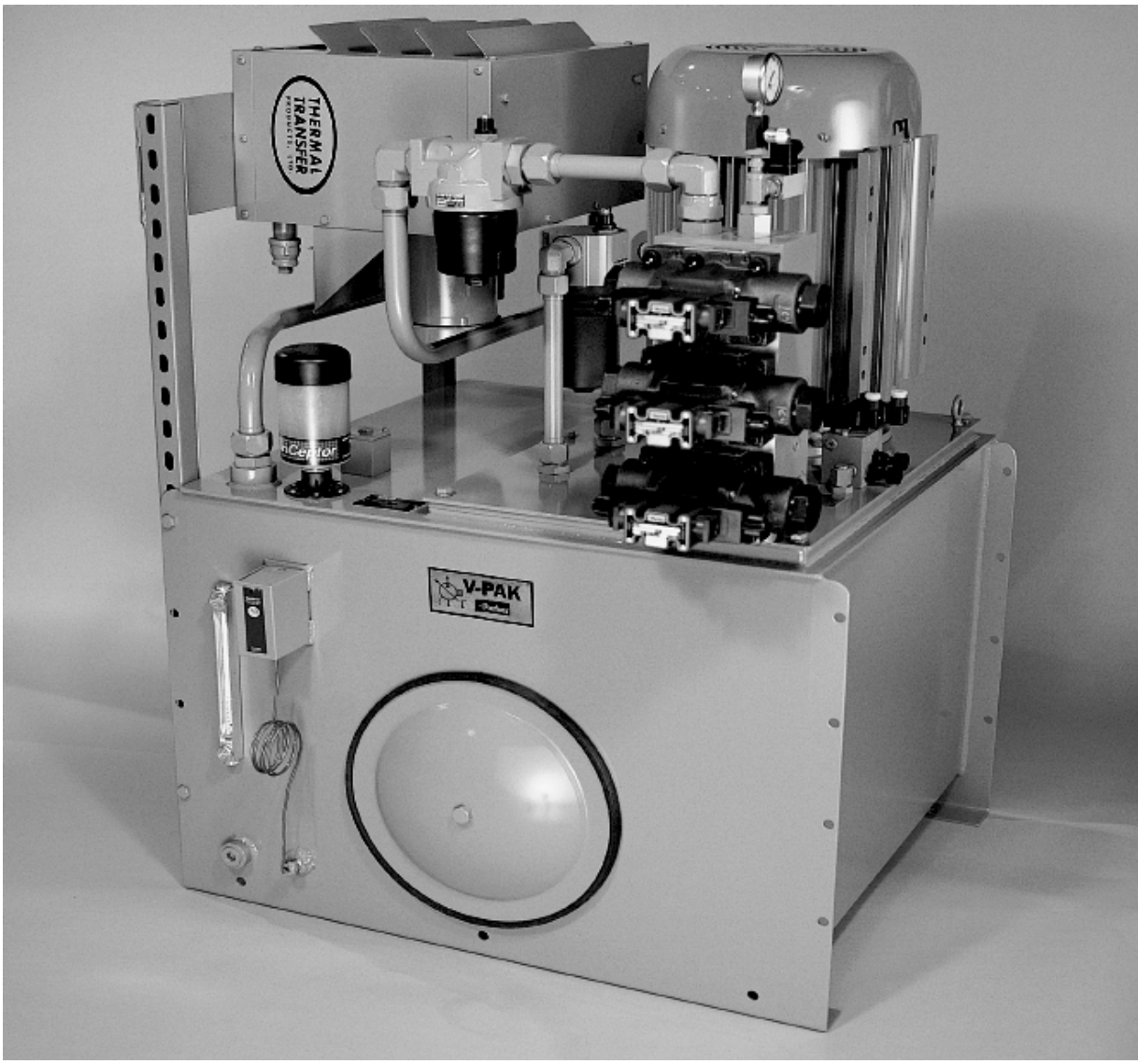
Parker Hydraulics

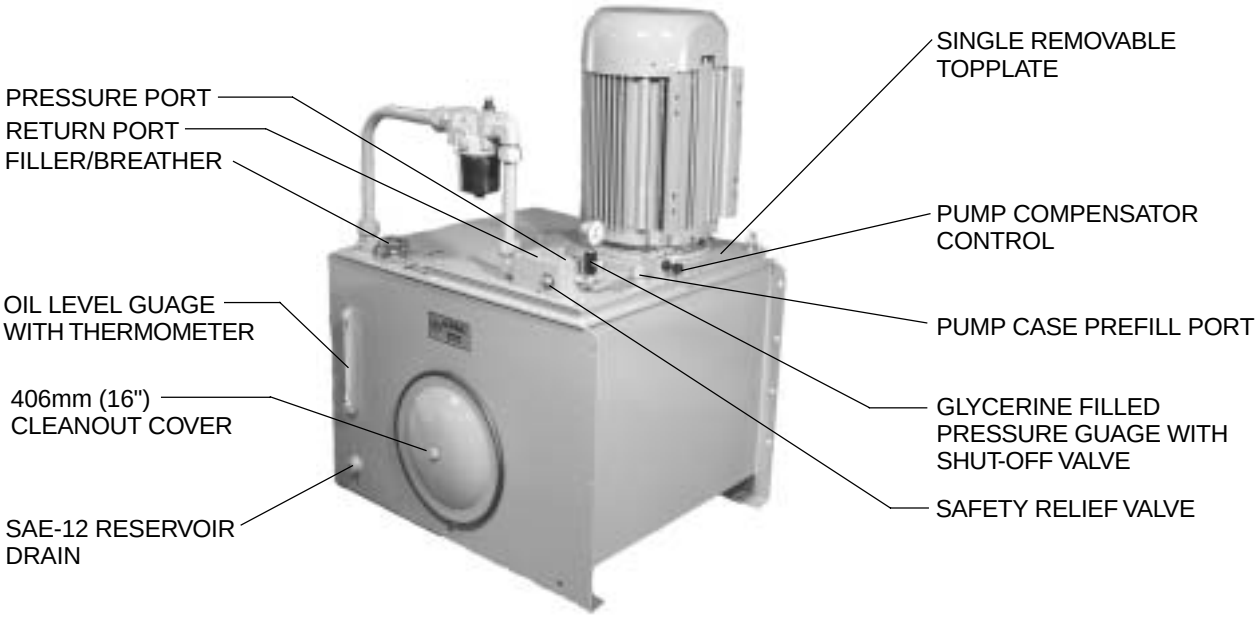
Series V-Pak

Low Profile Power Units

Catalog HY13-2600-520-001/US

B





B

Standard Features

- Vertical Design
- Submerged Pump
- Precision Pump Mounting Adapters
- Suction Strainer
- Glycerine Filled Pressure Gage with Shut Off
- Oil Level Gage with Thermometer
- Remote Compensator and Safety Relief
- Breather and Fill Cap
- 1800 RPM Motor
- Drain Plug
- Clean Out Cover
- Single Removable Topplate
- Extra SAE-20 Return Port
- All Hydraulic Connections SAE Straight Thread

Benefits

- Saves Floor Space
- Positive Pump Inlet
- Longer Pump Life
- Protects Pump from Contamination
- Improved Diagnostics
- Helps to Maintain Trouble-Free Performance
- Protects Against System Shock
- Easy to Fill Tank, Control Ingression of Airborne Contaminants
- More Flow at Less Cost
- Allows Drainage of Fluid
- Easy Access to Inside of Reservoir
- Easy Servicability of Internal Components
- Allows Flexibility for Customer Return Plumbling
- No Leaks

Quick Reference Data Chart

Low Profile V-Pak	Tank Size Liters (Gallon)	Pump Flow LPM (GPM) @ 1800 RPM	Electrical Motors KW (HP)	Maximum BAR (PSI)
V6	227.1 (60)	42.0 (11.0) to	5.6-29.8	207
V8	302.8 (80)	136.7 (36.1)	(7 1/2 - 40)	(3000)

Performance Data

Standard Features

- Vertical Design
- Submerged Pump
- Precision Pump Mounting Adapters
- Suction Strainer
- Glycerine Filled Pressure Gage with Shut Off
- Oil Level Gage with Thermometer
- Relief Valve
- External Pump Compensator Control
- Breather and Fill Cap
- 1800 RPM TEFC Motor
- Cleanout Cover
- Pressure and Return Port Block with Safety Relief
- Remote Pump Compensator Control Valve

Options

- D05 (D02), D05H (D02H), D08 (D06) Single Station Manifold with Safety Relief
- D05 (D02), D05H (D02H), D08 (D06) Multi-Station Manifold with Safety Relief
- Pressure & Return Filters (10 Micron)
- Immersion Heater
- Variety of Manapak Sandwich Valves
- Heat Exchangers (Air/Oil, Water/Oil)
- Liquid Level Switch-Fixed
- Temperature Switch-Adjustable
- Combination Temp/Float Switch-Fixed
- Pressure Switch-Adjustable
- Single Pressure Remote Compensator
- Single Pressure Remote Compensator with Low Pressure Standby
- Bi-Pressure Remote Compensator
- Bi-Pressure Remote Compensator with Low Pressure Standby
- Electro Hydraulic Pressure Control-Consult Factory
- Load Sensing (Flow Control)-Consult Factory
- Horsepower Limiting-Consult Factory

Specifications

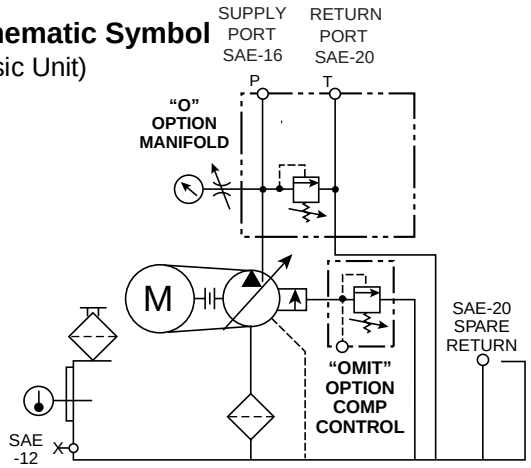
Parker “V-Pak” Hydraulic Power Units are vertical design, 227 or 303 liter (60 or 80 gallon) reservoirs utilizing Parker Variable Volume Piston Pumps.

