

The user of this spreadsheet shall input data into the relevant yellow boxes on this worksheet and on all of the other relevant worksheets

Note: The disclaimer on the first worksheet applies to all tables in this workbook

|                    |  |                       |                   |              |
|--------------------|--|-----------------------|-------------------|--------------|
| Rig Manufacturer : | <b>TESCAR</b>                          | Rig Type & Serial No. | <b>CF3</b>        | <b>#3166</b> |
| Operation mode:    | <b>Hitachi 70 LC-3 / Supporto ALTO</b> | Date:                 | <b>23/07/2018</b> |              |
| Completed by:      | <b>LG</b>                              | Checked by:           | <b>LF</b>         |              |

| Main Components - Slewing:                              |                    |             |                |                |                 |                 |   |
|---|--------------------|-------------|----------------|----------------|-----------------|-----------------|---|
| Item  | Mass (kg)          | Weight (kN) | X - Coordinate | Y - Coordinate | Moment Mx (kNm) | Moment My (kNm) |   |
| UPPER WORKS (Slewing)                                   | Mast Assembly      | 1,150       | 11             | 0.00           | 1.28            | -14             | 0 |
|   | Cathead            | 150         | 1              | 0.00           | 1.28            | -2              | 0 |
|   | Support            | 450         | 4              | 0.00           | 0.86            | -4              | 0 |
|   | Winches            | 300         | 3              | 0.00           | 0.40            | -1              | 0 |
|   | Hydraulic cylinder | 350         | 3              | 0.00           | 0.86            | -3              | 0 |
|   | Pull down          | 100         | 1              | 0.00           | 1.28            | -1              | 0 |
| LOWER WORKS (Slewing)                                   | Base Machine       | 2,300       | 23             | 0.00           | -1.12           | 25              | 0 |
|   |                    |             |                |                |                 | 0               | 0 |
|   |                    |             |                |                |                 | 0               | 0 |
|   |                    |             |                |                |                 | 0               | 0 |
| SUSPENDED EQUIPMENT CONNECTED TO CROWD SYSTEM (Slewing) | Kelly              | 1,600       | 16             | 0.00           | 1.99            | -31             | 0 |
|   | Rotary Head        | 400         | 4              | 0.00           | 1.99            | -8              | 0 |
|   |                    |             |                |                |                 | 0               | 0 |
| COUNTER-WEIGHT (Slewing)                                | Counterweight      | 700         | 7              | 0.00           | -1.50           | 10              | 0 |
|   |                    |             |                |                |                 | 0               | 0 |
| OTHER/OTHER SUSPENDED EQUIPMENT (Slewing)               |                    |             |                |                |                 | 0               | 0 |
|   |                    |             |                |                |                 | 0               | 0 |
| UPPER WORKS   | 2,500              | 25          | 0.00           | 1.04           | -26             | 0               |   |
| LOWER WORKS   | 2,300              | 23          | 0.00           | -1.12          | 25              | 0               |   |
| SUSPENDED EQUIPMENT CONNECTED TO CROWD SYSTEM           | 2,000              | 20          | 0.00           | 1.99           | -39             | 0               |   |
| COUNTERWEIGHT   | 700                | 7           | 0.00           | -1.50          | 10              | 0               |   |
| OTHER   | 0                  | 0           | 0.00           | 0.00           | 0               | 0               |   |
| SLEWING TOTAL/RESULTANT (with $\theta=0$ )              | 7,500              | 74          | 0.00           | 0.39           | -29             | 0               |   |

| Foot Pads - Slewing : |                |                  |                |                |              |                  |  |
|-----------------------|----------------|------------------|----------------|----------------|--------------|------------------|--|
| Description           | Bearing Area   | Max. Pad Loading | X - Coordinate | Y - Coordinate | Actual Shape | Actual Dimension |  |
|                       | m <sup>2</sup> | kN               | m              | m              |              |                  |  |
| Front Pad 1           |                |                  |                |                | None         | None             |  |
| Front Pad 2           |                |                  |                |                | None         | None             |  |
| Rear Pad 1            |                |                  |                |                | None         | None             |  |
| Rear Pad 2            |                |                  |                |                | None         | None             |  |

| Forces - Slewing                              |       |                |                |  |  |
|---|-------|----------------|----------------|--|--|
|   | Force | X - Coordinate | Y - Coordinate |  |  |
|   | kN    | m              | m              |  |  |
| Crowd System - Maximum Extraction Force (kN)  | 48    | 0.00           | 1.99           | Must be inline with suspended equip't.     |  |
| Crowd System - Maximum Penetration Force (kN) | -130  | 0.00           | 1.99           | -ve Must be inline with suspended equip't. |  |
| Maximum Auxillary Force (kN)                  | 1     | 0.00           | 1.80           |  |  |

| Main Components - Non-Slewing:                     |                        |             |                |                |                 |                 |   |
|--|------------------------|-------------|----------------|----------------|-----------------|-----------------|---|
| Item   | Mass (kg)              | Weight (kN) | X - Coordinate | Y - Coordinate | Moment Mx (kNm) | Moment My (kNm) |   |
| Lower Works Non-Slewing (undercarriage/tracks etc) | Tracks & Undercarriage | 3,500       | 34             | 0.00           | -0.08           | 3               | 0 |
|  |                        |             |                | 0.00           | 0.00            | 0               | 0 |
|  |                        |             |                | 0.00           | 0.00            | 0               | 0 |
| NON-SLEWING TOTAL/RESULTANT (with $\theta=0$ )     | 3,500                  | 34          | 0.00           | -0.08          | 3               | 0               |   |
| TOTAL RIG MASS                                     | 11,000                 |             |                |                |                 |                 |   |

| Foot Pads - Non-Slewing |                |                  |                |                |              |                  |  |
|-------------------------|----------------|------------------|----------------|----------------|--------------|------------------|--|
| Description             | Bearing Area   | Max. Pad Loading | X - Coordinate | Y - Coordinate | Actual Shape | Actual Dimension |  |
|                         | m <sup>2</sup> | kN               | m              | m              |              |                  |  |
| Front Pad 1             |                |                  |                |                |              |                  |  |
| Front Pad 2             |                |                  |                |                |              |                  |  |
| Rear Pad 1              |                |                  |                |                |              |                  |  |
| Rear Pad 2              |                |                  |                |                |              |                  |  |

| Tracks                                     | Slewing           |
|--|-------------------|
| Track bearing length (m)                   | 2.60              |
| Track pad width (m)                        | 0.45              |
| Distance between centrelines of tracks (m) | 1.87              |
|  | Can the rig slew? |
|  | <b>YES</b>        |

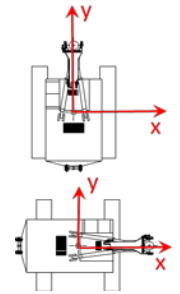
Note: The disclaimer on the first worksheet applies to all tables in this workbook



Notes  
MAX WORKING RADIUS 2,15m.



|                                 |                                    |                       |                       |                  |                  |
|---------------------------------|------------------------------------|-----------------------|-----------------------|------------------|------------------|
| <b>TESCAR</b><br><br><b>CF3</b> | <b>Weight / Force Applied (kN)</b> | <b>X - Coordinate</b> | <b>Y - Coordinate</b> | <b>Moment Mx</b> | <b>Moment My</b> |
|                                 |                                    |                       |                       |                  |                  |



