

**PARTS & SERVICE
NEWS**

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SUBJECT: REPAIR PROCEDURE OF WATER LEAKS FROM CYLINDER HEAD U-PLUG ON SA(A)6D170

PURPOSE: To introduce modification procedure to repair or to prevent occurrence of water leakage by corrosion of the U-plug of the cylinder head of the S (A or AA) 6D170 engines

APPLICATION: S6D170-1 Engines, Serial Nos. up to 20879
SA6D170(A, B)-1 Engines, Serial Nos. up to 20879
SAA6D170-1 Engines, Serial Nos. up to 20879

FAILURE CODE: A10JDD

DESCRIPTION:

1. Introduction

With the S(A or AA)6D170-1 type engines, depending on the mounting method of the exhaust manifold or on dispersion of the component parts, there is a possibility of occurrence of water leakage through the blind plug of the cylinder head. Therefore, when water leakage occurs through the blind plug (on the exhaust manifold mounting surface) of the cylinder head or when reinstalling the exhaust manifold after carrying out an overhauling work, install the exhaust manifold following the procedure being introduced in this Service News.

2. List of parts

Part No.	Part Name	Purpose of part	Q'ty	Remarks
6162-13-1150	Plug	Replacement	1	Blind plug
6161-11-5810	Gasket		6	Gasket for the exhaust manifold for the stationary regular purpose power generator engines and emergency purpose power generator engines
6162-13-5810	Gasket		6	Gasket for the exhaust manifold for other models than the above
6166-11-5820	Gasket		1	For the power generator engines SA6D170B and for regular purpose power generator engines SA6D170A
6151-11-5710	Gasket		1	For the 6 pole power generator engines SA6D170B for the D275A-2 and WA600-1
6151-11-5710	Gasket		2	Turbo gasket on the WA700-1
6162-83-2810	Gasket		1	Turbo gasket for other machine models than the above
02895-67075	O-ring		2	For the construction machine engines and 6-pole power generator engines SA6D170B
02895-67091	O-ring		2	Blower side O-rings for other power generator engines than the above
6151-51-8161	Gasket		2	Gasket for the oil filler port for the turbocharger on WA700-1
6151-51-8161	Gasket		1	Gasket for the oil filler port for the turbocharger on the 6-pole power generator engines SA6D170B
07005-01212	O-ring		2	O-ring for the oil filler port for the turbocharger on WA600-1
6128-51-8152	Gasket		2	Gasket for the oil filler port for the turbocharger on other machine models than the above

Part No.	Part Name	Purpose of part	Q'ty	Remarks
6151-51-8151	Gasket	} Replacement	2	Gasket for the 6 pole power generator engines SA6D170B on the WA600-1 and WA700-1
6127-51-6822	Gasket		2	Gasket for the turbocharger drain port on other machine models than the above

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3. The reason for making this modification

- ① With the S(A or AA)6D170-1 type engines, since the exhaust manifold will be installed below the cylinder head and below the top edge of the exhaust manifold gasket when it is being assembled, the gasket may project up beyond the exhaust manifold.
- ② By this structure, the high temperature of the exhaust gas will be conducted through the gasket to the blind plug of the cylinder head.
- ③ Therefore, the temperature of the cooling water in the neighborhood of the blind plug rises to cause deterioration (by boiling) of the corrosion preventive capacity of the antifreezing solution thus resulting in corrosion of the blind plug → and in occurrence of water leakage.

