

Gas engine must be purchased separately.

## Direct-Drive Plunger Pump

**Models**      66DX30G11  
                   66DX35G11  
                   66DX40G11

### SPECIFICATIONS

	U.S. Measure	Metric Measure
<b>MODEL 66DX30G11</b>		
Flow .....	3.0 GPM	(11.4 L/M)
Pressure Range .....	100 to 4000 PSI	(7 to 275 BAR)
Stroke .....	0.339"	(8.6 mm)
<b>MODEL 66DX35G11</b>		
Flow .....	3.5 GPM	(13.2 L/M)
Pressure Range .....	100 to 4000 PSI	(7 to 275 BAR)
Stroke .....	0.394"	(10 mm)
<b>MODEL 66DX40G11</b>		
Flow .....	4.0 GPM	(15.0 L/M)
Pressure Range .....	100 to 4000 PSI	(7 to 275 BAR)
Stroke .....	0.449"	(11.4 mm)

### COMMON PUMP SPECIFICATIONS

Max. RPM .....	3400 RPM	(3400 RPM)
Engine Mounting Face .....	6.5"	(6.5")
Inlet Pressure Range .....	Flooded to 75 PSI	(Flooded to 5.25 BAR)
Bore .....	0.551"	(14 mm)
Shaft Diameter (Hollow) .....	1"	(25.4 mm)
Max. Liquid Temperature .....	140°F	(60°C)
Crankcase Capacity .....	18 oz.	(0.55 L)
Inlet Ports (2) .....	1/2" NPTF	(1/2" NPTF)
Discharge Ports (2) .....	3/8" NPTF	(3/8" NPTF)
Weight .....	26.15 lbs.	(11.9 kg)
Dimensions (Pump Only) .....	10.0 x 9.96 x 6.38"	(254 x 253 x 162 mm)

### FEATURES

- Triplex plunger design provides a smooth liquid flow.
- Special concentric, high-density, polished, solid ceramic plungers provide a true wear surface and extended seal life.
- Compact flange mount permits easy, direct mounting to most gas engines.
- Modular Regulating Unloader with built-in by-pass is standard for safety and pressure setting.
- Fixed Chemical Injector is standard and mounts directly onto Unloader to provide cleaning flexibility.

#### **⚠ WARNING**

All systems require both a primary pressure regulating device (i.e., regulator, unloader) and a secondary pressure safety relief device (i.e., pop-off valve, safety valve). Failure to install such relief devices could result in personal injury or damage to the pump or to system components. CAT PUMPS does not assume any liability or responsibility for the operation of a customer's high pressure system.

### ELECTRIC HORSEPOWER REQUIREMENTS

MODEL	FLOW		PRESSURE			RPM
	U.S. GPM	L/M	PSI 2500	PSI 3200	PSI 4000	
			BAR 175	BAR 220	BAR 275	
<b>66DX30G11</b>	3.0	11.4	5.1	6.6	8.2	3400
<b>66DX35G11</b>	3.5	13.2	6.0	7.7	9.6	3400
<b>66DX40G11</b>	4.0	15.0	6.9	8.8	11.0	3400

