

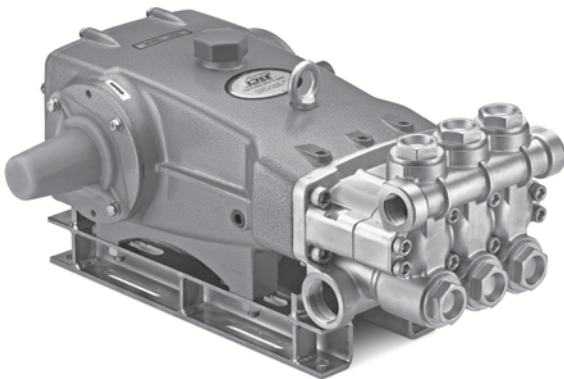
# DATA SHEET

## 35 FRAME PLUNGER PUMP



**Forged Brass  
Model:**

**3545HS**



Model 3545HS Shown  
(Shaft protector included, mounting rails  
sold separately)

### FEATURES

- Triplex plunger design delivers high efficiency and low pulsation.
- Durable dual V-Packings are lubricated and cooled by pumped liquid.
- Pre-Set Lo-Pressure seals provide secondary protection against external leaks and require no packing adjustment.
- Special high-density, polished, concentric ceramic plungers provide a true wear surface and extended seal life.
- Specially formulated seals and V-Packings offer unmatched performance and seal life.
- Wet-end is easily serviced without entering crankcase.
- Standard NBR seals with alternative options for temperature and chemical compatibility
  - FPM – .0110
  - EPDM – .0220
  - IPEE – .0770
  - High Temp, 190° F – .3000
  - High Temp, 200° F, – .3400 (Intermittent Run-Dry)

### SPECIFICATIONS

	U.S. Measure	Metric Measure
Flow*	50 gpm	189 lpm
Pressure Range*	100 to 1500 psi	6.9 to 103 bar
Pump RPM**	850 rpm	850 rpm
Inlet Pressure Range	Flooded to 70 psi	Flooded to 4.8 bar
Max. Liquid Temperature	140° F	60° C
Above 130°F call Cat Pumps for inlet conditions and elastomer recommendations.		
Bore	1.772"	45 mm
Stroke	1.890"	48 mm
Crankcase Capacity	4.2 Qts.	4 l
Inlet Ports (2)	1-1/2" NPT(F)	1-1/2" NPT(F)
Discharge Ports (2)	1" NPT(F)	1" NPT(F)
Shaft Diameter	1.378"	35 mm
Pulley Mounting	Either Side	Either Side
Weight	139 lbs.	63 kg
Dimensions	23.86 x 18.11 x 9.72"	606 x 460 x 247 mm

\*Intermittent Duty Only. Defined as: Operating pump at stated flow and pressure for no more than 50% of time in any given hour.

\*\*Pump minimum is 100 RPM.

### ELECTRIC HORSEPOWER REQUIREMENTS

FLOW		PRESSURE			PUMP RPM
		psi 1000 bar 69	psi 1250 bar 86	psi 1500 bar 103	
gpm	lpm				
50	189	34.2	42.8	51.4	850
45	170	30.8	38.5	46.2	765
40	27.4	27.4	34.2	41.1	680

