

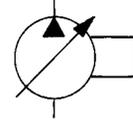


# PUMP, VARIABLE DELIVERY PVV-540 "B1"

ENGINEERING

1

## "A-\*\*\*" CONTROL



### Installation Drawing

### Force Amplifier Control

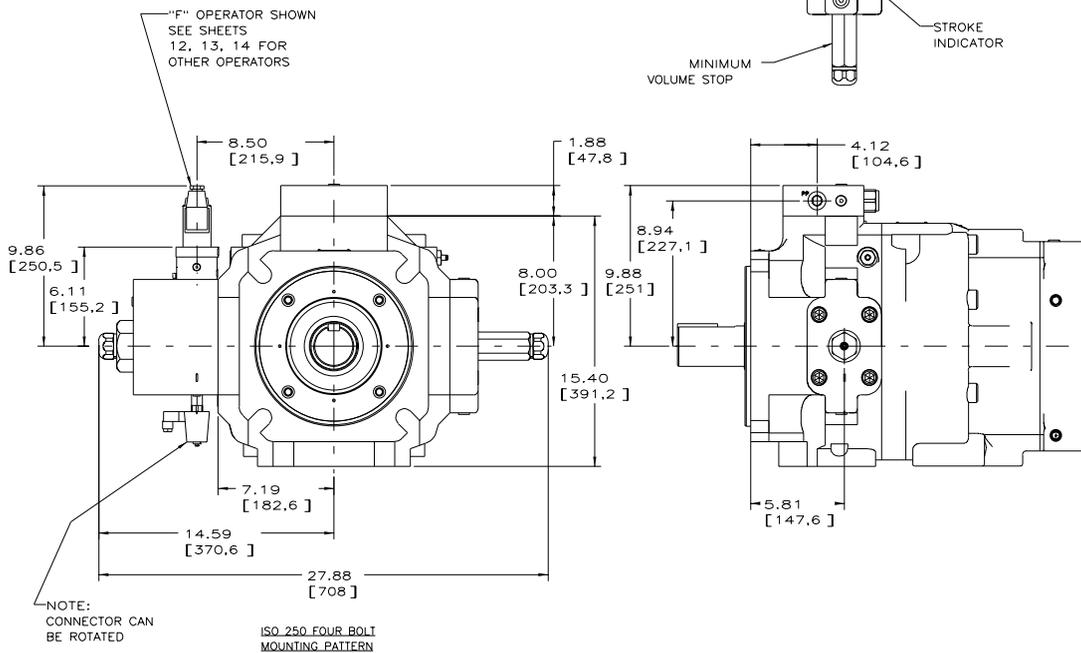
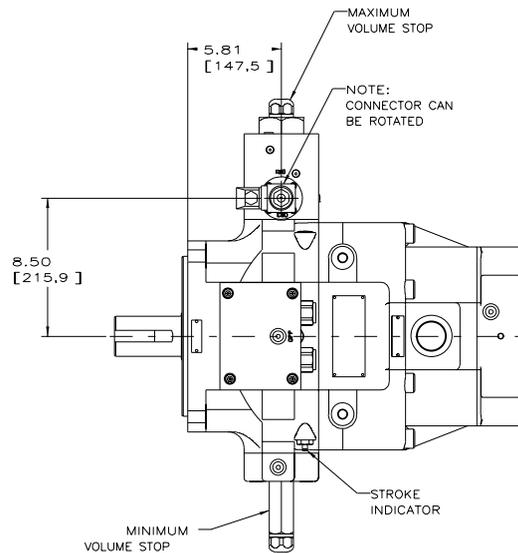
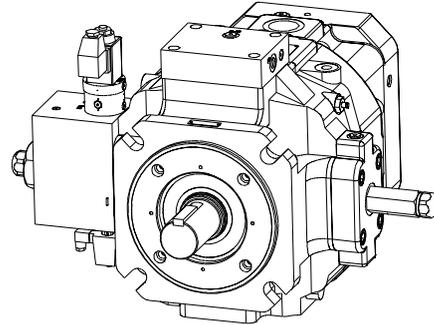
(A-FRH SHOWN)

#### PILOT PRESSURE REQUIREMENTS

PILOT PRESSURE CONNECTION OPTIONAL, BUT NOT REQUIRED  
(PORT "PP" = .375 BSP PORT or #6 SAE ADAPTER)

#### NOTES:

1. PUMPS DESIGNED FOR ONE-WAY SERVICE ARE DIMENSIONED AS SHOWN.
2. THESE UNITS ARE DESIGNED TO RUN CASE FULL OF FLUID AT ALL TIMES. FILL CASE BEFORE STARTING AND CONNECT DRAIN LINES ACCORDINGLY.
3. NUMERICAL DIMENSIONS ARE GIVEN IN INCHES/[MM].
4. FOR BASIC PUMP DIMENSIONS SEE:  
DS-47940A USA CONNECTIONS  
DS-M47940A METRIC CONNECTIONS
5. LH (CCW) VERSION IS SHOWN. FOR RH (CW) VERSION, THE CONTROL CAPS, VOLUME STOPS, AND STROKE INDICATOR WILL BE ON OPPOSITE SIDES ASSUMING THAT THE OUTLET IS ON TOP.



519256-007 sh. 1

Telephone: (414) 327-1700  
Fax: (414) 327-0532

OILGEAR  
2300 So. 51st. Street  
Milwaukee, WI USA 53219

Reissued: Jan., 2003  
DS-47428-A

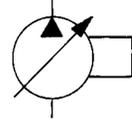


# PUMP, VARIABLE DELIVERY PVV-540 "B1"

ENGINEERING

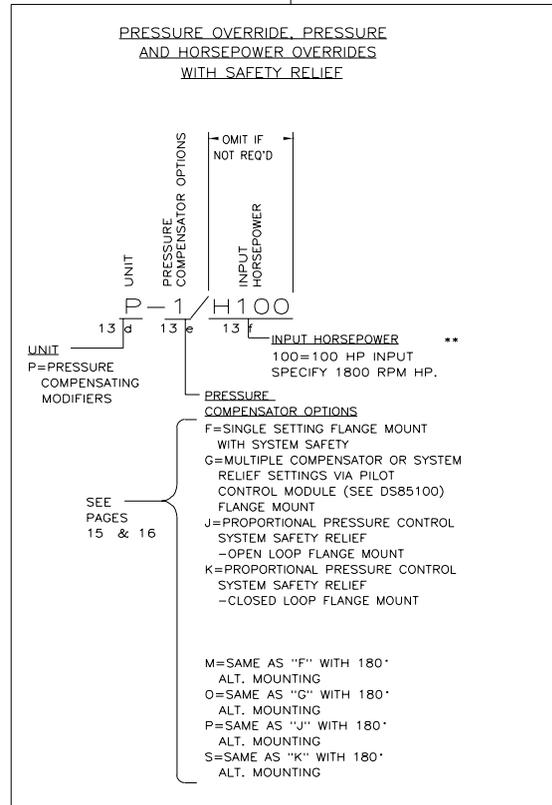
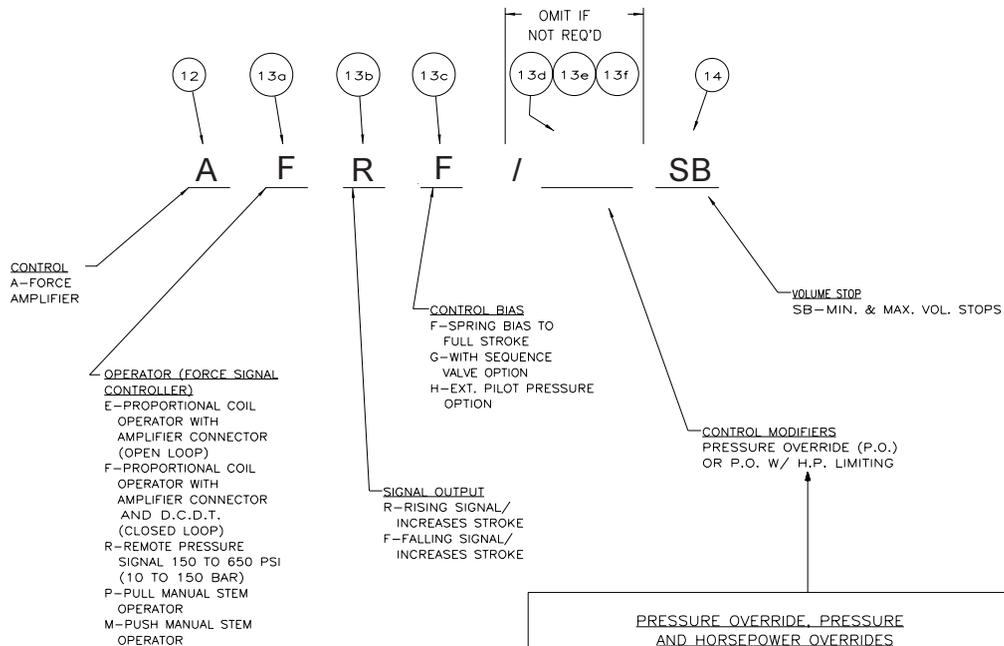
2

## PUMP & CONTROL



### Designation

### Pump & Control Designation Explanation

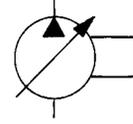


519256-007 sh. 2

D.C.D.T. MAY BE ORDERED IN ADDITION TO ANY FORCE SIGNAL CONTROLLER ON REQUEST.

