

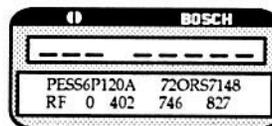
BOSCHDiesel
Fuel Injection
Service

INFORMATION

March 11, 1991
DSD SL 90-10 (Revised)**To: Central Distributors and Diesel Service Dealers****Subject: Vehicle Resonance Complaints on Mack Trucks Equipped with EM6 300L Engines and EM7 300L Engines****Injection Pump Combinations:**0 402 746 827
0 402 746 828
0 402 746 839
0 402 746 861
0 402 746 862

Some vehicles with the above pump combinations may develop a chassis resonance at highway speeds. To correct the condition, Mack has authorized a modification that will be performed without bench calibration **provided that the original adjustment seals are intact.**

Remove the flyweight adjustment cover and rotate the pump until the flyweight upper spring seat is in full view. Record the number of "clicks" to back out the upper spring seat retaining nut until it is flush with the spring post. Remove the center spring and shim(s) from each side of the flyweight assembly. **Be certain that none of the shims fall into the governor assembly.** The middle and outer springs and shims remain unchanged. Install new center springs, part no. **9 428 270 047**, without shims. Using the same number of clicks from the flush position as recorded earlier, replace the upper spring seat and retaining nut. Seal the flyweight adjustment cover. Stamp the pump nameplate with the letters "RF" as illustrated below.



Your Mack dealer will reset engine high idle to a maximum 2080 rpm and reseal the stop screw, per Mack Service Letter No. SL47C005. **The above modification is charged to the Mack dealer in accordance with the conditions included therein.** Should a vehicle performance complaint develop after this modification, inform your customer to contact Mack Service for further instructions.

If you receive one of the above pump combinations already stamped with the "RF" designation, use the attached Mack approved test specifications when checking calibration.

Sincerely,

Richard Lindberg
Product Support Manager, Heavy-Duty
AUTOMOTIVE & DIESEL PRODUCTSRobert Bosch Corporation
Sales Group • Department UA/ASV
2800 South 25th Avenue, Broadview, Illinois 60153

Attachments

BOSCH INJ. PUMP SPECIFICATIONS

Note remarks

Test sheet : **PRELIMINARY**
Edition :
Replaces : -
Test oil : ISO-4113

Combination no. : RF 0 402 746 827

Injection pump
Pump designation: PES6P120A720RS7148
EP type number : 0 412 726 810
Governor
Governor design : RQV325...875PA848-7K

Governor no. : 0 421 815 176

Customer-spec. information

Customer : MACK TRUCKS

Engine : EM 6-300L 4VH

1st version kW : 224.0

Rated speed : 1750

TEST BENCH REQUIREMENTS

Test oil
inlet temp., C : 38...42

Overflow valve
: 2 417 413 011

Inlet press., bar : 1.5

Overflow
qty. min. l/h : 160...170

Test nozzle holder
assembly : 1 688 901 101

Opening
pressure, bar : 207...210

Orifice plate
diameter mm : 0.6

Test Lines : 1 680 750 008

Outside diameter
x Wall thickness
x Length mm : 6.0X2.0X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar : 17...19
Prestroke mm : 2.75...2.85
: (2.70...2.90)
Rack travel in mm: 6.0...8.0
Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + -, : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 800

Rack travel in mm: 13.4-13.5

Del. quantity cm3/: 23.9 - 24.1

100 s : (23.7-24.3)

Spread cm3 : 0.5

100 s : (0.9)

2nd speed rpm: 325

Rack travel in mm: 4.7...4.9

Del. quantity cm3/: 3.9...4.5

100 s : (3.7...4.7)

Spread cm3: 0.8

100 s : (1.2)

(B) Setting of injection pump
with governor

GUIDE SLEEVE TRAVEL

1st speed rpm: 325

travel mm : 1.2...1.4

2nd speed rpm: 450

travel mm : 2.5...2.8

3rd speed rpm: 600

travel mm : 4.1...4.3

4th speed rpm: 875

travel mm : 5.9...6.1

5th speed rpm: 1000

travel mm : 6.9...7.3

GUIDE SLEEVE POSITION

Control-level position

Degree : -1

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 800
Aneroid pressure hPa: 1200
Del.quantity : 239.0...241.0
1000 : (237.0...245.0)
Spread cm3 : 5.0
1000 : (9.0)

RATED SPEED

1st version

Control lever
position degrees : 50...58

Testing:

1st rack travel mm : 10.4
Speed rpm : 915...925
2nd rack travel mm : 4.0
Speed rpm : 1035...1065
4th rack travel mm : 0.0...1.0
Speed rpm : 1150

LOW IDLE 1

Control Lever
position degrees : 7...15

Testing:

Speed rpm : 275
Min. rack travel : 6.2
Speed rpm : 325
Rack travel in mm : 4.7...4.9

CONSTANT REGULATION

Speed rpm : 325...520

TORQUE CONTROL

Dimension a mm : -
Torque control curve - 1st version
1st speed rpm : 800
Rack travel in mm : 13.4...13.5
2nd speed rpm : 510
Rack travel in mm : 16.5...16.7
3rd speed rpm : 700
Rack travel in mm : 14.4...14.6
4th speed rpm : 600
Rack travel in mm : 15.4...15.6
5th speed rpm : 450
Rack travel in mm : 0.0...16.6

Aneroid/Altitude Compensator Test

1st version

Setting
Speed rpm : 510
Pressure hPa : 1200
Rack travel mm : 16.5...16.7
Measurement
Speed 1/min : 510

1st pressure hPa : -
Rack travel in mm: 8.5...8.9
2nd pressure hPa : 370
Rack travel in mm: 10.7...10.8
3rd pressure hPa : 710
Rack travel in mm: 14.6...15.0

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid press. hPa : 1200
Speed rpm : 510
Del.quantity cm3/ : 299.0...305.0
1000 s : (296.0...308.0)
Spread cm3 : 8.0
1000 s : (12.0)
Aneroid press. hPa : -
Speed rpm : 400
Del.quantity cm3/ : 152.5...156.5
1000 s : (150.5...158.5)

BREAKAWAY

1st version

Rack travel less than
full load rack tr : 10.4
Speed rpm : 915...925

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 140...160
1000 s : (135.0...165.0)
Rack travel in mm : 8.5...8.9

LOW IDLE

Speed rpm : 325
Rack travel in mm : 4.7...4.9
Del.quantity cm3/ : 39.0...45.0
1000 s : (37.0...47.0)
Spread cm3 : 8.0
1000 s : (12.0)

Remarks:

: MACK # 313GC5174-P2

**This specification is only for combinations
modified with 9 428 270 047 flyweight spring.**

Guide Bolt dim : 37.1 mm
S-plate dim : 26.7 mm
Del.valve pretension: 3.1...3.2 mm

BOSCH INJ. PUMP SPECIFICATIONS

Note remarks

Test sheet : **PRELIMINARY**
Edition :
Replaces : -
Test oil : ISO-4113
Combination no. : RF 0 402 746 828
Injection pump
Pump designation: PES6P120A720RS7148
EP type number : 0 412 726 810
Governor
Governor design : RQV325...875PA878-7K

Governor no. : 0 421 815 184

Customer-spec. information

Customer : MACK TRUCKS

Engine : EM 6-300L 4VH

1st version kW : 224.0

Rated speed : 1750

TEST BENCH REQUIREMENTS

Test oil
inlet temp., C : 38...42

Overflow valve
: 2 417 413 011

Inlet press., bar : 1.5

Overflow
qty. min. l/h : 160...170

Test nozzle holder
assembly : 1 688 901 101

Opening
pressure, bar : 207...210

Orifice plate
diameter mm : 0.6

Test Lines : 1 680 750 008

Outside diameter
x Wall thickness
x Length mm : 6.0X2.0X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar : 17...19
Prestroke mm : 2.75...2.85
: (2.70...2.90)
Rack travel in mm: 6.0...8.0
Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + -., : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 800

Rack travel in mm: 13.4-13.5

Del. quantity cm³/: 23.9 - 24.1

100 s : (23.7-24.3)

Spread cm³ : 0.5

100 s : (0.9)

2nd speed rpm: 325

Rack travel in mm: 4.7...4.9

Del. quantity cm³/: 3.9...4.5

100 s : (3.7...4.7)

Spread cm³: 0.8

100 s : (1.2)

(B) Setting of injection pump
with governor

GUIDE SLEEVE TRAVEL

1st speed rpm: 325

travel mm : 1.2...1.4

2nd speed rpm: 450

travel mm : 2.5...2.8

3rd speed rpm: 600

travel mm : 4.1...4.3

4th speed rpm: 875

travel mm : 5.9...6.1

5th speed rpm: 1000

travel mm : 6.9...7.3

GUIDE SLEEVE POSITION

Control-level position

Degree : -1

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 800
Aneroid pressure hPa: 1200
Del.quantity : 239.0...241.0
1000 : (237.0...245.0)
Spread cm3 : 5.0
1000 : (9.0)