Warranty

The hydraulic components on these Parker Power Units are warranteed for one year. This warranty may be extended to three years by using and properly maintaining Parker filters.

Schematic Symbol

(Basic Unit)



V-PAK BASIC UNIT

NO OPTIONS OR ACCESSORIES
“OMIT” OPTION PUMP COMPENSATOR
“O” OPTION MANIFOLD

Installation Data:

See page B62 of this catalog or Parker Installation/ Maintenance Manual for specific recommendations pertaining to start-up, system cleanliness, fluids, temperatures and other important factors relative to proper installation and use of these power units.

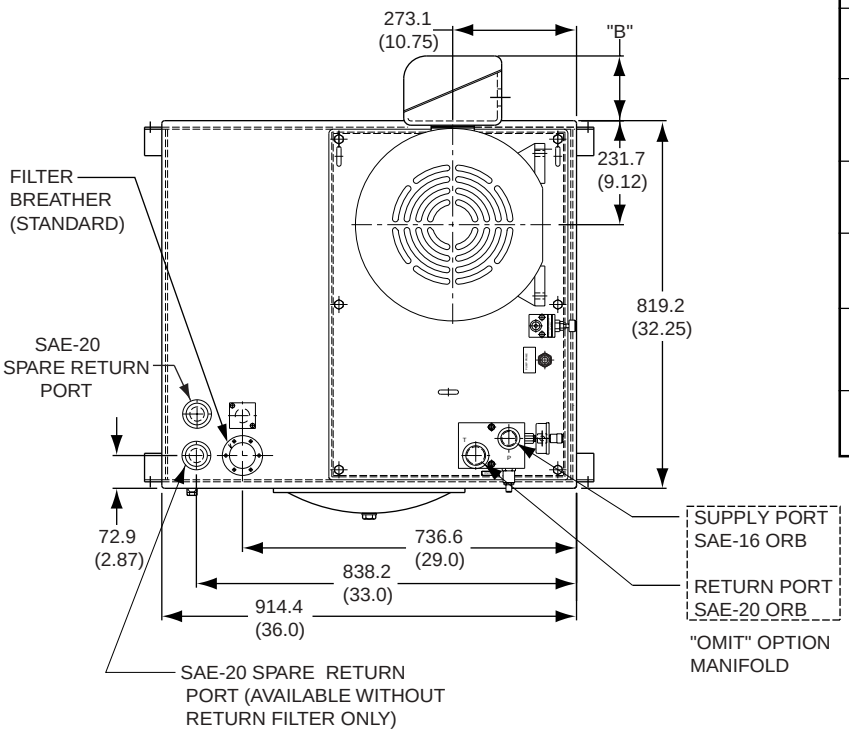
Pump Model	Tank Size Liters (Gallon)	Pump Flow LPM (GPM) @ 1800 RPM	Electrical Motors KW (HP)	Maximum BAR (PSI)
V-Paks	227.1 (60) 302.8 (80)	42.0-136.1 (11.0-36.1)	5.6-29.8 (7½ - 40)	207 (3000)

Dimensions – Basic

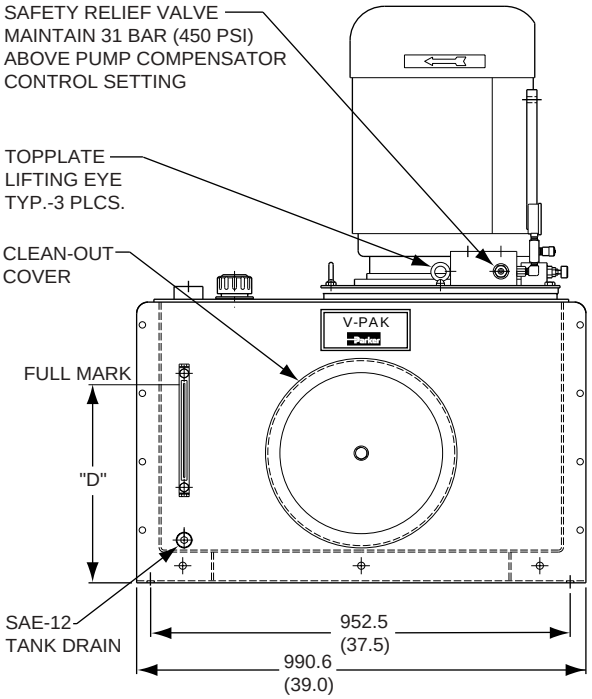
Shown with "Omit" Option Manifold

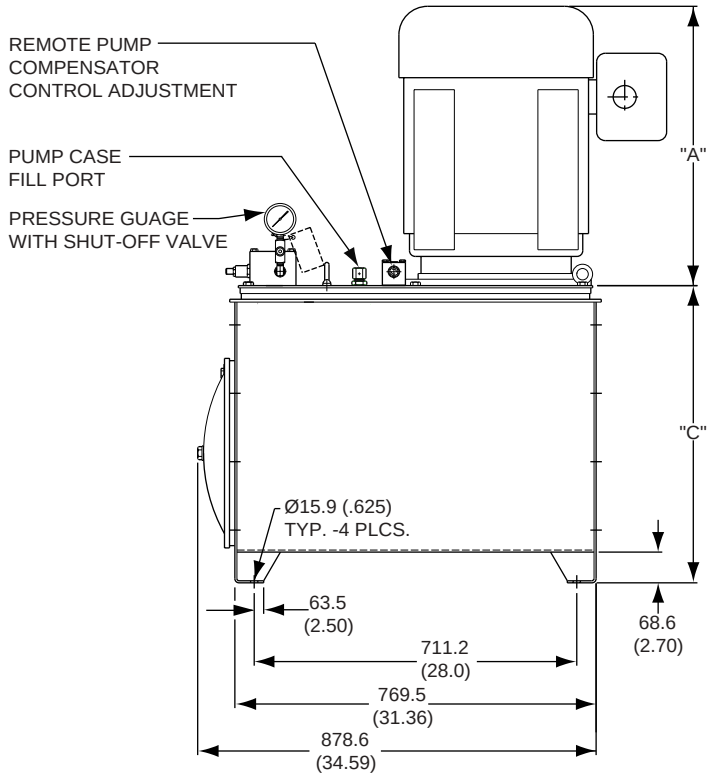
Inch equivalents for millimeters dimensions are shown in (**)

Motor Code	Motor Description HP-RPM-Frame-Type	Dimension "A"	"B"
M	7 1/2-1800-213TC-TEFC	451 (16.6)	N/A
N	10-1800-215TC-TEFC	451 (17.2)	N/A
P	15-1800-254TC-TEFC	451 (20.0)	48 (1.88)
S	20-1800-256TC-TEFC	597 (23.5)	48 (1.88)
Q	25-1800-284TC-TEFC	579 (22.8)	51 (2.0)
R	30-1800-286TC-TEFC	620 (24.4)	51 (2.0)
V	40-1800-324TC-TEFC	627 (24.7)	144 (5.69)



Reservoir Size	Dimension "C"	"D"
60 GAL.	662 (26.06)	368 (14.50)
80 GAL.	725 (28.56)	432 (17.0)



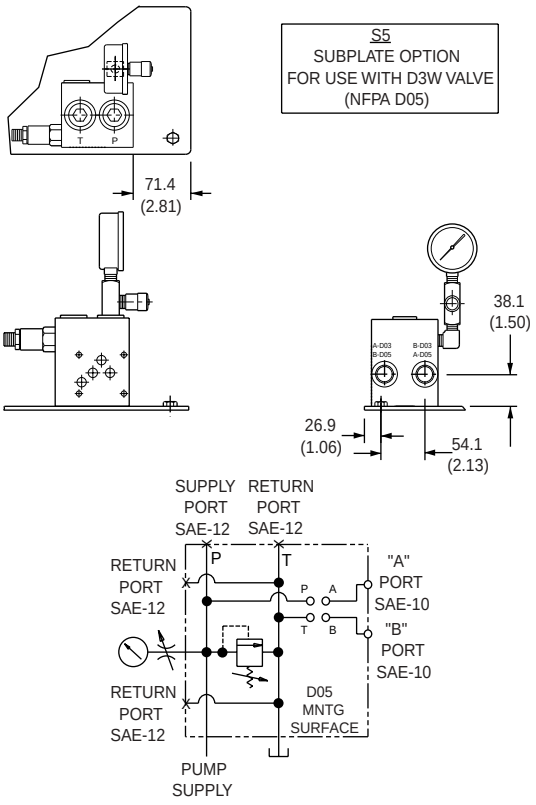


Parker Hannifin Corporation
Hydraulic Pump/Motor Division
Greeneville, Tennessee

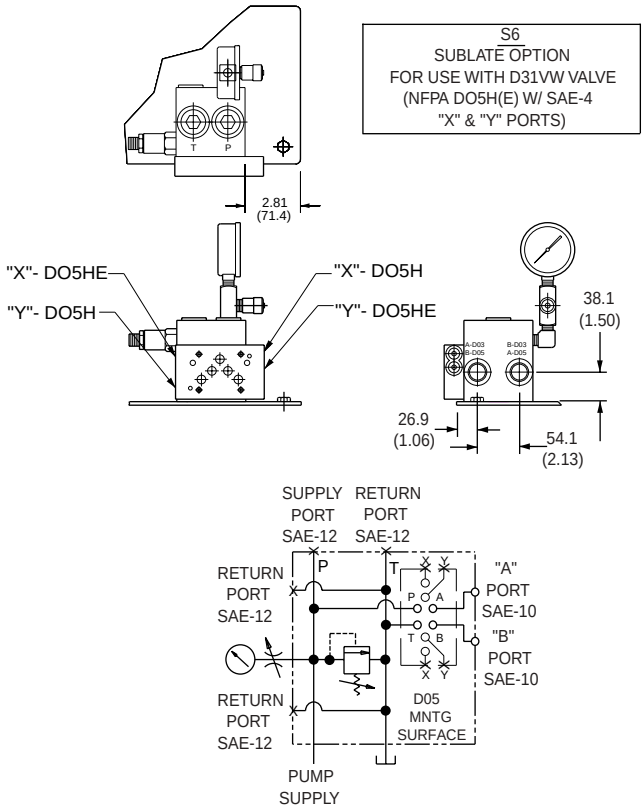
S5, S6, & S8 Option Manifolds

Inch equivalents for millimeters dimensions are shown in (**)

