



3 Frame Piston Pump Models

280 290

FEATURES

Superior Design

- Triplex Uniflow design provides continuous forward fluid flow for smooth operation.
- Wetted cups and floating pistons are lubricated and cooled by pumped fluid for long cup life.
- Mechanically actuated inlet valves give strong lift and easy prime.
- 304 stainless steel discharge valves for wear resistance.
- Oil bath crankcase assures optimum lubrication.

Quality Materials

- Cylinder and sleeve wear surfaces are hard chrome plated 304 stainless steel for maximum durability and abrasion resistance.
- Chrome plated, brass manifolds and optional stainless steel manifolds are strong and corrosion resistant.
- Heavy duty connecting rods are made of high quality Zamak offering superior bearing quality strength.
- Chrome-moly crankshaft gives unmatched strength and surface hardness.
- Oversized crankshaft bearings with greater loading capacity mean longer bearing life.

Easy Maintenance

- Stepped stainless steel piston rod with chrome-plated, stainless steel sleeve allows easy replacement from front of pump.
- All wet-end wear parts are easily serviced without entering crankcase, requiring less time and effort.
- Wear parts are available in convenient kits.

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

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

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

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

MODEL 280

	U.S. Measure	Metric Measure
Flow.....	3.0 GPM	(11 L/M)
Pressure Range.....	100 to 1000 PSI	(7 to 70 Bar)
RPM	1330 RPM	(1330 RPM)
Stroke.....	0.394"	(10 mm)
Weight.....	11.7 lbs.	(5.3 kg)

MODEL 290

	U.S. Measure	Metric Measure
Flow.....	3.5 GPM	(13 L/M)
Pressure Range.....	100 to 1200 PSI	(7 to 85 BAR)
RPM	1200 RPM	(1200 RPM)
Stroke.....	0.472"	(12 mm)
Weight.....	12.1 lbs.	(5.5 kg)

COMMON SPECIFICATIONS

Inlet Pressure	-8.5 to 40 PSI	(-0.6 to + 2.8 BAR)
Bore.....	0.787"	(20 mm)
Crankcase Capacity	10 oz.	(.3 L)
Maximum Fluid Temperature.....	160°F	(71°C)
Inlet Ports (1)	1/2" NPT	(1/2" NPT)
Chemical Injection Port (1).....	1/4" NPT	(1/4" NPT)
Discharge Ports (2).....	3/8" NPT	(3/8" NPT)
Pulley Mounting.....	Either side	(Either side)
Shaft Diameters	0.650"	(16.5 mm)
Dimensions.....	10.77 x 9.06 x 5.14"	(273.5 x 230 x 130.5 mm)

HORSEPOWER REQUIREMENTS

MODEL	FLOW		PRESSURE			MOTOR PULLEY SIZE	
			PSI 800	PSI 1000	PSI 1200	Using 1725 Nom. RPM Motor & 5.0" Pump Pulley O.D.	
	U.S. GPM	L/M	BAR 55	BAR 70	BAR 85	RPM	Pulley O.D.
280	3.0	11.4	1.6	2.1	N/A	1330	3.9
	2.5	9.5	1.4	1.7	N/A	1108	3.2
	2.0	7.6	1.1	1.4	N/A	887	2.8
290	3.5	13.2	1.9	2.4	2.9	1200	3.5
	3.0	11.4	1.6	2.1	2.5	1029	3.0
	2.5	9.5	1.4	1.7	2.1	858	2.5

