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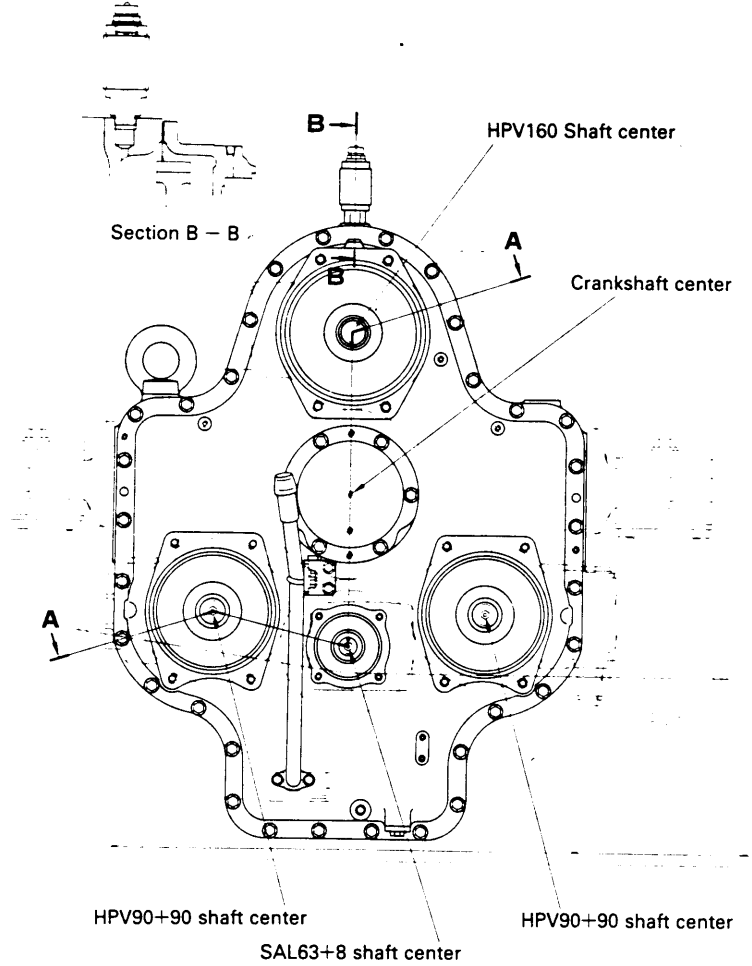
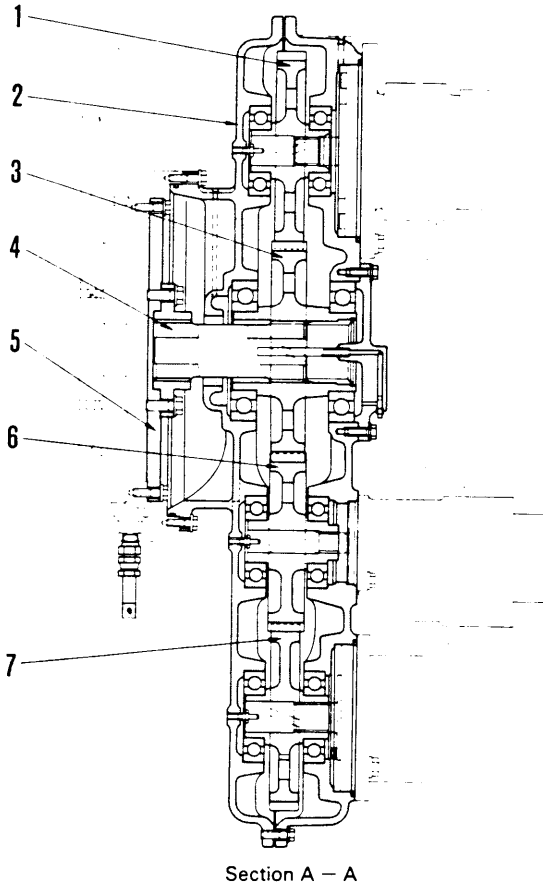
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# PTO (Power Take-Off)



1. Driven gear (No. of teeth: 46)
2. PTO case
3. Drive gear (No. of teeth: 51)
4. Input shaft
5. Connecting plate
6. Driven gear (No. of teeth: 41)
7. Driven gear (No. of teeth: 43)

## SPECIFICATIONS

Volume of lubrication oil: 11 ℓ (SAE30).