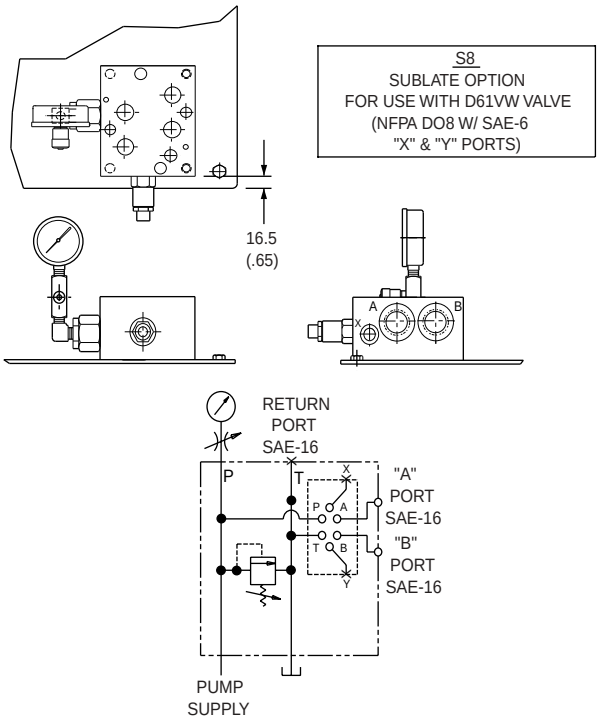
"S5 Option"



"S6 Option"



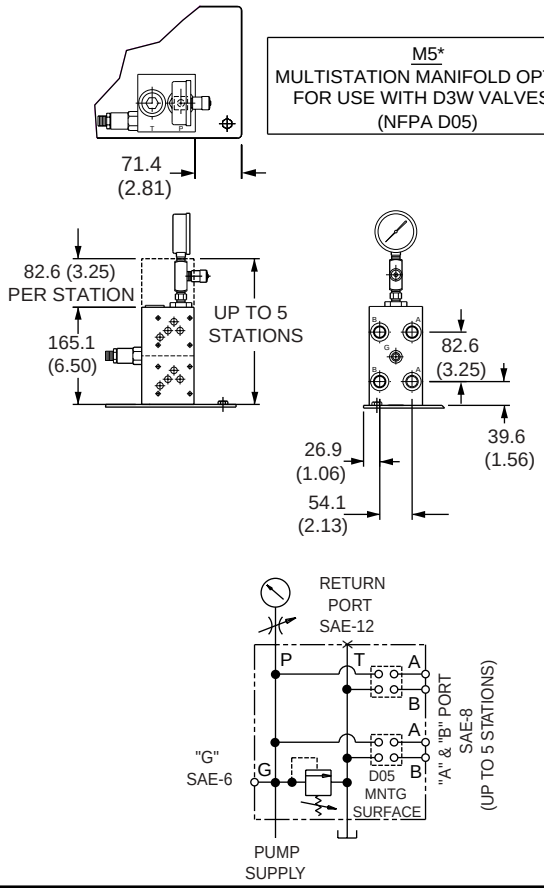
"S8 Option"



M5, M6 & M8 Option Manifolds

Inch equivalents for millimeters dimensions are shown in (**)

"M5 Option"



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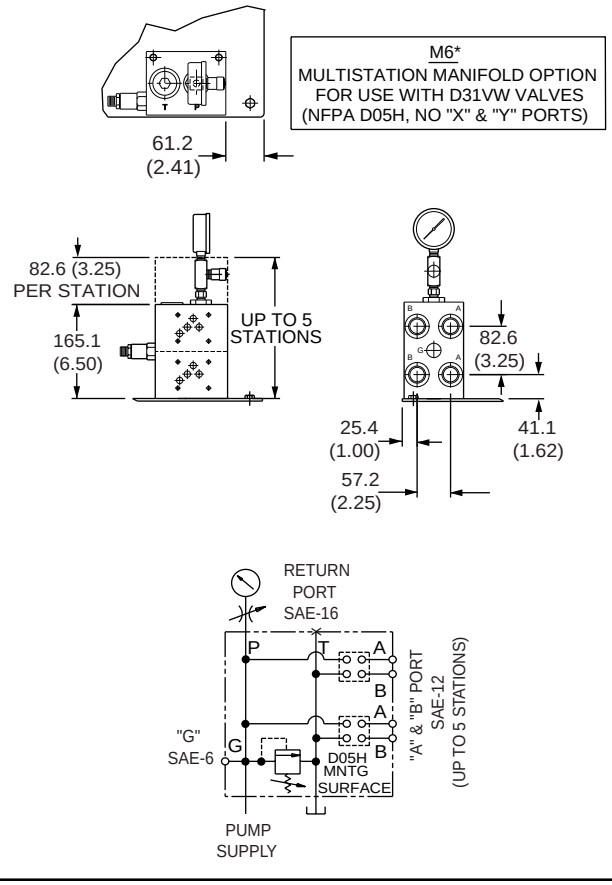

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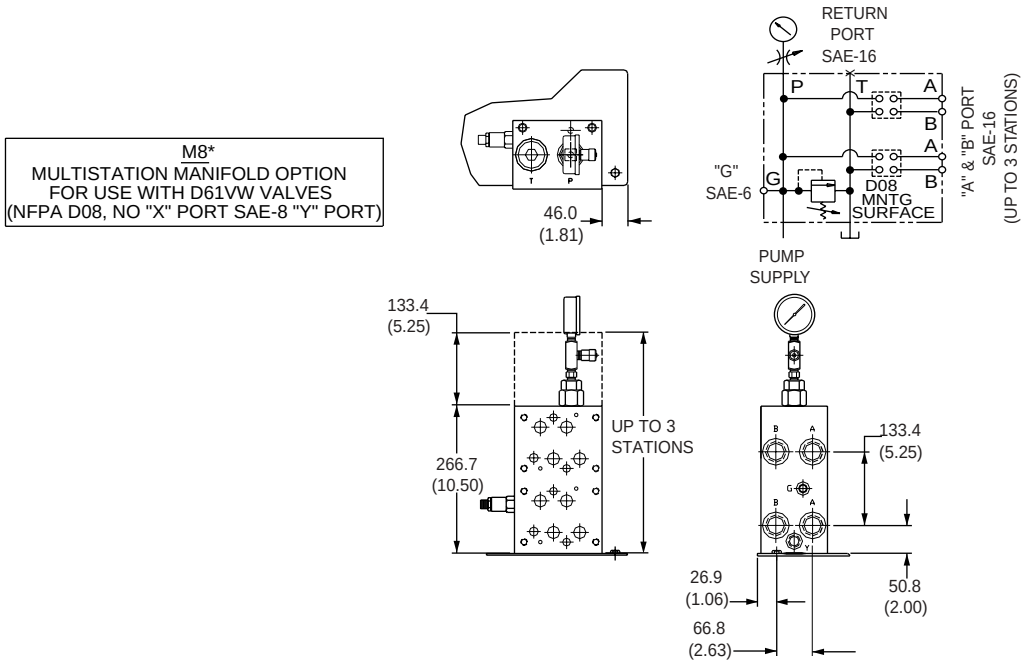

