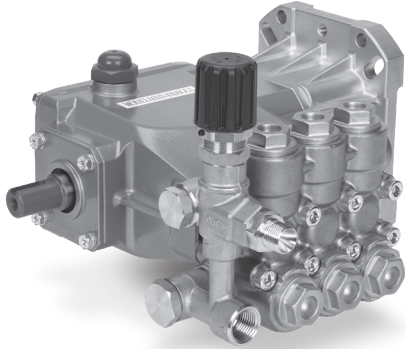


# DATA SHEET

## 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= 3¼", Pilot Ø= 5¾", BC. Ø= 6½", Thread ¾"-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)	½" NPT(F)	½" NPT(F)
Discharge Ports (2)	⅜" NPT(F)	⅜" 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				
			2500	172	3000	207		4000	275
Torque	4.0	15.0	10.6 ft-lbs		12.7 ft-lbs		16.9 ft-lbs		3400
Horsepower*			8.9 hp		10.5 hp		14.0 hp		

\*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.

#### DETERMINING THE PROPER TORQUE

$$\text{Torque (ft-lbs)} = 3.6 \times \frac{\text{gpm} \times \text{psi}}{\text{rpm}}$$

#### DETERMINING THE REQUIRED HP

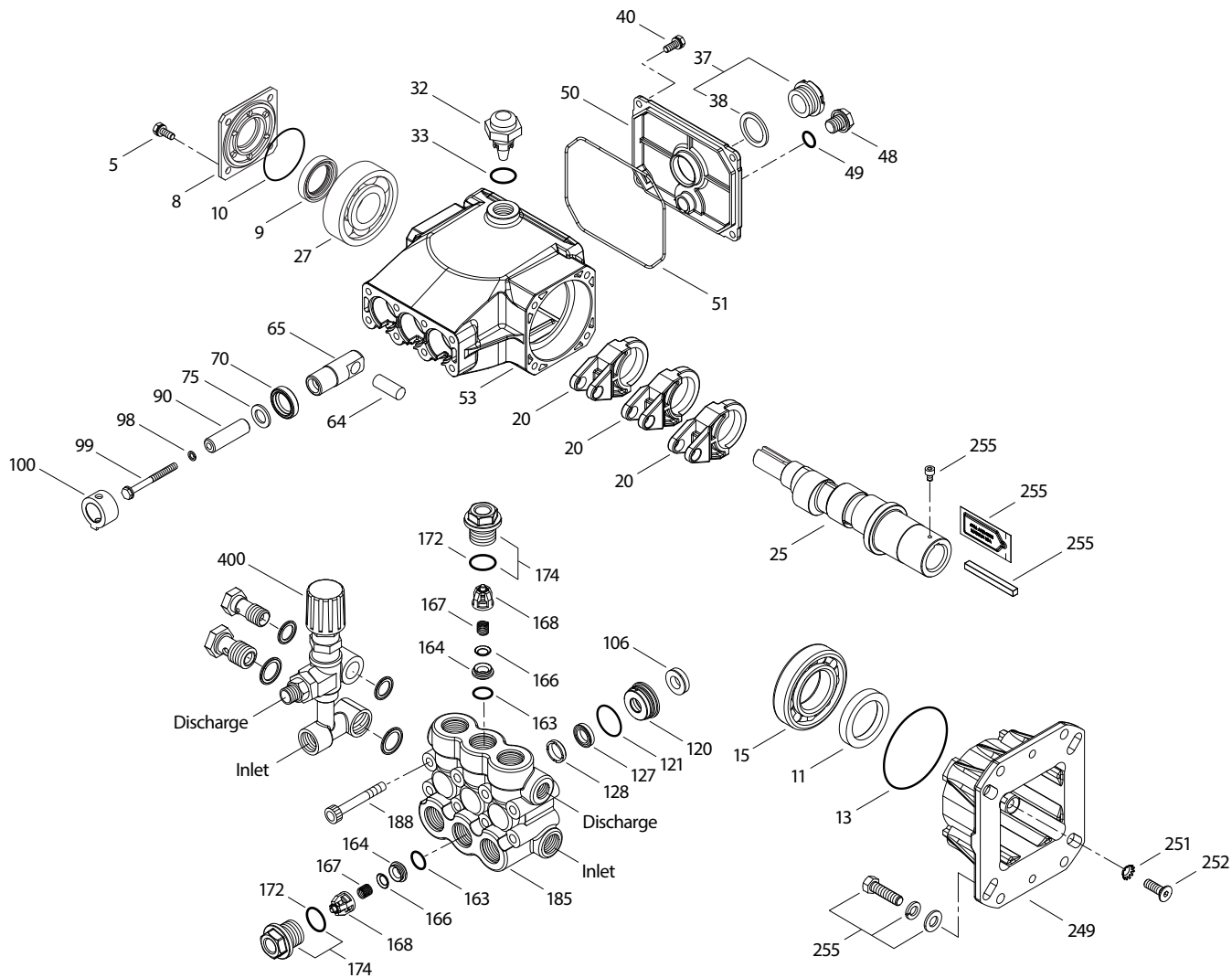
$$\text{Engine hp (Estimated)} = \frac{\text{gpm} \times \text{psi}}{1140}$$