RATED SPEED

1st version

Control lever
position degrees : 50...58

Testing:

1st rack travel mm : 10.4
Speed rpm : 915...925
2nd rack travel mm : 4.0
Speed rpm : 1035...1065
4th rack travel mm : 0.0...1.0
Speed rpm : 1150

LOW IDLE 1

Control Lever
position degrees : 7...15

Testing:

Speed rpm : 275
Min. rack travel : 6.2
Speed rpm : 325
Rack travel in mm : 4.7...4.9

CONSTANT REGULATION

Speed rpm : 325...520

TORQUE CONTROL

Dimension a mm : -
Torque control curve - 1st version
1st speed rpm : 800
Rack travel in mm : 13.4...13.5
2nd speed rpm : 510
Rack travel in mm : 16.5...16.7
3rd speed rpm : 700
Rack travel in mm : 14.4...14.6
4th speed rpm : 600
Rack travel in mm : 15.4...15.6
5th speed rpm : 450
Rack travel in mm : 0.0...16.6

Aneroid/Altitude
Compensator Test

1st version

Setting
Speed rpm : 510
Pressure hPa : 1200
Rack travel mm : 16.5...16.7
Measurement
Speed 1/min : 510

1st pressure hPa : -
Rack travel in mm: 8.5...8.9
2nd pressure hPa : 370
Rack travel in mm: 10.7...10.8
3rd pressure hPa : 710
Rack travel in mm: 14.6...15.0

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid press. hPa : 1200
Speed rpm : 510
Del.quantity cm3/ : 299.0...305.0
1000 s : (296.0...308.0)
Spread cm3 : 8.0
1000 s : (12.0)
Aneroid press. hPa : -
Speed rpm : 400
Del.quantity cm3/ : 152.5...156.5
1000 s : (150.5...158.5)

BREAKAWAY

1st version

Rack travel less than
full load rack tr : 10.4
Speed rpm : 915...925

INTERMEDIATE RATED SPEED

Speed rpm : 805
Rack travel mm : 9.4 ± (0.2)

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 140...160
1000 s : (135.0...165.0)
Rack travel in mm : 8.5...8.9

LOW IDLE

Speed rpm : 325
Rack travel in mm : 4.7...4.9
Del.quantity cm3/ : 39.0...45.0
1000 s : (37.0...47.0)
Spread cm3 : 8.0
1000 s : (12.0)

Remarks : MACK # 313GC5174-P4

This specification is only for combinations
modified with 9 428 270 047 flyweight spring.

Guide Bolt dim : 37.1 mm
S-plate dim : 26.7 mm
Del.valve pretension: 3.1...3.2 mm

BOSCH INJ. PUMP SPECIFICATIONS

Note remarks

Test sheet : **PRELIMINARY**
Edition :
Replaces : -
Test oil :
Combination no. : RF 0 402 746 839
Injection pump : 0 412 726 810
Pump designation: PES6P120A720RS7148
EP type number :
Governor
Governor design : RQV325...875PA848-19K

Governor no. : 0 421 815 199

Customer-spec. information

Customer : MACK TRUCKS

Engine : EM 7-300L 4VH

1st version kW : 224.0

Rated speed : 1750

TEST BENCH REQUIREMENTS

Test oil
inlet temp., C : 38...42

Overflow valve
: 2 417 413 011

Inlet press., bar : 1.5

Overflow
qty. min. l/h : 160-170 @ full load

Test nozzle holder
assembly : 1 688 901 101

Opening
pressure, bar : 207...210

Orifice plate
diameter mm : 0.6

Test Lines : 1 680 750 008

Outside diameter
x Wall thickness
x Length mm : 6.0X2.0X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar : 17...19
Prestroke mm : 2.75...2.85
Rack travel in mm: 6.0...8.0
Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + -., : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 800

Rack travel in mm: 13.1...13.3

Del. quantity cm³/: 23.9 - 24.1

100 s : (23.7-24.3)

Spread cm³ : 0.5

100 s : (0.9)

2nd speed rpm : 325

Rack travel in mm: 4.5...4.7

Del. quantity cm³/: 4.1...4.7

100 s : 3.9...4.9

Spread cm³ : 0.8

100 s : 1.2

(B) Setting of injection pump
with governor

GUIDE SLEEVE TRAVEL

1st speed rpm : 325

travel mm : 1.2...1.4

2nd speed rpm : 450

travel mm : 2.5...2.8

3rd speed rpm : 600

travel mm : 4.1...4.3

4th speed rpm : 875

travel mm : 5.9...6.1

5th speed rpm : 1000

travel mm : 6.9...7.3

GUIDE SLEEVE POSITION

Control-level position

Degree :

