Measure
<b>4SP21EL and 4SP21ELR</b>		
Flow	2.1 gpm	7.9 lpm
Pressure Range	100-2000 psi	7-138 bar
Max. RPM	1750 rpm	1750 rpm
Shaft Diameter (Hollow - Electric)	5/8"	15.9 mm
Bore	0.630"	16 mm
Stroke	0.319"	8.1 mm
Inlet Pressure Range	Flooded to 60 psi	Flooded to 4 bar
Max. Liquid Temperature	140°F	60°C
Crankcase Capacity	10.15 oz.	0.30 l
Inlet Port (1)	3/8" NPT(F)	3/8" NPT(F)
Accessory Inlet Port (1)	1/4" NPT(F)	1/4" NPT(F)
Discharge Port (3) (Model 4SP21EL)	3/8" NPT(F)	3/8" NPT(F)
Discharge Port (1) (Model 4SP21ELR)	3/8" NPT(F)	3/8" NPT(F)
Discharge Port (1) (Model 4SP21ELR)	3/8" NPT(M)	3/8" NPT(M)
Weight	10.6 lbs.	4.8 kg
Dimensions	7.8 x 6.7 x 5.3"	198 x 171 x 134 mm

### FEATURES

- Triplex plunger design provides a smooth liquid flow.
- Specially formulated high pressure seals and concentric, polished ceramic plungers assure maximum seal life.
- Compact, hollow shafted pump for direct mounting to 5/8" electric shaft. Eliminates the need for pulleys, belts or gearboxes.
- Stacked valve design for ease in servicing.
- Crankcase can be vented (for misting or other applications) or completely sealed (for portable extractors).
- ELR version includes integral regulator

### ELECTRIC HORSEPOWER REQUIREMENTS

MODELS	FLOW		PRESSURE			RPM
			psi 1200	psi 1500	psi 2000	
	U.S. gpm	lpm	bar 85	bar 103	bar 138	
<b>4SP21EL and 4SP21ELR</b>	2.1	7.9	1.4	2.2	2.9	1750

<b>DETERMINING THE PUMP R.P.M.</b>	Rated gpm	=	"Desired" gpm
	Rated rpm	=	"Desired" rpm
<b>DETERMINING THE REQUIRED H.P.</b>	gpm x psi	=	Electric Brake
	1460	=	H. P. Required
<b>DETERMINING MOTOR PULLEY SIZE</b>	Motor Pulley O.D.	=	Pump Pulley O.D.
	Pump rpm	=	Motor rpm

See complete Drive Packages [Incls: Pulleys, Belts, Hubs, Key] Tech Bulletin 003. Refer to pump **Service Manual** for repair procedure and additional technical information.

