

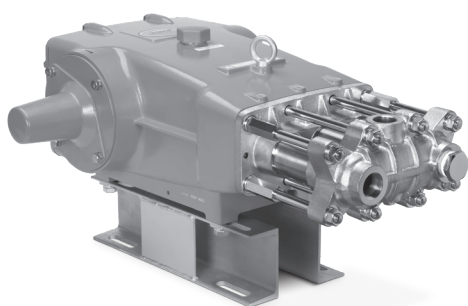
DATA SHEET

60FR PISTON PUMPS



Brass Models: 6020, 6040

Stainless Steel Models: 6021, 6041



Model 6040 Shown
(Box rails and shaft protector included)

FEATURES

- Triplex Uniflow design provides continuous forward liquid flow for smooth operation.
- Wetted cups and floating pistons are lubricated and cooled by pumped liquid resulting in longer cup life.
- Optional 316 stainless steel manifolds provide added corrosion resistance.
- Pump comes standard with NBR seals. Alternative seal materials are available for higher temperature or chemical compatibility.

SPECIFICATIONS

U.S. Measure

Metric Measure

Models 6020, 6021

Flow	60 gpm	227 lpm
Pressure Range	100–1000 psi	6.9–69 bar
Bore	2.205"	56 mm

Models 6040, 6041

Flow	40 gpm	151 lpm
Pressure Range	100–1500 psi	6.9–103 bar
Bore	1.811"	46 mm

COMMON SPECIFICATIONS

U.S.

Metric

Pump RPM*	500 rpm	500 rpm
Inlet Pressure Range	-8.5 to 40 psi	-0.6 to 2.8 bar
Maximum Liquid Temp. (NBR)	160° F	71° C

Alternative seals available for higher temperatures up to 180° F

Stroke	2.461"	62.5 mm
Crankcase Capacity	10 qts	9.46 l
Inlet Ports (1)	2" NPT(F)	2" NPT(F)
Discharge Ports (3)	1¼" NPT(F)	1¼" NPT(F)
Shaft Diameter	1.772"	45 mm
Weight	242 lbs	110 kg
Dimensions	31.4 x 24.0 x 12.05"	796 x 610 x 306 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)

See **Tech Bulletin 002** for inlet conditions and RPM at high-temperature.

DETERMINING THE PUMP RPM

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

DETERMINING THE REQUIRED HP

$$\frac{\text{hp}}{\text{(Electric Brake)}} = \frac{\text{gpm} \times \text{psi}}{1460}$$

DETERMINING MOTOR PULLEY SIZE

$$\frac{\text{Motor Pulley OD}}{\text{Pump rpm}} = \frac{\text{Pump Pulley OD}}{\text{Motor rpm}}$$

