



**ATA 61-25-08
(E-508)**

**HYDRAULIC PROPELLER GOVERNOR
OPERATION AND INSTALLATION MANUAL**

P-480-()

**Issue No. 6, June 12, 2002
LBA-approved**



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LIST OF REVISIONS

Consec. No.	Date of Issue	Page	Short Description
1	1996-09-06	all	Original Issue
2	1998-04-30	1, 2, 3, 4, 5, 6, 6-1, 7, 7-1, 8, 8-1, 9, 9-1, 15, 15-1, 16, 17, 18, 18-1, 19, 20, 20-1, 21, 21-1, 22, 23, 24, 24-1, 25, 26, 27, 27-1, 28, 28-1, 29, 29-1	Revisions
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P-480 HYDRAULIC PROPELLER GOVERNOR INSTALLATION AND OPERATION MANUAL

1.0 GENERAL

The P-480-() hydraulic propeller governor is a single acting governor developed for hydraulically variable pitch propellers with reverse and feathering, produced by Jihostroj for MT-Propeller, Straubing. See fig. 1/fig. 1.1.

DESIGNATION:

P-480-()
a b

a = Drawing No.

b = Application No. (Engine/Aircraft combination)

S/No. 93 003
a b

a = Year of Manufacture

b = consecutive No.

2.0 DESIGN INFORMATION

Also refer to fig. 2 and 2.1; 3 and 3.1; 4 and 4.1; 5

The governor is a dual pressure single acting system. It is designed for oil pressure to decrease pitch. The governor has two relief valves. A low pressure relief valve for normal operation and a high pressure relief valve for reverse/beta range.

In low pressure operation the necessary increase of the engine oil pressure is reacted by a gear pump in the governor, which increases the oil servo pressure. Flyweight and a speeder spring move a pilot valve, allowing servo oil to and from the piston in the propeller. In "on"-condition there is no oil flow.

A speed adjusting lever changes the pre-load of the speeder spring. This results in an engine/propeller speed change.

The high pressure mode is activated via a magnetic beta valve, which is installed on the governor. In this condition the pressure rises up approx. twice and pushes the blades into full reverse. During high pressure mode the propeller rpm is not controlled by the governor because the constant speed section is cut out. The negative thrust is produced by increasing and decreasing the power (rpm).

After the electric signal is switched off, the governor returns into normal operation pressure mode for constant speed operation.

The governor contains a gear pump, relief valves, pilot valve flyweights and the beta valve.

The flange type of the governor is in accordance with ADN 20010 standard, refer also to fig. 5. The magnetic valve is installed on the bottom of the governor. The electromagnet controls a hydraulic valve, which changes from low pressure to high pressure mode via an electric signal, which is produced by a switch inside the cockpit. If the high pressure mode is selected, the pilot valve is in-operative.

The control lever is installed on the head of the governor, its position can be changed 3 x 90° (until serial no. 97016) and 4 x 90° (from serial no. 97017).

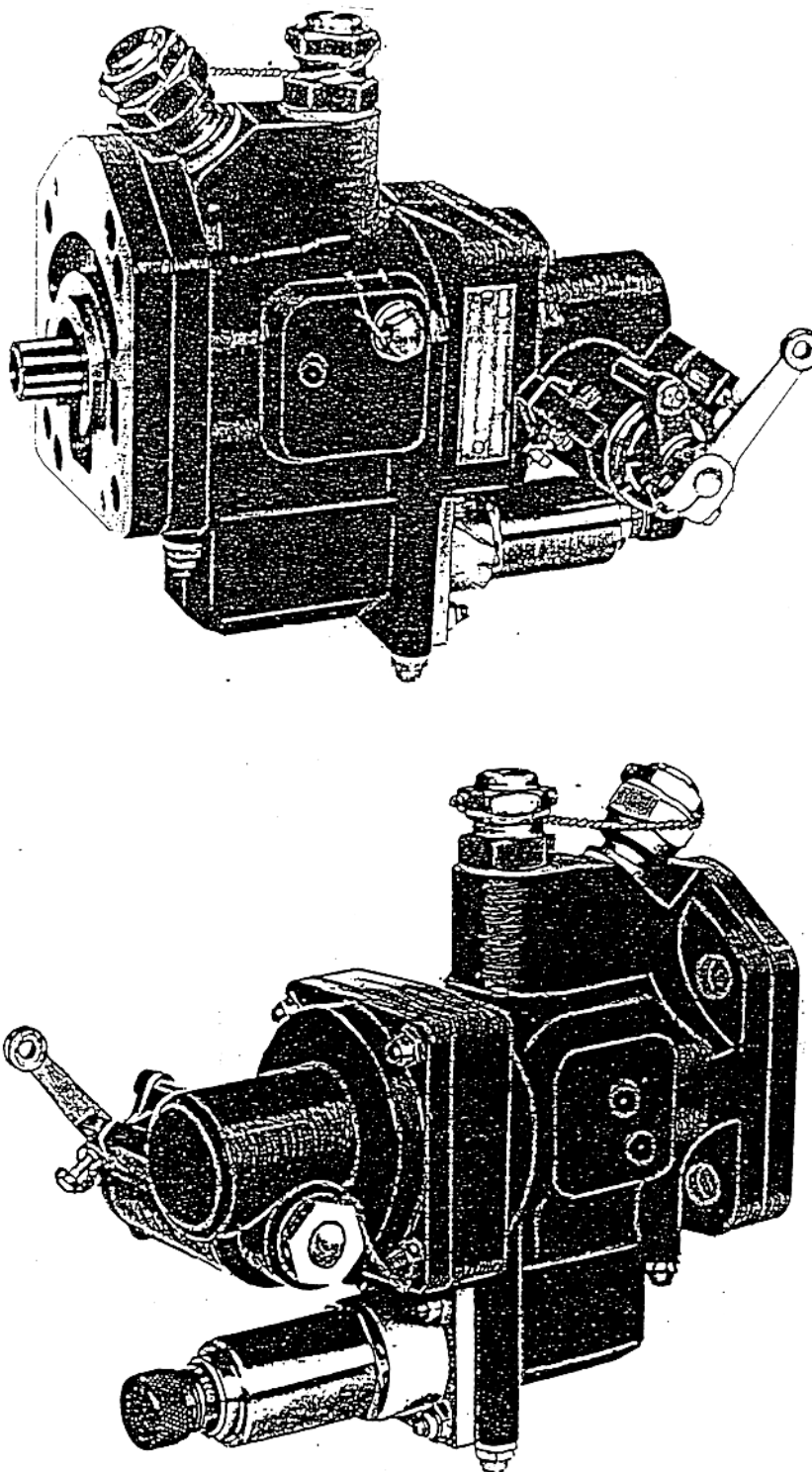


Fig. 1 P-480-() Propeller Governor - General Views
(until serial no. 97016)

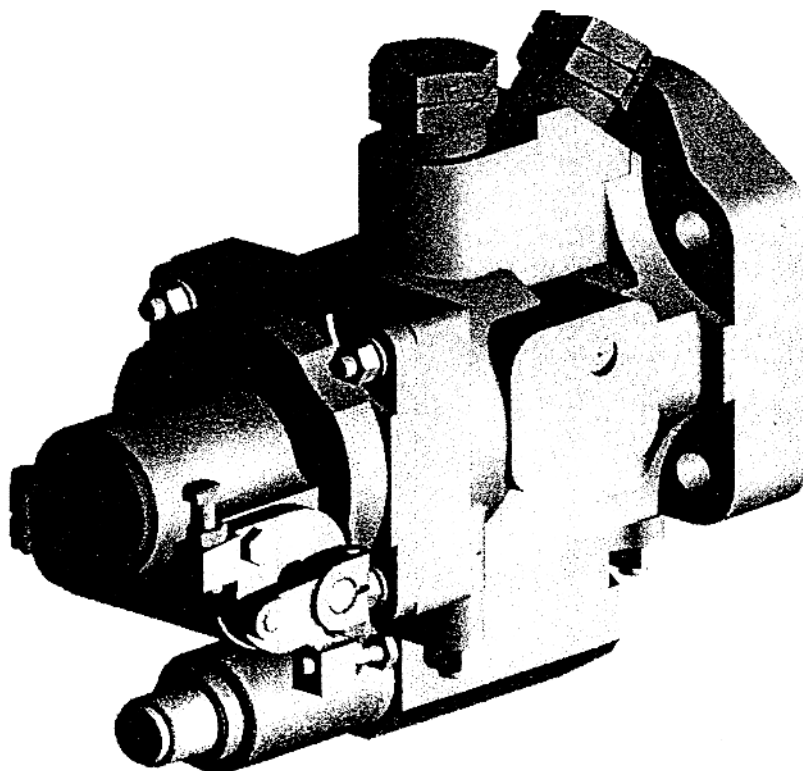
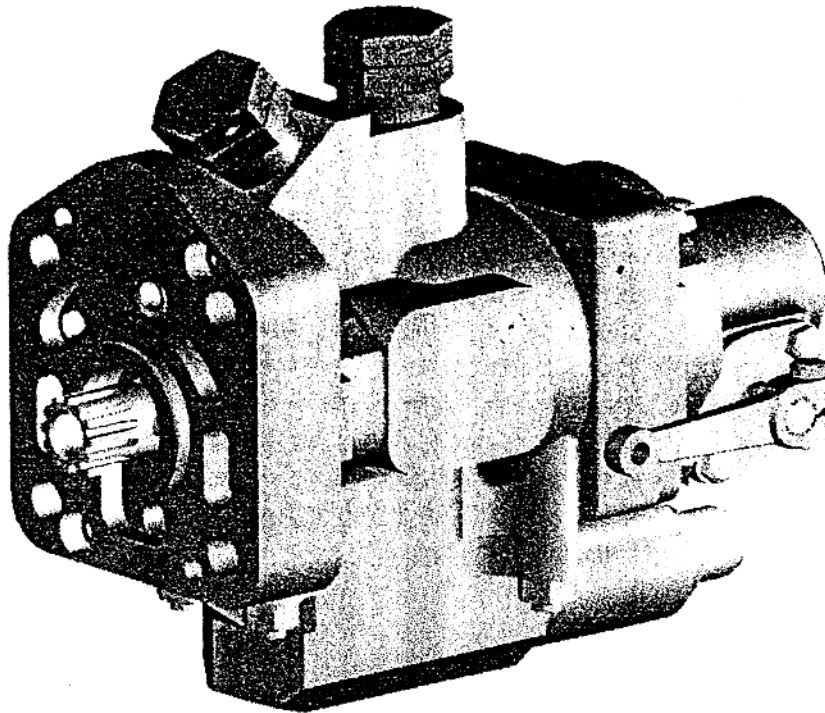


Fig. 1.1 P-480-() Propeller Governor - General Views
(from serial. no 97017)

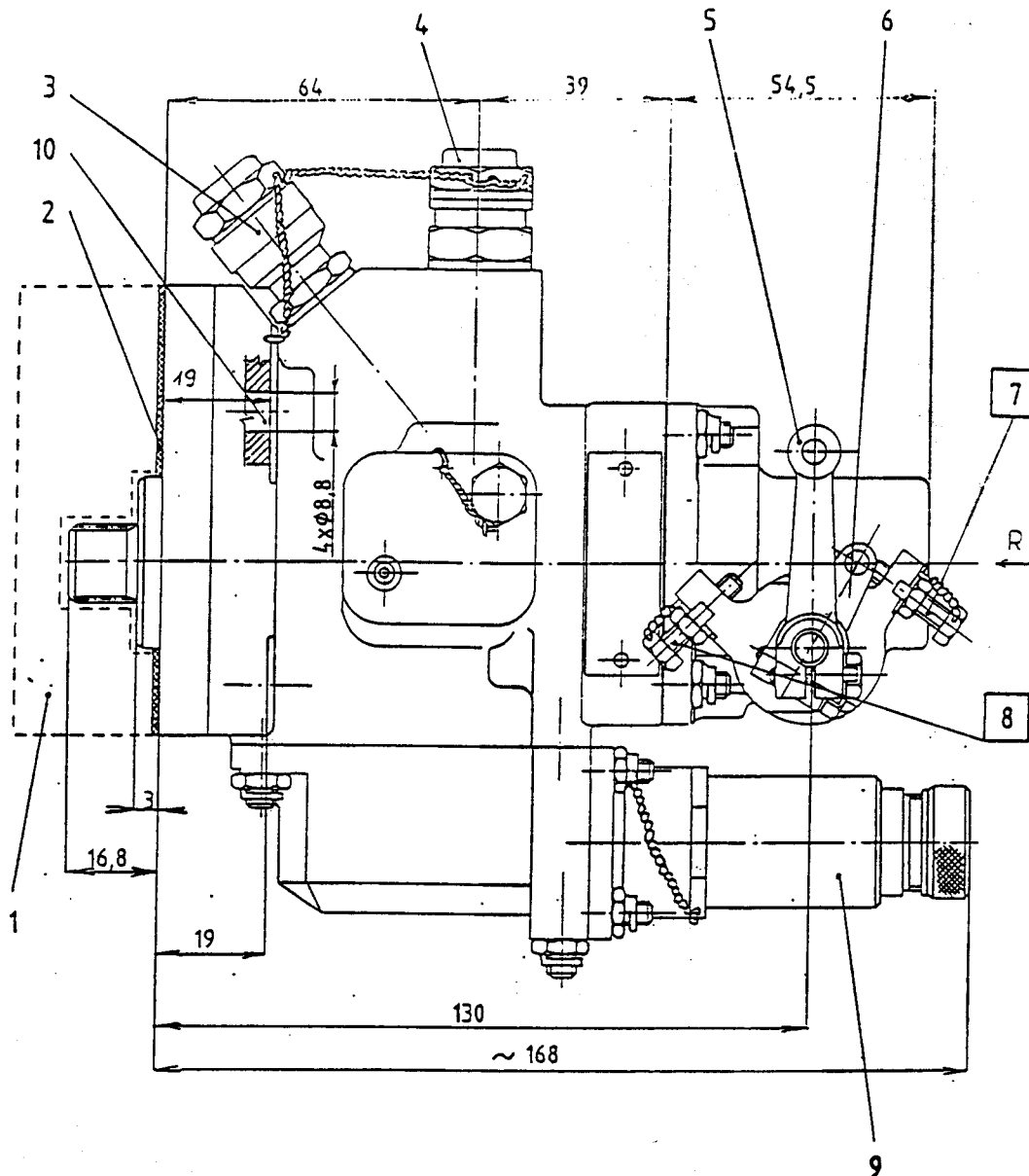


Fig. 2 P-480-() Propeller Governor (side view)
(until serial no. 97016)

