

Industrial - Hydraulic Pump OE

ISO 4406 - Iso Cleanliness Specification Recommendation of New Lubricants

Always follow Chevron's ISOCLEAN® Certified Lubricant Product Guidelines.



Hydraulic Pump and Gear Applications	Component Type	Oil Cleanliness Specification ISO 4406 Maximum Allowed Cleanliness Code	Source Notes	
Bosch Rexroth	High Dirt Sensitivity and High Availability	General recommendation is 16/12/9	See the section from Bosch Rexroth Cleanliness publication R999000240 dated 2016 for critical systems and other conditions	
	Piston Pumps	General recommendation is 18/16/13		
	Vane Pumps	General recommendation is 18/16/13		
Danfoss	Steering Components -Open Center	22/20/17	Data from Danfoss Publication titled "Hydraulic Fluids and Lubricants - Guidelines for Cleanliness page 15" Pub dated Sept 2018 Document provided below	
	Steering components - LS and closed center	21/19/16		
	Orbital Motors	20/20/16		
	Proportional Spool Valves	21/19/16		
	Axial & Radial Piston Pumps and Motors	22/18/13		
	Gear Pumps and Motors	22/18/13		
	Cartridge and Electrohydraulic Valves	18/16/13		
Dynex/Rivett - Axial piston pumps & valves	PF 4200 Series	For ALL PF and PV Series Pumps Subsea systems using water glycol standard: 19/17/14 For severe duty with extended life requirements: 17/15/12	Dynex Rivett pumps, particularly the checkball design pumps listed here are durable and relatively dirt tolerant. They are widely used in test stands and in the Oil Industry on subsea hydraulic control systems using water glycol fluids. Source Dan Iglieski, Chief Engineer, Dynex Rivett Inc., Pewaukee, Wisconsin.	
	PF2006/8, PF/PV4000 and PF/PV6000 Series			
	PF 1000, PF 2000 & PF 3000 Series	For ALL PF and PV Series Pumps Using conventional petroleum fluids, 140 mesh inlet screen with 10 micron filtration downstream of the pump is recommended for optimum pump life. No specific ISO code is specified for conventional fluids.		
	Standard pressure control valves	19/17/14		Engineering spec #VES.8820 9/2002
	High Pressure Directional Control Valves HP03 and HP05	<5000 psi (350 Bar) 18/16/13 >5000 psi (350 Bar) 17/15/12		
VST Seated valves	20/18/15			
Eaton (Hydraulic component business acquired by Danfoss 1.2020)	Both Heavy and Medium Duty Piston Pumps & Motors – Charged Systems and Light duty Pumps	>4µ no spec/ >6µ - 18/ >14µ -13	Eaton "Hydraulic Fluid Recommendations" Jan 2009"	
	Medium Duty Piston Pumps & Motors – Non Charged systems			
	Gear Pumps, Motors and Cylinders			
Eaton-Vickers (Hydraulic component business acquired by Danfoss 1.2020)	Mobile Piston Pumps	approx system pressure 2000 psi 17/15/13 >3000psi 16/14/12	Source Eaton Vickers Publication 561 "Systemic Approach to Contamination Control" dated 10/2002	
	Industrial Piston Pumps	approx system pressure 2000 psi 18/16/14 >3000 psi 17/15/13		
	Mobile Vane Pumps	approx system pressure 1000 psi 18/16/14 2000 psi 17/15/13		
	Industrial Vane Pumps	approx system pressure 2000 psi 19/17/14 >3000 psi 18/16/13		
Eaton-Char Lynn (Hydraulic component business acquired by Danfoss 1.2020)	J, R and S Series Motors and Disc Valve Pumps	>4µ no spec/ >6µ - 18/ >14µ -13	Eaton "Hydraulic Fluid Recommendations" Jan 2009"	
	W Series Gear Pumps			
Kawasaki Ref Catalog # P-969-0026	Staffa Radial Piston Motors	>4µ no spec/18/14 or >4µ - no spec /18/15 - see notes	Kawasaki Staffa Pump Catalog. Note this spec in all the Staffa motor catalogs was for ISO D 4406 (1986) which was >5>15 microns. A reasonable read across would be -/18/15 ISO D 4406 (1999), the same as axial piston pumps.	
Kawasaki Ref Catalog # P-969-0190	K3V/G & K5V Axial Piston Pumps	-/18/15	Kawasaki Axial; Pump Catalog KPM 1309 dated 9/13	
Muncie Gear Pumps		19/17/14		
OilGear	All pump types	19/16/13 or better for optimum component life Limit of 21/18/15 is the absolute maximum	OilGear Filtration Bulletin 90007-D dated 2/2002	
Parker/Hannifin Corp Denison Hydraulic Products Select the cleanliness level for the most critical component in the system, generally systems with Servo Control Valves	Vane and Piston Pumps & Motors	19/16/13	Parker "Handbook of Hydraulic Filtration 10.05"	
	Gear Pumps & Motors	20/17/14		
	Systems with Servo Control valves	17/14/11		
	Systems with Proportional valves	18/15/12		
	Systems with directional & pressure control valves	19/16/13		
	Systems with cylinders & flow control valves, Also NEW OIL fill for a system	21/18/15		