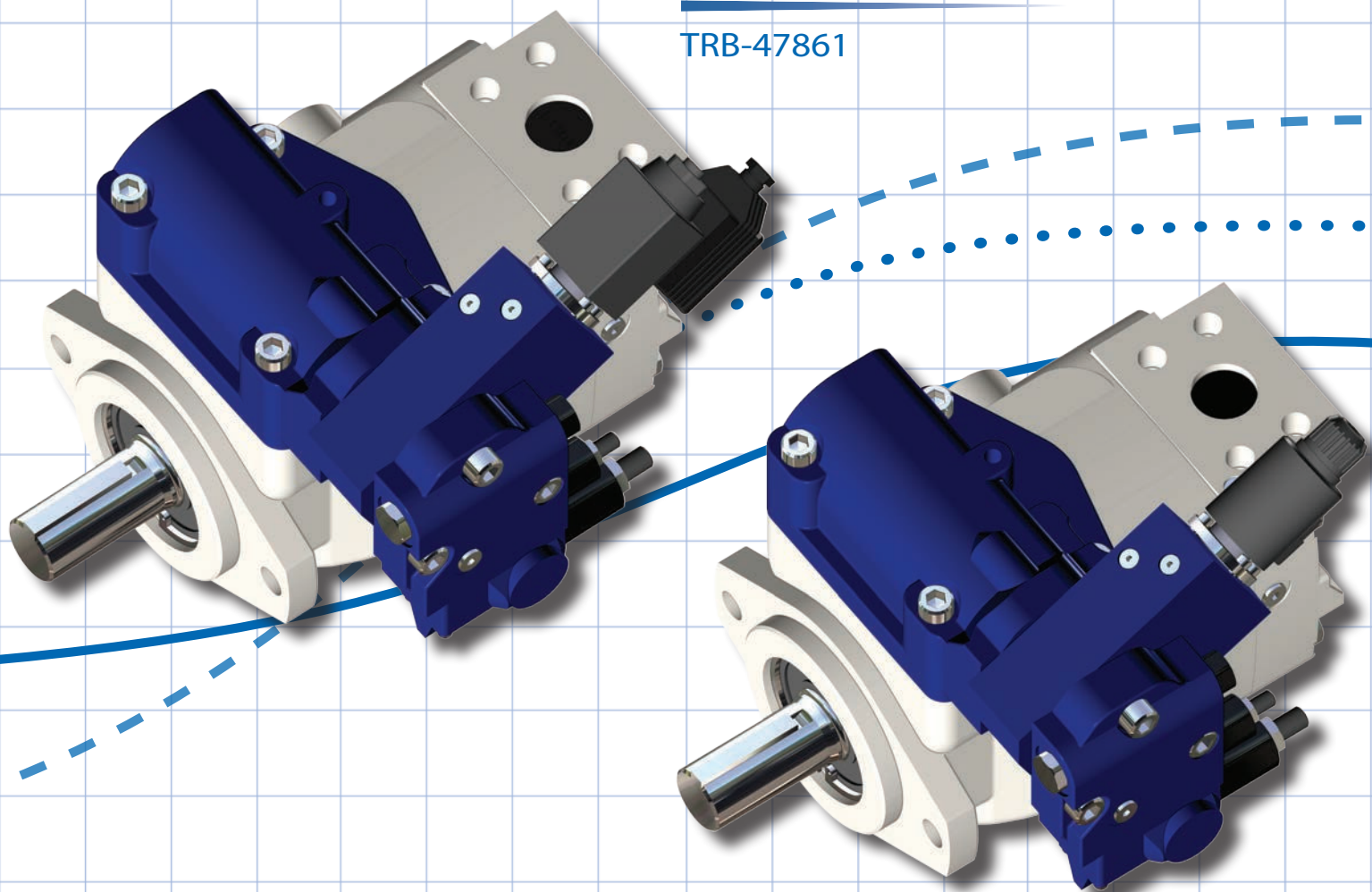


Controls Bulletin

Electronic Displacement Control PVG-100/130 F1 Series

C-Frame

TRB-47861



Electronic Displacement Control

- P-E Normally Open
- P-F Normally Closed
- P-E/F Normally Open with Load Sense
- P-F/F Normally Closed with Load Sense

Oilgear

Table of Contents

Reference Documents	page 2
Operational Description	3
Installation Drawings	
P-E Control - Industrial, Mobile	4-5
P-F Control - Industrial, Mobile	6-7
P-E/F Control - Industrial, Mobile	8-9
P-F/F Control - Industrial, Mobile	10-11
Exploded Views	
P-E Control, P-F Control	12-13
P-E/F Control, P-F/F Control	14-15
Cross Section Drawings	
P-E Control, P-F Control	16-17
P-F Control, P-F/F Control	18-19
Control Valve	
Exploded View	20
Cross Section	21
O-Ring Seals	22
Screw and Plug Torques	22
Service Kits	23
Electrical Connections and Specifications	24
Pulse Width Modulated (PWM) Examples	25

Reference Material

PVG Open Loop Pumps, Sales Bulletin 47019
 Specifications and performance data for PVG pumps

PVG Application Guidelines Bulletin 847019
 Notes and guidelines for proper use of PVG pumps

Information in this bulletin subject to change without notice. Current versions of the documents referenced in this bulletin may have a letter at the end to denote the revision level. The latest release of any document, including this one, can be found on the Oilgear web site or by contacting your Oilgear representative.

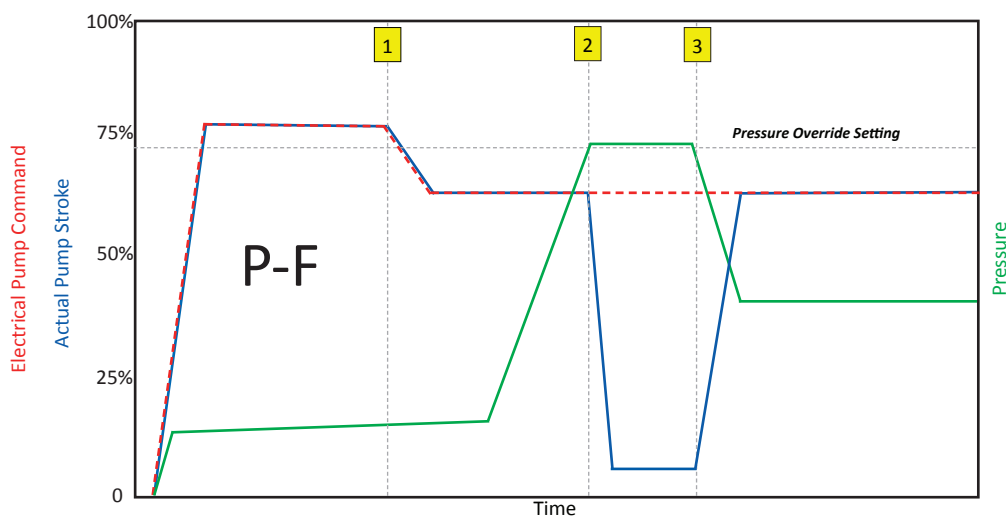
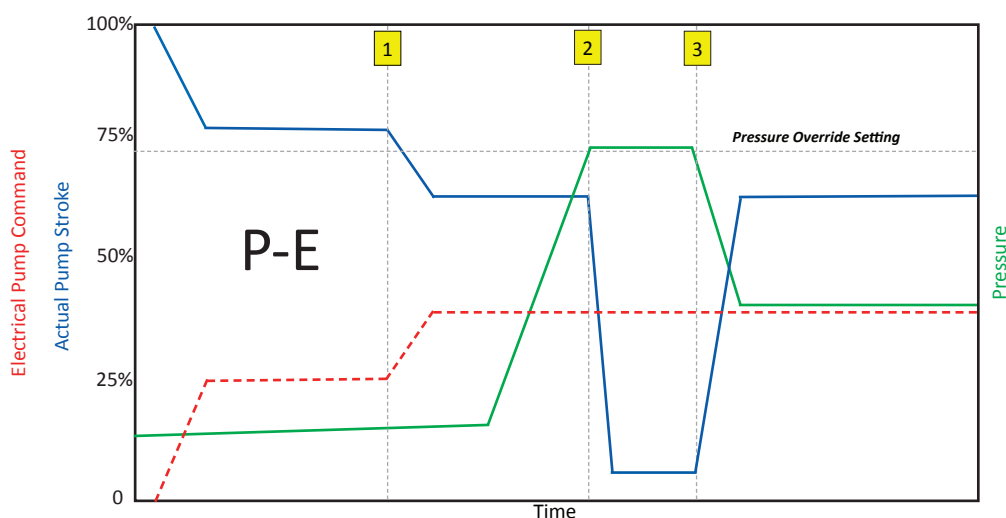
Operational Description

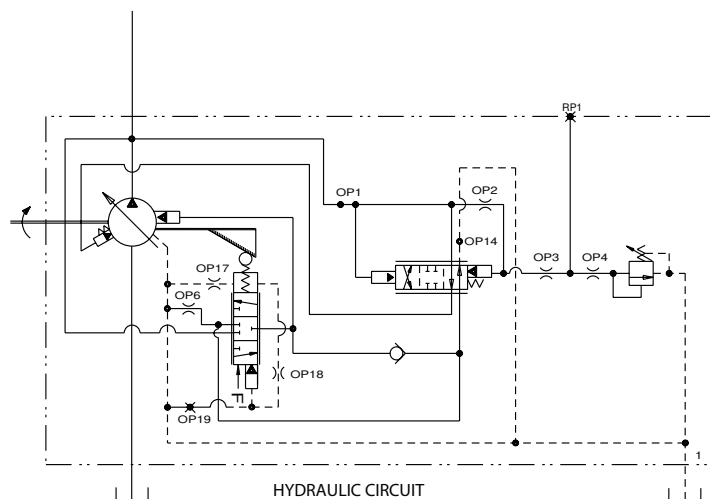
The **Electronic Displacement Control (EDC)** combines electronic proportional stroke control with mechanical pressure override. There are four configurations for this control P-E Normally Open (N.O.), P-F Normally Closed (N.C.), P-E/F N.O with Load Sense and P-F/F N.C. with Load Sense.

The pump stroke will respond to changes in the electrical command signal sent to the EDC proportional valve, provided that the pressure is below the mechanical override setting. The command signal can be changed in response to external events such as a change in engine RPM, system pressure, horsepower or other externally monitored condition (1) on graphs below). If the pressure reaches the override setting, the mechanical control overrides the electrical command signal and de-strokes the pump (2). If the pressure drops back below the setpoint the pump stroke returns to the level set by the proportional command (3).

Normally Open P-E Control - An increase in the command to the proportional valve results in a decrease in pump stroke. Zero command equals Full Stroke provided the outlet pressure is less than the pressure override setting. In the event of a loss of the electrical signal, the P-E control will operate as a standard pressure control.

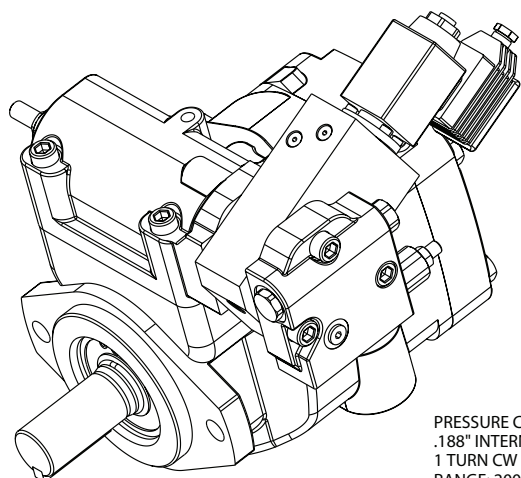
Normally Closed P-F Control - An increase in the command to the proportional valve results in an increase in pump stroke. With Zero command the pump will remain at Neutral.





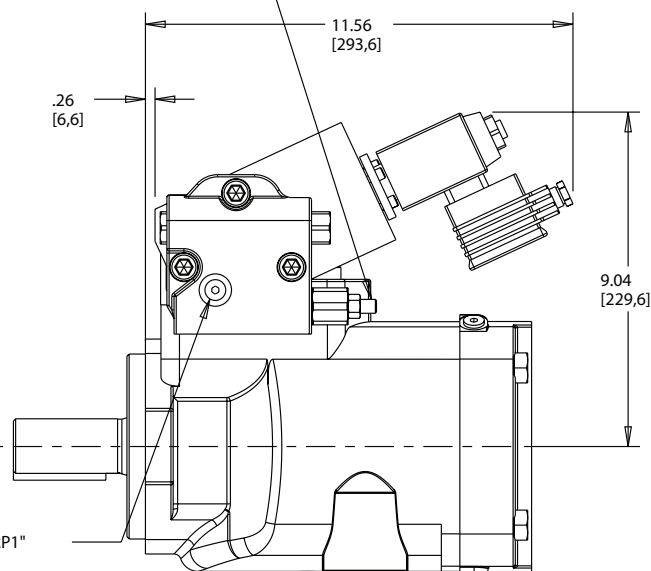
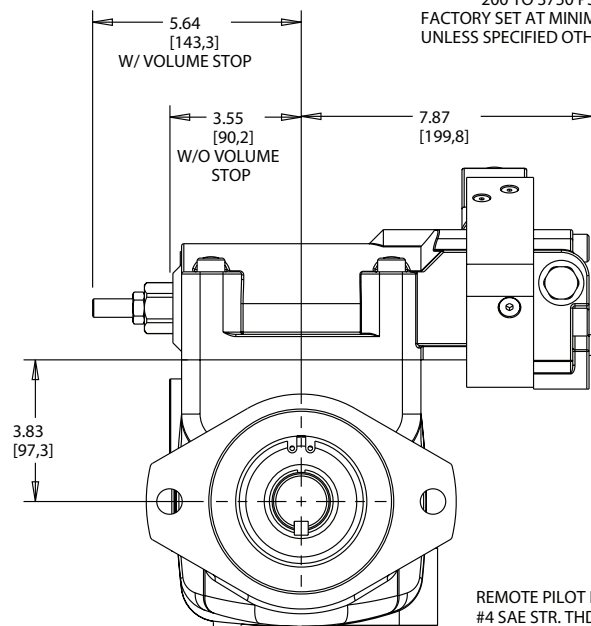
WEIGHT:
124 LBS [56KG] FOR REAR PORT VERSION SHOWN
133 LBS [60KG] FOR SIDE PORT VERSION
139 LBS [63KG] FOR THRU SHAFT VERSION

OPTIONAL MAXIMUM VOLUME STOP
.250" INTERNAL HEX
1 TURN CW DECREASES DELIVERY 7%
RANGE 100% TO 0%
FACTORY SET AT MAXIMUM VOLUME
UNLESS SPECIFIED OTHERWISE



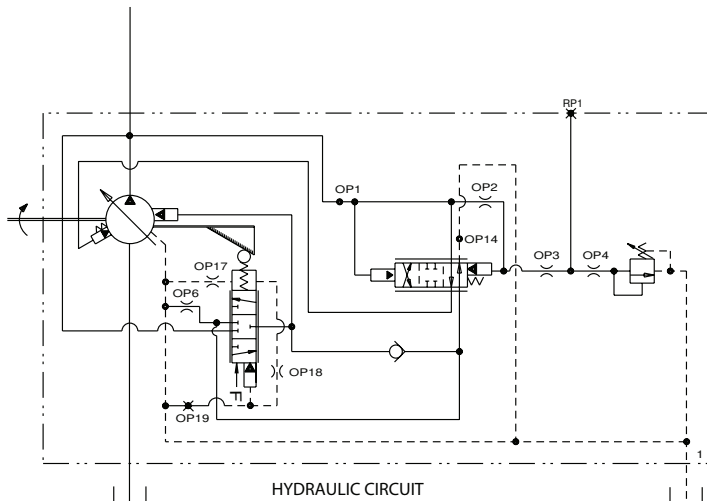
LIFTING HOLE
.375-16 UNF-2B THD.

PRESSURE COMPENSATOR ADJUSTMENT
.188" INTERNAL HEX
1 TURN CW INCREASES SETTING 1160 PSI (80 BAR)
RANGE: 200 TO 5000 PSI (14 TO 345 BAR) FOR 100
200 TO 3750 PSI (14 TO 260 BAR) FOR 130
FACTORY SET AT MINIMUM
UNLESS SPECIFIED OTHERWISE



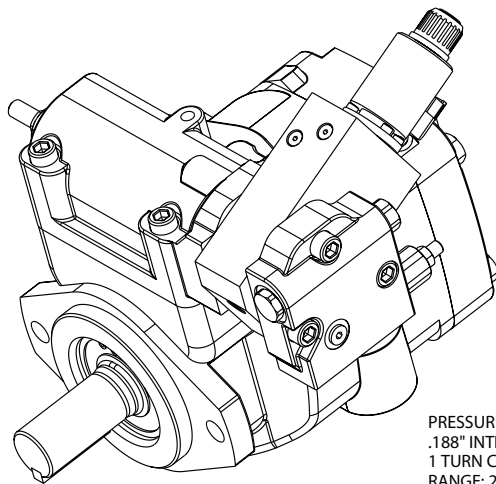
REMOTE PILOT PORT "RP1"
#4 SAE STR. THD. PORT
.438-20 UNF-2B THD.
(SHOWN PLUGGED)

For pump dimensions and specifications see Bulletin 47019

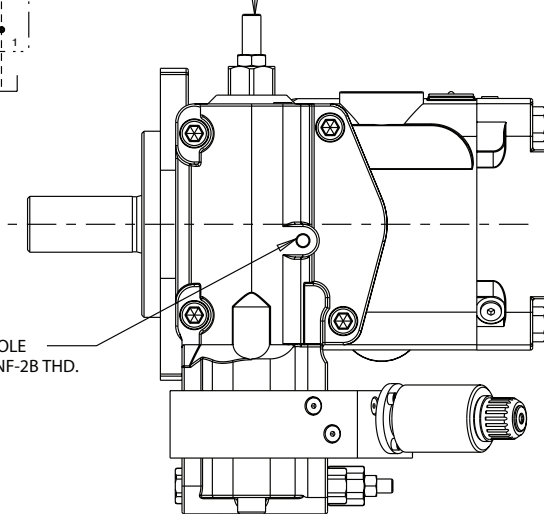


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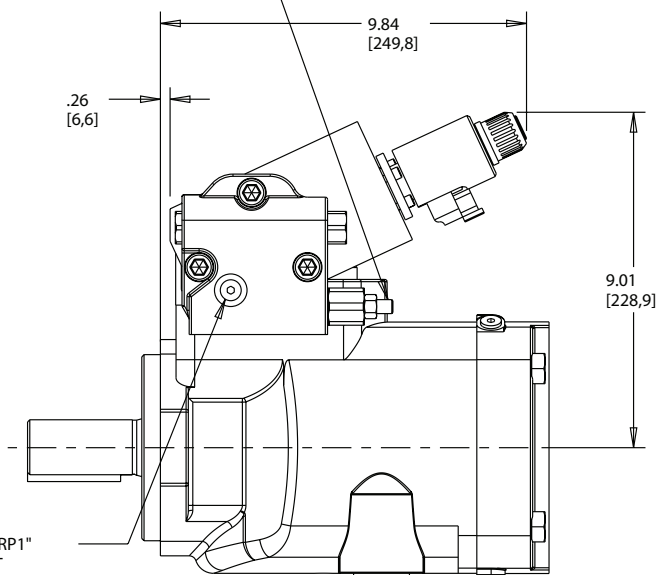
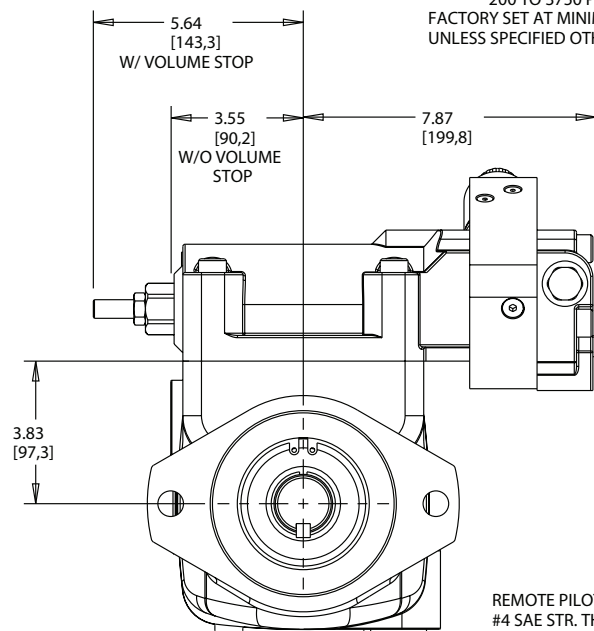
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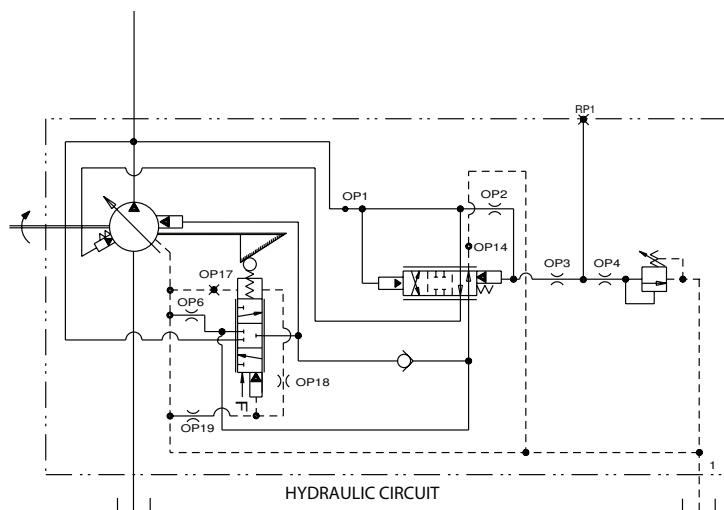


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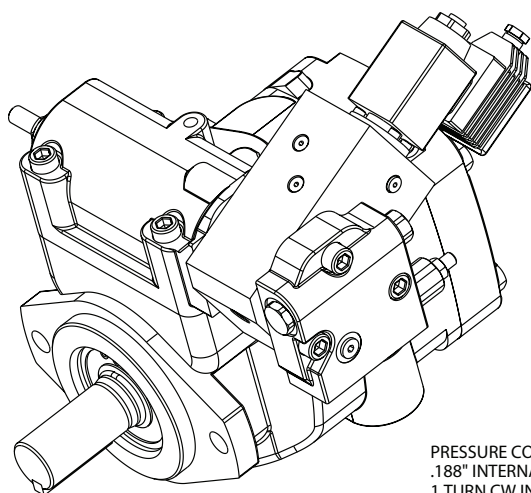
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 (SHOWN PLUGGED)

