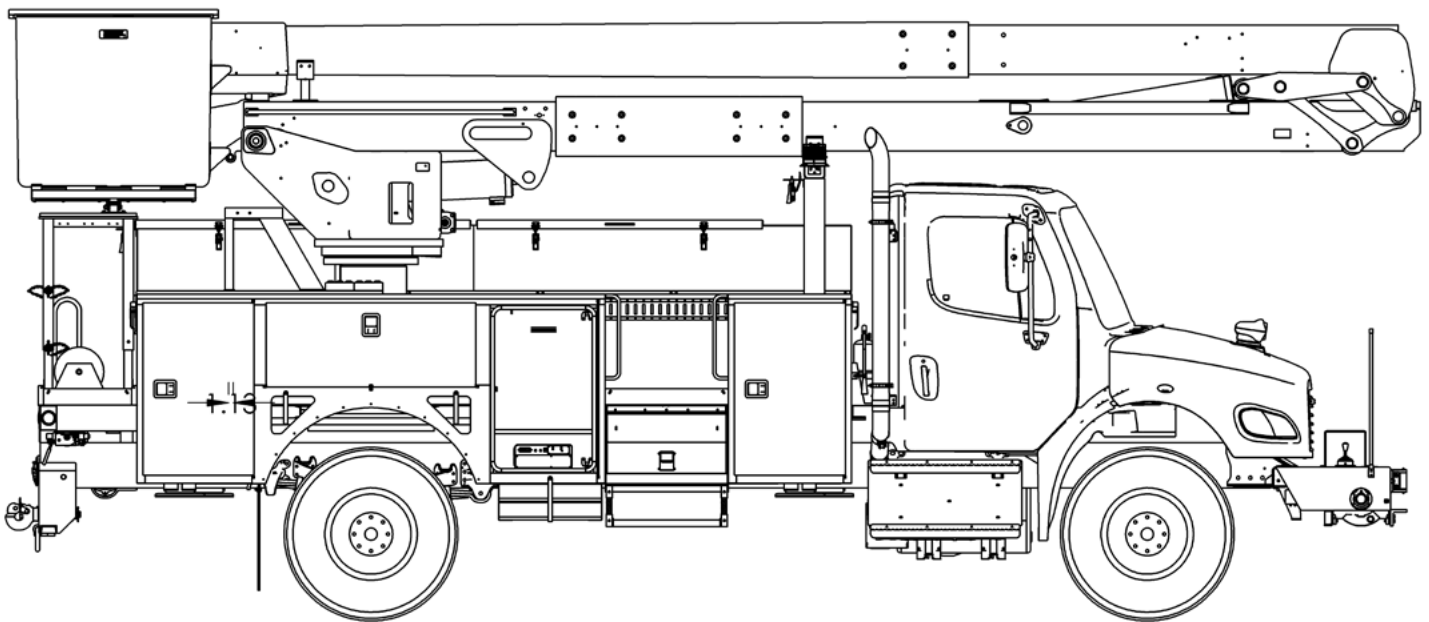




# TECH TIPS

CUSTOM OPTIMA TC55 LOAD CHART

NO. 190



**GENERAL KNOWLEDGE**  
CUSTOM OPTIMA TC55 LOAD  
CHART



**MODEL(S):**  
SOME OPTIMA TC55 UNITS



**TOOLS NEEDED:**  
NONE

TEREX UTILITIES TECHNICAL SUPPORT TEAM

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## **DANGER**

Failure to obey the instructions and safety rules in the appropriate Operator's Manual and Service Manual for your machine will result in death or serious injury.

Many of the hazards identified in the Operator's Manual are also safety hazards when maintenance and repair procedures are performed.

## **DO NOT PERFORM MAINTENANCE UNLESS:**

- ✓ You are trained and qualified to perform maintenance on this machine.
- ✓ You read, understand and obey:
  - manufacturer's instructions and safety rules
  - employer's safety rules and worksite regulations
  - applicable governmental regulations
- ✓ You have the appropriate tools, lifting equipment and a suitable workshop.

