

PARTS & SERVICE NEWS

REF NO.	AA03161
DATE	Dec. 2, 2003

SUBJECT: FRONT AND REAR AXLE - PLANETARY CARRIER

PURPOSE: To replace the planetary carrier, when the teeth in the axle shaft hole are broken off

APPLICATION: WA380-5H Wheel Loader, S/N H50051 thru H50473, H50476 thru H50481, H50485, H50491 thru H50493, H50495
 WA380-5L Wheel Loader, S/N A52029 to A52224 (Standard) A52106 to A52225 (LSD)
 WA400-5H Wheel Loader, S/N H50051 thru H50112
 WA400-5L Wheel Loader, S/N A40006 to A40040 (Standard) A40006 to A40046 (LSD)

FAILURE CODE: 2700DA

DESCRIPTION:

On the Wheel Loaders mentioned above, and in individual cases, teeth in the axle shaft hole of the planetary carrier can become damaged. If this occurs, the planetary carrier on both sides of the concerned axle (left and right side) has to be replaced with the new, improved planetary carrier.

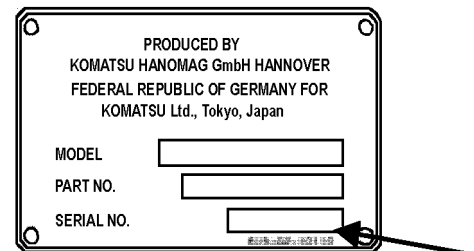
The removal of the axle has to be done according to the Shop Manual, Part 30. On pages 2 thru 10 you can find the instructions for the replacement of the planetary carrier.

Spare parts:

Name	P/N Current	P/N New	Qty.
Carrier	423-22-32660	423-22-32661 or 32662	2

Remark: Addition to the serial number - notice the axle number. The axle number can be found at the axle type plate indicated below by the arrow.

AXLE	AXLE S/N	MODEL	MODEL S/N
Standard	up to 00432	WA380-5L	See Above
LSD	up to 00263	WA380-5L	See Above
Standard	up to 00162	WA400-5L	See Above
LSD	up to 00134	WA400-5L	See Above



Axle housing assembly

Special tools

Symbol	Part Number	Part Name	Necessity	Quantity	New/Revised	Simplified Drawing	
J	1	793T-522-1140	Push tool	■	1	N	○
		793T-522-1150	Spacer	■	1	N	○
	2	797T-423-1290	Push tool	■	1		○
	3	793T-522-1160	Push tool	■	2	N	○

Disassembly

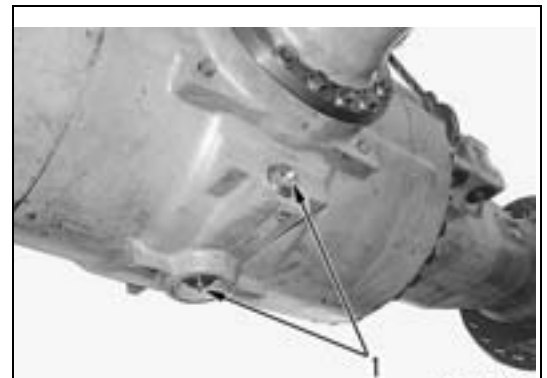
- ★ The subsequent photographs and illustrations are shown using the front axle assembly as an example.
- ★ The front axle housing and the rear axle housing have the same internal structure except their external appearance shape.

1. Oil drain

Dismount plug (1) and extract oil. (Front, rear)

NOTE

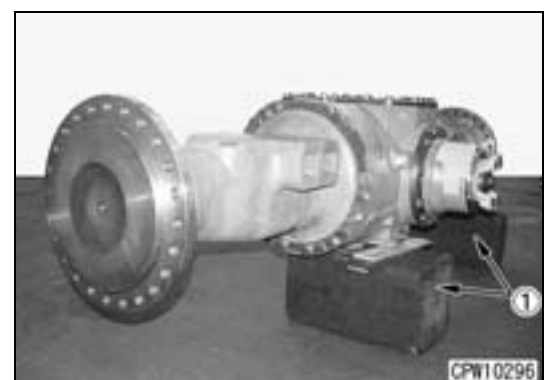
Rinse thoroughly the complete axle.



