



PIJTTERSEN

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15 Frame Plunger Pump

**Standard
Model**

654

FEATURES

Superior Design

- ⊗ Triplex plunger design provides smoother liquid flow.
- ⊗ V-Packings are completely lubricated and cooled by the liquid being pumped.
- ⊗ Special ported manifold permits an external flush liquid providing cooling for hi-temp liquids and lubrication for low lubricity liquids.
- ⊗ Lubricated Lo-Pressure Seals provide double protection against external leakage.
- ⊗ Oil bath crankcase assures optimum lubrication.
- ⊗ Close tolerance concentricity of the ceramic plunger offers perfect alignment and maximizes seal life.

Quality Materials

- ⊗ Precision design 304 and 316 Stainless steel valves and seats are hardened and polished for ultimate seating and extended valve life.
- ⊗ Bronze or Duplex Stainless Steel manifolds are strong and corrosion resistance.
- ⊗ Special concentric, high-density, polished, solid ceramic plungers provide a true wear surface and extended seal life.
- ⊗ Specially formulated, CAT PUMP exclusive, V-Packings offer unmatched performance and seal life.
- ⊗ Die cast aluminum crankcase provides high strength, minimum weight and precision tolerance control.
- ⊗ Chrome-moly crankshaft gives unmatched strength and surface hardness.
- ⊗ Oversized crankshaft bearings with greater loading capacity mean longer bearing life.

Easy Maintenance

- ⊗ Wet-end is easily serviced without entering crankcase, requiring less time and effort.
- ⊗ Inlet and discharge valve assemblies interchange for easier maintenance without disturbing piping.
- ⊗ Preset packings mean no packing gland adjustment is necessary, reducing maintenance costs.

⚠ WARNING

All systems require both a primary pressure regulating device (i.e., regulator, unloader) and a secondary pressure safety relief device (i.e., pop-off valve, safety valve). Failure to install such relief devices could result in personal injury or damage to the pump or to system components. CAT PUMPS does not assume any liability or responsibility for the operation of a customer's high pressure system.

SPECIFICATIONS

	U.S. Measure	Metric Measure
Flow	4.5GPM	(17 L/M)
Pressure Range.....	100 to 4000 PSI	(7 to 280 Bar)
Inlet Pressure Range	Flooded to 60 PSI	(Flooded to +4 Bar)
RPM	790 RPM	(790 RPM)
Bore.....	.709"	(18 mm)
Stroke.....	1.181"	(30 mm)
Crankcase Capacity	42 oz.	(1.26 L)
Maximum Liquid Temperature	160°F	(71°C)
Above 130F call CAT PUMPS for inlet conditions and elastomer recommendations.		
Inlet Ports (2)	3/4" NPTF	(3/4" NPTF)
Flushing Ports (2) (661C)	1/8" NPTF	(1/8" NPTF)
Discharge Ports (2)	1/2" NPTF	(1/2" NPTF)
Pulley Mounting	Either Side	(Either Side)
Shaft Diameter	1.181"	(30 mm)
Weight.....	44 lbs.	(19.9 kg)
Dimensions.....	16.28x12.99x6.44"	(413.50x330x163.50 mm)

ELECTRIC HORSEPOWER REQUIREMENTS

DETERMINING THE PUMP R.P.M.	Rated G.P.M. Rated R.P.M.	=	"Desired" G.P.M. "Desired" R.P.M.
DETERMINING THE REQUIRED H.P.	GPM x PSI 1460	=	Electric Brake H. P. Required
DETERMINING MOTOR PULLEY SIZE	Motor Pulley O.D. Pump R.P.M.	=	Pump Pulley O.D. Motor R.P.M.

