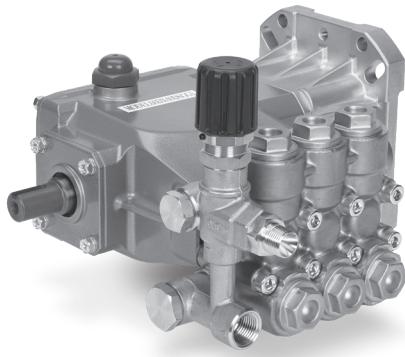


# DATA SHEET

## DIRECT DRIVE PLUNGER PUMP



Brass Model: **66DX40DSG1**



### FEATURES

- Triplex plunger design ensures high efficiency and low pulsation.
- Compact flange mount permits easy, direct mounting to most gas engines.\*
- Accessory components can be driven off the solid 20 mm shaft with an M6 keyway.
- Modular regulating unloader with built-in bypass ensures system pressure control and pump protection.\*\*
- Pump comes standard with NBR seals. Alternative seal materials are available for higher temperature or chemical compatibility.

\*Gas Mounting Flange: SAE J609, Flange B, Extension 4 (1" Ø), Shaft

Length= 3 1/4", Pilot Ø= 5 3/4", BC, Ø= 6 1/2", Thread 3/8"-16 UNC TAP.

\*\*Available without an unloader (66DX40DSGG1)

SPECIFICATIONS		U.S. Measure	Metric Measure
Flow		4.0 gpm	15.0 lpm
Pressure Range		100–4000 psi	6.9–275 bar
Pump RPM		3400 rpm	3400 rpm
Inlet Pressure Range		Flooded to 75 psi	Flooded to 5.2 bar
Max. Liquid Temperature (NBR)		140° F	60° C
<b>Alternate seals available for higher temperatures up to 180° F</b>			
Bore	0.551"		14 mm
Stroke	0.449"		11.4 mm
Crankcase Capacity	18 oz		0.53 l
Inlet Ports (2)	1/2" NPT(F)		1/2" NPT(F)
Discharge Ports (2)	3/8" NPT(F)		3/8" NPT(F)
Shaft Diameter (Hollow)	1"		25.4 mm
Accy. Shaft Diameter (Solid End)	0.787"		20 mm
Engine Mounting Face	6.5"		6.5"
Weight	23.95 lbs		10.9 kg
Dimensions	11.13 x 11.28 x 8.15"	282 x 286.5 x 207 mm	

### ALTERNATIVE SEAL CONFIGURATION

MATERIAL	SUFFIX CODE	MAXIMUM TEMPERATURE	
NBR	—	140° F	(60° C)
FPM	.0110	180° F	(82° C)

See **Tech Bulletin 002** for inlet conditions and RPM at high temperature.

### TORQUE AND HORSEPOWER REQUIREMENTS

	FLOW		PRESSURE				PUMP RPM
	GPM	LPM	PSI	BAR	PSI	BAR	
Torque			2500	172	3000	207	4000 275
Horsepower*	4.0	15.0	10.6 ft-lbs		12.7 ft-lbs		16.9 ft-lbs

\*HP is for estimate only. Torque values of the engine at given rpm should be used to determine correct size of engine.

Consult engine manufacturer for actual torque available at required speed.