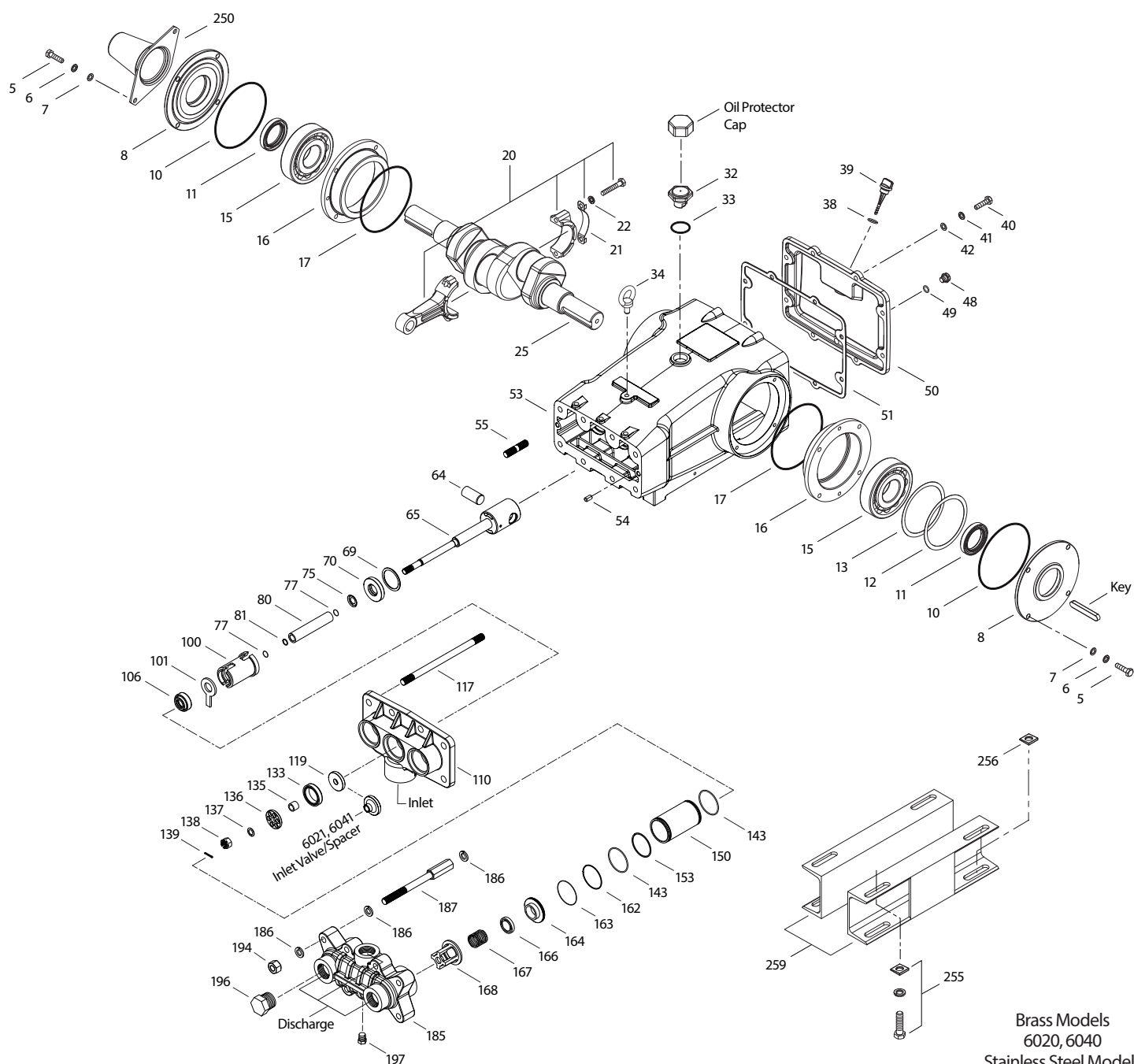
Refer to pump **Service Manual** for repair procedure and additional technical information.