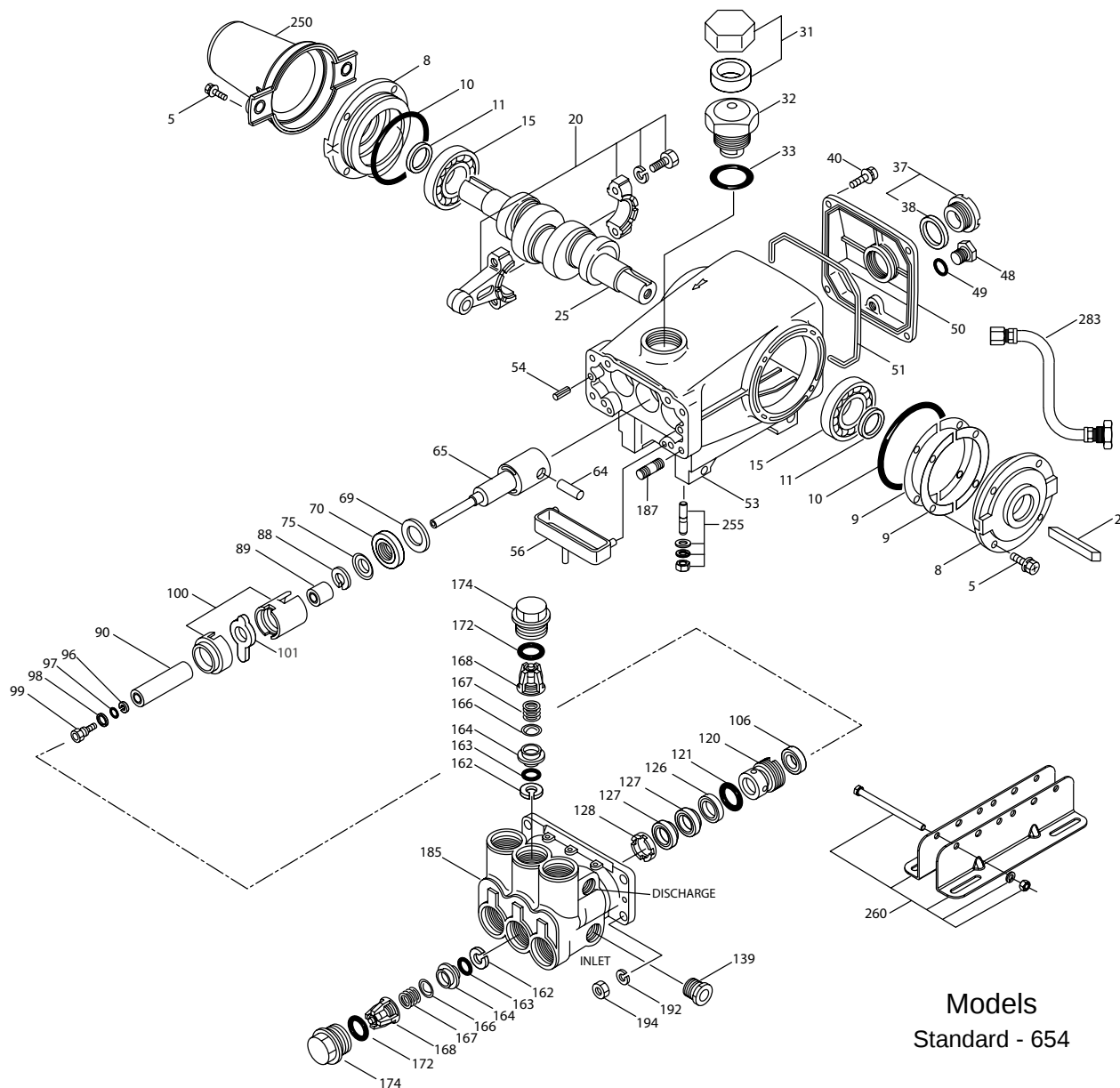
See complete Drive Packages [Includes: Pulleys, Belts, Hubs, Key] Tech Bulletin 003.
Refer to pump **Service Manual** for repair procedure, additional technical information and **pump warranty**.

