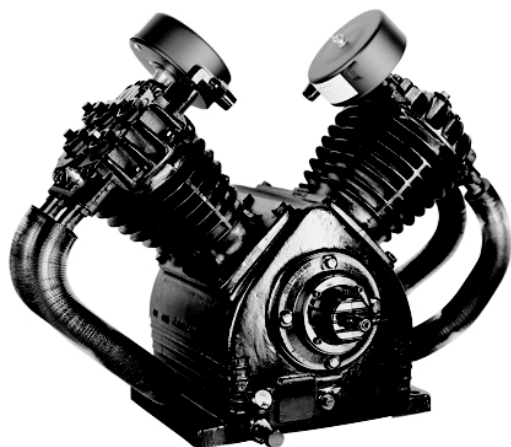




# 447 Series Compressor Pump



Model:	CPR Unloader	Aftercooler Tubes	Flywheel
447-4502			
447-4523	X		
447-4533	X	X	
447-510			X
447-523	X		X
447-533	X	X	X

### Specifications:

Minimum rpm: 300  
 Minimum rpm with CPR: 500  
 Maximum rpm: 900

Max Duty Cycle for 8 hour/day operation: 75-80%  
 Max Duty Cycle for 16 hour/day operation: 60%  
 Max Duty Cycle for 24 hour/day operation: 30-35%

Maximum Continuous Duty Working Pressure: 175 psi

Approx. Oil Capacity of Crankcase: 2.8 litres

HP	150 psi		125 psi		Cylinders			Flywheel	
	rpm	CFM	rpm	CFM	Qty	Bore	Stroke	Dia.	Groove
7.5	425	26.8	510	29.8	4	4.5" and 2.5"	4"	20"	2B
10	590	36.5	650	38.1					
15	880	51.8	880	52.1					

**NOTE**

For installation and maintenance information, refer to DV Systems Bulletin 'HDI01'.

**CAUTION**

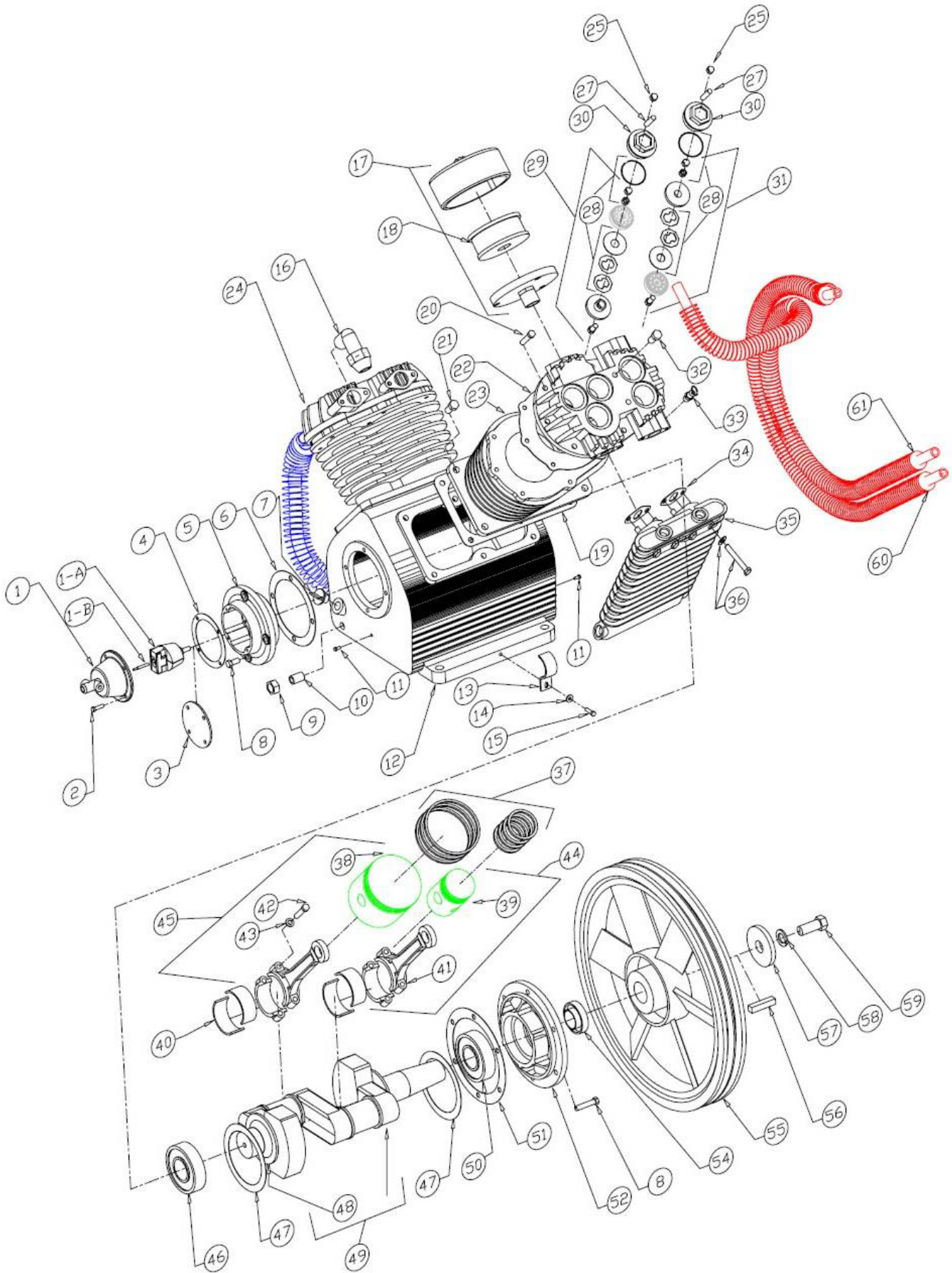
Check for proper oil level prior to using the Pump.

