

## 5CP Plunger Pump

**Models**      5CP2120W  
                     5CP2140WCS  
                     5CP2150W

### FEATURES

#### Superior Design

- Triplex plunger design gives smoother liquid flow.
- Hi-Pressure Seals are completely lubricated and cooled by the liquids being pumped.
- Inlet and discharge valve assemblies interchange for easier maintenance.
- Lubricated Lo-Pressure Seals provides double protection against external leakage.
- Oil bath crankcase assures optimum lubrication.
- Close tolerance concentricity of the ceramic plunger maximizes seal life.

#### Quality Materials

- All stainless steel valves are heat treated and seats are roller burnished for a positive seal and extended valve life.
- Forged brass manifolds for strength and corrosion resistance.
- Special blend W770 manifold offers washout and freeze protection for car wash applications.
- Special concentric, high density, polished, graphite impregnated, solid ceramic plungers are abrasion resistant and result in extended seal life.
- Specially formulated, CAT PUMP exclusive, Hi-Pressure Seals 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

- Convenient "press-in" style seal case for ease in servicing.
- Wet-end is easily serviced without entering crankcase, requiring less time and effort.
- Valve assemblies are accessible without disturbing piping, for quick service.
- Preset packings mean no packing gland adjustment is necessary, reducing maintenance costs.

**DETERMINING THE PUMP R.P.M.**       $\frac{\text{Rated G.P.M.}}{\text{Rated R.P.M.}} = \frac{\text{"Desired" G.P.M.}}{\text{"Desired" R.P.M.}}$

**DETERMINING THE REQUIRED H.P.**       $\frac{\text{GPM} \times \text{PSI}}{1460} = \text{Electric Brake H. P. Required}$

**DETERMINING MOTOR PULLEY SIZE**       $\frac{\text{Motor Pulley O.D.}}{\text{Pump R.P.M.}} = \frac{\text{Pump Pulley O.D.}}{\text{Motor R.P.M.}}$

Note: Consult engine manufacturer when using gas or diesel engine. Refer to pump Service Manual for important Inlet Condition Check-List, Start-up Procedure, Tech Bulletins and Pump Maintenance information.

### SPECIFICATIONS

	U.S. Measure	Metric Measure
<b>MODEL 5CP2120W</b>		
Flow .....	4.0 GPM	(15 L/M)
Pressure Range.....	100-2500 PSI	(7-175 BAR)
RPM .....	950 RPM	(950 RPM)
Bore.....	<b>0.787"</b>	<b>(20 mm)</b>
Stroke .....	0.709"	(18 mm)
Weight .....	19.14 lbs.	(8.7 kg)
<b>MODEL 5CP2140WCS</b>		
Flow .....	4.0 GPM	(15 L/M)
Pressure Range.....	100-2500 PSI	(7-175 BAR)
RPM .....	1725 RPM	(1725 RPM)
Bore.....	<b>0.787"</b>	<b>(20 mm)</b>
Stroke .....	0.394"	(10 mm)
Weight .....	19.14 lbs.	(8.7 kg)
<b>MODEL 5CP2150W</b>		
Flow .....	5.0 GPM	(19 L/M)
Pressure Range.....	100-2000 PSI	(7-140 BAR)
RPM .....	1725 RPM	(1725 RPM)
Bore.....	<b>0.787"</b>	<b>(20 mm)</b>
Stroke .....	0.472"	(12 mm)
Weight .....	19.14 lbs.	(8.7 kg)

