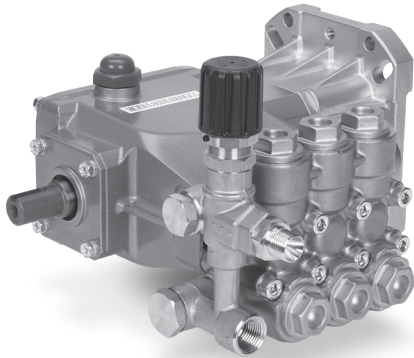


DATA SHEET

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.*
- Solid 20 mm shaft with M6 keyway, for accessory components.
- 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 ¼", Pilot Ø= 5 ¾", BC. Ø= 6 ½", Thread ¾"-16 UNC TAP.

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
Alternate seals available for higher temperature up to 180° F		
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)	¾" NPT(F)	¾" 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 10.51 x 8.15"	282 x 267 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	
Torque	4.0	15.0	10.6 ft-lbs		12.7 ft-lbs		3400
Horsepower*			8.9 hp		10.5 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

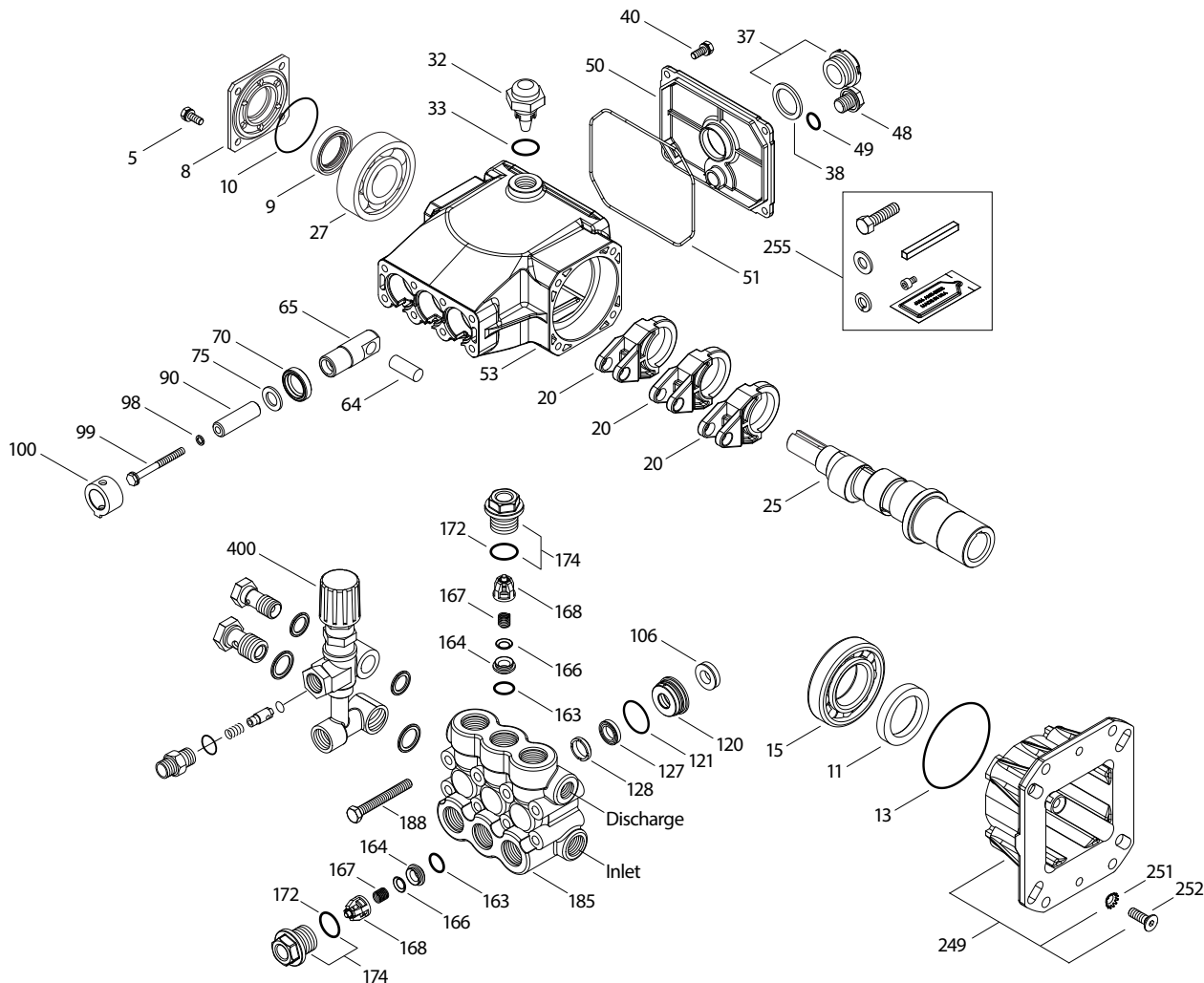
$$\text{Engine hp (Estimated)} = \frac{\text{gpm} \times \text{psi}}{1140}$$

