

WAUKESHA












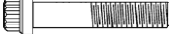
ENGINE: VRD220 (Naturally Aspirated)
VRD220S/VRD220TA (Turbocharged)

BORE: 3.875" | 4 Cyl | Diesel | NOTES: Supply Spec # to Verify Part Numbers

APPLICATION: Forklift: TCI; Swathers: 4400 Versatile (VRD220);
Swathers: 160 Versatile (VRD220S);

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	QTY	ITEM #	DESCRIPTION	LETTERED ITEMS INCLUDED IN KIT
				
	4	191224	Sleeve & Piston Assembly: Naturally Aspirated	
	4	191225	Sleeve & Piston Assembly: Turbocharged	
	4	191226	Piston Assembly: Naturally Aspirated	
	4	191227	Piston Assembly: Turbocharged	
	4	191228	Cylinder Liner (Includes O-Rings)	
	4	191329	Cylinder Liner O-Ring Kit, Late 3 Groove Liner	
	4	191331	Cylinder Liner O-Ring Kit, Early 2 Groove Liner	
	4	191139	Piston Ring Set: Naturally Aspirated (2-3/32 1-3/16)	
	4	191229	Piston Ring Set: Turbo (1-1/8K 1-3/32 1-3/16)	
	4	291221	STD Rod Bearing	
	4	291222	.010 Rod Bearing	
	4	291223	.020 Rod Bearing	
	4	291224	.030 Rod Bearing	
	1	291225	STD Main Bearing Set	
	1	291226	.010 Main Bearing Set	
	1	291227	.020 Main Bearing Set	
	1	291228	.030 Main Bearing Set	
	1	391254	Head Gasket Set: Naturally Aspirated	
	1	391256	Head Gasket Set: Turbocharged	
	1	391382	Head Gasket	
	1	391257	Valve Cover Gasket	
	4	391379	Exhaust Manifold Gasket	
	4	391381	Intake Manifold Gasket	
	1	391255	Lower Gasket Set w/Seals	
	1	391362	Pan Gasket	
	1	391383	Timing Cover Gasket	
	1	391384	Rear Seal Housing Gasket	
	1	391385	Front Crank Seal	
	1	391386	Rear Crank Seal	
	1	391387	Teflon Rear Crank Seal w/Wear Sleeve	
	8	291229	Pin Bushing	
	1	291232	Cam Bearing Set, wo/Hydraulic Pump (3 Finished Bearings)	
	1	291436	Cam Bearing Set, wo/Hyd Pump (3 Semi-Finished Bearings)	
	1	291231	Cam Bearing Set, w/Hydraulic Pump (4 Finished Bearings)	
	1	291437	Cam Bearing Set, w/Hyd Pump (4 Semi-Finished Bearings)	
	1	291233	Outboard Cam Bearing, Engines w/Hydraulic Pump	
	1	791162	Rear Cam Plug (2.250" Brass)	
	8	791118	Rod Bolt	
	1	791159	Head Bolt Kit w/Washers	

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BORE: 3.875"	4 Cyl	Diesel	NOTES: Supply Spec # to Verify Part Numbers
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APPLICATION: Forklift: TCI; Swathers: 4400 Versatile (VRD220);
Swathers: 160 Versatile (VRD220S);

	QTY	ITEM #	DESCRIPTION	LETTERED ITEMS INCLUDED IN KIT
	1	591157	Camshaft, Engines wo/Hydraulic Pump	
	1	591156	Camshaft, Engines w/Hydraulic Pump (Frt Support Journal)	
	1	591216	Cam Thrust Plate	
	8	591123	Tappet	
	4	491325	Exhaust Valve	
	4	491326	Intake Valve	
	8	491327	Valve Guide	
	4	491328	Exhaust Valve Spring	
	4	491133	Intake Valve Spring	
	4	491148	Exhaust Valve Rotator	
	16	491134	Valve Keeper (Half)	
	8	391395	Positive Valve Seal (Graphite-Teflon Seal w/Metal Jacket) (1)	
	4	491329	Exhaust Valve Seat	
	4	491136	Exhaust Rocker Arm	
	4	491137	Intake Rocker Arm	
	1	491331	Rocker Arm Shaft	
	1	591219	Cam Gear	
	1	591221	Crank Gear	
	1	591222	Idler Gear Asb (Gear, Hub, Bushing, Screw, Washers) (2)	
	8	591223	Push Rod	
	1	691139	Oil Pump, Engines w/Front Sump: Versatile 160	
	1	691141	Oil Pump, Engines w/Deep Rear Sump	
	1	691146	Oil Pump, Engines w/Shallow Rear Sump	
	1	691143	Oil Pump Kit (Body # 216080 & 216080A)	
	1	691142	Oil Pump Kit (Body # 216080C)	
	1	691144	Oil Pump Drive Gear (Body # 216080A)	
	1	691145	Oil Pump Drive Gear (Body # 216080C)	
	1	691147	Oil Pump Driveshaft w/Gear (Body # 216080A) (3)	
	1	691148	Oil Pump Driveshaft w/Gear (Body # 216080C) (3)	
	1	691149	Oil Pump Idler Gear	
	1	691153	Oil Pump Idler Shaft	
	1	691154	Oil Pump Relief Valve Spring	
	1	391258	Oil Pump Cover Gasket	
	1	691178	Oil Cooler Element	
	1	791163	Crankshaft	
	1	791164	Balancer Bushing Kit (5 Bushings)	
	1	791165	Balancer Overhaul Kit (4 Gears, 5 Bushings, Shims)	
	1	891187	Fuel Pump	
	1	891188	Thermostat (175 Degree)	
	1	891189	Water Pump w/Bracket Mounted Fan (4)	
	1	891191	Water Pump w/Pump Mounted Fan (5)	

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(1)Use VST1812 Seal Tool (2)For Bushing Use 591224 (3)Upper Bushing - 691151 Lower Bushing - 691152 (4)For Kit Use 891192

(5)For Kit Use 891193