

DATA SHEET

5 FRAME PLUNGER PUMPS



Brass Model: **45**

Brass Gearbox Models: **45G1, 45G118**



Model 45 Shown
(Rails sold separately)

FEATURES

- Industrial triplex design offers reliability and versatility.
- Compact direct-drive mount to motor using bell housing and flexible coupling (Electric - NEMA or IEC, Hydraulic - SAE).
- Gearbox model available with 1" and 1 1/8" hollow shaft to fit a wide variety of engines.
- Optional belt-drive for precision flow setting.
- Standard NBR seals with alternative options for temperature and chemical compatibility.

COMMON

SPECIFICATIONS	U.S.	Metric
Inlet Pressure Range	Flooded to 60 psi	Flooded to 4.1 bar
Max. Liquid Temp. (NBR)	160° F	71° C
Alternative seals available for high temp up to 190° F		
Bore	0.630"	16 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 (Single End)	0.787"	20 mm
Weight (45)	20.9 lbs.	9.5 kg
Weight (45G1)	27.6 lbs.	12.5 kg
Dimensions	11.99 x 8.54 x 5.50"	304.5 x 217.1 x 139 mm

SPECIFICATIONS

	U.S. Measure	Metric Measure
MODEL 45		
Flow	4.5 gpm	17 lpm
Pressure Range	100 – 3500 psi	6.9 – 241 bar
Pump RPM*	1645 rpm	1645 rpm
Stroke	0.708"	18 mm
MODELS 45G1, 45G118		
Flow	4.5 gpm	17 lpm
Pressure Range	100 – 3500 psi	6.9 – 241 bar
Engine RPM	3353 rpm	3353 rpm
Stroke	0.708"	18 mm

*Pump minimum is 100 RPM.

ALTERNATIVE SEAL CONFIGURATION

MATERIAL	SUFFIX CODE	MAXIMUM TEMPERATURE	
NBR	—	160° F	(71° C)
FPM	.0110	180° F	(82° C)
EPDM	.0220	160° F	(71° C)
HT	.3000	180° F	(82° C)
STHT	.3400	190° F	(88° C)

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

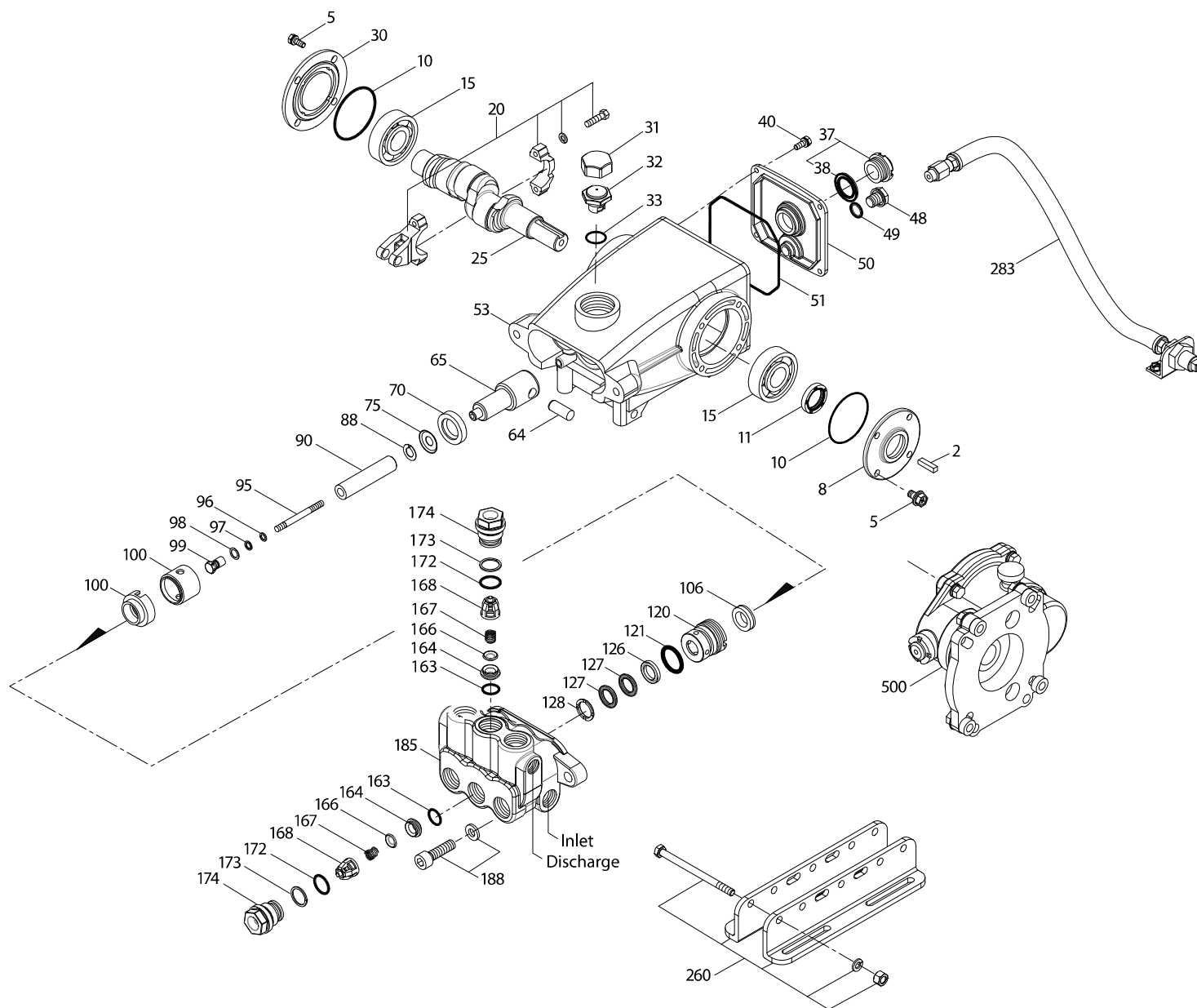
DETERMINING THE PUMP R.P.M.	Rated gpm	=	"Desired" gpm
	Rated rpm	=	"Desired" rpm
DETERMINING THE REQUIRED H.P.	Hp (Electric Brake)	=	gpm x psi 1460
	Motor Pulley O.D. Pump rpm	=	Pump Pulley O.D. Motor rpm