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

Italics are optional items.

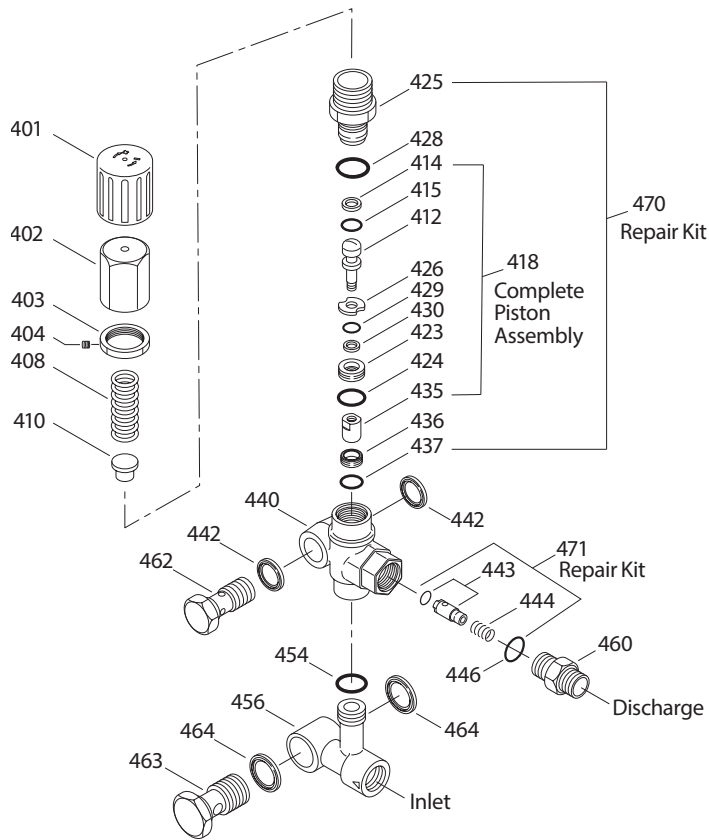
R Components comply with RoHS Directive. † Production parts different from service parts. For additional technical information see www.catpumps.com/literature/tech-bulletins.

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

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	—	S	Stem, Piston	1
414	—	PTFE	Backup Ring, Piston Stem	1
415	—	NBR	O-Ring, Piston Stem-90D	1
418	—	BB	Assembly, Piston (Included in Repair Kit)	1
423	49105	BB	Retainer, Valve	1
424	—	NBR	O-Ring, Valve Retainer-70D	1
425	—	BB	Retainer, Piston	1
426	—	S	Washer	1
428	—	NBR	O-Ring, Piston Retainer-80D	1
429	—	NBR	O-Ring, Valve Retainer-70D	1
430	—	D	Backup Ring, Valve Retainer	1
435	—	S	Valve/Ball Assembly	1
436	—	S	Seat	1
437	—	NBR	O-Ring, Seat-70D	1
440	—	BB	Valve Body	1
442	49121	STL	Washer, Seal (3/8")	2
443	—	BB	Valve, Check with NBR O-Ring	1
444	—	S	Spring, Check Valve	1
446	—	NBR	O-Ring, Body-80D	1
454	—	NBR	O-Ring, Manifold-70D	1
456	—	BB	Manifold	1
460	126974	BB	Fitting, Discharge [3/8" NPT(M)]	1
462	49120	BB	Screw, Flo-Thru [3/8" NPT(M)]	1
463	49117	BB	Screw, Flo-Thru [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: 418, 425, 428, 436, 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	7.6-19.0 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	35.2 oz	1.0 kg
Dimensions	4.65 x 1.70 x 6.75"	118 x 43 x 171 mm