Reduction ratio:

$$\text{HPV90 + 90 pump shaft} = \frac{43}{51} = 0.843$$

$$\text{HPV160 pump shaft} = \frac{46}{51} = 0.902$$

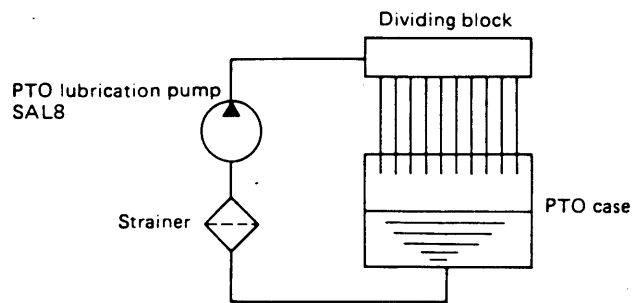
$$\text{SAL63 + 8 pump shaft} = \frac{41}{51} = 0.804$$

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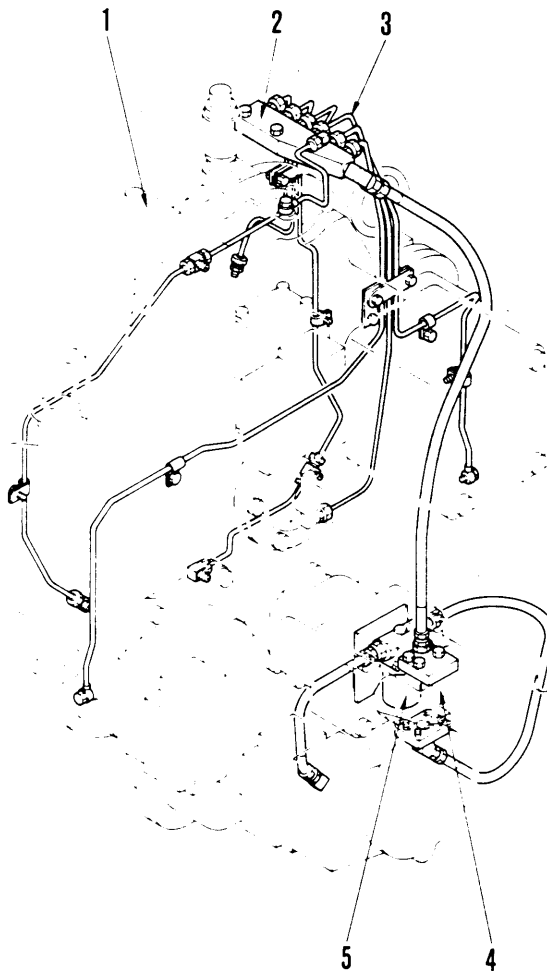
# PTO LUBRICATION SYSTEM

