

DATA SHEET

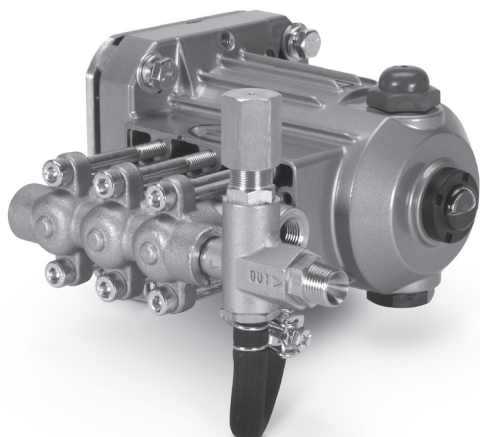
DIRECT DRIVE PLUNGER PUMPS



Brass Electric Models:

2SFX20ES, 2SFX30ES, 2SFX30GES

Brass Gas Models: 2SFX30GS, 2SFX30GZ



Model 2SFX30GS Shown
(Unloader and by-pass hose included with pump)

FEATURES

- Your choice of motorized unit or hollow shaft pump only for direct mounting to gas engine or electric motor.
- Includes regulating unloader, by-pass hose and crankcase oil.
- Includes crankcase oil.
- Standard NBR seals with alternative options for temperature and chemical compatibility.

COMMON SPECIFICATIONS

	U.S.	Metric
Inlet Pressure Range	Flooded – 75 psi	Flooded – 5.2 bar
Pump RPM	3450 rpm	3450 rpm
Bore	0.708"	18 mm
Max. Liquid Temperature (NBR)	160°F	71°C
Crankcase Capacity	10.1 oz.	0.3 l
Alternate seals available for high temperature up to 180° F		
Inlet Port (1)	3/8" NPT(F)	3/8" NPT(F)
Discharge Port (1)	3/8" NPT(F)	3/8" NPT(F)
Discharge Port (1)	3/8" NPT(M)	3/8" NPT(M)
By-pass Port (1)	1/4" NPT(F)	1/4" NPT(F)
Weight (Pump Only)	11.83 lbs.	4.8 kg
Dimensions (Pump Only)	9.13 x 6.65 x 6.50"	232 x 169 x 165 mm

SPECIFICATIONS

	U.S. Measure	Metric Measure
2SFX20ES		
Flow	2.0 gpm	7.6 lpm
Max. Discharge Pressure	2000 psi	138 bar
Stroke	0.122"	3.1 mm
2SFX30ES		
Flow	3.0 gpm	11.4 lpm
Max. Discharge Pressure	1500 psi	103 bar
Stroke	0.177"	4.5 mm
2SFX30GES		
Flow	3.0 gpm	11.4 lpm
Max. Discharge Pressure	2000 psi	138 bar
Stroke	0.189"	4.8 mm
2SFX30GS		
Flow	3.0 gpm	11.4 lpm
Max. Discharge Pressure	2000 psi	138 bar
Stroke	0.189"	4.8 mm
2SFX30GZ		
Flow	3.0 gpm	11.4 lpm
Max. Discharge Pressure	2500 psi	172 bar
Stroke	0.189"	4.8 mm

ES = **Electric** 5/8" hollow shaft with bolt mount, NEMA 56C

GES = **Electric** 3/4" hollow shaft with bolt mount.

GS, GZ = **Gas** 3/4" hollow shaft with bolt mount and adapter.

Gas Mounting Flange: SAE J609, Flange A, Extension 3 (3/4" Ø).

Shaft Length = 2.296, Pilot Ø = 1 5/8", B.C. Ø = 3 5/8", Thread = 5/16"-24 UNC Tap