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

PARTS LIST

ITEM	PART NUMBER	MATL	DESCRIPTION	QTY
2	30057	STL	Key (M6x6x25)	1
5	126542	STCP R	Screw, Sems HHC (M8x16)	8
8	49685	AL	Cover, Bearing (M8)	1
10	43343	NBR	O-Ring, Bearing Cover - 70D	2
11	43222	NBR	Seal, Oil, Crankshaft	1
15	14480	STL	Bearing, Ball	2
20	45883	HS	Rod, Connecting Assy	3
25	45911	FCM	Crankshaft - Single End (M18) - 45, 45G1, 45G118	1
30	45953	AL	Cover, Blind Shaft (M8)	1
31	828710	—	Protector, Oil Cap w/Foam Gasket	1
32	44666	RTP	Cap, Oil Filler, Domed	1
33	14177	NBR	O-Ring, Oil Filler Cap - 70D	1
37	92241	PC	Gauge, Oil, Bubble w/Gasket - 80D	1
38	44428	NBR	Gasket, Flat, Oil Gauge - 80D	1
40	125824	STCP R	Screw, Sems HHC (M6x16)	4
48	25625	STCP	Plug, Drain (¼"x19BSP)	1
49	23170	NBR	O-Ring, Drain Plug - 70D	1
50	48772	AL	Cover, Rear [3/10]	1
51	48773	NBR	O-Ring, Rear Cover [3/10]	1
53	129811	AL	Crankcase (M8) [3/10]	1
64	43351	CM	Pin, Crosshead	3
65	45908	ZZCP	Rod, Plunger	3
70	43228	NBR	Seal, Oil, Crankcase	3
75	43328	S	Slinger, Barrier	3
88	45697	S	Washer, Keyhole (M18x M10)	3
90	45783	CC	Plunger (M16x72)	3
95	126558	STCP R	Stud, Plunger Retainer (M6x64.5)	3
96	43235	PTFE	Back-up-Ring, Plunger Retainer	3
97	17399	NBR	O-Ring, Plunger Retainer - 80D	3
	14160	FPM	O-Ring, Plunger Retainer - 80D	3
98	45891	CU	Gasket, Plunger Retainer	3
99	46504	S	Retainer, Plunger (M6)	3
100	45784	PVDF	Retainer, Seal, 2-Pc [04/06] (See Tech Bulletin 105)	3
106	43316	NBR	Seal, LPS w/S-Spg	3
	106660	FPM	Seal, LPS w/S-Spg	3
120	45789	BB	Case, Seal	3
121	14200	NBR	O-Ring, Seal Case - 70D	3
	11719	FPM	O-Ring, Seal Case	3
126	43320	BB	Adapter, Female	3
127	43319	SNG	V-Packing	6
	46287	HT	V-Packing (See Tech Bulletin 073)	6
128	43318	BB	Adapter, Male	3
163	17547	NBR	O-Ring, Valve Seat - 85D	6
	11685	FPM	O-Ring, Valve Seat - 85D	6
164	45790	S	Seat	6
166	45899	S	Valve	6
167	43750	S	Spring	6
168	44565	PVDF	Retainer, Spring	6
172	17549	NBR	O-Ring, Valve Plug - 80D	6
	26996	FPM	O-Ring, Valve Plug - 70D	6
173	48365	D	Back-up-Ring, Valve Plug	6
174	45900	BB	Plug, Valve	6
185	45907	FBB	Head, Manifold	1
188	126520	STCP R	Screw, Sems HSH (M10x35)	2
260	30611	STZP R	Assy, Angle Rail, B (2.09" x 9.45") Standard	1
	30645	STZP R	Assy, Angle Rail, A (2.95" x 11.81")	1
275	30944	STL	Hub & Key Assy, "H" Series, M20, (M6 Key) (Incls: 30057, 30945) (See Tech Bulletin 003)	1
283	34334	—	Kit, Oil Drain (¾" x 24")	1
300	30629	NBR	Kit, Seal (Incls: 97, 106, 121, 127) Standard	1
	76629	FPM	Kit, Seal (Incls: 97, 106, 121, 127) .0110	1
	31629	HT	Kit, Seal (Incls: 97, 106, 121, 127) .3000	1
310	30683	NBR	Kit, Valve, Preassembled (Incls: 163, 164, 166, 167, 168, 172, 173) Standard, .3000	2
	76683	FPM	Kit, Valve, Preassembled (Incls: 163, 164, 166, 167, 168, 172, 173) .0110	2
350	30696	STZP	Plier, Reverse	1
351	43257	STZP	Tool, Seal Case Removal	1
	33005	STZP	Socket, Seal Case (½" Drive)	1
500	8065	—	Gearbox 1" Shaft (See Individual Data Sheet)	1
	8068	—	Gearbox 1 ⅞" Shaft (See Individual Data Sheet)	1
—	6107	—	Oil, Bottle (21 oz.) ISO-68 Hydraulic	1