PARTS LIST

ITEM	PART NUMBER		DESCRIPTION		QTY	
	6020,6021	MATL 6040, 6041	MATL			
5	126532	STCP R	126532	STCP R	Screw, HH (M10 x 40) (See Tech Bulletin 074)	8
6	126231	STCP R	126231	STCP R	Lockwasher (M10)	8
7	126574	STZP R	126574	STZP R	Washer, Flat (M10)	8
8	29443	ALE	29443	ALE	Case, Bearing, Outer (See Tech Bulletin 118)	2
10	29444	NBR	29444	NBR	O-Ring, Bearing Case–70D	2
11	11443	NBR	11443	NBR	Seal, Oil, Crankshaft	2
12	126594	STCP R	126594	STCP R	Washer, Shim (M120 x 0.3)	0–2
13	126595	STCP R	126595	STCP R	Washer, Shim (M120 x 0.5)	0–2
15	29441	STL	29441	STL	Bearing, Roller	2
16	29442	STL	29442	STL	Case, Bearing, Inner	2
17	29444	NBR	29444	NBR	O-Ring, Bearing Case–70D	2
20	126612	BBHS	126612	BBHS	Rod, Connecting (Includes: 21, 22) (See Tech Bulletin 074)	3
21	126560	STCP R	126560	STCP R	Washer, Locking	3
22	126593	STCP R	126593	STCP R	Washer, Shim	6
25	29440	FCM	29440	FCM	Crankshaft, Dual End (M65.5)	1
32	43211	ABS	43211	ABS	Cap, Oil Filler	1
33	14177	NBR	14177	NBR	O-Ring, Cap–70D	1
34	126743	STCP R	126743	STCP R	Bolt, Eye (M12) (For Lifting Pump Only)	1
38	129343	RBR	129343	RBR	Gasket, Flat Flex	1
39	27769	ABS	27769	ABS	Dipstick	1
40	126531	STCP R	126531	STCP R	Screw, HH (M10 x 30) (See Tech Bulletin 074)	8
41	126231	STCP R	126231	STCP R	Lockwasher (M10)	8
42	126574	STZP R	126574	STZP R	Washer, Flat (M10)	8
48	25625	STCP	25625	STCP	Plug, Drain (¼" x 19 BSP)	1
49	23170	NBR	23170	NBR	O-Ring, Drain Plug–70D	1
50	29438	ALE	29438	ALE	Cover, Rear (See Tech Bulletin 118)	1
51	129386	NBR	129386	NBR	Gasket, Rear Cover	1
53	133667	ALE	133667	ALE	Crankcase with Guide Pins (Includes: 34, 54) (See Tech Bulletin 118)	1
54	43282	S	43282	S	Pin, Guide	3
55	126554	STCP R	126554	STCP R	Stud (M16 x 72) (Models 6020, 6040)	4
	89615	S	89615	S	Stud (M16 x 70) (Models 6021, 6041)	3
64	29481	CM	29481	CM	Pin, Crosshead	3
65	43809	SSZZ	43809	SSZZ	Rod, Piston	3
69	126588	STCP R	126588	STCP R	Washer, Oil Seal	3
70	29454	NBR	29454	NBR	Seal, Oil, Crankcase	3
75	29340	S	29340	S	Slinger, Barrier	3
77	13967	NBR	13967	NBR	O-Ring, Sleeve	6
80	43129	SCP	43129	SCP	Sleeve (M25) (Models 6020, 6040)	3
	700923	SS	700923	SS	Sleeve (M25) (Models 6021, 6041)	3
	43271	S	43271	S	Sleeve (M25) (Unchromed) (Models 6020, 6021, 6040, 6041)	3
81	29455	PTFE	29455	PTFE	Backup Ring, Sleeve	3
100	29456	AL	29456	AL	Retainer, Seal	3
101	43136	—	43136	—	Wick, Oil (M25)	3
106	43130	NBR	43130	NBR	Seal, LPS Ungreased (M25)	3
110	43283	BBCP	43283	BBCP	Manifold, Inlet (Models 6020, 6040)	1
	29805	SS	29805	SS	Manifold, Inlet (Models 6021, 6041)	1
117	88902	STCP	88902	STCP	Stud (M16 x 277) (See Tech Bulletin 074)	4
119	29460	S	43200	S	Valve, Inlet (Models 6020, 6040)	3
	700942	SS	703444	SS	Valve, Inlet with Spacer (Models 6021, 6041)	3
133	29461	NBR	43201	NBR	Cup-Piston Assembly with S-Piston	3
135	29463	S	29463	S	Spacer, Piston (No Spacer Required for Models 6021, 6041)	3
136	29464	S	43203	S	Retainer, Piston	3
137	44272	SS	44272	SS	Washer, Conical (M14)	3
138	29465	S	29465	S	Nut, Slotted (M14) (See Tech Bulletin 074)	3
139	29354	S	29354	S	Cotterpin (M2.5 x 25)	3
143	12392	NBR	12392	NBR	O-Ring, Cylinder–70D	6
150	29466	SCP	43204	SCP	Cylinder (Models: 6020, 6040)	3
	700921	SS	700922	SS	Cylinder (Models 6021, 6041)	3
	43279	S	43392	S	Cylinder (Unchromed) (Models 6020, 6021, 6040, 6041)	3
153	23116	PTFE	23116	PTFE	Backup Ring, Cylinder	3
162	43206	PTFE	43206	PTFE	Backup Ring, Seat	3
163	29471	NBR	29471	NBR	O-Ring, Seat	3
164	43205	S	43205	S	Seat (Flat Valve)	3
166	29468	S	29468	S	Valve (Flat Valve)	3
167	29469	S	29469	S	Spring	3
168	43143	S	43143	S	Retainer, Spring	3
185	29472	BBCP	29472	BBCP	Manifold, Discharge (Models 6020, 6040)	1
	29806	SS	29806	SS	Manifold, Discharge (Models 6021, 6041)	1
186	126569	STCP R	126569	STCP R	Lockwasher (M16)	12
187	29473	STCP	29473	STCP	Bolt (M16 x 225)	4
194	126525	STCP R	126525	STCP R	Nut, Hex (M16) (Models 6020, 6040) (See Tech Bulletin 074)	8
	81291	S	81291	S	Nut, Hex (M16) (Models 6021, 6041) (See Tech Bulletin 074)	8
196	29476	BBCP	29476	BBCP	Plug (1¼" NPT[M])	1
197	22187	BBCP	22187	BBCP	Plug (¾" NPT[M]) (Models 6020, 6040)	1
	701078	SS	701078	SS	Plug (¾" NPT[M]) (Models 6021, 6041)	1
250	29445	ALE	29445	ALE	Protector, Shaft (See Tech Bulletin 118)	1
255	33243	STZP	33243	STZP	Mount, Direct	1
256	29649	STCP	29649	STCP	Washer, Slant (M16) (To Shim and Align Mounting Bolts [Not Included] Through the Box Rail and Mounting Base)	4
259	126604	STCP R	126604	STCP R	Rail, Box	2