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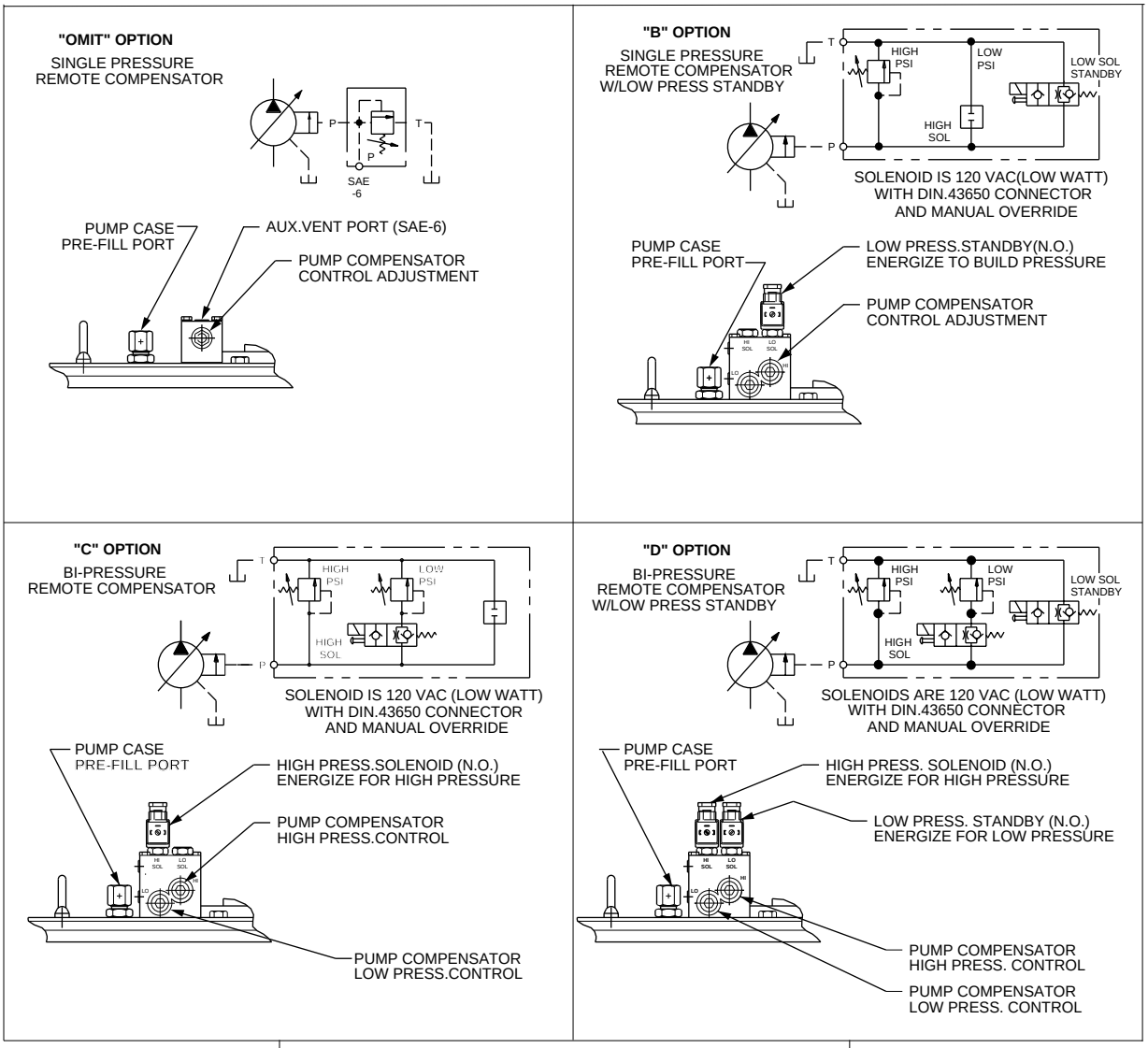
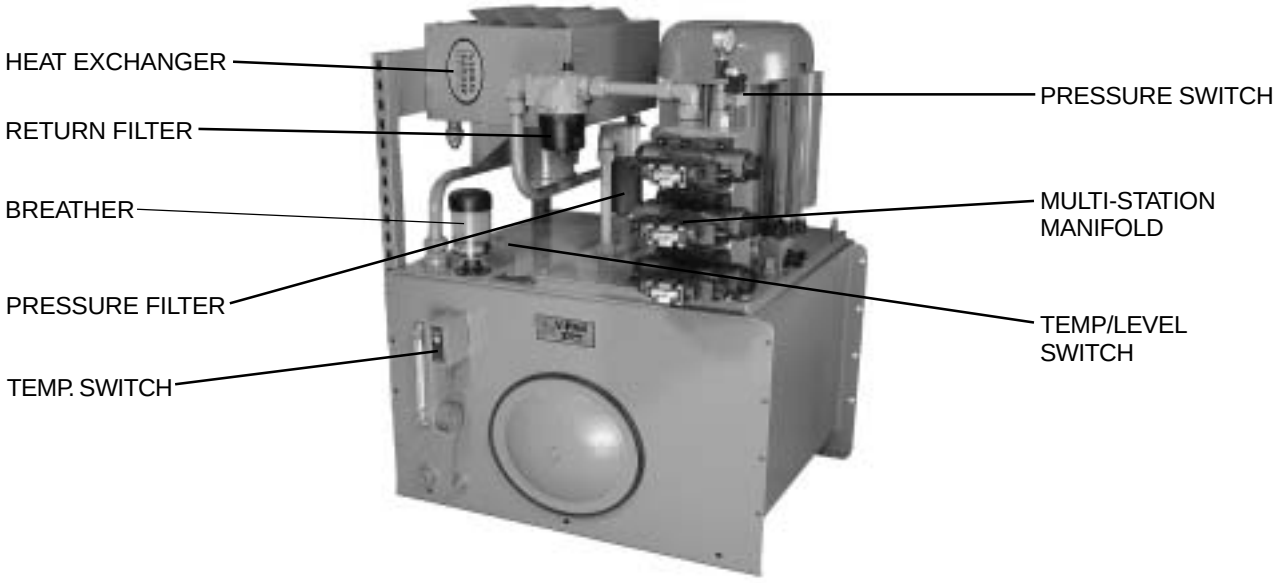
V-Pak - Compensator Options

Inch equivalents for millimeters dimensions are shown in (**)

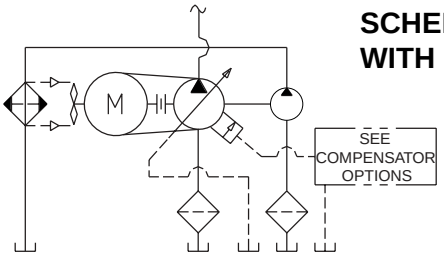




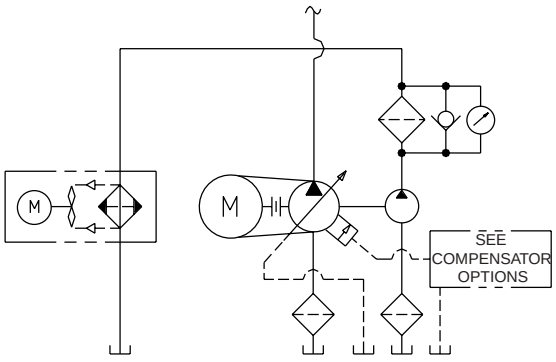
EXAMPLE OF VARIOUS ACCESSORIES INSTALLED FOR REFERENCE ONLY

B

SCHEMATIC - BASIC UNIT WITH ACCESSORIES



Ⓐ Ⓑ OPTION



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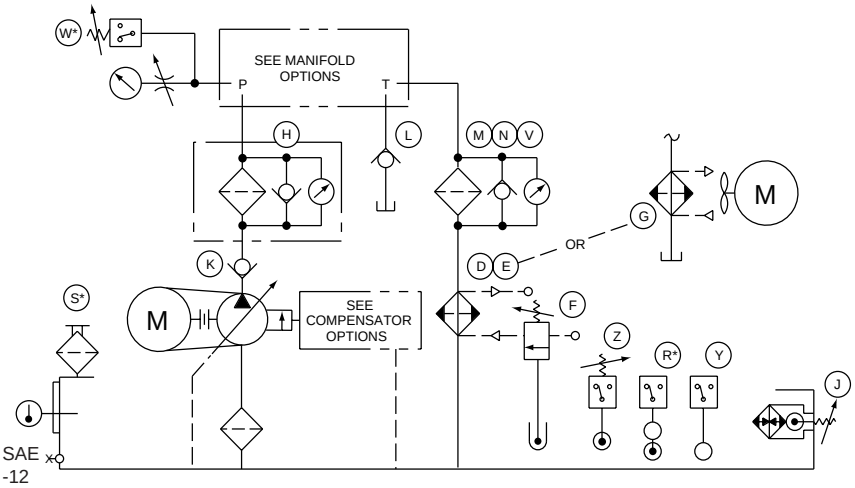


HYDRAULIC SCHEMATIC

ACCESSORY OPTIONS - V PAKS

OPTION Ⓐ COOLING LOOP (0.8 HP REMOVAL)
OPTION Ⓑ COOLING LOOP (1.5 HP REMOVAL)
OPTION Ⓒ SYSTEM COOLING/FILTER LOOP (4.5 HP REMOVAL)
OPTION Ⓓ RETURN LINE WATER/OIL HEAT EXCHANGER
OPTION Ⓔ RETURN LINE WATER/OIL HEAT EXCHANGER
OPTION Ⓕ WATER TEMPERATURE MODULATING VALVE
OPTION Ⓖ RETURN LINE AIR/OIL HEAT EXCHANGER
OPTION Ⓗ PRESSURE FILTER
OPTION Ⓙ IMMERSION HEATER
OPTION Ⓚ PUMP OUTLET CHECK VALVE
OPTION Ⓛ BYPASS CHECK-RETURN HT. EX. ONLY
OPTION Ⓜ RETURN FILTER-SINGLE ELEMENT
OPTION Ⓝ RETURN FILTER-DUAL ELEMENT
OPTION Ⓡ* COMBINATION LEVEL/TEMPERATURE SWITCH
OPTION Ⓢ* FILTER RESERVOIR BREATHER
OPTION Ⓥ SPIN-ON RETURN FILTER
OPTION Ⓦ* PRESSURE SWITCH
OPTION Ⓨ LEVEL SWITCH
OPTION Ⓩ TEMPERATURE SWITCH

