

TECHNICAL SPECIFICATIONS – ENGINE 125/150/250 SX 2009»

ENGINE	125 SX	150 SX	250 SX
Design	Liquid-cooled, single-cylinder, two-stroke engine with intake and exhaust control		
Piston displacement	124.8 ccm	143.6 ccm	249 ccm
Bore / stroke	54 / 54.5 mm (2.12 / 2.14 in)	54 / 58.4 mm (2.12 / 2.30 in)	66.4 / 72 mm (2.61 / 2.83 in)
Fuel	unleaded fuel with at least RON 95 (USA = Premium PON 91), mixed with high grade two stroke oil		
Oil / gasoline ratio	1:40	1:40	1:60
	when using high grade, two- stroke oil (Motorex Cross Power 2T).		
Crankshaft bearing	1 deep-groove ball bearing / 1 cylinder roller bearing		
Connecting rod bearing	needle bearing		
Piston pin bearing	needle bearing		
Piston	cast aluminum		
Piston ring	2 half keystone rings	2 half keystone rings	two plain compression rings
Dimension „X“ <small>(upper edge piston- upper edge cylinder)</small>	0.0 mm	0.0 mm	0.0 + 0.1 mm
Ignition timing	1.4 mm (0.055 in) BTDC	1.4 mm (0.055 in) BTDC	1.9 mm (0.074 in) BTDC
Spark plug	NGK BR9 ECMVX	NGK BR9 ECMVX	NGK BR8 ECM
Electrode gap	0.60 mm (0.023 in)		
Dimension „Z“ <small>(height of the control flap)</small>	43.5 mm (1.68 in)	43.1 mm (1.69 in)	47.5 mm (1.87 in)
Exhaust control start open	-	-	5500/min
Exhaust control fully open	-	-	7000/7500/7900/min (red/yellow/green spring)
Primary drive	straight cut spur gears		
Primary ratio	23 : 73	23 : 73	26 : 72
Available chain sprockets	13t /14t for chain 5/8 x 1/4"		
Clutch	multiple disc clutch in oil bath, hydraulically operated		
	Motorex Hydraulic Fluid 75	Motorex Hydraulic Fluid 75	Motorex brake fluid DOT 5.1
Transmission	6 speed, claw actuated	6 speed, claw actuated	5 speed, claw actuated
Gear ratio			
1st gear	13 : 32 „1S32“	13 : 32 „1S32“	“1S14” 14 : 28 “1S28”
2nd gear	„2S15“ 15 : 30 „2S30“	„2S15“ 15 : 30 „2S30“	“2S15” 15 : 24 “2S24”
3rd gear	„3S17H“ 17 : 28 „3S28H“	„3S17H“ 17 : 28 „3S28H“	“3S18” 18 : 24 “3S24”
4th gear	„4S20H“ 20 : 28 „4S28“	„4S20H“ 20 : 28 „4S28“	“4S21” 21 : 24 “4S24”
5th gear	„5S19H“ 19 : 23 „5S23H“	„5S19H“ 19 : 23 „5S23H“	“5S22” 22 : 21 “5S21”
6th gear	„6S22H“ 22 : 24 „6S24H“	„6S22H“ 22 : 24 „6S24H“	
Gear lubrication	0,7 liter (0.18 USgal) Motorex Top Speed 4T 15W50		
Available chain sprockets	13Z / 14Z für Kette 5/8 x 1/4"		
Coolant	1.2 litres, 50% anti freeze, 50% distilled water, at least -25 °C (-13 °F)		
Ignition system	KOKUSAN 2K-1	KOKUSAN 2K-1	stator 2K-1/flywheel 2K-2
Carburetor	flat-slide carburetor, carburetor setting see table		
Air-filter	wet foam type air filter insert		

BASIC CARBURETOR SETTING			
	125 SX	150 SX	250 SX
Carburetor	Keihin PWK-S 38 AG	Keihin PWK-S 38 AG	Keihin PWK 36 S AG
Carburetor setting mark	AQ7	AQ8	FK0180
Main jet	182 (180, 185)	182 (180, 185)	158 (155, 160)
Idling jet	42 (40, 45)	42 (40, 45)	45 (40)
Starting jet	85	85	85
Jet needle	NOZI (NOZH, NOZJ)	NOZI (NOZH, NOZJ)	N1E1 (N1EH)
Needle position from top	3	2	3
Throttle valve	7	6.5	6.5
Air adjustment srew open	1.5 turns	1.5 turns	1 turn