#### COMMON SPECIFICATIONS

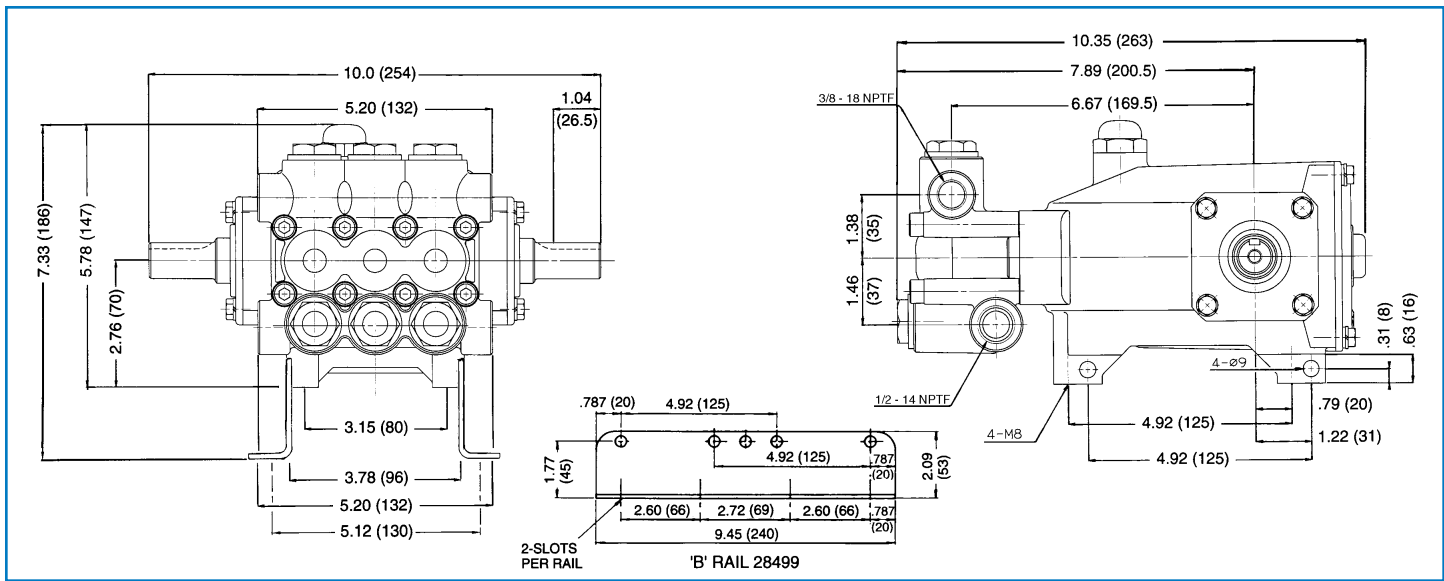
Max. Inlet Pressure (950 RPM)	-5 to 60 PSI	(-0.35 to 4 BAR)
Max. Inlet Pressure (1725 RPM)	Flooded to 60 PSI	(Flooded to 4 BAR)
Crankcase Capacity.....	17 oz.	(0.51 L)
Max. Liquid Temperature .....	160°F	(71°C)
Inlet Ports (2) .....	1/2" NPTF	(1/2" NPTF)
Discharge Ports (2) .....	3/8" NPTF	(3/8" NPTF)
Shaft Diameter .....	0.787"	(20 mm)
Dimensions .....	10.35 x 10.0 x 5.78"	(263 x 254 x 147 mm)

### HORSEPOWER REQUIREMENTS

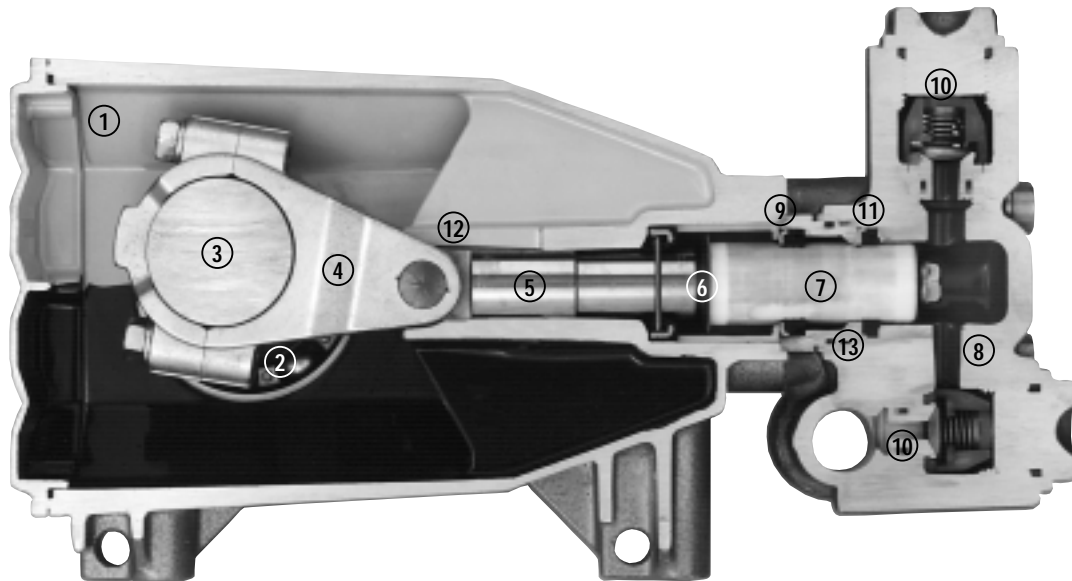
MODEL	FLOW		PRESSURE				MOTOR PULLEY SIZE	
	U.S. GPM	L/M	PSI 1200	PSI 1500	PSI 2000	PSI 2500	RPM	Pulley O.D.
<b>2120W</b>	4.0	15	3.3	4.1	5.5	6.9	950	4.3
	<b>Alternate</b>	5.0	19	4.1	5.1	6.9	N/A	1188
<b>2140WCS</b>	4.0	15	3.3	4.1	5.5	6.9	1725	Direct
<b>2150W</b>	5.0	19	4.1	5.1	6.9	N/A	1725	Direct