## Hydraulic circuit diagram



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## Hydraulic piping



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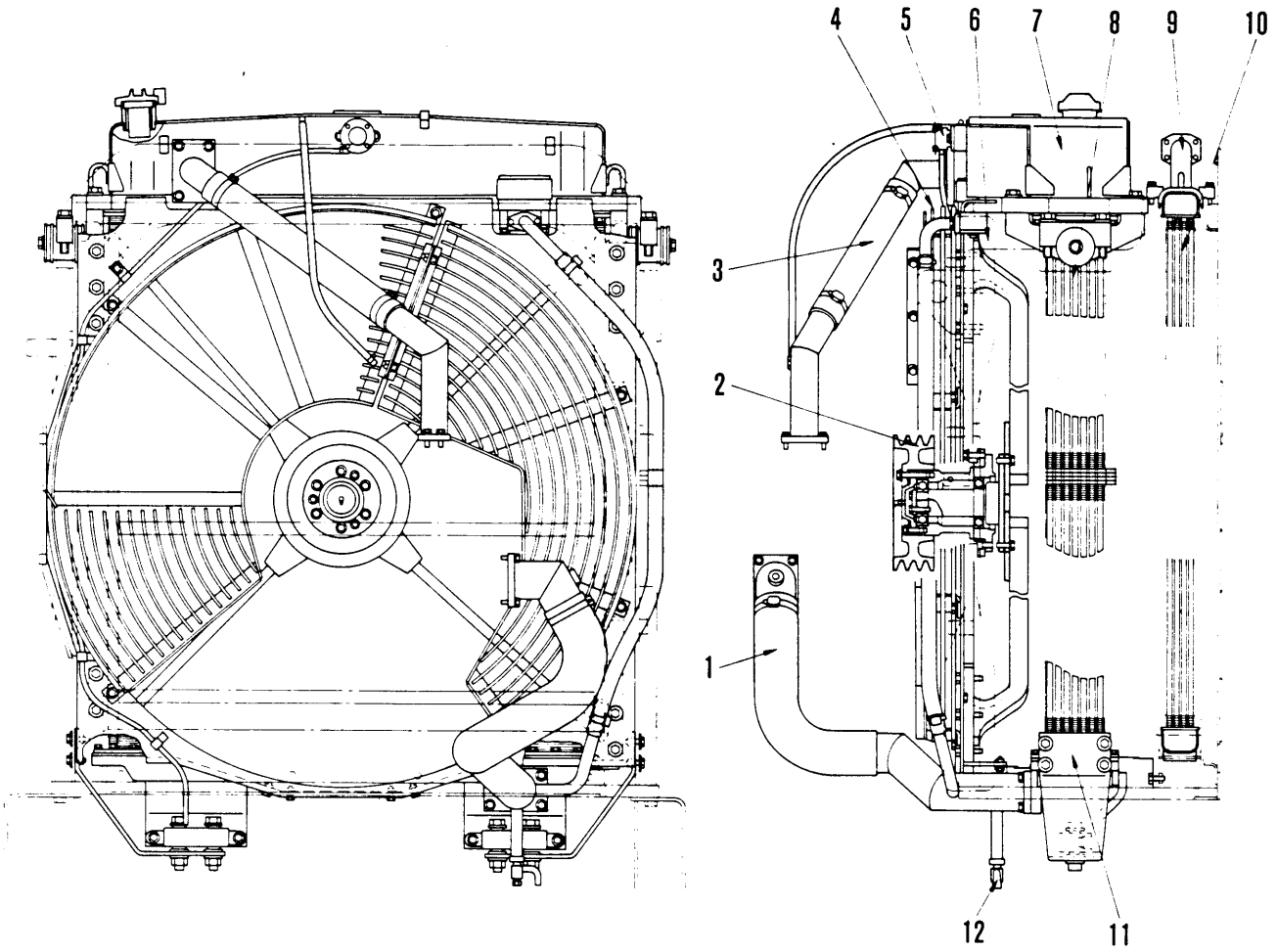
1. PTO case
2. Dividing block
3. Lubrication piping
4. Charging and PTO lubrication pump (SAL63 + 8)
5. Oil filter

### OUTLINE

In the PTO, the SAL8 of charging and PTO lubrication pump (4) is used to send the lubricating oil inside the PTO case through oil filter (5) to the top dividing block (2). From here, it is divided and sent to each part of the PTO and lubricates and cools all the gears.

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# RADIATOR AND OIL COOLER



1. Radiator outlet tube
2. Fan pulley
3. Radiator inlet hose
4. Fan guard
5. Pressure valve
6. Fan
7. Radiator upper tank
8. Radiator core
9. Oil cooler inlet tube
10. Oil cooler core
11. Radiator lower tank
12. Radiator drain valve