For pump dimensions and specifications see Bulletin 47019

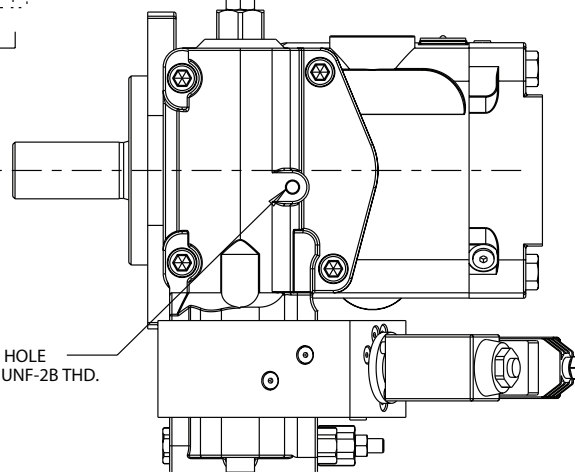


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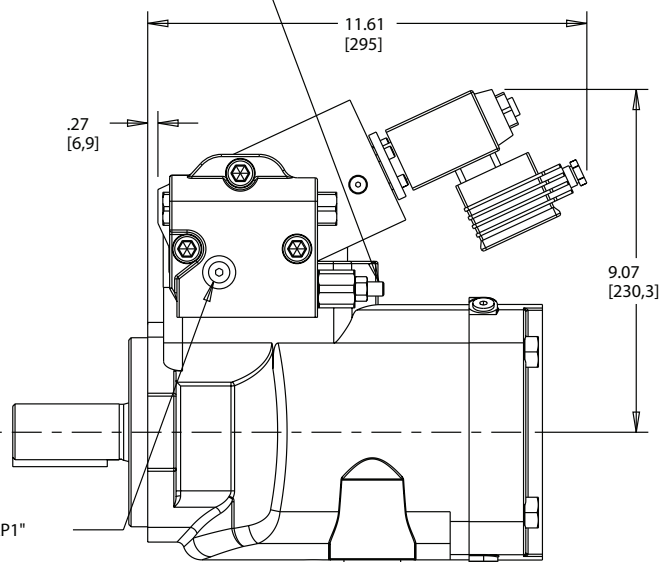
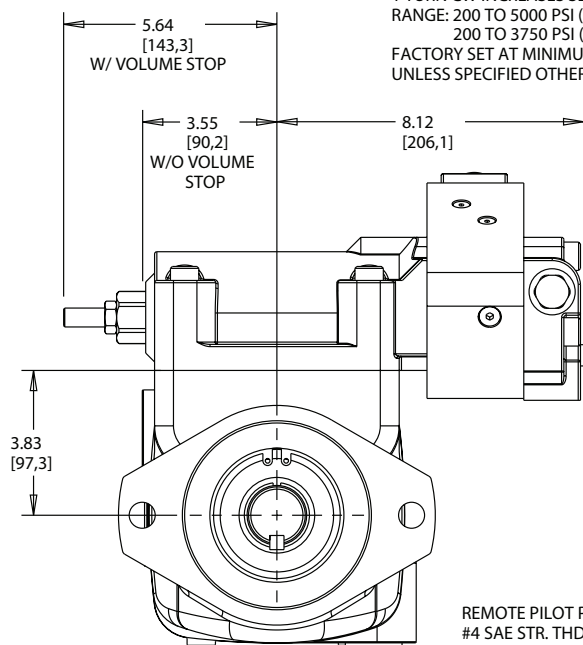
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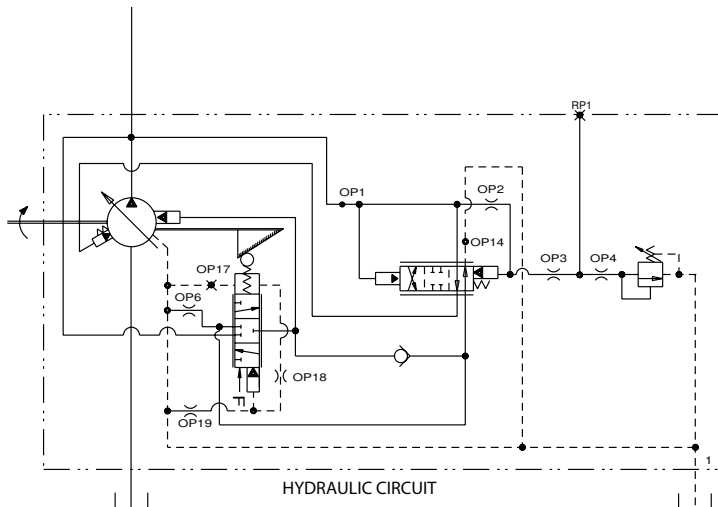


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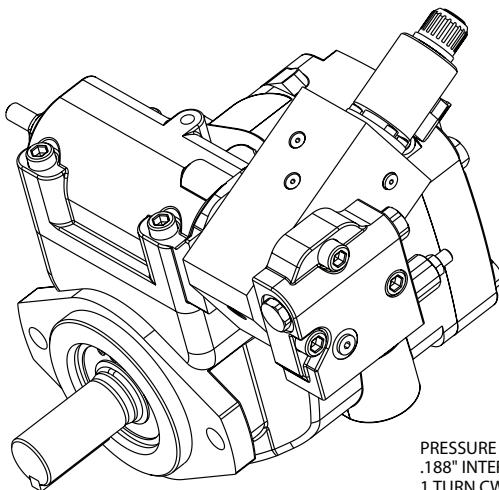
REMOTE PILOT PORT "RP1"
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.438-20 UNF-2B THD.
(SHOWN PLUGGED)

For pump dimensions and specifications see Bulletin 47019

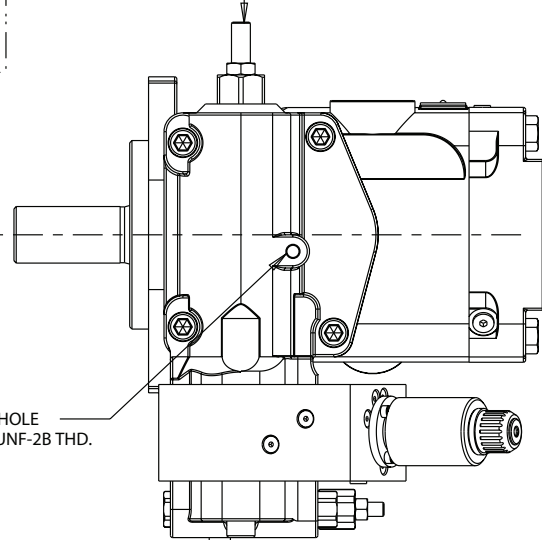


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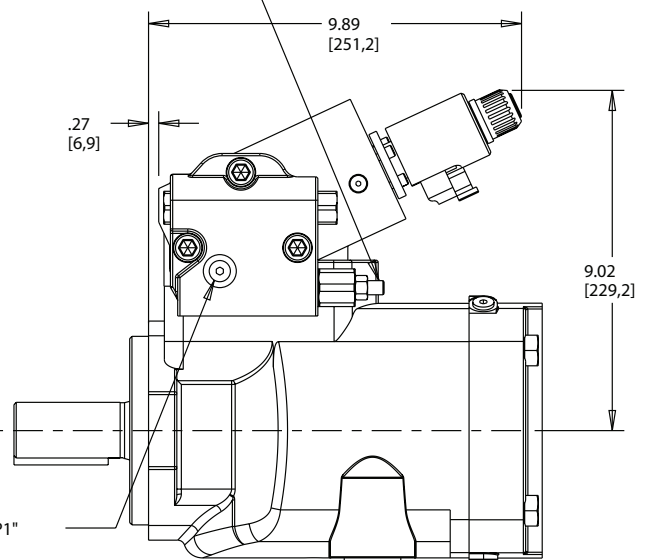
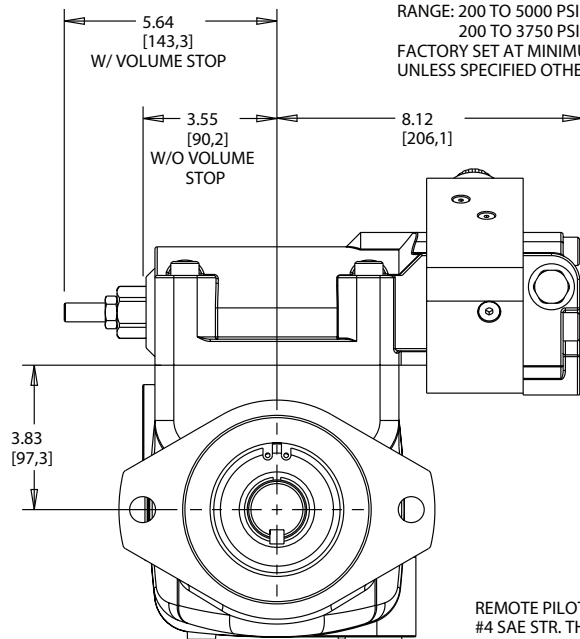
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LIFTING HOLE
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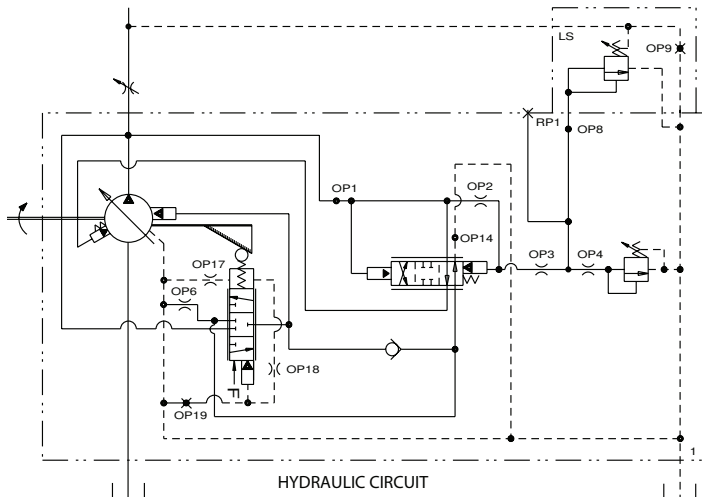


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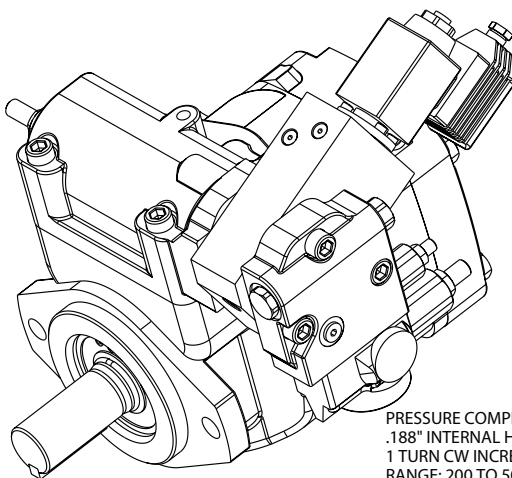
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 .438-20 UNF-2B THD.
 (SHOWN PLUGGED)

For pump dimensions and specifications see Bulletin 47019



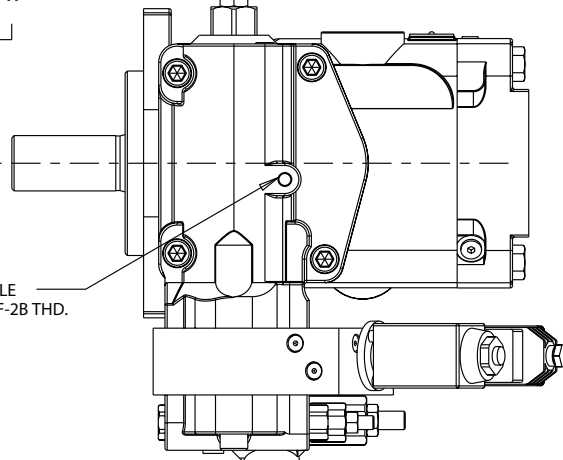
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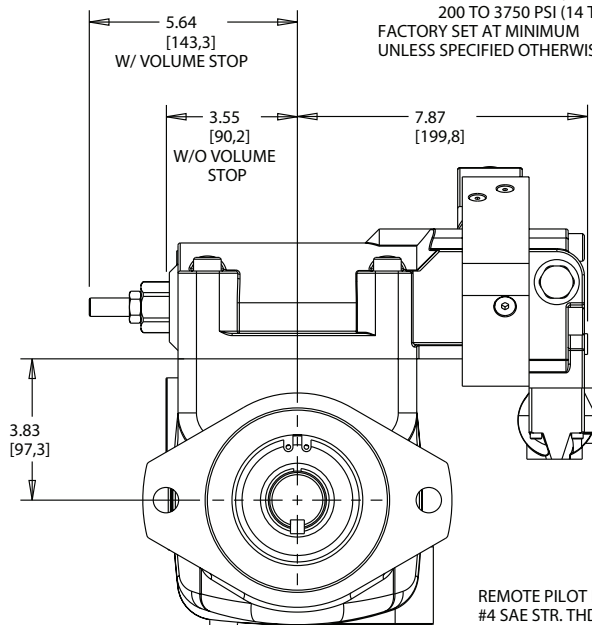


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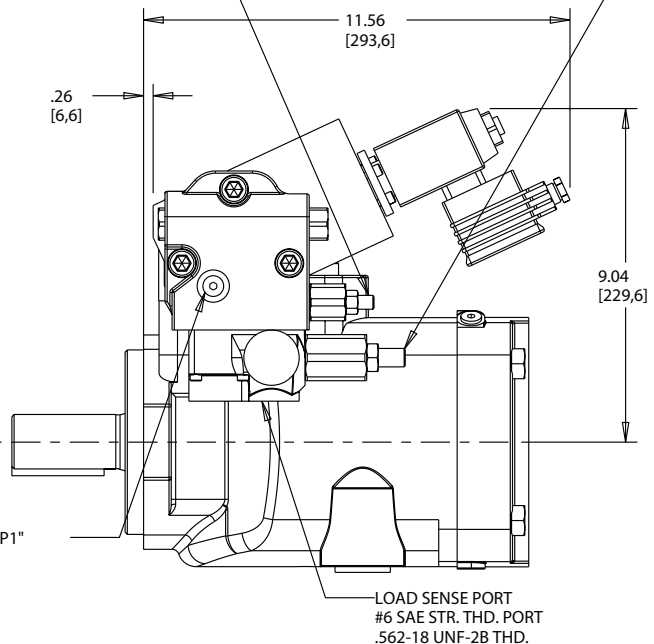
LIFTING HOLE
.375-16 UNF-2B THD.