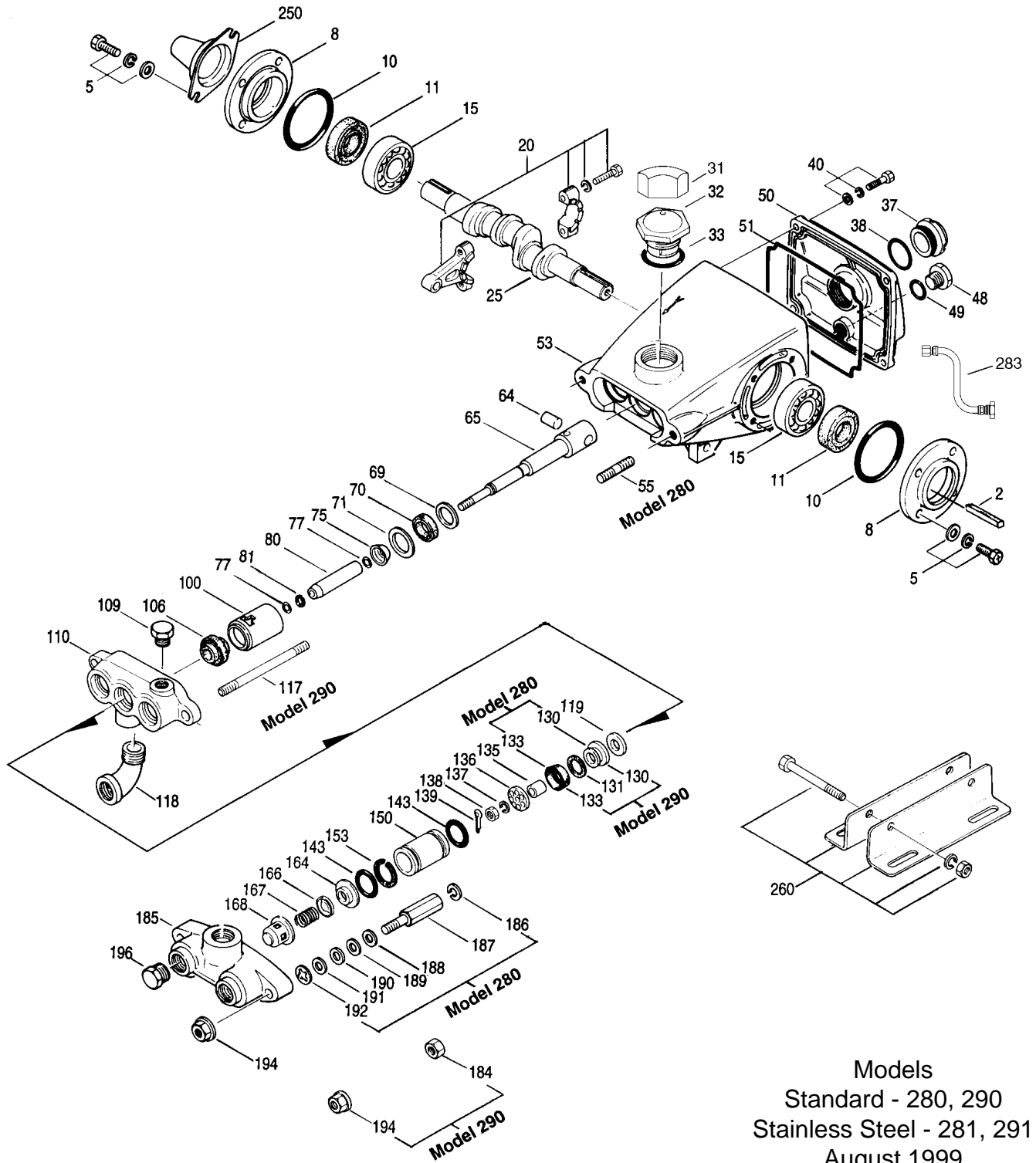
See complete Drive Packages [Incls: Pulleys, Belts, Hubs, Key] Tech Bulletin 03.

“Customer confidence is our greatest asset”