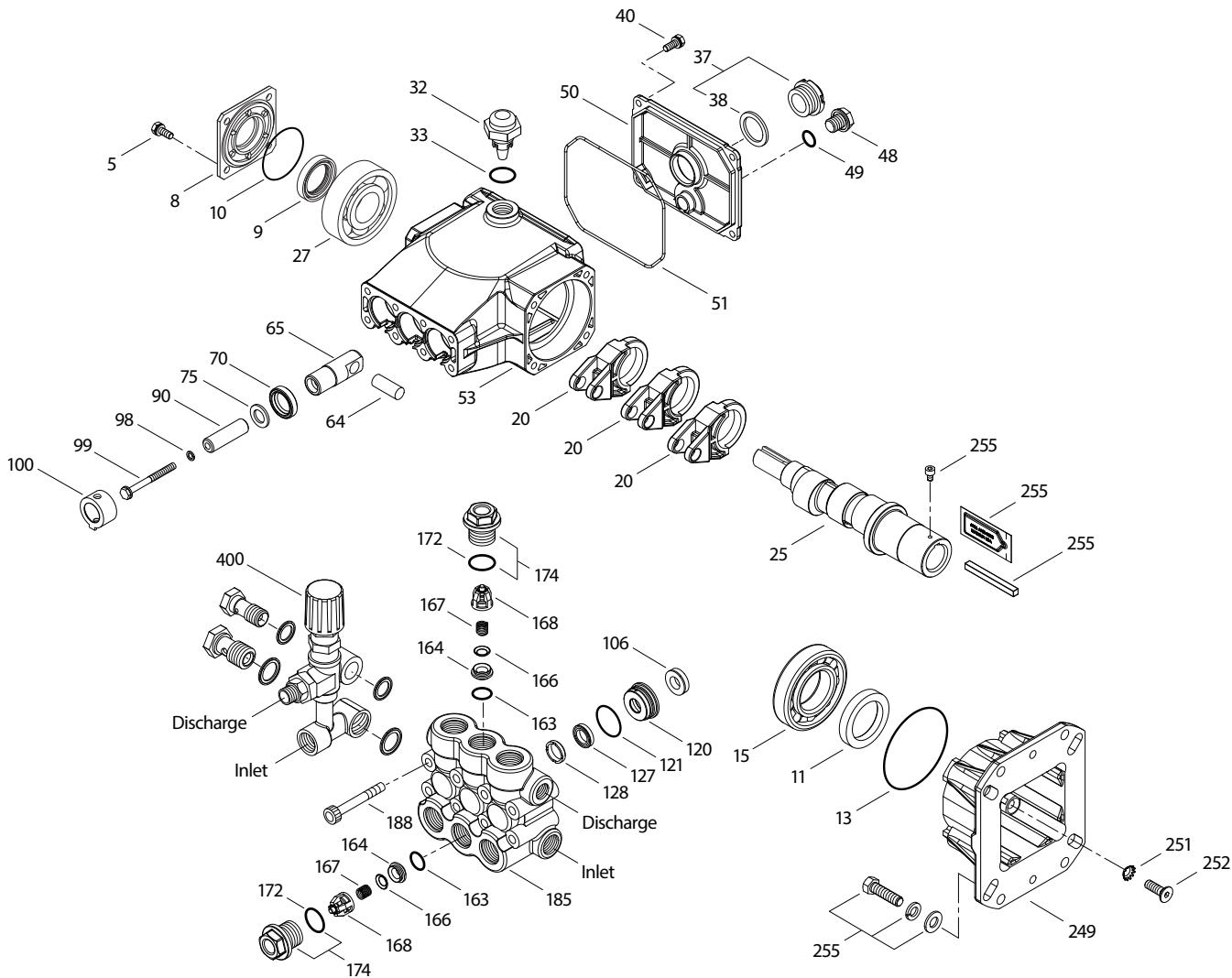
$$\text{DETERMINING THE PROPER TORQUE} \quad \text{Torque (ft-lbs)} = 3.6 \times \frac{\text{gpm} \times \text{psi}}{\text{rpm}}$$

$$\text{DETERMINING THE REQUIRED HP} \quad \text{Engine hp (Estimated)} = \frac{\text{gpm} \times \text{psi}}{1140}$$

$$\text{DETERMINING THE PUMP RPM} \quad \frac{\text{Rated gpm}}{\text{Rated rpm}} = \frac{\text{Desired gpm}}{\text{Desired rpm}}$$