- | | |
|--------------------------|---|
| 1. Shipping cover | 6. Stop lever |
| 2. Mounting gasket | 7. Minimal speed stop screw |
| 3. Relief valve RV 2 | 8. Maximal speed stop screw |
| 4. Relief valve RV 1 | 9. Electromagnetic beta valve |
| 5. Speed adjusting lever | 10. Installation hole for mounting studs. |

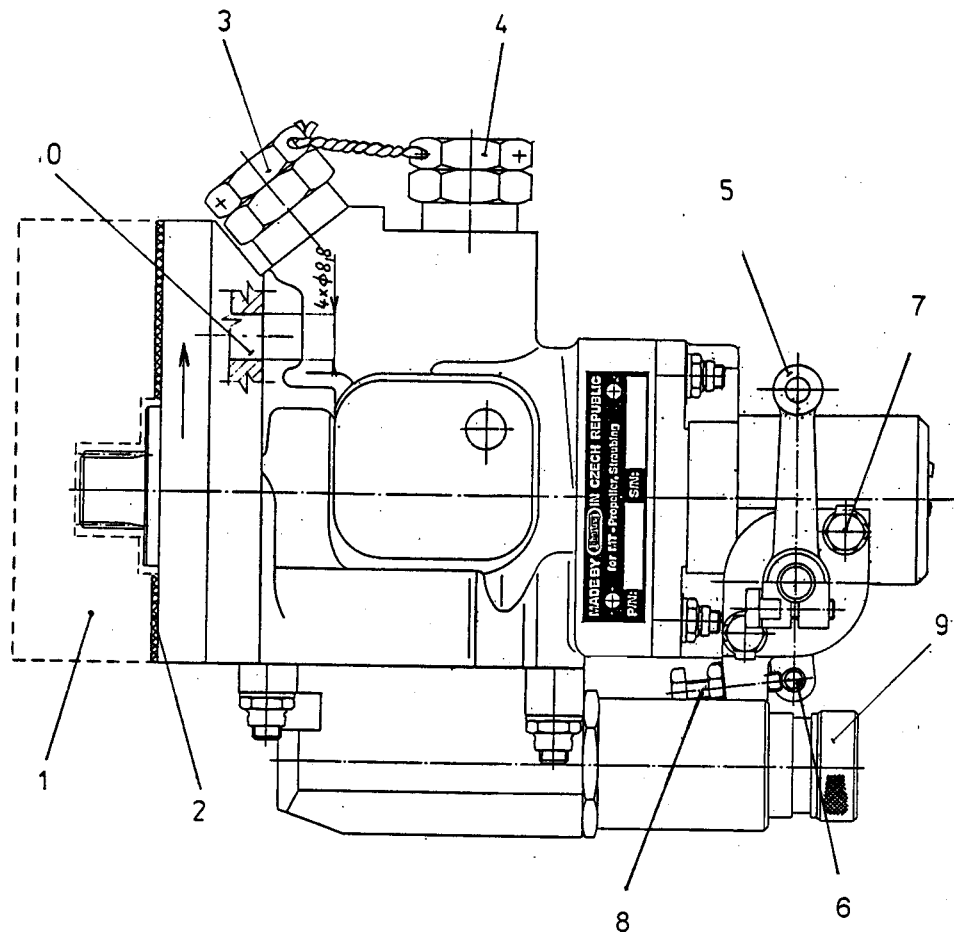


Fig. 2.1 P-480-() Propeller Governor (side view)
(from serial no. 97017)

- | | |
|--------------------------|---|
| 1. Shipping cover | 6. Stop lever |
| 2. Mounting gasket | 7. Minimal speed stop screw |
| 3. Relief valve RV 2 | 8. Maximal speed stop screw |
| 4. Relief valve RV 1 | 9. Electromagnetic beta valve |
| 5. Speed adjusting lever | 10. Installation hole for mounting studs. |

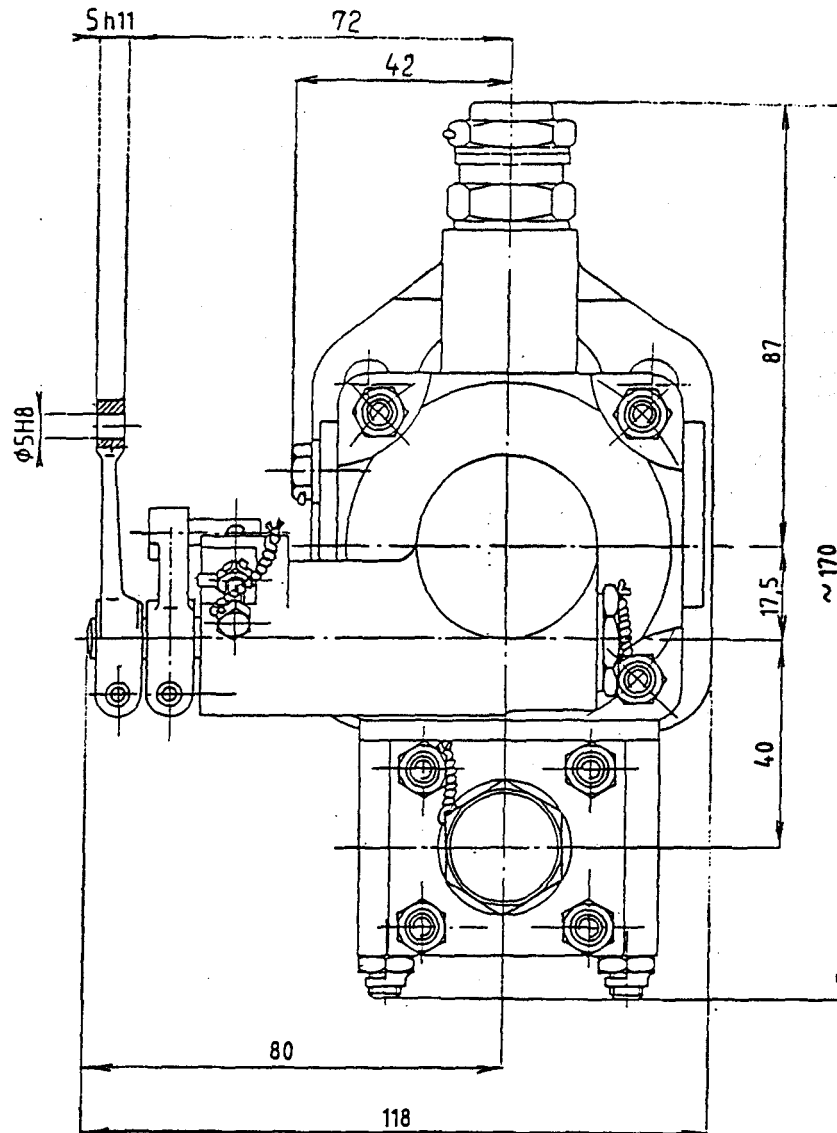


Fig. 3 P-480-() Propeller Governor (dimensions)
(until serial no. 97016)

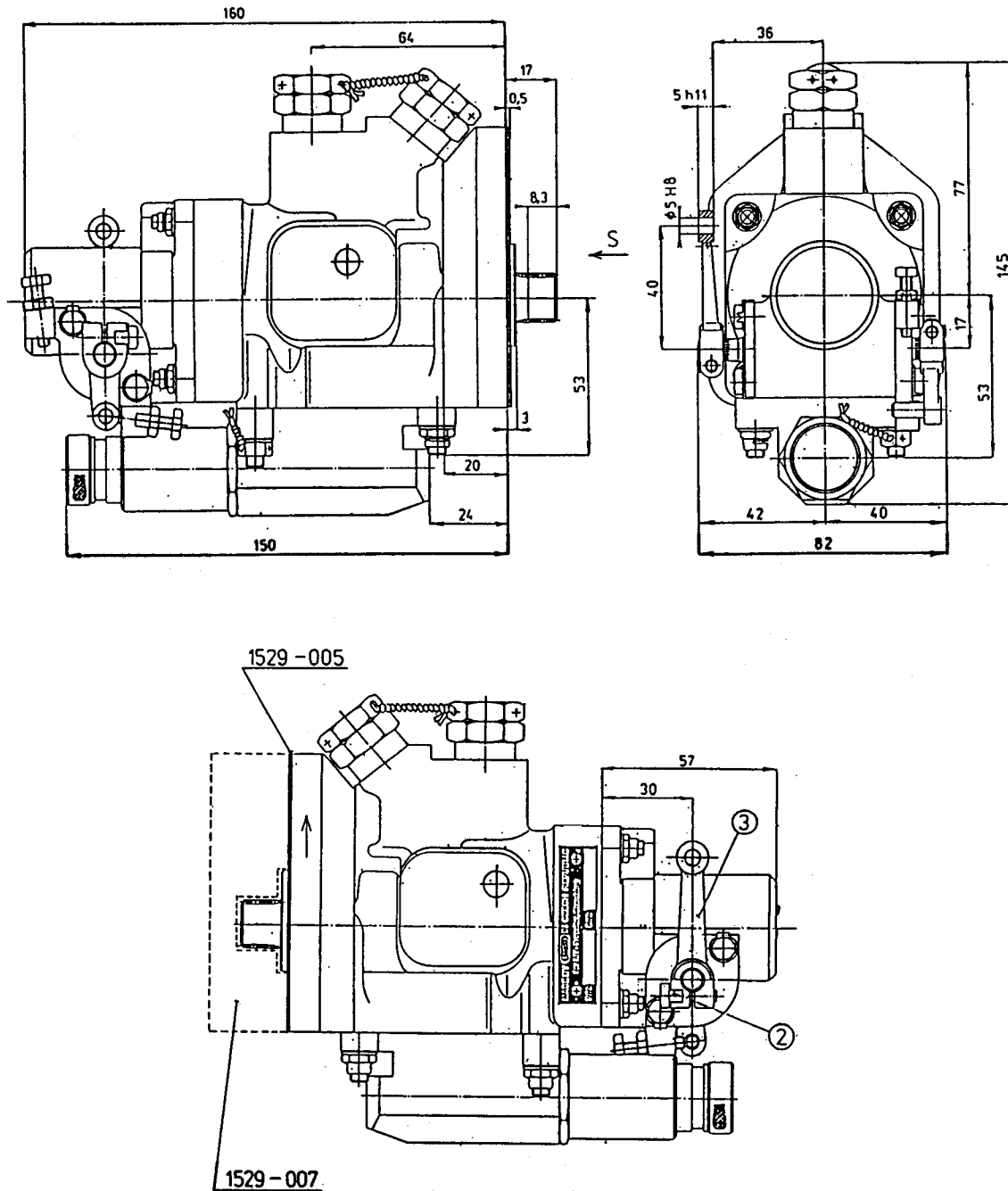


Fig. 3.1 P-480-() Propeller Governor (dimensions)
(from serial no. 97017)

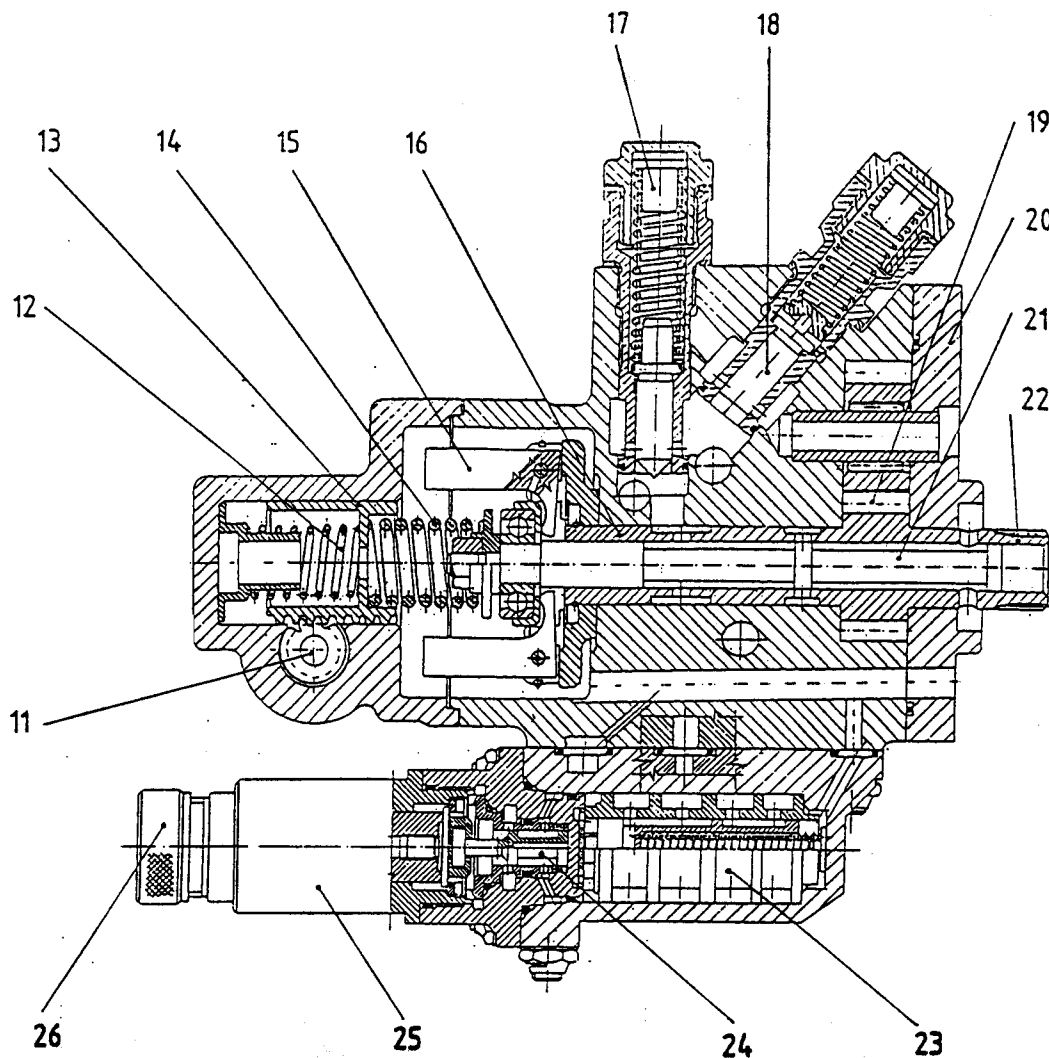


Fig. 4 P-480-() Propeller Governor (longitudinal sectional view)
(until serial no. 97016)