#### DETERMINING THE PUMP RPM

$$\frac{\text{Rated gpm}}{\text{Rated rpm}} = \frac{\text{Desired gpm}}{\text{Desired rpm}}$$

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

## EXPLODED VIEW



## PARTS LIST

ITEM	P/N	MATL DESCRIPTION	QTY	ITEM	P/N	MATL DESCRIPTION	QTY
5	125824	STCP R Screw, HHC (M6 x 16) (See Tech Bulletin 074)	4	98	46730	NBR Washer Seal, Plunger Retainer-90D	3
8	46901	AL Cover, Bearing	1	99	† 48201	SS Retainer, Plunger (See Tech Bulletin 074)	3
9	43222	NBR Seal, Oil, Crankshaft	1	100	48755	NY Retainer, Seal	3
10	14028	NBR O-Ring, Bearing Cover-70D	1	106	45188	NBR Seal, Low-Pressure with S-Spring	3
11	125351	NBR Seal, Oil, Crankshaft	1	120	48759	BB Case, Seal	3
13	14037	NBR O-Ring, Bearing Cover	1	121	13980	NBR O-Ring, Seal Case-70D	3
15	146421	STL Bearing, Inner Ball	1	127	48758	SNG V-Packing	3
20	48843	TNM Rod, Connecting	3	128	48757	NY Adapter, Male	3
25	134878	CM Crankshaft 11.4 mm	1	163	17547	NBR O-Ring, Seat-85D	6
27	14480	STL Bearing, Outer Ball	1	164	45790	S Seat	6
32	46798	— Cap, Domed, Oil Filler	1	166	46429	S Valve	6
33	14179	NBR O-Ring, Filler Cap-70D	1	167	43750	S Spring	6
37	92241	PC Gauge, Oil Bubble with Gasket-80D (See Tech Bulletin 074)	1	168	† 44565	PVDF Retainer, Spring	6
38	44428	NBR Gasket, Flat, Oil Gauge-80D	1	172	17616	NBR O-Ring, Valve Plug-80D	6
40	125824	STCP R Screw, HHC (M6 x 16) (See Tech Bulletin 074)	4	174	48760	BB Plug, Valve with O-Ring (See Tech Bulletin 074)	6
48	25625	STCP Plug, Drain (1/4" x 19 BSP)	1	185	48846	BB Head, Manifold	1
49	23170	NBR O-Ring, Drain Plug-70D	1	188	126512	STCP R Screw, HSH (M8 x 65) (See Tech Bulletin 074)	8
50	48862	AL Cover, Rear	1	197	941517	BB Assembly, GH (1/2" NPT[M]) x 3/4" GH[F] (Not Shown)	1
51	14048	NBR O-Ring, Rear Cover	1	249	48841	AL Flange, Adapter	1
53	48830	AL Crankcase	1	251	126746	STCP R Lockwasher, Conical (M8)	4
64	46404	CM Pin, Crosshead	3	252	46403	STL Screw, FH (M8 x 25)	4
65	48845	BB Rod, Plunger	3	255	30510	STZP Assembly, Bolt Mount	1
70	48911	NBR Seal, Oil, Crankcase	3	300	34262	NBR Kit, Seal (Includes: 98, 106, 121, 127, 128)	1
75	48754	NBR Slinger, Barrier	3	310	34260	NBR Kit, Valve (Includes: 163, 164, 166-168, 172)	2
90	48752	CC Plunger (M14 x 47)	3	400	7861	BB Unloader Assembly	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).