See complete Drive Packages [Incls: Pulleys, Belts, Hubs, Key] Tech Bulletin 03.

*"Customer confidence is our greatest asset"*



Models 5CP2120W, 5CP2140WCS, 5CP2150W



- 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 high strength **connecting rods** noted for strength and superior bearing quality.
- 5 The **plunger rods** with hardened surfaces offer wear resistance and Zamak cross-heads for high load capacity.
- 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, graphite impregnated, solid ceramic **plungers** are abrasion resistant and result in 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, positive seating and long life.
- 11 Specially formulated, CAT PUMP exclusive, **Hi-Pressure Seals** offer unmatched performance and seal life.
- 12 **Crossheads** are 360° supported for uncompromising alignment.
- 13 Press-in style **seal case** offers alignment and support for seals and “no tools” servicing.

Products described hereon are covered by one or more of the following U.S. patents 3558244, 3652188, 3809508, 3920356, 3930756 and 5035580

Oct 2000 9089

## World Headquarters

CAT PUMPS

1681 - 94th Lane N.E. Minneapolis, MN 55449-4324

Phone (763) 780-5440 — FAX (763) 780-2958

e-mail: sales@catpumps.com

www.catpumps.com

## International Inquiries

FAX (763) 785-4329

e-mail: intlsales@catpumps.com



“The World’s Most Dependable Pumps”

