



# **CASE STUDY**

## **Timken Counterfeit Bearings in Thailand**

**By**

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## INTRODUCTION

Generally, due to their own unique features, Timken tapered roller bearings in the AFMBA (inch series) system are always installed in critical machines.

Coupled to the fact that their prices are relatively high, all these render Timken bearings a “profitable” target for many counterfeiters.



## PURPOSES

The purposes of this published case study are:

- To educate all Timken customers of how to identify Timken counterfeit bearings in the most basic level.
- To prevent all damages that will occur at customer's side, due to the use of counterfeit bearings.
- To protect the integrity of The Timken Company and Hung Seng Huat Engineering Product Co.,Ltd., as a Timken's authorized distributor in Thailand.



## **CASE STUDY : TIMKEN COUNTERFEIT BEARINGS IN THAILAND**

**Customer:** one of Thailand's largest combined power plant.(based on approximately 60 sets of cooling tower gearboxes)

**Machine:** 11 sets of cooling tower gearboxes

**Bearing:** Timken, approximately 80 pieces



## HOW WAS THE CASE DISCOVERED?

Customer called Hung Seng Huat personnel for on-site inspection & suggested correction of a technical & commercial problem.

- The problem stemmed from the fact that customer procured the wrong type and quantity of Timken bearings from a non-authorized channel.
- In stead of buying a complete bearing assembly, customer bought single components. Consequently, not only the quantity was incorrect, all those single components could not be matched to have the correct Bench End Play (BEP).



## HOW WAS THE CASE DISCOVERED?

- It must be noted that customer was not aware of, and therefore did not buy Timken counterfeit bearings on purpose.
- They bought these counterfeits because the selling price from this non-authorized channel was approximately 12% lower than HSE's quoted prices.



## Customer's additional background

1. This is not a new customer to both Timken and Hung Seng Huat.
2. This customer has a long, good relationship with Hung Seng Huat for over 3 years.
3. More importantly, customer has been having a Timken supply contract with Hung Seng Huat for another similar application in the plant for over 2 consecutive years.



## Customer's additional background

4. Customer bought these counterfeit bearings due to the following reasons:
  - 4.1 The bearings were urgently needed.
  - 4.2 The higher-than-normal value of the bearings rendered the bid to be decided by a committee for the lowest quote.



# How to identify Timken counterfeits: external packaging

## 1. Incorrect spelling



## How to identify Timken counterfeits: external packaging

### 2. Lack of Timken's anti-counterfeit label.





## How to identify Timken counterfeits: external packaging

3. Generally, Timken medium size bearings are packed in carton boxes, not wooden boxes.



# How to identify Timken counterfeits: external packaging

## 4. Lack of a bar code



## How to identify Timken counterfeits: external packaging

5. Bearing wrapping in case of a spacer bearing assembly is not Timken standard vacuum-packed.





## How to identify Timken counterfeits: bearing weight

6. The bearing weight is different from Timken's specification  
example : cone assembly # **95500**

According to Timken catalog # 699, cone assembly 95500 has the net unit weight of 7.68 kilograms, which is not a comfortable weight to be lifted up by one hand. However, 95500 that we found on-site is noticeably lighter and can easily be lifted up by one hand.

95475	120.650 4.7500	63.500 2.5000	6.4 .25	8.30 kg 18.30 lb
95491	124.943 4.9190	63.500 2.5000	6.4 .25	7.89 kg 17.39 lb
<b>95500</b>	127.000 <b>5.0000</b>	63.500 <b>2.5000</b>	6.4 .25	<b>7.68 kg</b> 16.94 lb





## How to identify Timken counterfeits: spacer marking

7. All spacer markings are either wrong or in the wrong positions.



## How to identify Timken counterfeits: bearing marking

8. Laser Marking on some bearings is not sharp and well-defined.





## How to identify Timken counterfeits: Lack of serial number

9. All bearing assembly does not have the mandatory serial number marking.



## How to identify Timken counterfeits: lack of manufacturing date code

10. Some bearings do not have the mandatory manufacturing date code.





## CONCLUSION

Due to the possible unexpected customer's machine failures from the use of counterfeit bearings and corresponding huge loss of production, all bearing manufacturers suggest that the problem of counterfeit bearings is better **“prevented”** rather than **“corrected”**.

Additionally, more and more counterfeit bearings are made to have the exact physical look (not the quality) of the genuine bearings, to the point that the differences between them cannot be detected by visual inspection.



## CONCLUSION

This is because the 4 main differences between a counterfeit and a genuine bearing can never be detected by visual inspection. These differences are:

- raw material
- internal geometry
- heat treatment
- polishing, grinding and honing



## CONCLUSION

Some suggestions to prevent counterfeit Timken bearings entering your plants.....

1. Only purchase Timken bearings from a Timken authorized distributor.
2. If an end user wishes to check the genuinity of Timken bearings delivered yourself, there are 2 quick ways:
  - 2.1 check the bearing weight against Timken catalog.
  - 2.2 look for Timken's anti-counterfeit label on the box.



## CONCLUSION

3. Set up a system to check and cross-check a bearing distributor that services you, such as....
  - 3.1 From time to time, check the company's authorized distributorship with Timken.
  - 3.2 Arrange an on-site vendor audit to see the distributor's operation and warehouse.
  - 3.3 On a random basis, occasionally check the genuinity Timken bearings delivered to you, by sending them to Timken Thailand Ltd.



## MORE QUESTIONS?

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