Dimensions - Accessories

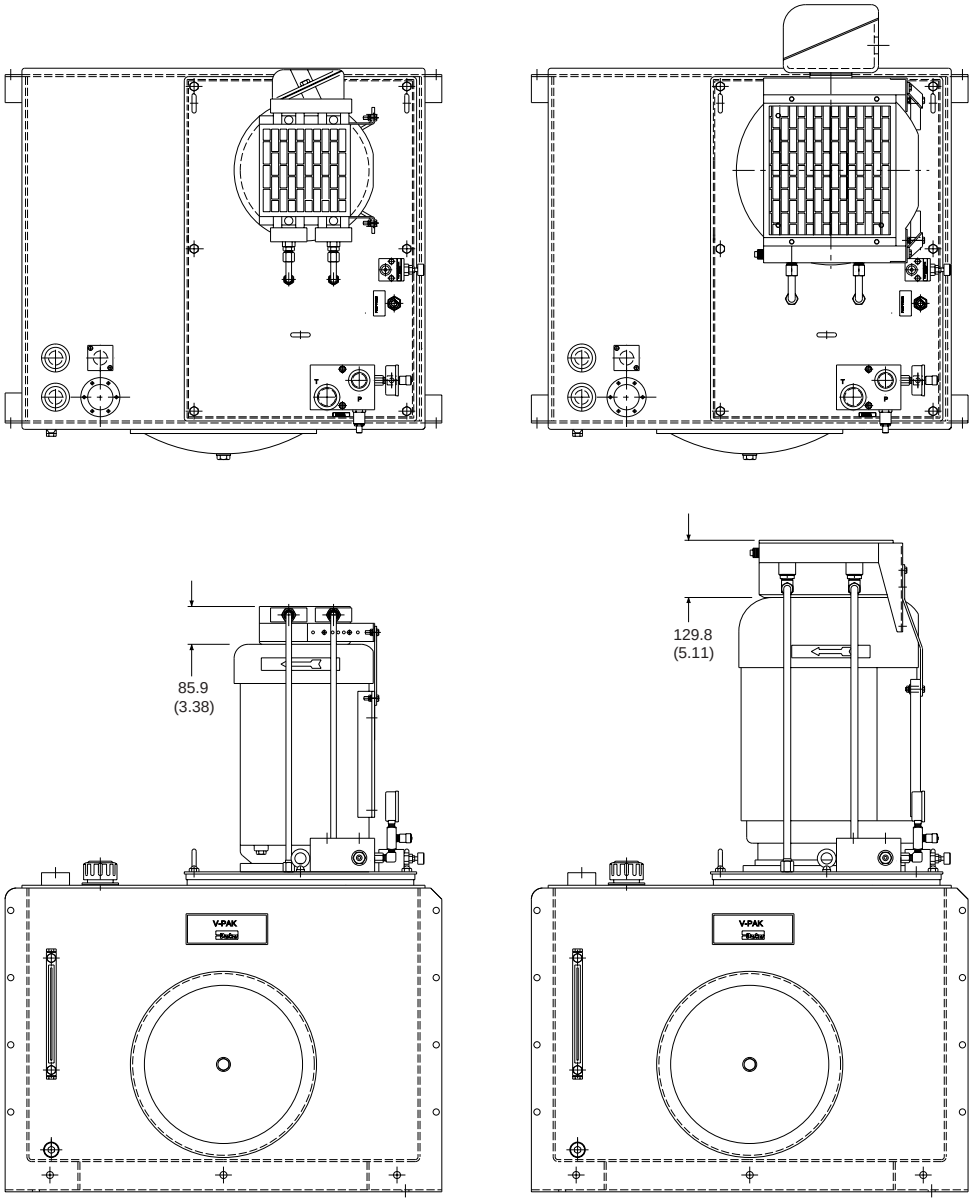
V8 reservoir with "Omit" manifold shown

Inch equivalents for millimeters dimensions are shown in (**)

Ordering Note: Units with PVP76 pumps and requiring options "A", "B" or "C" can only be ordered with V8 (302.8 L/80 Gal.) reservoir.

HEAT REMOVAL	**OPTION A**	**.6 KW (.80 HP*)**
HEAT REMOVAL	**OPTION B**	**1.1 KW (1.5 HP*)**

*Performance data are based on 100SSU oil leaving the cooler 4°C (40°F) higher than the ambient air temperature used for cooling.



Option "A" Cooling Loop
5.6 KW - 18.6 KW (7.5 HP - 25 HP) ONLY

Option "B" Cooling Loop

Dimensions - Accessories

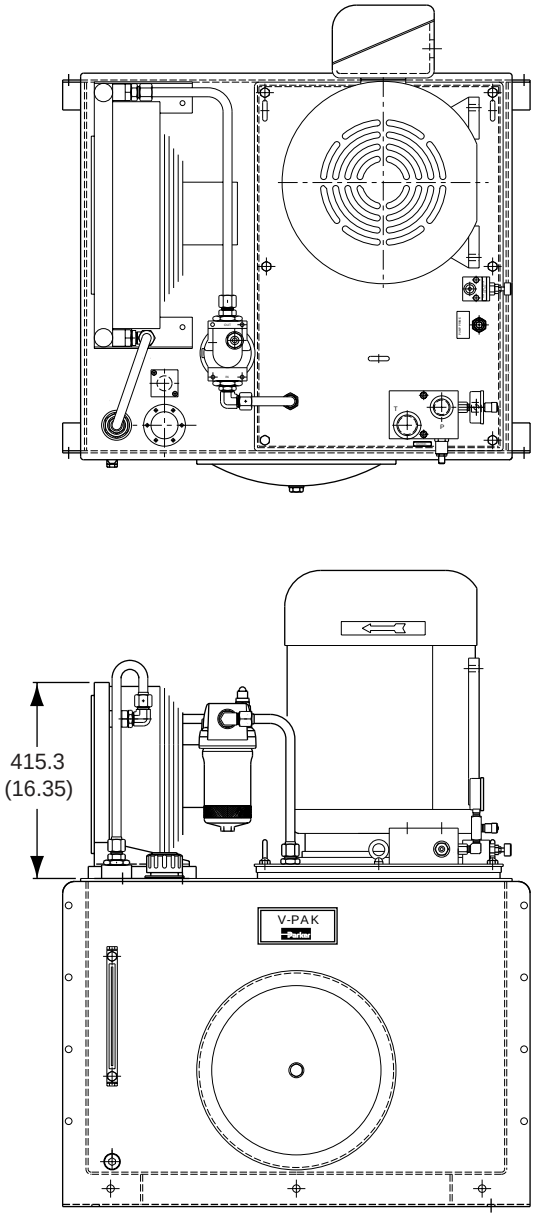
V8 reservoir with "Omit" manifold shown

Inch equivalents for millimeters dimensions are shown in (**)

Ordering Note: Units with PVP76 pumps and requiring options "A", "B" or "C" can only be ordered with V8 (302.8 L/80 Gal.) reservoir.

HEAT REMOVAL	OPTION C	3.4 KW (4.5 HP*)

*Performance data are based on 100SSU oil leaving the cooler 4°C (40°F) higher than the ambient air temperature used for cooling.

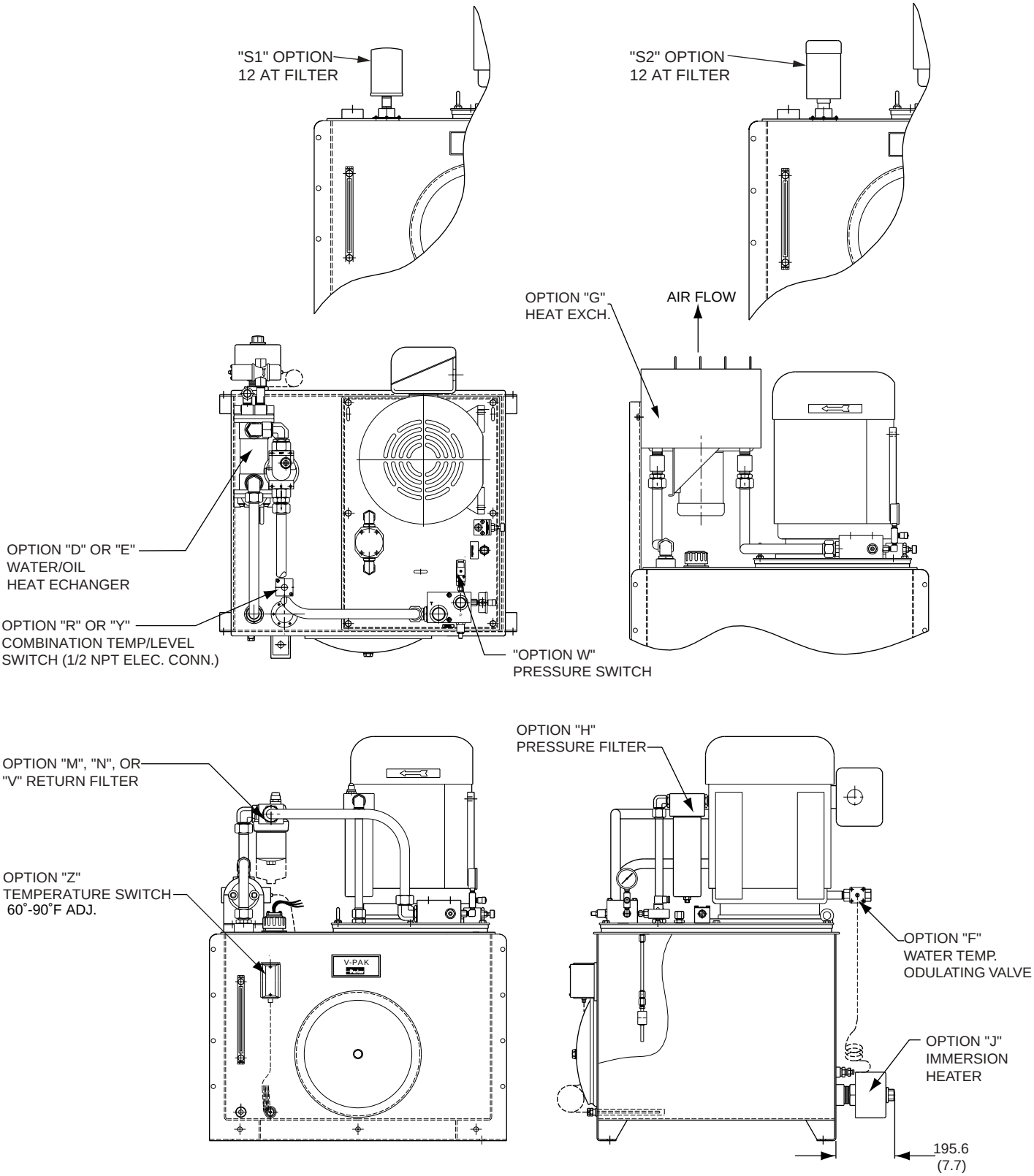


Option "C" System Cooling/Filter Loop

Dimensions - Accessories

V8 reservoir with "Omit" manifold shown

Inch equivalents for millimeters dimensions are shown in (**)



Parker Hannifin Corporation
Hydraulic Pump/Motor Division
Greeneville, Tennessee

Performance Data- Maximum Working Pressure

******** Represents maximum operating pressure with pump/motor combination. This will be the maximum relief valve or compensator setting.

******** Represents maximum operating pressure with pump/motor combination. When used on power unit products this will represent a 207 bar (3000 psi) relief valve or compensator setting.