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

ALTERNATIVE SEAL CONFIGURATION

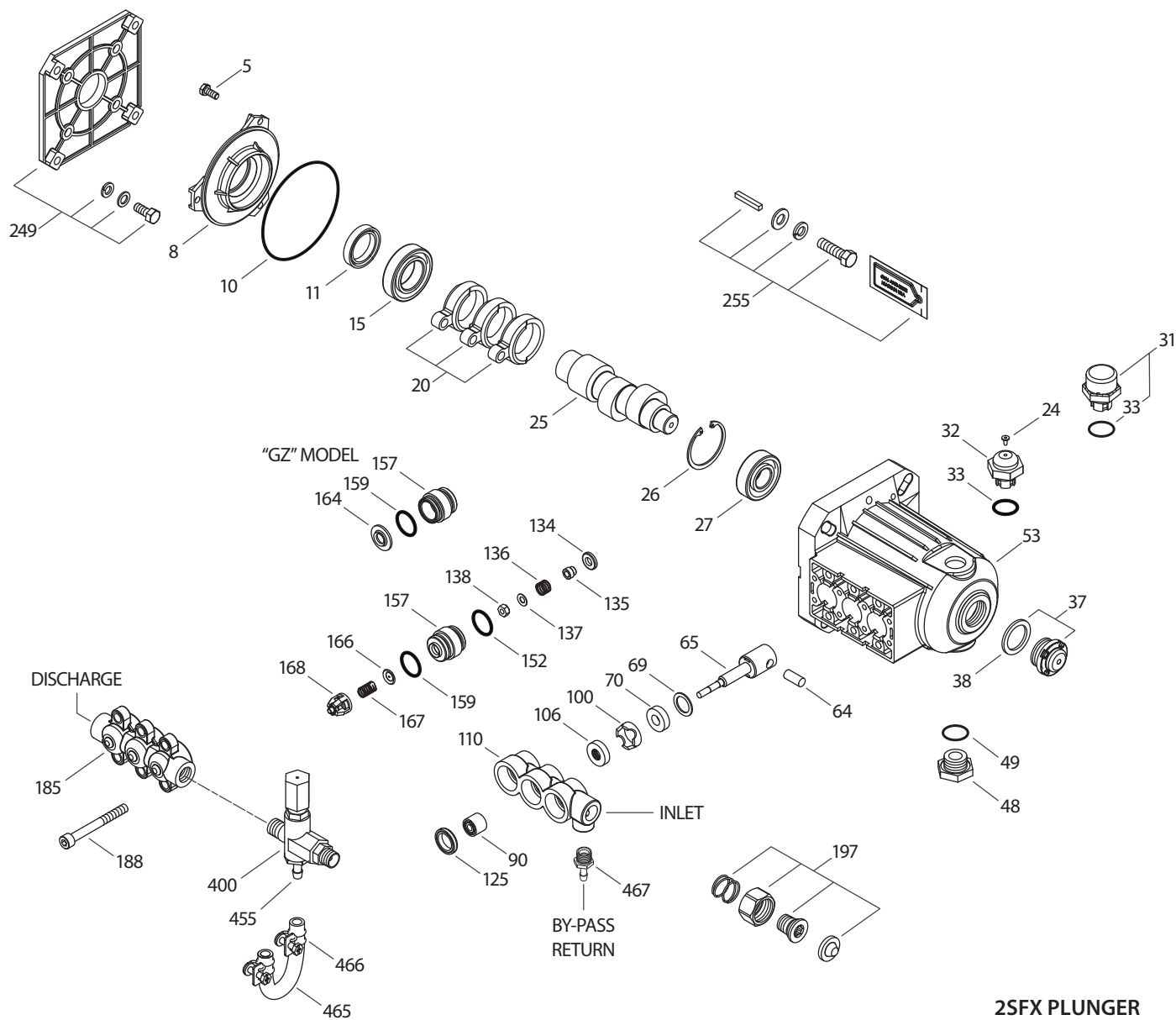
MATERIAL	SUFFIX CODE	MAXIMUM TEMPERATURE
NBR	—	160° F (71° C)
FPM	.0110	180° F (82° C)
EPDM	.0220	160° F (71° C)
HT	.3000	180° F (82° C)

See Reference Document 99TCH002 for inlet conditions and RPM at high temperature.