2. Axle assembly

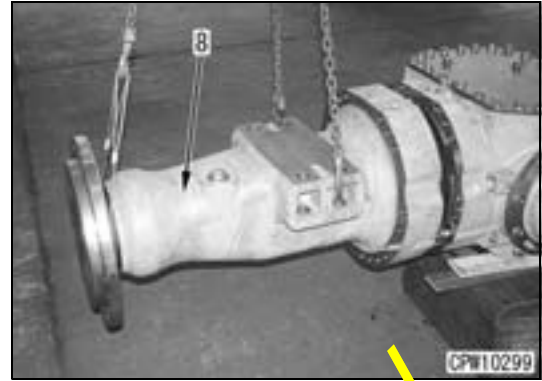
Load the axle assembly on block ①.

- ★ When one-sided housing assembly is dismantled, load the axle assembly on block ① so that it will not be tilted.
- ★ .



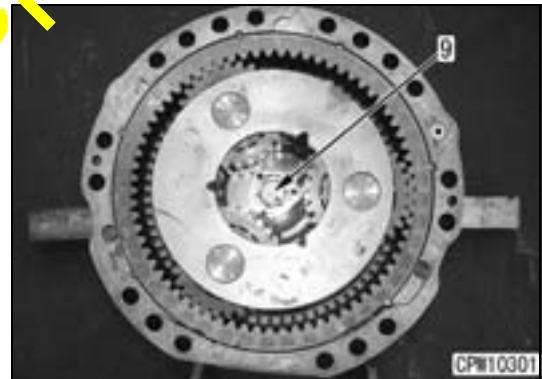
3. Axle housing assembly

- 1) Temporarily hang axle housing assembly (8) and remove the housing mounting bolt.
 - ★ When dismantling the axle housing assembly on both left and right, attach a counter mark to the housing and the differential case not so as to be mixed.
- 2) Dismount axle housing assembly (8).
- 3) Change the hanging position of the lifting tool and raise axle housing assembly (8) vertically.



4. Removal of current planetary carrier assembly

- 1) Remove axle shaft mounting bolt (9) and hang and dismount planetary carrier assembly (10)



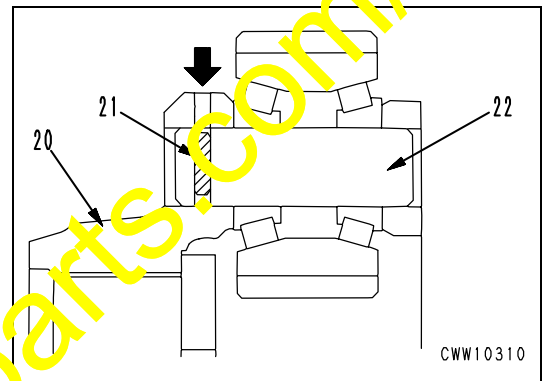
5. Dismount shim (11).
- 2) Record the thickness of the shim and refer to it at assembly.

NOTE

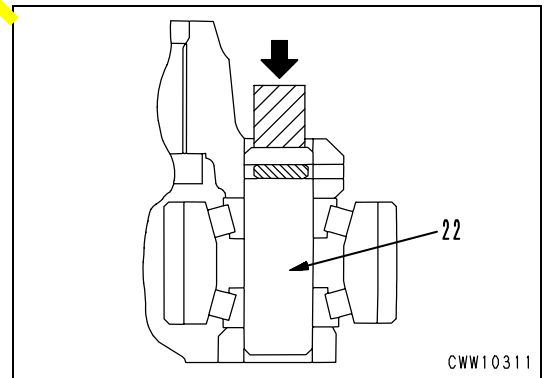
**Check the shaft bearing and the shaft seal rings for damage!
If there is any damage, change the shaft bearing and the seal rings according to the Shop Manual.**

**6. Disassembly of current planetary carrier**

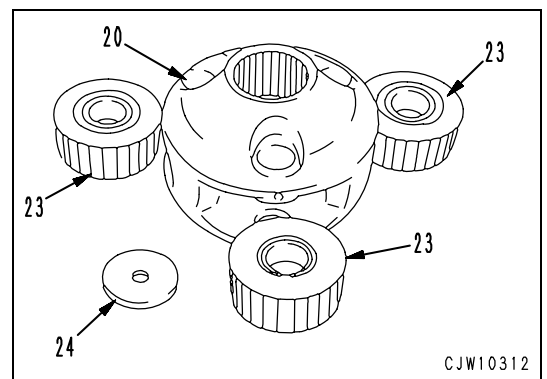
- 1) Punch spring pin (21) of planetary carrier (20) so that it is contained in shaft (22).
- ★ Take care not to punch the spring pin.



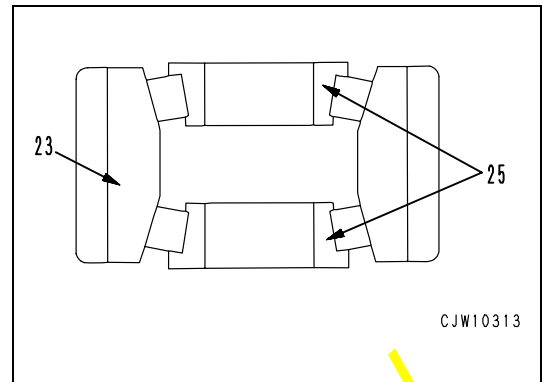
- 2) Use the press to pull out shaft (22).



- 3) Pull out spring pin (21) from planetary carrier (20).
- 4) Dismount pinion gear (23) and spacer (24) from planetary carrier (20).



- 5) Dismount bearing (25) from pinion gear (23).



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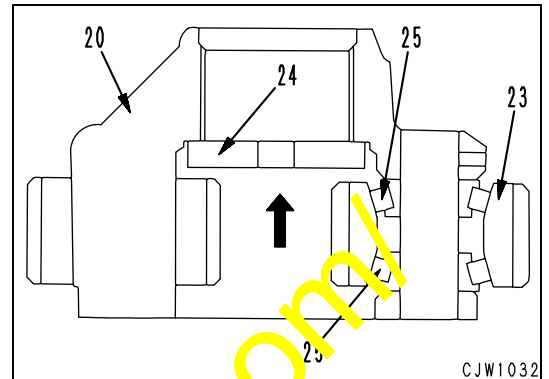
Assembly

1. Assembly of new planetary carrier

- 1) Previously assemble spacer (24) in planetary carrier (20).

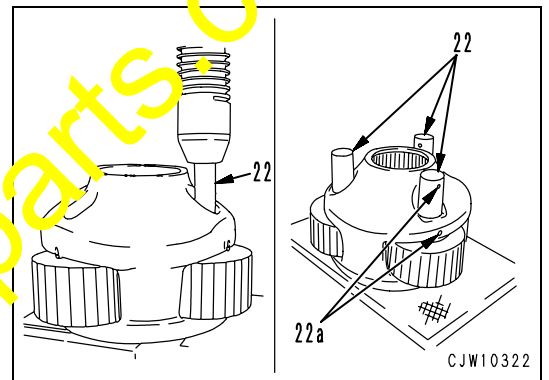
★ Assemble the spacer from the brake housing side.

- 2) Assemble bearing (25) in gear (23) and lift spacer (24), then assemble gear (23).

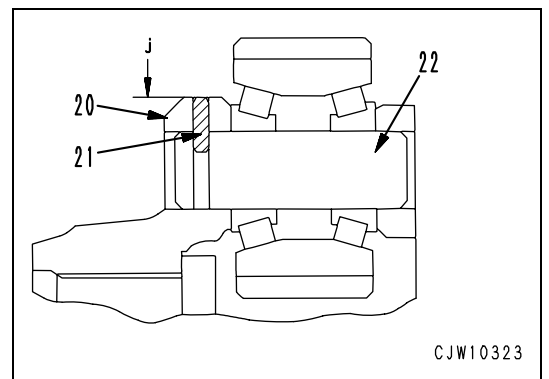


- 3) Press-fit the shaft aligning shaft (22) and spring pin hole (22a).

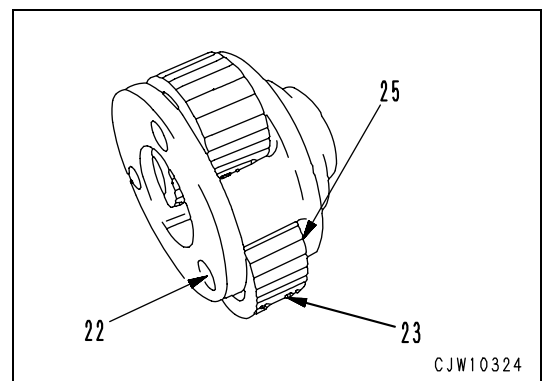
 Shaft: Oil (axle oil)



★ Align shaft (22) and spring pin hole (22a) and punch spring pin (21) so as to be made the same level (j portion) with carrier (20).

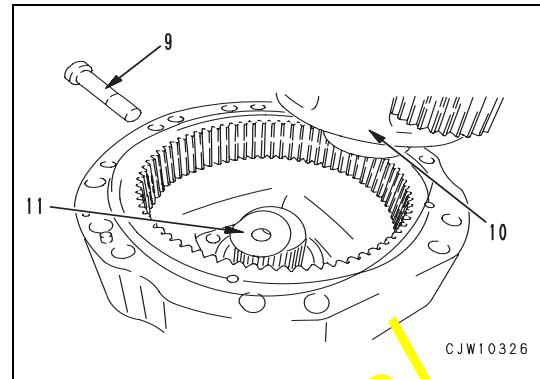


- 4) Tap on the end surface of shaft (22) and the differential side of gear (23) and push back bearing (25), then check that the gear rotates gently.




2. Mounting of new planetary carrier assembly

- 1) Assemble shim (11) selected in item 5) of procedure 4. on the axle shaft end surface.
 - 2) Mount planetary carrier assembly (10) and tighten mounting bolt (9).
- ★ Correctly degrease and clean the bolt mounting hole and mounting bolt of the axle shaft.

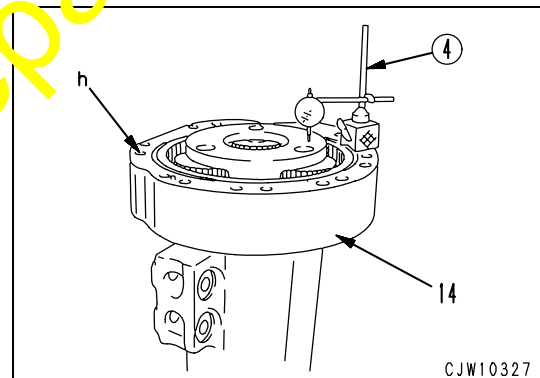


When assembling the planetary shaft, sufficiently take care so that the finger will not be caught in the gears.

 Mounting bolt: **Adhesive (LT-2)**

 Mounting bolt: **662 ~ 829 {67.5 ~ 84.5 kgm}**

- ★ Thoroughly clean and assemble the shaft end surface and the planetary carrier spline portion.
- 3) After having made the bearing run in fully, check the activation turning force "X" in the drill hole **h** portion of axle housing (14).
- ★ Refer to the item of procedure 4. Adjustment of End Surface.
- 4) Mount stand ④ of the dial gauge on axle housing (14) and measure the end play of the planetary carrier on the end surface of the planetary carrier.
- ★ Reference value.
 - End play of planetary carrier: 0 ~ 0.1 mm



3. Axle housing assembly


- 1) Degrease and clean axle housing (14) and the mounting surface of differential housing (30) and evenly coat the mounting surface with the liquid gasket.

 Housing mating face:
Liquid gasket LG-6 (Loctite 515)

- 2) Horizontally hang axle housing assembly (8) and quietly assemble it fitting the spline groove and guide bolt ⑤.


★ Assemble the axle housing assembly not to damage the brake piston surface and the plate surface.


- 3) Tighten the mounting bolt by mounting it on a diagonal line.

 Housing mounting bolt:
490 ~ 680 Nm {50 ~ 62 kgm}

4. Lubrication

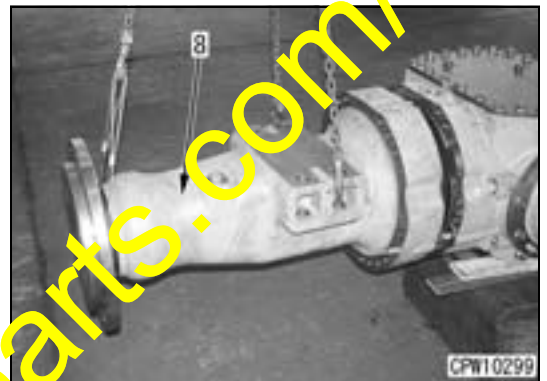
- 1) Tighten the drain plug and lubricate to a specified level from the oil filler port.

 Axle oil (front, rear):
WA380-5: 38 liters

 Axle oil (rear):
WA400-5: 40 liters

- 2) Remove the oil level plug and check that the oil is provided near the lower edge of the plug hole.

★ Mount the axle at the machine again, according to the Shop Manual.

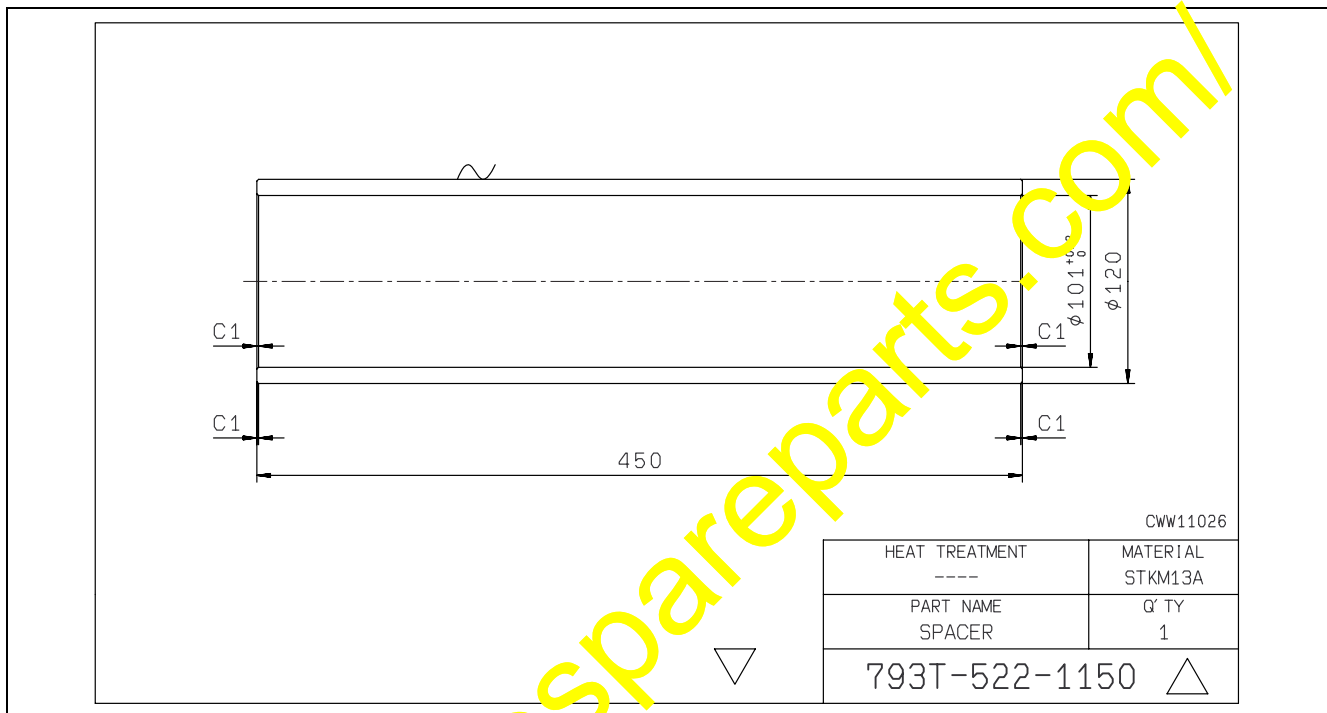


Special tool simplified drawings

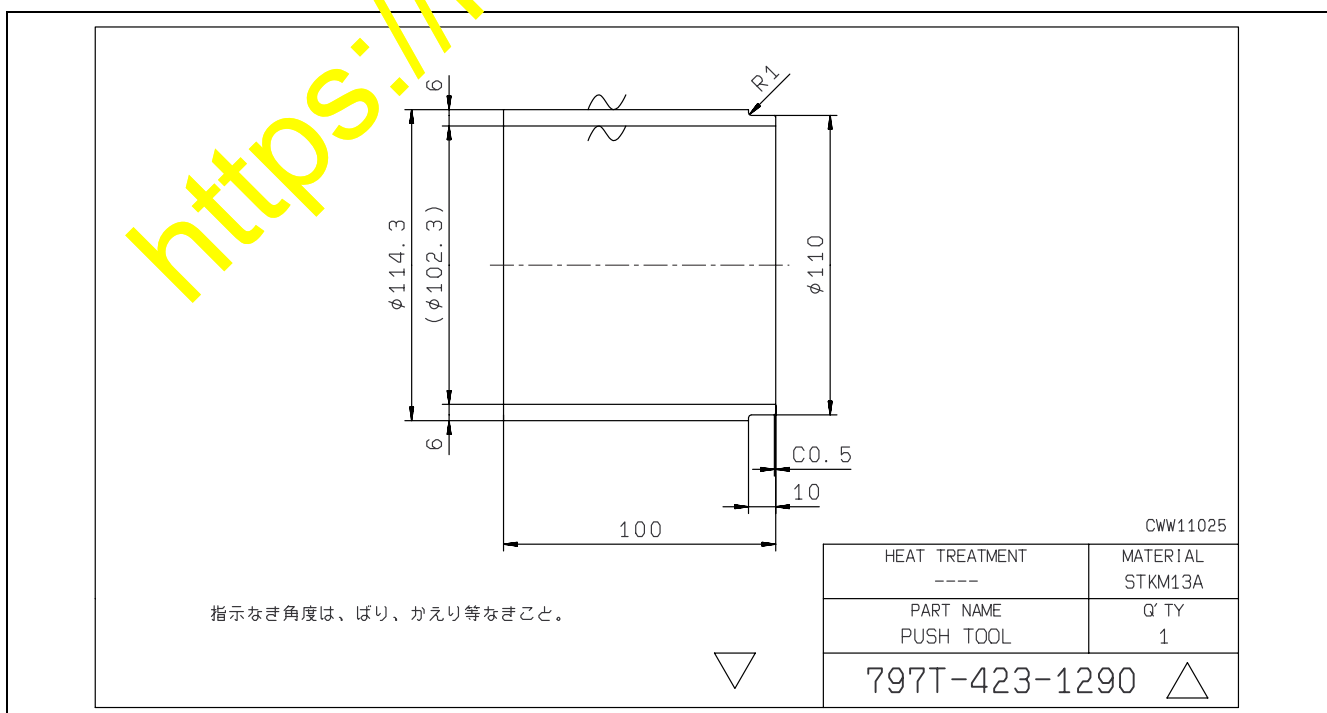
NOTE

We shall not take any responsibility for the special tools manufactured according to each of these drawings.