B

V-Pak - Pump/Motor Combinations Maximum Operating Pressure

PUMP	FLOW LPM (GPM) @ 1725 RPM	5.6 KW (7.5 HP)	7.5 KW (10 HP)	11.2 KW (15 HP)	14.9 KW (20 HP)	18.6 KW (25 HP)	22.3 KW (30 HP)	29.8 KW (40 HP)
PVP33	41.6 (11.0)	75.2 (1090)	98.6 (1430)	146.9 (2130)	194.4 (2820)	239.2 (3470)		
PVP33	43.5 (11.5)	72.4 (1050)	95.1 (1380)	141.3 (2050)	186.8 (2710)	230.3 (3340)		
PVP33	45.4 (12.0)	69.6 (1010)	91.7 (1330)	135.8 (1970)	180 (2610)	222 (3220)		
PVP33	47.3 (12.5)	66.9 (970)	88.3 (1280)	131 (1900)	173.7 (2520)	213.7 (3100)		
PVP33	49.2 (13.0)	64.8 (940)	85.5 (1240)	126.9 (1840)	167.5 (2430)	206.8 (3000)	247.5 (3590)	
PVP33	51.1 (13.5)	62.7 (910)	82.7 (1200)	122.7 (1780)	162 (2350)	200 (2900)	239.2 (3470)	
PVP33	52.9 (14.0)	60.7 (880)	80 (1160)	118.6 (1720)	157.2 (2280)	193.7 (2810)	232.4 (3370)	
PVP33	54.8 (14.5)	59.3 (860)	77.9 (1130)	115.1 (1670)	152.4 (2210)	188.2 (2730)	224.8 (3260)	
PVP33	56.7 (15.0)	57.2 (830)	75.2 (1090)	111.7 (1620)	147.5 (2140)	182.7 (2650)	218.6 (3170)	

Performance Data- Maximum Working Pressure

▭ Represents maximum operating pressure with pump/motor combination. This will be the maximum relief valve or compensator setting.

**** Represents maximum operating pressure with pump/motor combination. When used on power unit products this will represent a 207 bar (3000 psi) relief valve or compensator setting.

V-Pak - Pump/Motor Combinations Maximum Operating Pressure

PUMP	FLOW LPM (GPM) @1725 RPM	5.6 KW (7.5 HP)	7.5 KW (10 HP)	11.2 KW (15 HP)	14.9 KW (20 HP)	18.6 KW (25 HP)	22.3 KW (30 HP)	29.8 KW (40 HP)
PVP48	58.6 (15.5)	53.8 (780)	70.3 (1020)	103.4 (1500)	137.9 (2000)	170.3 (2470)	203.4 (2950)	270.2 (3920)
PVP48	60.5 (16.0)	53.1 (770)	68.9 (1000)	101.4 (1470)	133.8 (1940)	166.2 (2410)	198.6 (2880)	263.4 (3820)
PVP48	62.4 (16.5)	57.1 (750)	67.6 (980)	98.6 (1430)	130.3 (1890)	162 (2350)	193.1 (2800)	256.5 (3720)
PVP48	64.3 (17.0)	50.3 (730)	65.5 (950)	96.5 (1400)	126.9 (1840)	157.9 (2290)	188.2 (2730)	249.6 (3620)
PVP48	66.2 (17.5)	49 (710)	64.1 (930)	93.8 (1360)	124.1 (1800)	153.8 (2230)	183.4 (2660)	243.4 (3530)
PVP48	68.1 (18.0)	48.3 (700)	62.8 (910)	91.7 (1330)	121.3 (1760)	150.3 (2180)	179.3 (2600)	237.9 (3450)
PVP48	70.0 (18.5)	46.9 (680)	61.4 (890)	89.6 (1300)	118.6 (1720)	146.9 (2130)	175.1 (2540)	232.4 (3370)
PVP48	71.9 (19.0)	46.2 (670)	60 (870)	87.6 (1270)	115.8 (1270)	143.4 (2080)	171 (2480)	226.8 (3290)
PVP48	73.8 (19.5)	45.5 (660)	58.6 (850)	86.2 (1250)	113.1 (1640)	140 (2030)	167.5 (2430)	222 (3220)
PVP48	75.7 (20.0)	44.1 (640)	57.2 (830)	84.1 (1220)	110.3 (1600)	137.2 (1990)	163.4 (2370)	216.5 (3140)
PVP48	77.6 (20.5)	43.4 (630)	56.5 (820)	82 (1190)	108.2 (1570)	134.4 (1950)	160 (2320)	212.4 (3080)
PVP48	79.4 (21.0)	42.7 (620)	55.2 (800)	80.7 (1170)	106.2 (1540)	131.7 (1910)	157.2 (2280)	206.8 (3000)
PVP48	81.3 (21.5)	42.1 (610)	54.5 (790)	79.3 (1150)	104.1 (1510)	128.9 (1870)	153.8 (2230)	203.4 (2950)
PVP48	83.2 (22.0)	41.4 (600)	53.8 (780)	77.9 (1130)	102 (1480)	126.2 (1830)	151 (2190)	199.3 (2890)
PVP48	85.1 (22.5)	40.7 (590)	52.4 (760)	75.8 (1100)	100 (1450)	124.1 (1800)	147.5 (2140)	195.8 (2840)
PVP48	87.0 (23.0)	40 (580)	51.7 (750)	74.5 (1080)	97.9 (1420)	121.3 (1760)	144.8 (2100)	191.7 (2780)

Performance Data- Maximum Working Pressure

******** Represents maximum operating pressure with pump/motor combination. This will be the maximum relief valve or compensator setting.

******** Represents maximum operating pressure with pump/motor combination. When used on power unit products this will represent a 207 bar (3000 psi) relief valve or compensator setting.

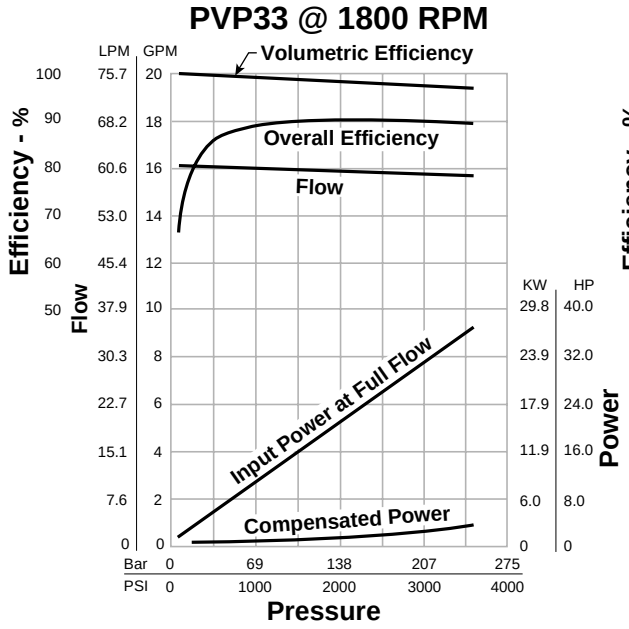
V-Pak - Pump/Motor Combinations Maximum Operating Pressure

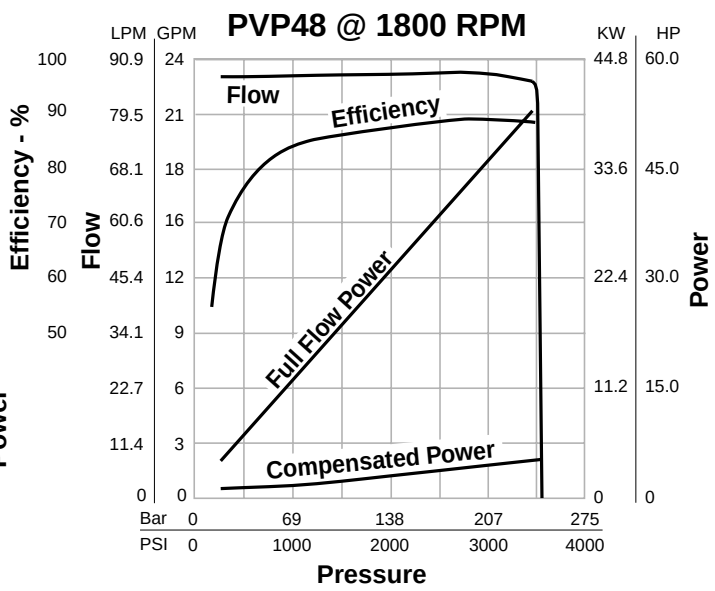
PUMP	FLOW LPM (GPM) @ 1725 RPM	5.6 KW (7.5 HP)	7.5 KW (10 HP)	11.2 KW (15 HP)	14.9 KW (20 HP)	18.6 KW (25 HP)	22.3 KW (30 HP)	29.8 KW (40 HP)
PVP76	90.8 (24.0)	20.7 (300)	31.7 (460)	55.2 (800)	78.6 (1140)	100 (1450)	121.3 (1760)	167.2 (2425)
PVP76	94.6 (25.0)	20 (290)	31 (450)	53.4 (775)	75.8 (1100)	96.5 (1400)	117.2 (1700)	160.3 (2325)
PVP76	98.4 (26.0)	18.6 (270)	29.6 (430)	52.4 (760)	73.8 (1070)	94.5 (1370)	113.8 (1650)	155.8 (2260)
PVP76	102.2 (27.0)	17.9 (260)	29.3 (425)	50.3 (730)	71 (1030)	91.4 (1325)	113.8 (1650)	155.8 (2260)
PVP76	106.0 (28.0)	17.6 (255)	27.6 (400)	48.3 (700)	68.3 (990)	88.3 (1280)	106.5 (1545)	144.1 (2090)
PVP76	109.8 (29.0)	17.2 (250)	26.9 (390)	46.5 (675)	65.5 (950)	86.9 (1260)	104.5 (1515)	140.7 (2040)
PVP76	113.6 (30.0)	-	26.9 (390)	45.5 (660)	63.8 (925)	83.4 (1210)	103.4 (1500)	137.9 (2000)
PVP76	117.3 (31.0)	-	25.9 (375)	43.8 (635)	61.4 (890)	80.7 (1170)	97.9 (1420)	132.4 (1920)
PVP76	121.1 (32.0)	-	24.8 (360)	42.7 (620)	60.3 (875)	78.6 (1140)	95.1 (1380)	128.6 (1865)
PVP76	124.9 (33.0)	-	23.4 (-340)	41.4 (600)	57.9 (840)	75.8 (1100)	92.4 (1340)	124.8 (1840)
PVP76	128.7 (34.0)	-	22.4 (325)	39.6 (575)	56.9 (825)	74.1 (1075)	90.3 (1310)	121.7 (1765)
PVP76	132.5 (35.0)	-	21.4 (310)	36.5 (530)	55.2 (800)	70.7 (1025)	87.9 (1275)	118.9 (1725)
PVP76	136.7 (36.0)	-	20.7 (300)	35.2 (510)	53.1 (770)	68.9 (1000)	84.8 (1230)	111 (1610)