## CAT PUMPS (U.K.) LTD.

1 Fleet Business Park, Sandy Lane, Church Crookham, Fleet

Hampshire GU13 0BF, England

Phone Fleet 44 1252-622031 — Fax 44 1252-626655

## N.V. CAT PUMPS INTERNATIONAL S.A.

Heiveldekens 6A, 2550 Kontich, Belgium

Phone 32-3-450.71.50 — Fax 32-3-450.71.51

e-mail: cpi@catpumps.be www.catpumps.be

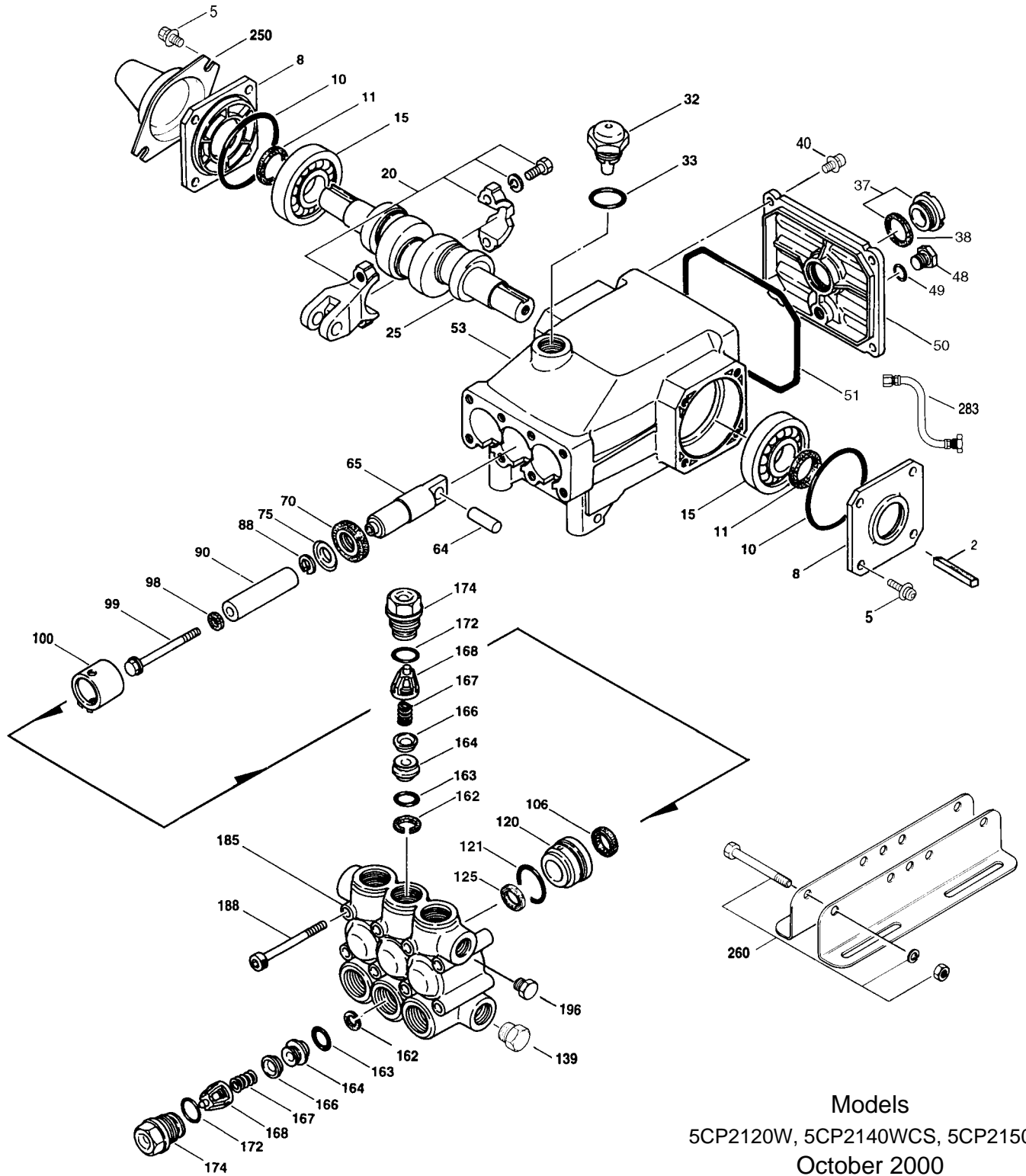
## CAT PUMPS DEUTSCHLAND GmbH

Buchwiese 2, D-65510 Idstein, Germany

Phone 49 6126-93030 — Fax 49 6126-930333

e-mail: catpumps@t-online.de www.catpumps.de

# EXPLODED VIEW



## Models

5CP2120W, 5CP2140WCS, 5CP2150W

October 2000

	5CP2120W	MATL	5CP2140WCS	MATL	5CP2150W	MATL		
310	30821	NBR	30821	NBR	30821	NBR	Kit, Valve (Incls: 162,163,164,166,167,168,172)	2
	31821	FPM	31821	FPM	31821	FPM	Kit, Valve (Incls: 162,163,164,166,167,168,172)	2
350	30696	STZP	30696	STZP	30696	STZP	Plier, Reverse	1
400	7655	BB	7655	BB	7655	BB	Modular Unloader (See Individual Data Sheet)	1
●	—		8026ES-8042ES	—	8026ES-8042ES	—	BD Motors (See Individual Data Sheet)	1 ●

● Industrial discount. **Bold print part numbers are unique to a particular pump model.** *Italics are optional items.*

† Standard pump production is ZZ, replacement parts are HS.

See Tech Bulletins 02, 03, 24, 36, 43, 53, 60, 61, 64, 73, 74, 77, 78 and 83 for additional information. W770 effective with 97 production. Add .3 for the Hi-Temp model.