- | | |
|-----------------------------|--------------------------------|
| 11. Speed adjusting shaft | 19. Gear pump |
| 12. Balance spring | 20. Governor base |
| 13. Speed adjusting plunger | 21. Pilot valve |
| 14. Speeder spring | 22. Governor drive |
| 15. Head with flyweights | 23. Pressure changing valve |
| 16. Shaft | 24. Electromagnetic valve part |
| 17. Relief valve RV 1 | 25. Electromagnet |
| 18. Relief valve RV 2 | 26. Electromagnet connector |

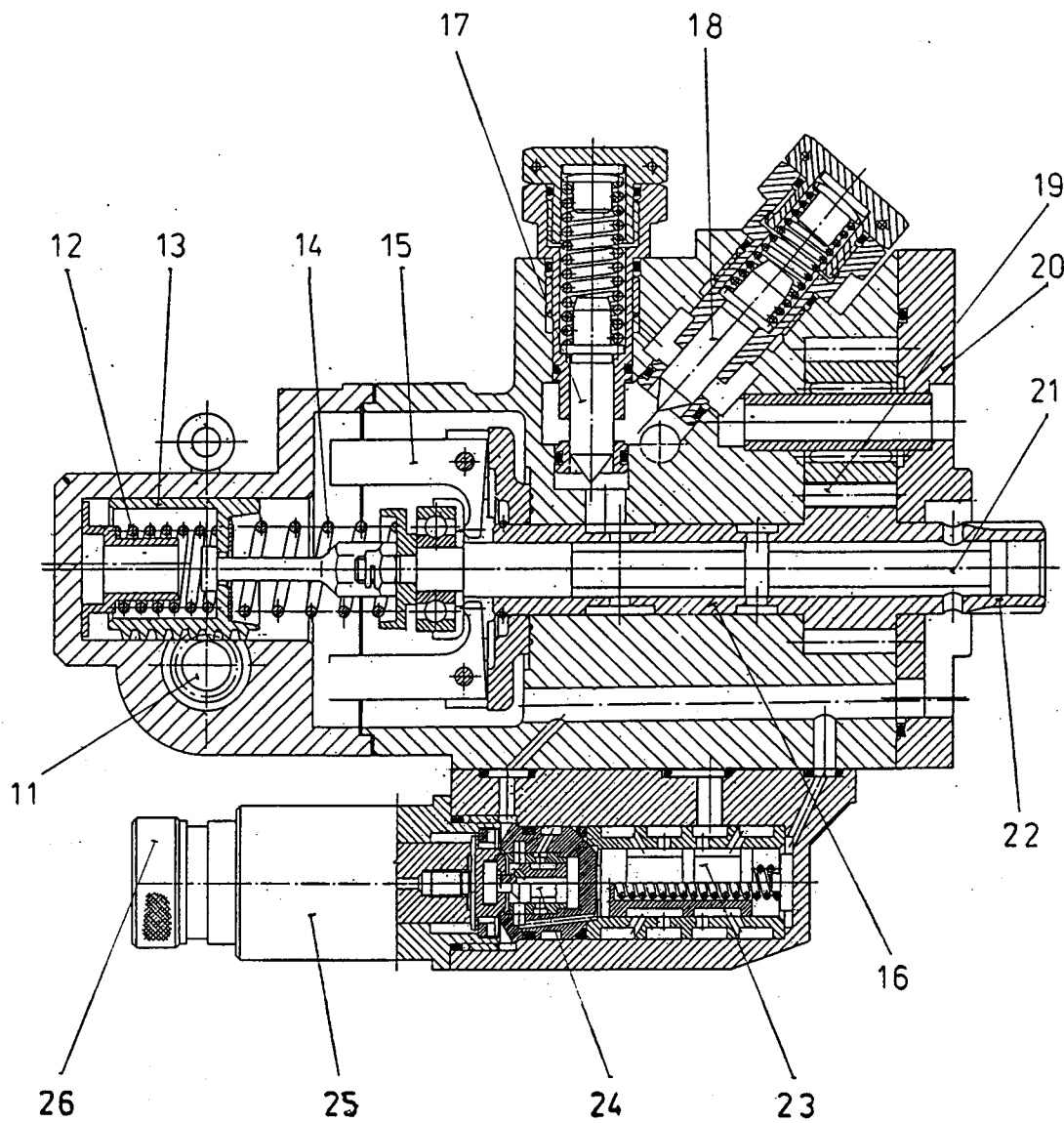


Fig. 4.1 P-480-() Propeller Governor (longitudinal sectional view)
(from serial no. 97017)

- | | |
|-----------------------------|--------------------------------|
| 11. Speed adjusting shaft | 19. Gear pump |
| 12. Balance spring | 20. Governor base |
| 13. Speed adjusting plunger | 21. Pilot valve |
| 14. Speeder spring | 22. Governor drive |
| 15. Head with flyweights | 23. Pressure changing valve |
| 16. Shaft | 24. Electromagnetic valve part |
| 17. Relief valve RV 1 | 25. Electromagnet |
| 18. Relief valve RV 2 | 26. Electromagnet connector |

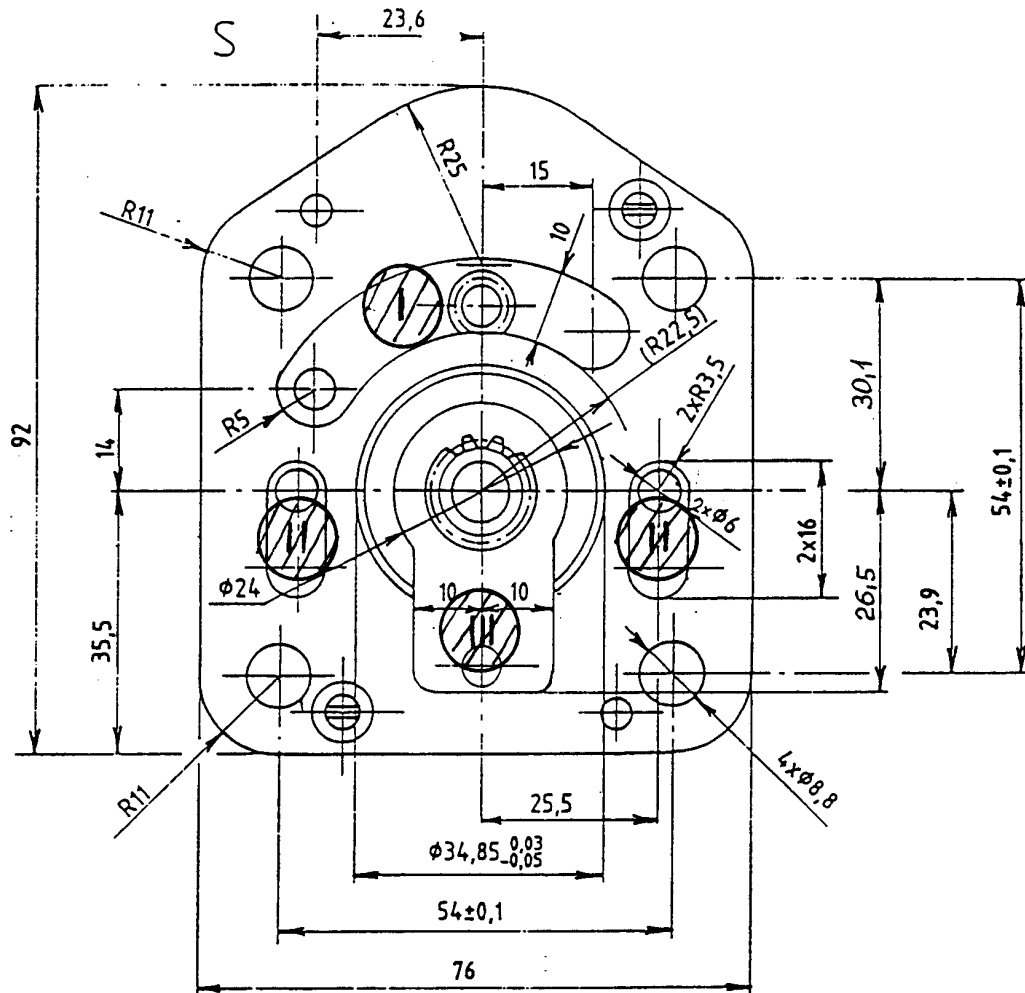


Fig. 5 Governor flange ADN 20010

Designation of channels

- I Oil supply from the engine oil system
- II Propeller oil supply
- III Return oil from the propeller hub and from the internal leakage of the governor into the engine oil system



3.0 OPERATION

3.1 Normal operation (onspeed)

Refer to page 12.

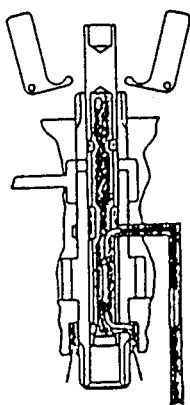
If the governor is in onspeed condition the actual speed and selected speed are equal, force of the speeder spring is balanced with force of the rotating flyweights. The pilot valve plunger covers ports so high pressure oil cannot flow to or drain from the propeller servo piston. High pressure oil from the gear pump overcomes RV2 relief valve spring force and is circulated through the open relief valve back to the inlet side of the pump.

3.2 Overspeed

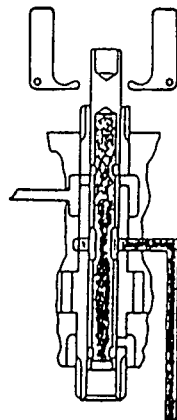
This condition occurs when actual propeller speed is greater than selected. The flyweights pivot outward and they overcome the force exerted by the speeder spring. Flyweight toes lift the pilot valve plunger, uncovering ports in the shaft, allowing high pressure oil to drain from the propeller servo piston. The propeller servo piston increases pitch, engine load is increased and propeller speed is reduced until selected speed is obtained. The flyweights return to a normal position and the pilot valve plunger covers ports in the shaft blocking the flow of high pressure oil to or from the propeller servo piston. The governor is back in onspeed condition.

3.3 Underspeed

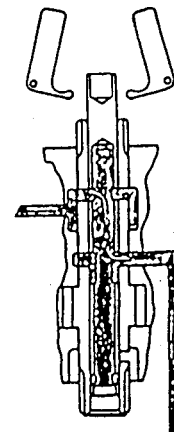
This condition occurs when actual propeller speed is less than selected speed. A decrease in centrifugal force causes the rotating flyweights to pivot inward under force exerted by the speeder spring. The pilot valve plunger is forced down uncovering ports in the shaft allowing high pressure oil to flow to the propeller servo piston. The propeller servo piston decreases pitch, thus reducing load on the engine and increasing propeller speed until selected speed is obtained. The flyweights return to a normal position and the pilot valve plunger covers ports in the shaft, blocking the flow of high pressure oil to or from the propeller servo piston. The governor is back in onspeed condition.



Overspeed



Onspeed



Underspeed

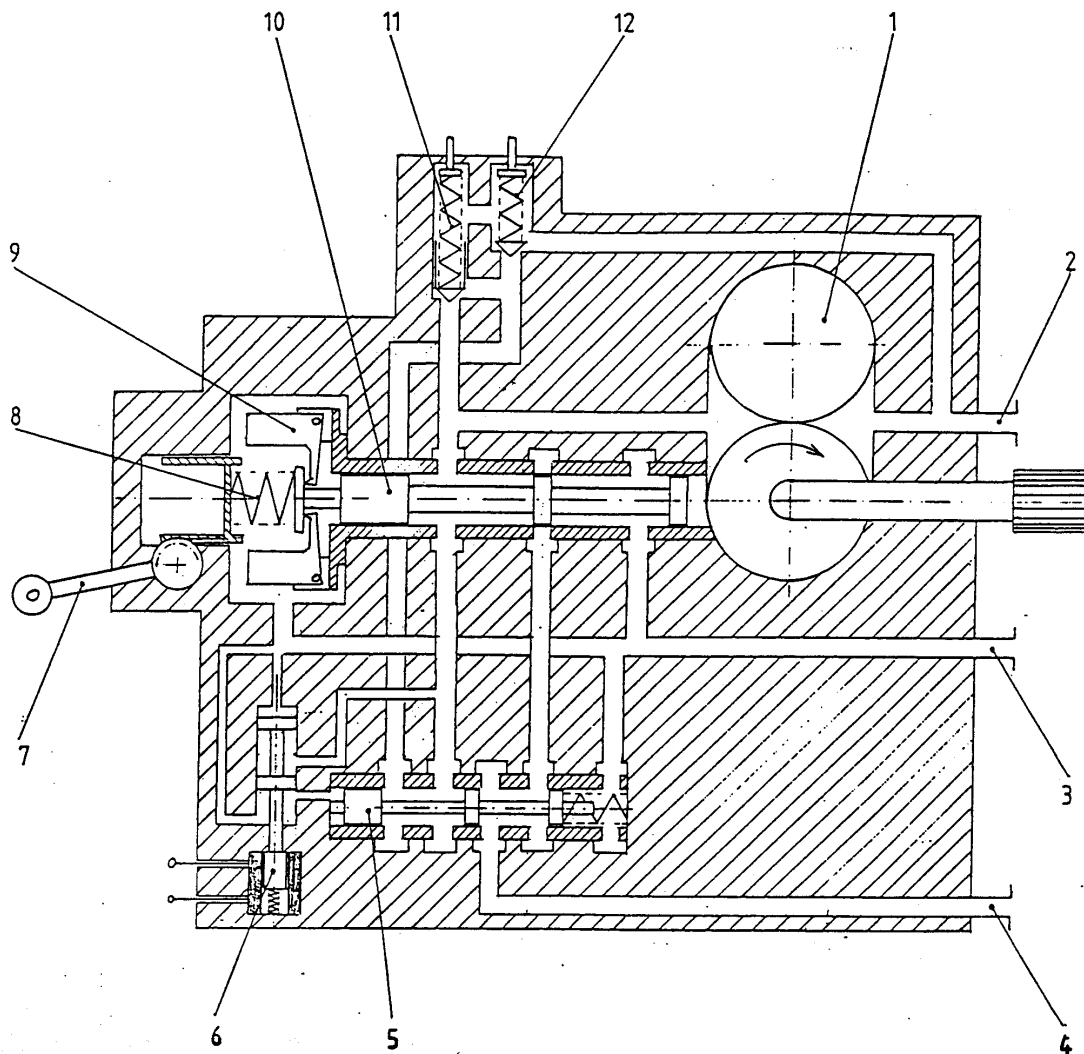


Fig. 6 Schematic diagram of governor operation
Normal operation

- | | |
|-------------------------------------|-------------------------------------|
| 1. Gear oil pump | 7. Speed adjusting lever |
| 2. Engine oil supply | 8. Speeder spring |
| 3. Drain line (to sump) | 9. Flyweights |
| 4. Control line for propeller servo | 10. Pilot valve |
| 5. Reversing valve | 11. High pressure relief valve RV 1 |
| 6. Electromagnet with control valve | 12. Low pressure relief valve RV 2 |



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3.4 Reversing

Refer to page 14.