**Service & Maintenance:** Use only Genuine DV Systems Oil and Kits as indicated on Page 3 of this manual.



DV Systems Inc.  
 490 Welham Road  
 Barrie, Ontario  
 L4N 8Z4

Tele: (705) 728-5657  
 Fax: (705) 728-4974  
 Email: sales@dvsystems.ca  
 Web: www.dvsystems.ca



Ref. #:	Qty:	Part #:	Description:	Ref. #:	Qty:	Part #:	Description:
1	1	CPR-9400	CPR Valve / Cup Body	31	4	445-4205	Exhaust Valve Assy
1-A	1	CPR-9401	Flyweight Assy	32	4	SS-31	3/8"-16 x 2-1/2" Hex Screw
1-B	1	CPR-9004	Valve Stem	33	2	TIA-5075	Safety Valve - 75 psi
2	4	SS-10022	1/4"-20 Socket Screw	34	4	445-196	Intercooler Gasket
3	1	445-9700	End Plate	35	2	447-330	Intercooler
4	1	445-144	Gasket	36	8	SS-01973	3/8"-16 x 3-3/4" Hex Bolt
5	1	445-136	Bearing Housing	36	8	SS-1525	3/8" Flat Washer (See Note Below)
6	1	445-12	End Plate Gasket	37	2	KK-9805	Ring Kit
7	1	NCB-303-1	Oil Filler Plug	38	2	445-412-1	Low Pressure Piston + Pin Assy
8	10	SS-25	3/8-16 x 1" Hex Screw	39	2	445-4112-1	High Pressure Piston + Pin Assy
9	1	SS-9924	3/8" NPT Pipe Cap	40	4	445-474	Conn Rod Bearing Insert
10	1	SS-2108	3/8" x 2" Nipple	41	4	445-4110-3	Rod + Cap Assy
11	2	225-6	Screw	42	8	SS-9947	Conn Rod Bolt
12	1	445-4	Crankcase	43	8	SS-9946	Lock Washer
13	2	SS-9941	Intercooler Bracket	44	2	445-9403	High Pressure Rod + Piston Assy
14	2	SS-1523	1/4" Flat Washer	45	2	445-9402	Low Pressure Rod + Piston Assy
15	2	SS-1	1/4"-20 x 1/2" Hex Screw	46	1	445-23	Ball Bearing
16	2	SS-01773	3/4" Compression Elbow	47	2	445-5-1	Oil Throw Ring
17	2	357-9401	Air Filter / Silencer Assy	48	2	445-43	Oil Cup
18	2	357-9701	Air Filter Element	49	1	445-450	Crankshaft + Oil Cup Assy
19	2	445-327	Cylinder to Crankcase Gasket	50	1	SST-3001	Ball Bearing
20	14	SS-26	3/8"-16 x 1-1/4" Hex Bolt	51	1	445-13	End Plate Gasket
21	12	SS-48	1/2"-13 x 1" Hex Head Cap Screw	52	1	445-9	End Plate
22	2	447-26	Head Gasket	53			
23	2	447-325	Cylinder	54	1	445-111	Oil Seal
24	2	447-24	Cylinder Head	55	1	445-2-1	Flywheel
25	10	SS-7424	3/8"-14 Cap Nut	56	1	SS-10493	1/2" x 2-1/2" Square Key
26				57	1	445-326	Flywheel Retaining Washer
27	10	SS-6045	3/8"-16 x 1-1/2" Set Screw	58	1	SS-1509	3/4" Medium Lockwasher
28	2	VRK-247	Valve Repair Kit	59	1	SS-6896	3/4"-16 x 1" Hex Head Cap Screw
29	6	445-4217	Intake Valve Assy	60	1	CT-9479	Aftercooler (outer)
30	10	445-89	Valve Plug	61	1	CT-9480	Aftercooler (inner)