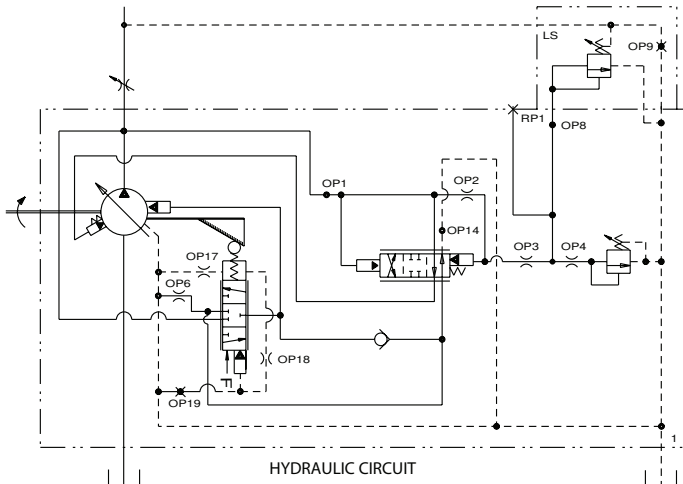
LOAD SENSE ADJUSTER
.188" INTERNAL HEX
1 TURN CW INCREASES SETTING 42 PSI (3 BAR)
RANGE: 200 TO 600 PSI (14 TO 43 BAR)
FACTORY SET AT MINIMUM
UNLESS OTHERWISE SPECIFIED



REMOTE PILOT PORT "RP1"
#4 SAE STR. THD. PORT
.438-20 UNF-2B THD.
(SHOWN PLUGGED)

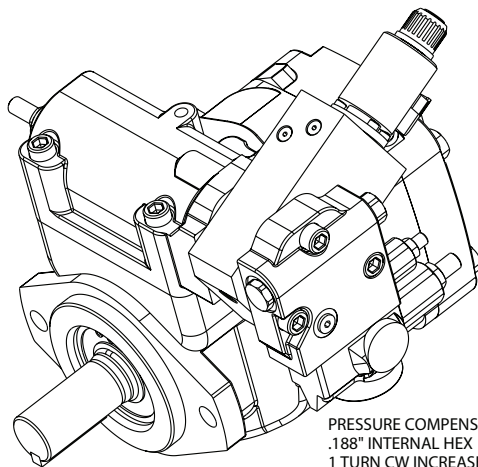


For pump dimensions and specifications see Bulletin 47019



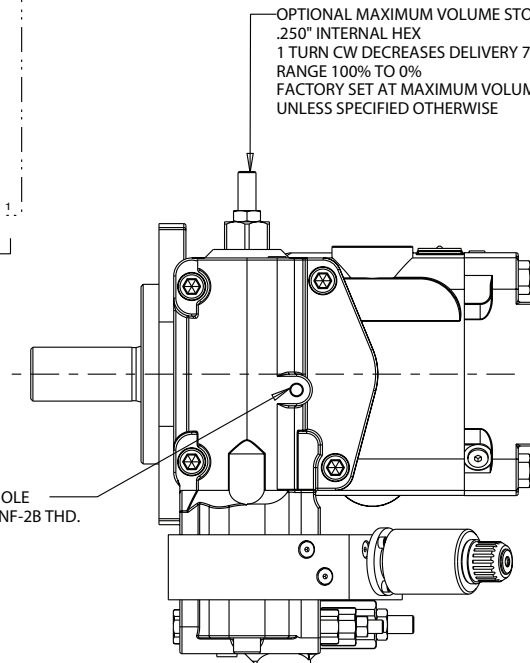
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UNLESS SPECIFIED OTHERWISE

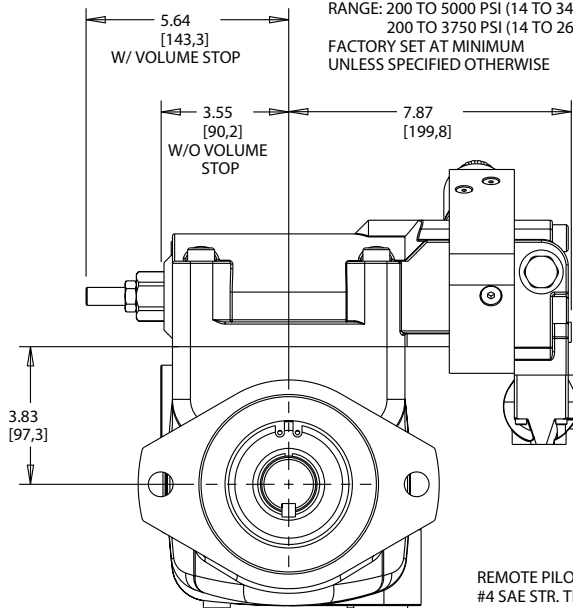


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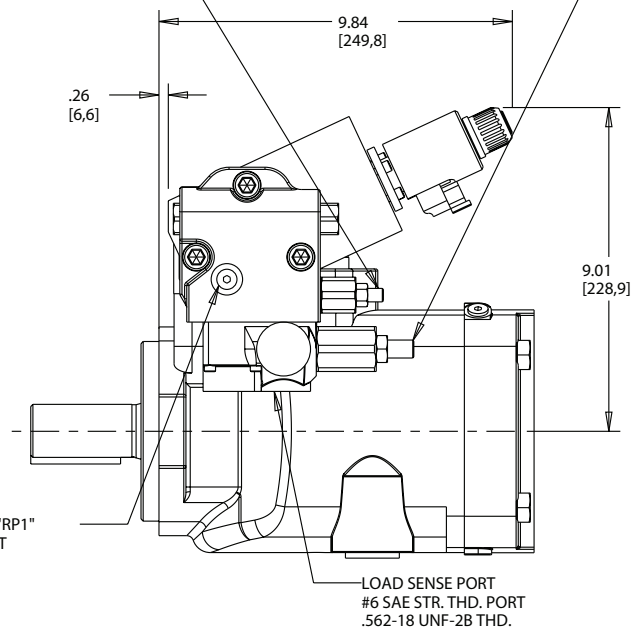
LIFTING HOLE
.375-16 UNF-2B THD.



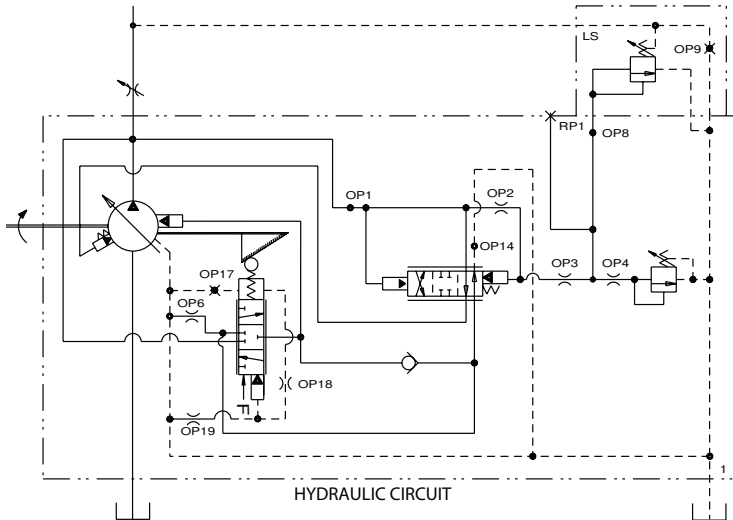
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REMOTE PILOT PORT "RP1"
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.438-20 UNF-2B THD.
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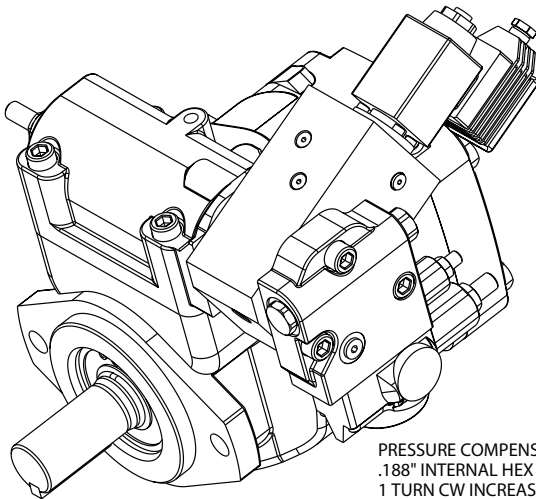


For pump dimensions and specifications see Bulletin 47019

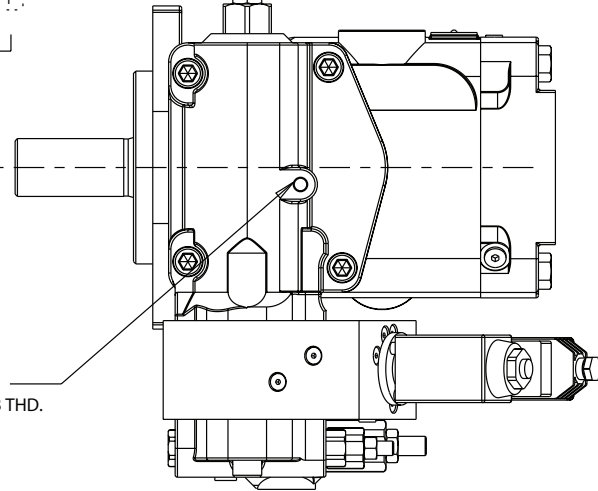


WEIGHT:
129 LBS [59KG] FOR REAR PORT VERSION SHOWN
138 LBS [63KG] FOR SIDE PORT VERSION
144 LBS [65KG] FOR THRU SHAFT VERSION

OPTIONAL MAXIMUM VOLUME STOP
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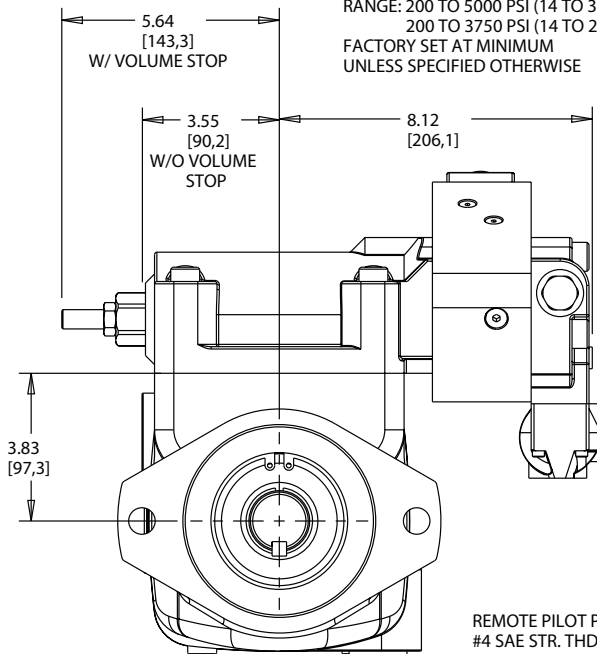


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.375-16 UNF-2B THD.

