

DATA SHEET

35 FRAME PLUNGER PUMPS

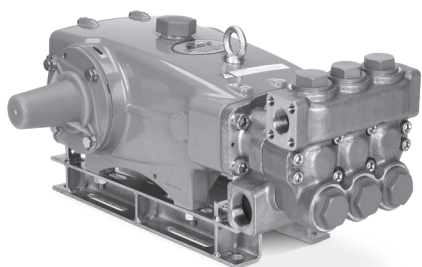


**Forged
Brass
3545HS**

**Stainless
Steel
3541DHS**

**Stainless Steel
Flushed
3541CHS**

**Nickel Aluminum
Bronze
3547HS**



Model 3541DHS Shown
(Shaft protector included, mounting rails sold separately)

FEATURES

- Triplex plunger design ensures high efficiency and low pulsation.
- Advanced connecting rod and plunger rod materials optimize drive-end operation for continuous-duty applications, and increase capabilities for intermittent-duty performance.
- V-packings and low-pressure seals are completely lubricated and cooled by pumped liquid, greatly increasing service life.
- Model 3541CHS offers an external flush for high-temperature liquids or low-lubricity liquids.
- Pump comes standard with NBR seals. Alternative seal materials are available for higher temperature or chemical compatibility.

SPECIFICATIONS

	U.S. Measure	Metric Measure
Flow	45 gpm	170 lpm
Pressure Range	100–1000 psi	6.9–69 bar
Pump RPM*	765 rpm	765 rpm
Inlet Pressure Range	Flooded to 70 psi	Flooded to 4.8 bar
Max. Liquid Temp. (NBR)	140° F	60° C

Alternative seals available for higher temperatures up to 200° F

Bore	1.772"	45 mm
Stroke	1.890"	48 mm
Crankcase Capacity	4.2 Qts	4 l
Inlet Ports (2)	1½" NPT(F)	1½" NPT(F)
Flush Ports (2)	¼" NPT (F)	¼" 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	24.33 x 18.11 x 9.72"	618 x 460 x 247 mm

ALTERNATE SPECIFICATIONS **

Flow	50 gpm	189 lpm
Pressure Range	100–1500 psi	6.9–103 bar
Pump RPM*	850 rpm	850 rpm

*Pump minimum is 100 RPM.

** Intermittent Duty Cycle Defined As:

Operating pump at maximum rated flow and pressure for no more than 50% of time in any given hour.

ALTERNATIVE SEAL CONFIGURATION

MATERIAL	SUFFIX CODE	MAXIMUM TEMPERATURE	
NBR	—	140° F	(60° C)
FPM	.0110	180° F	(82° C)
EPDM	.0220	160° F	(71° C)
FFKM	.0770	200° F	(93° C)
STHT	.3400	190° F	(88° C)

See **Tech Bulletin 002** for inlet conditions and RPM at higher temperatures.

DETERMINING THE PUMP RPM	Rated gpm Rated rpm	=	Desired gpm Desired rpm
DETERMINING THE REQUIRED HP	hp (Electric Brake)	=	gpm x psi 1460
DETERMINING MOTOR PULLEY SIZE	Motor Pulley OD Pump rpm	=	Pump Pulley OD Motor rpm