PARTS LIST

ITEM	PART NUMBER		DESCRIPTION		QTY	
	280	MATL	290	MATL		
2	30047	STL	30047	STL	Key (M5x5x24)	1
5	92519	STZP	92519	STZP	Screw, Sems HHC (M6x16)	8
8	27950	AL	27950	AL	Cover, Bearing	2
10	26536	NBR	26536	NBR	O-Ring, Bearing Cover	2
11	24159	NBR	24159	NBR	Seal, Oil, Crankshaft	2
15	14487	STL	14487	STL	Bearing	2
20	17556	ZZ	101799	ZZ	Rod, Assy Connecting	3
25	26239	FCM	43804	FCM	Crankshaft	1
31	828710		828710		Protector, Oil Cap	1
32	43211		43211		Cap, Oil Filler	1
33	14177	NBR	14177	NBR	O-Ring, Oil Filler Cap	1
37	43987		43987		Gauge, Oil Bubble	1
38	44428	NBR	44428	NBR	Gasket, Flat Flex, Oil Gauge	1
40	92520	STZP	92520	STZP	Screw, Sems HHC (M6x20)	4
48	25625	STCP	25625	STCP	Plug, Drain (1/4"x11)	1
49	23170	NBR	23170	NBR	O-Ring, Drain Plug	1
50	43339	AL	43339	AL	Cover, Rear	1
51	43340	NBR	43340	NBR	O-Ring, Rear Cover	1
53	44658	AL	44658	AL	Crankcase, 4 Screws - Large Cap	1
55	14137	STCP	—		Stud (M8x41.4)	2
64	16948	S	16948	S	Pin, Rist	3
65	29612	SZZ	101800	SZZ	Rod, Piston	3
69	20017	STZP	20017	STZP	Washer, Oil Seal	3
70	25301	NBR	25301	NBR	Seal, Oil	3
71	26854	S	26854	S	Washer, Oil Seal	3
75	25327	S	25327	S	Slinger, Barrier	3
77	25392	NBR	25392	NBR	O-Ring, Sleeve	6
	28771	FPM	28771	FPM	O-Ring, Sleeve	6
80	29614	SCP	29614	SCP	Sleeve	3
	29743	S	29743	S	Sleeve	3
81	—		29003	PTFE	Back-up-Ring, Sleeve	3
100	28597	PVDF	28597	PVDF	Retainer, Seal	3
106	30315	NBR	30315	NBR	Seal, LPS, Prrrrrm-A-Lube	3
	30325	FPM	30325	FPM	Seal, LPS, Prrrrrm-A-Lube	3
109	22177	BBCP	22177	BBCP	Plug (1/4" NPT)	1
110	25128	BBCP	25128	BBCP	Manifold, Inlet	1
	25635	SS	25635	SS	Manifold, Inlet	1
117	—		85680	STZP	Stud (M8x99.5)	2
118	22160	BBCP	22160	BBCP	Elbow (1/2" NPT)	1
119	27004	S	27004	S	Valve, Inlet	3
130	22021	S	30543	S	Piston	3
131	—		30544	PTFE	Bac-Cup Ring	3
133	43172	FPM	43172	FPM	Cup, Piston	3
133	29089	NBR	29089	NBR	Cup, V-Hot	3
135	27003	S	27983	S	Spacer, Piston	3
136	27002	S	27002	S	Retainer, Piston	3
137	27006	S	27006	S	Washer, Conical (M6)	3
138	27000	S	27000	S	Nut (M6)	3
139	14158	S	14158	S	Cotterpin	3
143	23172	NBR	23172	NBR	O-Ring, Cylinder	6
	11377	FPM	11377	FPM	O-Ring, Cylinder	6
	26961	PTFE	26961	PTFE	O-Ring, Cylinder	3
150	26112	SCP	101802	SCP	Cylinder	3
	28774	S	43834	S	Cylinder	3
153	—		21985	PTFE	Back-Up-Ring, Cylinder	3
164	43434	S	43434	S	Seat, Q.V.	3
	29487	S	29487	S	Seat, F.V.	3
166	43723	S	43723	S	Valve, Q.V.	3
	22842	S	22842	S	Valve, F.V.	3
167	43360	S	43360	S	Spring, Q.V.	3
	22031	S	22031	S	Spring, F.V.	3
168	43442	S	43442	S	Retainer, Spring, Q.V.	3
	22841	S	22841	S	Retainer, Spring, F.V.	3
184	—		81109	STZP	Nut, Hex (M8)	2
185	24459	BBCP	24459	BBCP	Manifold, Discharge	1
	25634	SS	25634	SS	Manifold, Discharge	1
186	15845	STZP	—		Lockwasher (M8)	2
187	26245	STZP	—		Bolt, Cylinder (M8x62.5)	2
188	22902	STZP	—		Shim (M8x13x1.0)	2-4
189	13533	STZP	—		Shim (M8x13x0.5)	2-4
190	43258	STZP	—		Shim (M8x13x0.3)	2-4
191	43425	STZP	—		Shim (M8x13x2.0)	2-4
192	26676	STZP	—		Retainer, Washer	2
194	101804	STZP	101804	STZP	Nut, Hex Flange (M8)	2
196	22187	BBCP	22187	BBCP	Plug (3/8" NPT)	1
250	25130	STCP	25130	STCP	Protector, Shaft	1
260	30612	STZP	30612	STZP	Mount Rail Assy (Incls: 26246, 30901, 30920, 30910)	1
270	30246	STL	30246	STL	Pulley Assy (Incls: 30032, 30047)	1
275	30942	STL	30942	STL	Hub & Key Assy (Incls: 30943, 30047)	1