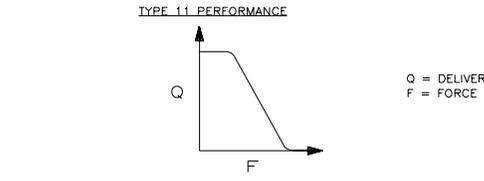
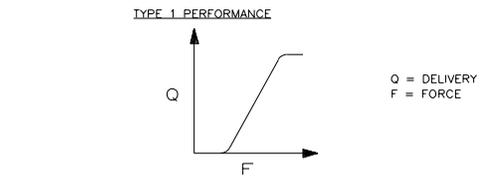
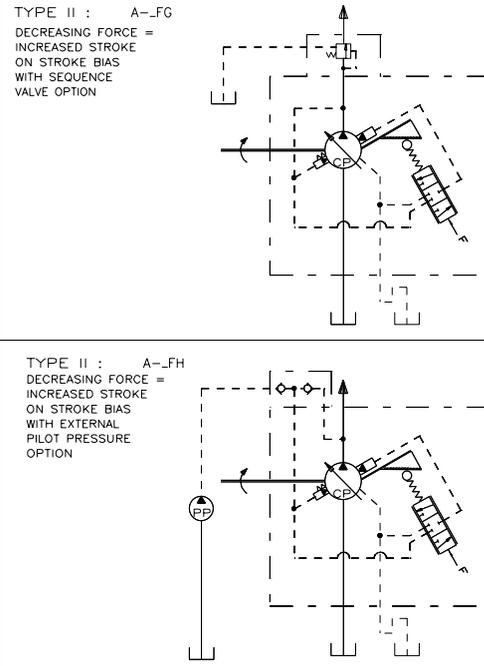
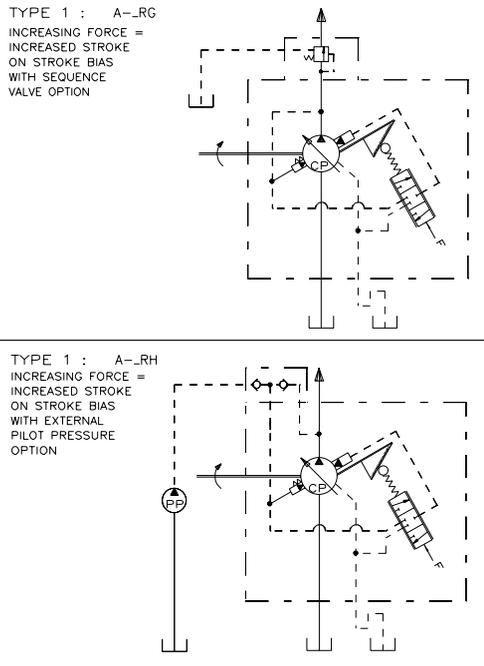
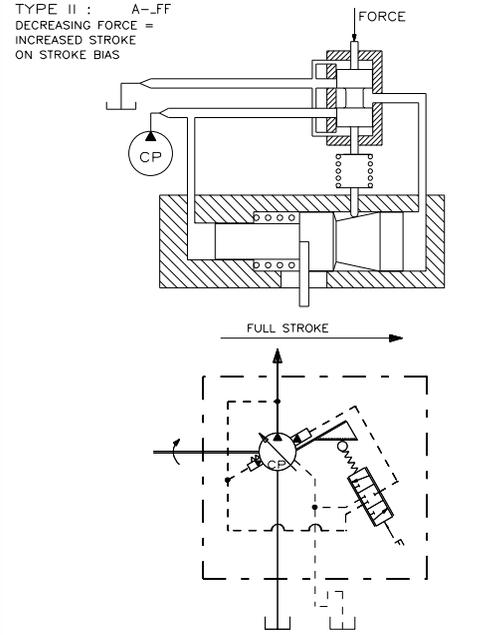
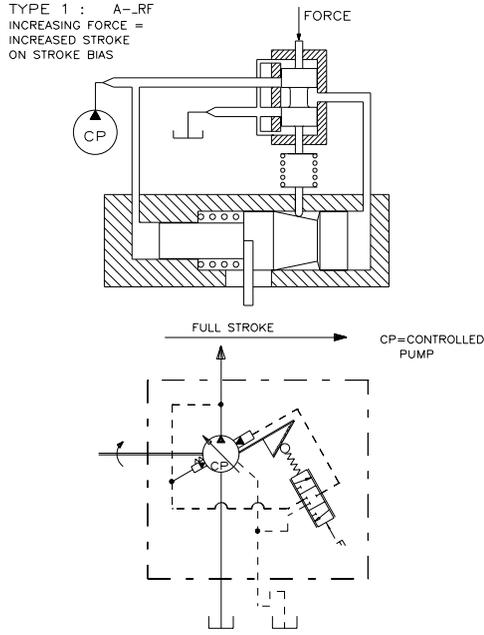
\*\* CONSULT ON AVAILABILITY

**"A-\*\*\*" CONTROL**



**Circuit Drawing**

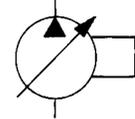
**Force Amplifier Controls**



519256-007 sh. 3

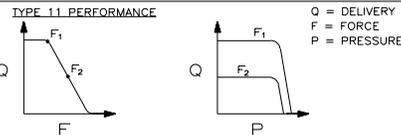
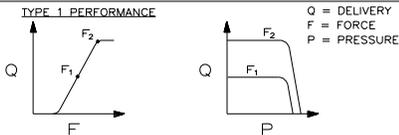
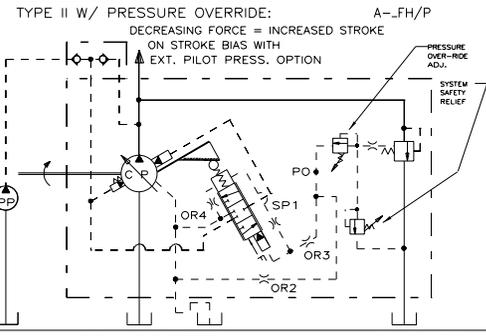
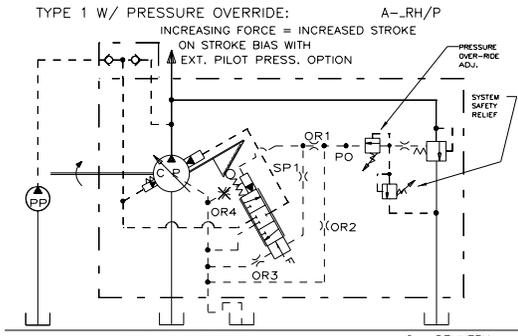
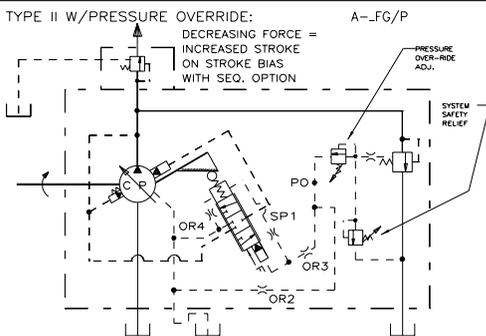
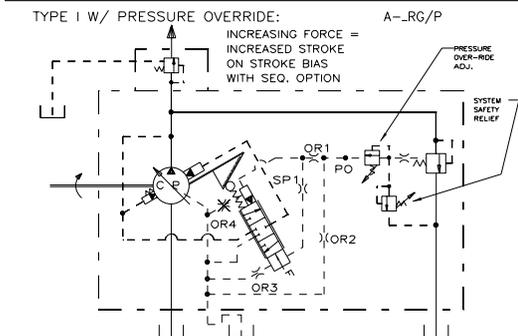
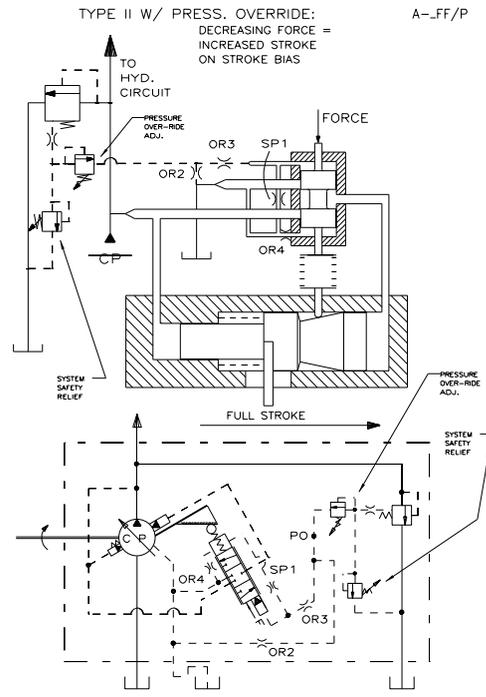
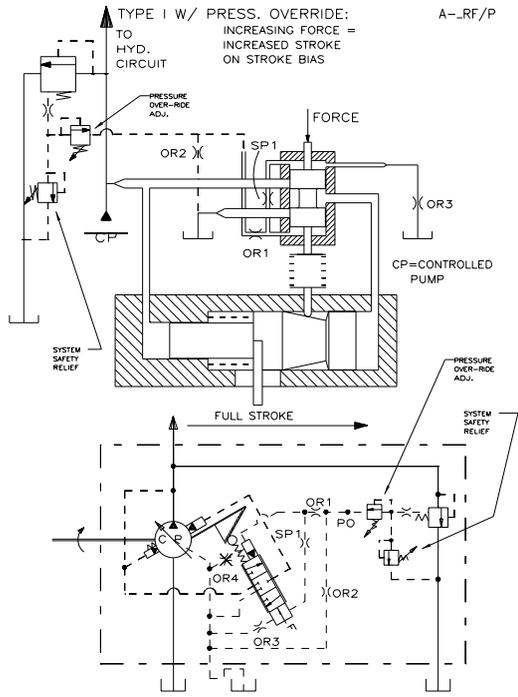
**"A-\*\*\*" CONTROL**

**W/Optional Pressure Override**



**Circuit Drawing**

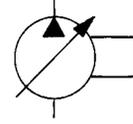
**Pressure Compensator Modifier & Options**