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

## EXPLODED VIEW



## PARTS LIST

ITEM	P/N	MATL	DESCRIPTION	QTY
5	125824	STCP R	Screw, HHC (M6 x 16) (See Tech Bulletin 074)	4
8	46901	AL	Cover, Bearing	1
9	43222	NBR	Seal, Oil, Crankshaft	1
10	14028	NBR	O-Ring, Cover, Bearing	1
11	125351	NBR	Seal, Oil, Crankshaft	1
13	14037	NBR	O-Ring, Cover, Bearing	1
15	146421	STL	Bearing, Ball, Inner	1
20	48843	TNM	Rod, Connecting	3
25	134878	CM	Crankshaft, 1" (11.4 mm)	1
27	14480	STL	Bearing, Ball, Outer	1
32	46798	—	Cap, Oil Filler Domed	1
33	14179	NBR	O-Ring, Filler Cap	1
37	92241	PC	Gauge, Oil Bubble with Gasket (See Tech Bulletin 074)	1
38	44428	NBR	Gasket, Flat, Oil Gauge	1
40	125824	STCP R	Screw, HHC (M6 x 16) (See Tech Bulletin 074)	4
48	25625	STCP	Plug, Drain (1/4" x 19 BSP)	1
49	23170	NBR	O-Ring, Drain Plug	1
50	48862	AL	Cover, Rear	1
51	14048	NBR	O-Ring, Cover, Rear	1
53	48830	AL	Crankcase	1
64	46404	CM	Pin, Crosshead	3
65	48845	BB	Rod, Plunger	3
70	48911	NBR	Seal, Oil, Crankcase	3
75	48754	NBR	Slinger, Barrier	3
90	48752	CC	Plunger (M14 x 47)	3

ITEM	P/N	MATL	DESCRIPTION	QTY
98	46730	NBR	Washer, Seal	3
99	† 48201	SS	Retainer, Plunger (See Tech Bulletin 074)	3
100	48755	NY	Retainer, Seal	3
106	45188	NBR	Seal, Low-Pressure with S-Spring	3
120	48759	BB	Case, Seal	3
121	13980	NBR	O-Ring, Seal Case	3
127	48758	SNG	V-Packing	3
128	48757	NY	Adapter, Male	3
163	17547	NBR	O-Ring, Seat	6
164	45790	S	Seat	6
166	46429	S	Valve	6
167	43750	S	Spring	6
168	† 44565	PVDF	Retainer, Spring	6
172	49839	NBR	O-Ring, Valve Plug	6
174	48760	BB	Plug, Valve with O-Ring (See Tech Bulletin 074)	6
185	48846	BB	Head, Manifold	1
188	126512	STCP R	Screw, HSH (M8 x 65) (See Tech Bulletin 074)	8
197	941517	BB	Assembly, GH (1/2" NPT[M] x 3/4" GH[F]) (Not Shown)	1
249	48841	AL	Flange, Adapter	1
251	126746	STCP R	Lockwasher, Conical (M8)	4
252	46403	STL	Screw, FH (M8 x 25)	4
255	30510	STZP	Assembly, Bolt Mount	1
300	34262	NBR	Kit, Seal (Includes: 98, 106, 121, 127, 128)	1
310	34260	NBR	Kit, Valve (Includes: 163, 164, 166-168, 172)	2
400	7861	BB	Unloader, Modular	1

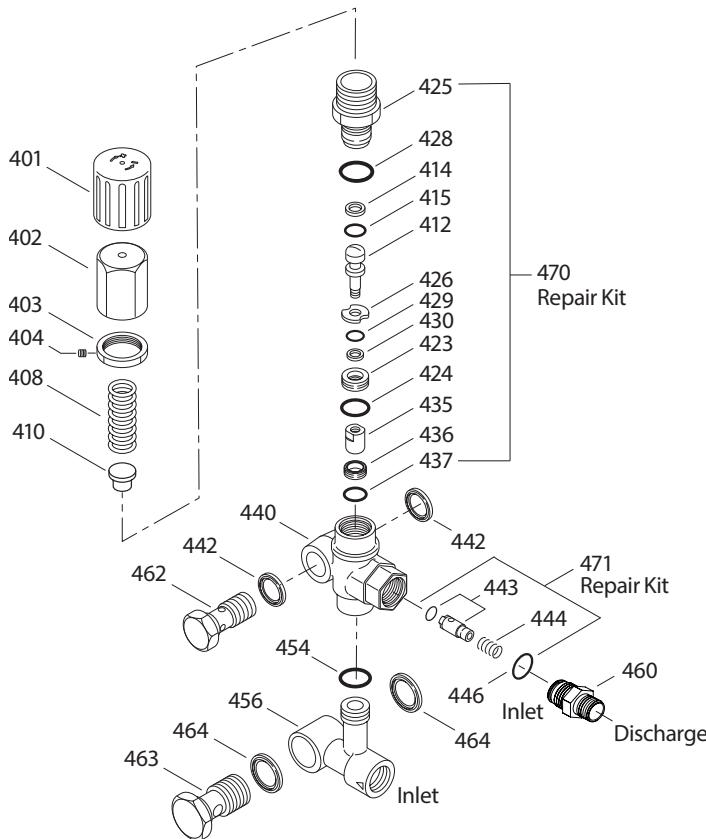
*Italics are optional items.* R Components comply with RoHS Directive.