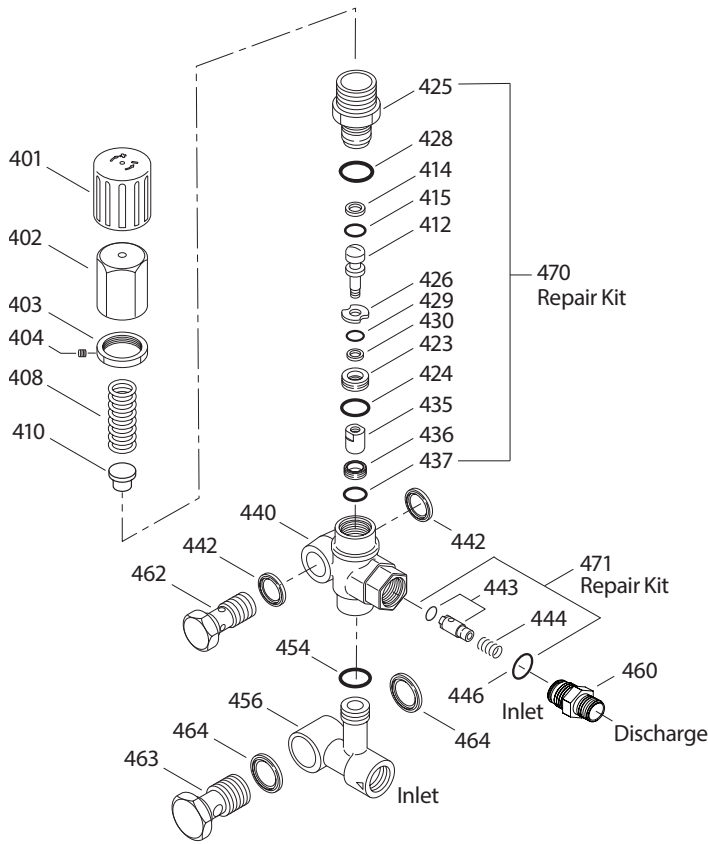
MATERIAL CODES (Not Part of Part Number): AL=Aluminum BB=Brass CC=Ceramic CM=Chrome-moly FPM=Fluorocarbon NBR=Medium Nitrile (Buna-N)

NY=Nylon PC=Polycarbonate PVDF=Polyvinylidene Fluoride 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

**Kits – NBR (STD) and FPM (.0110) listed on page 4.**

## EXPLODED VIEW



## 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-90D	1
423	49105	BB	Retainer, Valve	1
424	49106	NBR	O-Ring, Valve Retainer-70D	1
425	49102	BB	Retainer, Piston	1
426	49107	S	Washer	1
428	26133	NBR	O-Ring, Piston Retainer-80D	1
429	22056	NBR	O-Ring, Valve Retainer-70D	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-70D	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-80D	1
454	11346	NBR	O-Ring, Manifold-70D	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

## MODEL 7861 UNLOADER

### 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 each 66DX 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.