PARTS LIST

ITEM	PART NUMBER	MATL	DESCRIPTION	MODEL USED	QTY
5	549360	STCP R	Screw, HH (M6x14) (See Tech Bulletin 092)	All Models	3
8	547153	AL	Cover, Bearing, Inner (See Tech Bulletin 092)	All Models	1
10	14041	NBR	O-Ring, Bearing Cover-70D (See Tech Bulletin 092)	All Models	1
11	55337	NBR	Seal, Oil - 70D (See Tech Bulletin 092)	All Models	1
15	14488	STL	Bearing, Ball, Inner	All Models	1
20	547046	TNM	Rod, Connecting	All Models	3
24	549608	LPDE	Plug, Oil Cap (Remove before Start-Up)	All Models	1
25	46109	FCM	Crankshaft, 3450 RPM, 5/8", 3.1mm	2SFX20ES	1
	44931	FCM	Crankshaft, 3450 RPM, 5/8", 4.5mm	2SFX30ES	1
	546334	FCM	Crankshaft, 3450 RPM, 3/4", 4.8mm	2SFX30GES, GS, GZ	1
26	12385	STL	Ring, Retaining	All Models	1
27	15710	STL	Bearing, Ball, Outer	All Models	1
31	549726	—	Cap, Vented w/ O-Rings (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, Oil, Bubble w/Gasket	All Models	1
38	44428	NBR	Gasket, Oil Gauge - 80D	All Models	1
48	44842	NY	Plug, Drain [1/2" NPT(F)]	All Models	1
49	14179	NBR	O-Ring, Drain Plug - 70D	All Models	1
53	547285	AL	Crankcase (See Tech Bulletin 092)	All Models	1
64	16948	CM	Pin, Crosshead	All Models	3
65	540073	SZZ	Rod, Plunger, Unchromed	2SFX20, 30	3
	542958	SHS	Rod, Plunger	2SFX30GZ	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	3
100	44869	PVDF	Retainer, Seal	All Models	3
106	+ 834378	NBR	Seal, LPS w/SS-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 (See Tech Bulletin 073)	All Models except GZ	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	All Models	3
136	44872	S	Spring, Inlet	All Models	3
137	88575	S	Washer, Conical (M6)	All Models	3
138	81240	SS	Nut, Hex (M6)	All Models	3
152	+ 26089	NBR	O-Ring, Adapter - 80D	All Models	3
	11377	FPM	O-Ring, Adapter - 80D	All Models	3
	◆ 46647	EPDM	O-Ring, Adapter - 80D	All Models	3
157	45859	BB	Adapter, Discharge, Seat	All Models except GZ	3
	44878	BB	Spacer, Discharge, Valve	2SFX30GZ	3
159	+ 26089	NBR	O-Ring, Adapter - 80D	All Models	3
	11377	FPM	O-Ring, Adapter - 80D	All Models	3
	◆ 46647	EPDM	O-Ring, Adapter - 80D	All Models	3
164	44881	S	Seat	2SFX30GZ	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	GH Assembly, [3/8" NPT(M) x 3/4" GH(F)]	All Models	1
249	30520	—	Assy, Adapter Mount, Gas	All Gas Models	1
255	30517	STZP	Assy, Bolt Mount	All Models	1
285	80228	STL	Screw (M8-1.25x80) (Not Shown)	All Models	2
300	34053	NBR	Kit, Seal (Incls: 106,125,152,159) Standard	All Models	1
	33953	HT	Kit, Seal, Hi-Temp (Incls: 106,125,134,152,159) .3000 (See Tech Bulletin 073)	All Models	1
	33453	FPM	Kit, Seal (Incls: 106,125,152,159) .0110	All Models	1
	◆ 30536	EPDM*	Kit, Seal (Incls: 106, 125, 152, 159) .0220	All Models	1

EXPLODED VIEW



2SFX PLUNGER PUMP MODELS

ITEM	PART NUMBER	MATL	DESCRIPTION	MODEL USED	QTY
310	34056	NBR	Kit, Discharge Valve (Incls: 152,157,159,166,167,168) Standard, .3000	All except GZ	1
	34052	NBR	Kit, Discharge Valve (Incls: 152,159,164,166,167,168) Standard	2SFX30GZ	1
311	34668	NBR	Kit, Inlet Valve (Incls: 134–137,152,159) Standard	All Models	1
400	7500XS	BB	Unloader, Regulating	Std. 2SFX Models	1
	7625	BB	Unloader, Regulating	2SFX30GZ	1
—	6107	—	Oil, Bottle (21 oz) ISO 68 Hydraulic (Fill to specified crankcase capacity prior to start-up)	All Models	1

Bold Part Numbers are unique to a particular pump model. *Italics* are optional items.

[] Date of latest production change. † Production parts are different than service parts.

*Review individual parts in each kit for material identification. R Components comply with RoHS Directive.

For additional technical information see www.catpumps.com/literature/tech-bulletins.

Effective with 1/90 Mfg. date 45853, 14036, 44861, 92519 have been replaced with new one piece crankcase.