Via an electric signal to the magnetic beta valve, the control valve changes the position, high pressure oil is delivered to reverse valve front face, which moves to reverse position. After this change, parallel operation of both RV1 and RV2 relief valves is cancelled. The governor servo pressure will be controlled by the RV1 relief valve. At the same time, control line for propeller servo will be connected with governor high pressure line and pushes the propeller into full reverse. In this condition the pilot valve is inoperative, therefore the propeller is not controllable by the constant speed section in the governor. The negative thrust must be produced by increasing and decreasing the power (rpm).

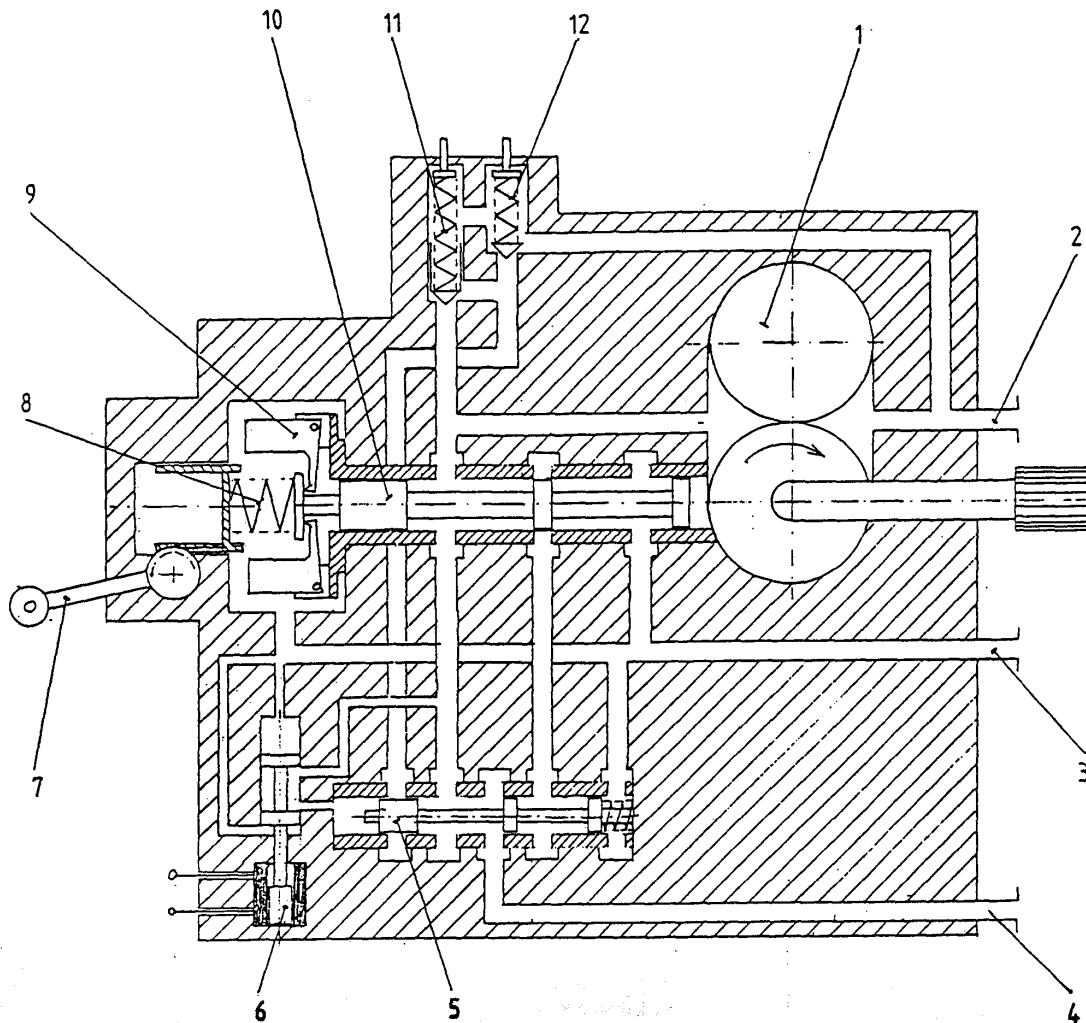


Fig. 7 Schematic diagram of governor operation
Reversing operation

- | | |
|-------------------------------------|------------------------------------|
| 1. Gear oil pump | 7. Speed adjusting lever |
| 2. Engine oil supply | 8. Speeder spring |
| 3. Drain line (to sump) | 9. Flyweights |
| 4. Control line for propeller servo | 10. Pilot valve |
| 5. Reversing valve | 11. High pressure relief valve RV1 |
| 6. Electromagnet with control valve | 12. Low pressure relief valve RV2 |



4.0 GOVERNOR SPECIFICATION

4.1 Basic Parameters

4.1.1	Weight	max. 2.5 kg
4.1.2	Dimensions	see fig. 3 and 3.1
4.1.3	Drive	from engine
4.1.4	Governor rotation facing base	CCW / CW
4.1.5	Propeller speed control	lever
4.1.6	Governor drive ratio	according to engine
4.1.7	Operating liquid	piston engine oil from engine oil system/ P-480-4 ,P-480-7 and P-480-8 (turbine oil)
4.1.8	Operating voltage	24 or 12 V

4.2 Technical Data

4.2.1	Supply oil pressure	$3 \pm 0,3$ bar (43,5 $\pm$ 4,4 psi)
4.2.2	High pressure - relief valve 1(RV1), at 90 % of max. governor rpm, oil temperature $75 \pm 3^{\circ}\text{C}$ (170°F)	$38,5 \pm 1$ bar (558 $\pm$ 14 psi)
4.2.3	Low pressure - relief valve 2 (RV2), at 30 % above governor idle rpm, oil temperature $75 \pm 3^{\circ}\text{C}$ (170°F)	min. 13 bar min. 180 psi
4.2.4	Low pressure - relief valve 2 (RV2), at max. governor rpm, oil temperature $75 \pm 3^{\circ}\text{C}$ (170°F)	$22 \text{ bar} \pm 1 \text{ bar}$ $320 \text{ psi} \pm 10 \text{ psi}$
4.2.5	Range of operating temperatures for full accuracy	+20 to + 80°C (+68 to + 176°F)
4.2.6	Full range of operating temperatures	-20 to + 110°C (-4 to +230°F)
4.2.7	Pump capacity at 1.750 + 10 governor rpm, $3 \pm 0,3\text{bar}$ (43,5 psi) input oil pressure, $75 \pm 3^{\circ}\text{C}$ (170°F) oil temperature, oil pressure at output approx. $10 \pm 0,5$ bar (145 $\pm$ 7psi)	min. 9 l/min (9,5 qu/min)
4.2.8	Range of governed speed	1.000 to 3.000 rpm
4.2.9	Internal leakage at 1.750 rpm, output pressure 18 ± 1 bar, temperature $75 \pm 3^{\circ}\text{C}$ (170°F)	max. 2.0 l/hour (2,1 qu/min)
4.2.10	Governor stability	$\pm 5 \%$
4.2.11	Total control arm angular travel	max. 90°



4.2.12-1 Table of Governor Types:

For all governor types please refer to MT-Propeller Governor List E-634



4.3 Operational Conditions

4.3.1 Altitude	0 to 8.500 m (0 to 28000ft)
4.3.2 Temperature ranges	-20 to +110°C (-4 to + 230°F)
4.3.3 Flight maneuvering load factor	+8g, -5g
4.3.4 Time between overhaul	2.000 flying hours or 7 calendar years
4.3.5 Maximum permitted RPM	3500 RPM (continuously) for standard reciprocating engines

5.0 GOVERNOR INSPECTION BEFORE INSTALLATION ON THE ENGINE

After unpacking, the governor must be inspected, whether it is damaged (for example after drop, etc.) and for damaged parts. In case you have found a damage caused by transportation, please, contact the forwarder immediately, as well as the supplier.

6.0 INSTALLATION INSTRUCTION

- 6.1 Clean engine and governor flange with solvent or gasoline. Both surfaces must be dry and clean. Remove all surface defects.
- 6.2 Install clean, silicone greased gasket on engine flange. Gasket must have a screen on the inlet (supply) parts. Turn governor drive by hand to check free turning. Install the governor on the engine flange. The splines of the governor shaft must fit into the splines of drive in the engine. Mounting bolts or stop nuts with washers should be torqued crosswise with 20-24 Nm (180 - 220 inlb).

Warning:

Loosen bolts or nuts can cause improper function of the governor or at least oil leakage.

- 6.3 Connect control rod to governor control lever (according to the instruction in the aircraft service manual).
- 6.4 Remove shipping cap from electromagnet connector and plug in connector MS3106A-10SL-4S with wiring 097-3106A-20-15S and wiring support 097-3057-12 for the reverse (beta) valve.
- 6.5 Perform a functional check and inspection for leakage according to chapter 12 in this manual.



7.0 CONTROL HEAD ADJUSTMENT

It is possible to position the governor head to the governor control by the rearranging to one of the three positions by 90° (until serial no. 97016) and the four positions by 90° (from serial no. 97017), according to fig. 8/fig. 8.1.

7.1 Governor head rearrangement instructions:

7.1.1 Remove one safety wire from M5 nut.

7.1.2 Loosen and remove the three stop nuts and one nut for a safety wire.

7.1.3 Remove the control head from the body. Speeder spring is loose and not guided during this process. Make sure that the spring remains in position.

7.1.4 Turn the control head to desired position and place it on the studs of the body.

Note:

During installation of the control head onto the studs, carefully check location of the speeder spring!

7.1.5 Place washers on the studs and mount three stop nuts and one nut for a safety wire. Install the nut for the safety wire according to fig. 6. Torque with 5 - 6 Nm (44-53 inlb).

Note:

Do not reuse the stop nuts!