**† Production parts different from service parts. For additional technical information see [www.catpumps.com/literature/tech-bulletins](http://www.catpumps.com/literature/tech-bulletins).**

MATERIAL CODES (Not Part of Part Number): AL=Aluminum BB=Brass CC=Ceramic CM=Chrome-moly PF=Fluorocarbon NBR=Medium Nitrile (Buna-N) NY=Nylon PC=Polycarbonate PVDF=Polyvinylidene Flouride S=304SS SNG=Special Blend (Buna) SS=316SS STCP=Steel/Chrome Plated STL=Steel STZP=Steel/Zinc Plated ST4=Special PTFE4 TNM=Special High Strength

## EXPLODED VIEW

## MODEL 7861 UNLOADER



## 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 (M25 x 1)	1
404	88953	S	Screw, Set (M4 x 4)	1
408	45198	ZP R	Spring, Pressure	1
410	49101	STZP R	Retainer, Spring	1
412	49103	S	Stem, Piston	1
414	129638	PTFE	Backup Ring, Piston Stem	1
415	49104	NBR	O-Ring, Piston Stem	1
423	49105	BB	Retainer, Valve	1
424	49106	NBR	O-Ring, Valve Retainer	1
425	49102	BB	Retainer, Piston	1
426	49107	S	Washer	1
428	26133	NBR	O-Ring, Piston Retainer	1
429	22056	NBR	O-Ring, Valve Retainer	1
430	49123	D	Backup Ring, Valve Retainer	1
435	49383	S	Valve/Ball Assembly	1
436	49384	S	Seat	1
437	13965	NBR	O-Ring, Seat	1
440	—	BB	Valve Body	1
442	49121	STL	Washer, Seal (3/8")	2
443	49245	BB	Valve, Check with NBR O-Ring	1
444	117275	S	Spring, Check Valve	1
446	26133	NBR	O-Ring, Body	1
454	11346	NBR	O-Ring, Manifold	1
456	—	BB	Manifold	1
460	126974	BB	Fitting, Discharge (3/8" NPT[M])	1
462	49120	BB	Screw, Flow-Through (3/8" NPT[M])	1
463	49117	BB	Screw, Flow-Through (1/2" NPT[M])	1
464	49118	STL	Washer, Seal (1/2")	2
468	31708	NBR	Kit, O-Ring (Includes: 414, 415, 424, 428-430, 437, 446, 454)	1
470	31556	NBR	Kit, Repair (Includes: 412, 414, 415, 423-426, 428-430, 435-437)	1
471	76185	NBR	Kit, Check Valve (Includes: 443, 444, 446)	1

*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

## SPECIFICATIONS

	U.S.	Metric
Flow Range	3.0-5.0 gpm	11.4-19.0 lpm
PSI Range	700-4000 psi	50-275 bar
Inlet Port, Side	1/2" NPT(F)	1/2" NPT(F)
Discharge Port, Front	3/8" NPT(M)	3/8" NPT(M)
Weight	2.1 lbs oz	0.95 kg
Dimensions	4.5 x 1.38 x 6.50"	114 x 35 x 165 mm

## UNLOADER TYPE

A modular regulating unloader comes with the 66DX40DSG1 pump to provide system pressure regulation and pump protection.