519256-007 sh. 4

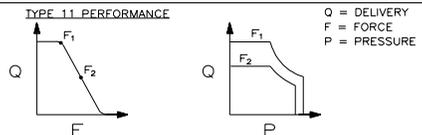
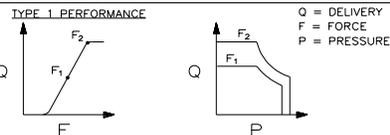
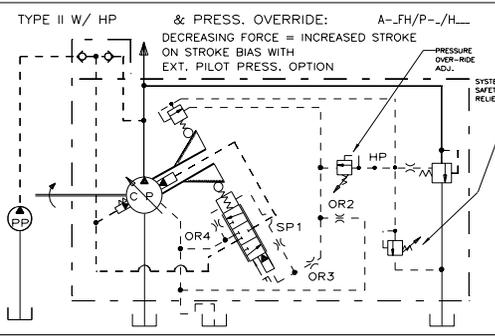
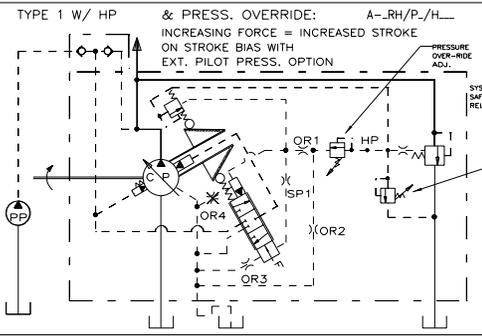
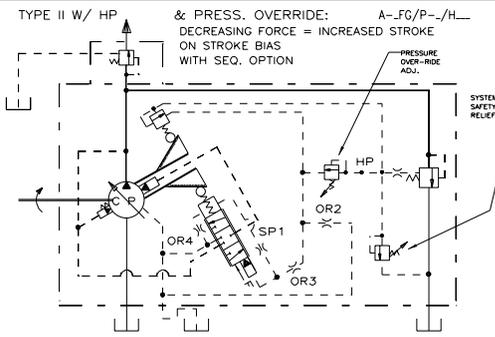
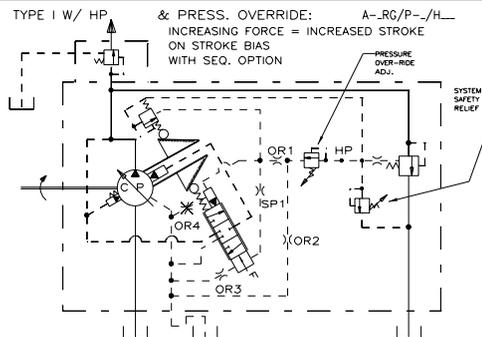
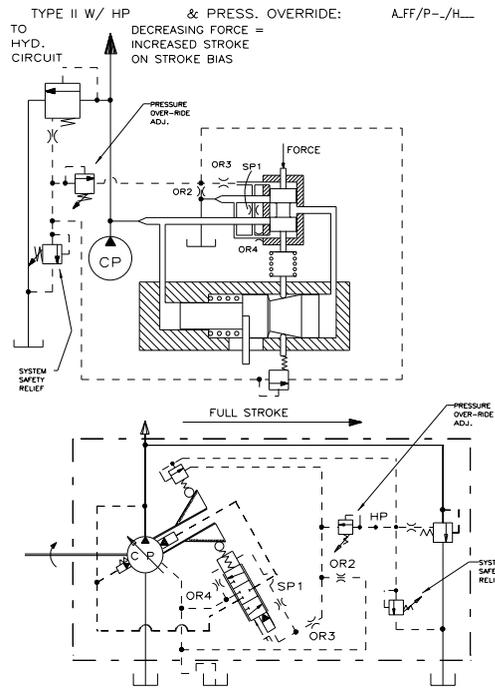
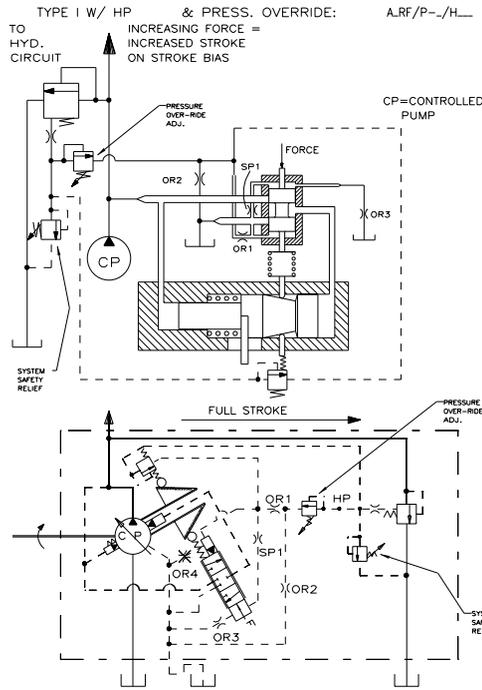
**"A-\*\*\*" CONTROL**

**W/Optional Pressure & H.P. Override**



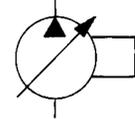
**Circuit Drawing**

**Pressure Compensator Modifier & Options**



519256-007 sh. 5

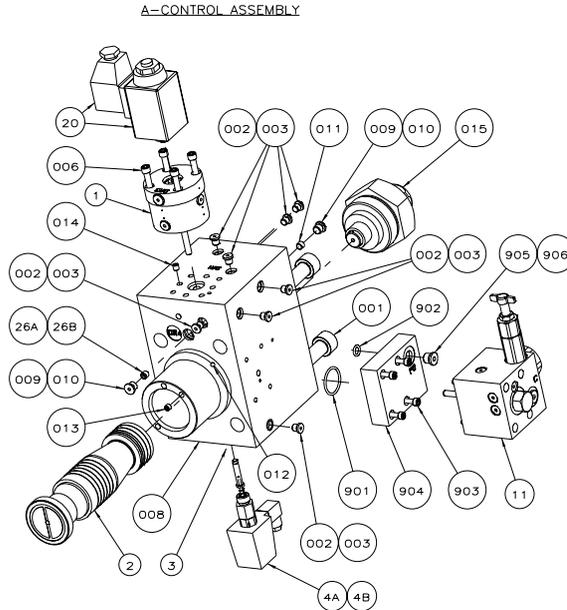
## "A-\*\*\*" CONTROL


**Parts Drawing**
**Force Amplifier Controls**

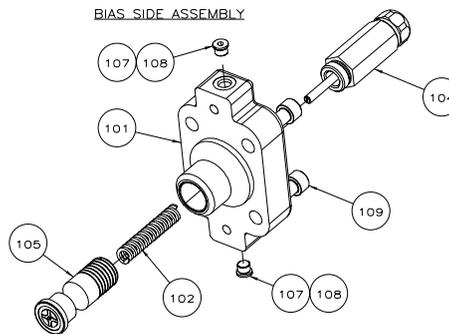
AMPLIFIER/CONTROL PISTON		
ITEM	QTY.	DESCRIPTION
1	1	AMPLIFIER BLOCK ASSEMBLY
2	1	CONTROL PISTON
3	1	O-RING
4A	1	PLUG, #6 SAE
4B	1	D.C.D.T.
11	1	HORSEPOWER LIMITER
20	REF.	OPERATOR ASSEMBLY
26A	1	PLUG, 1/16 NPT
26B	1	PLUG, ORIFICE
COVER PLATE		
901	1	O-RING
902	1	O-RING
903	4	SCREW, SHC, M5 X 16 MM
904	1	COVER PLATE
905	1	PLUG, #4 SAE
906	1	O-RING
COMMON PARTS		
001	4	SCREW, SHC M16 X 140 MM
002	9	PLUG, #2 SAE
003	9	O-RING
006	4	SCREW, SHC, M6 X 50 MM
008	1	CAP, A-CONTROL
009	2	PLUG, #3 SAE
010	2	O-RING
011	1	PLUG, 1/16 NPT
012	1	SCREW, SET, #10-32 CUP/NYLOK
013	1	SCREW, SET, .250-20 CUP/NYLOK
014	1	PLUG, ORIFICE
015	1	VOLUME STOP ASSEMBLY

LH VERSION IS SHOWN.  
RH VERSION IS SIMILAR.

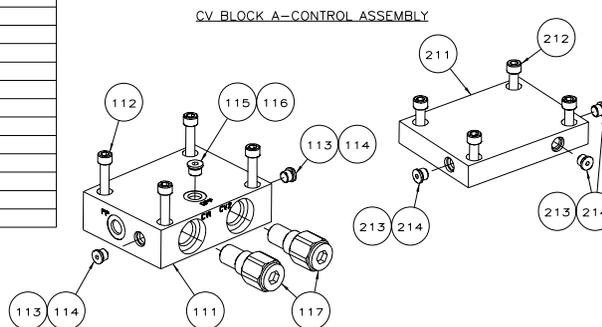
NOTE: TO ORDER SPARE PARTS, THE COMPLETE  
PUMP MODEL CODE MUST BE KNOWN.



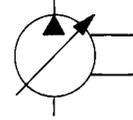
ITEM	QTY.	DESCRIPTION
101	1	CAP, BIAS CONTROL
102	1	SPRING
104	1	VOLUME STOP ASSEMBLY
105	1	BIAS PISTON ASSEMBLY
107	2	PLUG, #6 SAE
108	2	O-RING
109	4	SCREW, SHC, M16 X 55 MM



ITEM	QTY.	DESCRIPTION
111	1	CV BLOCK, A-CONTROL
112	4	SCREW, SHC, M10 X 45 MM
113	2	PLUG, #5 SAE
114	2	O-RING
115	1	PLUG, #6 SAE
116	1	O-RING
117	2	CHECK VALVE, HSC-803
211	1	COVER, A-CONTROL
212	4	SCREW, SHC, M10 X 25 MM
213	3	PLUG, #5 SAE
214	3	O-RING

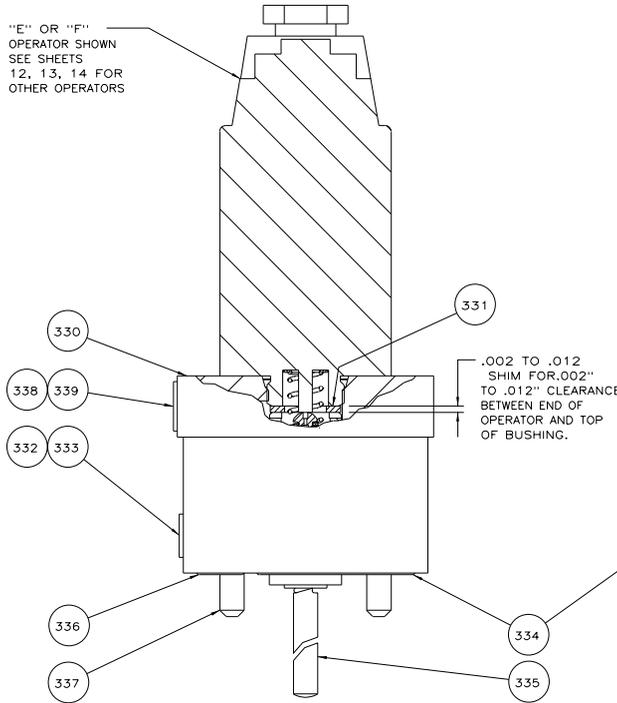


519256-007 sh. 6



**Parts Drawing**

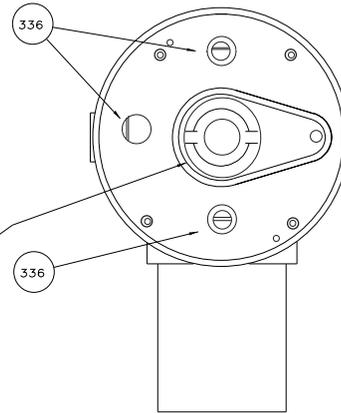
**Force Amplifier Control Block Assembly**



