

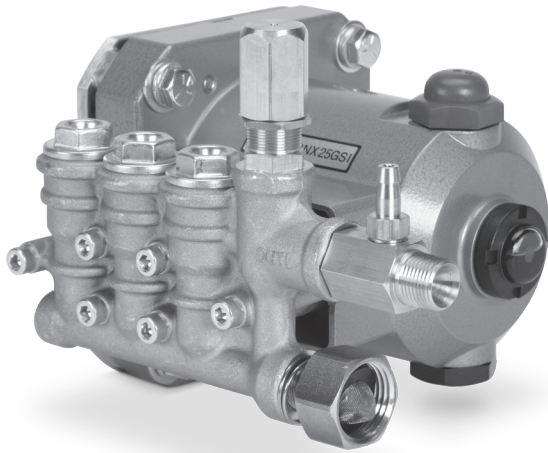
# DATA SHEET

## DIRECT DRIVE PLUNGER PUMP



### Brass Gas Model: 4DX29GUIF

See page 4 for complete pump model number selection.



SPECIFICATIONS	U.S. Measure	Metric Measure
Flow	2.9 gpm	11.0 lpm
Max. Discharge Pressure	2600 psi	179 bar
Pump RPM	3450 rpm	3450 rpm
Inlet Pressure Range	Flooded to 60 psi	Flooded to 4.1 bar
Max. Liquid Temperature (NBR)	140° F	60° C
<b>Alternate Seals Available for High Temperature up to 180° F</b>		
Bore	0.630"	16 mm
Stroke	0.232"	5.9 mm
Crankcase Capacity	8.5 oz.	0.25 l
Inlet Port (1)	¾" GHF	¾" GHF
Manifold Inlet Port	⅜" NPT(F)	⅜" NPT(F)
Discharge Ports (1)	⅜" NPT(M)	⅜" NPT(M)
Accessory Port (1)	¼" NPT(F)	¼" NPT(F)
Shaft Diameter	¾"	19.0 mm
Weight	10.7 lbs.	4.9 kg
Dimensions	8.03 x 7.72 x 6.29"	204 x 196 x 160 mm

Gas Mounting Flange: SAE J609, Flange A, Extension 3 (¾" Ø)

Shaft Length = 2.296", Pilot Ø = 1 ⅝", B.C. Ø = 3 ⅝"

Thread = ⅝" - 24 UNC TAP

### FEATURES

- Fits standard ¾" Ø Shaft engine.
- Stacked stainless steel valve design for long life and easy servicing.
- Integral pressure unloader with built-in by-pass standard on all units to assure system pressure control and pump protection.
- Includes crankcase oil.
- Standard NBR seals with alternate options for temperature and chemical compatibility.

### ALTERNATIVE SEAL CONFIGURATION

MATERIAL	SUFFIX CODE	MAXIMUM TEMPERATURE
NBR	—	140° F (60° C)
FPM	.0110	180° F (82° C)
HT	.3000	180° F (82° C)

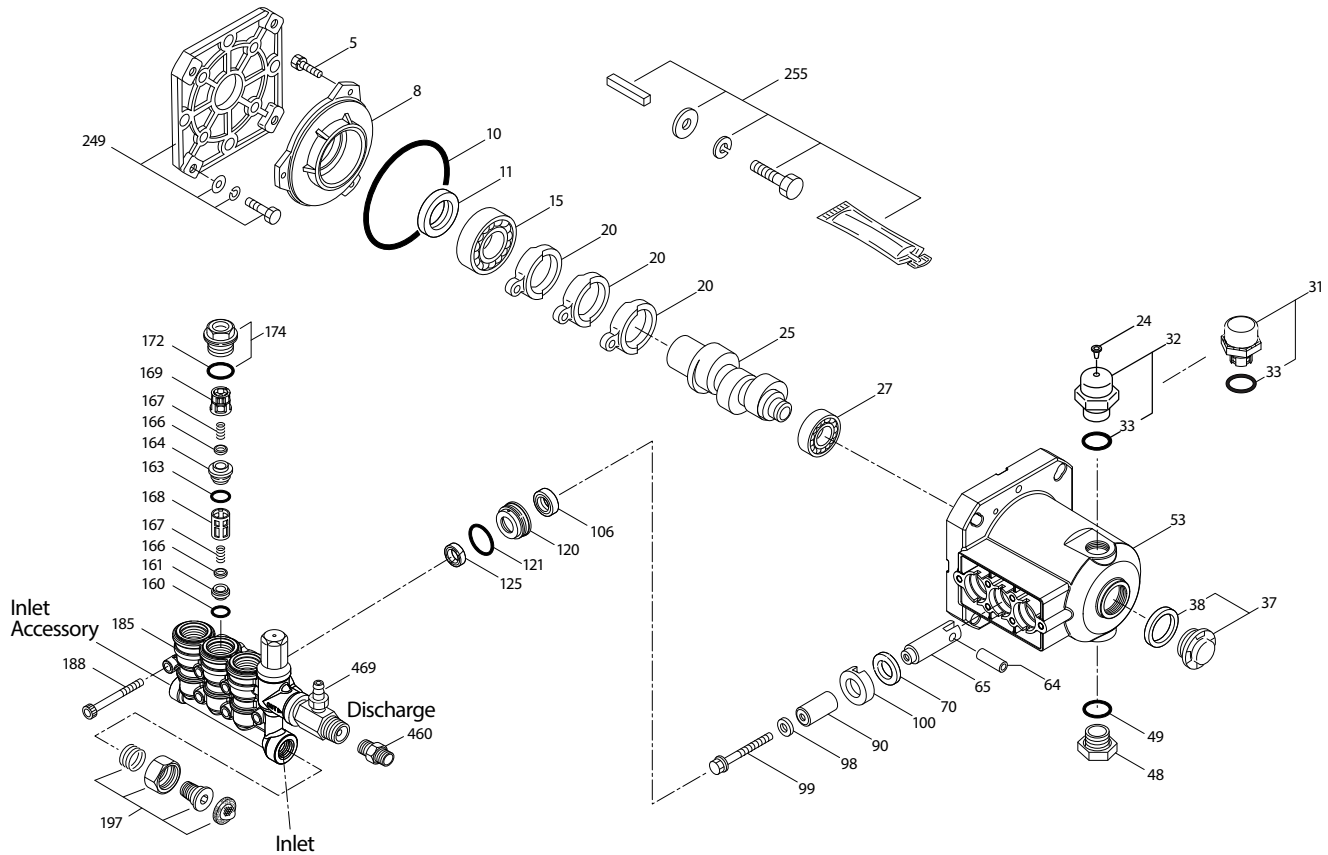
See Tech Bulletin 99TCH002 for inlet conditions and RPM at high temperature.

$$\text{DETERMINING THE PUMP R.P.M.} \quad \frac{\text{Rated gpm}}{\text{Rated rpm}} = \frac{\text{"Desired" gpm}}{\text{"Desired" rpm}}$$

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

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	549360	STCP R	Screw, HH (M6 x 14)	3	76088	ST2		Seal, HPS	3
8	547153	AL	Cover, Bearing	1	160	13965	NBR	O-Ring, Seat, Inlet - 70D	3
10	14041	NBR	O-Ring, Bearing Cover - 70D	1	76656	FPM		O-Ring, Seat, Inlet - 70D	3
11	55337	NBR	Seal, Oil	1	161	545177	S	Seat, Inlet	3
15	14488	STL	Bearing, Ball - Inner	1	163	19285	NBR	O-Ring, Seat, Discharge - 70D	3
20	547048	TNM	Rod, Connecting	3	14166	FPM		O-Ring, Seat, Discharge	3
24	549608	LDPE	Plug, Oil Cap	1	164	545178	S	Seat, Discharge	3
25	49884	CM	Crankshaft, 3450 RPM, 3/4", 5.9 mm	1	166	46764	S	Valve	6
27	15710	STL	Bearing, Ball - Outer	1	167	46865	S	Spring	6
31	549726	—	Cap, Vented w/O-Ring (Rain Cap)	1	168	543988	PVDF	Retainer, Spring, Inlet	3
32	547961	—	Cap, Vented w/O-Ring	1	169	49764	PVDF	Retainer, Spring, Discharge	3
33	14179	NBR	O-Ring, Oil Filler Cap - 70D	1	172	142807	NBR	O-Ring, Plug - 90D	3
37	92241	—	Gauge, Bubble Oil w/Gasket	1	547743	FPM		O-Ring, Plug	3
38	44428	NBR	Gasket, Flat Flex, Oil Gauge - 80D	1	174	547104	BB	Plug, Valve (M20 x 1.5) w/O-Ring	3
48	44842	NY	Plug, Drain	1	185	132192	FBB	Head, Manifold	1
49	14179	NBR	O-Ring, Drain Plug - 70D	1				with Integral Regulator/Unloader Body	
53	49801	AL	Crankcase	1	188	549357	STCP R	Screw, HSH (M6 x 60)	6
64	46229	CM	Pin, Crosshead	3	196	22177	BBCP	Plug, Accessory	1
65	132190	BB	Rod, Plunger	3	197	941516	BB	Assy, GH, 3/8" NPT	1
70	47215	NBR	Seal, Oil - 70D	3	249	30520	—	Assy, Adapter Mount	1
90	542403	CC	Plunger (M16 x 27)	3	255	30516	STZP R	Assy, Bolt Mount	1
98	46730	NBR	Washer, Seal - 90D	3	300	33053	NBR	Kit, Seal (Includes: 98, 106, 121, 125) <b>Standard</b>	1
	48394	FPM	Washer, Seal 90D	3		76453	FPM	Kit, Seal (Includes: 98, 106, 121, 125) <b>.0110</b>	1
99	542405	S	Retainer, Plunger (M6 x 35)	3	310	76978	NBR	Kit, Valve	1
100	46233	D	Retainer, Seal	3				(Includes: 160, 161, 163, 164, 166, 167, 168, 169, 172) <b>Standard</b>	
106	48222	NBR	Seal, LPS w/S-Spg	3		76463	FPM	Kit, Valve	1
	76089	ST2	Seal, LPS w/SS-Spg	3				(Includes: 160, 161, 163, 164, 166, 167, 168, 169, 172) <b>.0110</b>	
120	547357	BB	Case, Seal	3	400	—	—	Regulator/Unloader, Integral (See Individual Parts)	1
121	13976	NBR	O-Ring, Seal Case - 70D	3	460	107681	BB	Fitting, Discharge	1
	48522	FPM	O-Ring, Seal Case	3	469	7242	BB	Injector, Chemical, Fixed	1
125	† 46240	NBR	Seal, HPS w/S	3					

*Italics are optional items.* [ ] Date of latest production change. R Components comply with RoHS Directive.

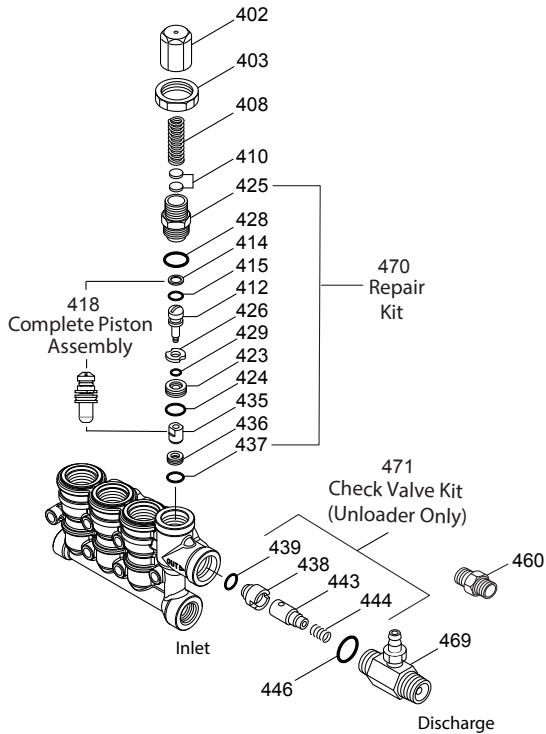
† Production parts are different than repair parts. See Tech Bulletins 024, 036, 043, 055, 074, 083, 086 and 094 for additional information.

MATERIAL CODES (Not Part of Part Number): AL=Aluminum BB=Brass BBCP=Brass Chrome Plated CC=Ceramic CM=Chrome-moly D=Acetal  
 FBB=Forged Brass FPM=Fluorocarbon LDPE=Low Density Polyethylene NBR=Medium Nitrile (Buna-N) NY=Nylon PVDF=Polyvinylidene Fluoride  
 S=304SS ST2=Special PTFE 2 STL=Steel STCP=Steel/Chrome Plated STZP=Steel/Zinc Plated TNM=Special High Strength