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 of Part Number): AL=Aluminum BB=Brass CC=Ceramic CM=Chrome-moly D=Acetal EPDM=Ethylene Propylene Diene Monomer
FCM=Forged Chrome-moly FPM=Fluorocarbon HT=Hi-Temp (EPDM Alternative) LPDE=Low Density Polyethylene NBR=Medium Nitrile (Buna-N) NY=Nylon
PVDF=Polyvinylidene Fluoride RTP=Reinforced Composite S=304SS SHS=304SS/High Strength SNG=Special Blend (Buna) SS=316SS ST4=Special PTFE 4
STL=Steel STCP=Steel/Chrome-Plated STZP=Steel/Steel Plated SZZ=304SS/Zamak TNN=Special High Strength

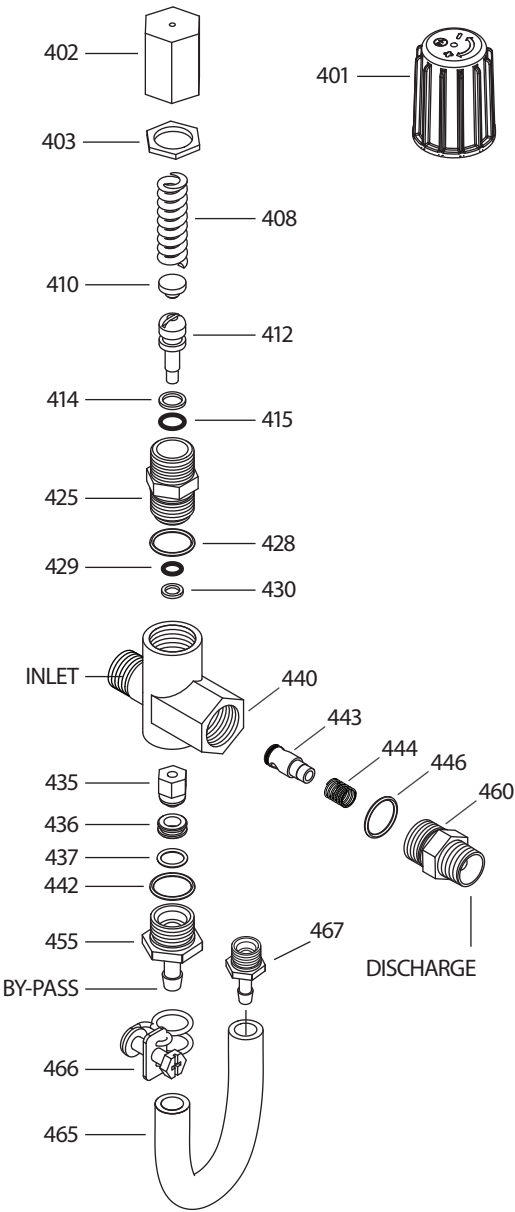
Center raised pilot guide on the **Adapter Plate** assures proper alignment of pump and engine. Before mounting pump onto engine inspect engine for **recessed seal and bearing guide** to permit adapter to completely seat into recess and four bosses to be flush with engine face.

7500XS UNLOADER for "ES, GS" Pump Models

SPECIFICATIONS	U.S.	Metric
Flow Range	0.5 – 6.0 gpm	2 – 23 lpm
Pressure Range	100 – 2000 psi	6.9 – 138 bar
Max. Temperature	190° F	88° C
Inlet Port - Rear	3⁄8" NPT(M)	3⁄8" NPT(M)
Discharge Port - Front	3⁄8" NPT(M)	3⁄8" NPT(M)
By-Pass Port - Barb	1⁄4"	1⁄4"
Weight	14 oz.	0.40 kg
Dimensions	3.0 x 1.0 x 4.25"	76.2 x 25.4 x 108 mm

PARTS LIST

ITEM	P/N	MATL	DESCRIPTION	QTY
401	32088	NY	Handle, Black	1
402	540081	BB	Cap, Adjusting	1
403	31047	BB	Nut, Lock	1
408	32094	STZP R	Spring, Pressure	1
410	107672	BB	Retainer, Spring	1
412	45694	S	Stem, Piston (M5)	1
414	—	PTFE	Back-up-Ring, Piston Stem	1
415	—	NBR	O-Ring, Piston Stem - 70D	1
425	107673	BB	Retainer, Piston	1
428	—	NBR	O-Ring, Retainer- 70D	1
429	—	NBR	O-Ring, Body	1
430	—	PTFE	Back-up-Ring, Body	1
435	45696	BB	Valve and Ball Assembly (M5)	1
436	107680	S	Seat	1
437	—	NBR	O-Ring, Seat - 70D	1
440	—	BB	Body	1
442	—	NBR	O-Ring, By-pass Fitting- 70D	1
443	541060	BB	Valve, Check w/O-Ring	1
	549468	SS	Valve, Check w/FPM O-Ring	1
	831515	SS	Valve, Check w/EPDM O-Ring	1
444	45924	S	Spring, Check Valve	1
446	—	NBR	O-Ring, Discharge Fitting - 70D	1
455	45865	BB	Barb, Hose, By-pass Fitting	1
460	107681	BB	Fitting, Discharge [3⁄8" NPT(M)]	1
465	46140	—	By-pass Hose (5 1⁄2"x1⁄4")	1
	45983	—	By-pass Hose (8 1⁄2"x1⁄4") (UMS)	1
466	34365	S	Clamp, Hose	2
467	45868	BB	Barb, Hose, Inlet Manifold	1
468	32097	NBR	Kit, O-Ring Standard, .3000 (Incls: 414,415,428,429,430,437,442,446)	1
	31627	FPM	Kit, O-Ring .0110 (Incls: 414,415,428,429,430,437,442,446)	1
	31959	EPDM	Kit, O-Ring .0220 (Incls: 414, 415, 428, 429, 430, 437, 442, 446)	1