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

PARTS LIST

ITEM	PART NUMBER	MATL	PART NUMBER	MATL	PART NUMBER	MATL	DESCRIPTION	QTY
	3545HS		3541DHS 3541CHS		3547HS			
5	96049	S	96049	S	96049	S	Screw, HH Sems (M10 x25) (See Tech Bulletin 074)	8
8	134604	ALE	134604	ALE	134604	ALE	Cover, Bearing	2
9	815279	FBR	815279	FBR	815279	FBR	Shim, Split 2-Piece	4
10	12398	NBR	12398	NBR	12398	NBR	O-Ring, Bearing Cover-70D	2
11	13296	NBR	13296	NBR	13296	NBR	Seal, Oil, Crankshaft	2
12	855049	S	855049	S	855049	S	Shim, Split 2-Piece	0-2
15	29326	STL	29326	STL	29326	STL	Bearing, Roller	2
20	126725	BZ R	126725	BZ R	126725	BZ R	Rod, Connecting Assembly (Includes: 21, 22, 23) (See Tech Bulletin 074)	3
21	126749	STCP R	126749	STCP R	126749	STCP R	Washer, Locking (M10)	6
22	126593	STCP R	126593	STCP R	126593	STCP R	Washer, Flat (M10)	6
23	122045	STZP	122045	STZP	122045	STZP	Screw, HH (M10 x 55)	6
25	29325	FCM	29325	FCM	29325	FCM	Crankshaft, Dual End (M48)	1
31	828710	PE	828710	PE	828710	PE	Protector, Cap with Foam Gasket	1
32	43211	ABS	43211	ABS	43211	ABS	Cap, Oil Filler	1
33	14177	NBR	14177	NBR	14177	NBR	O-Ring, Oil Filler Cap-70D	1
34	126743	STCP R	126743	STCP R	126743	STCP R	Bolt, Eye (M12 x 1.75) (For Lifting Pump Only)	1
37	92241	PC	92241	PC	92241	PC	Gauge, Oil, Bubble with Gasket (See Tech Bulletin 074)	1
38	44428	NBR	44428	NBR	44428	NBR	Gasket, Flat, Oil Gauge-80D	1
40	125753	S	125753	S	125753	S	Screw, HH Sems (M8 x 25) (See Tech Bulletin 074)	8
48	25625	STCP	25625	STCP	25625	STCP	Plug, Drain (1/4" x 19 BSP)	1
49	23170	NBR	23170	NBR	23170	NBR	O-Ring, Drain Plug-70D	1
50	45936	ALE	45936	ALE	45936	ALE	Cover, Rear	1
51	16612	NBR	16612	NBR	16612	NBR	O-Ring, Crankcase Cover-70D	1
53	134784	ALE	134784	ALE	134784	ALE	Crankcase Assembly (Includes: 54)	1
54	27488	S	27488	S	27488	S	Pin, Guide	2
56	27790	POP	27790	POP	27790	POP	Pan, Oil	1
59	92538	S	92538	S	92538	S	Screw, HHC Sems (M6 x 16)	2
64	43864	CM	43864	CM	43864	CM	Pin, Crosshead	3
65	49166	SSHB	49166	SSHB	49166	SSHB	Rod, Plunger	3
69	126587	STCP R	126587	STCP R	126587	STCP R	Washer, Oil Seal	3
70	100488	NBR	100488	NBR	100488	NBR	Seal, Oil, Crankcase	3
75	43865	S	43865	S	43865	S	Slinger, Barrier	3
88	45676	S	45676	S	45676	S	Washer, Keyhole (M16)	3
90	46806	CC	46806	CC	46806	CC	Plunger (M45 x 145)	3
95	† 89778	SS	89778	SS	89778	SS	Stud, Plunger Retainer (M10 x 135)	3
96	20189	PTFE	20189	PTFE	20189	PTFE	Backup Ring, Plunger Retainer	3
97	11345	NBR	11345	NBR	11345	NBR	O-Ring, Plunger Retainer-70D	3
98	44085	SS	44085	SS	44085	SS	Gasket, Retainer	3
99	† 44084	SS	44084	SS	44084	SS	Retainer, Plunger (M10) (See Tech Bulletin 074)	3
100	44119	PPG	44119	PPG	44119	PPG	Retainer, Seal	3
106	46809	NBR	48384	NBR	48384	NBR	Seal, Low-Pressure with S-Spring	3
107	46811	BB	48380	D	48380	D	Spacer, Low-Pressure	3
110	49482	BBCP R	48375	SS	49994	NAB	Manifold, Inlet	1
	—	—	49304	SS	—	—	Manifold, Inlet, Flushed (Model 3541CHS)	1
112	18688	NBR	18688	NBR	18688	NBR	O-Ring, Inlet Manifold-70D	3
117	44585	S	44585	S	44585	S	Screw, HSH (M14 x 40) (See Tech Bulletin 074)	4
126	46812	BB	48383	D	48383	D	Adapter, Female	3
127	46813	STGS	46813	STGS	46813	STGS	V-Packing	6
128	46814	BB	48386	SS	49319	NAB	Adapter, Male	3
141	49483	SS	49483	SS	49483	SS	Spring, Coil, Large	3
155	17784	NBR	17784	NBR	17784	NBR	O-Ring, V-Packing Spacer-80D	6
157	49484	BB	49506	SS	49507	NAB	Spacer, V-Packing	3
163	26143	NBR	26143	NBR	26143	NBR	O-Ring, Seat-80D	6
164	46822	S	48393	SS	48393	SS	Seat	6
166	43932	S	44108	SS	44108	SS	Valve	6
167	44109	SS	44109	SS	44109	SS	Spring, Valve	6
168	44728	PVDF	44728	PVDF	44728	PVDF	Retainer, Spring	6
170	44729	SS	44729	SS	44729	SS	Washer, Spring Retainer	6
171	44644	SS	44644	SS	44644	SS	Coil Spring (70kg), Valve Plug	6
172	89827	NBR	89827	NBR	89827	NBR	O-Ring, Valve Plug-90D	6
173	48364	D	48364	D	48364	D	Backup Ring, Valve Plug	6
174	46444	FBB	49300	SSD	44643	NAB	Plug, Valve (See Tech Bulletin 074)	6
185	49486	BBCP R	49302	SSD	49309	NAB	Manifold, Discharge	1
188	89981	S	89981	S	89981	S	Screw, HSH (M12 x 70) (See Tech Bulletin 074)	8
250	855042	NY	855042	NY	855042	NY	Protector, Shaft with Two (2) Screws, Washers, Lockwashers	1