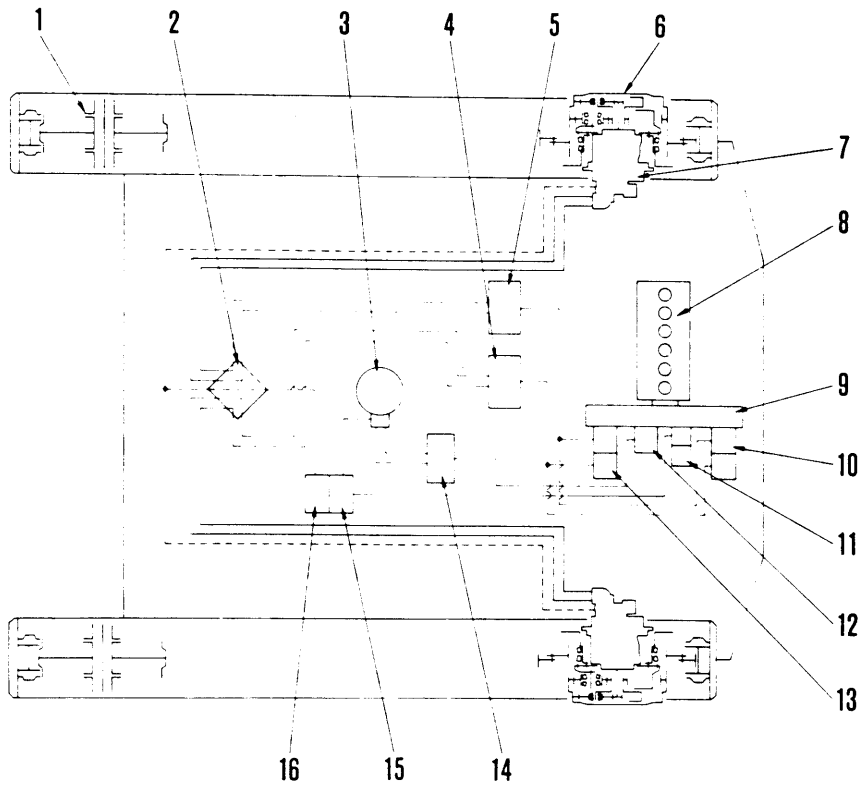
## SPECIFICATIONS

1. Fan
  - Outside diameter: 1,350 mm
  - No. of blade: 8
  - Fan speed: Standard 890 mm  
(At engine rated rpm: 1,800 rpm)
2. Radiator
  - Core type: D7
  - Fin pitch: 4 mm
  - Pressure valve set pressure:  $0.75 \pm 0.1$  kg/cm<sup>2</sup>
  - Vacuum valve set pressure: 0 – 0.07 kg/cm<sup>2</sup>
3. Oil cooler
  - Core type: J4
  - Fin pitch: 3 mm

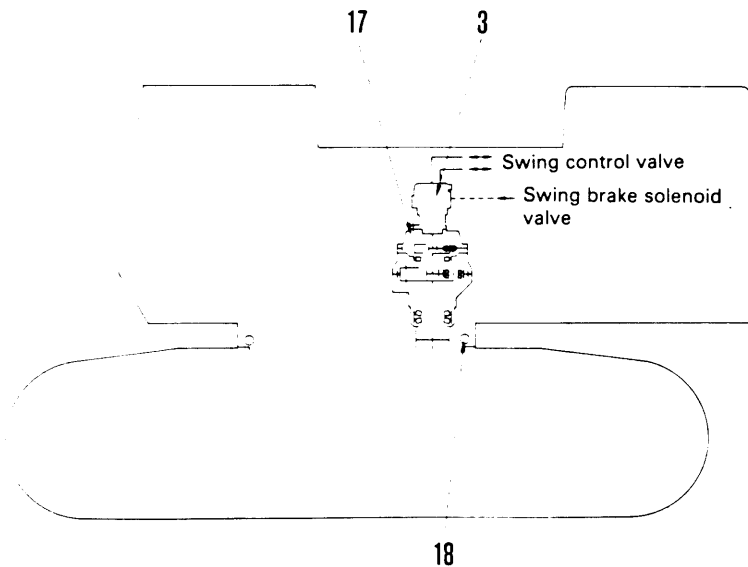
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# POWER TRAIN