EXPLODED VIEW



Models
Standard - 280, 290
Stainless Steel - 281, 291
August 1999

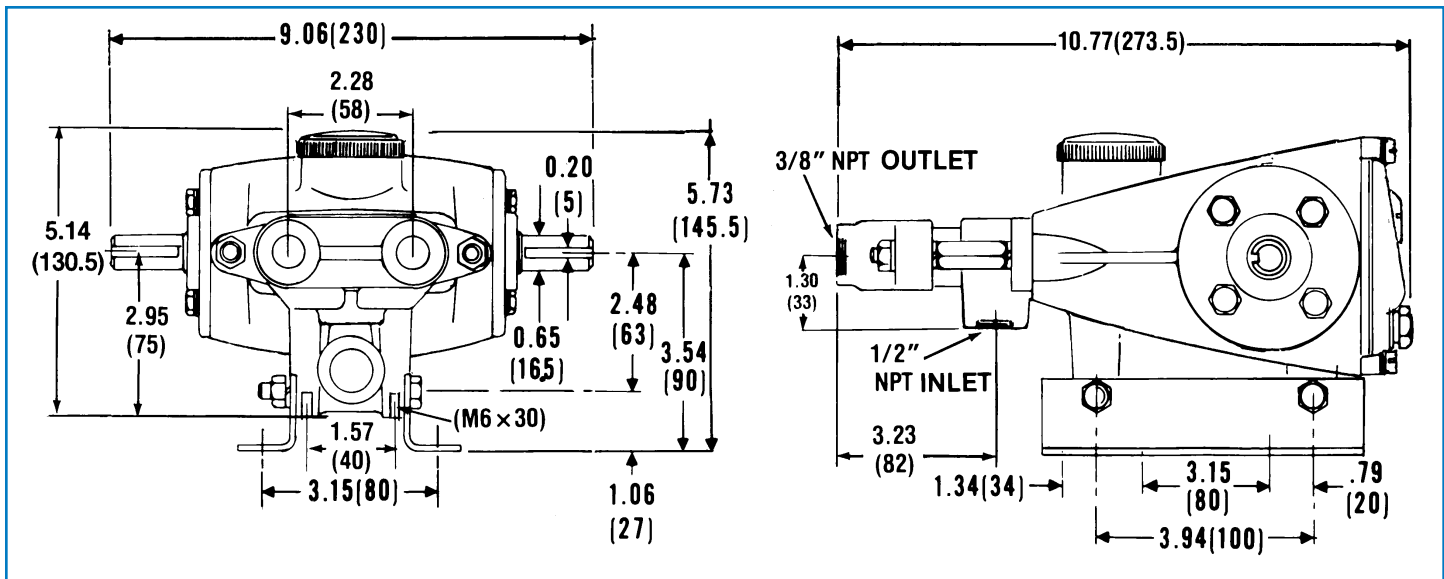
	280	MATL	290	MATL		
● 283	34334		34334		Kit, Oil Drain	1 ●
300	30023	FPM	30023	FPM	Kit, Cup (Incls: 133, 139, 143)	1
302	30202	NBR	30860	NBR	Kit, Piston (Incls: 119-139, 143, 153)	1
305	30431	NBR	30431	NBR	Kit, Sleeve & Seal (Incls: 75, 77, 80, 106, 139)	1
306	30305	NBR	30305	NBR	Kit, Seal (Incls: 106, 139)	1
310	30686	NBR	30686	NBR	Kit, Valve, Q.V. (Incls: 143, 164-168)	1
	30024	NBR	30024	NBR	Kit, Valve, F.V. (Incls: 143, 164-168)	1
355	22130	NY	22130	NY	Insertor, Cup	1

● Industrial discount. **Bold print part numbers are unique to a particular pump model. Italics are optional items.**
See Tech Bulletins 03, 16, 17, 20, 24, 26, 30, 33, 34, 36, 39, 74 and 77 for additional information.