Bold Part Numbers are unique to a particular pump model. † Production parts are different then repair parts.

R Components comply with RoHS Directive. For additional technical information see www.catpumps.com/literature/tech-bulletins.

MATERIAL CODES (Not Part of Part Number): ABS=ABS Plastic AL=Aluminum ALE=Aluminum Epoxy 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 FFKM=Perfluoroelastomer FPM=Fluorocarbon

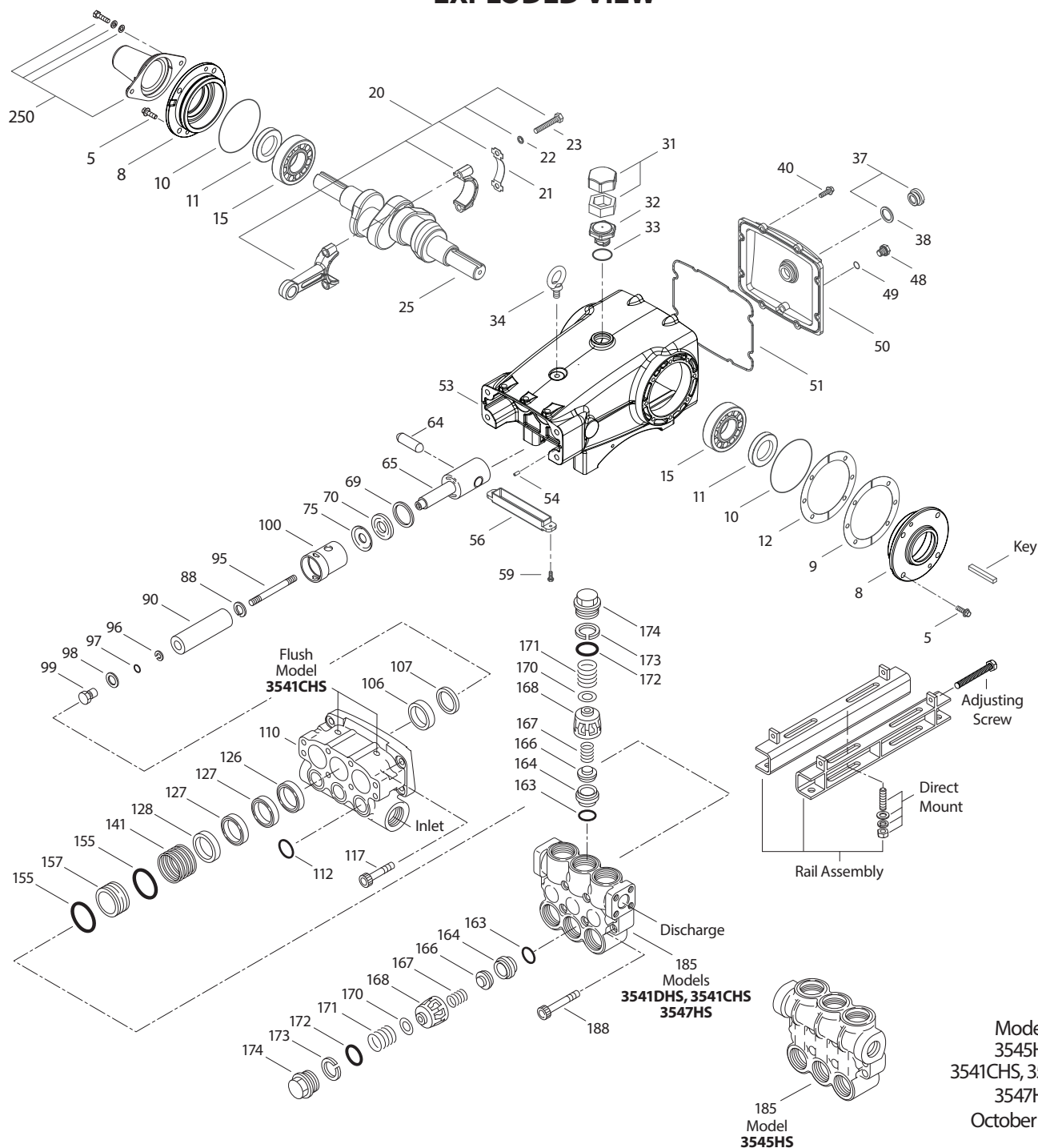
NBR=Medium Nitrile (Buna-N) NBR5=Buna, Silicone Free NY=Nylon PC=Polycarbonate PE=Polyethylene POP=Polypropylene PPG=Glass Filled Polypropylene