EXPLODED VIEW



Models
45
Gearbox - 45G1, 45G118
April 2020

Bold print part numbers are unique to a particular pump model.

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

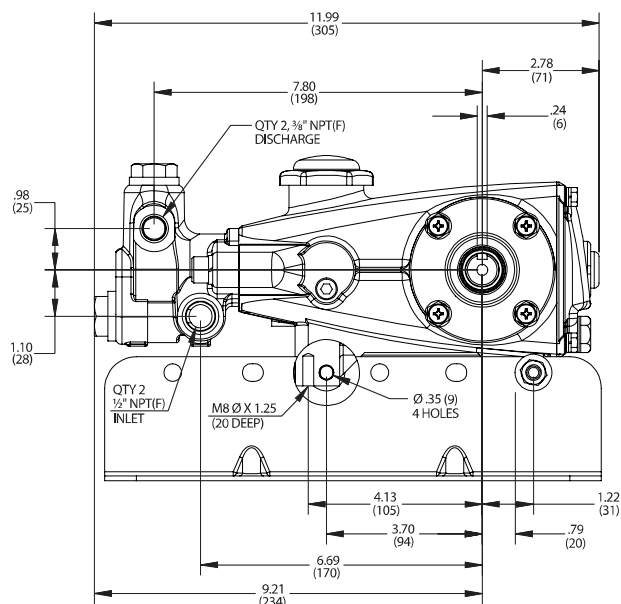
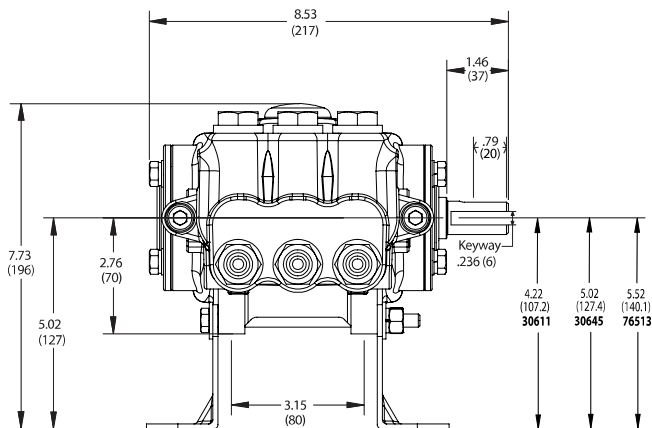
For additional technical information see www.catpumps.com/literature/tech-bulletins.