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 800
Aneroid pressure hPa: 1200
Del.quantity : 239.0...241.0
1000 : (237.0...243.0)
Spread cm3 : 5.0
1000 : (9.0)

RATED SPEED

1st version

Control lever
position degrees : 50...58

Testing:

1st rack travel mm : 11.5
Speed rpm : 865...885
2nd rack travel mm : 4.0
Speed rpm : 1035...1065
4th rack travel mm : 0.0...1.0
Speed rpm : 1150

LOW IDLE 1

Control Lever
position degrees : 8...16

Testing:

Speed rpm : 275
Min. rack travel : 6.0
Speed rpm : 325
Rack travel in mm : 4.7...4.9

CONSTANT REGULATION

Speed rpm : 325...520

TORQUE CONTROL

Dimension a mm : -
Torque control curve - 1st version
1st speed rpm : 800
Rack travel in mm : 13.1...13.3
2nd speed rpm : 510
Rack travel in mm : 16.0...16.2
3rd speed rpm : 700
Rack travel in mm : 14.2...14.4
4th speed rpm : 600
Rack travel in mm : 15.1...15.3
5th speed rpm : 450
Rack travel in mm : 0.0...15.7

Aneroid/Altitude
Compensator Test

1st version

Setting
Speed rpm : 510
Pressure hPa : 1200
Rack travel mm : 16.0...16.2
Measurement
Speed 1/min : 510

1st pressure hPa : -
Rack travel in mm : 8.7...9.1
2nd pressure hPa : 370
Rack travel in mm : 10.6...10.7
3rd pressure hPa : 710
Rack travel in mm : 14.3...14.7

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid press. hPa : 1200
Speed rpm : 510
Del.quantity cm3/ : 294.0...300.0
1000 s : (291.0...303.0)
Spread cm3 : 8.0
1000 s : (12.0)
Aneroid press. hPa : -
Speed rpm : 400
Del.quantity cm3/ : 166.0...170.0
1000 s : (164.0...172.0)

BREAKAWAY

1st version

Rack travel less than
full load rack tr : 11.5
Speed rpm : 865...885

INTERMEDIATE RATED SPEED

Speed rpm :
Rack travel in mm :

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 165.0...185.0
1000 s : 155.0...195.0
Rack travel in mm : 8.7...9.1

LOW IDLE

Speed rpm : 325
Rack travel in mm : 4.5...4.7
Del.quantity cm3/ : 41.0...47.0
1000 s : 39.0...49.0
Spread cm3 : 8.0
1000 s : 12.0

Remarks:

: MACK # 313GC5179-P6

**This specification is only for combinations
modified with 9 428 270 047 flyweight spring.**

Guide Bolt dim : 37.0 mm
S-plate dim : 26.7 mm
Del valve pretension: 3.1...3.2 mm

BOSCH INJ. PUMP SPECIFICATIONS

Note remarks

Test sheet : **PRELIMINARY**
Edition :
Replaces : -
Test oil : ISO-4113
Combination no. : RF 0 402 746 861
Injection pump
Pump designation: PES6P120A720RS7183
EP type number : 0 412 726 825
Governor
Governor design : RQV325...875PA848-26K

Governor no. : 0 421 815 212

Customer-spec. information

Customer : MACK TRUCKS

Engine : EM 6-300L 4 VH

1st version kW : 224.0

Rated speed : 1750

TEST BENCH REQUIREMENTS

Test oil
inlet temp., C : 38...42

Overflow valve
: 2 417 413 011

Inlet press. bar : 1.5

Overflow
qty. min. l/h : 160...170

Test nozzle holder
assembly : 1 688 901 101

Opening
pressure bar : 207...210

Orifice plate
diameter mm : 0.6

Test Lines : 1 680 750 008

Outside diameter
x Wall thickness
x Length mm : 6.0X2.0X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar : 17...19
Prestroke mm : 2.75...2.85
: (2.70...2.90)
Rack travel in mm: 6.0...8.0
Firing order : 1- 5- 3- 6- 2- 4
Phasing : 0-60-120-180-240-300
Tolerance + -., : 0.50 (0.75)
Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 800
Rack travel in mm: 13.5-13.6
Del. quantity cm3/: 24.0 - 24.2
100 s : (23.8-24.4)

Spread cm3 : 0.5
100 s : (0.9)

2nd speed rpm: 325
Rack travel in mm: 4.7...4.9
Del. quantity cm3/: 3.9...4.5
100 s: (3.7...4.7)
Spread cm3: 0.8
100 s : (1.2)

(B) Setting of injection pump
with governor

GUIDE SLEEVE TRAVEL

1st speed rpm: 325
travel mm : 1.2...1.4
2nd speed rpm: 450
travel mm : 2.5...2.8
3rd speed rpm: 600
travel mm : 4.1...4.3
4th speed rpm: 875
travel mm : 5.9...6.1
5th speed rpm: 1000
travel mm : 6.9...7.3

GUIDE SLEEVE POSITION

Control-level position
Degree : -1

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 800
Aneroid press. hPa : 1200
Del.quantity : 240.0...242.0
1000 : (238.0...244.0)
Spread cm3 : 5.0
1000 : (9.0)

RATED SPEED

1st version

Control lever
position degrees : 50...58

Testing:

1st rack travel mm : 10.5
Speed rpm : 915...925
2nd rack travel mm : 4.0
Speed rpm : 1035...1065
4th rack travel mm : 0.1...1.0
Speed rpm : 1150

LOW IDLE 1

Control Lever
position degrees : 7...15

Testing:

Speed rpm : 275
Min. rack travel : 6.2
Speed rpm : 325
Rack travel in mm : 4.7...4.9

CONSTANT REGULATION

Speed rpm : 325...520

TORQUE CONTROL

Dimension a mm : -
Torque control curve - 1st version
1st speed rpm : 800
Rack travel in mm : 13.5...13.6
2nd speed rpm : 510
Rack travel in mm : 16.6...16.8
3rd speed rpm : 700
Rack travel in mm : 14.5...14.7
4th speed rpm : 600
Rack travel in mm : 15.5...15.7
5th speed rpm : 450
Rack travel in mm : 0.0...16.6

Aneroid/Altitude Compensator Test

1st version

Setting
Speed rpm : 510
Pressure hPa : 1200
Rack travel in mm : 16.6...16.8
Measurement
Speed 1/min : 510

1st pressure hPa : -
Rack travel in mm: 8.7...9.1
2nd pressure hPa : 435
Rack travel in mm: 10.8...11.0
3rd pressure hPa : 795
Rack travel in mm: 14.6...15.0

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid press. hPa : 1200
Speed rpm : 510
Del.quantity cm3/ : 308.0...314.0
1000 s : (305.0...317.0)
Spread cm3 : 8.0
1000 s : (12.0)
Aneroid press. hPa: -
Speed rpm : 400
Del.quantity cm3/ : 154.0...158.0
1000 s : (152.0...160.0)

BREAKAWAY

1st version

Rack travel less than
full load rack tr : 10.2
Speed rpm : 915...925

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 150...170
1000 s : (145.0...175.0)
Rack travel in mm : 8.7...9.1

LOW IDLE

Speed rpm : 4.7...4.9
Rack travel in mm :
Del.quantity cm3/ : 39.0...45.0
1000 s : (37.0...47.0)
Spread cm3 : 8.0
1000 s : (12.0)

Remarks : MACK # 313GC5174-P6

**This specification is only for combinations
modified with 9 428 270 047 flyweight spring.**

Guide Bolt dim : 37.1 mm
S-plate dim : 26.7 mm
Del.valve pretension: 3.1...3.2 mm

BOSCH INJ. PUMP SPECIFICATIONS

Note remarks

Test sheet : **PRELIMINARY**
Edition :
Replaces : -
Test oil : ISO-4113
Combination no. : RF 0 402 746 862
Injection pump
Pump designation: PES6P120A720RS7183
EP type number : 0 412 726 825
Governor
Governor design : RQV325...875PA878-11K

Governor no. : 0 421 815 213

Customer-spec. information

Customer : MACK TRUCKS

Engine : EM 6-300L 4 VH

1st version kW : 224.0

Rated speed : 1750

TEST BENCH REQUIREMENTS

Test oil
inlet temp., C : 38...42

Overflow valve
: 2 417 413 011

Inlet press., bar : 1.5

Overflow
qty. min. l/h : 160...170

Test nozzle holder
assembly : 1 688 901 101

Opening
pressure, bar : 207...210

Orifice plate
diameter mm : 0.6

Test Lines : 1 680 750 008

Outside diameter
x Wall thickness
x Length mm : 6.0X2.0X600

(A) Injection pump setting values
Insp. values in parentheses
Set equal delivery quant.
per values _____

BEGINNING OF DELIVERY

Test pressure, bar : 17...19
Prestroke mm : 2.75...2.85
: (2.70...2.90)
Rack travel in mm: 6.0...8.0
Firing order : 1- 5- 3- 6- 2- 4

Phasing : 0-60-120-180-240-300

Tolerance + -., : 0.50 (0.75)

Time to cyl. no. : 1

BASIC SETTING

1st speed rpm : 800

Rack travel in mm: 13.5-13.6

Del. quantity cm3/: 24.0 - 24.2

100 s : (23.8-24.4)

Spread cm3 : 0.5

100 s : (0.9)

2nd speed rpm: 325

Rack travel in mm: 4.7...4.9

Del. quantity cm3/: 3.9...4.5

100 s : (3.7...4.7)

Spread cm3: 0.8

100 s : (1.2)

(B) Setting of injection pump
with governor

GUIDE SLEEVE TRAVEL

1st speed rpm: 325

travel mm : 1.2...1.4

2nd speed rpm: 450

travel mm : 2.5...2.8

3rd speed rpm: 600

travel mm : 4.1...4.3

4th speed rpm: 875

travel mm : 5.9...6.1

5th speed rpm: 1000

travel mm : 6.9...7.3

GUIDE SLEEVE POSITION

Control-level position

Degree : -1

FULL LOAD DELIV. AT FULL LOAD STOP

1st version

Speed rpm : 800
Aneroid pressure hPa: 1200
Del.quantity : 240.0...242.0
1000 : (238.0...244.0)
Spread cm3 : 5.0
1000 : (9.0)

RATED SPEED

1st version

Control lever
position degrees : 50...58

Testing:

1st rack travel mm : 10.5
Speed rpm : 915...925
2nd rack travel mm : 4.00
Speed rpm : 1035...1065
4th rack travel mm : 0.0...1.0
Speed rpm : 1150

LOW IDLE 1

Control Lever
position degrees : 7...15

Testing:

Speed rpm : 275
Min. rack travel : 6.2
Speed rpm : 325
Rack travel in mm : 4.7...4.9

CONSTANT REGULATION

Speed rpm : 325...520

TORQUE CONTROL

Dimension a mm : -
Torque control curve - 1st version
1st speed rpm : 800
Rack travel in mm : 13.5...13.6
2nd speed rpm : 510
Rack travel in mm : 16.6...16.8
3rd speed rpm : 700
Rack travel in mm : 14.5...14.7
4th speed rpm : 600
Rack travel in mm : 15.5...15.7
5th speed rpm : 450
Rack travel in mm : 0.0...16.6

Aneroid/Altitude Compensator Test

1st version

Setting
Speed rpm : 510
Pressure hPa : 1200
Rack travel mm : 16.6...16.8
Measurement
Speed 1/min : 510

1st pressure hPa : -
Rack travel mm : 8.7...9.1
2nd pressure hPa : 435
Rack travel mm : 10.8...11.0
3rd pressure hPa : 795
Rack travel mm : 14.6...15.0

FUEL DELIVERY CHARACTERISTICS

1st version

Aneroid press. hPa : 1200
Speed rpm : 510
Del.quantity cm3/ : 308.0...314.0
1000 s : (305.0...317.0)
Spread cm3 : 8.00
1000 s : (12.0)
Aneroid press. hPa : -
Speed rpm : 400
Del.quantity cm3/ : 154.0...158.0
1000 s : (152.0...160.0)

BREAKAWAY

1st version

1mm rack travel less than

full load rack tr : 10.2
Speed rpm : 915...925

INTERMEDIATE RATED SPEED

Speed rpm : 805
Rack travel in mm : 11.2 ± (0.2)

STARTING FUEL DELIVERY

Speed rpm : 100
Del.quantity cm3/ : 150...170
1000 s : (145.0...175.0)
Rack travel in mm : 8.7...9.1

LOW IDLE

Speed rpm : 325
Rack travel in mm : 4.7...4.9
Del.quantity cm3/ : 39.0...45.0
1000 s : (37.0...47.0)
Spread cm3 : 8.0
1000 s : (12.0)

Remarks: : MACK # 313GC5174-P8

**This specification is only for combinations
modified with 9 428 270 047 flyweight spring.**

Guide Bolt dim : 37.1 mm
S-plate dim : 26.7 mm
Del.valve pretension : 3.1...3.2 mm