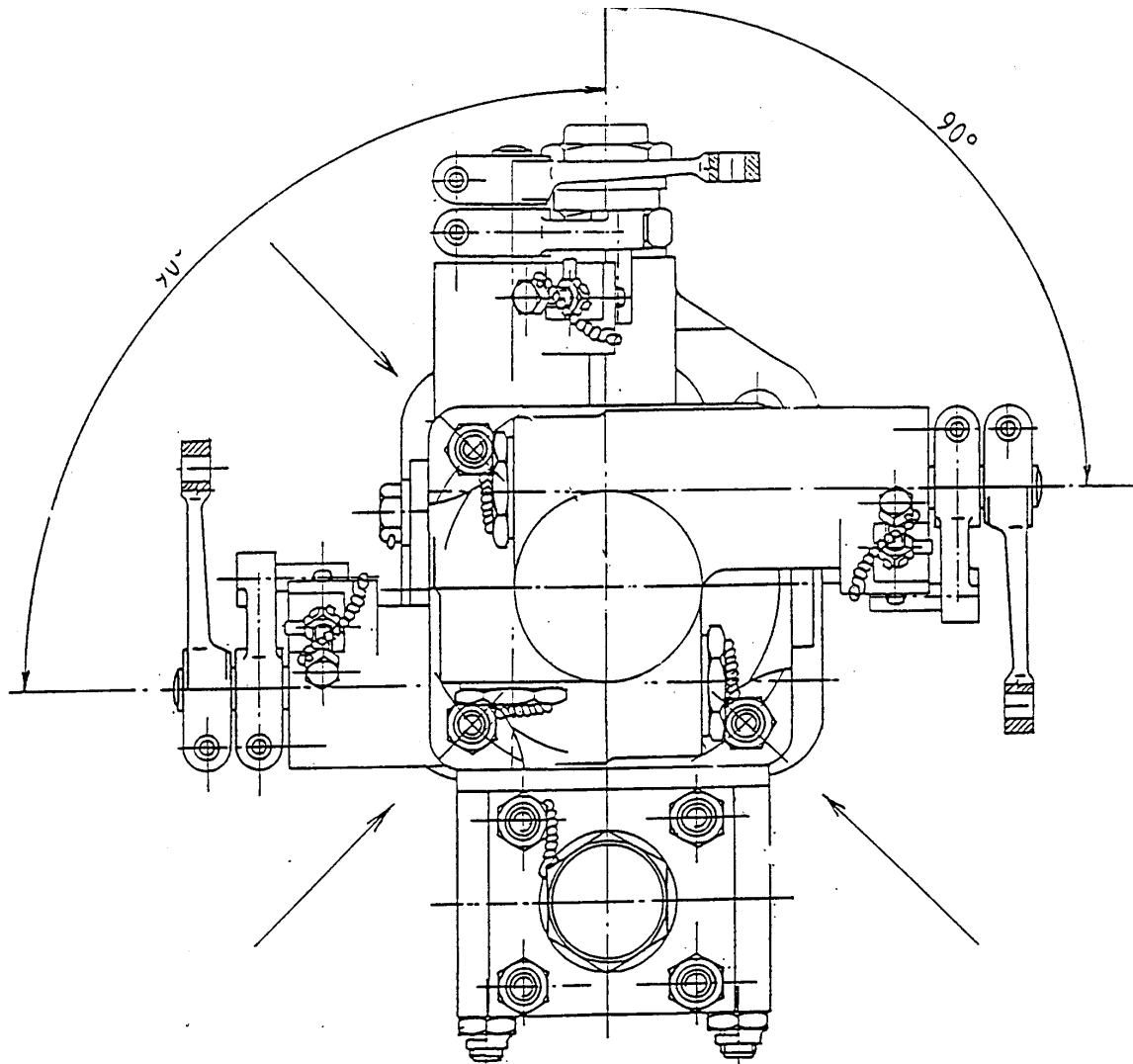
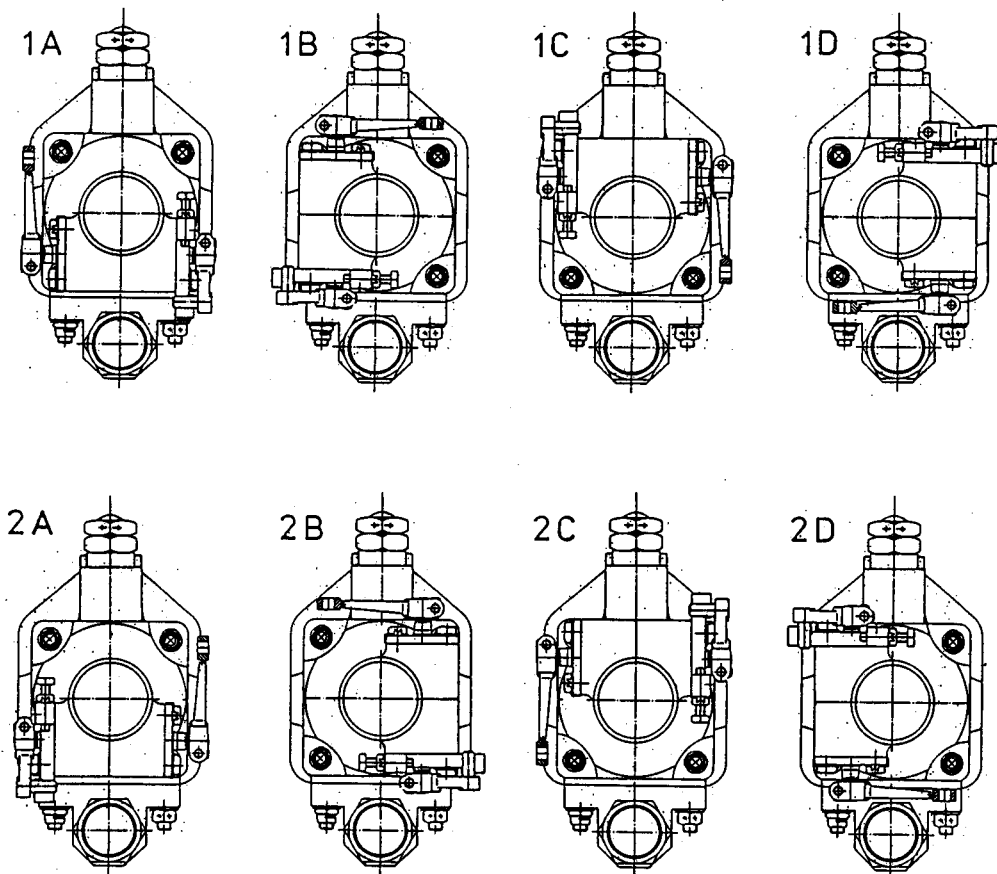


Fig. 8 Positioning of governor P-480-() control head
(until serial no. 97016)



1. It is necessary to mention the requested speed adjusting lever position in the order of a propeller governor P-480-().
2. For the speed adjusting lever positions marked 1A, 1B, 1C, 1D:
propeller speed decreases with turning of the speed adjusting lever in CW direction (facing the speed adjusting lever).
For the speed adjusting lever positions marked 2A, 2B, 2C, 2D:
propeller speed increases with turning of the speed adjusting lever in CW direction (facing the speed adjusting lever).

Fig. 8.1 Positioning of governor P-480-() control head
(from serial no. 97017)



8.0 POSITIONING OF PROPELLER RPM LEVER

- 8.1** Loosen and remove the screw securing the lever (fig. 9/fig.9.1).
- 8.2** Remove the lever from the serrations of the shaft.
- 8.3** Turn the lever to desired position and place the lever on the serrations of the shaft. The lever can be moved in increment of about 13° at any position.
- 8.4** Secure the lever with lock washer and screw. Torque screws 4 - 5 Nm (35-44 inlb).

9.0 ADJUSTING OF MAXIMAL PROPELLER RPM

Note:

It is possible to set maximum rpm with the described procedure only in a limited range. This is a normal maintenance procedure and fully authorized.

- 9.1** Remove lock washer from stop screw (fig. 10/10.1) and open tab washer, loosen check nut of the screw.
- 9.2** Place the governor lever on maximum rpm stop. Change maximum speed stop screw until proper speed setting is reached. Torque check nut.
- 9.3** Secure the lever with lock washer and screw 4 - 5 Nm (35-44 inlb).

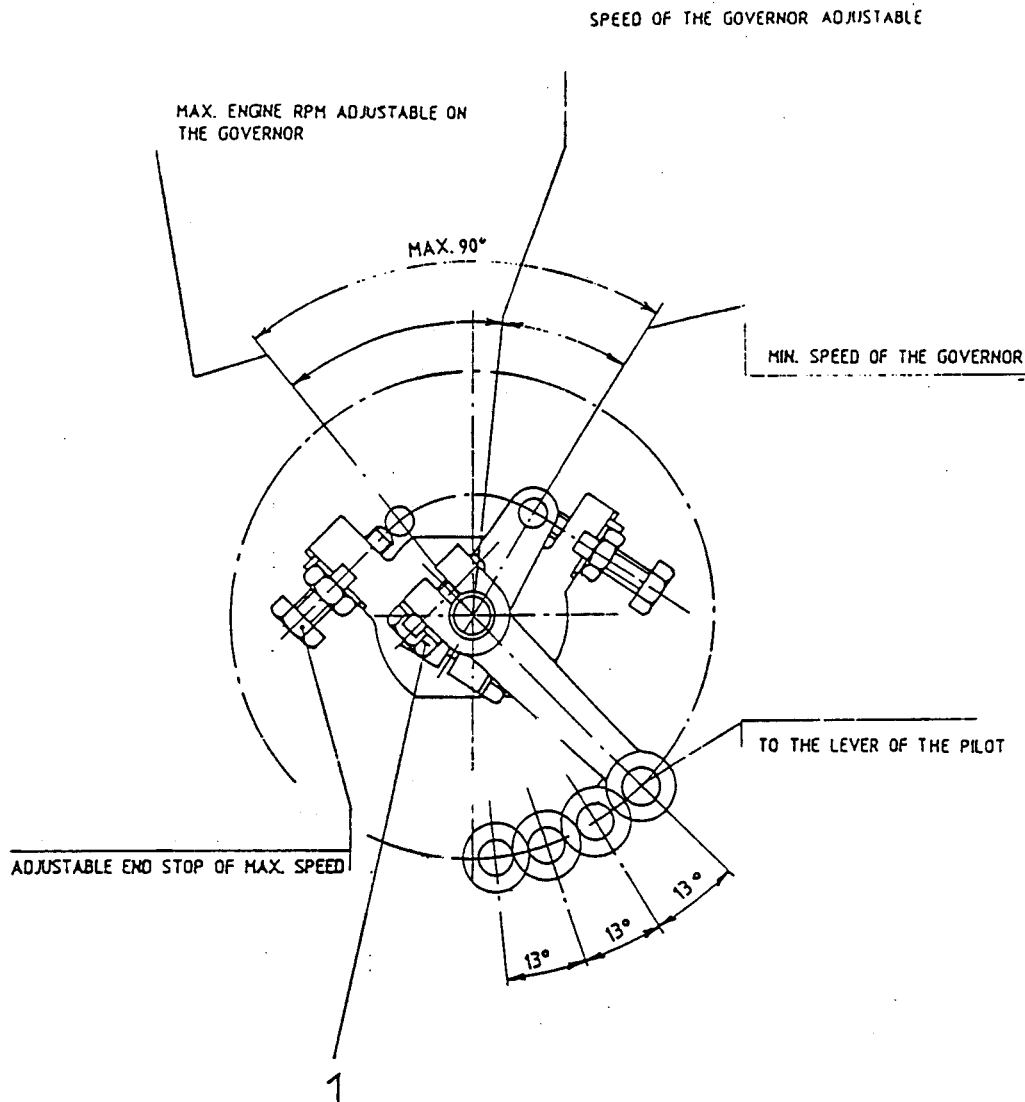


Fig. 9 Control lever adjustment
 (until serial no. 97016)

1. Screw for securing the governor control lever



The propeller (engine) RPM lever
can be mounted in increments of 13°
around 360°.

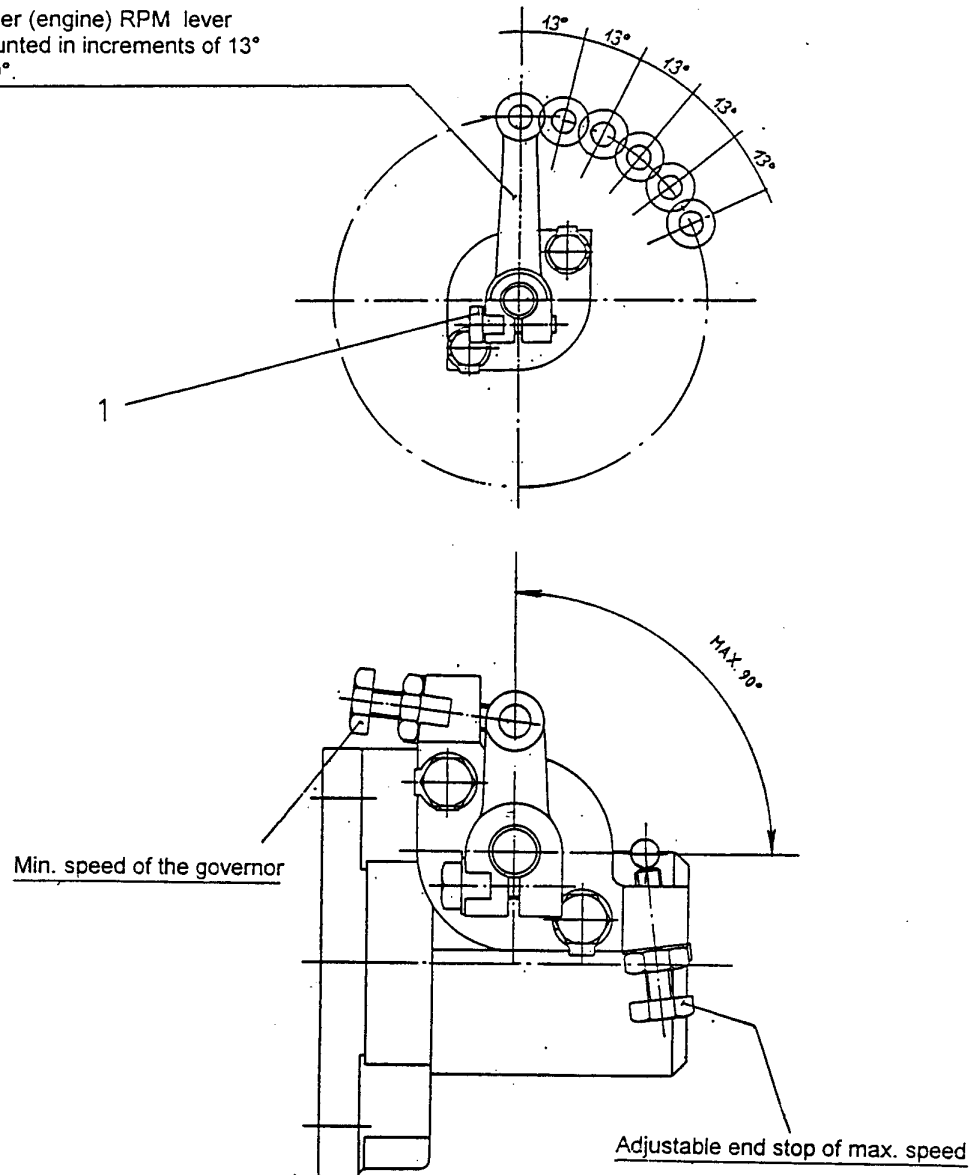


Fig. 9.1 Control lever adjustment
(from serial no. 97017)