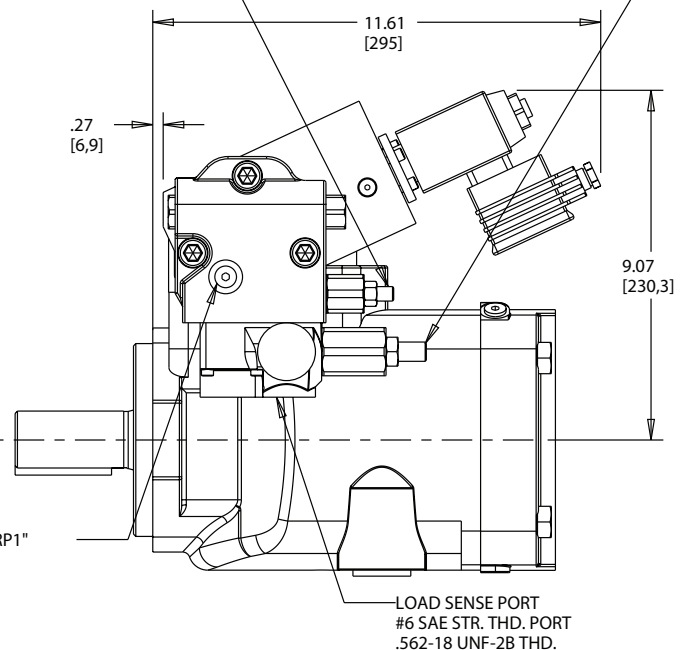


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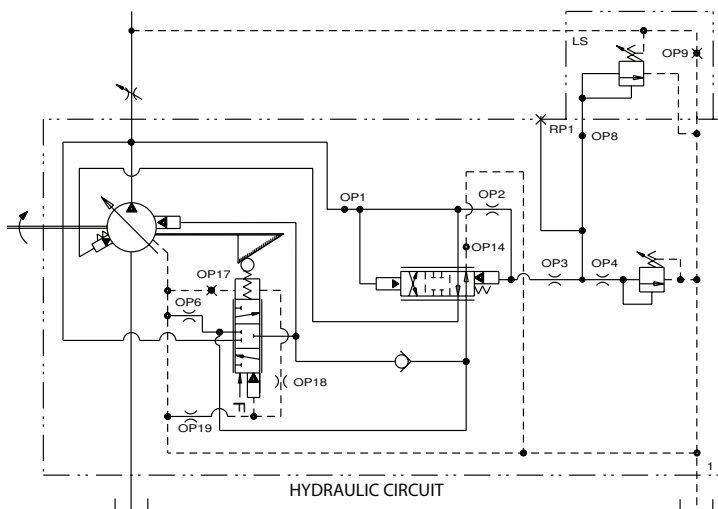


REMOTE PILOT PORT "RP1"
#4 SAE STR. THD. PORT
.438-20 UNF-2B THD.
(SHOWN PLUGGED)



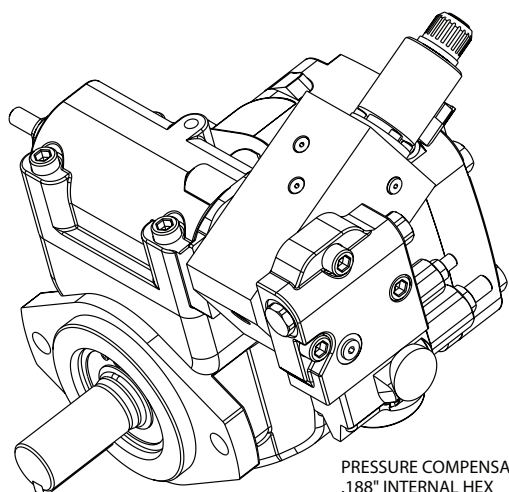
LOAD SENSE PORT
#6 SAE STR. THD. PORT
.562-18 UNF-2B THD.

For pump dimensions and specifications see Bulletin 47019

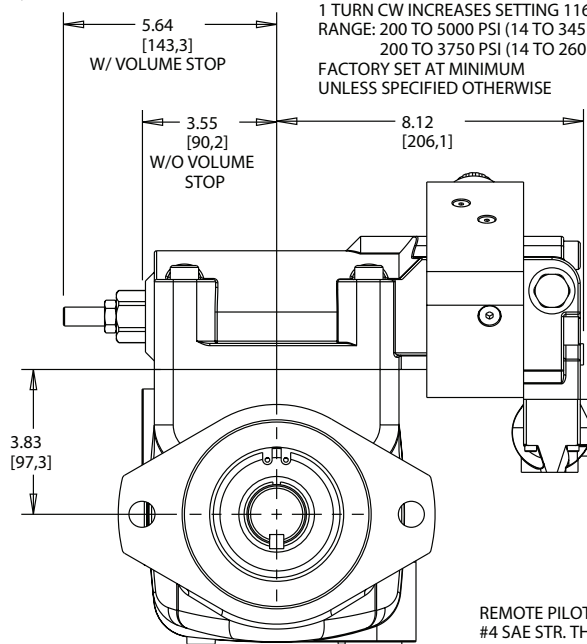


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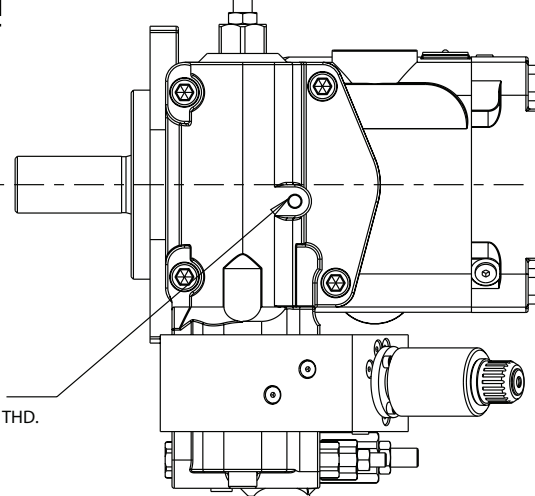
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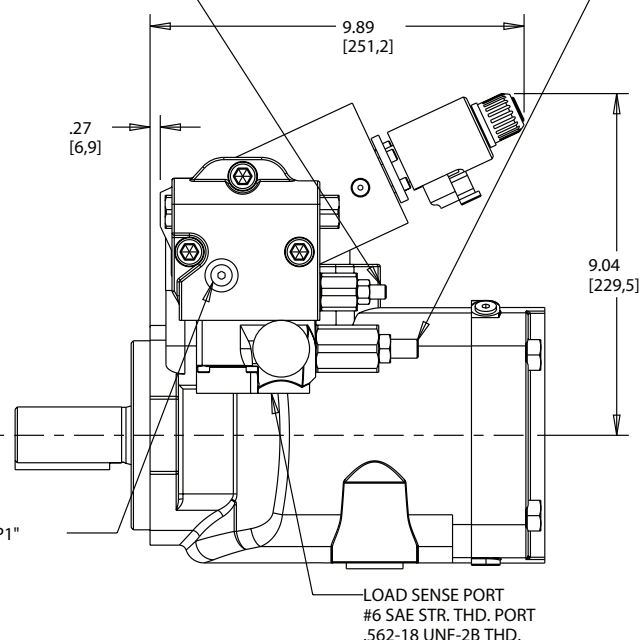


REMOTE PILOT PORT "RP1"
 #4 SAE STR. THD. PORT
 .438-20 UNF-2B THD.
 (SHOWN PLUGGED)



LIFTING HOLE
 .375-16 UNF-2B THD.

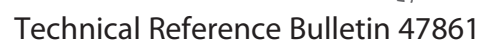
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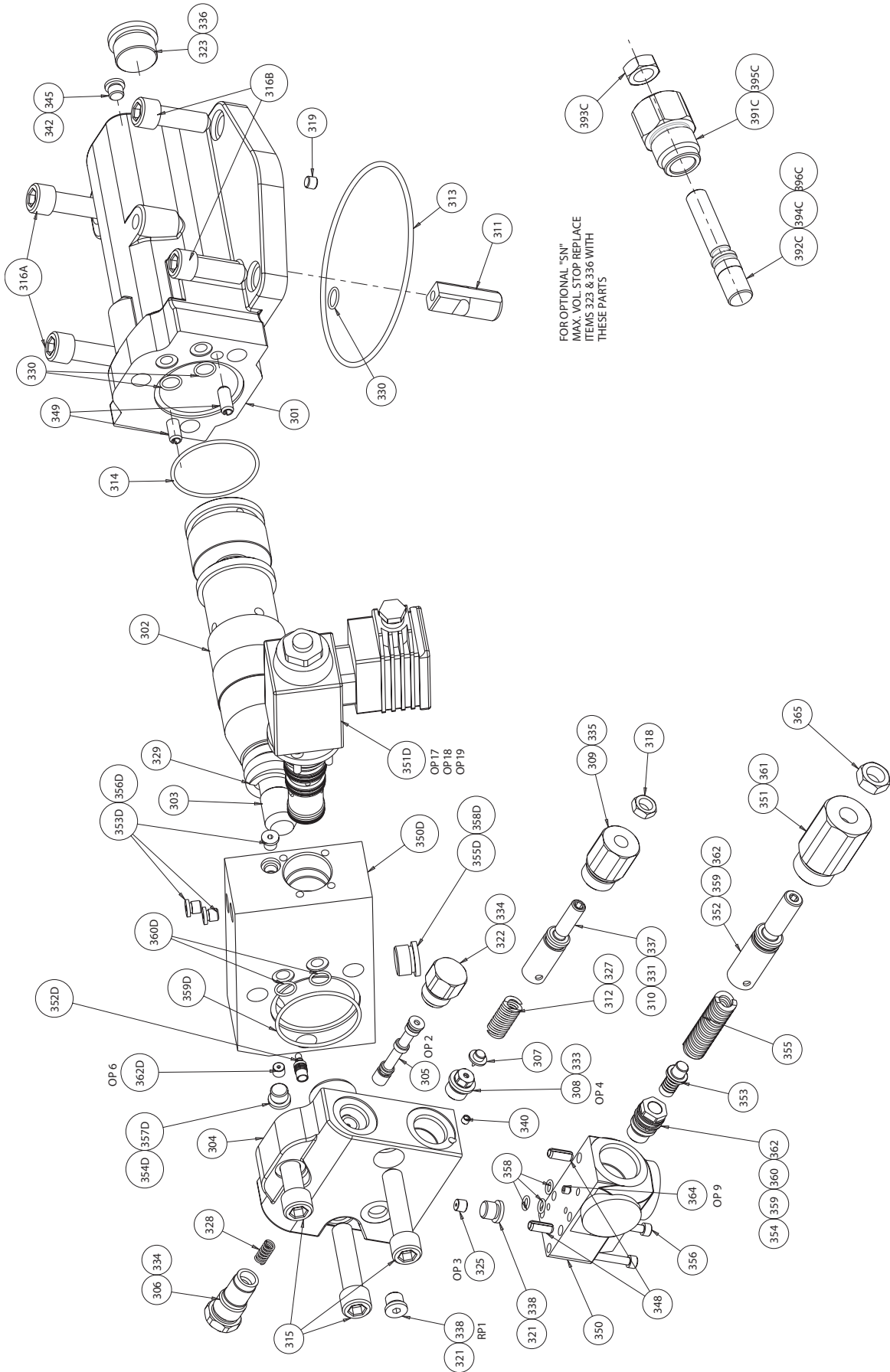
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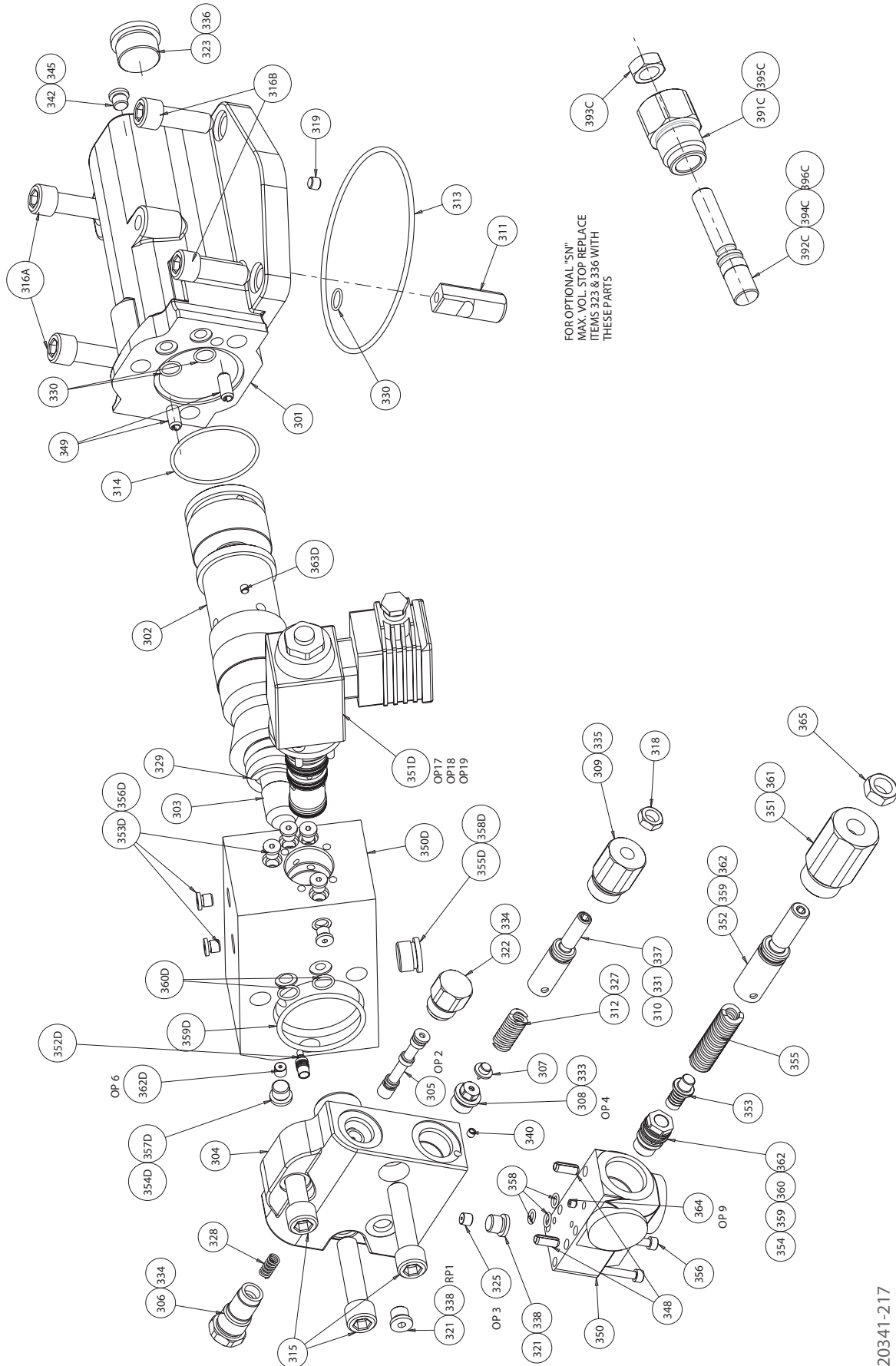
For pump dimensions and specifications see Bulletin 47019