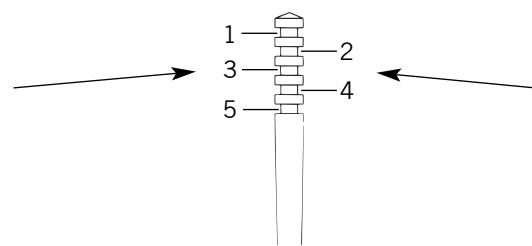
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TIGHTENING TORQUES - ENGINE		
Flange bolts - cylinder-head (125/150 SX)	M7	18 Nm
Flange bolts - cylinder-head (250 SX)	M8	27 Nm
Nuts-cylinder base (125/150 SX)	M8	30 Nm
Nuts-cylinder base (250 SX)	M10	35 Nm
Flywheel collar nut	M12x1	60 Nm
Nut primary sprocket (125/150 SX)	M16x1.5 links	Loctite 243 + 130 Nm
Nut primary sprocket (250 SX)	M18x1.5 links	Loctite 270 + 150 Nm
Nut inner clutch hub (125/150 SX)	M18x1.5	Loctite 243 + 130 Nm
Nut inner clutch hub (250 SX)	M18x1.5	Loctite 270 + 100 Nm
Collar screw clutch springs	M6	10 Nm
Oil drain plug	M12x1.5	20 Nm
Oil drain plug (125/150 SX) clutch cover	M10x1	15 Nm
Drain plug water pump cover	M10x1	15 Nm
Collar screw water pump cover	M6	Loctite 243 + 10 Nm
Water pump wheel	M5	Loctite 243 + 6 Nm
Crankcase and clutch cover bolts	M6	10 Nm
Collar screws ignition cover	M5	5 Nm
Spark plug	M14x1.25	25 Nm
Collar screws ignition system	M5	Loctite 243 + 6 Nm
Collar screw kickstarter lever	M8	Loctite 243 + 25 Nm
Collar screw shifting lever	M6 (10.9)	Loctite 243 + 14 Nm
Other screws	M 5	6 Nm
	M 6	10 Nm
	M 8	25 Nm
	M 10	45 Nm

CARBURETOR TABLE »

VERGASERREGULIERUNG CARBURETOR SETTING KEIHIN PWK-S 38 AG		125 SX 2009					KTM	
MEERESHÖHE ALTITUDE ↓	TEMPERATUR TEMPERATURE →	-20°C bis -7°C -2°F to 20°F	-6°C bis 5°C 19°F to 41°F	6°C bis 15°C 42°F to 60°F	16°C bis 24°C 61°F to 78°F	25°C bis 36°C 79°F to 98°F	37°C bis 49°C 99°F to 120°F	
3000 m 10000 ft ↑	LSO ASO LD IJ NADEL NEEDLE POS POS HD MJ	1,5 42 NOZI 3 182	2 42 NOZI 3 182	2,5 40 NOZI 2 180	2,5 38 NOZJ 2 178	3 38 NOZK 1 175		
2300 m 7500 ft ↑	LSO ASO LD IJ NADEL NEEDLE POS POS HD MJ	1,5 42 NOZI 4 185	1,5 42 NOZI 3 182	2 42 NOZI 3 182	2,5 40 NOZI 2 180	2,5 38 NOZJ 2 178	3 38 NOZK 1 175	
1500 m 5000 ft ↑	LSO ASO LD IJ NADEL NEEDLE POS POS HD MJ	1,5 45 NOZH 4 188	1,5 42 NOZI 4 185	1,5 42 NOZI 3 182	2 42 NOZI 3 182	2,5 40 NOZI 2 180	2,5 38 NOZJ 2 178	
750 m 2500 ft ↑	LSO ASO LD IJ NADEL NEEDLE POS POS HD MJ	1,5 48 NOZG 4 190	1,5 45 NOZH 4 188	1,5 42 NOZI 4 185	1,5 42 NOZI 3 182	2 42 NOZI 3 182	2,5 40 NOZI 2 180	
300 m 1000 ft ↑ Meeresniveau Sea level	LSO ASO LD IJ NADEL NEEDLE POS POS HD MJ	1 48 NOZF 5 192	1,5 48 NOZG 4 190	1,5 45 NOZH 4 188	1,5 42 NOZI 4 185	1,5 42 NOZI 3 182	2 42 NOZI 3 182	

LSO = Luftregulierschraube offen
LD = Leerlaufdüse
POS = Nadel Clip Position von oben
HD = Hauptdüse



ASO = Air screw open from fully-seated
IJ = Idling jet
POS = Needle clip position from top
MJ = Main jet


NICHT FÜR STRASSEN BETRIEB NICHT FÜR SANDSTRECKEN

Schieber: 7 mit Ausschnitt
Kraftstoff: Super Bleifrei ROZ 95

NOT FOR HIGHWAY USE AND SAND TRACKS
Throttle: 7 with cut
Fuel: unleaded fuel with at least RON 95
USA = Premium PON 91

VERGASER – GRUNDEINSTELLUNG FÜR SANDSTRECKEN	125 SX	CARBURETOR BASIC SETTING FOR SAND TRACKS
Vergasertyp	Keihin PWK-S 38 AG	Carburetor type
Luftregulierschraube offen (Umdrehungen)	1,5	Air screw open from fully-seated (turns)
Leerlaufdüse	45	Idling jet
Düsenadel	NOZH	Needle
Nadelposition von oben	4	Needle clip position from top
Hauptdüse	208	Main jet
Wenn der Motor unruhig läuft, ist eine kleinere Hauptdüse einzusetzen.		If the engine is hezitating, apply a smaller main jet

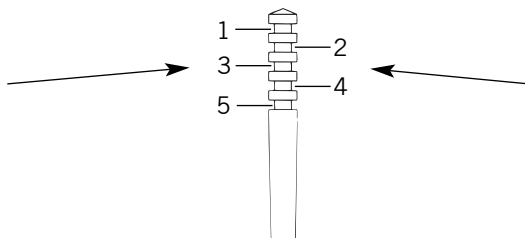
CARBURETOR TABLE »

VERGASERREGULIERUNG CARBURETOR SETTING KEIHIN PWK-S 38 AG		150 SX 2009						
MEERESHÖHE ALTITUDE ↓	TEMPERATUR TEMPERATURE →	- 20°C bis -7°C -2°F to 20°F	- 6°C bis 5°C 19°F to 41°F	6°C bis 15°C 42°F to 60°F	16°C bis 24°C 61°F to 78°F	25°C bis 36°C 79°F to 98°F	37°C bis 49°C 99°F to 120°F	
3000 m 10000 ft ↑	LSO ASO LD IJ NADEL NEEDLE POS POS HD MJ	1,5 42 NOZI 2 182	2 42 NOZI 2 182	2 40 NOZI 2 180	2,5 40 NOZJ 1 178	3 38 NOZK 1 175		
2301 m 7501 ft ↑	LSO ASO LD IJ NADEL NEEDLE POS POS HD MJ	1,5 42 NOZI 3 185	1,5 42 NOZI 2 182	2 42 NOZI 2 182	2 40 NOZI 2 180	2,5 40 NOZJ 1 178	3 38 NOZK 1 175	
2300 m 7500 ft ↑	LSO ASO LD IJ NADEL NEEDLE POS POS HD MJ	1,5 45 NOZH 3 188	1,5 42 NOZI 3 185	1,5 42 NOZI 2 182	2 42 NOZI 2 182	2 40 NOZI 2 180	2,5 40 NOZJ 1 178	
1500 m 5000 ft ↑	LSO ASO LD IJ NADEL NEEDLE POS POS HD MJ	1,5 48 NOZG 4 190	1,5 45 NOZH 3 188	1,5 42 NOZI 3 185	1,5 42 NOZI 2 182	2 42 NOZI 2 182	2 40 NOZI 2 180	
750 m 2500 ft ↑	LSO ASO LD IJ NADEL NEEDLE POS POS HD MJ	1,5 48 NOZF 5 192	1,5 48 NOZG 4 190	1,5 45 NOZH 3 188	1,5 42 NOZI 3 185	1,5 42 NOZI 2 182	2 42 NOZI 2 180	
300 m 1000 ft ↑ Meeresniveau Sea level	LSO ASO LD IJ NADEL NEEDLE POS POS HD MJ	1,5 48 NOZF 5 192	1,5 48 NOZG 4 190	1,5 45 NOZH 3 188	1,5 42 NOZI 3 185	1,5 42 NOZI 2 182	2 42 NOZI 2 180	

ENGLISH

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ASO = Air screw open from fully-seated
IJ = Idling jet
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NICHT FÜR STRASSEN BETRIEB
NICHT FÜR SANDSTRECKEN
Schieber: 6,5 mit Ausschnitt
Kraftstoff: Super Bleifrei ROZ 95

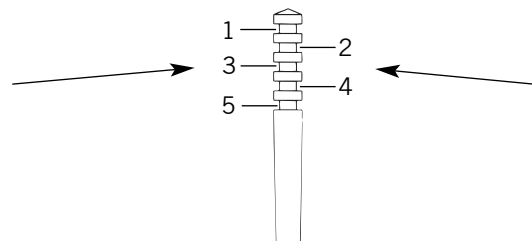
NOT FOR HIGHWAY USE AND SAND TRACKS
Throttle: 6.5 with cut
Fuel: unleaded fuel with at least RON 95
USA = Premium PON 91