ITEM	QTY.	PART NAME
330	1	AMPLIFIER VALVE ASSEMBLY
331	*	STOP, SHIM/SPOOL
332	3	#2 HP PLUG
333	3	O-RING, FOR #2 HP
334	1	O-RING
335	1	PIN, PICK-UP A-CONTROL
336	3	O-RING
337	4	SCREW, SHC, M6 X 50 MM
338	1	#3 HP PLUG
339	1	O-RING, FOR #3 HP

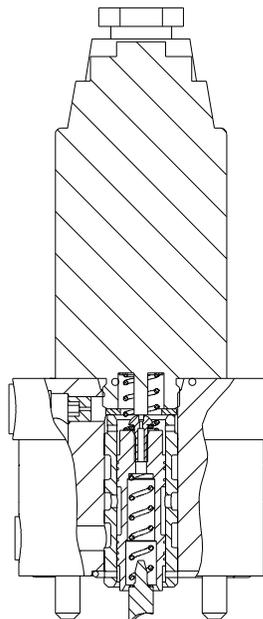
\* AS REQUIRED

\*\* TO ORDER AMPLIFIER BLOCK ASSEMBLY: THE COMPLETE CONTROL MODEL CODE MUST BE KNOWN.



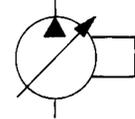
BOTTOM VIEW

**SERVICE NOTES FOR REPLACEMENT  
OF AMPLIFIER BLOCK ASSEMBLY**



519256-007 sh. 7

**"E" OPEN-LOOP OPERATOR**

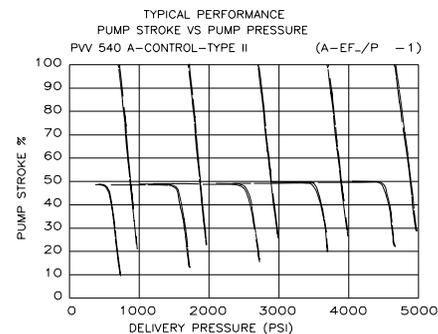
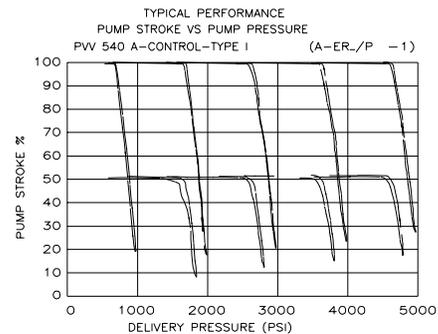
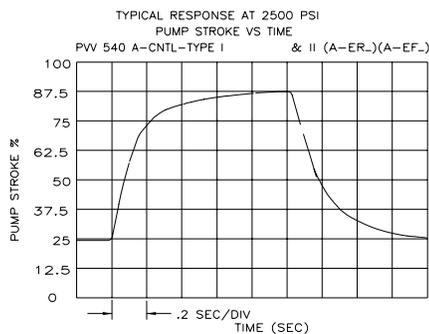
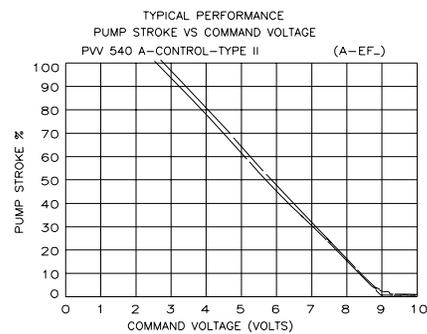
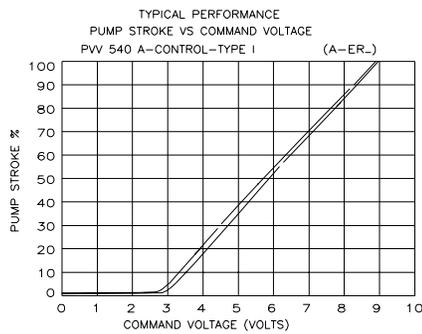
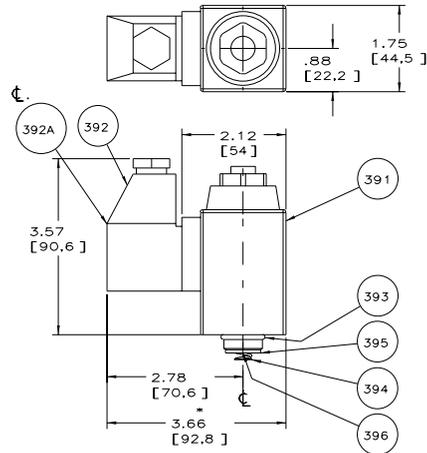


**Data Sheet**

**Open Loop Operator Schematic & Performance Curves**

ITEM	QTY.	PART NAME
391	1	COIL ASSEMBLY
392	1	CONNECTOR AMPLIFIER
392A	1	CONNECTOR
393	1	O-RING
394	1	SPRING
395	1	SHIM/SPOOL STOP
396	1	SHIM, SPRING

COIL ASSEMBLY WITH  
CONNECTOR AMPLIFIER  
• NOTE: RELATIVE LOCATION  
OF CONNECTOR AMP MAY  
BE ROTATED 360° /



519256-007 sh. 8

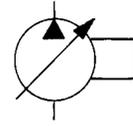


**PUMP, VARIABLE DELIVERY  
PVV-540 "B1"**

**ENGINEERING**

**9**

**"E" OPEN-LOOP OPERATOR**

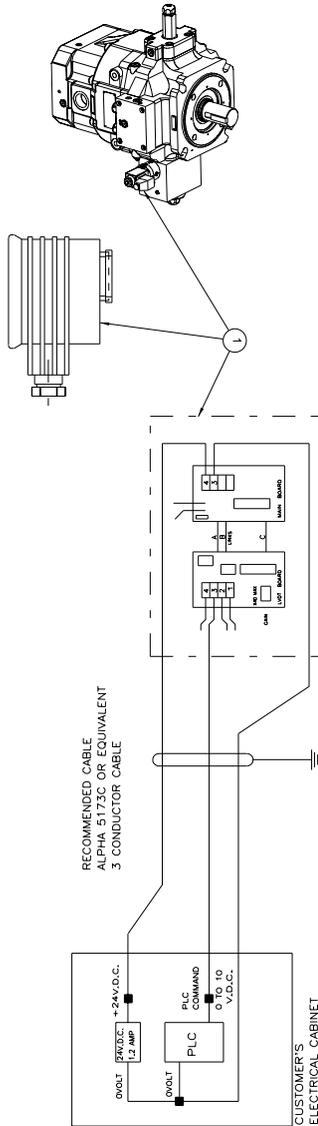


Data Sheet

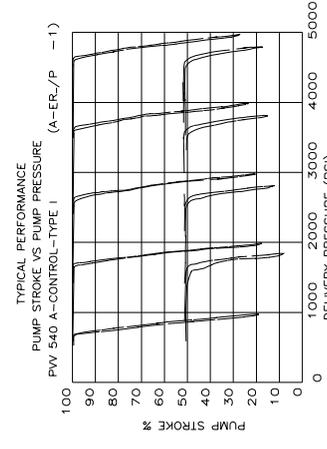
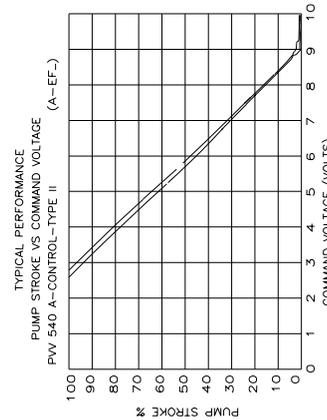
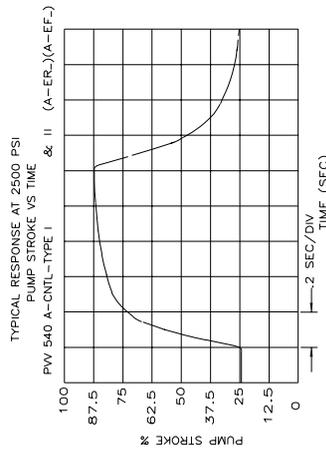
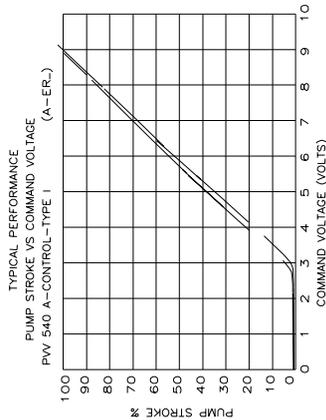
Open Loop Operator Schematic & Performance Curves

519256-007 sh. 9

**OPEN LOOP SCHEMATIC "E" OPERATOR**



NOTE:  
REMOTE CONNECTOR AMPLIFIER  
OR RACK MOUNTED AMPLIFIER,  
SEE HOW TO ORDER SHEET.