Note: SS-1525 Flatwasher (#36) are only used when replacing an existing Copper Finned Tube Intercooler. They are not required when replacing a Cast Intercooler.

### Service Kits and Maintenance Items:

PR-20-4: 20 Weight Oil, 4 litre (1 US gallon), suitable for ambient temperatures below 30°C (90°F)

PR-30-4: 30 Weight Oil, 4 litre (1 US gallon), suitable for ambient temperatures above 30°C (90°F)

OJ2000-K1: Synthetic Oil, 4 litre (1 US gallon)

MK-447: Includes (4) litres of 'PR-20' Oil and (2) '357-9701' Air Filters

MKS-447: Includes (4) litres of 'OJ2000' Oil and (4) '357-9701' Air Filters

VRK-247: Valve Repair Kit includes (5) Valve Discs, (10) Springs, (5) Jam Nuts, (5) Cap Nuts, (5) Brass Cap Nuts, (5) Socket head Cap Screws, and (3) Copper Gaskets. Two Kits required.

OK-447: Overhaul Kit includes (2) 'VRK-247' Valve Repair Kits, (1) 'GK-9403' Gasket Kit, (2) 'KK-9805' Ring Kits, and (4) '445-474' Bearing Insert Kits

GK-9403: Gasket Kit includes all Gaskets and (1) '445-111' Oil Seal

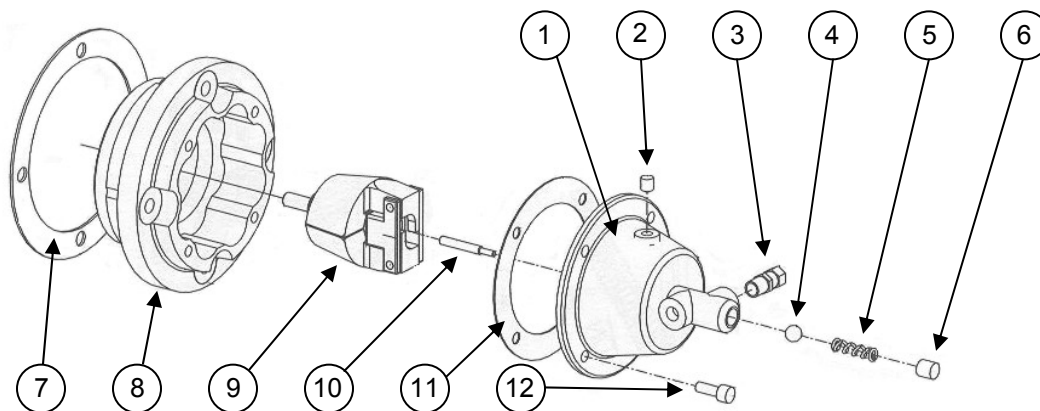
KK-9865: Intercooler Kit to include (1) '447-330' Intercooler, (2) '445-196' Gaskets, (4) 'SS-01973' Bolts and (4) 'SS-1525' Washers