The information contained in this Tech Tip is a supplement to the Service Manual. Consult the appropriate Service Manual of your machine for safety rules and hazards.



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## INTRODUCTION

An operator will move a transformer from the ground and position it on a pole. Using the information in the following steps, determine if the lift plan can be achieved while remaining within the limits of the load chart.

### Video Tech Tip

A **video tech tip** of this and numerous other procedures is available on our **Tech Tip Channel**.



This tech-tip demonstrates how to use a load chart. Always use the unit specific load chart to determine capacities and to plan the path of the load.

## STEP 1

The transformer has a known weight of 615 lbs. Performing a dry run, the operator determined the boom angles required to move and place the transformer.

|                         |                  |                         |            |
|-------------------------|------------------|-------------------------|------------|
| <b>Load Radius</b>      | 3 feet           | <b>Liner</b>            | 50 lbs.    |
| <b>Operator</b>         | 260 lbs.         | <b>Tools</b>            | 30 lbs.    |
| <b>Transformer</b>      | 615 lbs.         | <b>Lower Boom Angle</b> | 95 degrees |
| <b>Upper Boom Angle</b> | -30 to 0 degrees |                         |            |

## STEP 2

Determine if the load in the platform is within capacity.

Using the load chart, the platform capacity is 700 lbs.

The weight of the Operator + Liner + Tools = 260 + 50 + 30 = 340 lbs.

The total weight is less than the platform capacity.

|                  |                  |                  |            |
|------------------|------------------|------------------|------------|
| Load Radius      | 3 feet           | Liner            | 50 lbs.    |
| Operator         | 260 lbs.         | Tools            | 30 lbs.    |
| Transformer      | 615 lbs.         | Lower Boom Angle | 95 degrees |
| Upper Boom Angle | -30 to 0 degrees |                  |            |

| TEREX UTILITIES                       |                 |                                   |      |      |      |        |
|---------------------------------------|-----------------|-----------------------------------|------|------|------|--------|
| OPTIMA TC55 JIB AND BASKET CAPACITIES |                 |                                   |      |      |      |        |
| Maximum Jib Load                      |                 | 2000                              | 1500 | 750  | 500  | 500    |
| Upper Boom Angle                      | Basket Capacity | Jib Capacity at Load Radius Shown |      |      |      |        |
|                                       |                 | Zone A                            |      |      |      | Zone B |
|                                       |                 | Lower boom to 110 deg.            |      |      |      | >110   |
|                                       |                 | 0                                 | 0-2' | 2-4' | 4-6' | 0-6'   |
| -60                                   | 700             | 1430                              | 1380 | 750  | 500  | 480    |
| -30                                   | 700             | 610                               | 580  | 560  | 500  | 0      |
| 0                                     | 700             | 590                               | 560  | 540  | 500  | 0      |
| 15                                    | 700             | 590                               | 560  | 540  | 500  | 0      |
| 30                                    | 700             | 750                               | 720  | 690  | 500  | 80     |
| 45                                    | 700             | 1160                              | 1110 | 750  | 500  | 310    |
| 60                                    | 700             | 2000                              | 1500 | 750  | 500  | 500    |
| 65                                    | 700             | 2000                              | 1500 | 750  | 500  | 500    |
| 70                                    | 700             | 2000                              | 1500 | 750  | 500  | 500    |

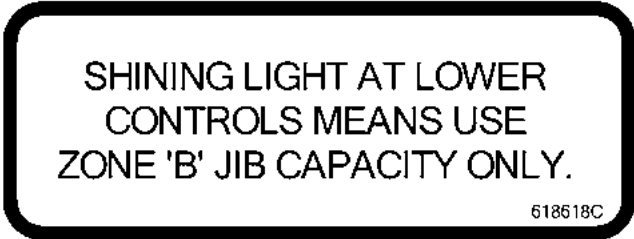
1) Capacities are in pounds, basket capacity is total for all baskets.  
 2) Jib capacity shown is in addition to basket capacity shown. If the platform capacity rating is different than the basket capacity shown, use the lower value. Maximum winch capacity is 2000 pounds  
 3) 90% of unused basket capacity may be added to the jib capacity, but do not exceed the maximum jib load shown.  
 4) If the aerial device is modified in any way or remounted, Terex Utilities must be notified as capacities shown may be affected.  
 5) See lower boom angle indicator for correct jib capacity.

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### STEP 3

An indicator light on top of the lower controls will be ON when the lower boom is greater than 110 degrees – indicating Zone B must be used.

**Figure 3**



According to the table, the lower boom is at 103 degrees. This means we'll be using Zone A of the load chart. **Figure 4**

**FIGURE 3**

|                  |            |                  |                  |
|------------------|------------|------------------|------------------|
| Load Radius      | 3 feet     | Transformer      | 615 lbs.         |
| Lower Boom Angle | 95 degrees | Upper Boom Angle | -30 to 0 degrees |

| TEREX UTILITIES                       |                 |                                   |      |      |      |        |
|---------------------------------------|-----------------|-----------------------------------|------|------|------|--------|
| OPTIMA TC55 JIB AND BASKET CAPACITIES |                 |                                   |      |      |      |        |
| Maximum Jib Load                      |                 | 2000                              | 1500 | 750  | 500  | 500    |
|                                       |                 | Jib Capacity at Load Radius Shown |      |      |      |        |
| Upper Boom Angle                      | Basket Capacity | Zone A                            |      |      |      | Zone B |
|                                       |                 | Lower boom to 110 deg.            |      |      |      |        |
|                                       |                 | 0                                 | 0-2' | 2-4' | 4-6' | >110   |
| -60                                   | 700             | 1430                              | 1380 | 750  | 500  | 480    |
| -30                                   | 700             | 610                               | 580  | 560  | 500  | 0      |
| 0                                     | 700             | 590                               | 560  | 540  | 500  | 0      |
| 15                                    | 700             | 590                               | 560  | 540  | 500  | 0      |
| 30                                    | 700             | 750                               | 720  | 690  | 500  | 80     |
| 45                                    | 700             | 1160                              | 1110 | 750  | 500  | 310    |
| 60                                    | 700             | 2000                              | 1500 | 750  | 500  | 500    |
| 65                                    | 700             | 2000                              | 1500 | 750  | 500  | 500    |
| 70                                    | 700             | 2000                              | 1500 | 750  | 500  | 500    |

1) Capacities are in pounds, basket capacity is total for all baskets.  
 2) Jib capacity shown is in addition to basket capacity shown. If the platform capacity rating is different than the basket capacity shown, use the lower value. Maximum winch capacity is 2000 pounds  
 3) 90% of unused basket capacity may be added to the jib capacity, but do not exceed the maximum jib load shown.  
 4) If the aerial device is modified in any way or remounted, Terex Utilities must be notified as capacities shown may be affected.  
 5) See lower boom angle indicator for correct jib capacity.

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**FIGURE 4**

## STEP 4

The load radius is 3 feet.

Based on this load radius, we'll be using the column highlighted below in Zone A.

|                  |            |                  |                  |
|------------------|------------|------------------|------------------|
| Load Radius      | 3 feet     | Transformer      | 615 lbs.         |
| Lower Boom Angle | 95 degrees | Upper Boom Angle | -30 to 0 degrees |