**NOTE:** Discard Key which may come standard with most motors and **use only the key included in this kit.**

# INTEGRAL REGULATOR/UNLOADER

SPECIFICATIONS	U.S.	Metric
Flow	3.1 gpm	11.7 lpm
PSI Range	100 - 2600 psi	6.9 - 179 bar
Inlet Port	3/8" NPT(F)	3/8" NPT(F)
Discharge Port	3/8" NPT(M)	3/8" NPT (M)



## PARTS LIST

ITEM	PN	MATL	DESCRIPTION	QTY
401	32088	NY	Handle, Adjustable (Not Shown)	1
402	46570	BB	Cap, Adjusting	1
403	45070	BB	Nut, Lock (M18 x 1)	1
408	33394	STZP R	Spring, Pressure	1
410	549352	STCP R	Retainer, Spring	2
412	46251	BB	Stem, Piston	1
414	—	PTFE	Back-up Ring, Piston Stem	1
415	—	NBR	O-Ring, Piston Stem - 70D	1
418	—	—	Assembly, Piston (Included In Repair Kit)	1
423	46249	BB	Retainer, Valve	1
424	—	NBR	O-Ring, Valve Retainer (Outer) - 70D	1
425	46248	BB	Retainer, Piston	1
426	46250	S	Washer	1
428	—	NBR	O-Ring, Piston Retainer - 80D	1
429	—	NBR	O-Ring, Valve Retainer (Inner) - 80D	1
435	547969	S	Valve	1
436	548075	S	Seat	1
437	—	NBR	O-Ring, Seat - 70D	1
438	—	NY	Seat, Check Valve	1
439	—	NBR	O-Ring, Seat, Check Valve - 70D	1
443	—	BB	Valve, Check w/O-Ring	1
444	—	S	Spring	1
446	—	NBR	O-Ring, Body - 80D	1
460	107681	BB	Fitting, Discharge [3/8" NPT(M)]	1
468	76754	NBR	Kit, O-Ring (Includes: 414, 415, 424, 428, 429, 437) <b>Standard</b>	1
	76467	FPM	Kit, O-Ring (Includes: 414, 415, 424, 428, 429, 437) <b>.0110</b>	1
469	7242	BB	Injector, Chemical Fixed	1
470	76031	NBR	Kit, Repair (Includes: 418, 425, 428, 436, 437) <b>Standard</b>	1
	76468	FPM	Kit, Repair (Includes: 418, 425, 428, 436, 437) <b>.0110</b>	1
471	† 76146	NBR	Kit, Check Valve (Includes: 438, 439, 443, 444, 446) <b>Standard</b>	1
	76469	FPM	Kit, Check Valve (Includes: 438, 439, 443, 444, 446) <b>.0110</b>	1

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

† Production parts are different than repair parts. MATERIAL CODES (Not Part of Part Number):

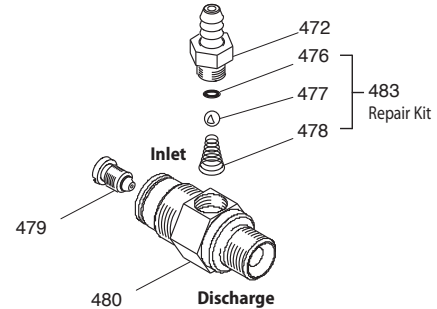
BB=Brass FPM=Fluorocarbon NBR=Medium Nitrile (Buna-N) NY=Nylon

PTFE=Pure Polytetrafluoroethylene S=304SS STCP=Steel/Chrome Plated

STZP=Steel/Zinc Plated

# MODEL 7242 FIXED CHEMICAL INJECTOR

SPECIFICATIONS	U.S.	Metric
GPM	3.0 gpm	11.4 lpm
Nozzle Orifice	2.0 mm	2.0 mm
Hose Barb	1/4"	1/4"
Tapped Barb	8/32" UNF	8/32" UNF
Inlet Port - Male	M18x1.0	M18x1.0
Discharge Port - Male	3/8" NPT(M)	3/8" NPT(M)
Weight	5.3 oz.	0.15 kg
Dimensions	2 x 1 x 1.75	52 x 25 x 45 mm



## PARTS LIST

ITEM	PN	MATL	DESCRIPTION	QTY
472	46630	BB	Barb	1
476	—	NBR	O-Ring, Barb - 70D	1
	—	FPM	O-Ring, Barb	1
477	—	S	Ball	1
478	—	S	Spring	1
479	547971	BB	Orifice (2.0 mm)	1
480	—	BB	Body	1
483	76176	NBR	Kit, Repair (Includes: 476, 477, 478) <b>Standard</b>	1
	76476	FPM	Kit, Repair (Includes: 476, 477, 478) <b>.0110</b>	1

MATERIAL CODES (Not Part of Part Number):

BB=Brass FPM=Fluorocarbon NBR=Medium Nitrile (Buna-N) S=304SS

## CHEMICAL INJECTOR PERFORMANCE CHART

### Optional Special Ported Chemical Injector for Unloader Mounting

Orifice Size	Maximum Injecting Pressure	Maximum Chemical Draw	Pressure Drop Across Injector at System Pressure
2.0 mm	280 psi	35.3 oz/min	148 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 pressures in excess of the low pressure nozzle rating and prevent the injector from drawing chemical. **Deduct hose friction loss from above low 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.

## REGULATING DEVICE

An integral regulator or unloader with built-in by-pass is part of the discharge manifold to provide system pressure regulation and pump protection. This unloader version includes a fixed chemical injector for chemical application. (See back page for proper model identifications)

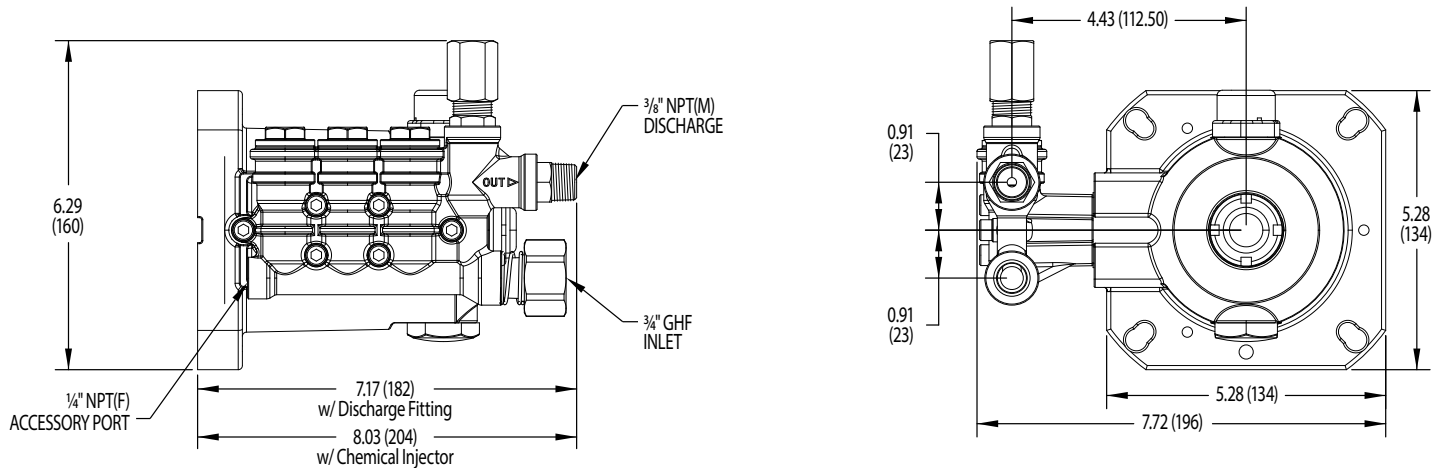
## OPERATION

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 regulator or unloader pressure must be done with the system turned on. Start the system with the regulator or 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.

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

## SERVICE

The regulator or unloader should be serviced on the same schedule as the seals in the pump. Refer to 4DX Service Manual or start-up, servicing of seals and valves, torque requirements and diagnosis and maintenance chart.



Base Model 4DX29GUIF

### 4DX Pump Series Selection Chart

Pump Series						Pump Flow/RPM	
4	D	X				gpm	rpm
			2	9		2.9	3450
				<b>G</b>		Gas, 3/4" Hollow Shaft	
				<b>R</b>		Regulating Device = Regulator	
				<b>U</b>		Regulating Device = Unloader	
				<b>I</b>		Fixed Chemical Injector	
				<b>F</b>		Garden Hose Fitting	
					<b>.0110</b>	FPM Seals	

**Examples:**

4DX29GUIF = 2.9 gpm (3450 rpm), Unloader, Chemical Injector, Garden Hose Inlet Fitting

**⚠ 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](http://www.catpumps.com/dynamic-literature/cautions-and-warnings) or can be requested directly from Cat Pumps.

**WARRANTY**

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