1. Screw for securing the governor control lever



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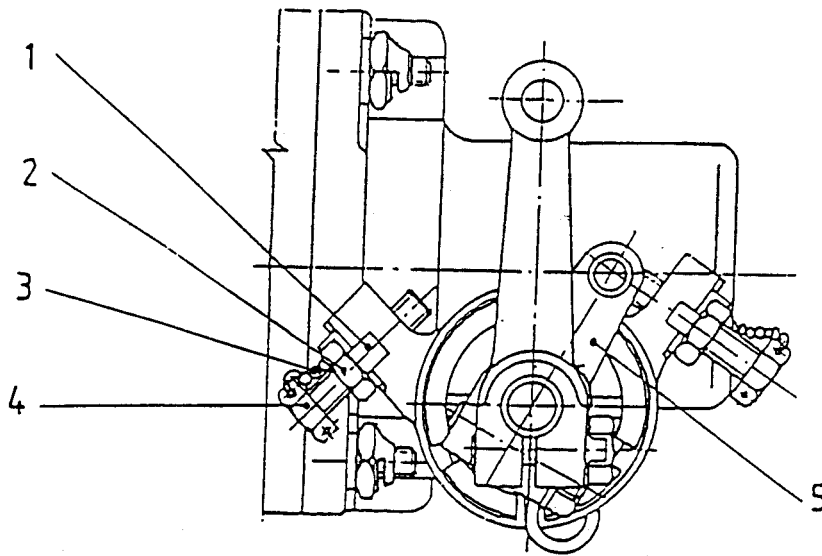


Fig. 10 Maximum rpm adjustment
(until serial no. 97016)

- | | |
|----------------------------------|---------------|
| 1. Lock washer | 4. Stop screw |
| 2. Check nut | 5. Stop lever |
| 3. Safety wire of the stop screw | |

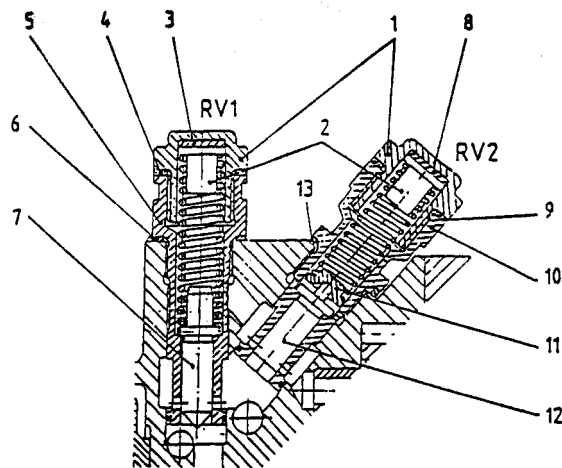


Fig. 11 Relief valve adjustment
(until serial no. 97016)

- | | |
|--------------------------|---------------------------|
| 1. Plug | 8. RV2 shim |
| 2. Spring guide | 9. RV2 gasket |
| 3. RV1 shim | 10. RV2 relief valve body |
| 4. RV1 gasket | 11. Spring guide |
| 5. RV1 relief valve body | 12. RV2 plunger |
| 6. RV1 gasket | 13. RV2 gasket |
| 7. RV1 plunger | |

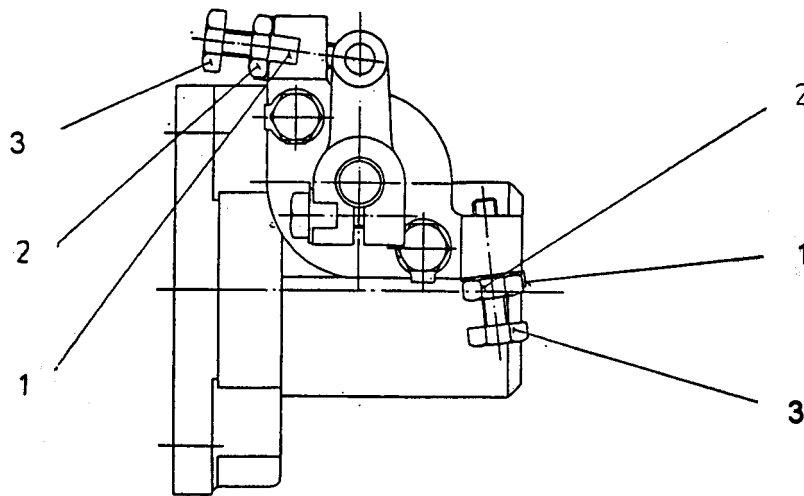


Fig. 10.1 Maximum rpm adjustment
(from serial no. 97017)

- 1. Lock washer
- 2. nut M4

- 3. Stop screw

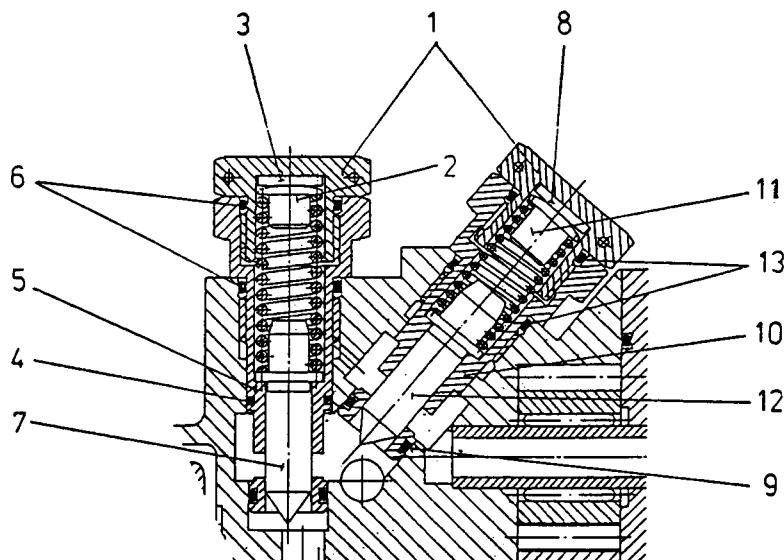


Fig. 11.1 Relief valve adjustment
(from serial no. 97017)

- 1. Plug
- 2. Spring guide
- 3. RV1 shim
- 4. RV1 gasket
- 5. RV1 relief valve body
- 6. RV1 gasket
- 7. RV1 plunger

- 8. RV2 shim
- 9. RV2 gasket
- 10. RV2 relief valve body
- 11. Spring guide
- 12. RV2 plunger
- 13. RV2 gasket



10.0 RV2 LOW-PRESSURE RELIEF VALVE ADJUSTMENT

Fig. 11/Fig. 11.1

10.1 Remove safety wire from relief valve plug.

10.2 Hold the relief valve body (10) with an appropriate wrench. Screw up the plug (1). Do not turn relief valve body.

Note:

Do not loose shim(s) during removing.

10.3 Relief valve pressure adjustment:

10.3.1 Change gasket (9) under the relief valve plug (max. 2 pcs.). Thickness 1 mm, 1,5 mm and 2 mm are available.

10.3.2 Change shims (8) (max. 3 pcs.) under the relief valve spring. Thickness 0,5 mm, 0,8 mm, 1 mm, 1,3 mm, 1,5 mm, 1,8 mm and 2 mm are available.

10.3.3 Combination of shims according to 10.3.1 and 10.3.2.

10.4 Relief valve pressure can be changed in a limited pressure range only.

The range can be adjusted by varying spring-type and shim set. Adjusting ratio: 1 mm = 4 bar (58 psi).

10.5 Put new shims onto the plug (1). Be sure, that a pin is on the relief spring, insert new combination of shims (max. 3 pcs.) and screw the plug on the valve body.

10.6 Hold the relief valve body with an appropriate wrench and tight the plug.

10.7 Do not turn the relief valve body. Secure relief valve with safety wire. Refer to fig. 11/fig.11.1

11.0 RV1 HIGH-PRESSURE RELIEF VALVE ADJUSTMENT

Fig. 11/Fig. 11.1

11.1 Proceed like low pressure relief valve adjustment, chapter 10. Adjustment ratio: 1 mm = 6 bar (87 psi).



12.0 GOVERNOR TIGHTNESS INSPECTION

Fig. 12/Fig.12.1

12.1 Check the governor tightness immediately after engine stop!

12.2 Inspect tightness of the following parts of the governor:

12.2.1 On governor base - remedy according to chapter 13 and 14

12.2.2 Between parts of relief valves - remedy according to chapter 14

12.2.3 Under relief valve body - tighten it or change gasket.

12.2.4 Under plug of body - tighten it or change gasket.

12.2.5 On the connections of governor parts - tighten nuts or change gasket.

12.3 If it is impossible to ensure tightness on the above mentioned parts, contact the governor manufacturer or a service center.

13.0 TIGHTENING OF GOVERNOR MOUNTING NUTS

13.1 Remove safety wire from all nuts (fig. 11/fig.11.1)

13.2 The nuts should be torqued crosswise with equal force, use an appropriate wrench.

13.3 Secure the nuts with a safety wire 0.63 mm (0.025 inch).

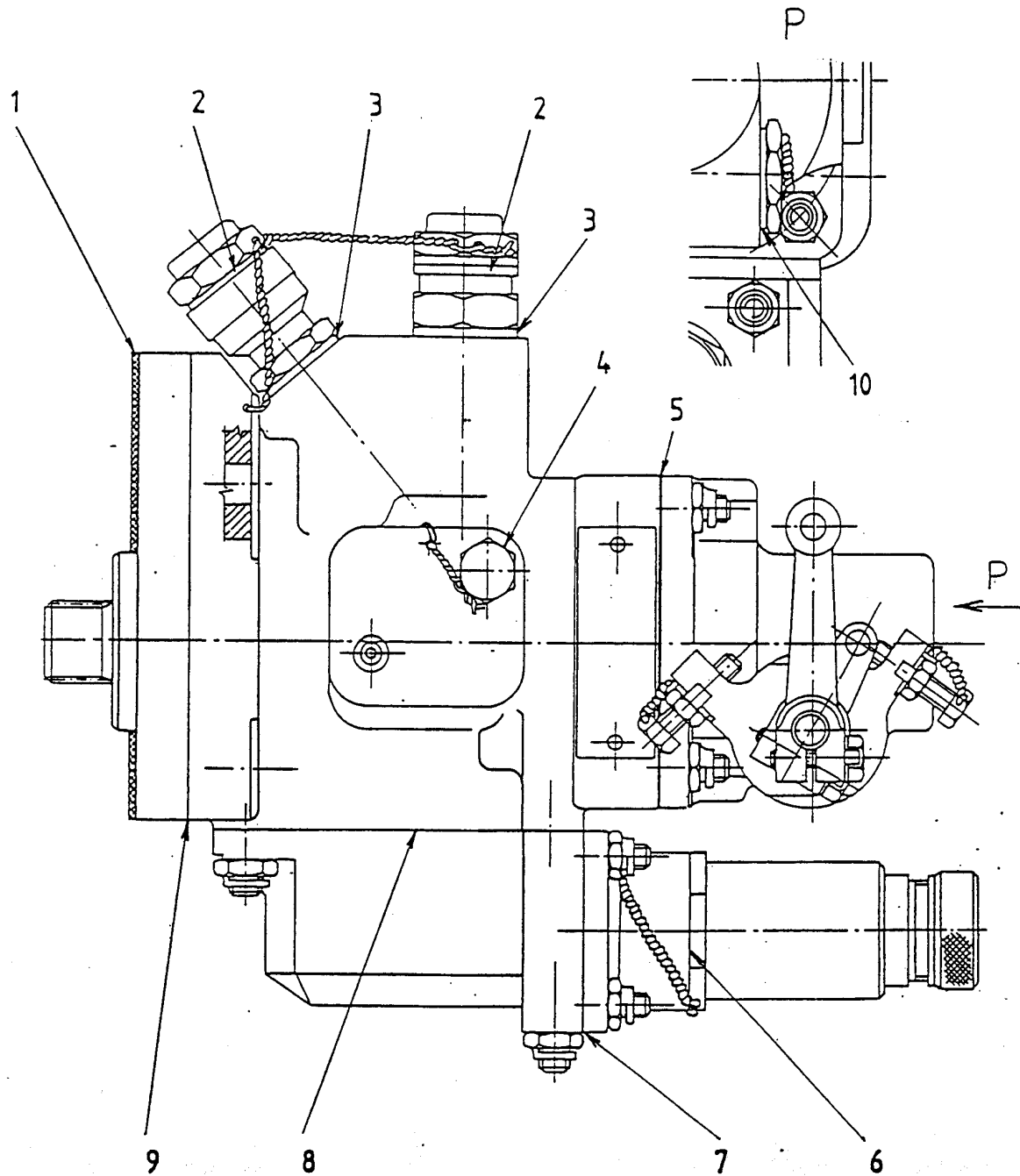


Fig. 12 Tightness inspection
 (until serial no. 97016)

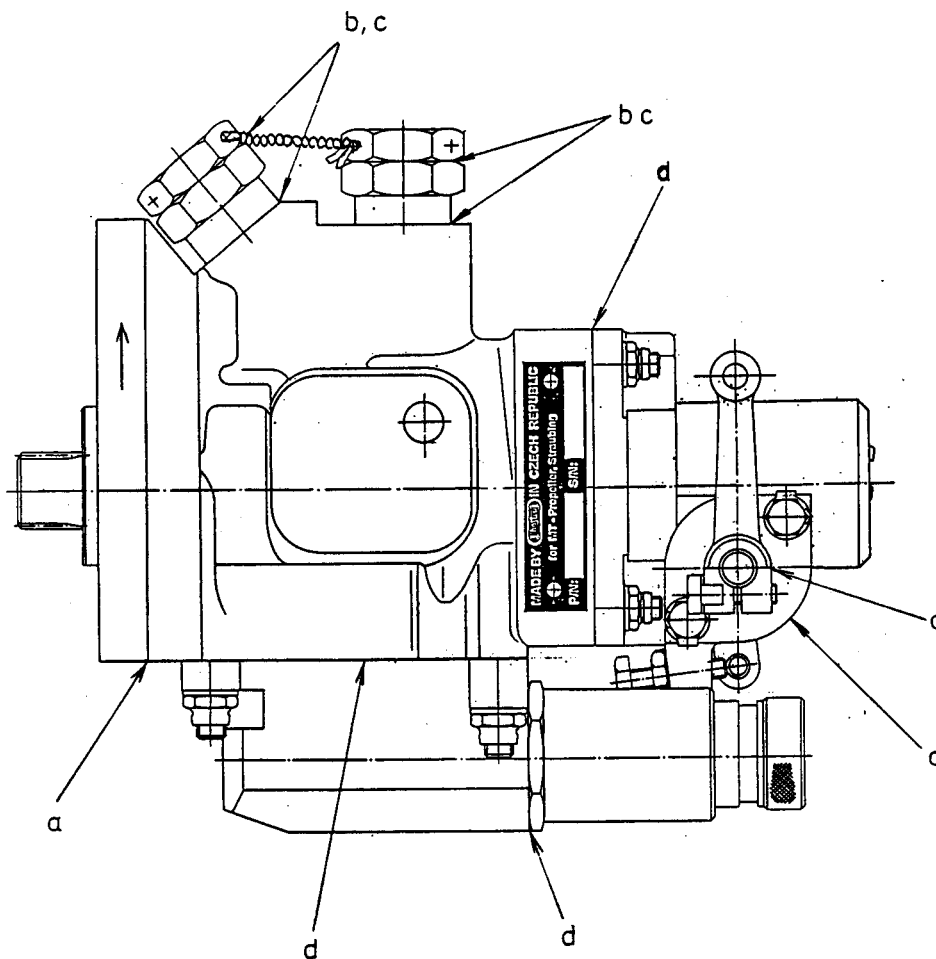


Fig. 12.1 Tightness inspection
 (from serial no. 97017)



14.0 RELIEF VALVE THIGHTENING

14.1 Remove safety wire from relief valve.

14.2 Hold relief valve body (5,10 in fig. 11/fig. 11.1) with an appropriate wrench. Tight plug. Refer to fig.11/fig. 11.1.
Do not turn the relief valve.