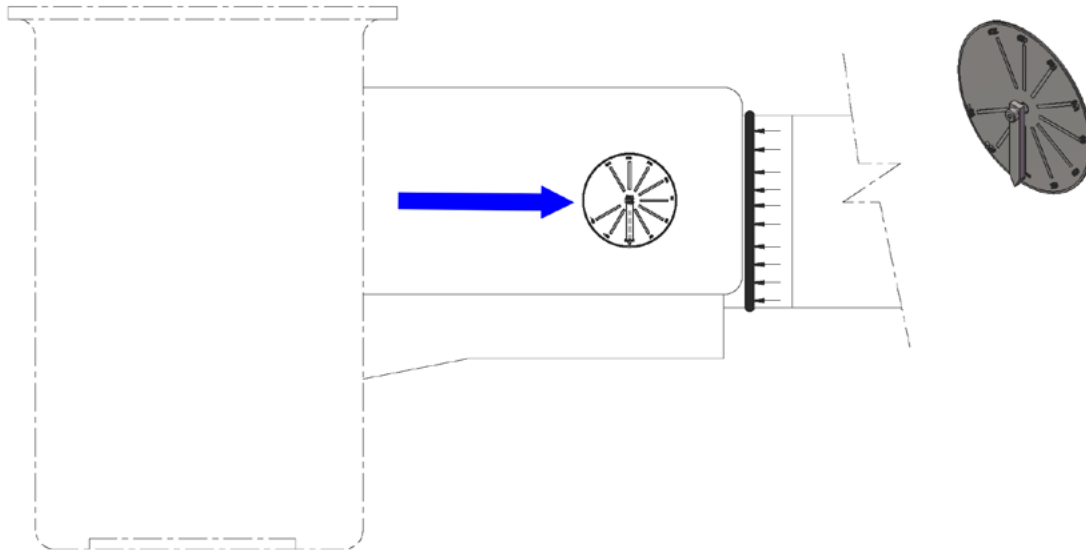
| TEREX UTILITIES                       |     |                                   |      |      |      |        |
|---------------------------------------|-----|-----------------------------------|------|------|------|--------|
| OPTIMA TC55 JIB AND BASKET CAPACITIES |     |                                   |      |      |      |        |
| Maximum Jib Load                      |     | 2000                              | 1500 | 750  | 500  | 500    |
| Upper Boom Angle                      |     | Jib Capacity at Load Radius Shown |      |      |      |        |
|                                       |     | Zone A                            |      |      |      | Zone B |
|                                       |     | Lower boom to 110 deg.            |      |      |      | >110   |
| Basket Capacity                       |     | 0                                 | 0-2' | 2-4' | 4-6' | 0-6'   |
| -60                                   | 700 | 1430                              | 1380 | 750  | 500  | 480    |
| -30                                   | 700 | 610                               | 580  | 560  | 500  | 0      |
| 0                                     | 700 | 590                               | 560  | 540  | 500  | 0      |
| 15                                    | 700 | 590                               | 560  | 540  | 500  | 0      |
| 30                                    | 700 | 750                               | 720  | 690  | 500  | 80     |
| 45                                    | 700 | 1160                              | 1110 | 750  | 500  | 310    |
| 60                                    | 700 | 2000                              | 1500 | 750  | 500  | 500    |
| 65                                    | 700 | 2000                              | 1500 | 750  | 500  | 500    |
| 70                                    | 700 | 2000                              | 1500 | 750  | 500  | 500    |

1) Capacities are in pounds, basket capacity is total for all baskets.  
 2) Jib capacity shown is in addition to basket capacity shown. If the platform capacity rating is different than the basket capacity shown, use the lower value. Maximum winch capacity is 2000 pounds  
 3) 90% of unused basket capacity may be added to the jib capacity, but do not exceed the maximum jib load shown.  
 4) If the aerial device is modified in any way or remounted, Terex Utilities must be notified as capacities shown may be affected.  
 5) See lower boom angle indicator for correct jib capacity.

