

# **UNIC HYDRAULIC CRANE**

## **URV SERIES**

### **MODEL**

**URV230, URV260, URV290, URV300  
URV340, URV370, URV500**

## **WORK SHOP MANUAL**

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## § 19. INSUPECTION PROCEDURES WHEN CYLINDER SINKE

### 19. 1 Inspection of telescoping cylinder (3-section or 4-section boom)

#### (1) Preparation before inspection

- ① Allow booms to be horizontal and extend them fully to put a mark on each boom section (refer to Fig. 1).
- ② Raise booms to their maximum to sling a load.
- ③ In order to release pressure remained in the telescoping system, stop the engine and shift the manual lever for telescoping booms.

#### (2) Starting inspection

- ④ Remove the retraction hose to check if oil overflows continuously out of the cylinder port of retraction side.  
At the same time, also check that which boom section sinks how far to grasp condition of booms as a whole.  
If no oil flows out of the port of retraction side, the cylinder is normal.
- ⑤ Next, remove the extension hose, and if oil overflows continuously out of counter-balance valve port of extension side, there may be faulty on the seat surface of counter-balance valve (refer to Fig. 3).  
In addition, check how far boom3 sinks simultaneously.

#### Caution:

**In order to release pilot pressure in the retraction side, be sure to remove the extension hose after the retraction hose has been removed (refer to Fig. 2).**

**Since overflowing oil out of the port on retraction side means internal leakage in the cylinder, check tele1 and tele2 separately.**

**Be sure to measure the how far each boom sinks as it is an important point for judging that it is normal or abnormal.**

#### (3) Inspection of tele1

- ⑥ Extend booms to a position where it is a little bit shorter than 2-section boom to put a mark on the boom (refer to Fig. 4).
- ⑦ Raise booms to their maximum to sling a load.
- ⑧ In order to release pressure remained in the telescoping system, stop the engine and shift the manual lever for telescoping booms.
- ⑨ Remove the retraction hose.  
If oil overflows out of cylinder port of retraction side and boom2 sinks, there may be internal oil leakage in tele1.  
In addition, check how far boom2 sinks simultaneously.

#### (4) Inspection of tele2

- ⑩ Allow booms to be horizontal and extend them fully to put a mark on each boom section (refer to Fig. 1).
- ⑪ Raise booms to their maximum to sling a load.
- ⑫ In order to release pressure remained in the telescoping system, stop the engine and shift the manual lever for telescoping booms.
- ⑬ Remove the retraction hose.  
If oil overflows out of cylinder port of retraction side and boom3 sinks, there may be internal oil leakage in tele2.  
In addition, check how far boom3 sinks simultaneously.

The same procedures in checking boom sinkage are applied for 5-section boom

Be sure to check the boom sections one by one reliably.

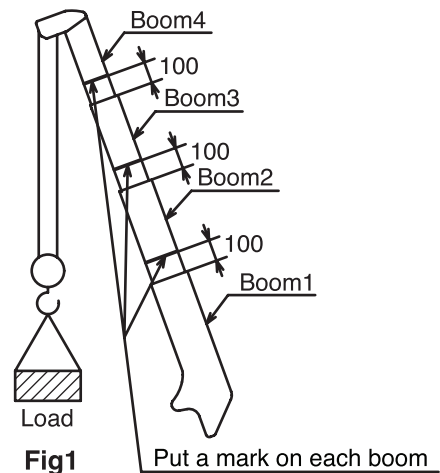


Fig1

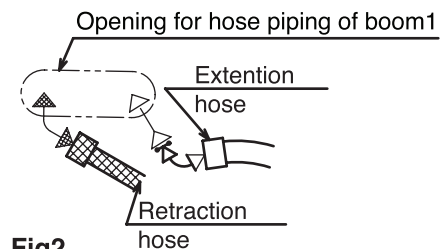


Fig2

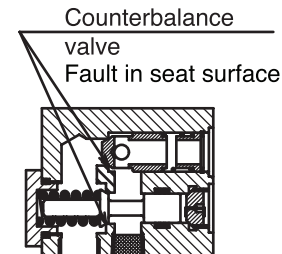


Fig3

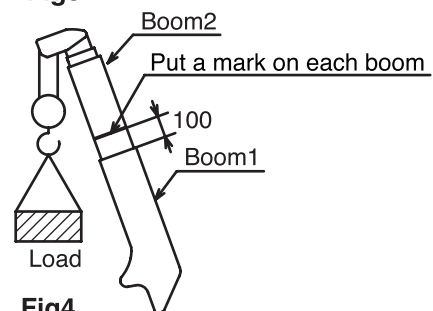


Fig4

## 19. 2 Inspection of derrick cylinder

### (1) Preparation before inspection

- ① Raise booms to an angle of approx. 30°.
- ② Put a mark on the rod with a felt pen (refer to Fig. 1).
- ③ In order to release pressure remained in the derrick system, stop the engine and shift the manual lever for raising/lowering of booms.