**DETERMINING  
THE PUMP R.P.M.**

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

**DETERMINING  
THE REQUIRED H.P.**

$$\text{Hp (Electric Brake)} = \frac{\text{gpm x psi}}{1460}$$

**DETERMINING  
MOTOR PULLEY SIZE**

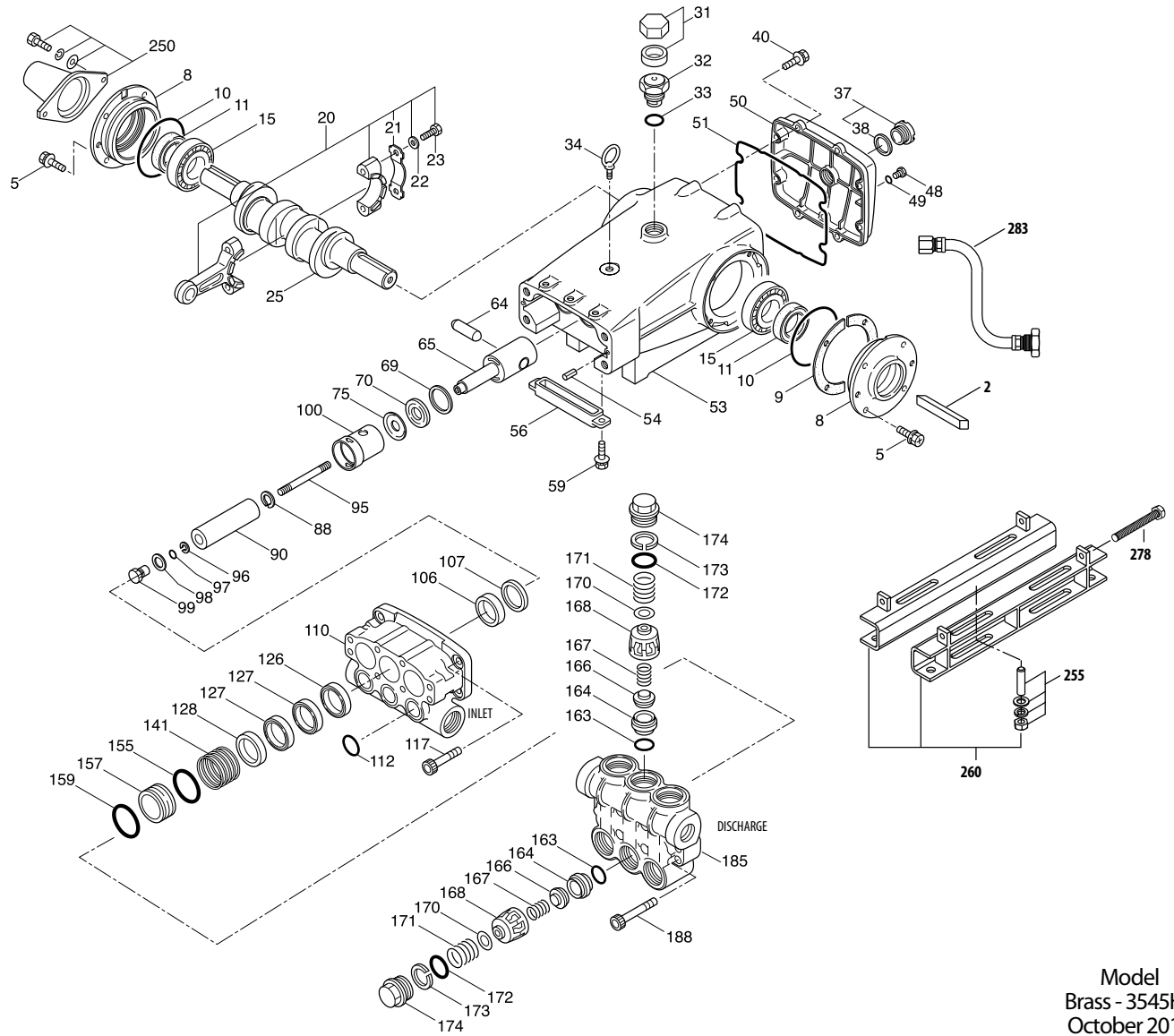
$$\frac{\text{Motor Pulley O.D.}}{\text{Pump rpm}} = \frac{\text{Pump Pulley O.D.}}{\text{Motor rpm}}$$

See complete Drive Packages [Includes: pulleys, belts, hubs, key] Tech Bulletin 003.  
Refer to pump **Service Manual** for repair procedure and additional technical information.