Telephone: (414) 327-1700  
Fax: (414) 327-0532

**OILGEAR**  
2300 So. 51st. Street  
Milwaukee, WI USA 53219

Reissued: Jan., 2003  
**DS-47428-A**

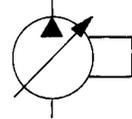


# PUMP, VARIABLE DELIVERY PVV-540 "B1"

ENGINEERING

10

## "F" CLOSED-LOOP OPERATOR



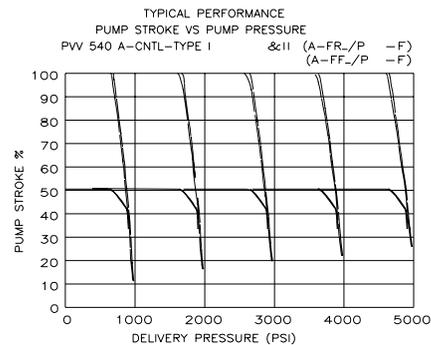
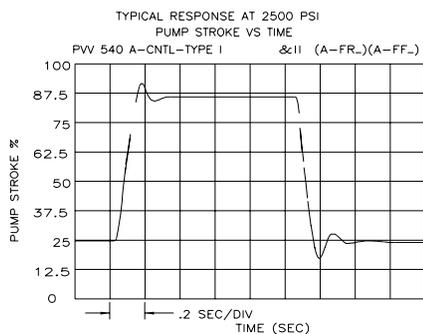
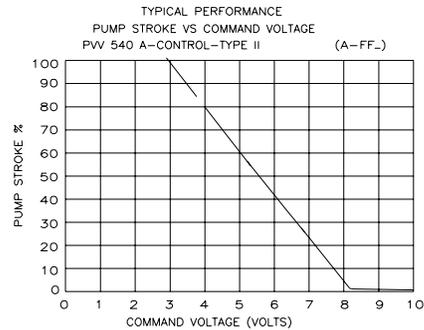
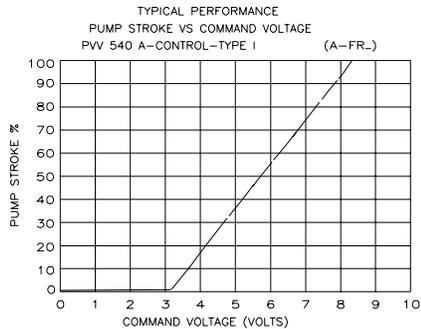
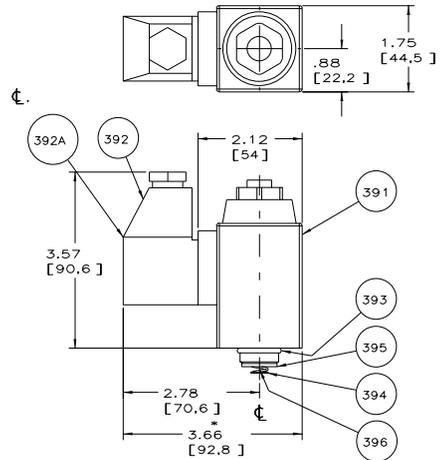
Data Sheet

### Closed Loop Operator Schematic & Performance Curves

ITEM	QTY	PART NAME
391	1	COIL ASSEMBLY
392	1	CONNECTOR AMPLIFIER
392A	1	CONNECTOR
393	1	O-RING
394	1	SPRING
395	1	SHIM/SPOOL STOP
396	1	SHIM, SPRING

COIL ASSEMBLY WITH  
CONNECTOR AMPLIFIER

• NOTE: RELATIVE LOCATION  
OF CONNECTOR AMP MAY  
BE ROTATED 360°



519256-007 sh. 10

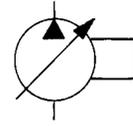


# PUMP, VARIABLE DELIVERY PVV-540 "B1"

## "F" CLOSED LOOP OPERATOR

ENGINEERING

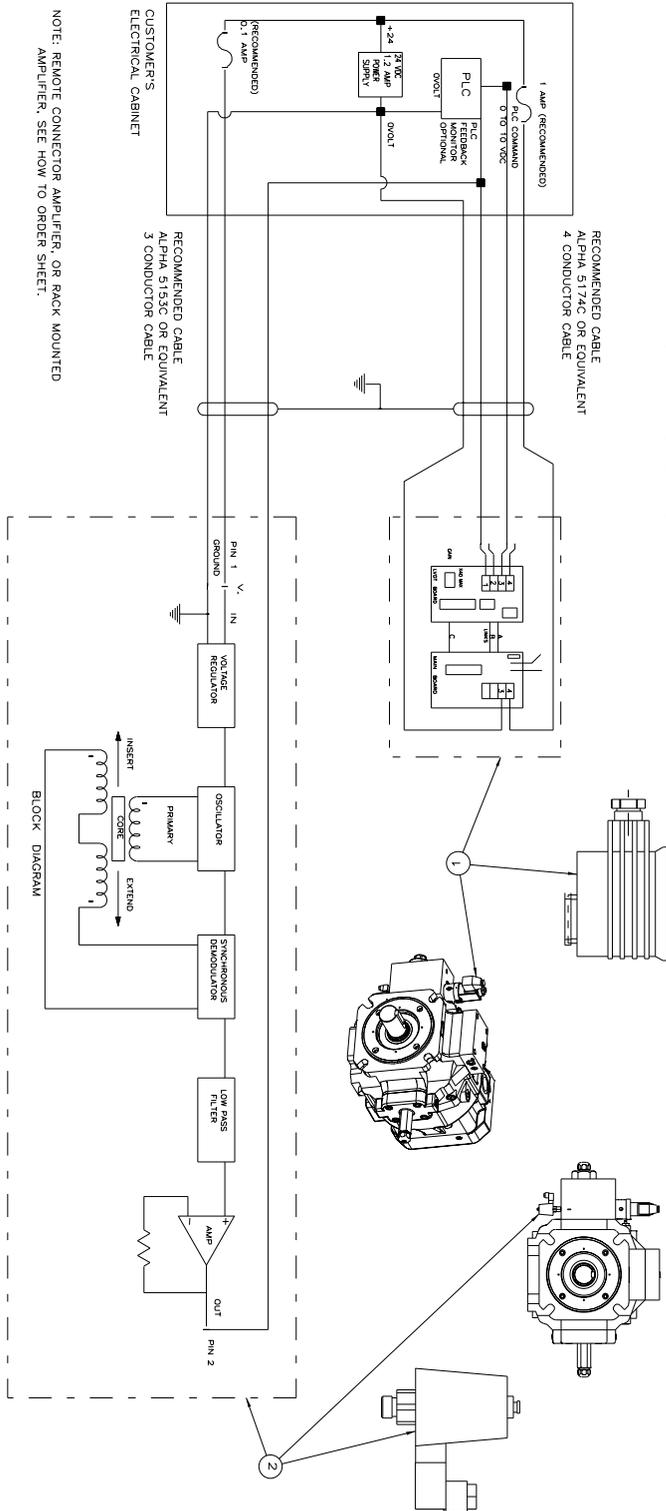
11



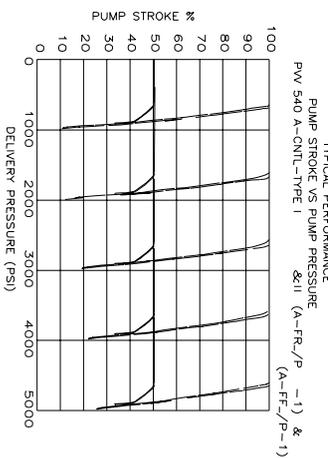
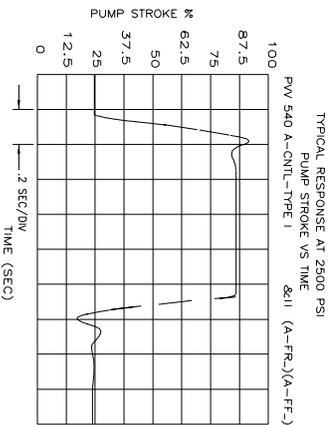
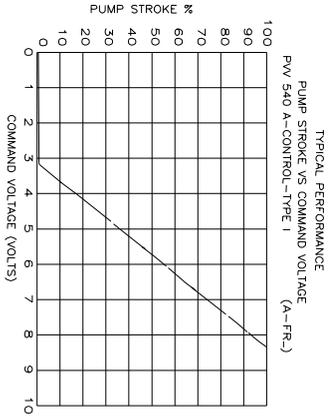
Data Sheet

### Closed Loop Operator Schematic & Performance Curves

CLOSED LOOP SCHEMATIC "F" OPERATOR



NOTE: REMOTE CONNECTOR AMPLIFIER, OR RACK MOUNTED AMPLIFIER, SEE HOW TO ORDER SHEET.



519256-007 sh. 11

Telephone: (414) 327-1700  
Fax: (414) 327-0532

OILGEAR  
2300 So. 51st. Street  
Milwaukee, WI USA 53219

Reissued: Jan., 2003  
DS-47428-A

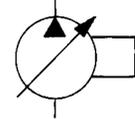


# PUMP, VARIABLE DELIVERY PVV-540 "B1"

ENGINEERING

12

## "P" OPERATOR

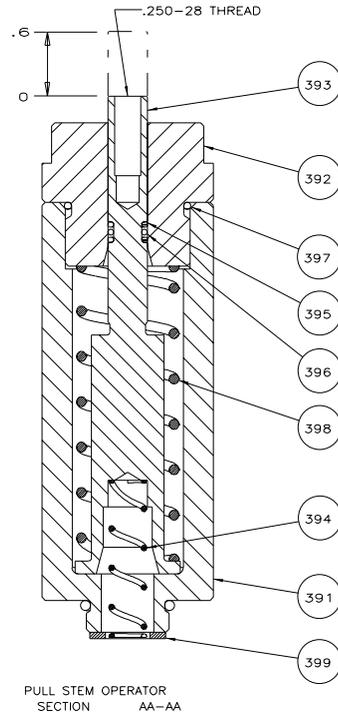


### Data Sheet Manual Stem Pull Operator Installation, Parts & Performance

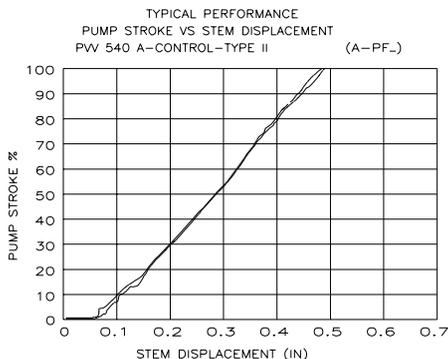
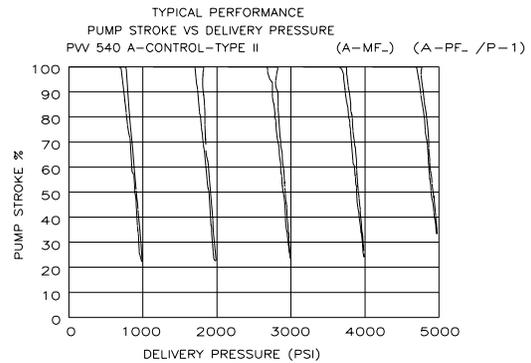
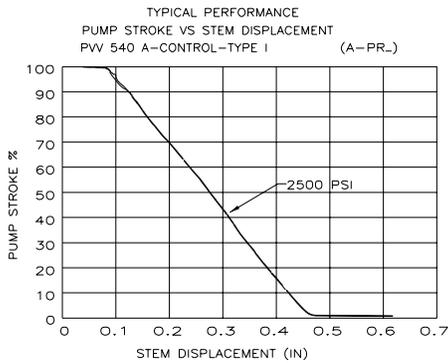
TYPE P - PULL STEM OPERATOR		
ITEM	QTY.	PART NAME
391	1	ADAPTER, MANUAL A-CONTROL
392	1	BONNET, MANUAL A-CONTROL
393	1	STEM, PULL
394	1	SPRING, COMPRESSION
395	2	RING, BACKUP
396	1	O-RING
397	1	O-RING
398	1	BIAS SPRING
399	1	SHIM/SPOOL STOP

NOTE: CAN BE CONVERTED TO A PUSH OPERATOR BY REMOVING BIAS SPRING, ITEM 398.