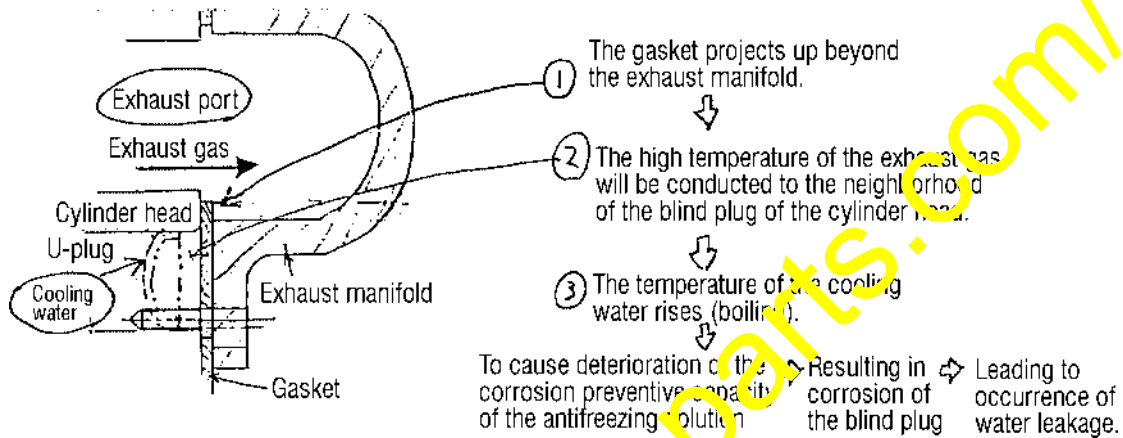


Fig. 1

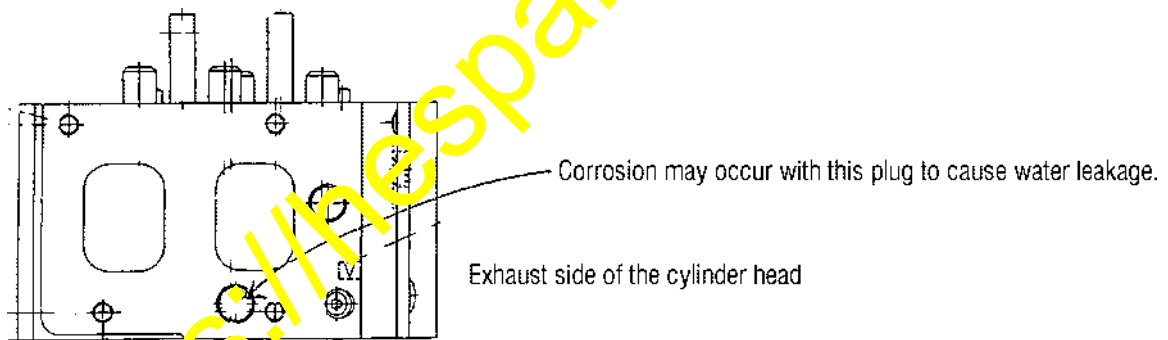


Fig. 2

4. Contents of the modification for the engines being shipped from the factory after this

- (1) Permanent measure (to be taken before shipment from the factory)

Up to now, the mounting bolt holes for the exhaust manifold were all $\phi 15$ holes while the mounting bolt size was M12. Hereafter smaller holes will be made for the positioning purpose.

(Smaller hole of $\phi 13.5$: At 3 places marked ★ in the drawing below.)

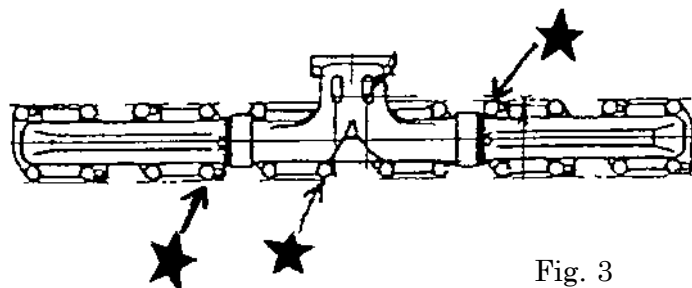


Fig. 3

- (2) Temporary measure (to be taken before shipment from the factory)

Until the permanent measure as per the above section (1) is fully implemented, as a temporary measure, the assembly jig (guide bar) will be modified so that assembly will not be made in the state where the exhaust manifold comes below the top edge of the gasket.

5. Contents of the modification to make for already shipped engines

- (1) Applicable engines:

When installing the exhaust manifold of the part numbers before the modification, regardless if water leakage is occurring or not through the blind plug section of the cylinder head, install the exhaust manifold using the mounting jig being introduced in this Service News.