Optional Parts and Accessories listed on pages 3. Standard and Optional Seal, Sleeve and Seal, Cup, Piston and Valve Kits listed on Page 4.

EXPLODED VIEW



OPTIONAL PARTS AND ACCESSORIES

PART	DESCRIPTION	QTY
43048	Key (M14 x 9 x 90)	1
828710	Protector, Oil Cap with Foam Gasket	1
990014	Hub, "B", 45mm (Not Shown)	1
30429	Oiler, 10 oz (Not Shown)	3
10070	Gasket, Oiler (Not Shown)	3
34314	Kit, Oil Drain (3/8" x 48") (Not Shown)	1

SERVICE PARTS

PART	DESCRIPTION	QTY
30484	Kit, Seal – Standard NBR	1
30441	Kit, Valve – Standard NBR	1
6102	Oil, Jug (2.5 gal) ISO 68 Hydraulic (Fill to Specified Crankcase Capacity Prior to Start-up)	1
6124	Gasket, Liquid (3 oz)	1
6139	Anti-seize, Lubricant (8 oz) (Models 6021 and 6041)	1

Bold part numbers are unique to a particular pump model. Italics are optional items.

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 BBP=Brass/Chrome Plated BBHS=Brass/High Strength CM=Chrome-Moly
FCM=Forged Chrome-Moly FPM=Fluorocarbon NBR=Medium Nitrile (Buna-N) PE=Polyethylene PTFE=Pure Polytetrafluoroethylene RBR=Rubber S=304SS
SCP=304SS/Chrome Plated SS=316SS SSZZ=316SS/Zamak STCP=Steel/Chrome Plated STL=Steel STZP=Steel/Zinc Plated
TG=PTFE Graphite Compound (GIT) ST4=Special PTFE4

Kits - Additional Seal Kits, Sleeve and Seal Kits, Cup Kits, Piston Kits and Valve Kits listed on Page 4.

SEAL KITS One (1) seal kit required per pump

Pump Models	NBR		
6020, 6021, 6040, 6041	30484		
ITEM (Included in Seal Kits)		DESCRIPTION	QTY
101	43136	Wick, Oil	3
106	43130 *	Seal, Low-Pressure	3
139	29354	Cotterpin	3
	30168	Paper, Abrasive	1

* Use PN 43132 for FPM

SLEEVE AND SEAL KIT One (1) sleeve and seal kit required per pump

Pump Models	NBR	NBR		
6020, 6040	30485			
6021, 6041		700974		
ITEM (Included in Sleeve and Seal Kits)			DESCRIPTION	QTY
75	29340	29340	Slinger, Barrier	3
77	13967 **	13967 **	O-Ring, Sleeve	6
80	43129	700923	Sleeve	3
81	29455	29455	Backup Ring, Sleeve	3
101	43136	43136	Wick, Oil	3
106	43130 *	43130 *	Seal, Low-Pressure	3
139	29354	29354	Cotterpin	3

* Use PN 43132 for FPM, ** Use PN 14308 for FPM

CUP KITS One (1) cup kit required per pump

Pump Models	NBR	NBR		
6020, 6021	30440			
6040, 6041		30433		
ITEM (Included in Cup Kits)			DESCRIPTION	QTY
133	29461	43201	Assembly, Cup-Piston	3
139	29354	29354	Cotterpin	3
143	12392 *	12392 *	O-Ring, Cylinder	6