### (2) Starting inspection

- ④ Remove the lowering hose to check if oil overflows continuously out of the cylinder port of lowering side. At the same time, check also that how far the rod shifts. If no oil flows out of the port of lowering side, the cylinder is normal.
- ⑤ Next, remove the raising hose, and if oil overflows continuously out of counter-balance valve port of raising side, there may be faulty on the seat surface of counter-balance valve (refer to Fig. 3). In addition, check how far the cylinder sinks simultaneously.

#### Caution:

In order to release pilot pressure in the lowering side, be sure to remove the raising hose after the lowering hose has been removed (refer to Fig. 2).

If oil overflows out of the port on lowering side, it suggests internal leakage in the cylinder.

Be sure to measure the how far each boom sinks as it is an important point for judging that it is

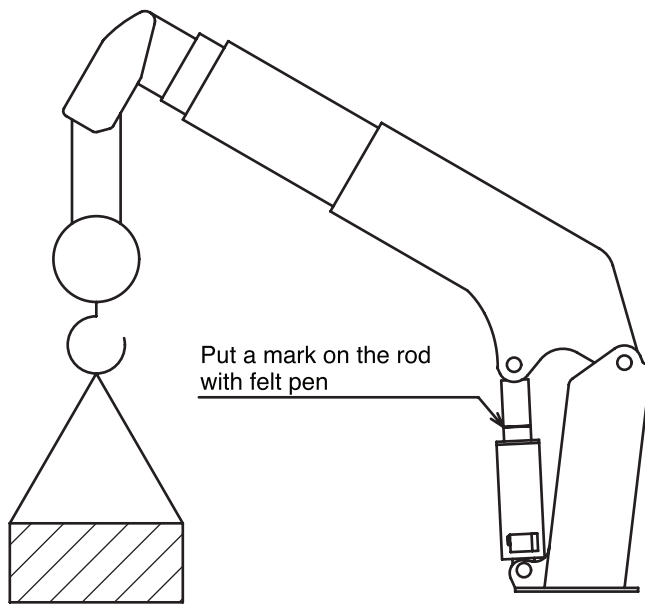


Fig1

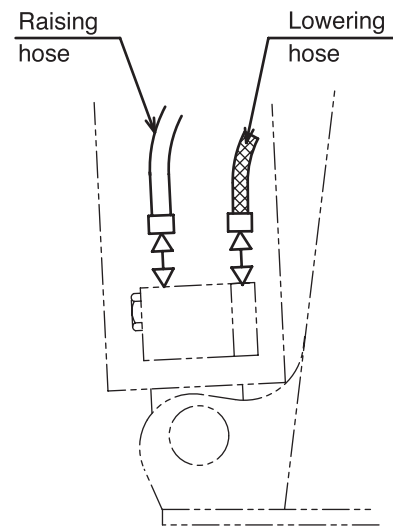


Fig2

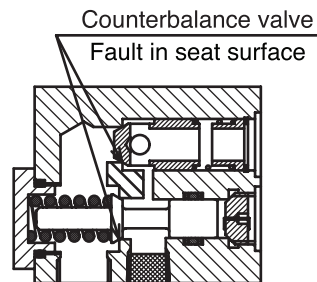


Fig3

## 19. 3 Inspection of outrigger cylinder

### (1) Preparation before inspection

- ① Extend outrigger cylinders to their extremes.
- ② Put a mark on the rod with a felt pen (refer to Fig. 1).
- ③ In order to release pressure remained in the outrigger system, stop the engine and shift the manual levers for extension/retraction of outriggers.

### (2) Starting inspection

- ④ Remove the retraction pipe to check if oil overflows continuously out of the cylinder port of retraction side.  
At the same time, check also that how far the rod shifts.  
If no oil flows out of the port of lowering side, the cylinder is normal.
- ⑤ Next, remove the extension pipe, and if oil overflows continuously out of the pilot check valve port of raising side, there may be faulty on the seat surface of pilot check valve (refer to Fig. 2).  
In addition, check how far the cylinder sinks simultaneously.