14.3 If the plug (1) was tightened when untightness was found, use new gasket (6, 13 in fig.11/fig.11.1).

14.4 Secure the relief valve with safety wire 0,63mm (0,025inch).

15.0 CHANGE GASKET UNDER RELIEF VALVE PLUG

15.1 Remove safety wire from relief valve.

15.2 Be sure, that the reason for untightness isn't a loose plug (1), see chapter 13.

15.3 If the plug (1) was tightened when untightness was found, use new gasket (6, 13 in fig.11/fig.11.1).

15.4 Hold the relief valve body (5,10 in fig. 11/fig.11.1) with an appropriate wrench and screw up the plug (1), fig.11/fig.11.1. Do not turn the relief valve body.

Note:

Do not lose shim(s) (3,8 in figure 11/fig.11.1).

15.5 Remove gasket.

15.6 Use new gasket with the dimensions of the original gasket.

15.7 Put new gasket on the plug (1). Check that the original shims are in the plug and the guide pin is on the valve spring.

15.8 Hold the relief valve body (5, 10 in figure 11/fig.11.1) with an appropriate wrench and tight the plug with shims and gasket. Do not turn the relief valve body.

15.9 Secure the relief valve with safety wire 0,63mm (0,025inch). See fig. 13/fig13.1 and 13a./fig.13.a1

15.10 Check the governor according to chapter 12.



16.0 CHANGE GOVERNOR FLANGE GASKET

16.1 Remove governor from engine, chapter 17.

16.2 Install the governor with a new gasket to the engine. Surfaces must be clean and smooth. See chapter 5.

17.0 REMOVING THE GOVERNOR FROM ENGINE

17.1 Disconnect the control rod, refer to engine/aircraft service manual.

17.2 Disconnect wire from electromagnet. Put shipping cap on the electromagnet.

17.3 Remove safety wire from flange-nuts. Remove nuts and washers.

17.4 Remove the governor from the engine. Protect the engine flange by appropriate means.

17.5 Secure governor flange with shipping cap. See fig. 14/fig.14.1. In case of necessity clean the governor with cleaning cloth using petrol.
Pay attention that no petrol can enter the governor.

17.6 Put the governor into an appropriate box, store it as mentioned in chapter 19.

18.0 GOVERNOR CONSERVATION

18.1 Clean the governor with a soft brush or an appropriate cloth with petrol.

Note:

Pay attention that no petrol can enter the governor.

18.2 Cover all non varnished areas on the governor with a thin film of light engine oil.

18.3 Treat the governor according the instruction in item 17 and store it according to chapter 19.

18.4 If the governor is conserved and mounted on a engine flange, which is out of operation, it is necessary to check it's condition each 6 months. According to this inspection repeat it's conservation.

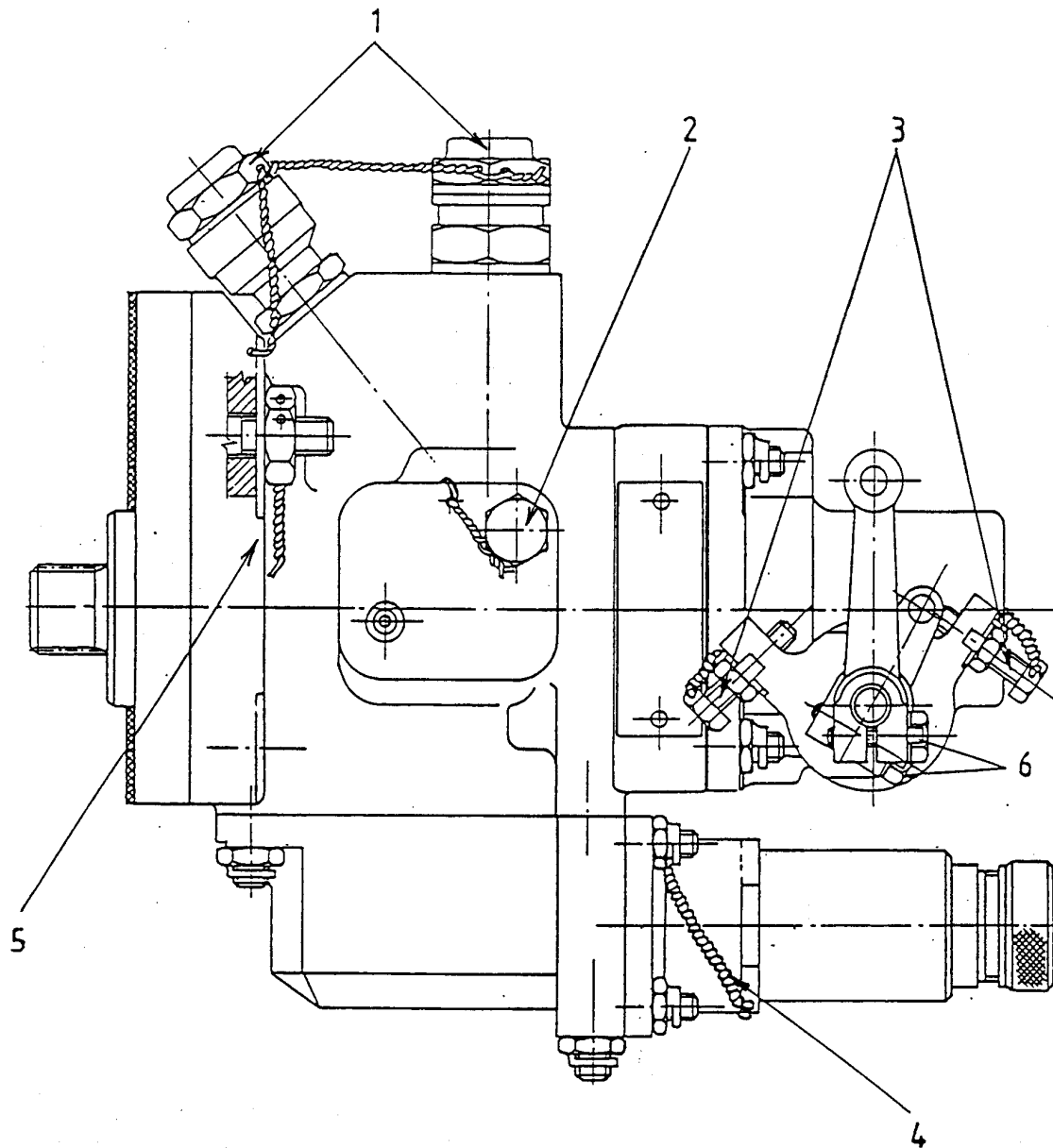


Fig. 13 Inspection of governor safety device
 (until serial no.97016)

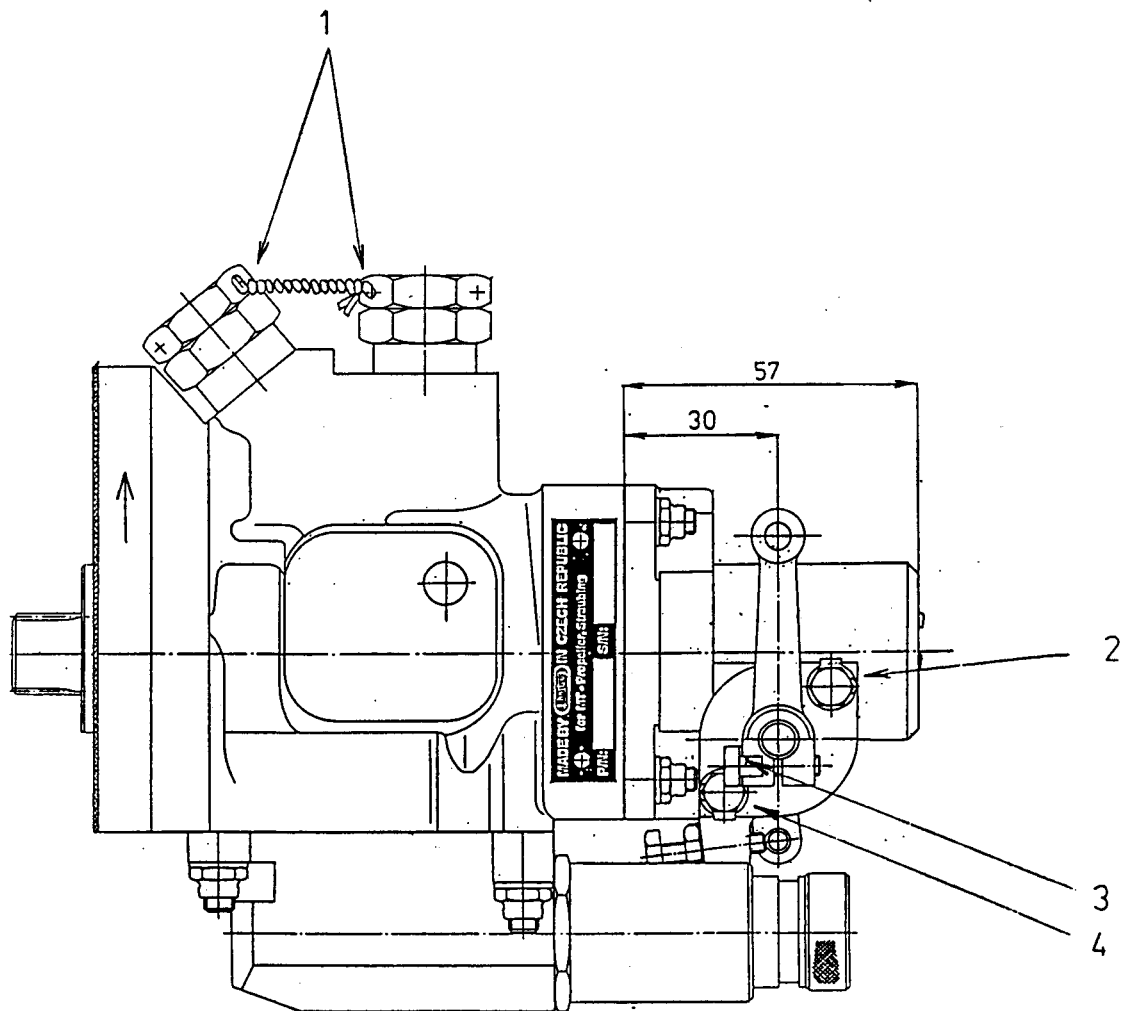


Fig. 13.1 Inspection of governor safety device
 (from serial no. 97017)

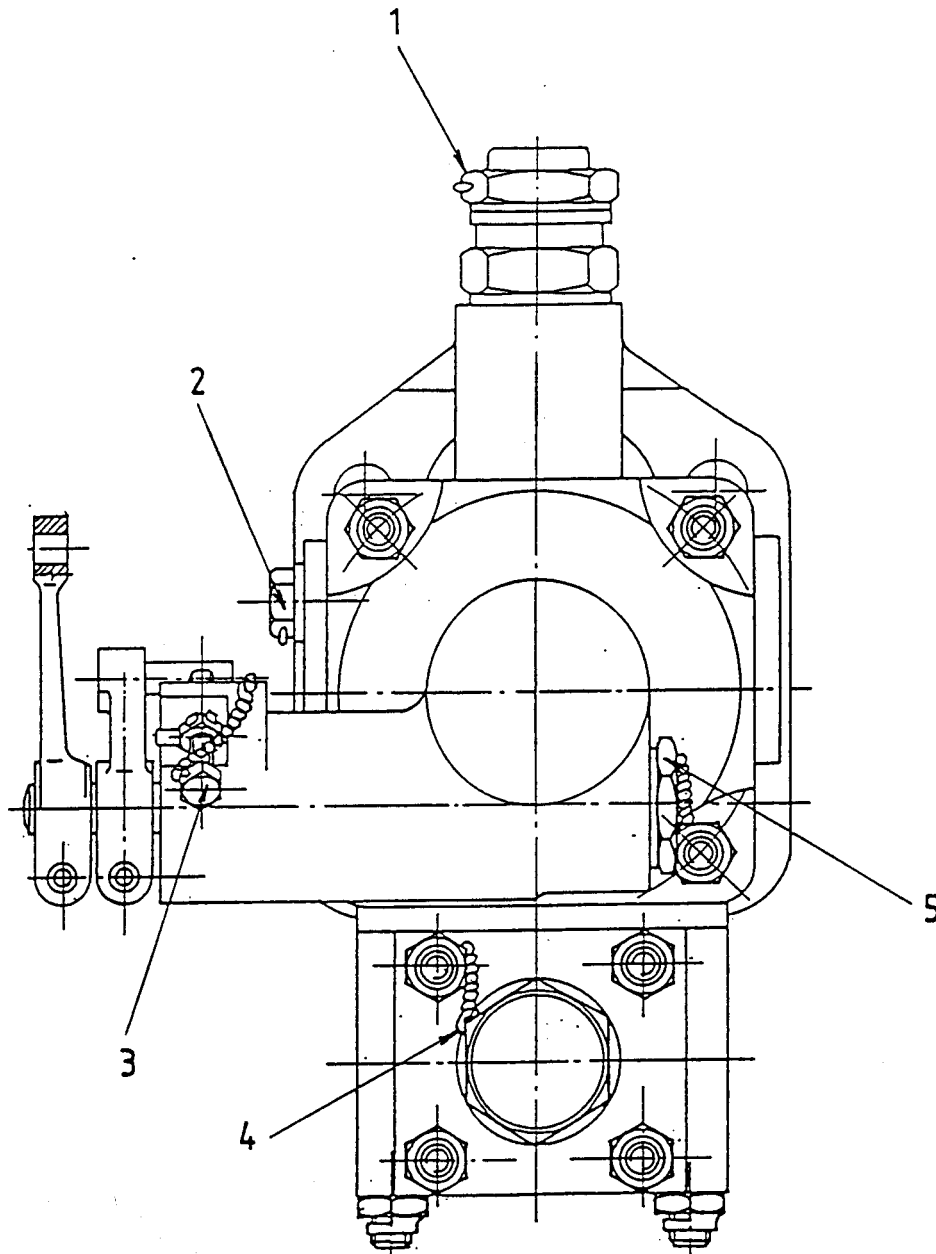


Fig. 13a Inspection of governor safety device
 (until serial no. 97016)