# PARTS LIST

ITEM	PART NUMBER	MATL	DESCRIPTION	QTY
2	34021	STL	Key (M10x8x70)	1
5	125753	S	Screw, HH Sems (M8x25)	8
8	44542	AL	Cover, Bearing (See Tech Bulletin 118)	2
9	815279	FBR	Shim, Split 2-PC	4
10	12398	NBR	O-Ring, Bearing Cover - 70D	2
11	13296	NBR	Seal, Oil, Crankshaft	2
15	29326	STL	Bearing, Roller	2
20	126725	BZ	Rod, Connecting Assembly (Incls: 21, 22, 23)	3
21	126749	STCP R	Washer, Locking (M10)	6
22	126593	STCP R	Washer, Flat (M10)	6
23	122045	STZP	Screw, HH (M10x55)	3
25	29325	FCM	Crankshaft, Dual End	1
31	828710	PE	Protector, Cap w/Foam Gasket	1
32	43211	ABS	Cap, Oil Filler	1
33	14177	NBR	O-Ring, Oil Filler Cap - 70D	1
34	126743	STCP R	Bolt, Eye (M12x1.75) (For Lifting Pump Only)	1
37	92241	—	Gauge, Oil, Bubble w/Gasket	1
38	44428	NBR	Gasket, Flat, Oil Gauge - 80D	1
40	125753	S	Screw, HH Sems (M8x25)	8
48	25625	STCP	Plug, Drain (1/4"x19 BSP)	1
49	23170	NBR	O-Ring, Drain Plug - 70D	1
50	45936	AL	Cover, Rear (See Tech Bulletin 118)	1
51	16612	NBR	O-Ring, Crankcase Cover - 70D	1
53	44487	AL	Crankcase Assy (Incls: 34, 54) (See Tech Bulletin 118)	1
54	27488	S	Pin, Guide	2
56	27790	POP	Pan, Oil	1
59	92538	S	Screw, HHC Sems (M6x16)	2
64	43864	CM	Pin, Crosshead	3
65	49166	SSHB	Rod, Plunger	3
69	126587	STCP R	Washer, Oil Seal	3
70	100488	NBRS	Seal, Oil, Crankcase	3
	44739	FPM	Seal, Oil, Crankcase	3
75	43865	S	Slinger, Barrier	3
88	45676	S	Washer, Keyhole (M16)	3
90	46806	CC	Plunger (M45x145)	3
95	89778	SS	Stud, Plunger Retainer (M10x135)	3
96	20189	PTFE	Back-up-Ring, Plunger Retainer	3
97	11345	NBR	O-Ring, Plunger Retainer - 70D	3
	11375	FPM	O-Ring, Plunger Retainer	3
	◆ 701490	EPDM	O-Ring, Plunger Retainer	3
98	44085	SS	Gasket, Retainer	3
99	44084	SS	Retainer, Plunger (M10)	3
100	44119	PPG	Retainer, Seal (See Tech Bulletin 105)	3
106	46809	NBR	Seal, LPS w/S-Spg	3
	702013	SFTB	Seal, LPS w/SS-Spg	3
	◆ 46945	EPDM	Seal, LPS w/SS-Spg	3
107	46811	BB	Spacer, LPS	3
110	49482	BBCP R	Manifold, Inlet	1
112	18688	NBR	O-Ring, Inlet Manifold - 70D	3
	11739	FPM	O-Ring, Inlet Manifold	3
	◆ 701659	EPDM	O-Ring, Inlet Manifold - 70D	3
117	44585	S	Screw, HSH (M14x40)	4
126	46812	BB	Adapter, Female	3
127	46813	STGS	V-Packing	6
128	46814	BB	Adapter, Male	3
141	49483	SS	Spring, Coil, Large (See Tech Bulletin 107)	3
155	17784	NBR	O-Ring, V-Packing Spacer - 80D	3
	20138	FPM	O-Ring, V-Packing Spacer - 80D	3
	◆ 701658	EPDM	O-Ring, V-Packing Spacer - 80D	3
157	49484	BB	Spacer, V-Packing (See Tech Bulletin 107)	3
159	17784	NBR	O-Ring, V-Packing Spacer - 80D	3
	20138	FPM	O-Ring, V-Packing Spacer - 80D	3
	◆ 701658	EDPM	O-Ring, V-Packing Spacer - 80D	3
163	26143	NBR	O-Ring, Seat - 80D	6
	14331	FPM	O-Ring, Seat - 70D	6
	◆ 701660	EPDM	O-Ring, Seat	6
164	46822	S	Seat	6
166	43932	S	Valve	6
167	44109	SS	Spring, Valve	6
168	44728	PVDF	Retainer, Spring	6
170	44729	SS	Washer, Spring Retainer	6
171	44644	SS	Coil Spring (70kg), Valve Plug	6
172	89827	NBR	O-Ring, Valve Plug - 90D	6
	11747	FPM	O-Ring, Valve Plug - 90D	6
	◆ 701494	EPDM	O-Ring, Valve Plug - 70D	6
173	48364	D	Back-up-Ring, Valve Plug	6
174	46444	FBB	Plug, Valve	6
185	49486	BBCP R	Manifold, Discharge	1