* Use PN 13279 for FPM

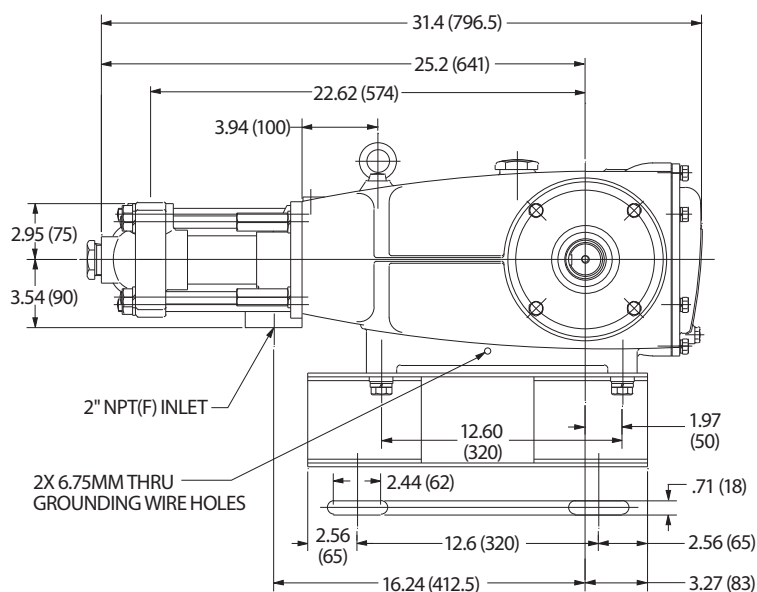
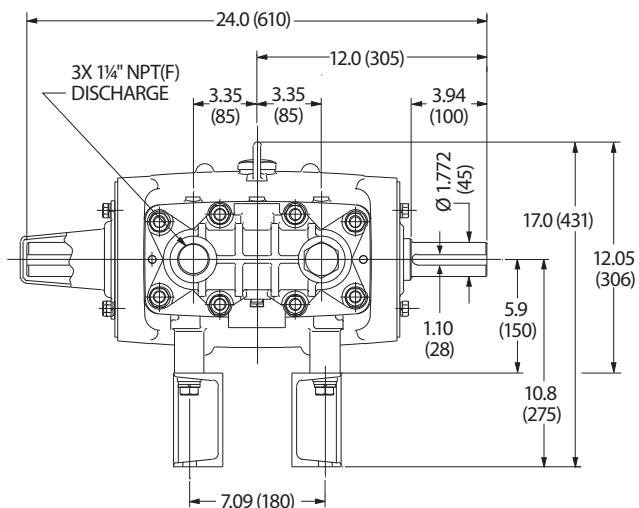
PISTON KITS One (1) piston kit required per pump

Pump Models	6020	6021	6040	6041		
	NBR	NBR	NBR	NBR		
	30439	32214	32215	32217		
ITEM (Included in Piston Kits)					DESCRIPTION	QTY
119	29460	700942	43200	703444	Valve, Inlet	3
133	29461	29461	43201	43201	Assembly, Cup-Piston	3
135	29463	—	29463	—	Spacer, Piston	3
136	29464	29464	43203	43203	Retainer, Piston	3
137	44272	44272	44272	44272	Washer, Conical	3
138	29465	29465	29465	29465	Nut, Slotted	3
139	29354	29354	29354	29354	Cotterpin	3
143	12392 *	12392 *	12392 *	12392 *	O-Ring, Cylinder	6

* Use PN 13279 for FPM

VALVE KITS One (1) valve kit required per pump

Pump Models	NBR (Flat)	FPM (Flat)		
6020, 6021, 6040, 6041	30441	76441		
ITEM (Included in Valve Kits)			DESCRIPTION	QTY
143	13292	13279	O-Ring, Cylinder	6
162	43206	43206	Backup Ring, Cylinder	3
163	29471	29479	O-Ring, Seat	3
164	43205	43205	Seat	3
166	29468	29468	Valve	3
167	29469	29469	Spring	3
168	43143	43143	Retainer, Spring	3



Model 6020, 6021, 6040, 6041

⚠ 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