PULLING FORCE REQUIRED  
1 LB. AT 0  
20 LB. AT .6 IN



#### PULL



519256-007 sh. 12

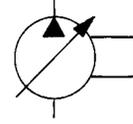


# PUMP, VARIABLE DELIVERY PVV-540 "B1"

ENGINEERING

13

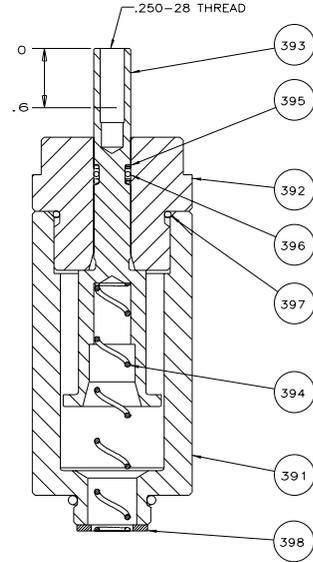
## "M" OPERATOR



### Data Sheet Manual Stem Push Operator Installation, Parts & Performance

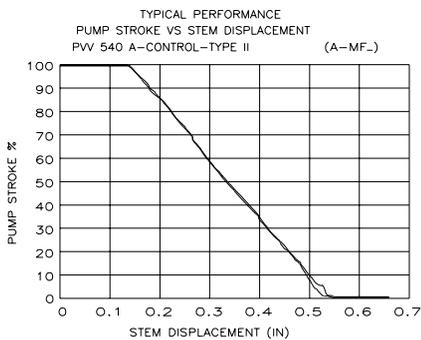
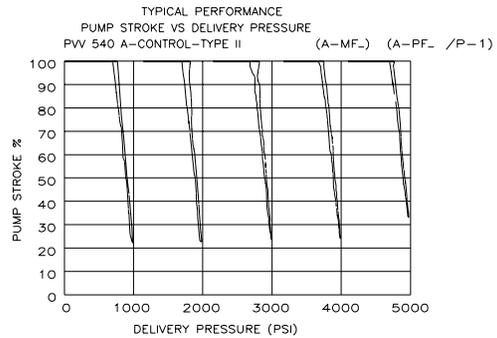
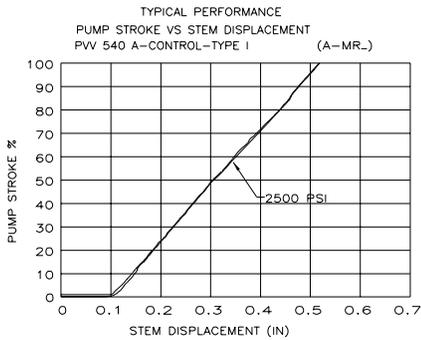
TYPE M - PUSH STEM OPERATOR		
ITEM	QTY.	PART NAME
391	1	ADAPTER, MANUAL A-CONTROL
392	1	BONNET, MANUAL A-CONTROL
393	1	STEM, PUSH
394	1	SPRING, COMPRESSION
395	2	RING, BACKUP
396	1	O-RING
397	1	O-RING
398	1	SHIM/SPOOL STOP

PUSHING  
FORCE  
REQUIRED  
5 LB. AT 0  
18 LB. AT .6 IN



PUSH STEM OPERATOR  
SECTION AA-AA

#### PUSH



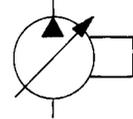
519256-007 sh. 13

Telephone: (414) 327-1700  
Fax: (414) 327-0532

OILGEAR  
2300 So. 51st. Street  
Milwaukee, WI USA 53219

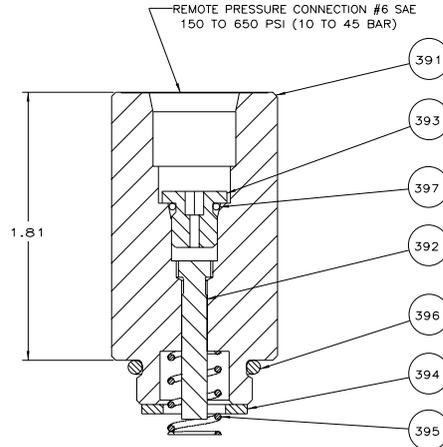
Reissued: Jan., 2003  
DS-47428-A

## "R" OPERATOR

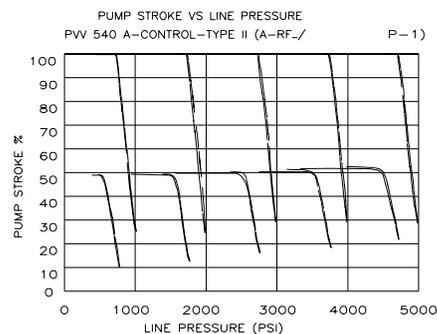
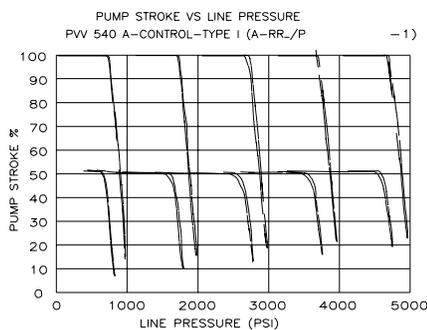
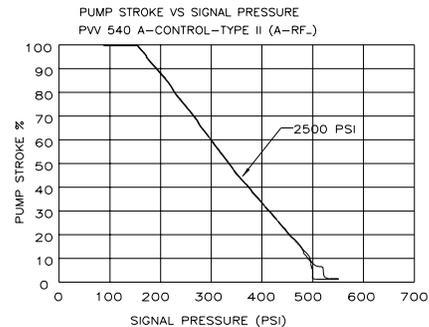
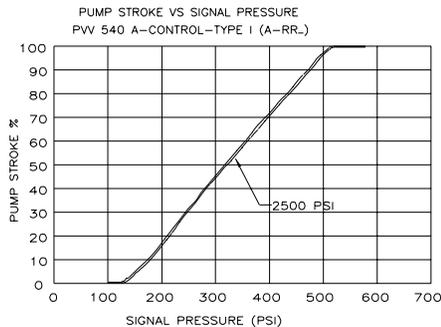

**Data Sheet**
**Remote Pressure Operator Installation, Parts & Performance**

REMOTE PRESSURE OPERATOR		
ITEM	QTY.	PART NAME
391	1	BONNET, REMOTE A-CONTROL
392	1	PLUNGER, REMOTE A-CONTROL
393	1	ORIFICE PLUG, .062 DIA.
394	1	SHIM/SPOOL STOP
395	1	SPRING, COMPRESSION
396	1	O-RING
397	1	O-RING

RECOMMENDED PRESSURE RIPPLE  
AMPLITUDE: 50 TO 100 PSI  
FREQUENCY: 250 TO 750 Hz



REMOTE OPERATOR  
SECTION A-A



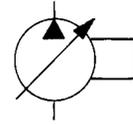
519256-007 sh. 14



# PUMP, VARIABLE DELIVERY PVV-540 "B1"

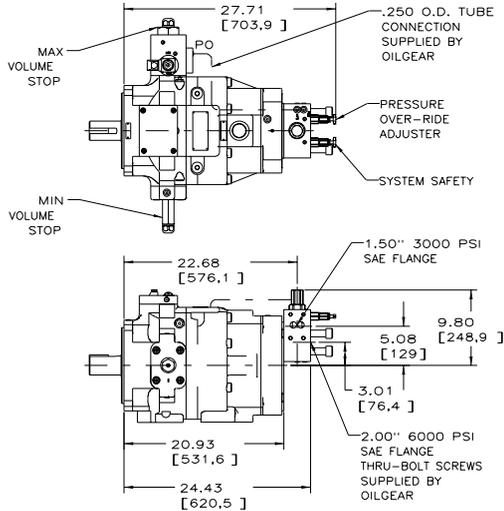
ENGINEERING

15



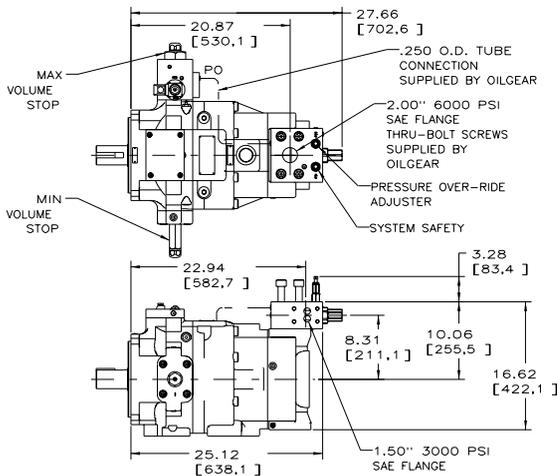
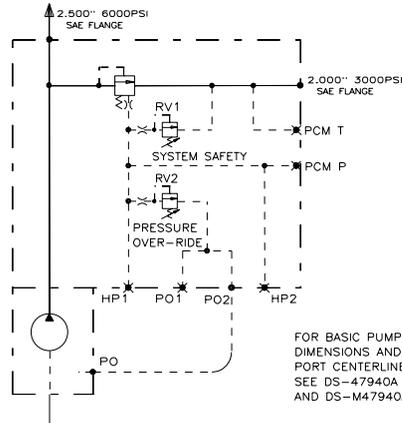
## PRESSURE OVERRIDE MODIFIER