MATERIAL CODES (Not Part of Part Number): AL=Aluminum BB=Brass BBNP=Brass/Nickel Plated CC=Ceramic CM=Chrome-moly D=Delrin®

FBB=Forged Brass FCM=Forged Chrome-moly FPM=Fluorocarbon (Viton®) HS=High Strength HT=Hi-Temp (EPDM Alternative)

NBR=Medium Nitrile (Buna-N) PVDF=Fluoroplastic (High Strength) S=304SS SNG=Special Blend (Buna) STL=Steel

W770=Special Alloy STCP=Steel/Chrome Plated STZP=Steel/Zinc Plated ZZ=Zamak

# PARTS LIST

ITEM	5CP2120W		PART NUMBER		5CP2140WCS		5CP2150W		DESCRIPTION	QTY
	MATL		MATL		MATL		MATL			
2	30057	STL	30057	STL	30057	STL	30057	STL	Key (M6x6x25)	1
5	96031	STZP	96031	STZP	96031	STZP	96031	STZP	Screw, Sems (M8x16)	8
8	46910	AL	46910	AL	46910	AL	46910	AL	Cover, Bearing	2/1
10	14028	NBR	14028	NBR	14028	NBR	14028	NBR	O-Ring, Bearing Cover - 70D	2
11	43222	NBR	43222	NBR	43222	NBR	43222	NBR	Seal, Oil, Crankshaft	2
15	14480	STL	14480	STL	14480	STL	14480	STL	Bearing, Ball	2
20	† 48658	HS	† 48658	HS	† 48658	HS	† 48658	HS	Rod, Connecting Assy	3
25	<b>46928</b>	<b>FCM</b>	—	—	<b>46982</b>	<b>FCM</b>	—	—	Crankshaft, Dual End	1
	—	—	<b>48203</b>	<b>FCM</b>	—	—	—	—	Crankshaft, Single End	1
30	—	—	<b>48224</b>	<b>AL</b>	—	—	—	—	Cover, Bearing Blind	1
32	46798		46798		46798		46798		Cap, Oil Filler, Domed	1
33	14179	NBR	14179	NBR	14179	NBR	14179	NBR	O-Ring, Oil Filler Cap - 70D	1
37	92241		92241		92241		92241		Gauge, Oil, Bubble w/Gasket - 80D	1
38	44428	NBR	44428	NBR	44428	NBR	44428	NBR	Gasket, Flat, Oil Gauge - 80D	1
40	92519	STZP	92519	STZP	92519	STZP	92519	STZP	Screw, Sems (M6x16)	4
48	25625	STCP	25625	STCP	25625	STCP	25625	STCP	Plug, Drain (1/4"x19BSP)	1
49	23170	NBR	23170	NBR	23170	NBR	23170	NBR	O-Ring, Drain Plug - 70D	1
50	46940	AL	46940	AL	46940	AL	46940	AL	Cover, Rear	1
51	14044	NBR	14044	NBR	14044	NBR	14044	NBR	O-Ring, Rear Cover	1
● 53	48617	AL	48617	AL	48617	AL	48617	AL	Crankcase	1 ●
64	46746	CM	46746	CM	46746	CM	46746	CM	Pin, Crosshead	3
65	48458	BBNP	48458	BBNP	48458	BBNP	48458	BBNP	Rod, Plunger	3
70	46838	NBR	46838	NBR	46838	NBR	46838	NBR	Seal, Oil, Crankcase - 70D	3
75	43328	S	43328	S	43328	S	43328	S	Slinger, Barrier	3
88	45697	S	45697	S	45697	S	45697	S	Washer, Keyhole (M18)	3
90	46841	CC	46841	CC	46841	CC	46841	CC	Plunger (M20x50)	3
98	46730	NBR	46730	NBR	46730	NBR	46730	NBR	Washer, Seal	3
	48394	FPM	48394	FPM	48394	FPM	48394	FPM	Washer, Seal	3
99	46729	S	46729	S	46729	S	46729	S	Retainer, Plunger w/Stud (M6)	3
100	46749	PVDF	46749	PVDF	46749	PVDF	46749	PVDF	Retainer, Seal	3
106	43305	NBR	43305	NBR	43305	NBR	43305	NBR	Seal, LPS w/S-Spg	3