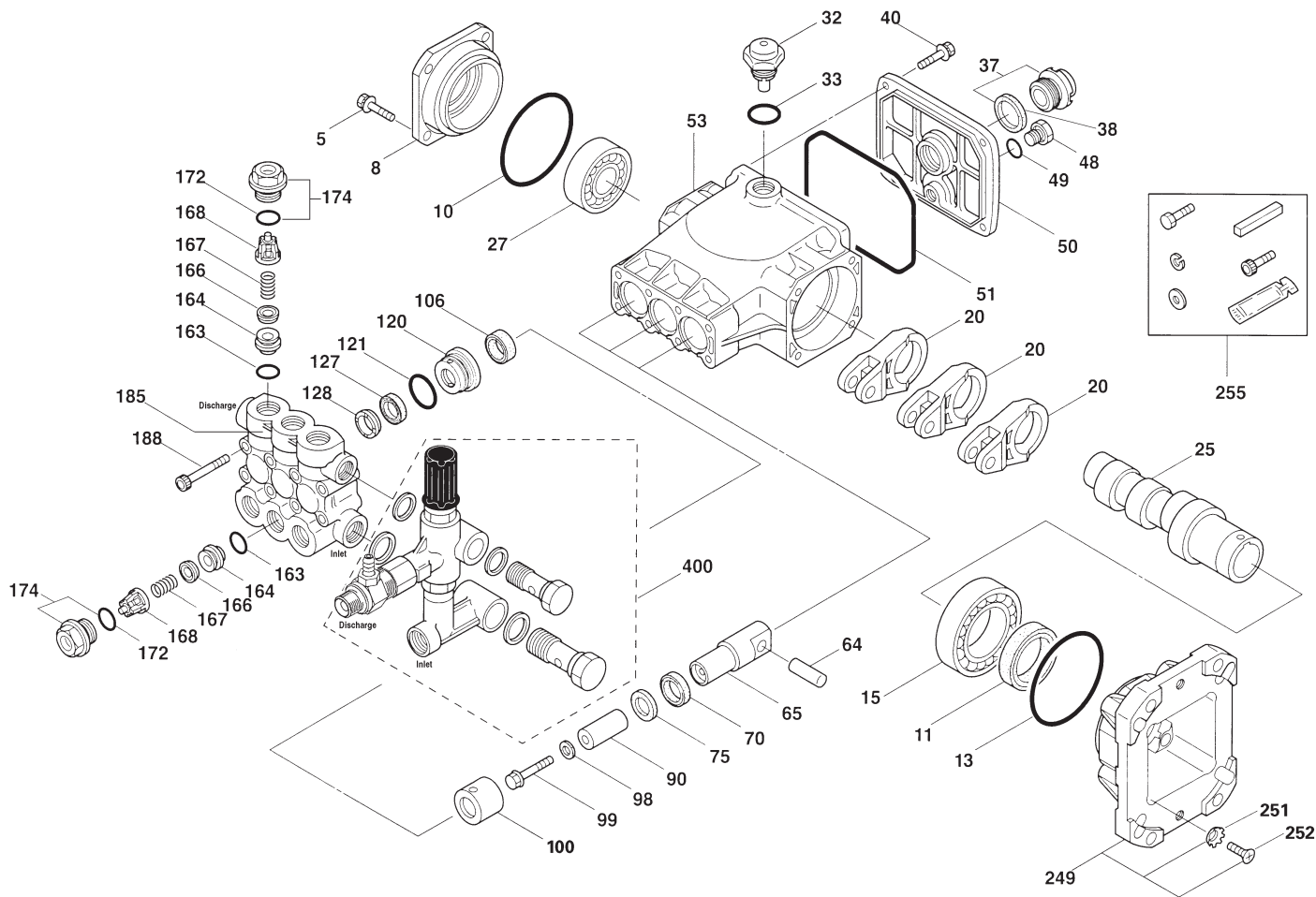
<b>DETERMINING THE PUMP R.P.M.</b>	$\frac{\text{Rated G.P.M.}}{\text{Rated R.P.M.}}$	=	$\frac{\text{"Desired" G.P.M.}}{\text{"Desired" R.P.M.}}$
<b>DETERMINING THE REQUIRED H.P.</b>	$\frac{\text{GPM} \times \text{PSI}}{1460}$	=	Electric Brake H. P. Required
<b>DETERMINING MOTOR PULLEY SIZE</b>	$\frac{\text{Motor Pulley O.D.}}{\text{Pump R.P.M.}}$	=	$\frac{\text{Pump Pulley O.D.}}{\text{Motor R.P.M.}}$

Note: Consult engine manufacturer when using gas or diesel engine. Refer to pump **Service Manual** for repair procedure, additional technical information and **pump warranty**.

*"Customer confidence is our greatest asset"*

# EXPLODED VIEW

# 66DX PLUNGER PUMPS 66DX30G1I, 66DX35G1I, 66DX40G1I



## PARTS LIST

ITEM	P/N	MATL	DESCRIPTION	QTY	ITEM	P/N	MATL	DESCRIPTION	QTY
5	92519	STZP	Screw, HHC (M6x16)	4	98	46730	NBR	Washer Seal, Plunger Retainer - 90D	3
	125824	STCP R	Screw, HHC (M6x16)	4	99	† 48201	SS	Retainer, Plunger	3
8	48259	AL	Cover, Bearing	1	100	48755	NY	Retainer, Seal	3
10	14028	NBR	O-Ring, Bearing Cover - 70D	1	106	45188	NBR	Seal, LPS w/S-Spg	3
11	125351	NBR	Seal, Oil, Crankshaft - 70D	1	120	48759	BB	Case, Seal	3
13	14037	NBR	O-Ring, Bearing Cover - 70D	1	121	13980	NBR	O-Ring, Seal Case - 70D	3
15	146421	STL	Bearing, Ball - Inner	1	127	48758	SNG	V-Packing	3
20	48843	TNM	Rod, Connecting	3		49201	STG	V-Packing	3
25	48970	CM	Crankshaft (8.6 mm) 30G1I	1	128	48757	NY	Adapter, Male	3
	48977	CM	Crankshaft (10.0 mm) 35G1I	1	163	17547	NBR	O-Ring, Seat - 85D	6
	48839	CM	Crankshaft (11.4 mm) 40G1I	1	164	45790	S	Seat	6
27	14480	STL	Bearing, Ball - Outer	1	166	46429	S	Valve	6
32	46798	—	Cap, Domed, Oil Filler	1	167	43750	S	Spring	6
33	14179	NBR	O-Ring, Filler Cap - 70D	1	168	46583	NY	Retainer, Spring	6
37	92241	—	Gauge, Oil Bubble w/Gasket - 80D	1	172	17616	NBR	O-Ring, Valve Plug - 80D	6
38	44428	NBR	Gasket, Flat, Oil Gauge - 80D	1	174	48760	BB	Plug, Valve w/O-Ring	6
40	92519	STZP	Screw, HHC (M6x16)	4	185	48846	BB	Head, Manifold	1
	125824	STCP R	Screw, HHC (M6x16)	4	188	126512	STCP R	Screw, HSH (M8x65)	8
48	25625	STCP	Plug, Drain (1/4"x19BSP)	1	196	46690	BB	Plug, Discharge HSH 3/8" NPTM (Not Shown)	1
49	23170	NBR	O-Ring, Drain Plug - 70D	1	249	48841	AL	Flange, Adapter	1
50	48862	AL	Cover, Rear	1	251	126746	STCP R	Lockwasher, Conical (M8)	4
51	14048	NBR	O-Ring, Rear Cover - 70D	1	252	46403	STZP	Screw, FH (M8x25)	4
53	48830	AL	Crankcase	1	255	30510	STZP	Assy, Bolt Mount	1
64	46404	CM	Pin, Crosshead	3	283	34334	—	Kit, Oil Drain (3/8"x24") (Not Shown)	1
65	48845	BB	Rod, Plunger	3	300	34262	NBR	Kit, Seal (Incls: 98,106,121,127,128)	1
70	48911	NBR	Seal, Oil, Crankcase	3	310	34260	NBR	Kit, Valve (Incls: 163,164,166,167,168,172)	2
75	48754	NBR	Slinger, Barrier - 70D	3	400	7860	BB	Unloader Assy w/Fixed Injector (Eff. 04/07)	1
90	48752	CC	Plunger (M14x47)	3					

*Italics are optional items.* R Components comply with RoHS Directive. † Production parts different from service parts.

See Tech Bulletins 024, 060, 074, 083, and 101 for additional information.

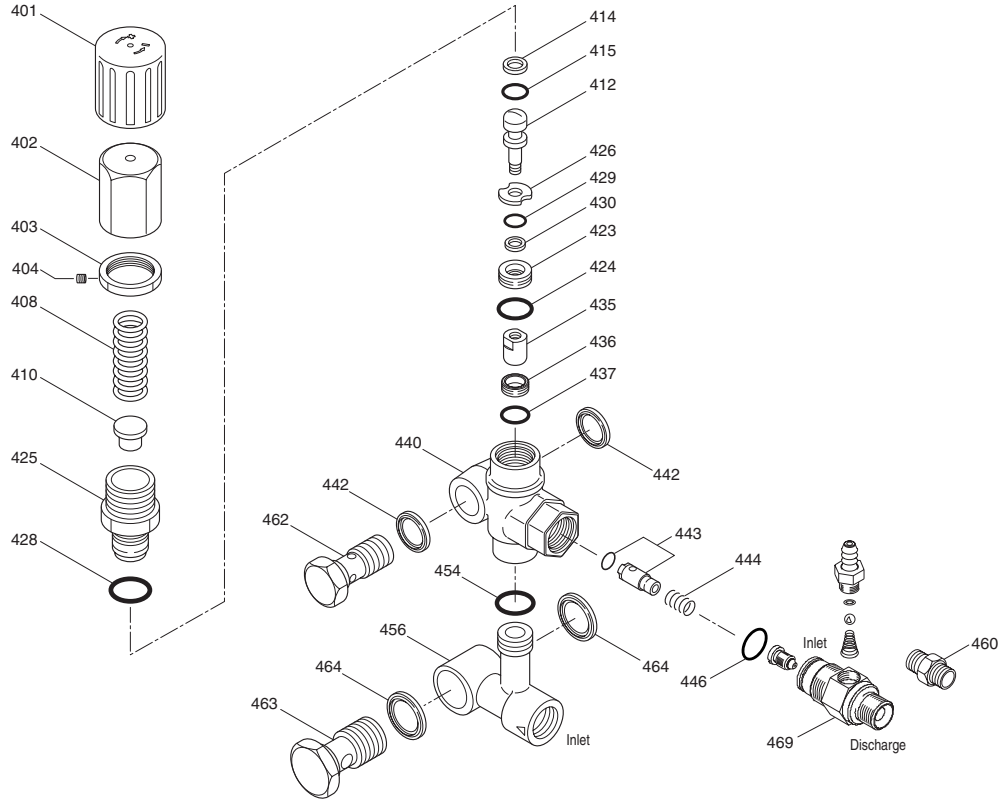
MATERIAL CODES (Not Part of Part Number): AL=Aluminum BB=Brass CC=Ceramic CM=Chrome-moly NBR=Medium Nitrile (Buna-N) NY=Nylon S=304SS SNG=Special Blend (Buna) SS=316SS STCP=Steel/Chrome Plated STG=Special Blend PTFE White STL=Steel STZP=Steel/Zinc Plated TNM=Special High Strength

# 7860 UNLOADER WITH INJECTOR

# 7367 FIXED CHEMICAL INJECTOR

Specifications	U.S. Measure	Metric Measure
Flow .....	3.0-5.0 GPM	(7.6-19 L/M)
PSI Range.....	700-4000 PSI	(50-275 BAR)
Inlet Port, Side .....	1/2" NPTF	(1/2" NPTF)
Discharge Port.....	M20 x 1	(M20 x 1)
Weight.....	35.2 oz.	(1.0 kg)
Dimensions .....	4.65 x 1.70 x 6.75"	(118 x 43 x 171 mm)

Specifications	U.S. Measure	Metric Measure
Flow .....	3.0-5.0 GPM	(11.4-19 L/M)
Nozzle Orifice.....	2.1 mm	(2.1 mm)
Hose Barb - Ext .....	1/4"	(1/4")
Tapped Barb.....	8/32" UNF	(8/32" UNF)
Inlet Port.....	M20 x 1	(M20 x 1)
Discharge Port .....	3/8" NPTM	(3/8" NPTM)
Weight.....	5.3 oz.	(0.15 kg)
Dimensions .....	2.0 x 1.0 x 1.75"	(52 x 25 x 45 mm)