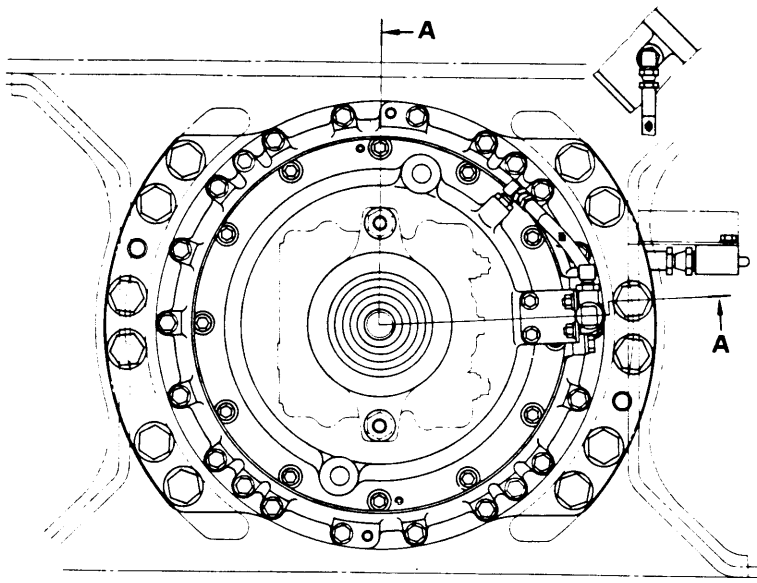
1. Idler
2. Center swivel joint
3. Swing motor
4. L.H. 5-spool control valve
5. R.H. 4-spool control valve
6. Final drive and sprocket
7. Travel motor
8. Engine
9. PTO
10. No. 1 pump
11. Charging pump and PTO lubricating pump
12. Swing pump
13. No. 2 pump
14. Swing control valve
15. Swing brake solenoid valve
16. Travel speed solenoid valve
17. Swing machinery
18. Swing circle



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# SWING MACHINERY



1. Swing pinion
2. Housing
3. No. 2 sun gear (13 teeth)
4. No. 2 ring gear (80 teeth)
5. Case
6. No. 1 ring gear (160 teeth)
7. No. 1 planetary carrier
8. Cover
9. Swing motor
10. No. 1 sun gear (23 teeth)
11. No. 1 planetary gear (36 teeth)
12. Oil level gauge
13. No. 2 planetary gear (33 teeth)
14. No. 2 planetary carrier

## SPECIFICATIONS

Reduction ratio:

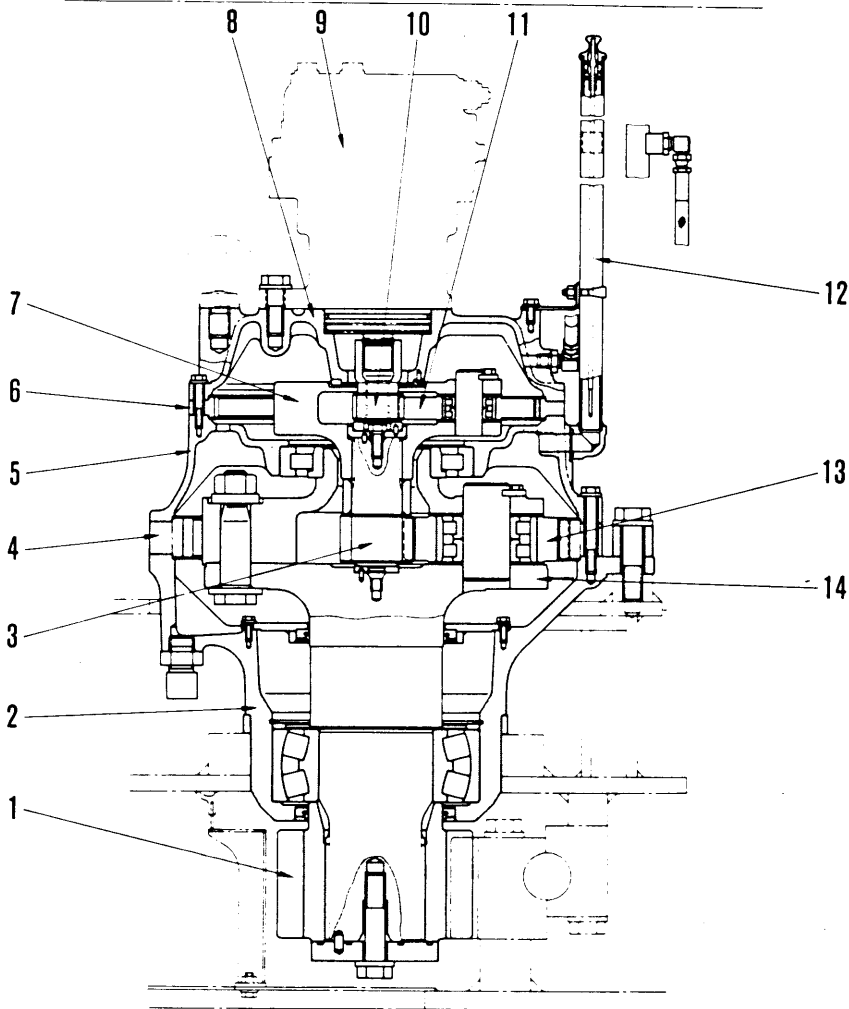
$$\frac{23 + 160}{23} \times \frac{13 + 80}{13} \times \frac{86}{13} = 376.55$$