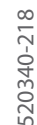


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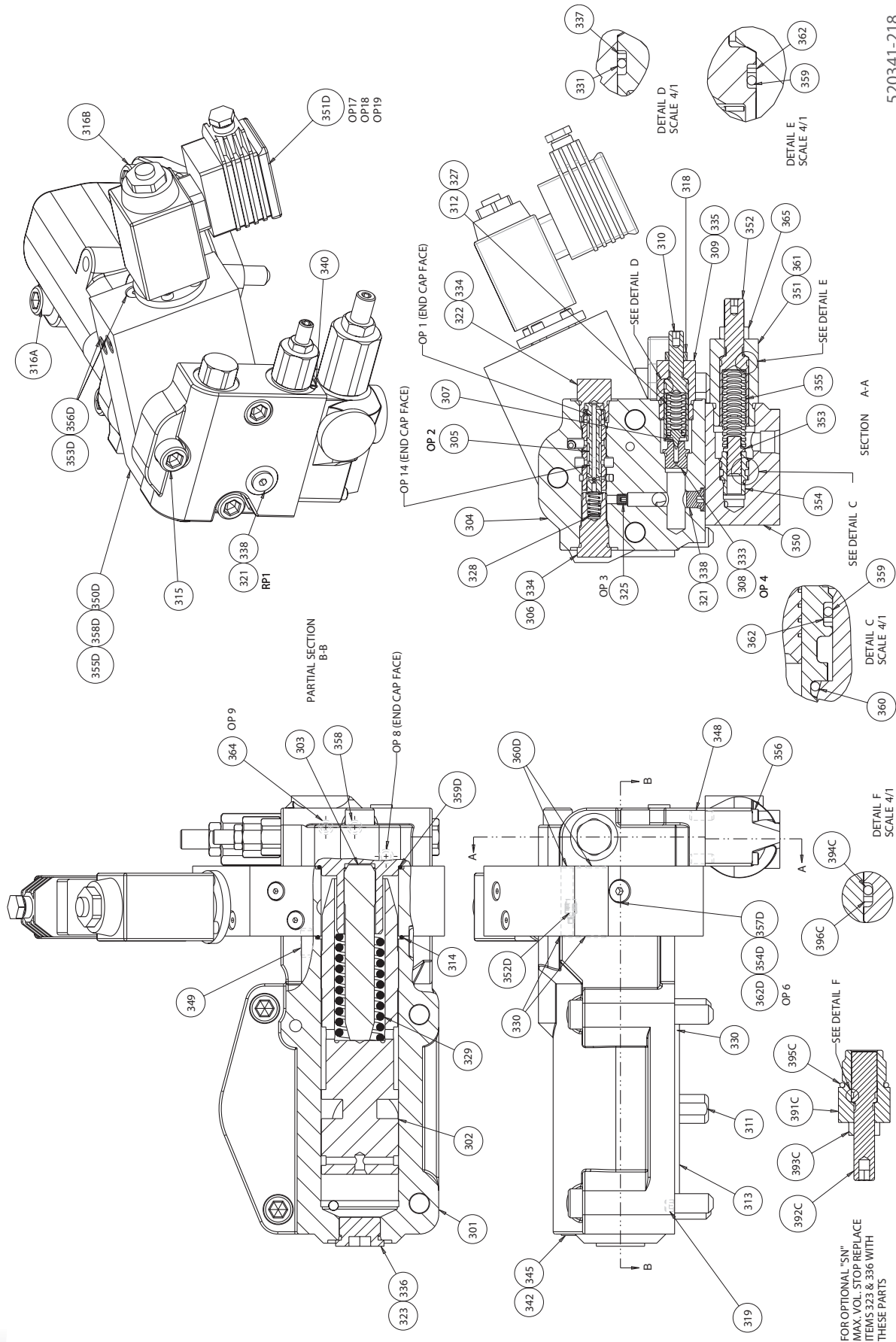


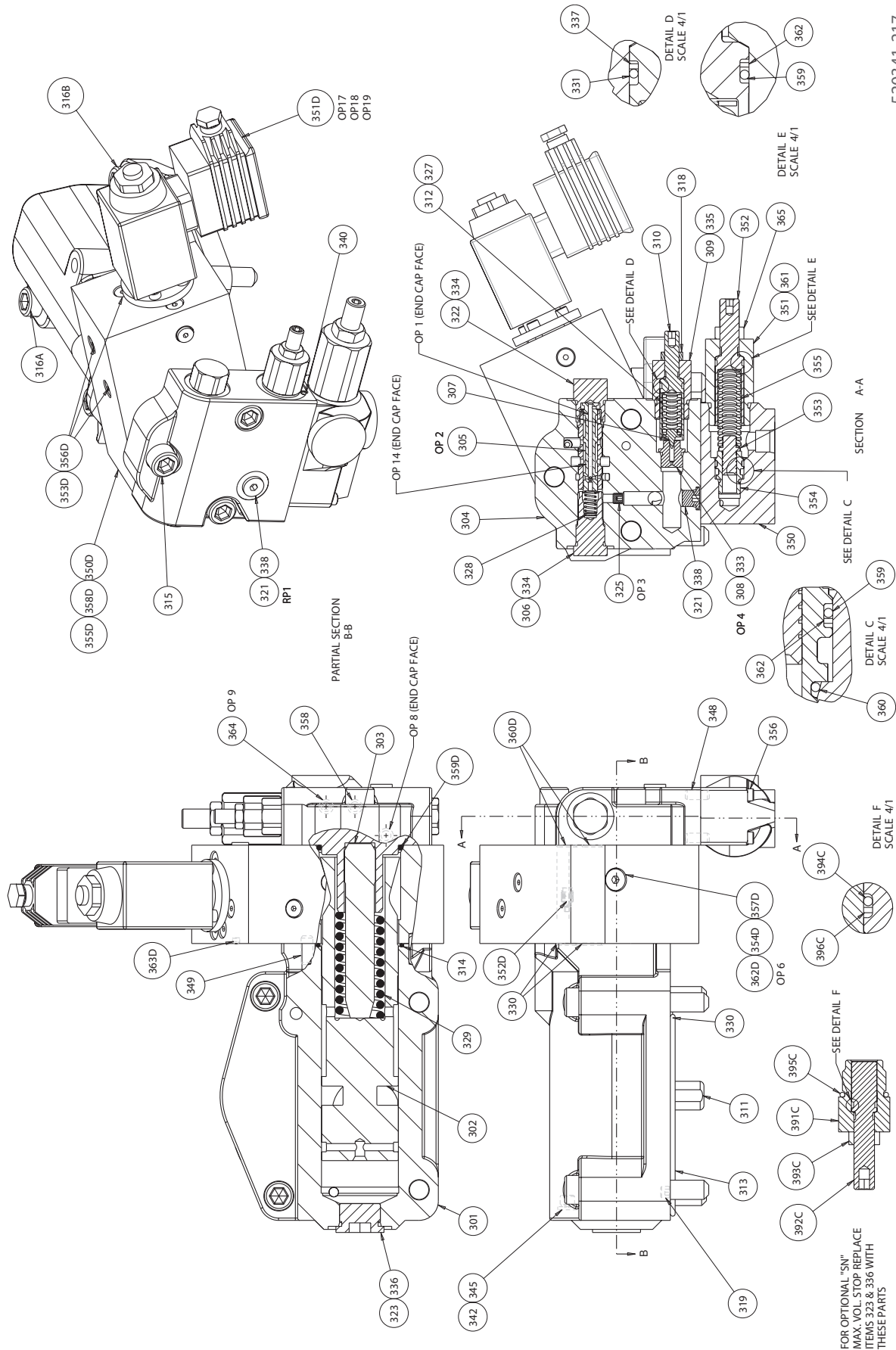
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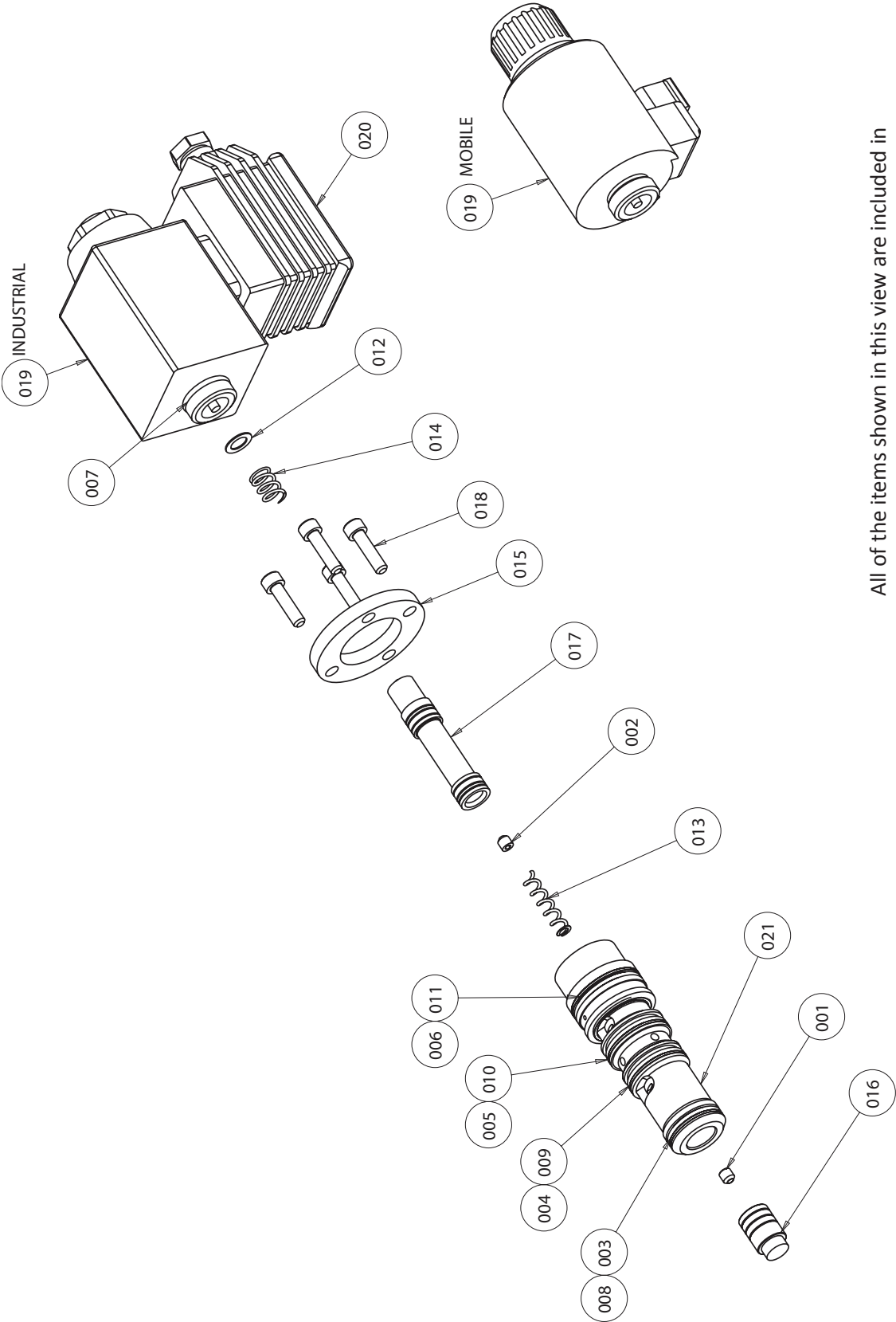