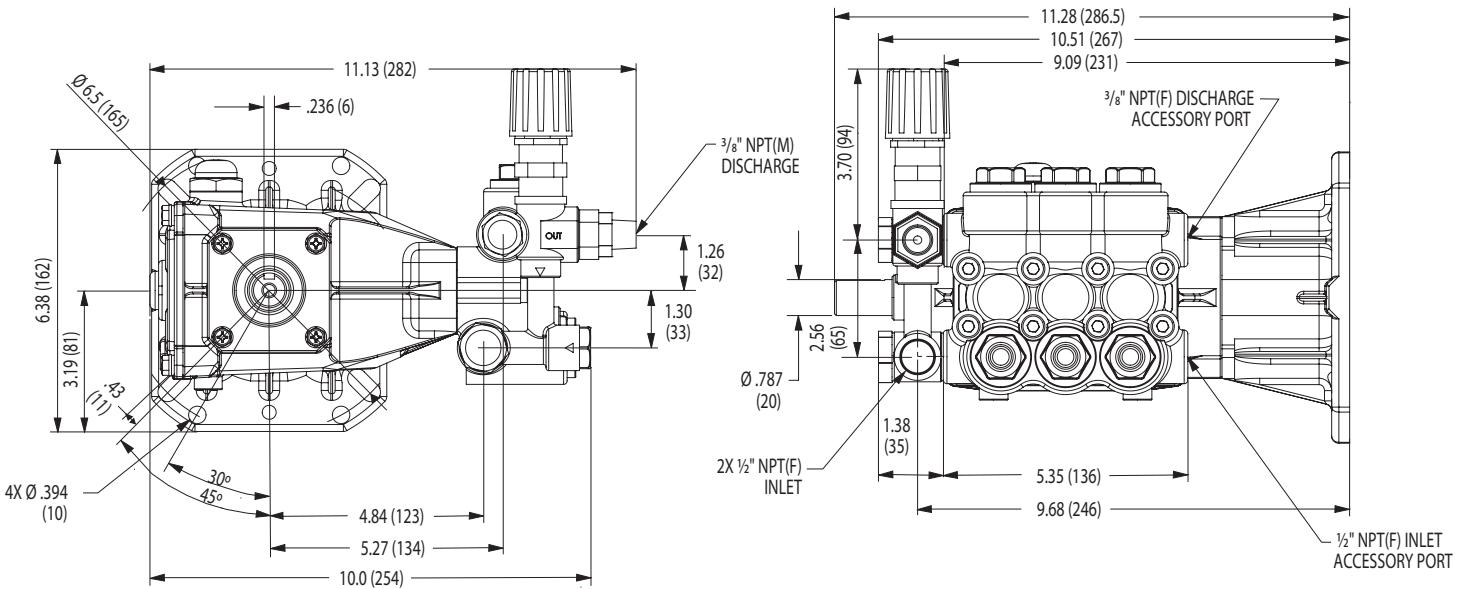
## OPERATION:

Purge pump of air before commencing operation by allowing liquid to flow through the pump without discharge restriction. Removing trapped air will ensure full system pressure can be obtained. 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.



## SEAL KITS

One (1) seal kit required per pump

PUMP MODEL	NBR (STD)	FPM (.0110)
66DX40DSG1I	34262	32376*

ITEM (Included in Seal Kits)	DESCRIPTION	QTY
98	46730	48394
106	45188	704649
121	13980	14330
127	48758	49201
128	48757	48757

\* Review material codes for individual items (STG may be used as alternative)

## VALVE KITS

Two (2) valve kits required per pump

PUMP MODEL	NBR (STD)	FPM (.0110)
66DX40DSG1I	34260	32375

ITEM (Included in Valve Kits)	DESCRIPTION	QTY
163	17547	11685
164	45790	45790
166	46429	46429
167	43750	43750
168	46583	46583
172	49839	11686

### CAUTIONS AND WARNINGS

All high-pressure systems require a primary pressure regulating device (e.g. regulator, unloader) and a secondary pressure relief device (e.g. 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/dynamic-literature/cautions-and-warnings](http://www.catpumps.com/dynamic-literature/cautions-and-warnings) or can be requested directly from Cat Pumps.

### WARRANTY

View the Limited Warranty online at [www.catpumps.com/literature/cat-pumps-limited-warranty](http://www.catpumps.com/literature/cat-pumps-limited-warranty)