"Customer confidence is our greatest asset"

PARTS LIST

ITEM	PART NUMBER	DESCRIPTION	QTY
	654 MATL		
2	30067 STL	Key (M8x7.5x25)	1
5	92519 STZP	Screw, HHC Sems (M6x16)	8
	125824 STCP R	Screw, HHC Sems (M6x16)	8
8	43496 AL	Cover, Bearing	2
9	815281 FBR	Split Shim, Bearing Cover, 2 Pc.	2
	—	Split Shim, Bearing Cover, 2 Pc.	2
10	11340 NBR	O-Ring, Bearing Case - 70D	2
11	43495 NBR	Seal, Oil, Crankshaft - 70D	2
15	39060 STL	Bearing, Roller	2
20	48600 TNM	Rod Assy, Connecting [11/00]	3
25	43494 FCM	Crankshaft - Dual End	1
31	828710 —	Protector, Oil Cap w/Foam Gasket	1
32	43211 ABS	Cap, Oil Filler	1
33	14177 NBR	O-Ring, Filler Cap - 70D	1
37	92241 —	Gauge, Oil, Bubble w/Gasket - 80D	1
38	44428 NBR	Gasket, Flat, Oil Gauge - 80D	1
40	92520 STZP	Screw, HHC Sems (M6x20)	4
	126541 STCP R	Screw, HHC Sems (M6x20)	4
48	25625 STCP	Plug, Drain (1/4"x19BSP)	1
49	23170 NBR	O-Ring, Drain Plug - 70D	1
50	43491 AL	Cover, Rear	1
51	44834 NBR	O-Ring, Rear Cover - 70D	1
53	115471 AL	Crankcase (Incls: 54)	1
54	27488 S	Pin, Guide	2
56	44664 POP	Pan, Oil	1
64	43507 CM	Pin, Crosshead	3
65	48228 SHS	Rod, Plunger, Long	3
	—	Rod, Plunger, Short [3/02]	3
69	126592 STCP R	Washer, Seal	3
70	43500 NBR	Seal, Oil, Crankcase - 80D	3
75	43506 S	Slinger, Barrier	3
88	45675 S	Washer, Keyhole	3
89	43584 BB	Spacer, Plunger	3
90	43232 CC	Plunger (M20x77)	3
95	—	Stud, Plunger Retainer (M6x70)	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 - 70D	3
	☒ 46204 EPDM	O-Ring, Plunger Retainer - 70D	3
98	45891 CU	Gasket, Plunger Retainer	3
99	—	Retainer, Plunger (M6)	3
	104360 S	Retainer w/stud, Plunger (M5)	3
100	855001 POP	Retainer, Seal, 2-pc [07/05]	3
101	43585 —	Wick, Long Tab	3
106	43586 NBR	Seal, LPS w/SS-Spg	3
120	49291 BB	Case, Seal [07/05]	3
121	14762 NBR	O-Ring, Seal Case - 70D	3
	11737 FPM	O-Ring, Seal Case - 75D	3
	☒ 46205 EPDM	O-Ring, Seal Case	3
126	43590 BB	Adapter, Female [01/04]	3
127	43589 NBR	V-Packing	6
128	43588 BB	Adapter, Male	3
139	20326 BB	Plug, Inlet (3/4" NPT)	1
162	43248 PTFE	Back-up-Ring, Seat	6
163	43249 NBR	O-Ring, Seat - 80D	6
	44383 FPM	O-Ring, Seat - 70D	6
	☒ 46206 EPDM	O-Ring, Seat - 70D	6
164	43722 S	Seat	6
166	43721 S	Valve	6
167	43751 S	Spring	6
168	44564 PVDF	Retainer, Spring	6
172	17617 NBR	O-Ring, Valve Plug - 90D	6
	11691 FPM	O-Ring, Valve Plug - 90D	6
	☒ 46207 EPDM	O-Ring, Valve Plug - 70D	6
174	43850 BB	Plug, Valve	6
185	45975 NAB	Head, Manifold	1
	—	Head, Manifold Flushed (1/8" Flushing Port) 661C Only	1
187	126545 STCP R	Stud (M10x45)	4
192	126231 STCP R	Lockwasher (M10)	4
194	126522 STCP R	Nut, Hex (M10)	4
250	30764 NY	Protector, Shaft w/Two Screws	1
	—	Protector, Shaft w/Two SS Screws	1
255	30264 STZP	Mount, Direct	1
260	30613 STZP	Mount, Rail Assy	1
	990550 STZP	Mount, Rail (Required on Diesel/Gas)	1
269	30206 F	Pulley (10") AB [See Drive Packages, Tech Bulletin 003]	1