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

7625 UNLOADER for "GZ" Pump Models

SPECIFICATIONS

	U.S.	Metric
Flow Range	0.5 – 7.8 gpm	2 – 30 lpm
Pressure Range	100 – 2500 psi	6.9 – 172 bar
Max. Temperature	194° F	90° C
Inlet Port – Rear	3/8" BSP(M)	3/8" BSP(M)
Discharge Port – Front	3/8" BSP(F)	3/8" BSP(F)
By-Pass Port – Barb	1/4"	1/4"
Auxiliary Port – Side	1/4" BSP(F)	1/4" BSP(F)
Weight	19.5 oz.	0.55 kg
Dimensions	3.2 x 1.5 x 4.7"	81 x 38 x 119.4 mm

PARTS LIST

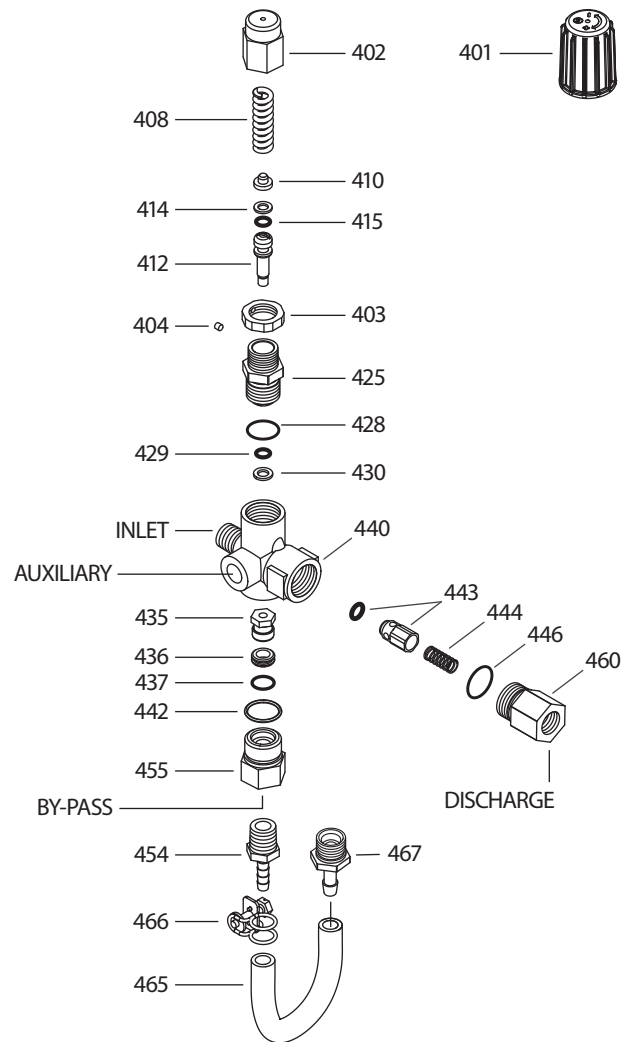
ITEM	P/N	MATL	DESCRIPTION	QTY
401	32088	NY	Handle, Black	1
402	33859	BB	Cap, Adjusting	1
403	33857	BB	Nut, Lock (M18x1)	1
404	33061	STZP	Screw, Set (M4x4)	1
408	32094	STZP R	Spring, Pressure	1
410	32819	STZP	Retainer, Spring	1
412	33860	S	Stem, Valve w/O-Ring and Back-up Ring	1
414	—	PTFE	Back-up-Ring, Stem	1
415	—	NBR	O-Ring, Stem	1
425	33861	BB	Retainer, Piston	1
428	—	NBR	O-Ring, Retainer	1
429	—	NBR	O-Ring, Body	1
430	—	PTFE	Back-up-Ring, Body	1
435	33853	SSS	Valve and Ball Assembly (M6)	1
436	33806	NBR	Seat, w/O-Ring	1
437	—	NBR	O-Ring, Seat	1
440	—	BB	Valve Body	1
442	—	NBR	O-Ring, By-pass Fitting - 85D	1
443	76736	BB	Valve, Check w/O-Ring	1
444	33843	S	Spring	1
446	—	NBR	O-Ring, Discharge Fitting	1
454	33865	BB	Barb, By-pass [3/8" BSP(M) x 1/4"]	1
455	33846	BB	Fitting, By-pass [3/8" BSP(F)]	1
460	33847	BB	Fitting, Discharge [3/8" BSP(F)]	1
465	46140	—	By-pass Hose (5 1/2"x 1/4")	1
466	34365	S	Clamp, Hose	2
467	45868	BB	Barb, Hose, Inlet Manifold	1
468	76781	NBR	Kit, O-Ring (Incls: 414, 415, 428, 429, 430, 437, 442, 446)	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 SSS=416SS STZP=Steel/Zinc Plated