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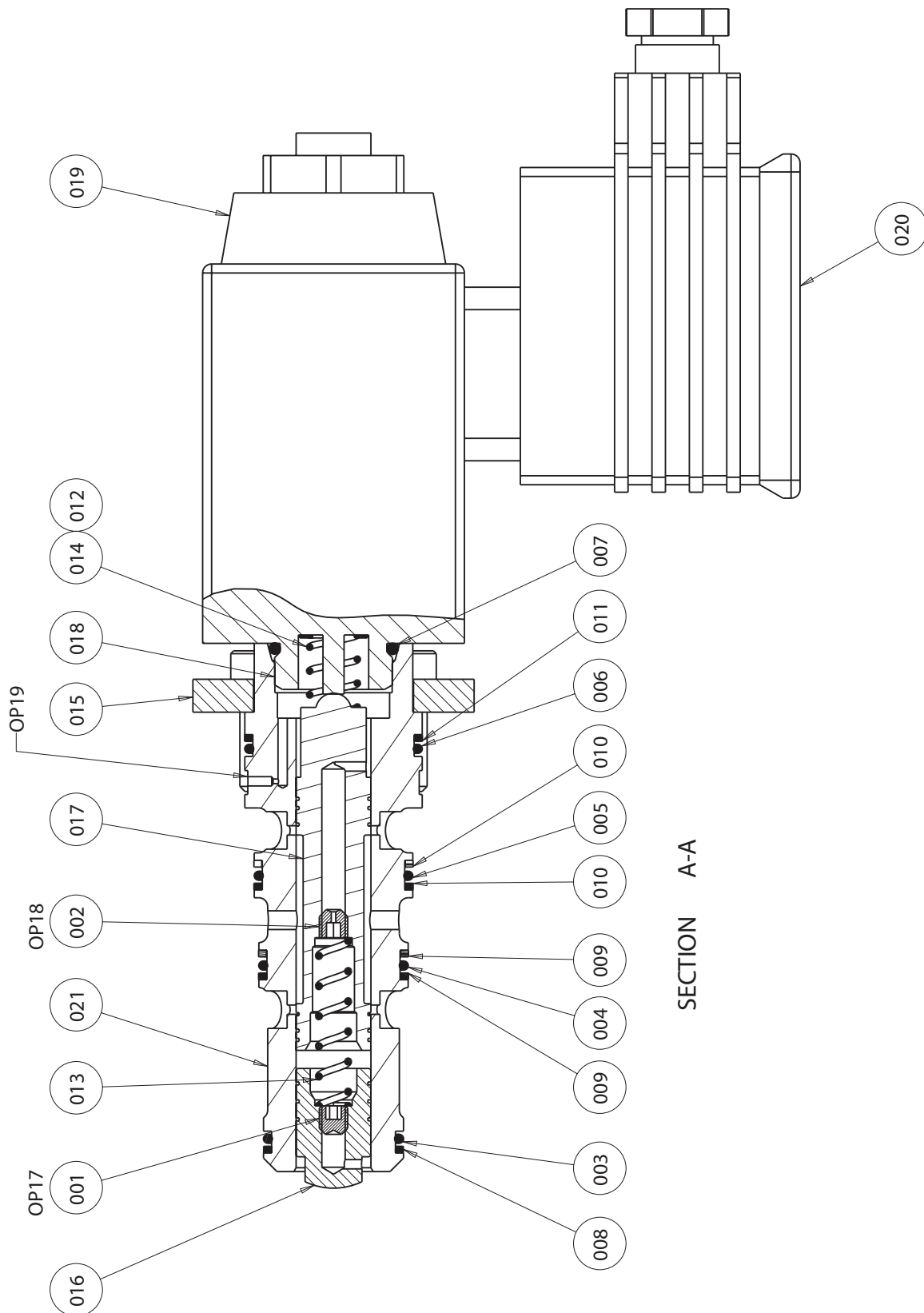


520341-217



All of the items shown in this view are included in Item 351D which is part of the proportional control valve service kit.

408673-017



408673-017

Item Number	AS 568A Number	Shore A Durometer Viton
313	-250	70
314	-137	Teflon
330	-013	90
331	-014	90
333	-906	90
334	-908	90
335	-910	90
336	-912	90
337	-014	*
338	-904	90
358♦	-010	90
359♦	-016	90

Item Number	AS 568A Number	Shore A Durometer Viton
360♦	-906	90
361♦	-912	90
362♦	-016	*
356D	-902	90
357D	-904	90
358D	-908	90
359D	-136 (P-E) -226 (P-F)	70
360D	-013	90
394C	-014	90
395C	-912	90
396C	-014	*

Item Number	AS 568A Number	Shore A Durometer Viton
Control Valve Assembly		
003	-019	90
004	-020	90
005	-021	90
006	-023	90
007	-908	90
008	-019	*
009	-020	*
010	-021	*
011	-023	*

* Teflon Backup Ring

♦ Load Sense Only

Screw and Plug Torques

Item Number	Description	Head Size / Type	Tightening Torque
306	PLUG, END	7/8" external	50 ft-lb (68 Nm)
308	SEAT	7/16" external	200 in-lb (23 Nm)
309	BONNET, PRESSURE COMPENSATOR	1" external	80 ft-lb (108 Nm)
315	SCREW, SHC, 1/2-13 UNC	3/8" internal	100 ft-lb (136 Nm)
316A	SCREW, SHC, 1/2-13 UNC 3.25 Long	3/8" internal	100 ft-lb (136 Nm)
316B	SCREW, SHC, 1/2-13 UNC 1.25 Long	3/8" internal	100 ft-lb (136 Nm)
319	PLUG, .062 NPT	5/32" internal	48 in-lb (5 Nm)
321	PLUG, #4 HP	3/16" internal	120 in-lb (14 Nm)
322	PLUG, END, COMPENSATOR VALVE	7/8" external	50 ft-lb (68 Nm)
323	PLUG, #12 HP	9/16" internal	85 ft-lb (115 Nm)
325	ORIFICE, .062 NPTF-.040 DIA	5/32" internal	48 in-lb (5 Nm)
342	PLUG, #3 HP	1/8" internal	45 in-lb (5 Nm)
351	BONNET, LOAD SENSE	1 1/4" external	85 ft-lb (115 Nm)
354	SEAT, LOAD SENSE	5/8" external	70 +10 in-lb (8 +1,13 Nm)
356	SCREW, SHC #10-24 1.50 Long.	5/32" internal	57 in-lb (6 Nm)
364	SCREW, CPS #10-24 0.19 Long	5/32" internal	20 in-lb (2 Nm)
391C	BONNET, MAX. VOL. STOP	1 1/4" external	85 ft-lb (115 Nm)
351D	SCREW, SHC #10-24 0.50 Long	5/32" internal *	57 in-lb (6 Nm)
	ASM, SOLENOID CONTROL	5/8" external **	15 ft-lb (20 Nm)
353D	PLUG, #2 HP	1/8" internal	45 in-lb (5 Nm)
354D	PLUG, #4 HP	3/16" internal	120 in-lb (14 Nm)
355D	PLUG, #8 HP	5/16" internal	45 ft-lb (61 Nm)
362D	ORIFICE, .062 NPTF-.062 (PVG-100)	5/32" internal	48 in-lb (5 Nm)
	ORIFICE, .062 NPTF-.089 (PVG-130)		

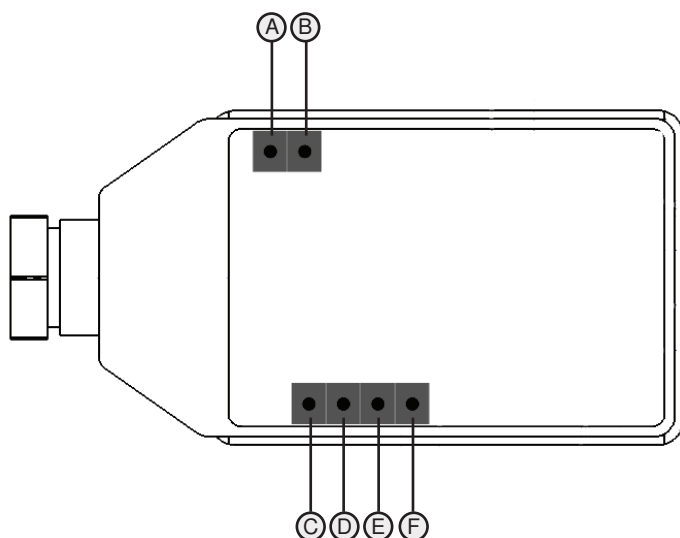
Control Valve Exploded View

* Item 18

** Item 19

Description	Kit No.	Series	Items Included (quantity is 1 unless noted)
Control Piston and Spring			
N.O. P-E, P-E/F	L723987-006	F1	302, 303, 329
N.C. P-F, P-F/F	L723987-007		
Pressure Compensator Relief			
P-E, P-F, P-E/F, P-F/F	L723987-101	F1	307, 308, 312(4), 327, 333
Load Sense / Pressure Compensator Relief			
P-E/F, P-F/F	L723987-108	F1	307, 308, 312(4), 327, 333, 353, 354, 355, 359(2), 360, 362(2)
Pressure Compensator Spool			
P-E, P-F, P-E/F, P-F/F	L723987-202	F1	305, 328
Pressure Compensator Adjustor			
P-E, P-F, P-E/F, P-F/F	L300574HS07	F1	309, 310, 318, 331, 335, 337
Load Sense Adjustor			
P-E/F, P-F/F	L318966-002	F1	351, 352, 359, 361, 362, 365
Adjustable Maximum Volume Stop			
P-E, P-F, P-E/F, P-F/F	L516319-001	F1	391C, 392C, 393C, 394C, 395C, 396C
Control Seal Kit			
P-E, P-F	K520340-001	F1	313, 314, 330(3), 331, 333, 334(2), 335, 336, 337, 338(2), 345, 394C, 395C, 396C, 356D(3), 357D, 358D, 359D, 360D(2), 003, 004, 005, 006, 007, 008, 009, 010, 011
P-E/F, P-F/F	K520341-001	F1	313, 314, 330(3), 331, 333, 334(2), 335, 336, 337, 338(2), 345, 358(2), 359(2), 360, 361, 362(2), 394C, 395C, 396C, 356D(3), 357D, 358D, 359D, 360D(2), 003, 004, 005, 006, 007, 008, 009, 010, 011
End Cap Assembly			
P-E, P-F	L520340-300	F1	303, 304, 305, 306, 307, 308, 309, 310, 312(4), 315(3), 318, 321(2), 322, 325, 327, 328, 331, 333, 334(2), 335, 337, 338(2), 359D, 360D(2)
P-E/F, P-F/F	L520341-300	F1	303, 304, 305, 306, 307, 308, 309, 310, 312(4), 315(3), 318, 321(2), 322, 325, 327, 328, 331, 333, 334(2), 335, 337, 338(2), 350, 352, 352, 353, 354, 355, 356(4), 358(3), 359(2), 360, 361, 362(2), 364, 365, 359D, 360D(2)
Proportional Control Valve Assembly			
P-E, P-E/F - 24V Industrial	L520340-304	F1	314, 330(2), 350D, 351D, 352D, 353D(3*)(7**), 354D, 355D, 356D(3*)(7**), 357D, 358D, 359D, 360D(2), 362D * P-E, P-E/F Control Valve Assemblies ** P-F, P-F/F Control Valve Assemblies
P-E, P-E/F - 13V Mobile	L520340-305		
P-E, P-E/F - 27V Mobile	L520340-306		
P-F, P-F/F - 24V Industrial	L520341-304		
P-F, P-F/F - 13V Mobile	L520341-305		
P-F, P-F/F - 27V Mobile	L520341-306		
Proportional Amplifier			
P-E, P-F, P-E/F, P-F/F - 24V Industrial	407932-902	F1	020
P-E, P-F, P-E/F, P-F/F - 13V and 27V Mobile		F1	

Amplifier Connections-Industrial Coil Only

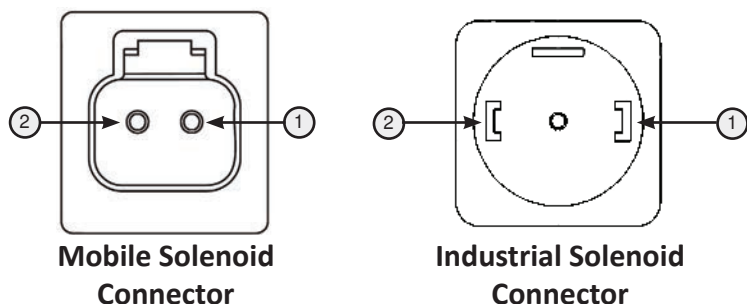


- A 0 Volt Supply
- B 24 Volt Supply
- C Signal 0 Volt
- D 3 to 8 Volt Command*
- E Unused
- F Unused

* For use with 4-20mA command source, install a 500Ω resistor between terminals C and D. Functional command range would be 6mA - 16mA (3 to 8 volt).