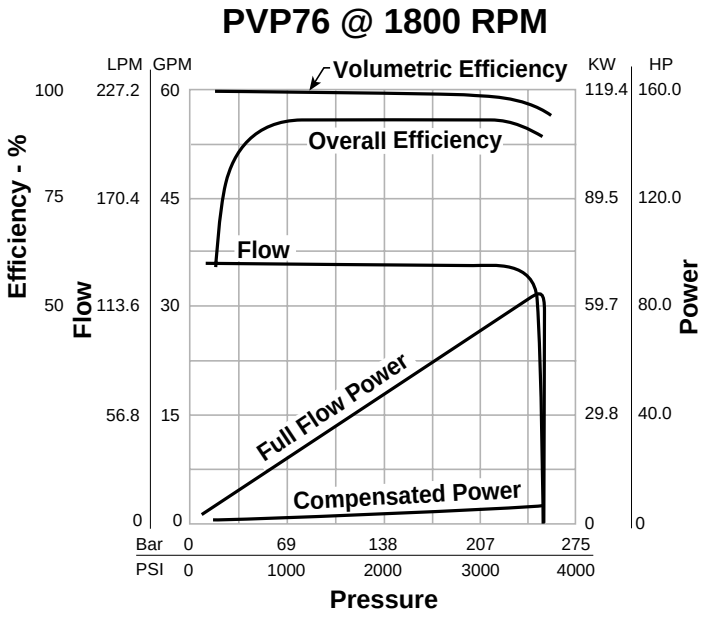
Performance Data

Fluid Standard Hydraulics Oil 100 SSU @ 49°C (120°F)

Flow, Horsepower and Efficiency Charts







NOTE: The efficiencies and data in the graph are good only for pumps running at 1800 RPM and stroked to maximum. To calculate approximate horsepower for the other conditions, use the following formula:

$$HP = \left[\frac{Q \times (PSI)}{1714} \right] + (CHp)$$

Actual GPM is directly proportional to drive speed and maximum volume setting. Flow loss, however, is a function of pressure only.

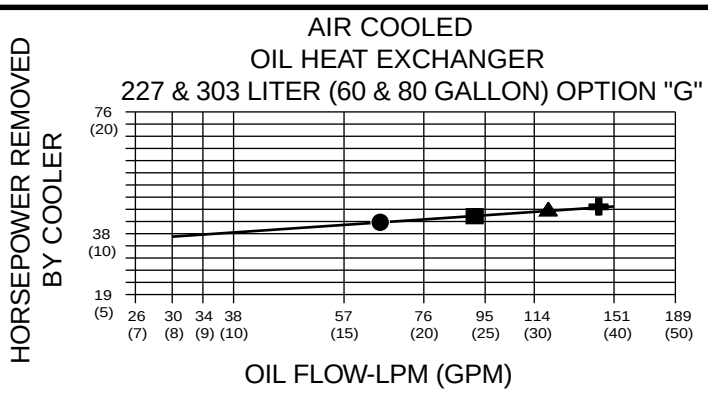
WHERE:

Q = Actual Output Flow in GPM

PSI = Pressure at Pump Outlet

CHp = Input Horsepower @ Full Compensation @ 1800 RPM (from graph read at operating pressure)

NOTE: Maximum input HP to the pump may exceed electric motor drive capability. Select motor size (HP) to exceed application requirements (HP).



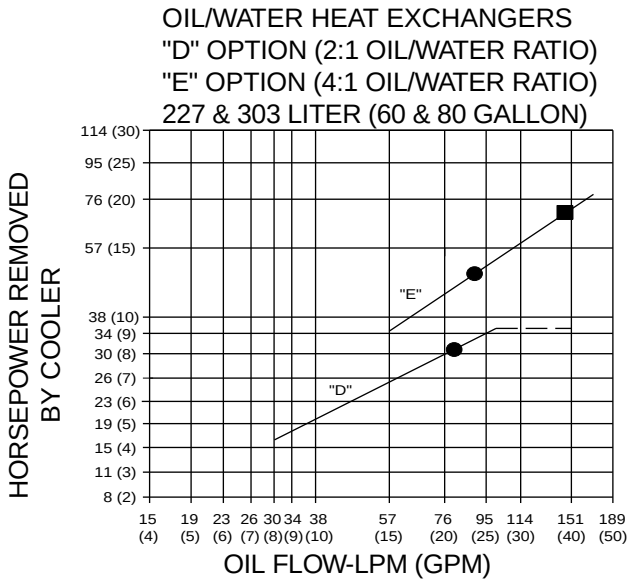
"G" - Return Line HT. EX. 30 LPM - 136 LPM (8 GPM - 36 GPM MAX.)

Performance data is based on 100 SSU oil leaving the cooler 4.4°C (40°F) higher than the ambient air temperature used for cooling.

OIL PRESSURE DROP AT 100 SSU

● = .34 BAR (5 PSI)
■ = .69 BAR (10 PSI)
▲ = 1.0 BAR (15 PSI)
✚ = 1.4 BAR (20 PSI)

B



OIL PRESSURE DROP AT 100 SSU

● = .34 BAR (5 PSI)
■ = .69 BAR (10 PSI)

"D" Option - Return line ht. ex. 30 LPM - 136 LPM (8.0 GPM - 36 GPM Max.) max. water flow not to exceed 45 LPM (12 GPM).

"E" Option - Return line ht. ex. (15.0 GPM - 36 GPM Max.) max. water flow not to exceed 45 LPM (12 GPM).

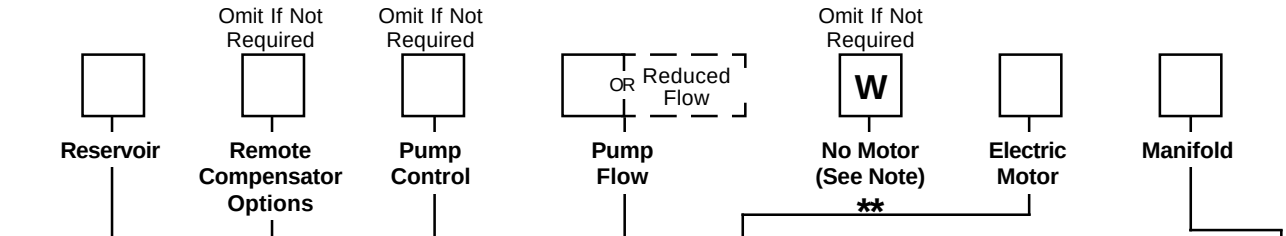
"---------" - Represents max. horsepower removal at max. pump flow rate.

Heat removal is based on 4.4°C (40°F) differential between transfer medium using 29°C (85°F) cooling water.

The oil/water ratio 2:1 means that for every 7.5 liters (2 gallons) of oil through the cooler, a minimum of 3.8 liters (1 gallon) of 29°C (85°F) water must be circulated to achieve curve results.

	RESERVOIR SIZE LITERS (GALLONS)	
	227 (60)	303 (80)
KW (HP) REMOVAL	4.2 (1.1)	4.5 (1.2)

Heat removal is based on static ambient air of 29°C (85°F) and max. oil temperature of 57°C (135°F).



Ordering Code	Reservoir Size (Gallons)
V6	60
V8	80

Ordering Code	Pump Control Option
Omit	Std. Remote Compensator
A*	Load Sense (Flow Control)

***** Unless otherwise specified, a SAE-6 37° flared port will be supplied for customer connection.

When shuttle check option (7 or 8) is specified on S5, S6, or S8 manifold, sense line will be plumbed to shuttle check.

****** Consult factory for horsepower and hi-lo pump control options. Lead time is four weeks.

Ordering Code	Motor Description (HP-RPM-Frame-Type)
M	7 1/2-1800-213TC-TEFC
N	10-1800-215TC-TEFC
P	15-1800-254TC-TEFC
S	20-1800-256TC-TEFC
Q	25-1800-284TC-TEFC
R	30-1800-286T-TEFC
V	40-1800-324T-TEFC

Electric motors are 230/460V, 60Hz, 3PH. Consult factory for other motor speeds (RPM) and voltages.

****** Use "W" prefix when no motor is required on unit. When ordering, "W" must be followed by motor model code equivalent to frame size of motor to be used.

Example: V815WM*=80 Gallon reservoir, std PVP33 unit to accept a 7.5 HP/213TC C-face frame motor.

Ordering Code	Pump Flow Rate @ 1800 RPM	Pump Used and Description
15	15.6	PVP33 - Std. Remote Compensator
23	23.0	PVP48 - Std. Remote Compensator
36	36.1	PVP 76-STD Remote Compensator
*****	Specify in GPM	Destroked (Reduced) Flow

***** Unless otherwise specified, units are shipped at max. flow rate (GPM) at 1800 RPM. When reduced flow setting is required,

Reduced flows from 22.5 to 8.0 GPM, specify in 0.5 GPM increments.

Reduced flows from 35.0 to 24.0 GPM, specify in 1.0 GPM increments.