OPERATION

A Regulating Unloader comes with each 2SFX pump to provide system pressure regulation and pump protection.

For MAXIMUM SUCTION capability, Regulating unloader should be remounted on discharge manifold, OPPOSITE from pump inlet port.

Standard units with return of by-pass back to the inlet of the pump should have a thermo valve in the by-pass line.

By-pass HOSE ASSEMBLY is designed for cold water or ambient temperature operation. DO NOT EXCEED 6 MINUTES in by-pass operation. Excessive temperatures will cause premature wear or damage to the pump and VOID THE WARRANTY.

Hi-Temp Units with special Hi-Temp seals do not use the thermo valve. Use optional dual pressure switches and mechanical relay in auto shut off kits 34870 and 34871.

If unit is INFREQUENTLY USED OR PERIODICALLY STORED, seals may become dry. UNDER SUCTION FEED, system must be PURGED BEFORE OPERATION (system liquid must flow through the pump without discharge restriction) to assure full system pressure is reached.

OPTIONAL CHEMICAL INJECTORS

7192, 7193, 7194, 7224 ADJUSTABLE, DOWN STREAM SPECIFICATIONS

		U.S.	Metric
Flow Range	7192	2 – 4 gpm	7.6 – 15 lpm
	7193	3 – 5 gpm	11.4 – 19 lpm
	7194	3 – 6 gpm	11.4 – 23 lpm
	7224	5 – 6 gpm	19 – 23 lpm
Orifice Size	7192	1.8 mm	1.8 mm
	7193	2.1 mm	2.1 mm
	7194	2.3 mm	2.3 mm
	7224	2.3 mm	2.3 mm
Max. Pressure		3500 psi	241 bar
Max. Temperature		195° F	90° C
Inlet Port (7192, 7193, 7194)		M18 x 1.0	M18 x 1.0
Inlet Port (7224)		M22 x 1.5	M22 x 1.5
Discharge Port		3⁄8" NPT(M)	3⁄8" NPT(M)
Hose Barb		1⁄4"	1⁄4"
Weight		6.3 oz.	0.18 kg
Dimensions		2.0 x 1.0 x 3.0"	50.8 x 25.4 x 76.2 mm

PARTS LIST

ITEM	P/N	MATL	DESCRIPTION	MODEL USED	QTY
471	33949	NY	Handle, Adjustment	All	1
472	32941	BB	Barb, Adjustable w/O-Ring	All	1
473	—	NBR	O-Ring, Hose Barb	All	1
474	33500	S	Spring, Retainer	All	1
475	33946	BB	Retainer, Ball/Seat	All	1
476	33504	FPM	O-Ring, Retainer	All	1
477	34620	SS	Ball, Seat 1⁄4"	All	1
478	33501	SS	Spring, Ball	All	1
479	32372	S	Injector Orifice (1.8 mm)	7192	1
	32373	S	Injector Orifice (2.1 mm)	7193	1
	32374	S	Injector Orifice (2.3 mm)	7194	1
	32074	SSS	Injector Orifice (2.3 mm)	7224	1
480	—	BB	Body	All	1
481	33481	BBNY	Barb Assy, Adjustable (Incls: 471,472,473,474,475,476,477,478)	All	1
482	13969	NBR	O-Ring, Body - 70D	All	1

Italics are optional items.