EXPLODED VIEW



Models
Standard - 654

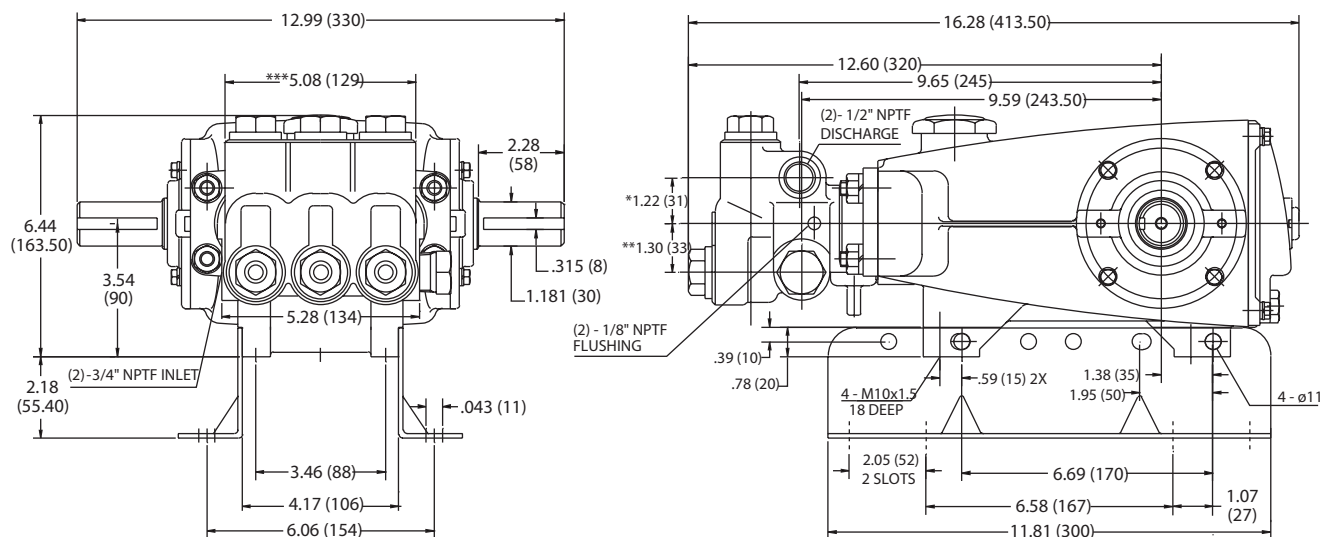
	654	MATL		
274	30059	STL	Hub, "H" (M30) (Keyway M8) [See Drive Packages, Tech Bulletin 003]	1
283	34334	—	Kit, Oil Drain (3/8" x 24")	1
299	814561	BB	Head, Complete	1
	—	—	Head, Complete - C (661C Only)	1
300	30919	NBR*	Kit, Seal (Incls: 97,100,106,121,127)	1
310	30820	NBR	Kit, Valve, Preassembled (Incls: 162,163,164,166,167,168,172)	2
	31256	FPM	Kit, Valve, Preassembled (Incls: 162,163,164,166,167,168,172)	2
	31253	EPDM	Kit, Valve, Preassembled (Incls: 162,163,164,166,167,168,172)	2
350	30696	STZP	Plier, Reverse	1
351	43523	STZP	Tool, Seal Case Removal	1
	33006	STZP	Socket, Seal Case 1/2" Drive	1
352	44050	STZP	Tool, Oil Gauge Removal	1
	6107	—	Oil, Bottle (21 oz.) ISO-68 Hydraulic	2
	6575	—	(Fill to specified crankcase capacity prior to start-up)	
	—	—	Plunger Pump Service DVD	1
	—	—	Lubricant, Antiseize (1 oz.)	1

Bold print part numbers are unique to a particular pump model. Italics are optional items. Silicone oil/grease required.