## PARTS LIST

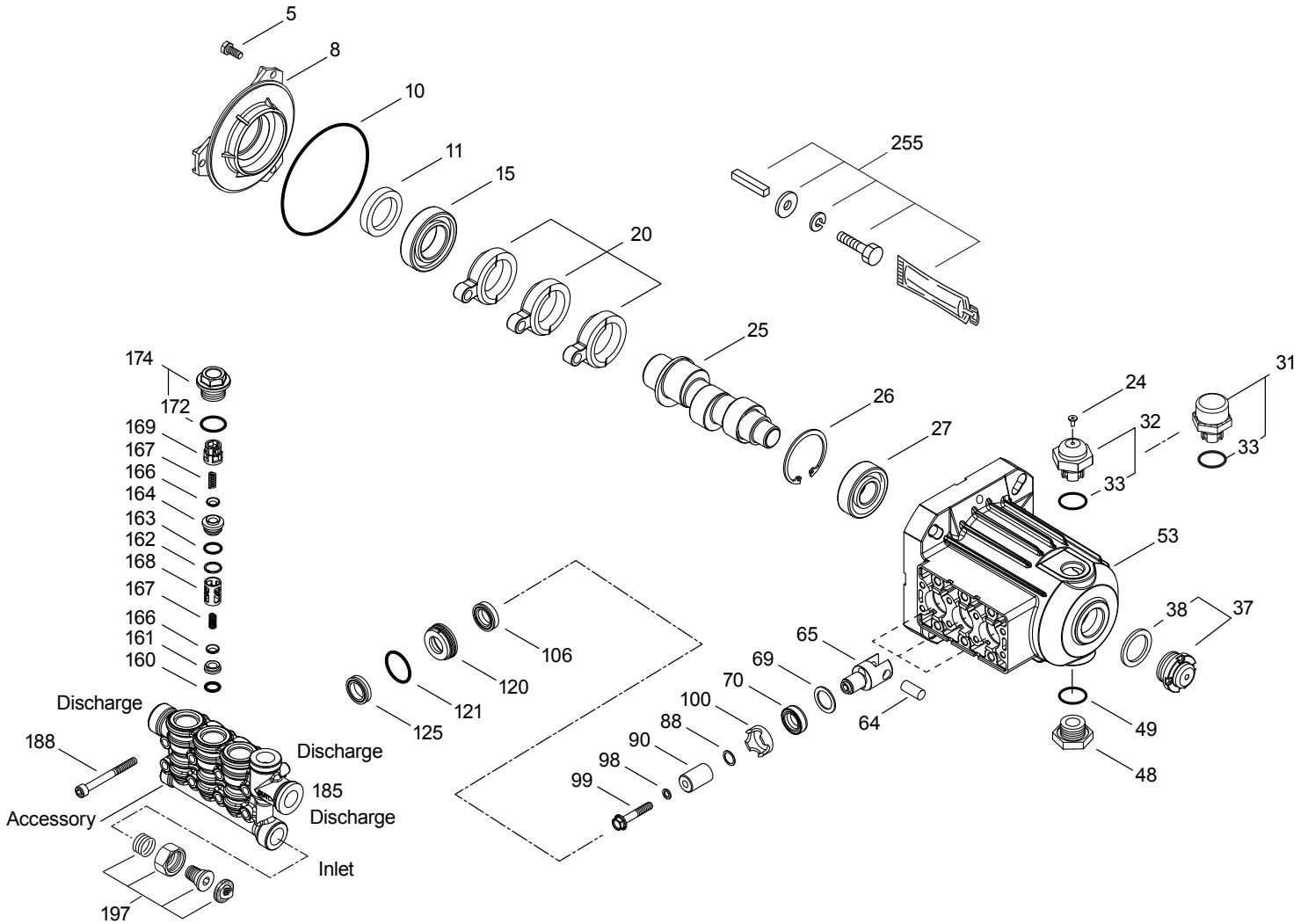
ITEM	P/N	MATL	DESCRIPTION	QTY
5	549360	STCP R	Screw, HHC Sems (M6x14)	3
8	547153	AL	Cover, Bearing	1
10	14041	NBR	O-Ring, Bearing Cover - 70D	1
11	55337	NBR	Seal, Oil	1
15	14488	STL	Bearing, Ball, Inner	1
20	547020	TNM	Rod, Connecting Assy	3
24	549608	LDPE	Plug, Oil Cap	1
25	132605	CM	Crankshaft, 3450 RPM, 1", 8.1 mm	1
26	12385	STL	Ring, Retaining	1
27	15710	STL	Bearing, Ball, Outer	1
31	549726	—	Cap, Vented w/O-Ring	1
32	547961	RTP	Cap, Oil Filler 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	132606	CC	Plunger (M16x24.6)	3
98	46730	NBR	Washer, Seal - 90D	3
99	542405	S	Retainer, Plunger (M6x35)	3
100	44869	PVDF	Retainer, Seal	3
106	48222	NBR	Seal, LPS w/S-SPG	3
120	132608	BB	Case, Seal	3
121	13977	NBR	O-Ring, Seal Case - 70D	3
125	547157	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	132609	FBB	Head, Manifold (Model 4SP21EL)	1
—	132973	FBB	Head, Manifold w/Integral Regulator Body (Model 4SP21ELR)	1
188	549357	STCP R	Screw, HSH (M6x60)	8
197	941516	BB	Assembly, GH 3/8" (Both pump models)	1
255	30516	STZPR	Mount, Bolt Assy.	1
283	990394	—	Kit, Oil Drain (Not Shown)	1
300	76968	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	76754	NBR	Kit, O-Ring (Incls: 414, 415, 424, 428, 429, 437)	1
470	76031	NBR	Kit, Repair (Incls: 418, 425, 428, 436, 437)	1

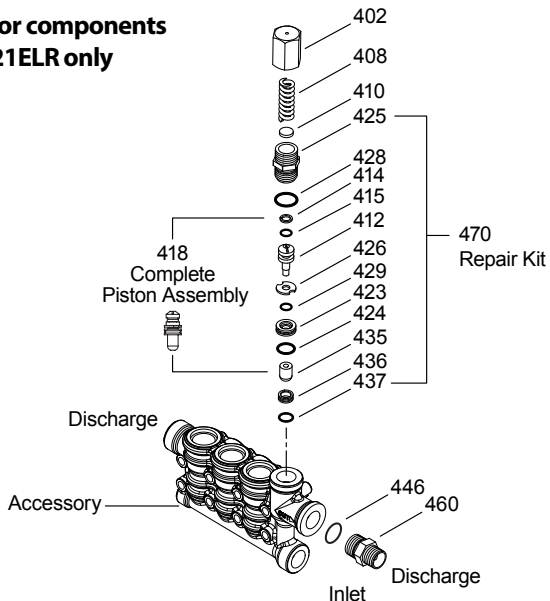
*Italics are optional items.* R Components comply with RoHS Directive. MATERIAL CODES (Not Part of Part Number): BB = Brass, NBR = Medium Nitrile (Buna-N), NY = Nylon, PTFE = Pure Polytetrafluoroethylene, S= 304SS STCP = Steel/Chrome Plated, STZP = Steel/Zinc Plated

# 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, FCM=Forged Chrome-Moly, LDPE=Low Density Polyethylene, NBR=Medium Nitrile (Buna-N), NY=Nylon, PE=Polyethylene, PVDF=Polyvinylidene Fluoride, RTP=Reinforced Composite, 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.**

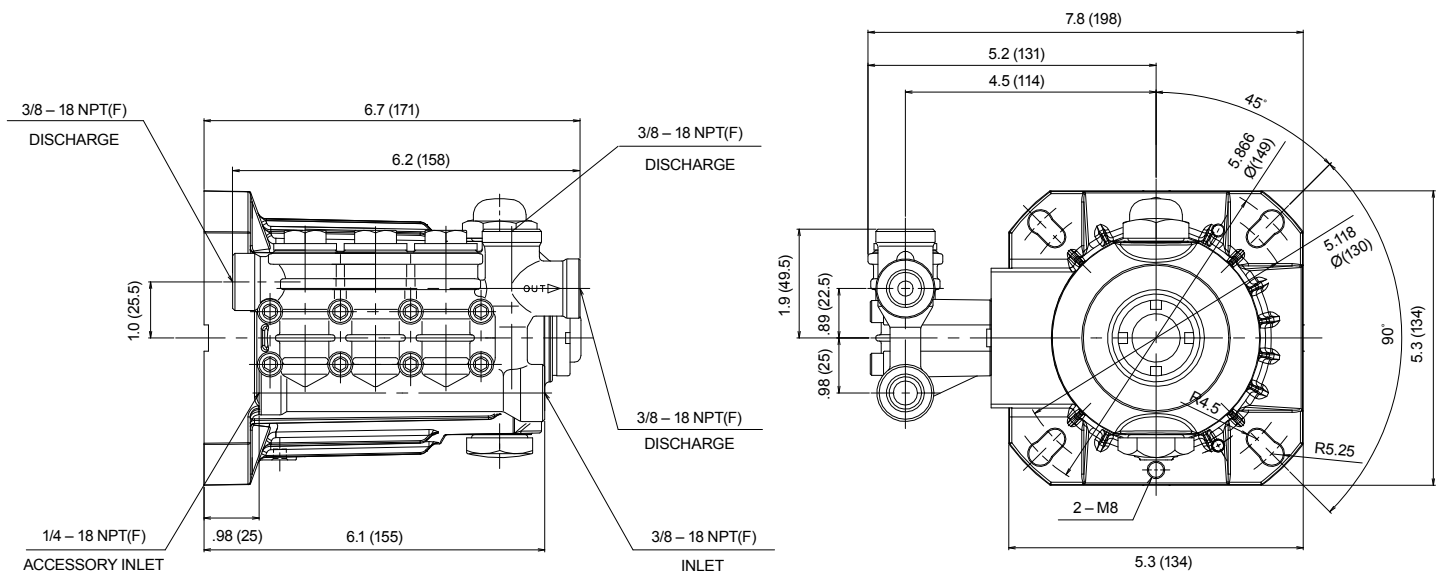
## Regulator components for 4SP21ELR only



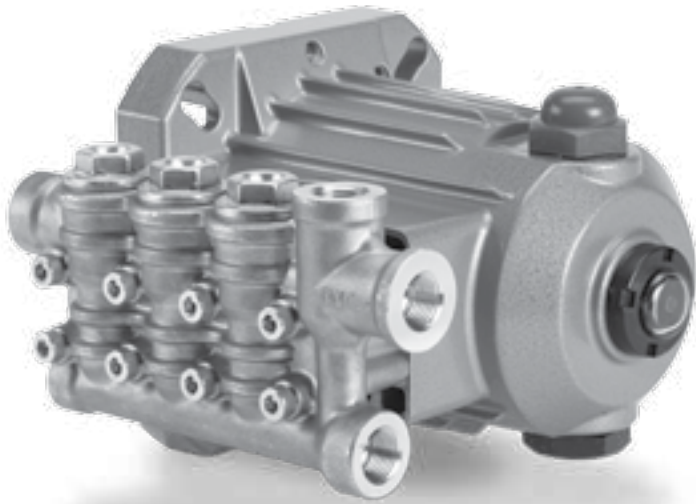
## SPECIFICATIONS

### Integral Regulator

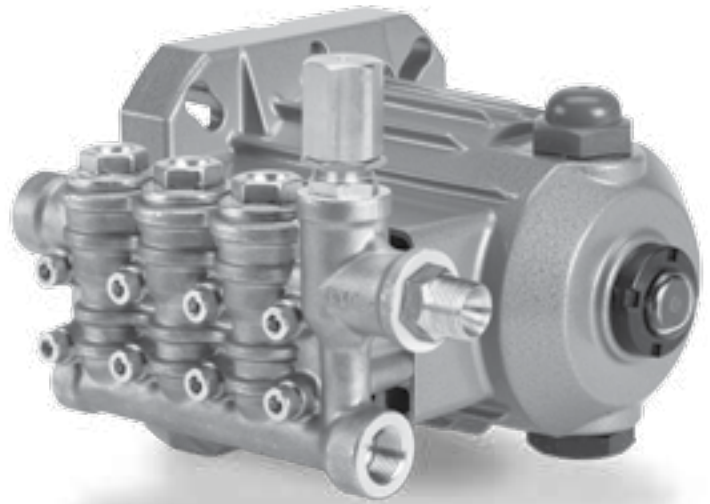
	U.S. Measure	Metric Measure
Flow	2.1 gpm	7.9 lpm
PSI Range	100-2000 psi	7-138 bar
Inlet Port	3/8" NPT(F)	3/8" NPT(F)
Discharge Port	3/8" NPT(M)	3/8" NPT(M)



Model 4SP21EL



Model 4SP21EL Shown



Model 4SP21ELR Shown

**⚠ 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](http://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](http://www.catpumps.com/warranty).



**CAT PUMPS**

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