Position	Part No. of the exhaust manifold	
	Before the modification	After the modification (addition of smaller holes)
Center exhaust manifold	6162-13-2121	6162-13-2122
	6162-13-5121	6162-13-5122
	6162-13-2131	6162-13-2131
	6162-13-2170	6162-13-2171
	6162-13-5131	6162-13-5132
Front and rear exhaust manifold	6162-13-2110	6162-13-2111
	6162-13-5111	6162-13-5112
	6162-13-2140	6162-13-2141
	6162-13-5141	6162-13-5142

Since the part number of the exhaust manifold is being stamped or embossed at the position shown in the drawing below, identify if the exhaust manifold is of before the modification or after the modification by the aforementioned part number.

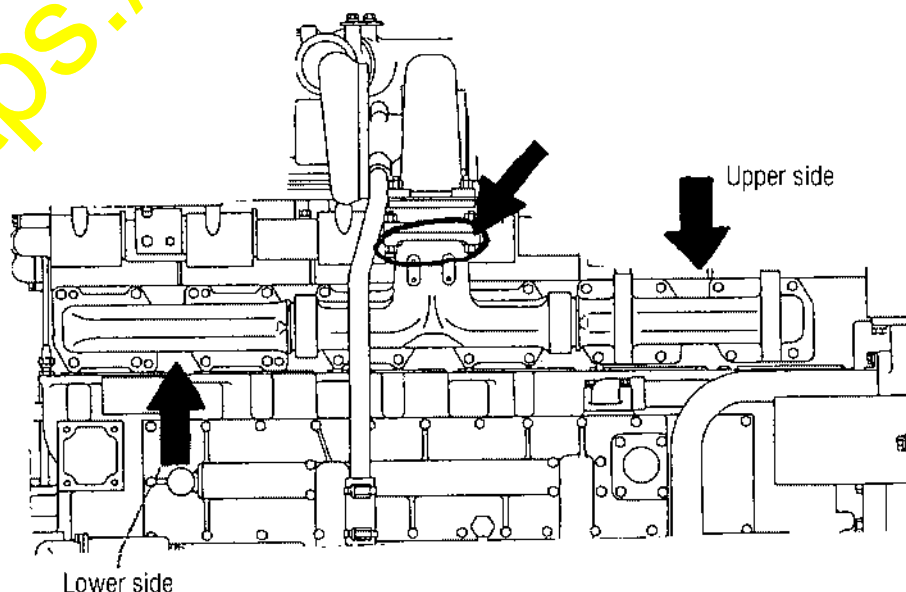


Fig. 4

- (2) If water leakage has occurred through the blind plug being positioned on the mounting surface on the cylinder head for the exhaust manifold, make the following modification to repair the water leakage.
Refer to the Shop Manual regarding the disassembly and re-assembly procedure.

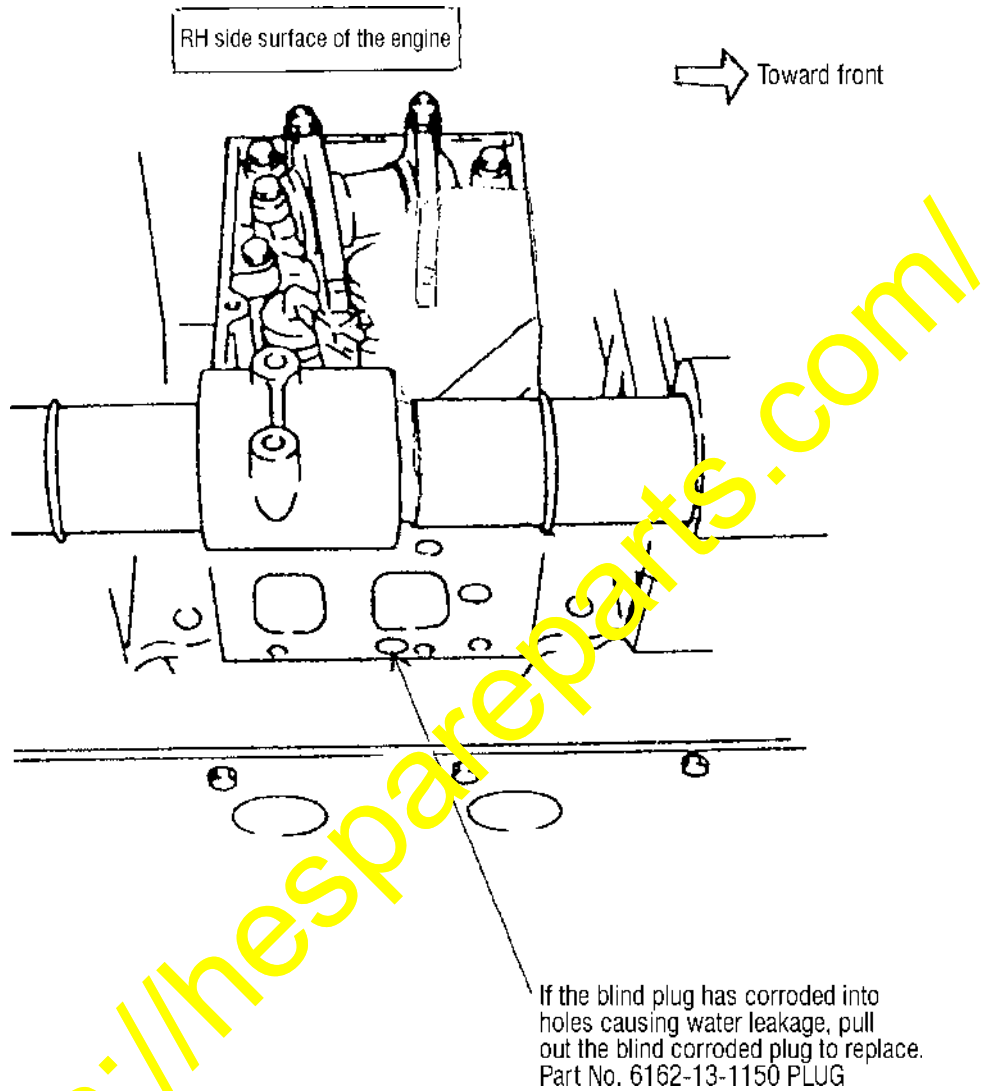


Fig. 5

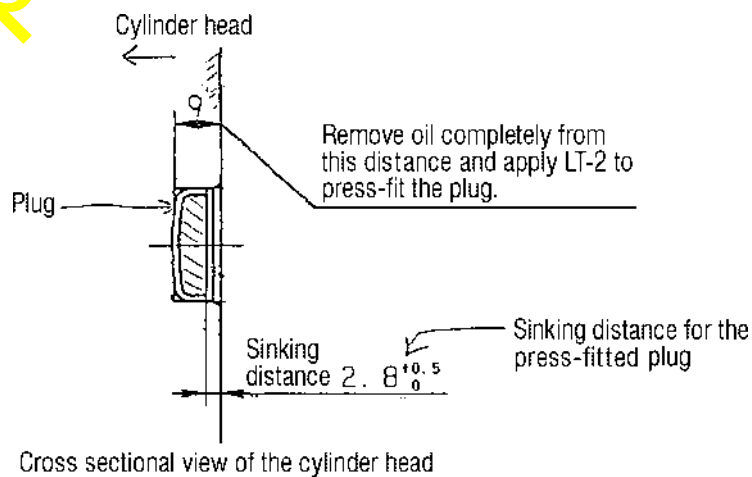


Fig. 6

(3) Installation procedure for the exhaust manifold

When reinstalling the exhaust manifold of a part number before this modification after carrying out an overhauling work, install the exhaust manifold following the procedure being described below regardless if water leakage is occurring or not through the blind plug section of the cylinder head.

- a) Make 3 pieces of the guide bars as per Fig. 8
(3 guide bars are necessary for one engine.)
- b) Install the prepared guide bars into the 3 sections (Marked ★) shown in the drawing below and, after that, mount the exhaust manifold ass'y by tightening the mounting bolts getting through the bolt holes where the guide bars are not being inserted.
- c) Remove the three guide bars and insert the mounting bolts to tighten them.

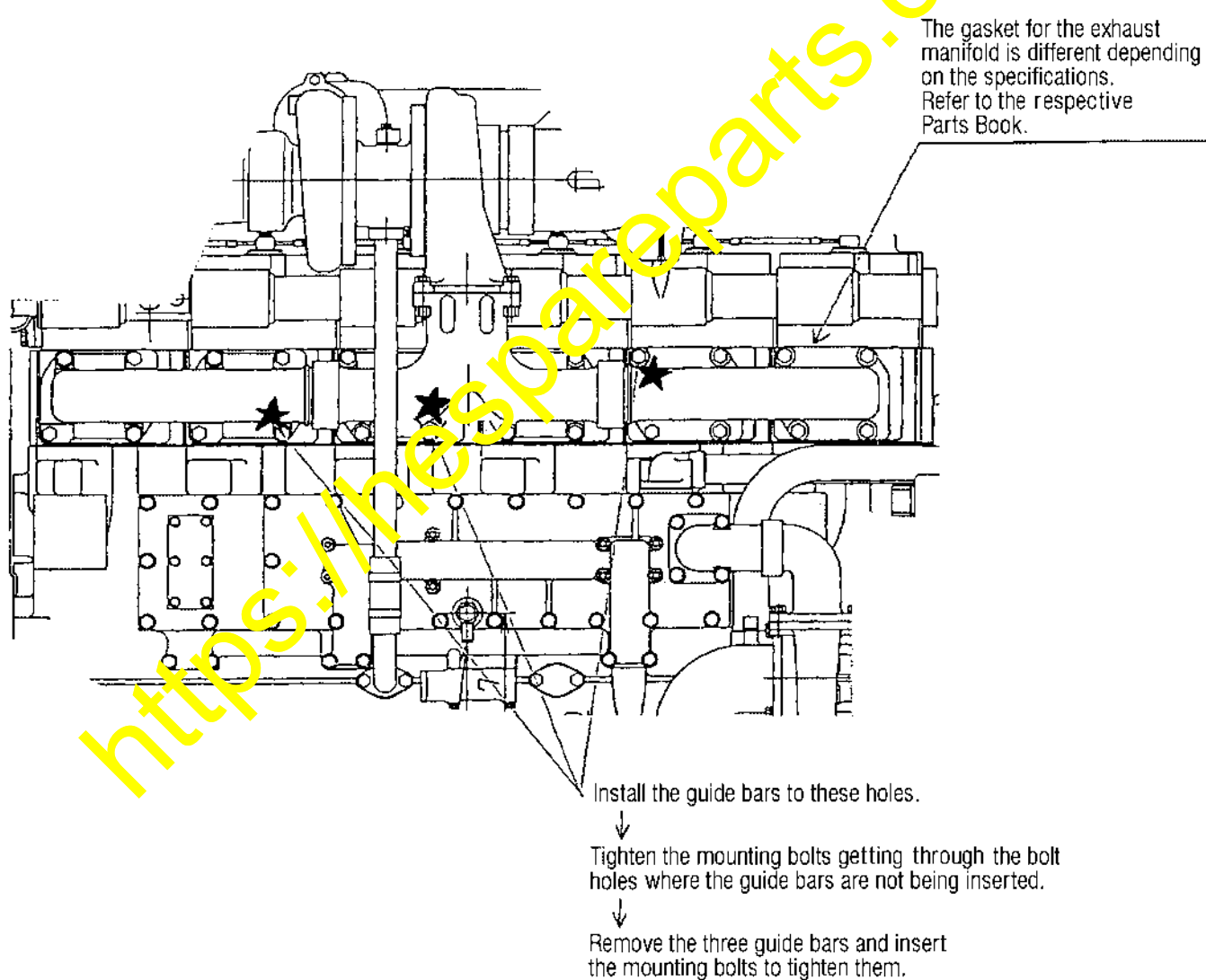


Fig. 7

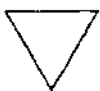
