

BOSCH-INJ.-PUMP TEST SPECIFICATIONS

Note inst. in remarks column

Test sheet : VOL 3,1 C
Edition : 3.12.86
replaces : 4.86
Calibrating oil : ISO 4113

Injection pump : VE 4/11F1900 L217
Type number : O 460 414 027

Customer-specific information
Customer : VOLVO PENTA

Engine : TAMD 31

Power k: 95

TEST BENCH REQUIREMENTS

Calibrating-oil
return temp. °C
with thermometer : 40...48
electronically : 42...50

Inlet press., bar : 0.2

Calibrating nozzle-holder
assembly : 1 688 901 022

Opening
pressure bar : 130...133

Test inj. tubing : 1 680 750 073

Outside diameter : 6
x Wall thickness : 2
x Length mm : 450

Start of delivery
Prestroke mm : 0,3
(from BDC): +-0,02 (0,04)

Injection-pump setting values
Test specifications in parentheses

Timing-device travel:

Speed 1/min: 1500
Charge press. hPa: 1000
Setting value mm: 4,3...4,7

Supply-pump pressure:

Speed 1/min: 1500
Charge press. hPa: 1000
Setting value bar: 6,1...6,7

Full-load del. with charge press.:

Speed 1/min: 1500
Charge press. hPa: 1000
Del. quantity cm3/
1000H.: 93,5...94,5
Dispersion cm3/ : 5,0
1000H.: -

Full-load del. w/out charge press.:

Speed 1/min : 650
Del. quantity cm3/
1000H.: 58,5...59,5

Low-idle speed regulation:

Speed 1/min: 350
Charge press. hPa: -
Del. quantity cm3/
1000H.: 23,0...27,0
Dispersion cm3/ : 3,5
1000H.: -

Full-load speed regulation:

Speed 1/min: 2100
Charge press. hPa: 1000
Del. quantity cm3/
1000H.: 31,0...37,0

Start:

Speed 1/min: 100
Del. quantity mind.
cm3/1000H.: 100

Inspection-pump test specifications
Test specifications in parentheses

Timing-device characteristic:

1st speed 1/min: 1100
Charge press. hPa: 1000
TD travel mm: 0,9...1,7
mm: (0,6...2,0)
2nd speed 1/min: 1500
Charge press. hPa: 1000
TD travel mm: -
mm: (3,8...5,2)
3rd speed 1/min: 1900
Charge press. hPa: 1000
TD travel mm: 6,1...6,9
mm: (5,8...7,2)

Supply-pump pressure characteristic:

1st speed 1/min: 500
Charge press. hPa: 1000

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Supply-pump
pressure bar: 2,7...3,3
2nd speed 1/min: 1900
Charge press. hPa: 1000
Supply-pump
pressure bar: 7,5...8,1

Overflow quantity at overflow valve:

1st speed 1/min: 700
Charge press. hPa: -
Overflow : 46...83
quantity cm3/10s: (21...98)
2nd speed 1/min: 1900
Charge press. hPa: 1000
Overflow : 55...138
quantity cm3/10s: (40...153)

Delivery-quant. and breakaway char.:

1st speed 1/min: 800
Charge-air pressure-setting
point hPa: 300
LDA stroke mm: 6,4
Del. quantity cm3/
1000H.: (81,3...86,7)
2nd speed 1/min: 2230
Charge press. hPa: 1000
Del. quantity cm3/
1000H.: 0...3,0
3rd speed 1/min: 2100
Charge press. hPa: 1000
Del. quantity cm3/
1000H.: (29,5...38,5)
4th speed 1/min: 2050
Charge press. hPa: 1000
Del. quantity cm3/
1000H.: (67,0...77,0)
mm: (67,5...76,5)
5th speed 1/min: 1900
Charge press. hPa: 1000
Del. quantity cm3/
1000H.: (81,8...87,2)
6th speed 1/min: 1500
Charge press. hPa: 1000
Del. quantity cm3/
1000H.: (91,3...96,7)
7th speed 1/min: 1200
Charge press. hPa: 1000
Del. quantity cm3/
1000H.: (97,2...99,8)
mm: (95,8...101,2)
8th speed 1/min: 700
Charge press. hPa: 1000
Del. quantity cm3/
1000H.: (96,5...99,5)
mm: (94,6...101,4)
9th speed 1/min: 650
Charge press. hPa: -
Del. quantity cm3/
1000H.: (56,3...61,7)

Zero delivery (stop):

Mech. shutoff:

Speed 1/min: -
Del.quantity cm3/: -
1000H.

Electr. shutoff:

Speed 1/min: 1090
ELAB volt: 12,0
Del.quantity cm3/: -
1000H.

Idle delivery:

1st speed 1/min: 350
Del.quantity cm3/: -
1000H.: (20,5...29,5)
2nd speed 1/min: 400
Del.quantity cm3/: 7,0...13,0
1000H.: (5,5...14,5)
3rd speed 1/min: 480
Del.quantity cm3/: -
1000H.: 0...3,0

Automatic starting fuel delivery:

1st speed 1/min: 400
Del.quantity cm3/: -
ind. 1000H: 74,0

2nd speed 1/min: 500
Del.quantity cm3/: -
ax. 1000H: 72,0

Shutoff electromagnet:

Cut-in
min. voltage : 10,0
Rated voltage : 12,0

Mounting and assembly dimensions:

Designation

K	mm	: -
KF	mm	: 5,2...5,5
MS	mm	: 1,2...1,4
SVS max.	mm	: 3,8
XK	mm	: 18,8...20,8
XL	mm	: 14,3...17,7

Remarks:

Pushing electromagnet.

Correction at adjusting nut (46)