## PARTS LIST

ITEM	P/N	MATL	DESCRIPTION	QTY.
401	49100	NY	Handle, Adjusting (Black)	1
402	49099	BB	Cap, Adjusting	1
403	125521	BB	Nut, Locking (M25X1)	1
404	88953	S	Screw, Set	1
408	45198	ZP R	Spring	1
410	49101	STZP R	Retainer, Spring	1
412	49103	S	Stem, Piston	1
414	20889	PTFE	Back-up-Ring, Piston Stem	1
415	49104	NBR	O-Ring, Piston Stem - 90D	1
423	49105	BB	Retainer, Valve	1
424	49106	NBR	O-Ring, Valve Retainer - 90D	1
425	49102	BB	Retainer, Piston	1
426	49107	S	Washer	1
428	26133	NBR	O-Ring, Retainer - 80D	1
429	22056	NBR	O-Ring, Valve Retainer - 70D	1
430	49123	D	Back-up-Ring, Valve Retainer	1
435	49383	S	Valve/Ball Assembly	1
436	49384	S	Seat	1
437	13965	NBR	O-Ring, Seat - 70D	1
440	—	BB	Valve Body	1
442	49121	STL	Washer, Seal (3/8")	2
443	49245	BB	Valve, Check w/NBR O-Ring	1
444	117275	S	Spring	1
446	26133	NBR	O-Ring, Body - 80D	1
454	11346	NBR	O-Ring, Manifold - 70D	1
456	—	BB	Manifold	1
460	126974	BB	Fitting, Discharge (3/8" NPTM)	1
462	49120	BB	Screw, Flo-thru (3/8" NPTM)	1
463	49117	BB	Screw, Flo-thru (1/2" NPTM)	1
464	49118	STL	Washer, Seal (1/2")	2
468	31708	NBR	Kit, O-Ring (Incls: 414,415,424,428,429,430,437,446,454)	1
469	7367	BB	Injector, Fixed	1

## CHEMICAL INJECTOR PERFORMANCE CHART

Desired Pump Flow	Orifice Size	Maximum Injecting Pressure	Maximum Chemical Draw	Pressure Drop Across Injector at System Pressure (4000 PSI)
3.0	2.1 mm	190 PSI	70.0 oz/min	136 PSI
3.5	2.1 mm	260 PSI	74.2 oz/min	245 PSI
4.0	2.1 mm	358 PSI	76.8 oz/min	288 PSI

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. Consult CAT PUMPS for assistance with other options.**

**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.

*Italics are optional items.* R Components comply with RoHS Directive.

MATERIAL CODES (Not Part of Part Number): BB=Brass D=Acetal

NBR=Medium Nitrile (Buna-N) NY=Nylon PTFE=Pure Polytetrafluoroethylene

S=304SS STL=Steel STZP=Steel/Zinc Plated ZP=Zinc Plated

## UNLOADER TYPE

A modular regulating unloader with chemical injector comes with each 66DX pump to provide system pressure regulation, pump protection, and metered chemical application.

## OPERATION:

Pump should be purged of air before commencing with operation. Liquid must flow through the pump without discharge restriction to assure full system pressure is reached.

Install a pressure gauge close to the manifold head of the pump to assist in setting system pressure and to periodically monitor system pressure.

Setting and adjusting the unloader pressure must be done with the system turned on. Start the system with the unloader backed off to the lowest pressure setting (counterclockwise direction). Squeeze the trigger and read the pressure on the gauge at the pump. Do not read pressure at the gun or nozzle. If more pressure is desired, release the trigger, turn adjusting cap one quarter turn in a clockwise direction. Squeeze the trigger and read the pressure. Repeat this process until the desired system pressure is reached.