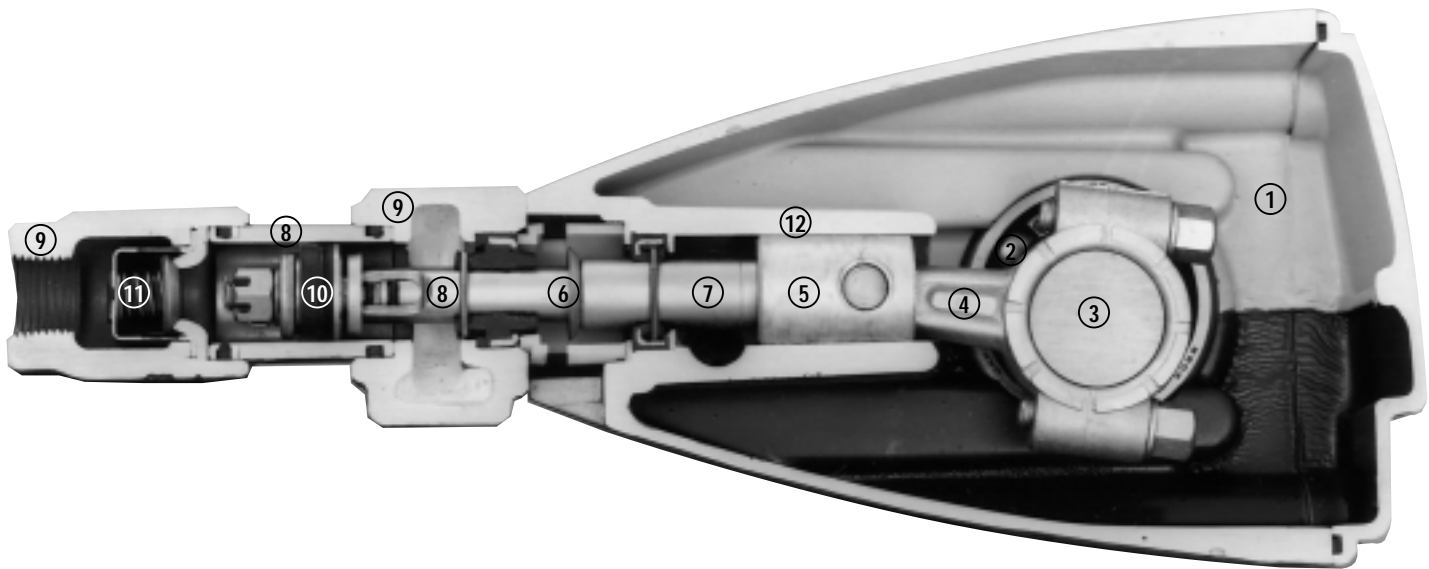
All Q.V. parts are necessary for conversions, Q.V. and F.V. parts cannot be mixed.

MATERIAL CODES (Not Part of Part Number): AL=Aluminum BBCP=Brass/Chrome Plated FCM=Forged Chrome-moly FPM=Fluorocarbon (Viton®)
NBR=Medium Nitrile (Buna-N) NY=Nylon PTFE=Polytetrafluoroethylene (Teflon®) PVDF=Fluoroplastic (High Strength) S=304SS SCP=304SS/Chrome Plated
SS=316SS STCP=Steel/Chrome Plated STL=Steel STZP=Steel/Zinc Plated SZZ=304SS/Zamak ZZ=Zamak

ORDER CODES: Add to Model Number .0110 for FPM (Viton®), consult factory for pricing.



Models 280, 290



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| <p>1 Die cast aluminum crankcase means high strength, lightweight, and excellent tolerance control.</p> <p>2 Oversized crankshaft bearings provide extended bearing life and pump performance.</p> <p>3 Chrome-moly crankshaft provides unmatched strength and surface hardness for long life.</p> <p>4 Matched oversized high strength connecting rods are noted for strength and superior bearing quality.</p> | <p>5 Special stainless steel piston rod with Zamak crossheads for longevity and corrosion resistance.</p> <p>6 The stainless steel slinger provides backup protection for the crankcase seal, keeping pumped fluids out of the crankcase.</p> <p>7 The patented stepped piston rod with hard chrome-plated stainless steel sleeve provides a durable wear surface and easy wet-end servicing.</p> <p>8 The cylinder and sleeve wear surfaces are hard chrome-plated 304 stainless steel for longer service life.</p> | <p>9 Manifolds are of high tensile strength chrome-plated brass or 316 stainless steel for special corrosion resistance.</p> <p>10 100% wet cup/seal design adds to service life by allowing pumped fluids to cool and lubricate the elastomers on both sides.</p> <p>11 304 stainless steel valves, seats, and springs provide corrosion-resistance, positive seating and long life.</p> <p>12 Crossheads are 360° supported for uncompromising alignment.</p> |
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Products described hereon are covered by one or more of the following U.S. patents 3558244, 3652188, 3809508, 3920356, 3930756 and 5035580

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