MATERIAL CODES (Not Part of Part Number): AL=Aluminum BB=Brass CC=Ceramic CM=Chrome-moly CU=Copper D=Acetal FBB=Forged Brass

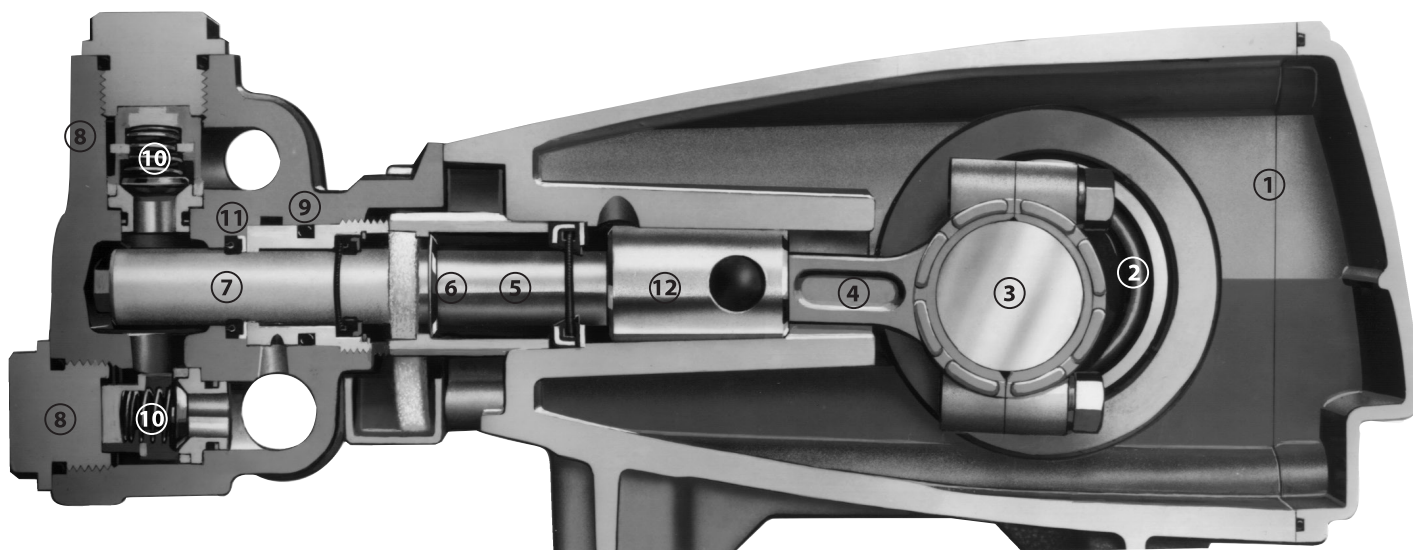
FCM=Forged Chrome-moly FPM=Fluorocarbon HS=High Strength HT=Hi-Temp (EPDM Alternative) NBR=Medium Nitrile (Buna-N)

PC= Poly Carbonate PTFE=Pure Polytetrafluoroethylene PVDF=Polyvinylidene Fluoride RTP=Reinforced Composite S=304SS

SNG=Special Blend (Buna)STCP=Steel/Chrome Plated STL=Steel STZP=Steel/Zinc Plated ZZCP=Zamak/Chrome Plated



Model 45



- 1 Die cast aluminum **crankcase** means high strength, lightweight, and excellent tolerance control.
- 2 Oversized crankshaft **bearings** provide extended bearing life and pump performance.
- 3 Chrome-moly **crankshaft** provides unmatched strength and surface hardness for long life.
- 4 Matched oversized high strength **connecting rods** noted for superior tensile strength and bearing quality.
- 5 High strength **plunger rods** for high load bearing and longevity.
- 6 The stainless steel **slinger** provides back-up protection for the crankcase seal, keeping pumped liquids out of the crankcase.
- 7 Special concentric, high-density, polished, solid ceramic **plungers** provide a true wear surface and extended seal life.
- 8 **Manifolds** are a high tensile strength forged brass for long term, continuous duty.
- 9 100% wet **seal** design adds to service life by allowing pumped liquids to cool and lubricate on both sides.
- 10 Stainless steel **valves, seats and springs** provide corrosion-resistance, ultimate seating and extended life.
- 11 Specially formulated, Cat Pumps exclusive, **V-Packings** offer unmatched performance and seal life.
- 12 **Crossheads** are 360° supported for uncompromising alignment.

⚠ 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 on-line at www.catpumps.com/warranty.