UNLOADER TYPE

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

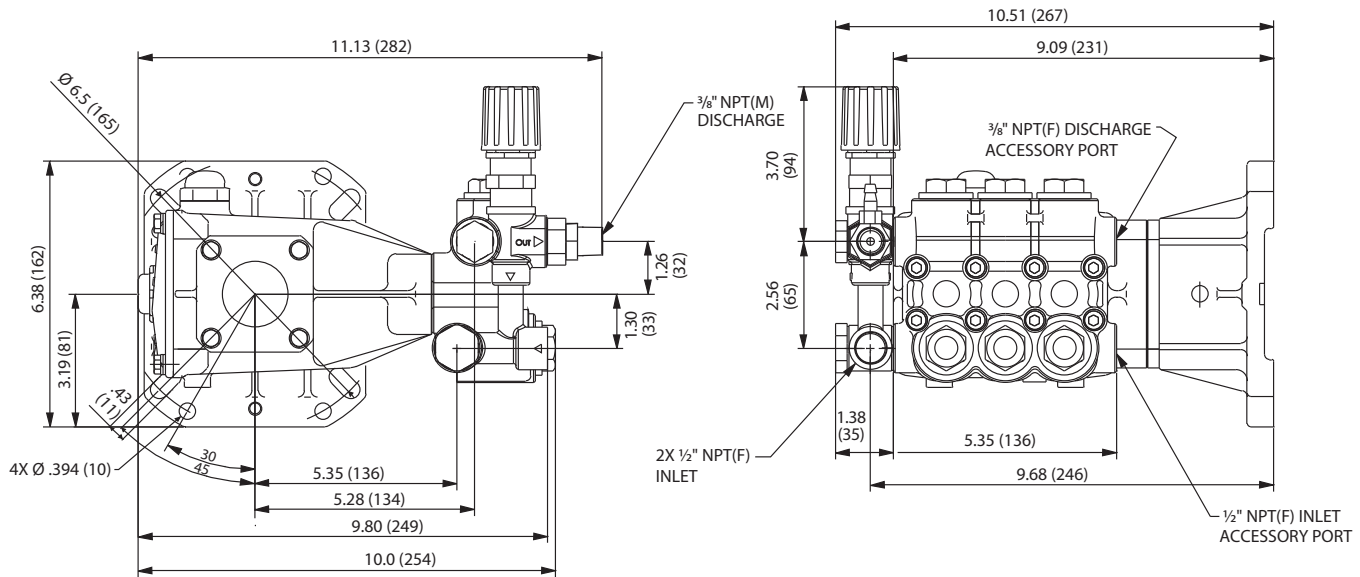
OPERATION:

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.



SEAL KITS One (1) seal kit required per pump

PUMP MODEL	NBR (STD)	FPM (.0110)
66DX40DSG11	34262	32376*

ITEM (Included in Seal Kits)	DESCRIPTION		QTY
98	46730	48394 Washer, Seal	3
106	45188	704649 Seal, LPS with S-Spring	3
121	13980	14330 O-Ring, Seal Case	3
127	48758	49201 V-Packing	3
128	48757	48757 Adapter, Male	3

* Review individual parts in each kit for material code identification

VALVE KITS Two (2) valve kit required per pump

PUMP MODEL	NBR (STD)	FPM (.0110)
66DX40DSG11	34260	32375

ITEM (Included in Valve Kits)	DESCRIPTION		QTY
163	17547	11685 O-Ring, Seat	3
164	45790	45790 Seat	3
166	46429	46429 Valve	3
167	43750	43750 Spring	3
168	44565	44565 Retainer, Spring	3
172	17616	11686 O-Ring, Valve Plug	3

⚠ 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/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

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