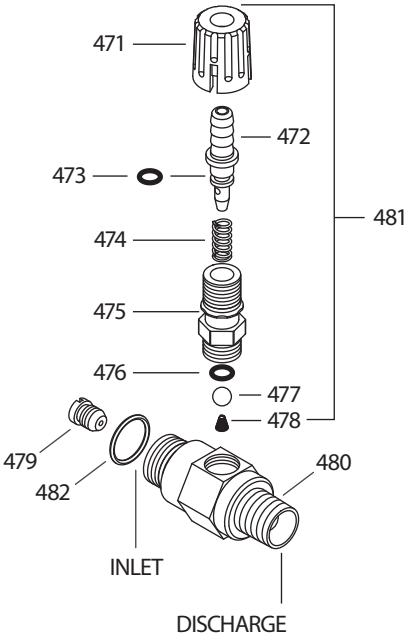
Material Codes (Not Part of Part No.): BB=Brass FPM=Fluorocarbon
NBR=Medium Nitrile (Buna-N) NY=Nylon S=304SS SS=316SS SSS=416SS

PERFORMANCE CHART

Model	Desired Flow	Orifice Size (mm)	Low PSI Nozzle (max. injecting pressure less hose friction loss)	Max. Chemical Draw (oz/min)	Pressure Drop across orifice (deduct from Hi-Pressure)
7192	2 gpm	1.8	225 psi	60	150
7192	3 gpm	1.8	275 psi	60	300
7192	4 gpm	1.8	450 psi	60	500
7193	3 gpm	2.1	225 psi	54	150
7193	4 gpm	2.1	375 psi	54	250
7193	5 gpm	2.1	600 psi	54	400
7194	3 gpm	2.3	150 psi	50	125
7194	4 gpm	2.3	225 psi	50	220
7224	3 gpm	2.3	150 psi	50	125
7224	4 gpm	2.3	225 psi	50	220

Optimum performance of chemical injector occurs with a 35 ft. high pressure hose and a minimum 3⁄8 I.D. The type of hose, extended lengths, reduced I.D. and fittings may create back pressure in excess of the low pressure nozzle rating and prevent the injector from drawing chemical. Deduct hose friction loss from the above PSI nozzle. Contact Cat Pumps for assistance with other options.

EXPLODED VIEW



CAUTION

Deduct the pressure drop shown in the performance chart from your desired system pressure to arrive at the maximum high pressure nozzle rating. This is essential to avoid over-pressurizing the pump.

EXAMPLE

System - 4 GPM, 2000 PSI
Injector - 7193
Pressure Drop - 250 PSI

=

Low Pressure Nozzle - 375 PSI
Max. High Pressure Nozzle - 1750 PSI

Flush system after chemical application to prevent clogging and to prolong life.

TROUBLESHOOTING

No Chemical Draw:	- Low pressure nozzle sized for too high pressure. - Air leak in suction line. - Worn injector orifice.
Leaking Around Adjusting Collar:	- O-ring worn. - Foreign material in injector.

ELECTRIC MOTOR SPECIFICATIONS (60 hz, 1 hp)

Contact Cat Pumps for additional motor options including the 3 ph, 50 hz, etc...

Model 8050

Horsepower	1.5
Shaft Diameter	5/8"
Maximum Volts	115/230
Full Load Amps	12.1
RPM	3450
Weight	32.1 lbs.
Phase	Single
Frame Size	56C TEFC
Service Factor	1.15

Model 8060*

Horsepower	1.5
Shaft Diameter	5/8"
Maximum Volts	115/208 - 230
Full Load Amps	13.6/7.5 - 6.8
RPM	1725
Weight	40 lbs.
Phase	Single
Frame Size	56C TEFC
Service Factor	1.15

* Use to reduce flow by 50% on standard electric models

Model 8052

Horsepower	2.0
Shaft Diameter	5/8"
Maximum Volts	115/230
Full Load Amps	17.0/9.2-8.5
RPM	3450
Weight	32.5 lbs.
Phase	Single
Frame Size	56C TEFC
Service Factor	1.15

Model 8062*

Horsepower	2.0
Shaft Diameter	5/8"
Maximum Volts	115/230
Full Load Amps	18.8/9.4
RPM	1725
Weight	47 lbs.
Phase	Single
Frame Size	56C TEFC
Service Factor	1.15