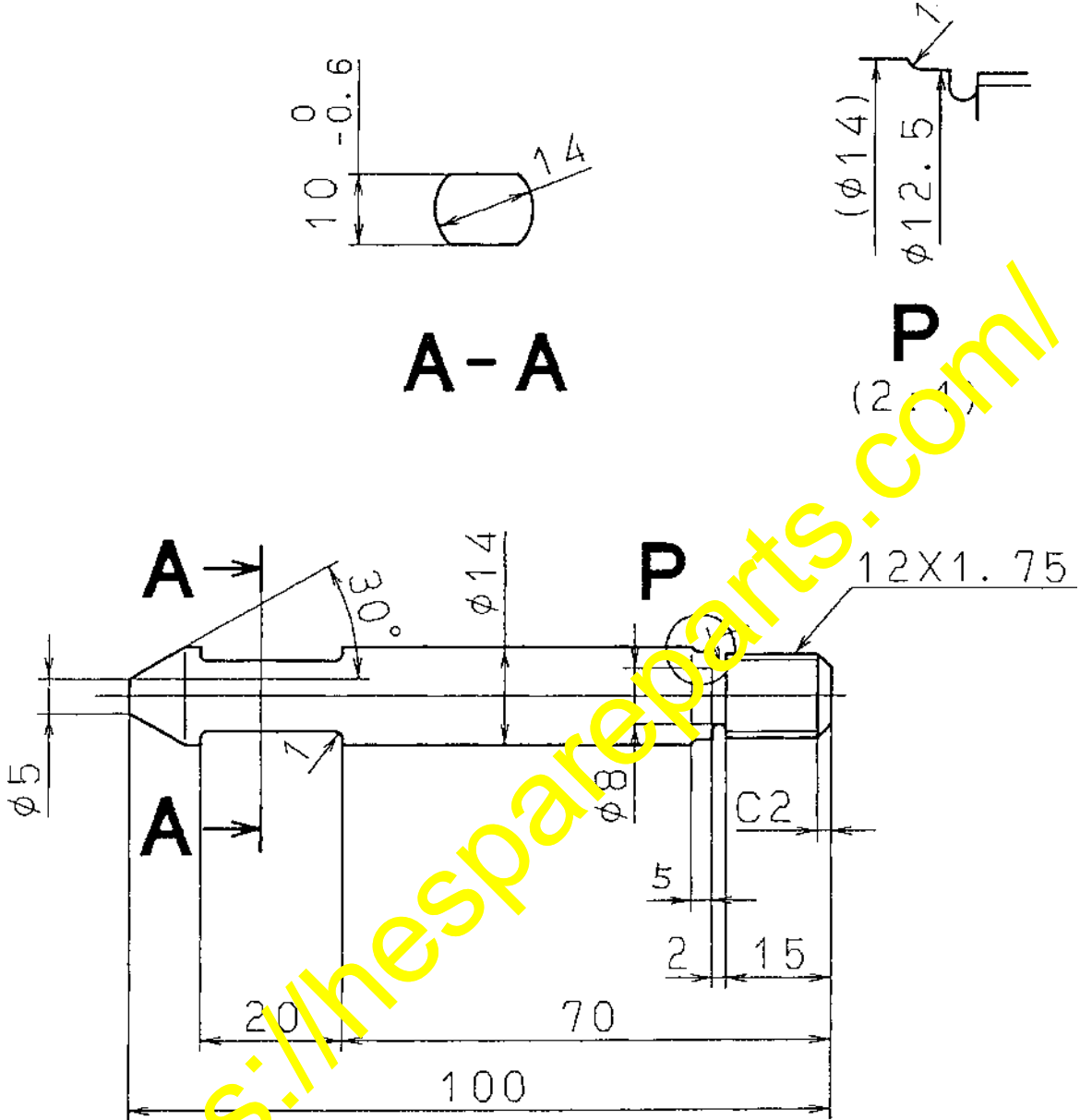


Fig. 8

Material: SS400
or an equivalent material