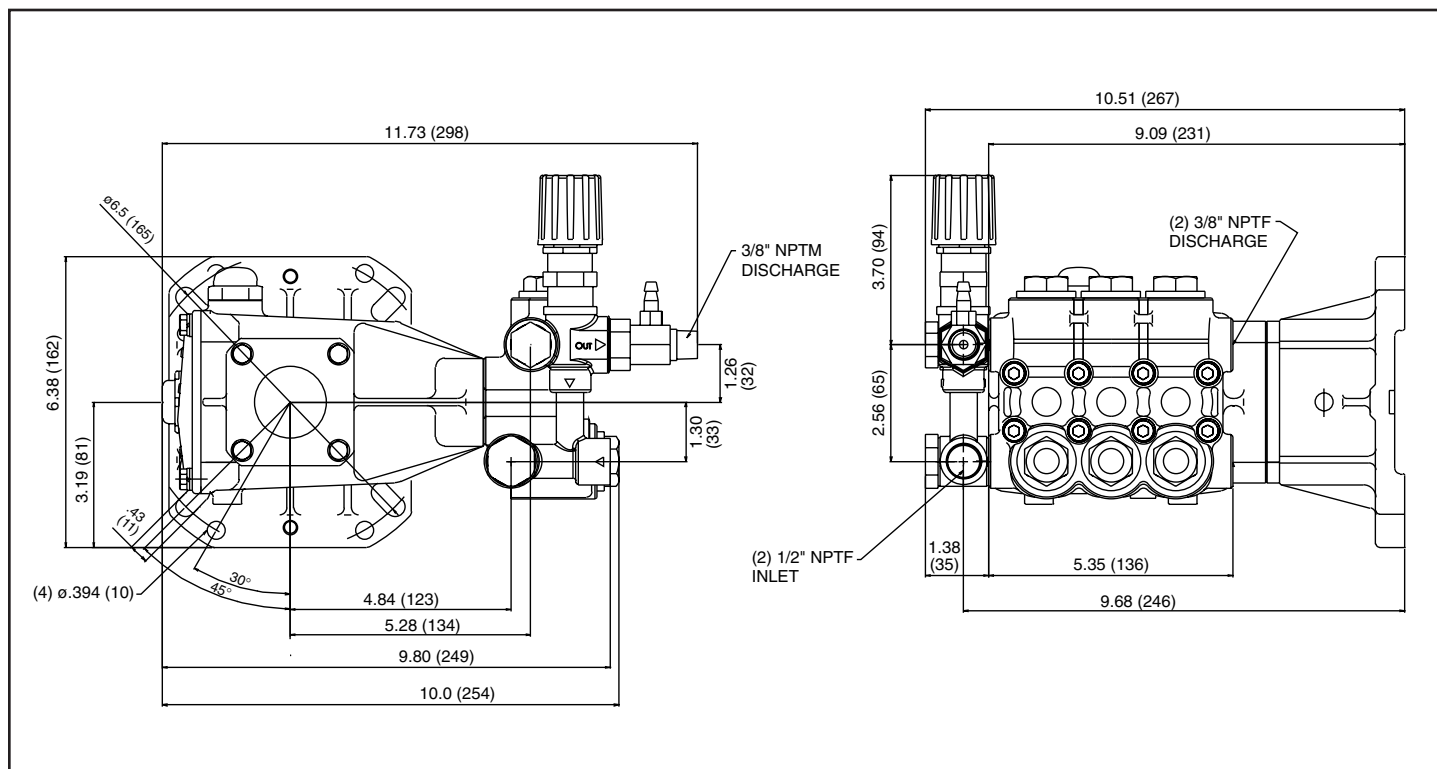
Thread locking nut up to adjusting cap and tighten set screw. All high pressure systems should have a secondary relief valve. Set secondary relief valve 200-300 psi above the unloader setting.

**NOTE:** Pressure is not set at the factory.

## SERVICE:

The unloader should be serviced on the same schedule as the seals in the pump. Refer to 66DX Service Manual for start-up, servicing of seals and valves, torque requirements and Diagnosis/Maintenance chart.

## 66DX DIMENSIONAL



Products described hereon are covered by one or more of the following U.S. patents 3558244, 3652188, 3809508, 3920356, 3930756 and 5035580

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