Signal 0V and Supply 0V are internally linked. If 0 Volt signals are linked outside of connector use only 0 Volt supply terminal.

Solenoid Connections



- 1 + Signal
- 2 0V Signal

Mating connector for Mobile Solenoid: Deutsch DT04-2P

Mating connector for Industrial Solenoid: Hirschmann GDM 209

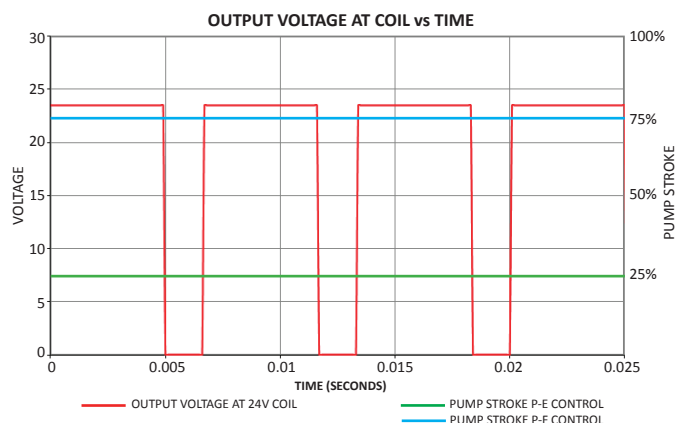
Specifications

	Industrial 24V	Mobile 24V	Mobile 12V
Supply Voltage	24 Volt DC +0.5V fused at 1.5 A	27 Volt DC fused at 1.5 A	13 Volt DC fused at 2.5 A
Control Signal (Amplifier Only)	3 to 8 VDC = 100% to 0% stroke	N/A	N/A
PWM* Switching Frequency	150 Hz	180 Hz	180 Hz
Maximum Continuous Current	1 A	1 A	2 A
Operating Temperature	-5°C to 70°C	-5°C to 70°C	-5°C to 70°C
Nominal Coil Resistance	24 Ω	28 Ω	7 Ω

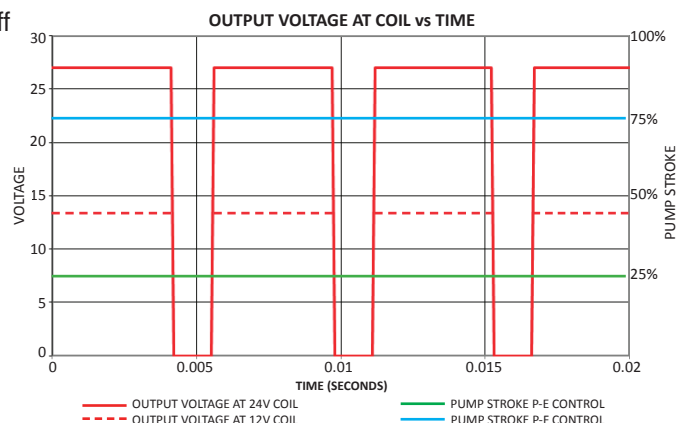
* Pulse Width Modulated

Industrial

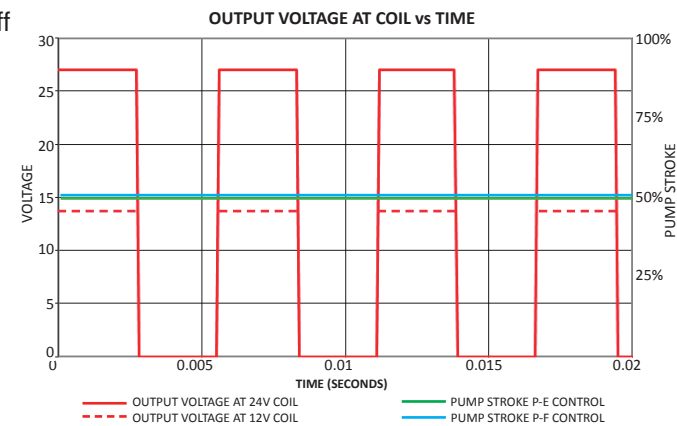
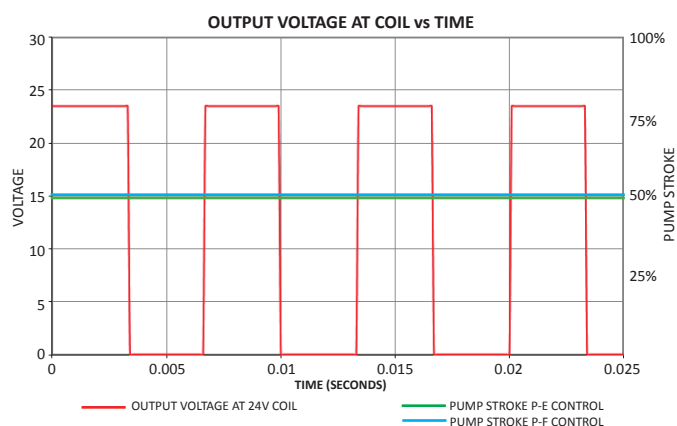
PWM:
75% On
25% Off



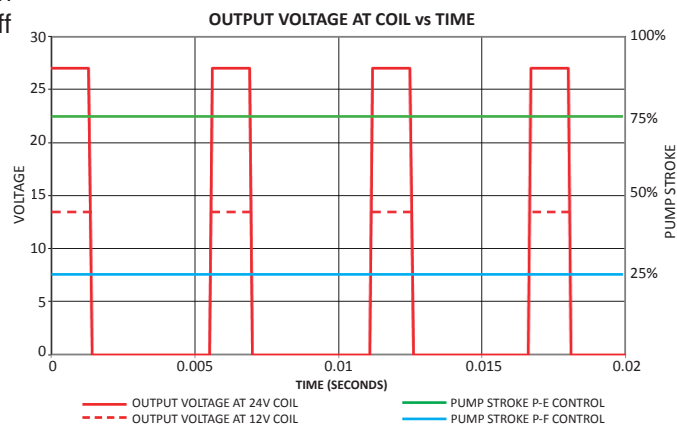
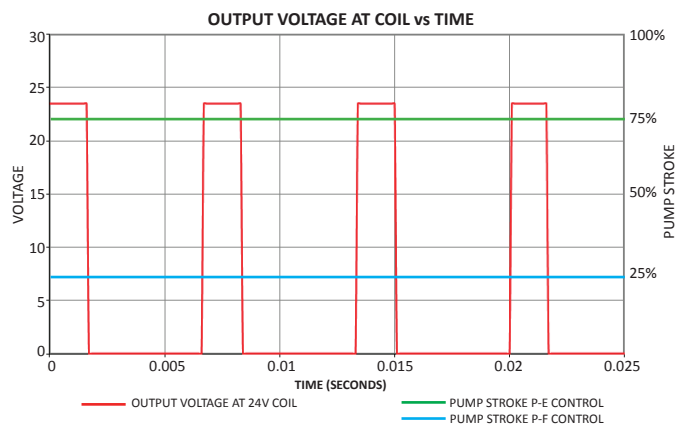
Mobile

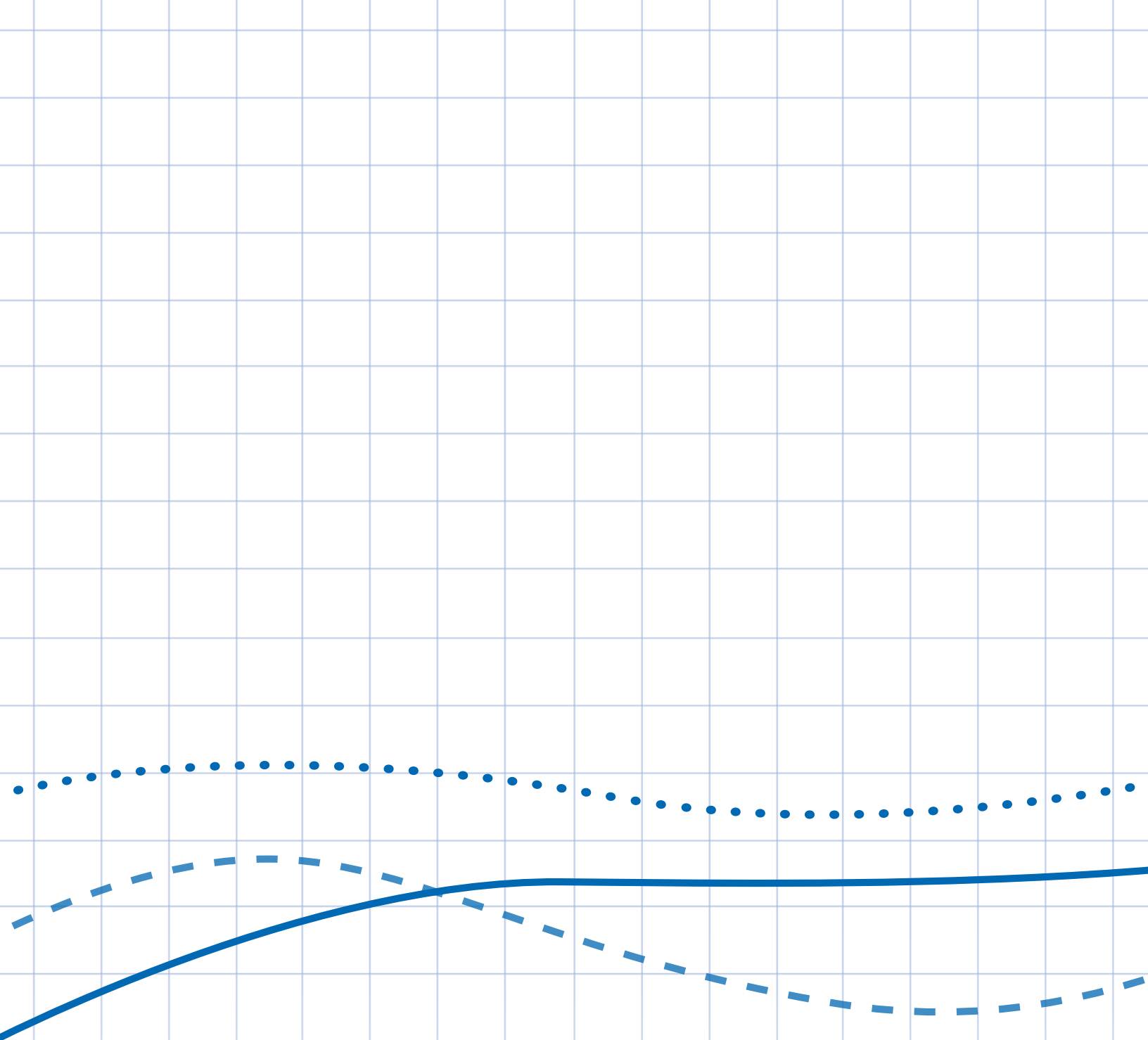


PWM:
50% On
50% Off



PWM:
25% On
75% Off





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