Kleenoil USA Inc • 6913 Avenue K • Suite #303 • Plano, Texas • 75074 • www.kleenoilusa.com

Kleenoil Hydraulic Kits

The Kleenoil Hydraulic Block is mounted to the bottom of the Kleenoil Bypass Filtration System to convert the lower pressure bypass engine oil filter to a high pressure hydraulic fluid filter.

There are three ports on the valve block as listed:

- Port 1: Low Pressure output approximately 50 PSI normally is blanked off but may be used to supply another filter housing
- Port 2: High pressure input up to 3000 PSI
- Port 3: Return to hydraulic reservoir. This port is fitted with adaptors size No. 6 JIC and it is important that the return hose is of at least 3/8 bore

Hydraulic Fluid Factoids

- More than 70% of hydraulic failures are caused by contaminants in the oil.
- Heavily contaminated oil can reduce power by as much as 15-20%, slowing machine response and taking longer to perform an operation.
- By following a few basic tips listed below, the life of piston rods, seals, valves, and pumps can be more than doubled.
- By Maintaining the hydraulic fluid in 'as-new' condition, the life of the same components can be increased ten-fold.

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Filtration Level: Particulate contamination in accordance with BS 5540 Part 4: 1981 and ISO/DIS 4406 14/9 equivalent to NAS 1638 Class 6 (Hydraulic Oil Specification).

Water Retention: To <0.025%

Total Water Capacity of Cartridges: Heavy Duty (Code 1878) - 0.56L and Super Duty (code 1888) - 1.2L

NAS GRADE (National Aerospace Standard 1638)

NAS GRADE is a widely adopted standard to measure the contamination degree of hydraulic oil.

	NAS GRADE (Nos. in 100ml.)											
Particle Size (µ)	1	2	3	4	5	6	7	8	9	10	11	12
5 - 15	500	1,000	2,000	4,000	8,000	16,000	32,000	64,000	128,000	256,000	512,000	1,024,000
15 -25	89	178	356	712	1,425	2,850	5,700	11,400	22,800	45,600	91,000	182,000
25-50	16	32	63	126	253	506	1,012	2,025	4,050	8,100	16,200	32,400
50 - 100	3	6	11	22	45	90	180	360	720	1,440	2,880	5,760
> 100	1	1	2	4	8	16	32	64	128	256	512	1,024
						Kleenoil Purified Oil		New Hydraulic Oil				

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Hydraulic Control Valve

The hydraulic control valve is a three function valve which accurately controls pressure, flow and also relieves in the case of the filter becoming so clogged that it is unable to pass any fluid. Port 3 on the valve block carries both the return from the filter and also acts as a "sensing" point for the valve to reference to. The valve will deliver a pressure of approximately 50 PSI above whatever pressure is shown at port 3.

This is why we always use a 3/8 inch bore hose for the return so as to minimize any back pressure which would influence the pressure delivered to the filter. Where our system differs from our competitors is that in the event of the filter being unable to pass any fluid then the valve in effect shuts down and will only pass 10 cc per minute through port 3 which is not enough to upset the delicate balance of some hydraulic systems.

Many simpler systems used by our competition use what is a simple relief valve coupled to a check valve which takes off the excess oil to maintain the correct reduced pressure at the filter. The problem with this idea is that you have a constant flow of oil at quite a high rate through the valve which may cause problems and could also cause the fluid temperature to rise considerably.

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Hydraulic Control Valve Mounting

Step 1: Remove the adaptors that are in the base of the unit taking care not to score or damage the mating surfaces

Step 2: Carefully clean the mating surfaces and remove any burrs or sealing compound that may be present.

Step 3: Remove valve assembly from the packaging and check that the two "O" rings are correctly seated in the ports on the underside valve block.

Step 4: Carefully locate the valve assembly onto the face of the filter housing and attach with the three stainless socket screws provided. Tighten to approxiately 10 ft lbs

Step 5: There are three ports on the valve block identified as listed below:

Port 1: Low pressure output approxiately 50 PSI normally blanked off but may be used to supply another filter housing.

Port 2: High pressure input upto 3000 PSI.

Port 3: Return to hydraulic reservoir. This port is fitted with adaptors size No. 6 JIC and it is important that the return hose is of at least 3/8 bore.

Step 6. Ensure that all connections are tight and that the valve body is seated and tightened in the valve block.

FYI: The bottom of the filter housing is marked inlet and outlet but these markings are only relevant when used WITHOUT the hydraulic control block.

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