PTFE=Pure Polytetrafluoroethylene PVDF=Polyvinylidene Fluoride S=304SS SS=316SS SFTB=Special Blend PTFE Black SSD=Duplex Stainless Steel

SSHB=316SS/High Strength Brass STGS=Special Blend PTFE White Silicone Free STCP=Steel/Chrome Plated STL=Steel STZP=Steel/Zinc Plated

Optional Parts and Accessories and Service Parts listed on page 3. Standard and Optional Seal and Valve Kits listed on page 4.

EXPLODED VIEW

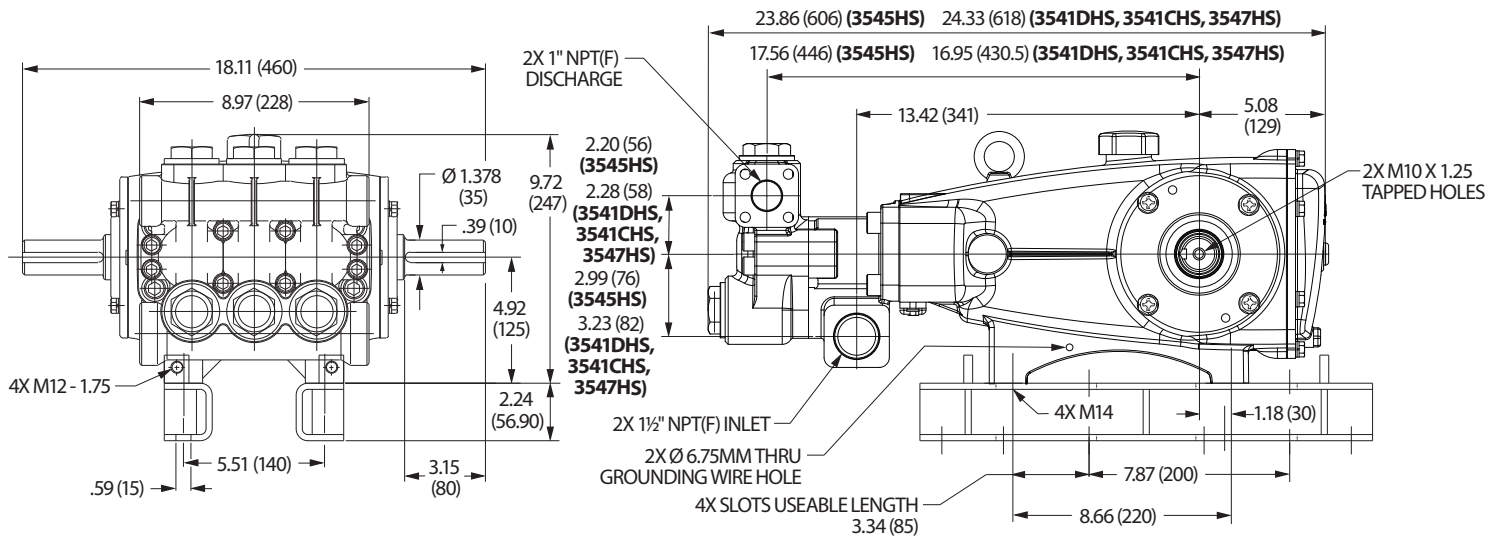


OPTIONAL PARTS AND ACCESSORIES

PART	DESCRIPTION	QTY
34021	Key (M10 x 8 x 70)	1
92674	Rail, Mount Assembly (STZP R) (Includes: 34018)	1
34018	Mount, Direct (STZP R)	1
76514	Rail, Assembly (S) (Includes: 34039)	1
34039	Mount, Direct (S)	1
990013	Hub, "B", 35 mm (STL)	1
80540	Screwing, Adjusting (M12 x 100)	2
34314	Kit, Oil Drain (3/8" x 48") (Not Shown)	1
819000	Assembly, Crankcase, Cast Iron Conversion (Not Shown)	1

SERVICE PARTS

PART	DESCRIPTION	QTY
33234	Kit, Seal – Standard–NBR (Model 3545HS)	1
33834	Kit, Seal – Standard–NBR (Models 3541DHS, 3541CHS, 3547HS)	1
33235	Kit, Valve – Standard–NBR (Model 3545HS)	2
33835	Kit, Valve – Standard–NBR (Models 3541DHS, 3541CHS, 3547HS)	2
6100	Oil, Case (12–21 oz bottles) (Fill to Specific Crankcase Capacity Prior to Start-up)	1
6139	Lubricant, Anti-Seize (8 oz) (See Tech Bulletin 095)	1
6124	Gasket, Liquid (3 oz)	1
32273	Crankcase Oil Seal Removal and Installation Kit (Not Shown) (Includes: Oil Seals, Guide Tool, Screws, Washers, Driver)	1
30696	Reverse Pliers (Not Shown)	1
818428	Head, Complete with NBR Seals and O-Rings (Model 3545HS)	1
818371	Head, Complete with NBR Seals and O-Rings (Model 3541DHS)	1
818575	Head, Complete with NBR Seals and O-Rings (Model 3547HS)	1



Models 3541DHS, 3541CHS, 3547HS

SEAL KITS

One (1) seal kit required per pump

PUMP MODELS	NBR (STD)	FPM (.0110)	EPDM (.0220)◆	FFKM (.0770)
3545HS	33234 *	31261	33223 *	76615 *
3541DHS, 3541CHS 3547HS	33834 *	31261	33223 *	76615 *

ITEM (Included in Seal Kits)					DESCRIPTION	QTY
97	11345	11375	701490	702961	O-Ring, Plunger Retainer	3
106	46809	—	—	—	Seal, Low-Pressure with S-Spring	3
	48384	702013	46945	703296	Seal, Low-Pressure with SS-Spring (Models: 3541DHS, 3547HS)	3
112	18688	11739	701659	704172	O-Ring, Inlet Manifold	3
127	46813	46813	46813	46813	V-Packing	6
155	17784	20138	701658	703292	O-Ring, V-Packing Spacer	6

◆ Silicone oil/grease required *Review material codes for individual items (STG generally may be used as alternative)

VALVE KITS

Two (2) valve kits required per pump

PUMP MODELS	NBR (STD)	FPM (.0110)	EPDM (.0220)◆	FFKM (.0770)
3545HS	33235	31262	31235	76636
3541DHS, 3541CHS 3547HS	33835	31262	31264	76636

ITEM (Included in Valve Kits)					DESCRIPTION	QTY
163	26143	14331	701660	703293	O-Ring, Valve Seat	3
164	46822	—	46822	—	Seat (3545HS)	3
	48393	48393	48393	48393	Seat (3541DHS, 3541CHS, 3547HS)	3
166	43932	—	43932	—	Valve (3545HS)	3
	44108	44108	44108	44108	Valve (3541DHS, 3541CHS, 3547HS)	3
167	44109	44109	44109	44109	Spring	3
168	44728	44728	44728	44728	Retainer, Spring	3
170	44729	44729	44729	44729	Washer, Spring Retainer	3
172	89827	11747	701494	703169	O-Ring, Valve Plug	3
173	48364	48364	48364	48364	Backup Ring, Valve Plug	3

◆ Silicone oil/grease required

⚠ CAUTIONS AND WARNINGS

All high-pressure systems require a primary pressure regulating device (e.g. regulator, unloader) and a secondary pressure relief device (e.g. 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