### Installation Drawing Flange Mounted Pressure Override Control Modifier



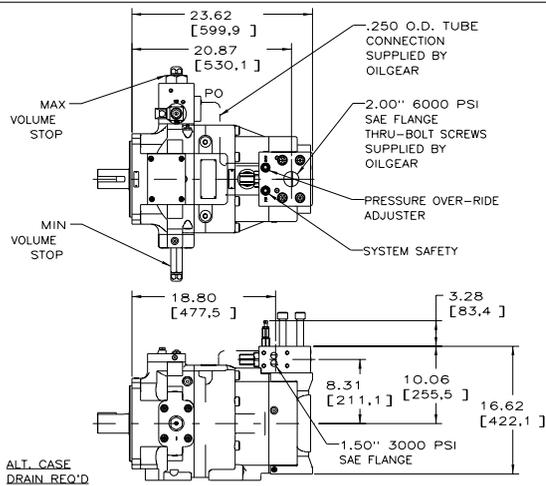
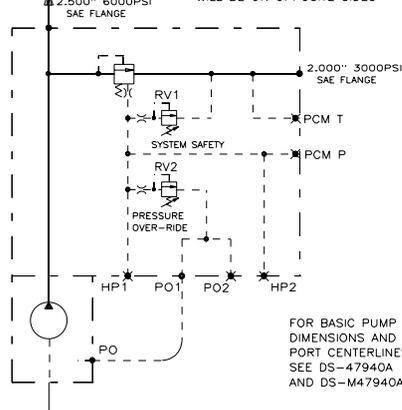
TYPE I & II L.H. REAR PORT  
PW-540-B1--LSE-A--F/P-E

\*FOR RH VERSION, CONTROL CAPS WILL BE ON OPPOSITE SIDES



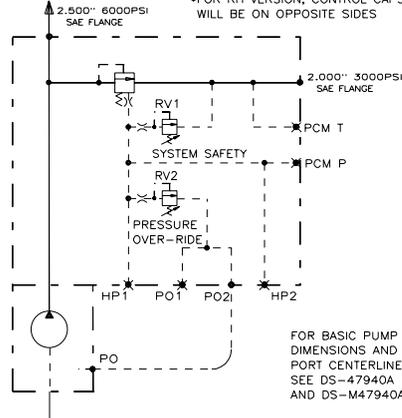
TYPE I & II L.H. SIDE PORT  
PW-540-B1--LSE-A--F/P-E

\*FOR RH VERSION, CONTROL CAPS WILL BE ON OPPOSITE SIDES



ALTERNATE MOUNTING  
TYPE I & II L.H. SIDE PORT  
PW-540-B1--LSE-A--F/P-E

\*FOR RH VERSION, CONTROL CAPS WILL BE ON OPPOSITE SIDES



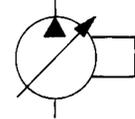
519256-007 sh. 15

Telephone: (414) 327-1700  
Fax: (414) 327-0532

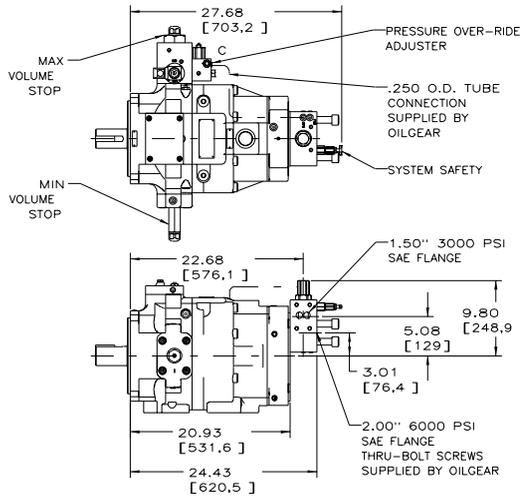
OILGEAR  
2300 So. 51st. Street  
Milwaukee, WI USA 53219

Reissued: Jan., 2003  
DS-47428-A

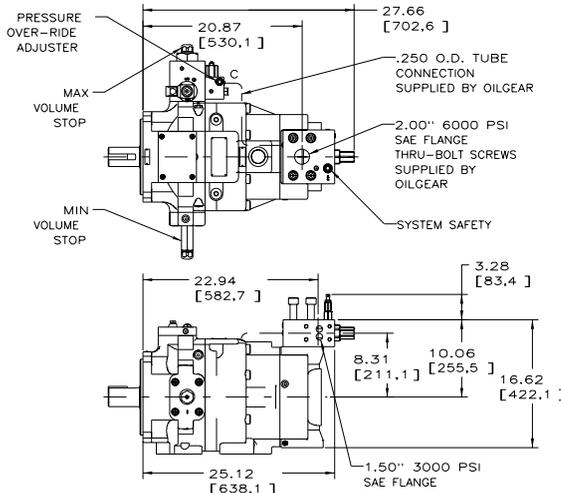
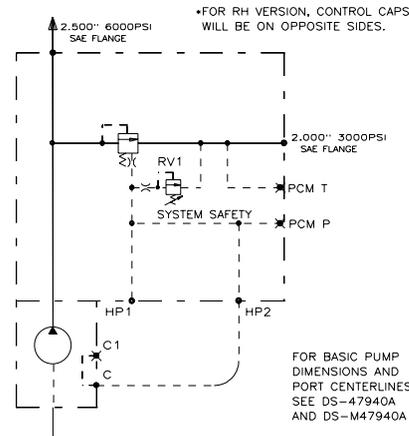
**HORSEPOWER LIMITER  
MODIFIER**



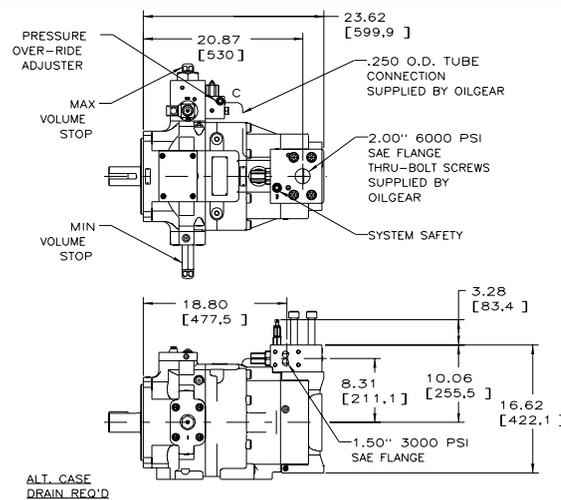
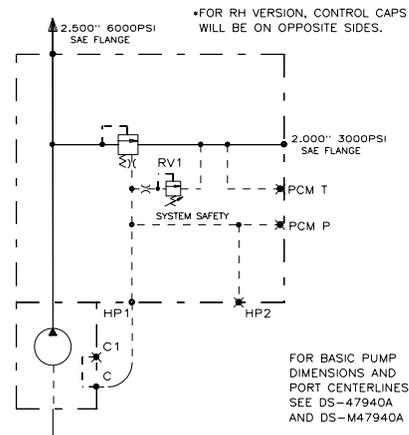
**Installation Drawing Flange Mounted Horsepower Pressure Override Control Modifier**



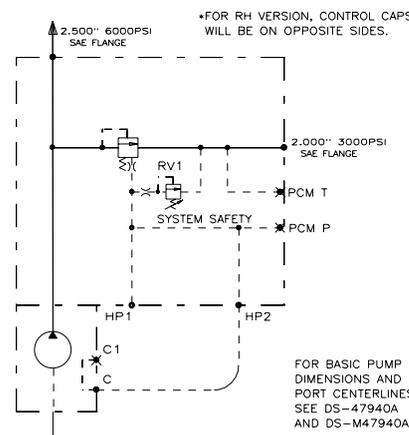
**TYPE I & II L.H. REAR PORT**  
PWV-540-B1--LSF-A--F/P-F/H



**TYPE I & II L.H. SIDE PORT**  
PWV-540-B1--LDF-A--F/P-F/H

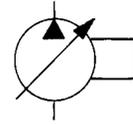


**ALTERNATE MOUNTING**  
**TYPE I & II L.H. SIDE PORT**  
PWV-540-B1--LDF-A--F/P-F/H



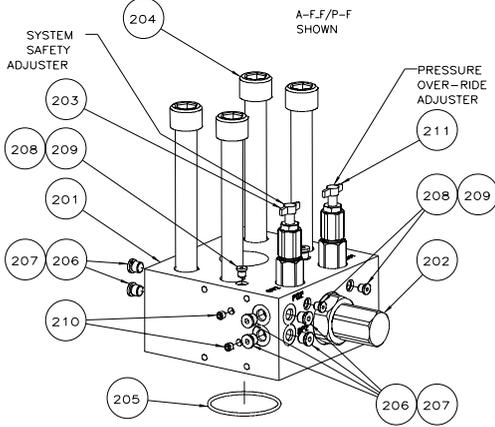
519256-007 sh. 16

**PRESSURE & H.P. LIMITER  
MODIFIER**

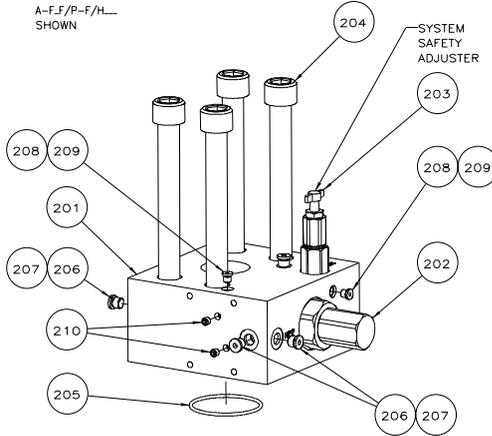


**Parts Drawing Flange Mounted Pressure Override & H.P. Limiter Modifier**

PRESSURE OVER-RIDE ON SIDE PORTED PUMP



HORSEPOWER LIMITER ON SIDE PORTED PUMP

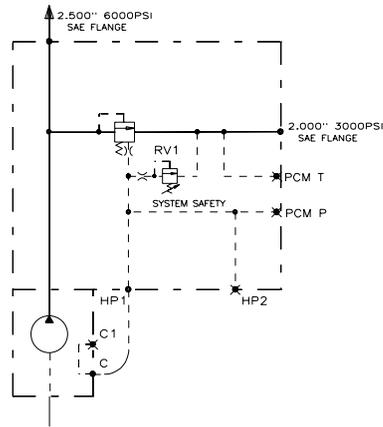
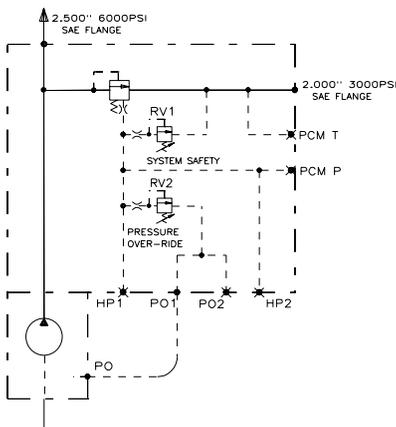


NOTE: TO ORDER SPARE PARTS THE COMPLETE PUMP MODEL CODE MUST BE KNOWN.

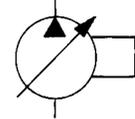
CONTROL PARTS		
ITEM	QTY.	DESCRIPTION
201	1	OVER-RIDE BLOCK, FLANGE MT.
202	1	SEQUENCE VALVE
203	1	VALVE
204	4	SCREW, SHC, .875-9 X 6.50 LG
205	1	O-RING
206	6	PLUG, #4 HP
207	6	O-RING, FOR #4 HP
208	3	PLUG, #2 HP
209	3	O-RING, FOR #2 HP
210	*	1/16 NPT
211	1	VALVE

CONTROL PARTS		
ITEM	QTY.	DESCRIPTION
201	1	OVER-RIDE BLOCK, FLANGE MT.
202	1	SEQUENCE VALVE
203	1	VALVE
204	4	SCREW, SHC, .875-9 X 6.50 LG
205	1	O-RING
206	3	PLUG, #4 HP
207	3	O-RING, FOR #4 HP
208	3	PLUG, #2 HP
209	3	O-RING, FOR #2 HP
210	*	1/16 NPT

519256-007 sh. 17



**HORSEPOWER LIMITER  
MODIFIER**



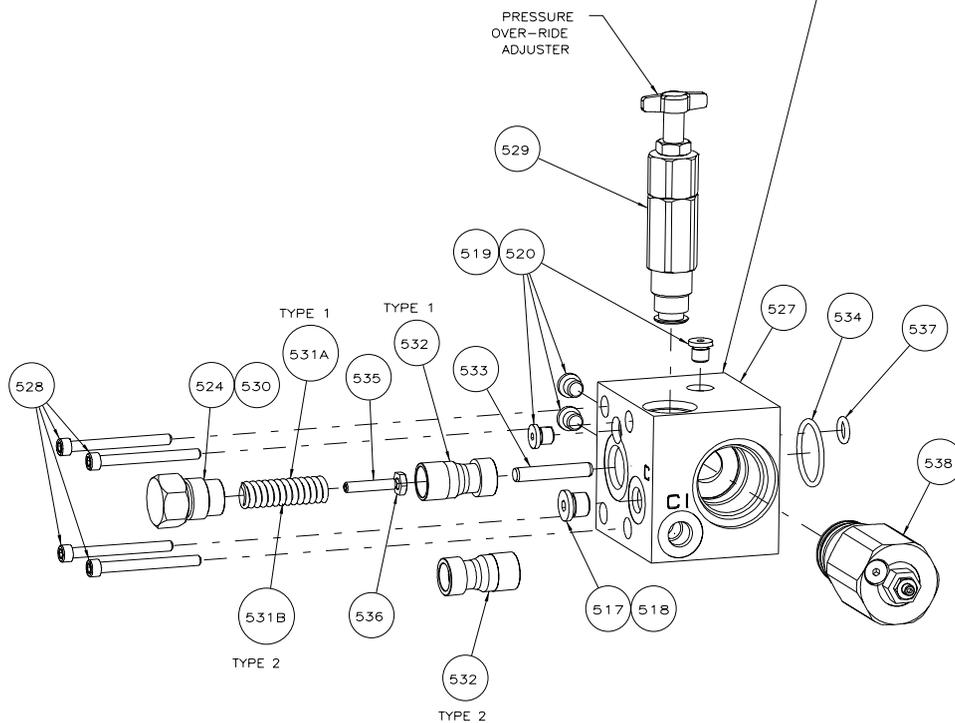
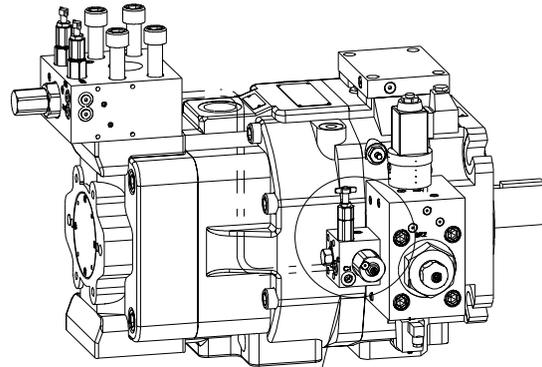
**Parts Drawing**

**"A" Control Modifier for Horsepower Limiter**

HORSEPOWER CONTROL PARTS		
ITEM	QTY.	DESCRIPTION
517	1	#4 HP PLUG
518	1	O-RING, FOR #4 HP
519	4	#2 HP PLUG
520	4	O-RING, FOR #2 HP
524	1	O-RING
527	1	HOUSING, HORSEPOWER
528	4	SCREW, SHC, M5 X 50 MM LG
529	1	DIRECT RELIEF VALVE
530	1	BONNET, HP LIMITER
531A	1	SPRING, HP LIMITER TYPE 1
531B	1	SPRING, HP LIMITER TYPE 2
532	1	CAM, HP LIMITER
533	1	PIN, PICK-UP
534	1	O-RING
535	1	SCR, SET #10-32 X 1.00 CUP
536	1	NUT, MACHINE, #10-32
537	1	O-RING
538	1	HP VALVE ASSEMBLY

NOTE: TO ORDER SPARE PARTS, THE COMPLETE CONTROL MODEL CODE MUST BE KNOWN.

PVV-540-B1--LDF--A--\_F/P-F/H--



519256-007 sh. 18

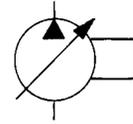


# PUMP, VARIABLE DELIVERY PVV-540 "B1"

ENGINEERING

19

## SEQUENCE VALVE OPTION CONTROLS

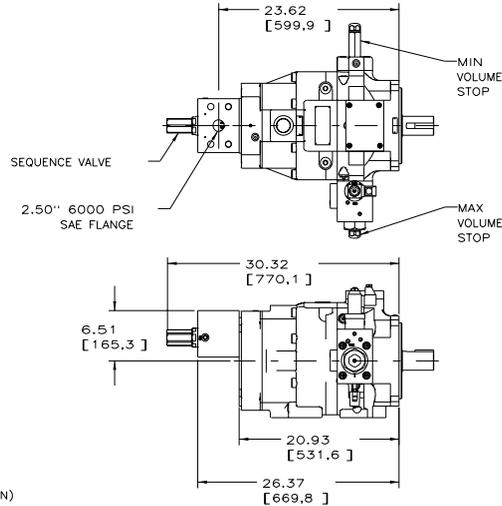
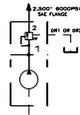


Data Sheet

"A" Control Modifier

TYPE I & II L.H. REAR PORT  
PWV-540-B1--LSF-A--G

\*FOR RH VERSION, CONTROL CAPS  
WILL BE ON OPPOSITE SIDES.

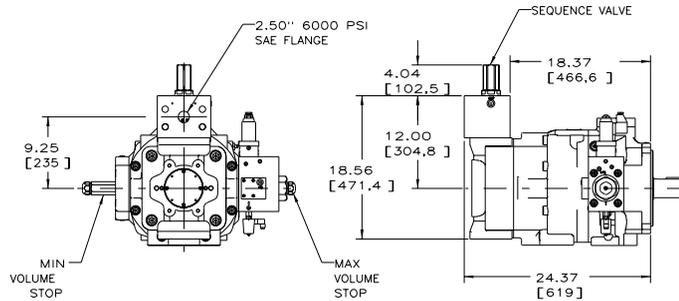
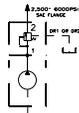


FOR BASIC PUMP DIMENSIONS AND PORT CENTERLINES  
SEE DS-47940A AND DS-M47940A

EXTERNAL DRAIN REQUIRED IN EITHER DR1 OR DR2 (#6 SAE CONNECTION)

TYPE I & II L.H. SIDE PORT  
PWV-540-B1--LDF-A--G

\*FOR RH VERSION, CONTROL CAPS  
WILL BE ON OPPOSITE SIDES.



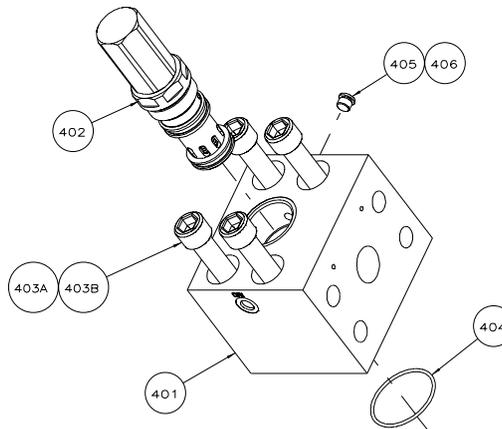
FOR BASIC PUMP  
DIMENSIONS AND  
PORT CENTERLINES  
SEE DS-47940A  
AND DS-M47940A

EXTERNAL DRAIN REQUIRED IN EITHER DR1 OR DR2 (#6 SAE CONNECTION)

### SEQUENCE VALVE CONTROL PARTS

ITEM	QTY	DESCRIPTION
401	1	SEQUENCE MANIFOLD
402	1	SEQUENCE VALVE
403A	4	SCREW, SHC, .875-9 X 6.5 LG
403B	4	SCREW, SHC, M24 X 165 MM LG
404	1	O-RING
405	1	PLUG, #6 HP
406	1	O-RING, FOR #6 HP PLUG

EXTERNAL DRAIN REQUIRED  
IN EITHER DR1 OR DR2.



519256-007 sh. 19

Telephone: (414) 327-1700  
Fax: (414) 327-0532

OILGEAR  
2300 So. 51st. Street  
Milwaukee, WI USA 53219

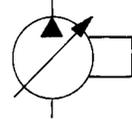
Reissued: Jan., 2003  
DS-47428-A



**PUMP, VARIABLE DELIVERY  
PVV-540 "B1"**

**ENGINEERING**

**20**



**NOTES**