



Technical specifications and instructions



Direct-Drive Plunger pumps

Electric models

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

Gas models

2SF30GS, 2SF35GS

Specifications (*)

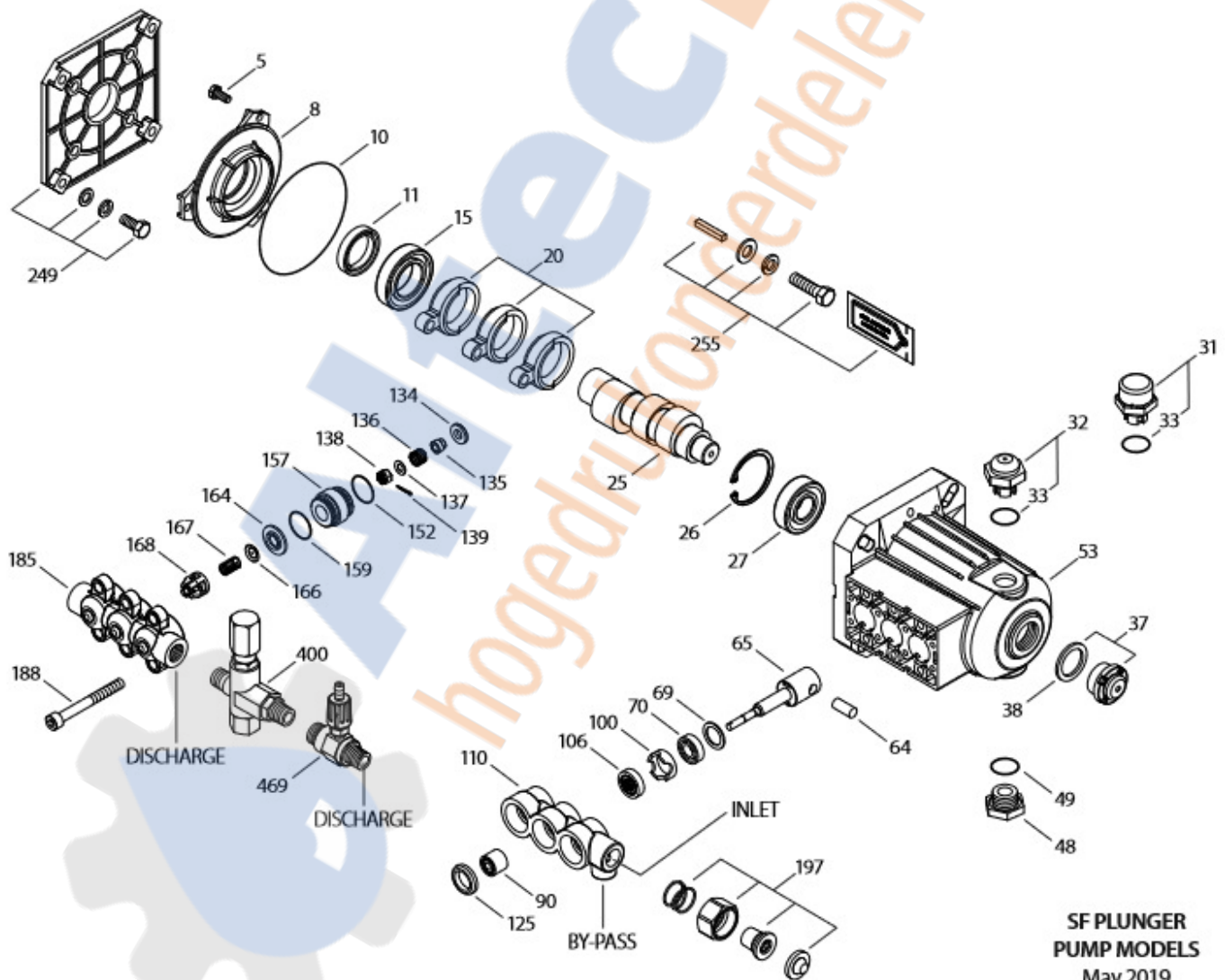
	2SF10ES	2SF20ES	2SF22ES
Flow	3,1 l/min	6,2 l/min	6,8 l/min
Max. discharge pressure	140 bar	140 bar	140 bar
Max. RPM	2800 RPM	2800 RPM	2800 RPM
Stroke	1,8 mm	3,1 mm	3,35 mm
	2SF22ELS	2SF29ELS	2SF30ES
Flow	7 l/min	8,9 l/min	9,25 l/min
Max. discharge pressure	140 bar	105 bar	105 bar
Max. RPM	1450 RPM	1450 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/M
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
May 2019

May 2019

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	Garden Hose Assembly, 3/8" NPTFM x 3/4" GHF	All Models	1
249	30520	-	Assy, adapter mount, gas	2SF30GS, 2SF35GS	1
255	30517	STZP R	Assy, bolt mount	All Models	1
285	80228	STL	Screw (M8-1.25x80) (not shown)	All models	2
300	34053	NBR	Kit, seal (incl.106,125,139,152,159) standard	All models	1
	33953	HT	Kit, seal 'Hi-temp' (incl.106,125,134,139,152,159)	All models	1
	33453	FPM	Kit, seal (incl.106,125,139,152,159)	All models	1
	# 30536	EPDM*	Kit, seal (incl.106,125,139,152,159)	All models	1
310	34052	NBR	Kit, valve (incl.152,159,164,166,167,168)	All models	1
311	34668	NBR	Kit, inlet (incl.134-139,152,159)	All models	1
400	7500S	BB	Unloader, regulating	All models	1
469	7192	BB	Injector, chemical (1.8 mm adjustable)	All models	1
	7193	BB	Injector, chemical (2.1 mm adjustable)	All models	1
	7194	BB	Injector, chemical (2.3 mm adjustable)	All models	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. # Silicone oil/grease required

View 'Tech Bulletins' 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 Monamer	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.