	45153	FPM	45153	FPM	45153	FPM	45153	FPM	Seal, LPS w/S-Spg	3
120	46843	BB	46843	BB	46843	BB	46843	BB	Case, Seal (Press-in-style)	3
121	13978	NBR	13978	NBR	13978	NBR	13978	NBR	O-Ring, Seal Case - 70D	3
	14329	FPM	14329	FPM	14329	FPM	14329	FPM	O-Ring, Seal Case	3
125	43307	SNG	43307	SNG	43307	SNG	43307	SNG	Seal, HPS w/S	3
	44936	FPM	44936	FPM	44936	FPM	44936	FPM	Seal, HPS w/S	3
	46667	HT	46667	HT	46667	HT	46667	HT	Seal, HPS w/S	3
139	22179	BBCP	22179	BBCP	22179	BBCP	22179	BBCP	Plug, Inlet (1/2"NPT)	1
162	48361	D	48361	D	48361	D	48361	D	Back-up-Ring, Seat	6
163	43358	NBR	43358	NBR	43358	NBR	43358	NBR	O-Ring, Seat	6
	44938	FPM	44938	FPM	44938	FPM	44938	FPM	O-Ring, Seat	6
164	43725	S	43725	S	43725	S	43725	S	Seat	6
166	43723	S	43723	S	43723	S	43723	S	Valve	6
167	43750	S	43750	S	43750	S	43750	S	Spring	6
168	44565	PVDF	44565	PVDF	44565	PVDF	44565	PVDF	Retainer, Spring	6
172	17615	NBR	17615	NBR	17615	NBR	17615	NBR	O-Ring, Valve Plug	6
	15855	FPM	15855	FPM	15855	FPM	15855	FPM	O-Ring, Valve Plug	6
174	43849	BBCP	43849	BBCP	43849	BBCP	43849	BBCP	Plug, Valve	6
185	46842	FBB	46842	FBB	46842	FBB	46842	FBB	Manifold, Head	1
	48245	W770	48245	W770	48245	W770	48245	W770	Manifold, Head - W770	1
188	87872	STZP	87872	STZP	87872	STZP	87872	STZP	Screw, HSH (M8x70)	8
196	22187	BBCP	22187	BBCP	22187	BBCP	22187	BBCP	Plug, Discharge (3/8"NPT)	1
250	118672	STCP	118672	STCP	118672	STCP	118672	STCP	Protector, Shaft	1
255	30243	STZP	30243	STZP	30243	STZP	30243	STZP	Mount, Direct	1
260	30611	STZP	30611	STZP	30611	STZP	30611	STZP	Assembly, Angle Rail - B	1
	30637	STZP	30637	STZP	30637	STZP	30637	STZP	(Incls: 28499, 30900, 30910, 30920) (Belt Drive Only)	1
	30659		30659		30659		30659		Mount, Angle Assy-Retro Fit	1
265	30659		30659		30659		30659		Kit, Complete Mounting	1
									(Incls: 30611,30944,30633,118672) (Belt Drive Only)	1
● 275	30944	STL	30944	STL	30944	STL	30944	STL	Hub & Key Assy (M20 w/M6 Keyway)	1 ●
									<b>[See Drive Packages, Tech Bulletin 03]</b>	
● 283	34334		34334		34334		34334		Kit, Oil Drain	1 ●
● 298	34970	STZP	34970	STZP	34970	STZP	34970	STZP	Clutch, Assy, Single Groove, 20mm, 12VDC	1 ●
●	34980	STZP	34980	STZP	34980	STZP	34980	STZP	Clutch, Assy, Dual Groove, 20mm, 12VDC	1 ●
● 299	816650	W770	816650	W770	816650	W770	816650	W770	Head, Complete	1 ●
300	33628	NBR	33628	NBR	33628	NBR	33628	NBR	Kit, Seal (Incls: 98, 106, 121, 125)	1
	31628	FPM	31628	FPM	31628	FPM	31628	FPM	Kit, Seal (Incls: 98, 106, 121, 125)	1
	31638	HT	31638	HT	31638	HT	31638	HT	Kit, Seal (Incls: 98, 106, 121, 125)	1