Continuous rotating speed: 5.3 rpm

Volume of lubrication oil:

Upper 37 ℓ (Engine oil SAE30)

Lower 6 ℓ (Grease G2-LI)

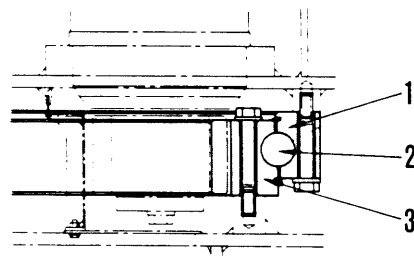
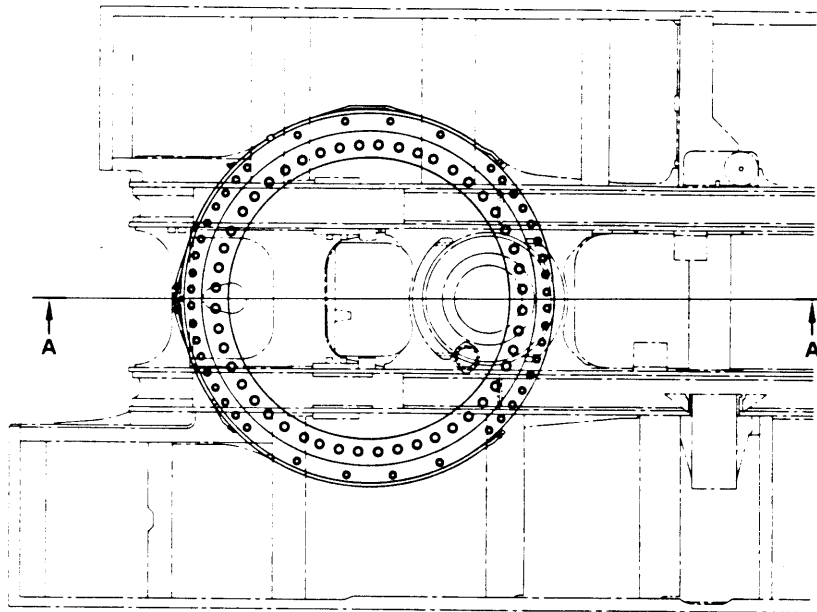


Section A - A

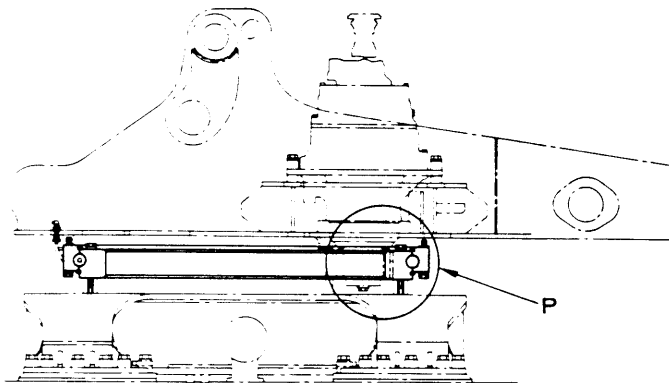
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# SWING CIRCLE



Detail P



Section A - A

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1. Swing circle outer race
2. Ball bearing
3. Swing circle inner race

## SPECIFICATION

Grease volume: 95 ℓ (G2-LI)

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