VERGASER – GRUNDEINSTELLUNG FÜR SANDSTRECKEN	150 SX	CARBURETOR BASIC SETTING FOR SAND TRACKS
Vergasertyp	Keihin PWK-S 38 AG	Carburetor type
Luftregulierschraube offen (Umdrehungen)	1,5	Air screw open from fully-seated (turns)
Leerlaufdüse	45	Idling jet
Düsenadel	NOZH	Needle
Nadelposition von oben	3	Needle clip position from top
Hauptdüse	208	Main jet
Wenn der Motor unruhig läuft, ist eine kleinere Hauptdüse einzusetzen.		If the engine is hezitating, apply a smaller main jet

CARBURETOR TABLE »

VERGASERREGULIERUNG CARBURETOR SETTING KEIHIN PWK 36 S AG		250 SX 2009						
MEERESHÖHE ALTITUDE ↓	TEMPERATUR TEMPERATURE →	-20°C bis -7°C -2°F to 20°F	-6°C bis 5°C 19°F to 41°F	6°C bis 15°C 42°F to 60°F	16°C bis 24°C 61°F to 78°F	25°C bis 36°C 79°F to 98°F	37°C bis 49°C 99°F to 120°F	
3000 m 10000 ft ↑	LSO ASO LD IJ NADEL NEEDLE POS POS HD MJ	1 42 N1EI 3 158	1 40 N1EI 3 158	1 38 N1EI 2 155	2 38 N1EJ 2 152	2,5 38 N1EJ 1 150		
2301 m 7501 ft ↑	LSO ASO LD IJ NADEL NEEDLE POS POS HD MJ	1 42 N1EH 3 160	1 42 N1EI 3 158	1 40 N1EI 3 158	1 38 N1EI 2 155	2 38 N1EJ 2 152	2,5 38 N1EJ 1 150	
2300 m 7500 ft ↑	LSO ASO LD IJ NADEL NEEDLE POS POS HD MJ	1 45 N1EH 4 162	1 42 N1EH 3 160	1 42 N1EI 3 158	1 40 N1EI 3 158	1 38 N1EI 2 155	2 38 N1EJ 2 152	
1500 m 5000 ft ↑	LSO ASO LD IJ NADEL NEEDLE POS POS HD MJ	1 45 N1EH 4 162	1 45 N1EH 4 162	1 42 N1EI 3 160	1 40 N1EI 3 158	1 38 N1EI 2 155	2 38 N1EJ 2 152	
750 m 2500 ft ↑	LSO ASO LD IJ NADEL NEEDLE POS POS HD MJ	1 45 N1EG 4 165	1 45 N1EH 4 162	1 42 N1EH 3 160	1 42 N1EI 3 158	1 40 N1EI 3 158	1 38 N1EI 2 155	
300 m 1000 ft ↑ Meeresniveau Sea level	LSO ASO LD IJ NADEL NEEDLE POS POS HD MJ	0,75 48 N1EF 5 168	1 45 N1EG 4 165	1 45 N1EH 4 162	1 42 N1EH 3 160	1 42 N1EI 3 158	1 40 N1EI 3 158	

LSO = Luftregulierschraube offen
LD = Leerlaufdüse
POS = Nadel Clip Position von oben
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ASO = Air screw open from fully-seated
IJ = Idling jet
POS = Needle clip position from top
MJ = Main jet

NICHT FÜR STRASSENBETRIEB

NICHT FÜR SANDSTRECKEN

Schieber: 6,5 mit Ausschnitt
Kraftstoff: Super Bleifrei ROZ 95

NOT FOR HIGHWAY USE AND SAND TRACKS

Throttle: 6.5 with cut
Fuel: unleaded fuel with at least RON 95
USA = Premium PON 91

VERGASER – GRUNDEINSTELLUNG FÜR SANDSTRECKEN	250 SX	CARBURETOR BASIC SETTING FOR SAND TRACKS
Vergasertyp	Keihin PWK 36 S AG	Carburetor type
Luftregulierschraube offen (Umdrehungen)	1	Air screw open from fully-seated (turns)
Leerlaufdüse	45	Idling jet
Düsenadel	NOZG	Needle
Nadelposition von oben	4	Needle clip position from top
Hauptdüse	175	Main jet
Wenn der Motor unruhig läuft, ist eine kleinere Hauptdüse einzusetzen.		If the engine is hezitating, apply a smaller main jet