* Use to reduce flow by 50% on standard electric models

Model 8055

Horsepower	3.0
Shaft Diameter	3/4" **
Maximum Volts	230
Full Load Amps	15.2/13.6
RPM	3450
Weight	46.3 lbs.
Phase	Single
Frame Size	56C TEFC
Service Factor	1.15

** Use 3/4" shaft size motor with GES and GZ Models.

Models 8125

Horsepower	2.5
Shaft Diameter	5/8"
Maximum Volts	115/230, 110/220
Full Load Amps	20.8/10.4
RPM	1750
Weight	52.9 lbs.
Phase	Single
Hertz	60/50
Frame Size	56HC TEFC
Service Factor	1.15

Model 8057

Horsepower	5.0
Shaft Diameter	3/4" **
Maximum Volts	230
Full Load Amps	22.0
RPM	3450
Weight	40 lbs.
Phase	Single
Frame Size	56C OPEN DRIP
Service Factor	1.15

** Use 3/4" shaft size motor with GES and GZ Models.

Common Motor Specifications

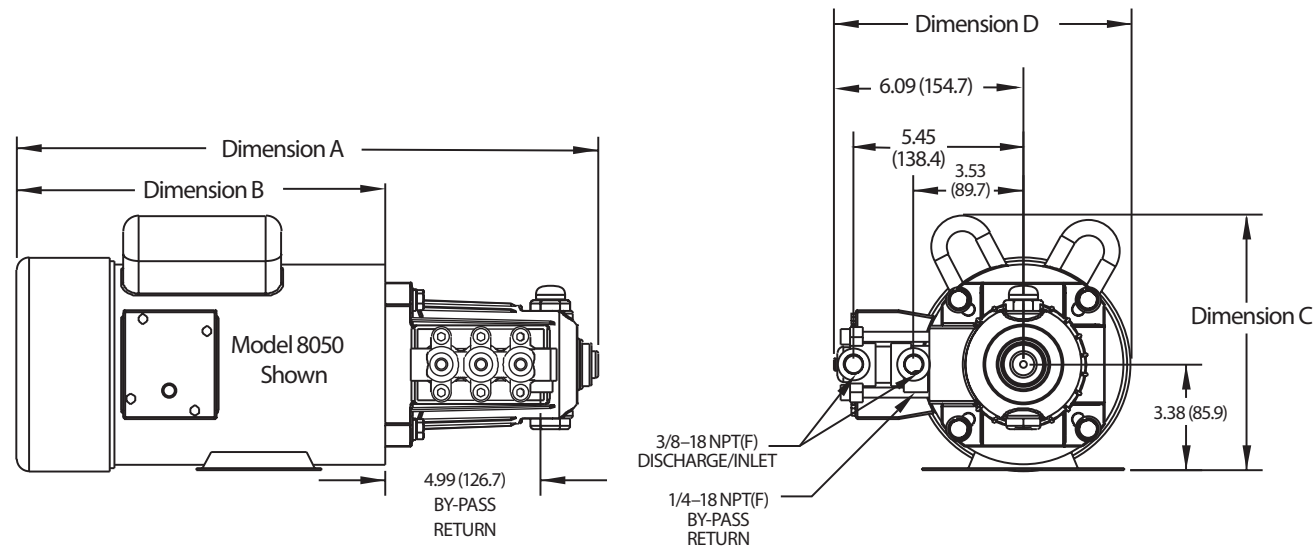
Max. Ambient Temperature	104° F
Hertz	60 Hz
Capacitor Start	Yes
Thermal Overload-Manual Reset	Yes

Note: Motor Start-Up AMPS may vary, then settle within FULL LOAD AMPS rating after initial run in time.

Before mounting pump on motor, apply P.N. 6106 Antiseize Lubricant to pump shaft.

Refer to Tech Bulletin 99TCH055 for instructions on removing pump from gas engine or electric motor.

MOTOR DIMENSIONS



DETERMINING THE REQUIRED H.P. Hp = $\frac{\text{gpm} \times \text{psi}}{1460}$
(Electric Brake)

For proper gas or diesel engine selection consult your engine supplier.

MODEL	8050	8052	8055	8057	8060	8062	8125
Dimension A	18.2	18.2	20.0	18.7	18.8	19.7	19.1
Dimension B	11.3	11.3	13.1	11.8	11.9	12.8	12.2
Dimension C	8.4	8.4	8.3	9.0	8.9	8.9	9.6
Dimension D	9.5	9.5	9.5	9.5	9.7	9.7	9.7

⚠ 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.