Example: V*9.5**-- = PVP33 Pump Destroked to 9.5 GPM
V*A31**-- = PVP76 Load Sense Pump Destroked to 31.0 GPM

Ordering Code	Compensator Description
Omit	Single Pressure Remote Compensator
B	Single Pressure Remote Compensator With Low Pressure Standby
C	Bi-Pressure Remote Compensator
D	Bi-Pressure Remote Compensator With Low Pressure Standby
E	Provision For Customer Supplied Remote Control Relief Valve

***** Consult factory for electrohydraulic pressure control and driver card options.

Ordering Code	Pump Control/Mounting	Supply/Return Port Actuator Port Size	Other
OMIT	Pressure and Return Port Block with Safety Relief and Pump Compensator Control Valves	"P" Port SAE-16 "T" Port SAE-20	None
S5	D05 Single Station Subplate with Safety Relief and Pump Compensator Control Valves	"A" & "B" Ports SAE-10 Str. Thr'd	None
S6	D05H/D05HE Single Station Subplate with Safety Relief and Pump Compensator Control Valves	"A" & "B" Ports SAE-10 Str. Thr'd	"X" & "Y" Ports SAE-4 Str. Thr'd
S8	D08 Single Station Subplate with Safety Relief and Pump Compensator Control Valves	"A" & "B" Ports SAE-16 Str. Thr'd	"X" & "Y" Ports SAE-6 Str. Thr'd
M5 *	D05 Multistation Parallel Circuit Manifold with Safety Relief and Pump Compensator Control Valves	"A" & "B" Ports SAE-8 Str. Thr'd	None
M6 *	D05H Multistation Parallel Circuit Manifold with Safety Relief and Pump Compensator Control Valves	"A" & "B" Ports SAE-12 Str. Thr'd	None
M8 *	D08 Multistation Parallel Circuit Manifold with Safety Relief and Pump Compensator Control Valves	"A" & "B" Ports SAE-16 Str. Thr'd	"Y" Port SAE-8 Str. Thr'd

***** When ordering Multi-Station Manifolds, the number of stations must be specified. If valves are to be mounted, specify the valves and sequence, if the model code exceeds 25 digits, utilize the special ordering code X.

Example: V615QM53EFG4
3 Station D05 Manifold
Station #1: E
Station #2: F
Station #3: G4

Example: V615QM54B1B1CB4
4. Station D05 Manifold
Station #1: B1
Station #2: B1
Station #3: C
Station #4: B4

Note:
1. Manifolds are mounted vertically bottom station is number 1.
2. M5 & M6 -2 thru 5 stations available M8-2 & 3 stations available. (Other manifolds- Consult factory)

B

Omit If Not Required — **Directional Control Valve**

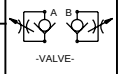
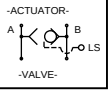
Omit If Not Required — **Manapak Control Valves**

P — Omit If Not Required — **Accessories**

Omit If Not Required — X — **Special Modifications**

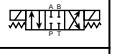
Not Required When Ordering — **Design Series**

Indicates special modification has been specified.

Ordering Code	Function	Valve Model Number	NFPA Mounting Pad	Nominal Flow LPM (GPM)	Circuit Symbol
1	Flow Control (Meter Out)	FM3DDKN	D05	45 (12)	
2	Flow Control (Meter Out)	FM6DDKN	D08	151 (40)	
3	Pilot Operator Check	CPOM3DDN	D05	45 (12)	
4	Pilot Operator Check	CPOM6DDN	D08	189 (50)	
5	"P" Port Pressure Reducing	PRM3PA25KN (150-3500)	D05	45 (12)	
6	"P" Port Pressure Reducing	PRM6PA25KN (150-3000)	D08	189 (50)	
7*	Shuttle Check (Load Sense)	–	D05	–	
8*	Shuttle Check (Load Sense)	–	D08	–	

***** Use in combination with load sense pump control "A" and flow control valve option (1 or 2).

Manapak valves mounted in order of callout. First valve will be nearest DCV; last valve will be on manifold.

Ordering Code	Valve Model Number	NFPA Mounting Pad	Nominal Flow LPM (GPM)	Solenoid Operator -110 VAC	Circuit Symbol
A	D3W20BNYK	D05	78 (20)	Single (Spr. Ret)	
B	D3W1CNYK	D05	78 (20)	Double (Spr. Ctr)	
C	D3W4CNYK	D05	57 (15)	Double (Spr. Ctr)	
D	D3W20DNYK	D05	78 (20)	Double (Detent)	
E	D31VW20B4NYCF	D05H	78 (20)	Single (Spr. Ret)	
F	D31VW1C4NYCF	D05H	78 (20)	Double (Spr. Ctr)	
G	D31VW4C4NYCF	D05H	78 (20)	Double (Spr. Ctr)	
H	D31VW20D4NYCF	D05H	78 (20)	Double (Detent)	
J	D61VW1B4NYCF	D08	189 (50)	Single (Spr. Ret)	
K	D61VW1C4NYCF	D08	189 (50)	Double (Spr. Ctr)	
L	D61VW4C4NYCF	D08	189 (50)	Double (Spr. Ctr)	
M	D61VW1D4NYCF	D08	189 (50)	Double (Detent)	
N	Cover Plate	D05	–	–	
R	Cover Plate	D08	–	–	

Order Code	Function	Model Number	Technical Data
A**	Continuous Cooling	RM-08-2-2	*Air/Oil: Max Oil Flow 17 LPM (4.5 GPM) .6 KW (.8 HP) Heat Rejection
B**	Continuous Cooling	RM-19-2-2	*Air/Oil: Max Oil Flow 17 LPM (4.5 GPM) 1.1 KW (1.5 HP) Heat Rejection
C**	Filter Cooling Loop	AOC-22-2-1PH 40CN205Q	*Air/Oil W1 PH Motor Max Oil Flow 32 LPM (8.5 GPM) 3.3 KW (4.5 HP) Heat Rejection
D	Oil/Water Heat Exchanger	N701B6F	Oil/Water (2:1) Max.95 LPM (25 GPM)
E	Oil/Water Heat Exchanger	EKS-708-T	Oil/Water (4:1) Max. 144 LPM (38 GPM)
F	Water Temp. Modulating Valve	V47AC-6	24°-57°C (75°F-135°F) Adj. Range Cross Ambient Sensing 3/4" NPT Inlet
G	Air Cooled Oil Heat Exchanger	AOVH-15-3PH	Air Cooled-3 Phase Motor 9 KW (12 HP) Removal @ Max. 136 LPM (36 GPM)
H	Pressure Filter	30P210QM250NN-1	10 Micron-Microglass Dual Element Mech. Indicator
J	Immersion Heater	KB-3T2-0193-M1	3KW-480V-3PH -17°-38°C (0°-100°F) ADJ. W/Thermostat
K	Check Valve Pump Outlet	493-16-D1-2	.3 BAR (5 PSI) Cracking Pressure
L	Bypass Check	C2020S65	4.5 BAR (65 PSI) Cracking Pressure
M	Return Filter	40CN110Q	10 Micron Microglass Single Element Mech. Indicator ***(13 PSID)
N	Return Filter	40CN210Q	10 Micron Microglass Dual Element Mech. Indicator *** (8 PSID)
R1	Combination Float/Temp. SW N.O. Float Up	877501	Fixed Temp @ 65°C (149°F) Close @ Low Level and/or 65°C (149°F) (N.C.)
R2	Combination Float/Temp. SW N.C. Float Up	877502	Fixed Temp. @ 65°C (149°F) Open @ Low Level and/or 65°C (149°F) (N.C.)
S1	12AT Canister Breather	926169	2 Micron Cellulose Media
S2	Triceptor Breather	934331	Silica Gel Desiccant
V	Return Filter	50AT10CN1500LI	Cellulose Element Ind. Guage-1 BAR (15 PSI) Bypass 132 LPM (35 GPM) Max. Oil Flow
W1	Pressure Switch 10-160 BAR (150-2320 PSI)	876731-03	N.O. & N.C. Contacts (SPDT Switch) DIN 43650 Connector
W2	Pressure Switch 25-248 BAR (360-3600 PSI)	876731-02	N.O. & N.C. Contacts (SPDT Switch) DIN 43650 Connector
Y	Level Switch	877004	Open @ Low Level
Z	Adjustable Temperature Switch	837-A4A NEMA 1	16°-88°C (60°F-190°F) Range Adjust. Differential N.O. & N.C. Contacts

* Heat rejection data are based on 100SSU oil leaving the cooler 4°C (40°F) higher than the ambient air temperature used for cooling.

**Units with PVP76 pumps and requiring options "A", "B" or "C" can only be ordered with V8 (302.8 L/80 Gal.) reservoir.
Option "A" available from 5.6 KW (7.5 HP) thru 18.5 KW (25 HP)
Option "C" not available with option "A" or "B".

***Based on max 136 LPM (36 GPM) w/ 150SUS oil.

Operating Notes

- Jog the electric motor once and verify that the electric motor is rotating in the same direction as the arrow on the electric motor housing. If direction is incorrect, reverse two of the three leads on a 3-phase electric motor.
- V-Pak power units are tested and pressure control valves are factory preset. If adjustments are needed, follow the procedure below: Begin adjusting relief valve and pump compensator control valve to increase pressure gradually. (NOTE: Always set relief valve 28-31 bar (400-450 psi) higher than pump compensator pressure control valve or severe overheating will occur.)
- If pump fails to prime, vent pump discharge to atmosphere to establish fluid flow.
- Reservoir temperature should not exceed 66°C (150°F). System reliability and component service life will be reduced when system is operated at higher temperature.
- Clean fluid = improved system reliability and longer component service life, change filter elements whenever filter indicators indicate a dirty element condition.
- It is recommended that every 4,000 operating hours or once a year, whichever occurs first, the filler/breather cap and suction strainer should be replaced.

Fluid Recommendations

Premium quality hydraulic oil with a viscosity range between 150-250 SSU (30-50 cst.) at 38°C (100°F). Normal operating viscosity range between 80-1000 SSU (17-180 cst.). Maximum start-up viscosity is 4000 SSU (1000 cst.).

NOTE: Consult Parker when exceeding 71°C (160°F) operation. Oil should have maximum anti-wear properties, rust and oxidation treatment.

Filtration

For maximum pump and system component life, the system should be protected from contamination at a level not to exceed 125 particles greater than 10 microns per milliliter of fluid. (SAE Class 4 / ISO 16/13.) Due to the nature of variable displacement pumps, variations in pump inlet conditions, fluid acceleration losses, system aeration, and duty cycle must be carefully considered before specifying suction line filtration. Contact your Parker representative for assistance.