# EXPLODED VIEW



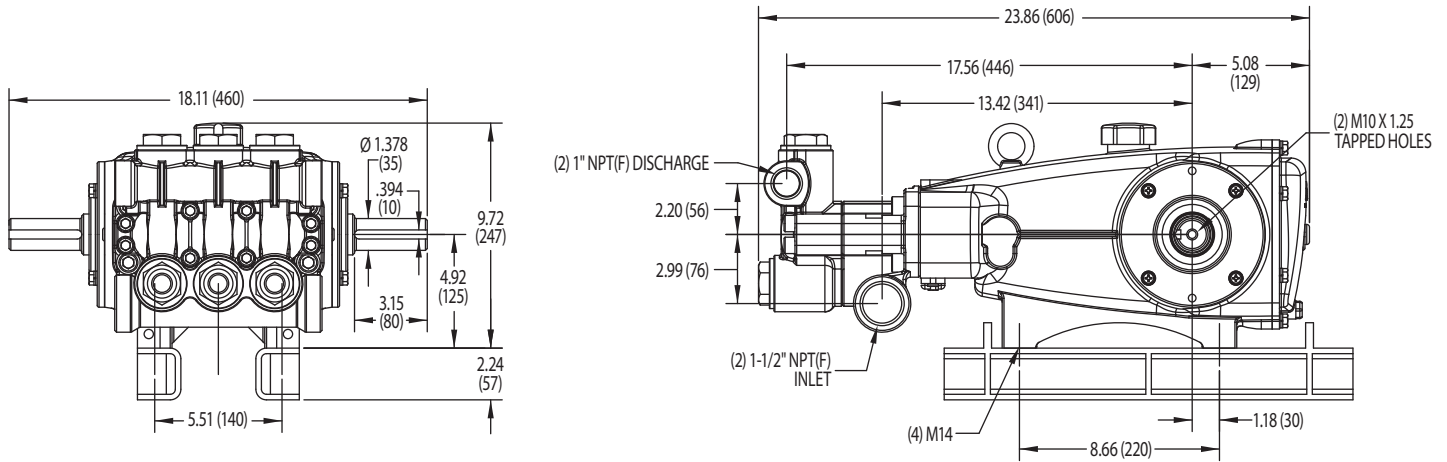
Model  
Brass - 3545HS  
October 2016

ITEM	PART NUMBER	MATL	DESCRIPTION	QTY
188	89981	S	Screw, HSH (M12x70)	8
250	44516	NY	Protector, Shaft w/2 Screws, Washers, Lockwashers (Included w/ Pump)	1
255	34018	STZPR	Kit, Direct Mount	1
	34039	S	Kit, Direct Mount	1
260	92674	STZPR	Mounting, Box Assy (Incls 34018)	1
275	990013	STL	Hub, 'B' 35mm w/Keyway [See Drive Packages Tech Bulletin 003]	1
278	80540	STZP	Screw, HH (M12x100) (Rail Adjusting Screw)	1
283	34314	—	Kit, Oil Drain (3/8" x 48")	1
290	6124	—	Gasket, Liquid (3 oz.)	1
299	818428	BBCP R	Head, Complete w/NBR Seals and O-Rings	1
300	33234	NBR*	Kit, Seal (Incls: 97, 106, 112, 127, 155, 159) <b>Standard</b>	1
	31261	FPM	Kit, Seal (Incls: 97, 106, 112, 127, 155, 159) <b>.0110</b>	1
	◆ 33223	EPDM*	Kit, Seal (Incls: 97, 106, 112, 127, 155, 159) <b>.0220</b>	1
310	33235	NBR	Kit, Valve, Preassembled (Incls: 163, 164, 166, 167, 168, 170, 172, 173) <b>Standard</b>	2
	31262	FPM	Kit, Valve, Preassembled (Incls: 163, 164, 166, 167, 168, 170, 172, 173) <b>.0110</b>	2
	◆ 31235	EPDM	Kit, Valve, Preassembled (Incls: 163, 164, 166, 167, 168, 170, 172, 173) <b>.0220</b>	2
—	819000	F	Assy, Crankcase, Cast Iron Conversion	1
—	6100	—	Oil, Case (12 Bottles) ISO-68 Hydraulic (Fill to specified crankcase capacity prior to start-up)	1
—	—	—	Lubricant, Antisieze (2 oz.)	1

*Italics are optional items.* ◆ Silicone oil/grease required. R Components comply with RoHS Directive. \* Review individual parts in each kit for material code identification.

See Tech Bulletins 002, 003, 024, 036, 041, 043, 053, 074, 083, 099, 105, 107, 109 and 118 for additional information.

MATERIAL CODES (Not Part of Part Number): ABS=ABS Plastic AL=Aluminum BB=Brass BBCP=Brass/Chrome Plated BZ=Bronze CC=Ceramic CM=Chrome-Moly D=Acetal EPDM=Ethylene Propylene Diene Monomer F=Cast Iron FBB=Forged Brass FBR=Fiber FCM=Forged Chrome-moly FPM=Fluorocarbon NBR=Medium Nitrile (Buna-N) NBR5=Buna, Silicone Free NY=Nylon PE=Polyethylene POP=Polypropylene PPG=Glass Filled Polypropylene PTFE=Pure Polytetrafluoroethylene PVDF=Polyvinylidene Fluoride S=304SS SS=316SS SFTB=Special Blend PTFE Black SSHB=316SS/High Strength Brass STGS=Special Blend PTFE White Silicone Free STCP=Steel/Chrome Plated STL=Steel STZP=Steel/Zinc Plated TNM=Special High Strength



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

**WARRANTY**

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

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