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## STEP 5

Use the angle indicator located at the upper boom tip to determine the angle of the upper boom. During the dry run, the operator determined that the upper boom angle ranged from 0 to 60 degrees. The lowest capacity indicated in this range on the load chart is 540 lbs. - less than the weight of the transformer (615 lbs.). **Figure 7**



| TEREX UTILITIES                       |                 |                                   |      |      |      |        |
|---------------------------------------|-----------------|-----------------------------------|------|------|------|--------|
| OPTIMA TC55 JIB AND BASKET CAPACITIES |                 |                                   |      |      |      |        |
| Maximum Jib Load                      |                 | 2000                              | 1500 | 750  | 500  | 500    |
| Upper Boom Angle                      | Basket Capacity | Jib Capacity at Load Radius Shown |      |      |      |        |
|                                       |                 | Zone A                            |      |      |      | Zone B |
|                                       |                 | Lower boom to 110 deg.            |      |      |      | >110   |
|                                       |                 | 0                                 | 0-2' | 2-4' | 4-6' | 0-6'   |
| -60                                   | 700             | 1430                              | 1380 | 750  | 500  | 480    |
| -30                                   | 700             | 610                               | 580  | 560  | 500  | 0      |
| 0                                     | 700             | 590                               | 560  | 540  | 500  | 0      |
| 15                                    | 700             | 590                               | 560  | 540  | 500  | 0      |
| 30                                    | 700             | 750                               | 720  | 690  | 500  | 80     |
| 45                                    | 700             | 1160                              | 1110 | 750  | 500  | 310    |
| 60                                    | 700             | 2000                              | 1500 | 750  | 500  | 500    |
| 65                                    | 700             | 2000                              | 1500 | 750  | 500  | 500    |
| 70                                    | 700             | 2000                              | 1500 | 750  | 500  | 500    |

1) Capacities are in pounds, basket capacity is total for all baskets.  
 2) Jib capacity shown is in addition to basket capacity shown. If the platform capacity rating is different than the basket capacity shown, use the lower value. Maximum winch capacity is 2000 pounds  
 3) 90% of unused basket capacity may be added to the jib capacity, but do not exceed the maximum jib load shown.  
 4) If the aerial device is modified in any way or remounted, Terex Utilities must be notified as capacities shown may be affected.  
 5) See lower boom angle indicator for correct jib capacity.

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**FIGURE 7**



## STEP 6

This load chart states that 90% of the unused platform capacity may be added to the jib - up to the maximum jib load listed. According to the load chart the maximum jib capacity is 750 lbs.

From Step 2, we know that 340 lbs. of platform capacity is used and the maximum platform (basket capacity) is 700 lbs.  $700 - 340 = 360$  lbs.  $360 \times .9 = 324$  lbs. This excess capacity can then be added to the capacities on the load chart up to the Maximum Jib Load.

For example, at 0 and 15 degrees, the load chart capacity shown is 540 lbs. Adding the excess capacity of 324 lbs. gives a total capacity of 864 lbs. Since 864 lbs. is greater than the maximum jib load of 750 listed on the load chart, the capacity at both of these angles is reduced down to 750 lbs. Using the excess capacity makes it possible to lift this transformer within the load chart capacity.

|                         |            |                         |                  |
|-------------------------|------------|-------------------------|------------------|
| <b>Load Radius</b>      | 3 feet     | <b>Transformer</b>      | 615 lbs.         |
| <b>Lower Boom Angle</b> | 95 degrees | <b>Upper Boom Angle</b> | -30 to 0 degrees |