#### Caution:

In order to release pilot pressure in the retraction side, be sure to remove the extension pipe after the retraction pipe has been removed (refer to Fig. 1).

If oil overflows out of the port on retraction side, it suggests internal leakage in the cylinder.

Be sure to measure the how far each boom sinks as it is an important point for judging that it is

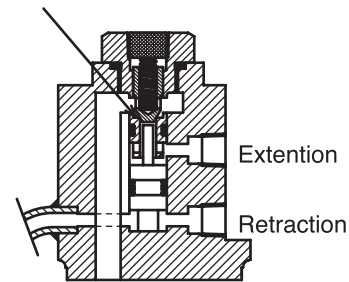


Fig2

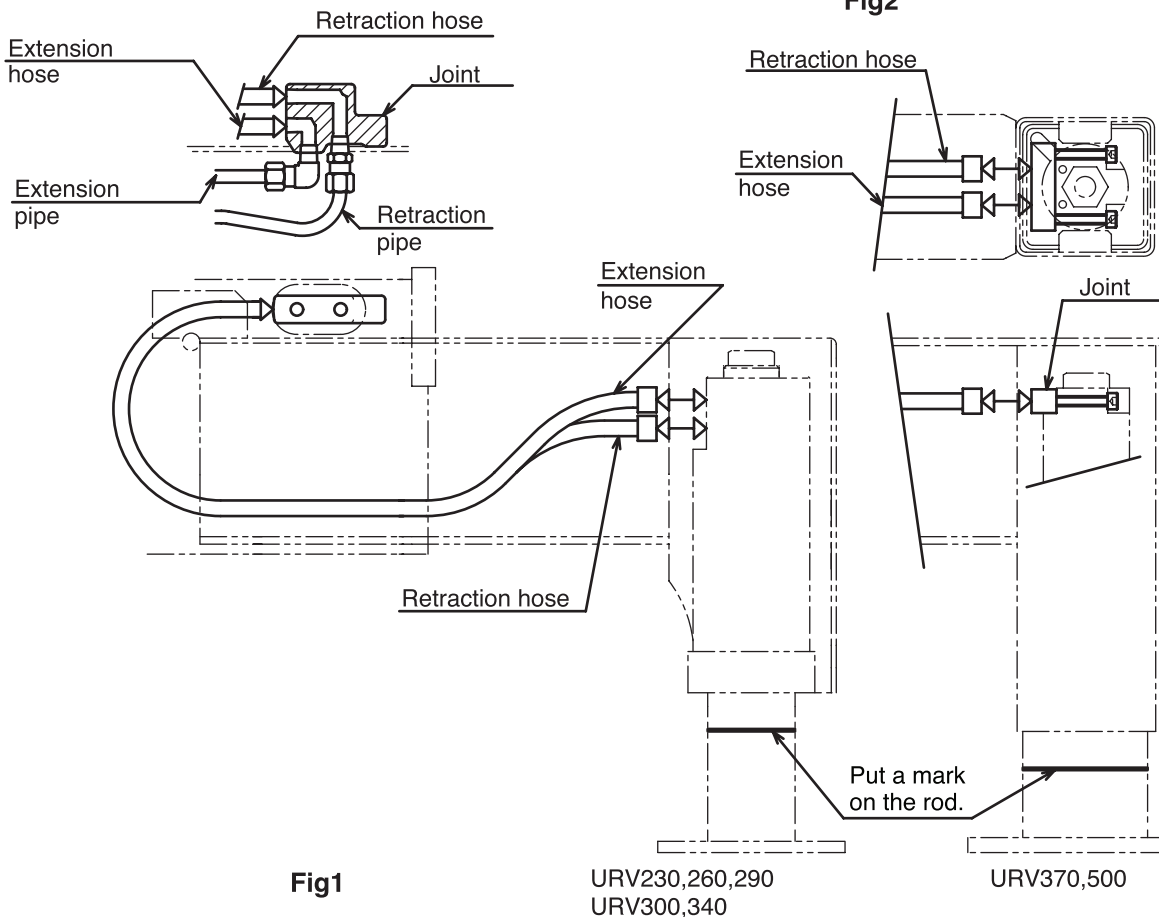


Fig1