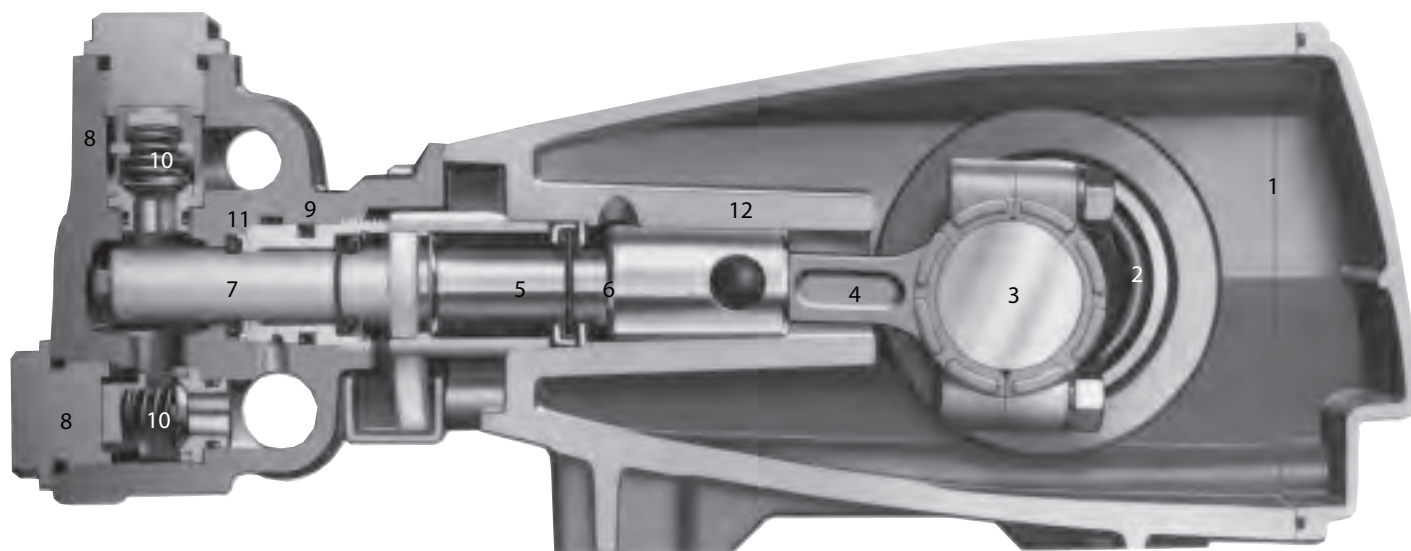
[] Date of latest production change. R Components comply with RoHS Directive. *Review individual parts in each kit for material code identification.

See Tech Bulletins 002, 003, 024, 027, 035, 036, 043, 045, 048, 049, 052, 053, 062, 074, 077, 083 and 098 for additional information.

MATERIAL CODES (Not Part of Part Number): ABS=ABS Plastic AL=Aluminum BB=Brass BBP=Brass/Chrome Plated CC=Ceramic CM=Chrome-Moly
CU=Copper EPDM=Ethylene Propylene Diene Monomer F=Cast Iron FBR=Fiber FCM=Forged Chrome-Moly FPM=Fluorocarbon NAB=Nickel Aluminum Bronze
NBR=Medium Nitrile (Buna-N) NY=Nylon POP=Polypropylene PTFE=Pure Polytetrafluoroethylene PVDF=Polyvinylidene Fluoride S=304SS
SFTB=Special Blend PTFE Black SHS=304SS/High Strength SS=316SS SSD=Duplex Stainless SSB=316SS/High Strength Brass
STCP=Steel/Chrome Plated STG=Special Blend PTFE White STL=Steel STZP=Steel/Zinc Plated TNM=Special High Strength



Model 654



- 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 TNM **connecting rods** noted for superior tensile strength and bearing quality.
- 5 Special stainless steel **plunger rods** with high strength crossheads for longevity and corrosion resistance.
- 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 bronze or Duplex stainless steel for long term, continuous duty and corrosion resistance.
- 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 PUMP exclusive, **V-Packings** offer unmatched performance and seal life.
- 12 **Crossheads** are 360° supported for uncompromising alignment.
- 13 Optional special **ported Flushed Manifold** permits external for lubricating and cooling seals when pumping liquids such as DI water, Hi-Temp or low lubricity. (Not shown).



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