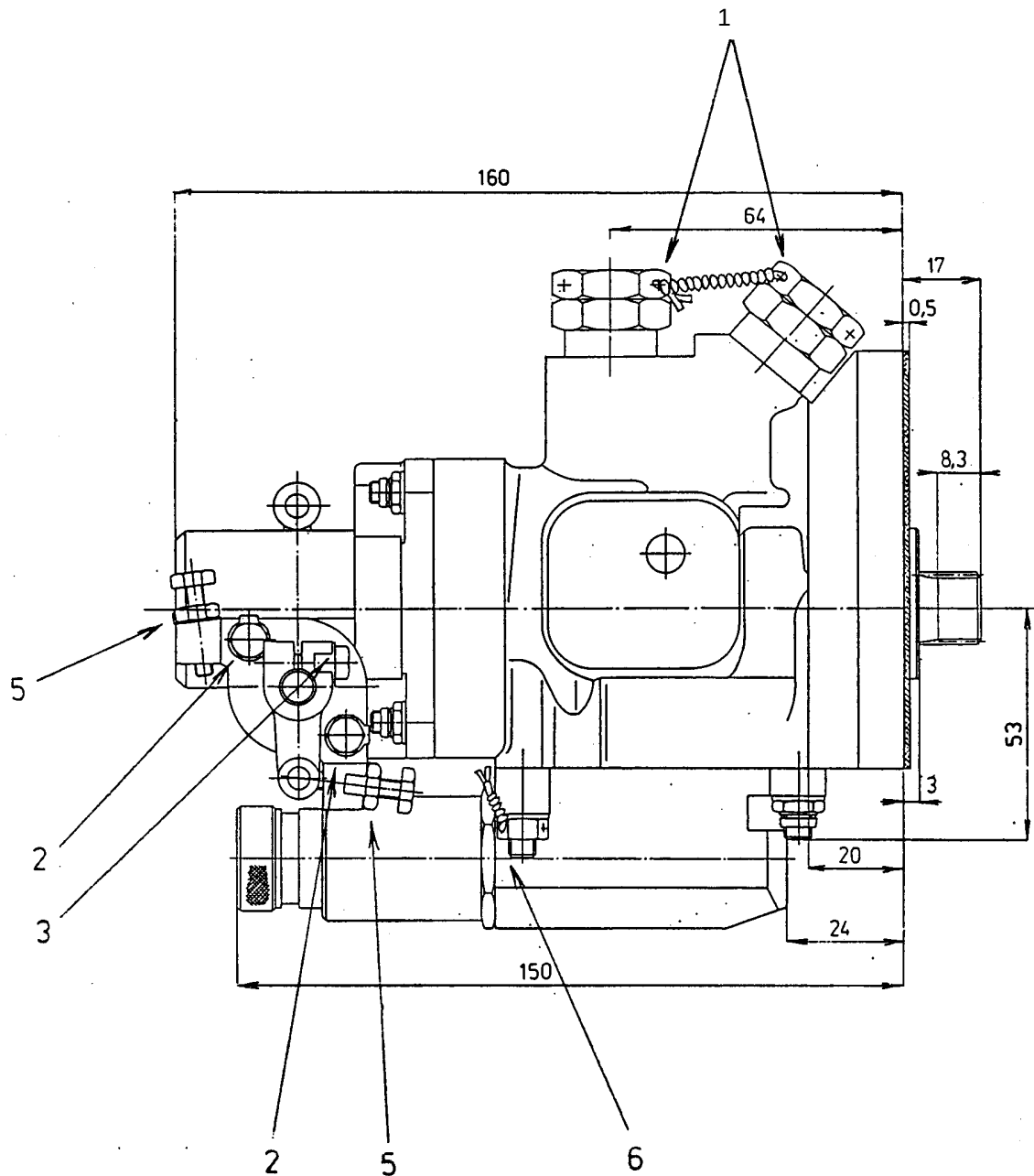


Fig. 13a.1 Inspection of governor safety device
(from serial no. 97017)

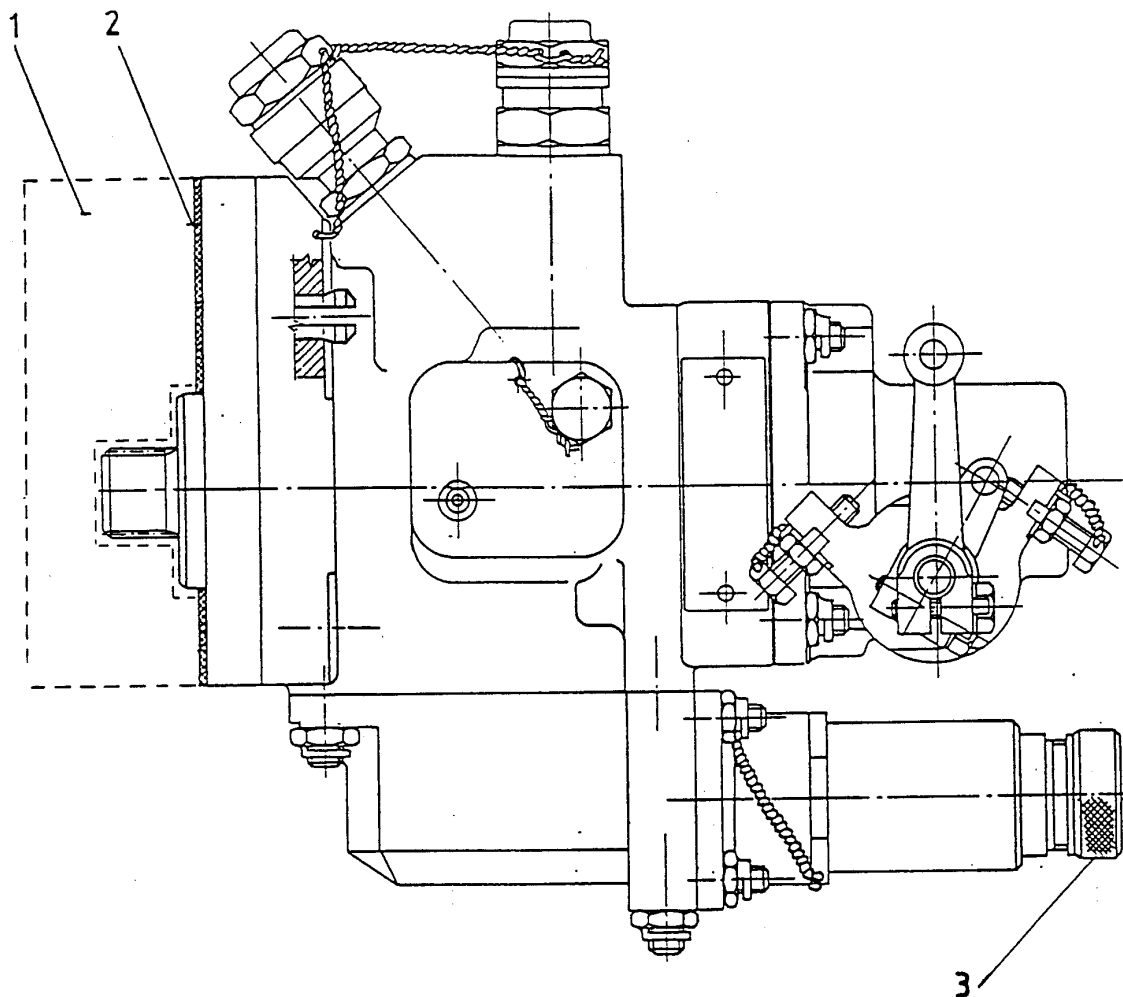


Fig. 14 Covering of governor flange
(until serial no. 97016)

1. Governor flange cap
2. Gasket
3. Shipping cap

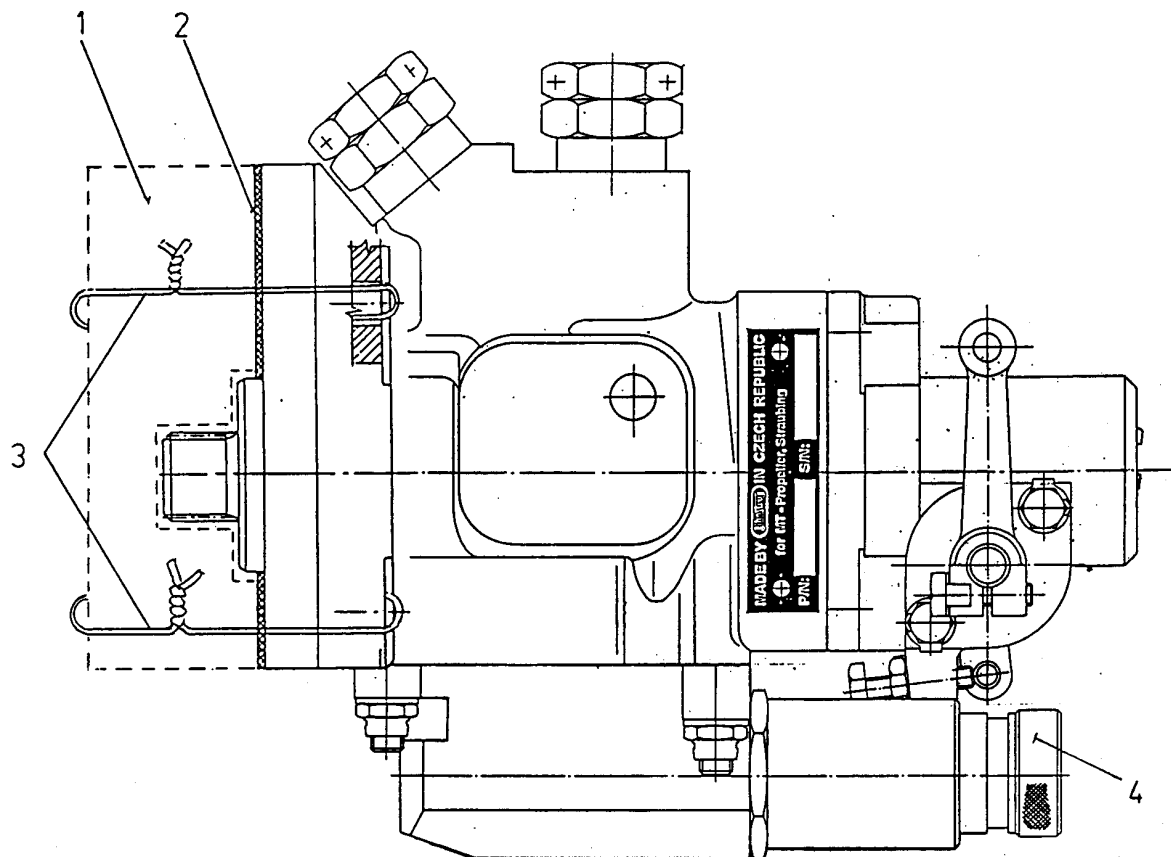


Fig. 14.1 Covering of governor flange
 (from serial no. 97017)

1. Governor flange cap
2. Gasket
3. Shipping wire
4. Shipping cap



19.0 SHIPPING AND STORAGE

19.1 For any shipment of the governor use original container or box.

In case of returning the governor it is furthermore recommended to return all accessories and parts together with the governor. They will also be inspected and not considered to be missing.

19.2 If the governor is stored for a longer period of time, preferably use the original container or an equivalent one. Storage only in a controlled environment (temperature - 5°F to 95°F, rel. humidity 10 % to 75 %). Avoid extreme temperature/humidity differences or cycles. All metal surfaces should have anti-corrosion protection which is easy to remove.

19.3 Long-term storage could require additional preservation. All standard anti-corrosive preservation oils may be used if they do not affect the seals.

19.4 If the governor is stored or transported in corrosive environment such as salt water or fog, it is recommendable to cover the visible outside surfaces of the metal parts with a thin film of light engine oil.

19.5 Before reuse of the governor, clean it inside with engine oil. Pour oil in governor through channels I, II and III, see fig. 5. Then turn governor drive in direction marked on one side of the base. Then leave oil to flow out from the governor.

20.0 MAINTENANCE

20.1 There is no maintenance required except for the procedures described in this manual.

20.2 In case of necessity, please, contact service center or governor manufacturer.