| <b>TEREX UTILITIES</b>                       |                        |  |      |      |      |                |
|--|------------------------|--|------|------|------|----------------|
| <b>OPTIMA TC55 JIB AND BASKET CAPACITIES</b> |                        |  |      |      |      |                |
| <b>Maximum Jib Load</b>                      |                        | 2000                                     | 1500 | 750  | 500  | 500            |
| <b>Upper Boom Angle</b>                      | <b>Basket Capacity</b> | <b>Jib Capacity at Load Radius Shown</b> |      |      |      |                |
|  |                        | <b>Zone A</b>                            |      |      |      | <b>Zone B</b>  |
|  |                        | <b>Lower boom to 110 deg.</b>            |      |      |      | <b>&gt;110</b> |
|  |                        | 0  | 0-2' | 2-4' | 4-6' | 0-6'           |
| -60  | 700                    | 1430                                     | 1380 | 750  | 500  | 480            |
| -30  | 700                    | 610                                      | 580  | 560  | 500  | 0              |
| 0  | 700                    | 590                                      | 560  | 540  | 500  | 0              |
| 15   | 700                    | 590                                      | 560  | 540  | 500  | 0              |
| 30   | 700                    | 750                                      | 720  | 690  | 500  | 80             |
| 45   | 700                    | 1160                                     | 1110 | 750  | 500  | 310            |
| 60   | 700                    | 2000                                     | 1500 | 750  | 500  | 500            |
| 65   | 700                    | 2000                                     | 1500 | 750  | 500  | 500            |
| 70   | 700                    | 2000                                     | 1500 | 750  | 500  | 500            |

1) Capacities are in pounds, basket capacity is total for all baskets.  
 2) Jib capacity shown is in addition to basket capacity shown. If the platform capacity rating is different than the basket capacity shown, use the lower value. Maximum winch capacity is 2000 pounds  
 3) 90% of unused basket capacity may be added to the jib capacity, but do not exceed the maximum jib load shown.  
 4) If the aerial device is modified in any way or remounted, Terex Utilities must be notified as capacities shown may be affected.  
 5) See lower boom angle indicator for correct jib capacity.

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## STEP 7

If the load radius is reduced to 1 foot, 6 inches, then the Maximum Jib Load on this chart increases to 1500 lbs. At this load radius, the load chart capacity is 560 lbs at 0 degrees and 580 lbs at -30 degrees. Adding the 324 lbs of excess capacity yields a total capacity of 884 lbs at 0 degrees and 904 at -30 degrees. Since these totals are less than the 1500 lb maximum, we are able to utilize all of the excess capacity available.

|                         |                  |                         |                  |
|-------------------------|------------------|-------------------------|------------------|
| <b>Load Radius</b>      | 1 foot, 6 inches | <b>Transformer</b>      | 615 lbs.         |
| <b>Lower Boom Angle</b> | 95 degrees       | <b>Upper Boom Angle</b> | -30 to 0 degrees |

| <b>TEREX UTILITIES</b>                       |                        |  |      |      |      |                |
|--|------------------------|--|------|------|------|----------------|
| <b>OPTIMA TC55 JIB AND BASKET CAPACITIES</b> |                        |  |      |      |      |                |
| <b>Maximum Jib Load</b>                      |                        | 2000                                     | 1500 | 750  | 500  | 500            |
| <b>Upper Boom Angle</b>                      | <b>Basket Capacity</b> | <b>Jib Capacity at Load Radius Shown</b> |      |      |      |                |
|  |                        | <b>Zone A</b>                            |      |      |      | <b>Zone B</b>  |
|  |                        | <b>Lower boom to 110 deg.</b>            |      |      |      | <b>&gt;110</b> |
|  |                        | 0  | 0-2' | 2-4' | 4-6' | 0-6'           |
| -60  | 700                    | 1430                                     | 1380 | 750  | 500  | 480            |
| -30  | 700                    | 610                                      | 580  | 560  | 500  | 0              |
| 0  | 700                    | 590                                      | 560  | 540  | 500  | 0              |
| 15   | 700                    | 590                                      | 560  | 540  | 500  | 0              |
| 30   | 700                    | 750                                      | 720  | 690  | 500  | 80             |
| 45   | 700                    | 1160                                     | 1110 | 750  | 500  | 310            |
| 60   | 700                    | 2000                                     | 1500 | 750  | 500  | 500            |
| 65   | 700                    | 2000                                     | 1500 | 750  | 500  | 500            |
| 70   | 700                    | 2000                                     | 1500 | 750  | 500  | 500            |

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