### Compressor Pump Torque Values:

Ref. #:	Description:	In Lbs	Ft Lbs	Nm	Ref. #:	Description:	In Lbs	Ft Lbs	Nm
8	Hex Screw @ Small End Plate	240	20	27.1	27	Valve Set Screw	180	15	20.3
8	Hex Screw @ Large End Plate	240	20	27.1	28	Valve Assy	180	15	20.3
11	Oil Ring Retainer	144	12	16.2	30	Valve Plug	1500	125	169
20 & 32	Head Bolts	360	30	40.6	36	Hex Bolt @ Intercooler	360	30	40.6
21	HHCS @ Cylinder to Crankcase	564	47	63.7	42	Connecting Rod Bolt	408	34	46
25	Cap Nuts	180	15	20.3	59	HHCS @ Flywheel	1860	155	210

Note: Re-torque End Plate Screws (#8), Head Bolts (#20 & 32), Cylinder Bolts (#21), and Intercooler Screws (#36) after first 10 hours of operation.

## Centrifugal Pressure Release Assembly ('CPR-9700'):



Ref. #:	Part #:	Description:	Ref. #:	Part #:	Description:	Ref. #:	Part #:	Description:
1	CPR-9009	Valve / Cup Body	5	CPR-9006	Valve Spring	9	CPR-9401	Plunger / Flyweight
2	CPR-9000-R	1/8" NPT Brass Plug	6	CPR-9000-R	Plug	10	CPR-9004	Valve Stem
3	SS-8553	1/4" Tube x 1/8" NPT Strt Fit.	7*	445-12	Gasket	11	445-144	End Plate Gasket
4	CPR-9007	1/4" Dia Steel Ball	8*	445-136	Bearing Housing	12	SS-10022	1/4"-20 x 1" HSCS

**Note:** Parts noted with a "\*" above are required when converting a non-CPR Pump to one with a CPR Assembly, and are not included in the 'CPR-9700' Kit.

**CPR Repair Kit:** 'CPR-9010' Repair Kit includes 'CPR-9007' (#4), 'CPR-9006' (#5), 'CPR-9000-R' (#6), 'CPR-9004' (#10), and '445-144' End Plate Gasket (#11).

## Centrifugal Pressure Release Torque Values:

Ref. #:	Description:	In Lbs	Ft Lbs	Nm
9	Plunger / Flyweight	288	24	32.5
12	1/4"-20 x 1" HSCS	96	8	10.8

## Pump Overhaul Specifications:

### Honing Specifications:

Cylinder:	Standard Hone Dia:	Skirt / Cyl Dia Clearance
LP Cylinder	4.5000" / 4.5005"	.0065" / .0085"
HP Cylinder	2.5000" / 2.5005"	.0025" / .0045"

1. Cylinder must be within diametral tolerance at all points. Out-of-round or taper must not exceed 0.005".
2. Hone, 20 minimum to 35 maximum micro-inches of surface roughness.
3. De-burr the sharp corners at the top and bottom of the Cylinder opening with a 1/64" to 1/32" x 30° chamfer.

### Connecting Rod Insert Bearing Specifications:

Insert	Crank Throw Dia:	Part #:
Standard	2.2490" / 2.2485"	445-474
0.02" Oversize	2.2290" / 2.2285"	445-474-020

**Caution:** Pre-lubricate all Crank Throws and Insert Bearing surfaces to prevent Pump tie-up during the first few minutes of operation. Pour oil on the outside of the Connecting Rod and Crank Shoulders. Use the Crankcase oil, do not use grease.

## Pump Dimensions:

