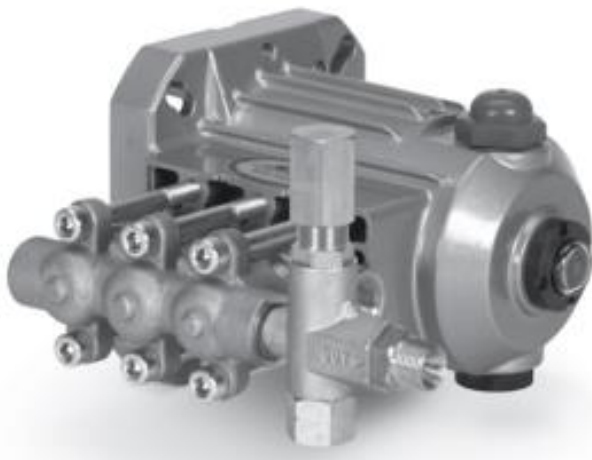




Technical specifications and instructions



Direct-Drive Plunger pumps

Electric models

**2SF10ES, 2SF20ES,
2SF22ES, 2SF22ELS,
2SF29ELS, 2SF30ES,
2SF35ES**

Gas models

2SF30GS, 2SF35GS

Specifications (*)

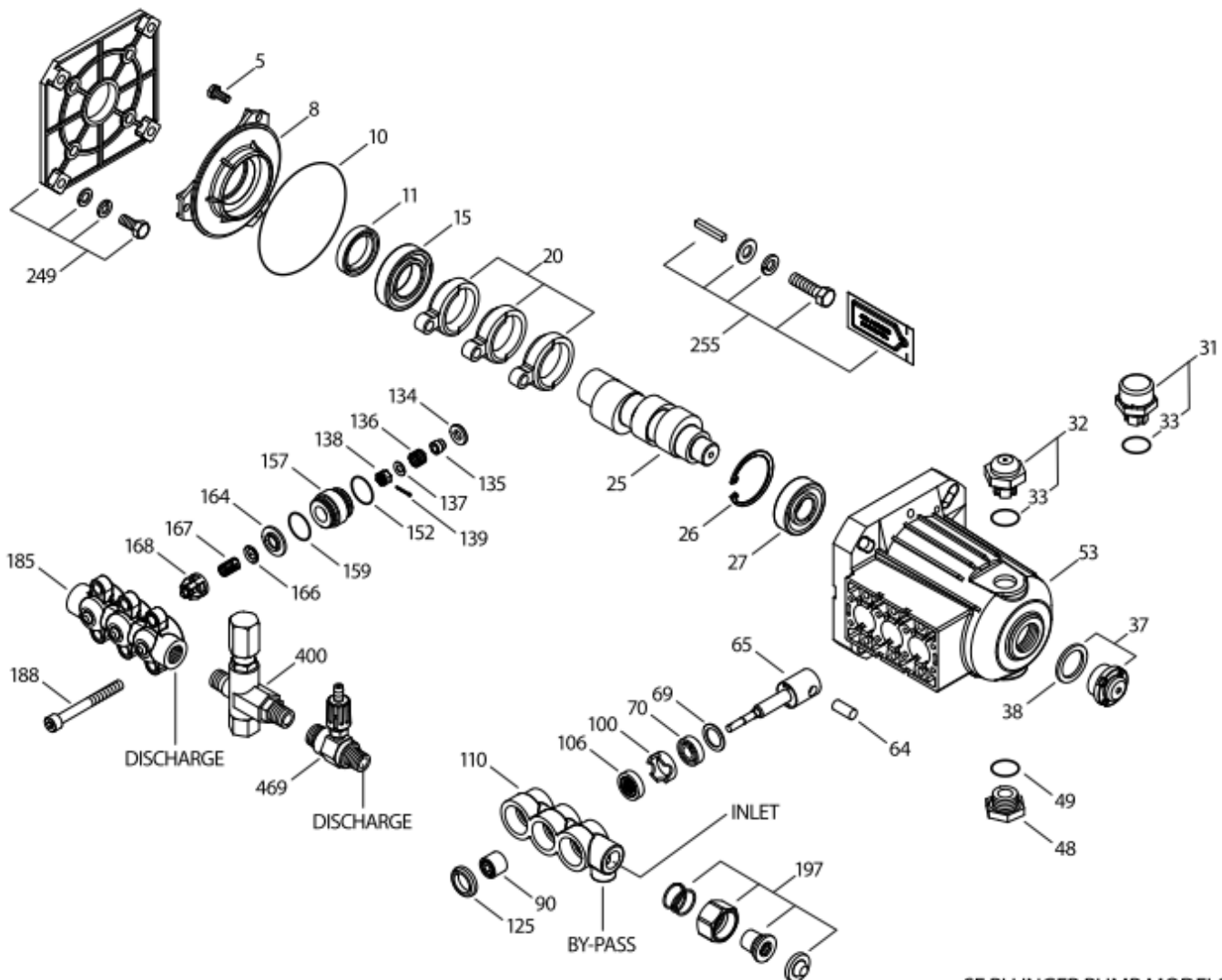
	2SF10ES	2SF20 ES	2SF22ES
Flow	3,1 l/min	6,2 l/min	6,8 l/min
Max. discharge pressure	140 bar	140 bar	140 bar
Max. RPM	2800 RPM	2800 RPM	2800 RPM
Stroke	1,8 mm	3,1 mm	3,35 mm
	2SF22ELS	2SF29ELS	2SF30ES
Flow	7 l/min	8,9 l/min	9,25 l/min
Max. discharge pressure	140 bar	105 bar	105 bar
Max. RPM	1450 RPM	1450 RPM	2800 RPM
Stroke	6,3 mm	8,5 mm	4,5 mm
	2SF30GS	2SF35ES	2SF35GS
Flow	9,25 l/min	10,7 l/min	10,7 l/min
Max. discharge pressure	140 bar	105 bar	140 bar
Max. RPM	2800 RPM	2800 RPM	2800 RPM
Stroke	4,8 mm	5,6 mm	5,6 mm

(*) Abnormalities permitted only after consultation and written confirmation from Cat Pumps.

Common Specifications

Inlet pressure range (standard)	flooded to 5,25 bar
Inlet pressure range (Hi-temp)	2,1 bar to 5,25 bar
Bore	18 mm
Max. liquid temperature (standard)	71° C
Max. liquid temperature (Hi-temp)	88° C
Crankcase capacity	0,33 L
Inlet ports (1)	3/8" NPTF
Discharge ports (2)	3/8" NPTF
By-pass ports (1)	1/4" NPTF
Weight (pump only)	4,8 kg
Dimensions (pump only)	232 x 169 x 165 mm

Exploded View



SF PLUNGER PUMP MODELS

Parts list

Item	Num.	Mat.	Description	Models	Qty
5	549360	STCP R	Screw, HH (M6x14) (see TB 092)	All Models	3
8	547153	AL	Cover, bearing, inner (see TB 092)	All Models	1
10	14041	NBR	O-ring, bearing cover – 70D (see TB 092)	All Models	1
11	55337	NBR	Seal, oil (see TB 092)	All Models	1
15	14488	STL	Bearing, ball, inner	All Models	1
20	547046	TNM	Rod, Connecting	All Models	3
25	831987	CM	Crankshaft, 2800 RPM, 5/8", 1.8 mm	2SF10ES	1
	46109	CM	Crankshaft, 2800 RPM, 5/8", 3.1 mm	2SF20ES	1
	45962	CM	Crankshaft, 2800 RPM, 5/8", 3.35 mm	2SF22ES	1
	546334	CM	Crankshaft, 2800 RPM, 3/4", 4.8 mm	2SF30GS	1
	44931	CM	Crankshaft, 2800 RPM, 5/8", 4.5 mm	2SF30ES	1
	45096	CM	Crankshaft, 2800 RPM, 5/8", 5.6 mm	2SF35ES	1
	46017	CM	Crankshaft, 2800 RPM, 3/4", 5.6 mm	2SF35GS	1
	45160	CM	Crankshaft, 1450 RPM, 5/8", 6.3 mm	2SF22ELS	1
	45914	CM	Crankshaft, 1450 RPM, 5/8", 8.5 mm	2SF29ELS	1
26	12385	STL	Ring, retaining	All Models	1
27	15710	STL	Bearing, ball, outer	All Models	1
31	549726	-	Cap, vented w/O-ring (rain cap)	All Models	1
32	547961	RTP	Cap, oil filler w/O-ring	All Models	1
33	14179	NBR	O-ring, oil filler cap – 70D	All Models	1
37	92241	-	Gauge, bubble oil w/gasket – 80D	All Models	1
38	44428	NBR	Gasket, flat flex., oil gauge – 80D	All Models	1
48	44842	NY	Plug, drain (1/2" NPTF)	All Models	1
49	14179	NBR	O-ring, drain plug – 70D	All Models	1
53	547285	AL	Crankcase (see TB 092)	All Models	1
64	16948	CM	Pin, crosshead	All Models	3
65	44865	SCP	Rod, plunger	All Models except 2SF29ELS	3
	45427	SZZ	Rod, plunger	2SF29ELS	3
69	126259	STCP R	Washer (M24)	All Models	3
70	25461	NBR	Seal, oil	All Models	3
90	45847	CC	Plunger (M18x14)	All Models except 2SF29ELS	3
	45429	CC	Plunger (M18x16)	2SF29ELS	3
100	44869	PVDF	Retainer, seal	All Models	3
106	44876	NBR	Seal, LPS w/S-Spg	All Models	3
	545192	FPM	Seal, LPS w/SS-Spg	All Models	3
	# 546507	EPDM	Seal, LPS w/SS-Spg	All Models	3
110	44874	BB	Manifold, inlet	All Models	1
125	43245	SNG	Seal, HPS w/S	All Models	3
	46652	HT*	Seal, HPS 'Hi-Temp' 2-pc w/S-support	All Models	3
	76052	ST4	Seal, HPS w/S	All Models	3
134	45854	S	Valve, inlet	All Models	3
	33873	D	Valve, inlet, Hi-Temp	All Models	3
135	549520	S	Spacer, inlet	All Models	3
136	44872	S	Spring, inlet valve	All Models	3
137	88575	S	Washer, conical (M6)	All Models	3
138	27000	S	Nut, slotted (M6)	All Models	3
139	14158	S	Cotterpin (M1.6x10)	All Models	3
152	26089	NBR	O-ring, adapter, inner – 80D	All Models	3
	11377	FPM	O-ring, adapter, inner – 80D	All Models	3
	# 46647	EPDM	O-ring, adapter, inner – 80D	All Models	3
157	44878	BB	Discharge valve adapter	All Models except 2SF29ELS	3
	45430	BB	Discharge valve adapter	2SF29ELS	3
159	26089	NBR	O-ring, adapter, outer – 80D	All Models	3
	11377	FPM	O-ring, adapter, outer – 80D	All models	3
	# 46647	EPDM	O-ring, adapter, outer – 80D	All models	3

164	44881	S	Seat	All Models	3
166	43723	S	Valve	All Models	3
167	541062	S	Spring	All Models	3
168	44565	PVDF	Retainer, spring	All Models	3
185	44879	BB	Manifold, discharge	All Models	1
188	126762	STCP R	Screw, HSH (M8x75)	All Models	6
197	941516	BB	<i>Garden Hose Assembly, 3/8" NPTF</i>	<i>All Models</i>	1
249	30520	-	Assy, adapter mount, gas	2SF30GS, 2SF35GS	1
255	30517	STZP R	Assy, bolt mount	All Models	1
283	990394	-	<i>Kit, oil drain (not shown)</i>	<i>All models</i>	1
285	80228	STL	<i>Screw (M8-1.25x80) (not shown)</i>	<i>All models</i>	2
300	34053	NBR	<i>Kit, seal (incl.106,125,139,152,159) standard</i>	<i>All models</i>	1
	33953	HT	<i>Kit, seal 'Hi-temp' (incl.106,125,134,139,152,159)</i>	<i>All models</i>	1
	33453	FPM	<i>Kit, seal (incl.106,125,139,152,159)</i>	<i>All models</i>	1
	# 30536	EPDM*	<i>Kit, seal (incl.106,125,139,152,159)</i>	<i>All models</i>	1
310	34052	NBR	<i>Kit, valve (incl.152,159,164,166,167,168)</i>	<i>All models</i>	1
311	34668	NBR	<i>Kit, inlet (incl.134-139,152,159)</i>	<i>All models</i>	1
400	7500S	BB	<i>Unloader, regulating</i>	<i>All models</i>	1
469	7192	BB	<i>Injector, chemical (1.8 mm adjustable)</i>	<i>All models</i>	1
	7193	BB	<i>Injector, chemical (2.1 mm adjustable)</i>	<i>All models</i>	1
	7194	BB	<i>Injector, chemical (2.3 mm adjustable)</i>	<i>All models</i>	1

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

{ } Date of latest production change. R Components comply with RoHS directive. # Silicone/grease required.

* Review individual parts in each in each kit for material code identification.

View 'Tech Bulletins' 002, 024, 036, 043, 055, 064, 065, 070, 073, 074, 083, 091 and 092 for additional information.

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

Material codes: (not part or part number)

AL	Aluminum	NBR	Medium nitrile (Buna-N)	STCP	Steel / chrome plated
BB	Brass	NY	Nylon	STL	Steel
CC	Ceramic	PVDF	Polyvinylidene fluoride	STZP	Steel / zinc plated
CM	Chrome-moly	RTP	Reinforced composite	SZZ	304SS / zamak
D	Acetal	S	304SS	TNM	Special high strength
EPDM	Thylene Propylene Diene Monomer	SCP	304SS / chrome plated		
FPM	Fluorocarbon	SNG	Special blend (buna)		
HT	Hi-Temp (EPDM alternative)	ST4	Special PTFE 4		

Center raised pilot guide on the **Adapter Plate** assures proper alignment of pump and engine. Before mounting pump onto engine inspect engine for **recessed seal and bearing guide** to permit adapter to completely seat into recess and four bosses to be flush with engine face.