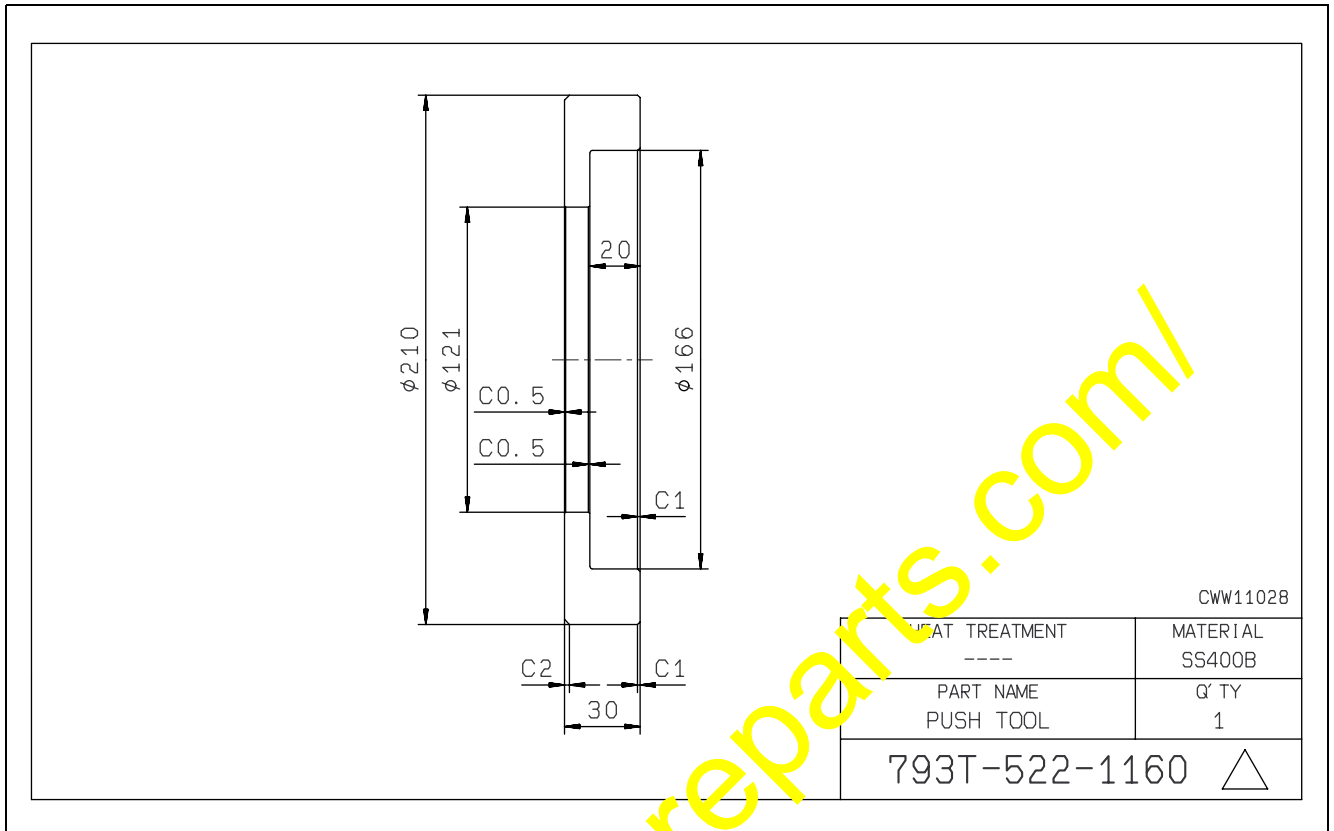
J1 Spacer



J2 Push Tool



J3 Push Tool



J1 Push Tool 54