|                                  |    |      |       |     |   |
|----------------------------------|----|------|-------|-----|---|
| <b>SLEWING ACTIONS</b>           |    |      |       |     |   |
| Upper Works (slewing)            | 25 | 0.00 | 1.04  | -26 | 0 |
| Suspended Eqpt. on Crowd         | 20 | 0.00 | 1.99  | -39 | 0 |
| Counterweight (slewing)          | 7  | 0.00 | -1.50 | 10  | 0 |
| Other (slewing)                  | 0  | 0.00 | 0.00  | 0   | 0 |
| Lower Works (Slewing)            | 23 | 0.00 | -1.12 | 25  | 0 |
| Net Extraction Force             | 0  | 0.00 | 1.99  | 0   | 0 |
| Net Penetration Force            | 0  | 0.00 | 1.99  | 0   | 0 |
| Applied Auxiliary Force          | 0  | 0.00 | 1.80  | 0   | 0 |
| Front Pad 1                      | 0  | 0.00 | 0.00  | 0   | 0 |
| Front Pad 2                      | 0  | 0.00 | 0.00  | 0   | 0 |
| Rear Pad 1                       | 0  | 0.00 | 0.00  | 0   | 0 |
| Rear Pad 2                       | 0  | 0.00 | 0.00  | 0   | 0 |
| <b>Summary of Slewing Action</b> | 74 | 0.00 | 0.39  | -29 | 0 |

|                          |                     |                        |                    |
|--------------------------|---------------------|------------------------|--------------------|
| Applied Force (kN)       | Max. Allowable (kN) | Applied Pressure (kPa) | Foot Pad Area (m2) |
| 0                        | 48                  | 0                      | 0.00               |
| 0                        | -130                | 0                      | 0.00               |
| 0                        | 1                   | 0                      | 0.00               |
| <b>Max. Pad Pressure</b> |                     | 0                      |                    |

|                                       |     |      |       |     |                          |                            |                     |                        |                    |  |
|---------------------------------------|-----|------|-------|-----|--------------------------|----------------------------|---------------------|------------------------|--------------------|--|
| <b>NON-SLEWING ACTIONS</b>            |     |      |       |     |                          | Applied Force (kN)         | Max. Allowable (kN) | Applied Pressure (kPa) | Foot Pad Area (m2) |  |
| Lower Works Non-Slewing               | 34  | 0.00 | -0.08 | 3   | 0                        | 0                          | 0                   | 0                      | 0.00               |  |
| Front Pad 1                           | 0   | 0.00 | 0.00  | 0   | 0                        | 0                          | 0                   | 0                      | 0.00               |  |
| Front Pad 2                           | 0   | 0.00 | 0.00  | 0   | 0                        | 0                          | 0                   | 0                      | 0.00               |  |
| Rear Pad 1                            | 0   | 0.00 | 0.00  | 0   | 0                        | 0                          | 0                   | 0                      | 0.00               |  |
| Rear Pad 2                            | 0   | 0.00 | 0.00  | 0   | 0                        | 0                          | 0                   | 0                      | 0.00               |  |
| <b>Summary of Non-slewing Actions</b> | 34  | 0.00 | -0.08 | 3   | 0                        | <b>Max. Pad Pressure 0</b> |                     |                        |                    |  |
| <b>Total Rig Weight (kN)</b>          | 108 |      |       |     | Track Bearing Length (m) | 2.60                       |                     |                        |                    |  |
| <b>Resultant of all Actions (kN)</b>  | 108 | 0.00 | 0.24  | -26 | 0                        | Track pad width (m)        | 0.45                |                        |                    |  |
|                                       |     |      |       |     |                          | Track Centerline Dist. (m) | 1.87                |                        |                    |  |

|                                    |              |
|------------------------------------|--------------|
| <b>Input Data Warning Messages</b> | <b>Notes</b> |
| Auxiliary Line Force OK            |              |
| Extraction Force OK                |              |
| Penetration Force OK               |              |
| Slewing Footpad Forces OK          |              |
| Non-Slewing Footpad Forces OK      |              |

**Notes on Using this Table**

- Auxiliary Line Pull +ve Z direction. Enter applied force (kN) in appropriate yellow box (G11). Note the maximum design force in the adjacent box (H11).
- Extraction Line Pull +ve Z direction. Enter applied force (kN) in appropriate yellow box (G9). Note the maximum design force in the adjacent box (FH9).
- Penetration Force -ve Z direction. Enter applied force (kN) in appropriate yellow box (G10) - must be negative as it imposes an upwards resultant force. Note the maximum design force in the adjacent box (H10).
- Slewing Foot Pad Forces +ve Z direction. Enter applied total force (kN) in appropriate yellow boxes (G12 to G15). Note the maximum the machine can develop is given in the adjacent boxes.
- Non-Slewing Foot Pad Forces -ve Z direction. Enter applied total force (kN) in appropriate yellow boxes (G20 to G23). Note the maximum the machine can develop is given in the adjacent boxes.

Fill in values in all yellow boxes appropriate for this mode -  
Net extraction or penetration force is the applied value minus the weight of any rope / kelly / chain suspended equipment.  
By trial and error, adjust Foot Pad Forces to eliminate "error" messages and equalise bearing pressures on both tracks and foot pads (highlighted in red boxes).  
When applying Auxiliary or Extraction Line Pull, ensure that Penetration Force is zero.

**ONLY A COMPETENT PERSON MAY USE THIS TABLE !**

**Note: The disclaimer on the first worksheet applies to all tables in this workbook**

| Mode : Travelling   |   |                                 |   |   |                              |                  | Transformation from triangular or trapezoidal to an equivalent rectangular pressure distribution under track maintaining the load centroid |         |   |
|---|---|---------------------------------|---|---|------------------------------|------------------|--|---------|---|
| Relative Angle - Upper Body and Tracks (degrees)                        | Max bearing pressure L.H. track (kN/m²) | Min pressure L.H. track (kN/m²) | Max bearing pressure R.H. track (kN/m²) | Min bearing pressure R.H. track (kN/m²) | Max Track loading dimensions |                  | Equivalent Bearing   |         |   |
|   |   |                                 |   |   | ecc (m)                      | Bearing Len. (m) | L (m)  | Q (kPa) |   |
| 0   | 72                                      | 20                              | 72                                      | 20                                      | 0.243                        | 2.600            | 2.114  | 57      |   |
| 15  | 66                                      | 20                              | 76                                      | 23                                      | 0.234                        | 2.600            | 2.132  | 60      |   |
| 30  | 58                                      | 21                              | 78                                      | 28                                      | 0.207                        | 2.600            | 2.186  | 63      |   |
| 45  | 51                                      | 23                              | 77                                      | 34                                      | 0.164                        | 2.600            | 2.271  | 64      |   |
| 60  | 43                                      | 26                              | 72                                      | 43                                      | 0.109                        | 2.600            | 2.382  | 63      |   |
| 75  | 37                                      | 30                              | 65                                      | 53                                      | 0.044                        | 2.600            | 2.512  | 61      |   |
| 90  | 35                                      | 31                              | 63                                      | 56                                      | -0.025                       | 2.600            | 2.549  | 61      |   |
| 105   | 41                                      | 26                              | 72                                      | 46                                      | -0.095                       | 2.600            | 2.410  | 64      |   |
| 120   | 47                                      | 22                              | 79                                      | 36                                      | -0.160                       | 2.600            | 2.281  | 66      |   |
| 135   | 55                                      | 18                              | 83                                      | 28                                      | -0.215                       | 2.600            | 2.169  | 66      |   |
| 150   | 63                                      | 16                              | 84                                      | 21                                      | -0.258                       | 2.600            | 2.084  | 66      |   |
| 165   | 71                                      | 15                              | 82                                      | 17                                      | -0.285                       | 2.600            | 2.030  | 63      |   |
| 180   | 77                                      | 15                              | 77                                      | 15                                      | -0.294                       | 2.600            | 2.012  | 60      |   |
| 195   | 82                                      | 17                              | 71                                      | 15                                      | -0.285                       | 2.600            | 2.030  | 63      |   |
| 210   | 84                                      | 21                              | 63                                      | 16                                      | -0.258                       | 2.600            | 2.084  | 66      |   |
| 225   | 83                                      | 28                              | 55                                      | 18                                      | -0.215                       | 2.600            | 2.169  | 66      |   |
| 240   | 79                                      | 36                              | 47                                      | 22                                      | -0.160                       | 2.600            | 2.281  | 66      |   |
| 255   | 72                                      | 46                              | 41                                      | 26                                      | -0.095                       | 2.600            | 2.410  | 64      |   |
| 270   | 63                                      | 56                              | 35                                      | 31                                      | -0.025                       | 2.600            | 2.549  | 61      |   |
| 285   | 65                                      | 53                              | 37                                      | 30                                      | 0.044                        | 2.600            | 2.512  | 61      |   |
| 300   | 72                                      | 43                              | 43                                      | 26                                      | 0.109                        | 2.600            | 2.382  | 63      |   |
| 315   | 77                                      | 34                              | 51                                      | 23                                      | 0.164                        | 2.600            | 2.271  | 64      |   |
| 330   | 78                                      | 28                              | 58                                      | 21                                      | 0.207                        | 2.600            | 2.186  | 63      |   |
| 345   | 76                                      | 23                              | 66                                      | 20                                      | 0.234                        | 2.600            | 2.132  | 60      |   |
| <b>Maximum Track Values</b>   |   |                                 |   |   |                              |                  | 2.169  | 66      |   |
|   |   |                                 |   |   |                              |                  | Pad Area (m²)  |         |   |
| Max. Slewing Foot Pads Bearing Pressure (kPa) & Equivalent Bearing Leng |   |                                 |   |   |                              |                  | 0.000  | 0.000   | 0 |
| Max. Non-Slewing Foot Pads Bearing Pressure (kPa) & Equivalent Bearing  |   |                                 |   |   |                              |                  | 0.000  | 0.000   | 0 |
| <b>Maximum Equivalent Design Values</b>                                 |   |                                 |   |   |                              |                  | 2.169  | 66      |   |
| Eccentricity index - X direction (sideways)                             |   |                                 |   |   |                              |                  | 0.29   |         |   |
| Eccentricity index - Y direction (forwards/backwards)                   |   |                                 |   |   |                              |                  | 0.23   |         |   |
| Track pressure distribution warning                                     |   |                                 |   |   |                              |                  | None   |         |   |
| Slewing foot pad message  |   |                                 |   |   |                              |                  | Slewing Foot Pad Pressure OK   |         |   |
| Non-Slewing foot pad message  |   |                                 |   |   |                              |                  | Non-Slewing Foot Pad Pressure OK   |         |   |
| <b>BRE LOAD CASE ( 1 or 2 )</b>   |   |                                 |   |   |                              |                  | <b>1</b>   |         |   |

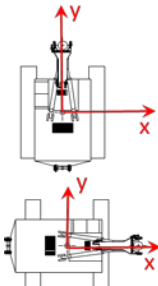


|               |                             |                |                |           |           |
|---------------|-----------------------------|----------------|----------------|-----------|-----------|
| <b>TESCAR</b> | Weight / Force Applied (kN) | X - Coordinate | Y - Coordinate | Moment Mx | Moment My |
| <b>CF3</b>    |                             |                |                |           |           |

|                           |    |      |       |     |   |
|---------------------------|----|------|-------|-----|---|
| <b>SLEWING ACTIONS</b>    |    |      |       |     |   |
| Upper Works (slewing)     | 25 | 0.00 | 1.04  | -26 | 0 |
| Suspended Eqpt. on Crowd  | 20 | 0.00 | 1.99  | -39 | 0 |
| Counterweight (slewing)   | 7  | 0.00 | -1.50 | 10  | 0 |
| Other (slewing)           | 0  | 0.00 | 0.00  | 0   | 0 |
| Lower Works (Slewing)     | 23 | 0.00 | -1.12 | 25  | 0 |
| Net Extraction Force      | 0  | 0.00 | 1.99  | 0   | 0 |
| Net Penetration Force     | 0  | 0.00 | 1.99  | 0   | 0 |
| Applied Auxiliary Force   | 1  | 0.00 | 1.80  | -2  | 0 |
| Front Pad 1               | 0  | 0.00 | 0.00  | 0   | 0 |
| Front Pad 2               | 0  | 0.00 | 0.00  | 0   | 0 |
| Rear Pad 1                | 0  | 0.00 | 0.00  | 0   | 0 |
| Rear Pad 2                | 0  | 0.00 | 0.00  | 0   | 0 |
| Summary of Slewing Action | 75 | 0.00 | 0.41  | -31 | 0 |

|                    |                     |
|--------------------|---------------------|
| Applied Force (kN) | Max. Allowable (kN) |
| 0                  | 48                  |
| 0                  | -130                |
| 1                  | 1                   |

|                        |                                 |
|------------------------|---------------------------------|
| Applied Pressure (kPa) | Foot Pad Area (m <sup>2</sup> ) |
| 0                      | 0.00                            |
| 0                      | 0.00                            |
| 0                      | 0.00                            |
| 0                      | 0.00                            |
| 0                      | 0.00                            |
| Max. Pad Pressure      | 0                               |



|                                |     |      |       |     |   |
|--------------------------------|-----|------|-------|-----|---|
| <b>NON-SLEWING ACTIONS</b>     |     |      |       |     |   |
| Lower Works Non-Slewing        | 34  | 0.00 | -0.08 | 3   | 0 |
| Front Pad 1                    | 0   | 0.00 | 0.00  | 0   | 0 |
| Front Pad 2                    | 0   | 0.00 | 0.00  | 0   | 0 |
| Rear Pad 1                     | 0   | 0.00 | 0.00  | 0   | 0 |
| Rear Pad 2                     | 0   | 0.00 | 0.00  | 0   | 0 |
| Summary of Non-slewing Actions | 34  | 0.00 | -0.08 | 3   | 0 |
| Total Rig Weight (kN)          | 108 |      |       |     |   |
| Resultant of all Actions (kN)  | 109 | 0.00 | 0.26  | -28 | 0 |

|                            |                     |                        |                                 |
|----------------------------|---------------------|------------------------|---------------------------------|
| Applied Force (kN)         | Max. Allowable (kN) | Applied Pressure (kPa) | Foot Pad Area (m <sup>2</sup> ) |
| 0                          | 0                   | 0                      | 0.00                            |
| 0                          | 0                   | 0                      | 0.00                            |
| 0                          | 0                   | 0                      | 0.00                            |
| 0                          | 0                   | 0                      | 0.00                            |
| 0                          | 0                   | 0                      | 0.00                            |
| Max. Pad Pressure          | 0                   |                        |                                 |
| Track Bearing Length (m)   |                     |                        | 2.60                            |
| Track pad width (m)        |                     |                        | 0.45                            |
| Track Centerline Dist. (m) |                     |                        | 1.87                            |

Handling

|                                    |              |
|------------------------------------|--------------|
| <b>Input Data Warning Messages</b> | <b>Notes</b> |
| Auxiliary Line Force OK            |              |
| Extraction Force OK                |              |
| Penetration Force OK               |              |
| Slewing Footpad Forces OK          |              |
| Non-Slewing Footpad Forces OK      |              |

**Notes on Using this Table**

Auxiliary Line Pull +ve Z direction. Enter applied force (kN) in appropriate yellow box (G11). Note the maximum design force in the adjacent box (H11).  
 Extraction Line Pull +ve Z direction. Enter applied force (kN) in appropriate yellow box (G9). Note the maximum design force in the adjacent box (FH9).  
 Penetration Force -ve Z direction. Enter applied force (kN) in appropriate yellow box (G10) - must be negative as it imposes an upwards resultant force. Note the maximum design force in the adjacent box (H10).  
 Slewing Foot Pad Forces +ve Z direction. Enter applied total force (kN) in appropriate yellow boxes (G12 to G15). Note the maximum the machine can develop is given in the adjacent boxes.  
 Non-Slewing Foot Pad Forces -ve Z direction. Enter applied total force (kN) in appropriate yellow boxes (G20 to G23). Note the maximum the machine can develop is given in the adjacent boxes.

Fill in values in all yellow boxes appropriate for this mode -

Net extraction or penetration force is the applied value minus the weight of any rope / kelly / chain suspended equipment.

By trial and error, adjust Foot Pad Forces to eliminate "error" messages and equalise bearing pressures on both tracks and foot pads (highlighted in red boxes).

When applying Auxiliary or Extraction Line Pull, ensure that Penetration Force is zero.

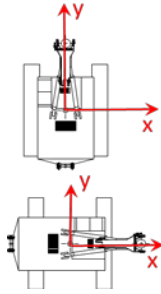
**ONLY A COMPETENT PERSON MAY USE THIS TABLE !**

**Note: The disclaimer on the first worksheet applies to all tables in this workbook**

|   |  |  |  |  |  |       |  |          |   |
|---|--|--|--|--|--|-------|--|----------|---|
| <b>Mode : Handling</b>  |  |  |  |  |  |       | Transformation from triangular or trapezoidal to an equivalent rectangular pressure distribution under track maintaining the load centroid |          |   |
| Relative Angle - Upper Body and Tracks (degrees)                        | Max bearing pressure L.H. track (kN/m <sup>2</sup> ) | Min pressure L.H. track (kN/m <sup>2</sup> ) | Max bearing pressure R.H. track (kN/m <sup>2</sup> ) | Min bearing pressure R.H. track (kN/m <sup>2</sup> ) | Max Track loading dimensions<br>ecc (m) Bearing Len. (m) |       | Equivalent Bearing<br>L (m) Q (kPa)  |          |   |
| 0   | 74   | 19   | 74   | 19   | 0.257  | 2.600 | 2.085  | 58       |   |
| 15  | 67   | 18   | 79   | 21   | 0.248  | 2.600 | 2.104  | 62       |   |
| 30  | 60   | 19   | 81   | 26   | 0.220  | 2.600 | 2.161  | 64       |   |
| 45  | 51   | 22   | 79   | 34   | 0.175  | 2.600 | 2.251  | 65       |   |
| 60  | 44   | 25   | 74   | 43   | 0.116  | 2.600 | 2.368  | 64       |   |
| 75  | 37   | 29   | 67   | 53   | 0.048  | 2.600 | 2.504  | 62       |   |
| 90  | 34   | 31   | 64   | 57   | -0.025   | 2.600 | 2.550  | 62       |   |
| 105   | 40   | 25   | 74   | 46   | -0.098   | 2.600 | 2.403  | 65       |   |
| 120   | 48   | 21   | 81   | 36   | -0.167   | 2.600 | 2.267  | 67       |   |
| 135   | 56   | 18   | 86   | 27   | -0.225   | 2.600 | 2.150  | 68       |   |
| 150   | 64   | 15   | 87   | 20   | -0.270   | 2.600 | 2.060  | 68       |   |
| 165   | 72   | 13   | 85   | 16   | -0.298   | 2.600 | 2.004  | 65       |   |
| 180   | 80   | 13   | 80   | 13   | -0.308   | 2.600 | 1.984  | 61       |   |
| 195   | 85   | 16   | 72   | 13   | -0.298   | 2.600 | 2.004  | 65       |   |
| 210   | 87   | 20   | 64   | 15   | -0.270   | 2.600 | 2.060  | 68       |   |
| 225   | 86   | 27   | 56   | 18   | -0.225   | 2.600 | 2.150  | 68       |   |
| 240   | 81   | 36   | 48   | 21   | -0.167   | 2.600 | 2.267  | 67       |   |
| 255   | 74   | 46   | 40   | 25   | -0.098   | 2.600 | 2.403  | 65       |   |
| 270   | 64   | 57   | 34   | 31   | -0.025   | 2.600 | 2.550  | 62       |   |
| 285   | 67   | 53   | 37   | 29   | 0.048  | 2.600 | 2.504  | 62       |   |
| 300   | 74   | 43   | 44   | 25   | 0.116  | 2.600 | 2.368  | 64       |   |
| 315   | 79   | 34   | 51   | 22   | 0.175  | 2.600 | 2.251  | 65       |   |
| 330   | 81   | 26   | 60   | 19   | 0.220  | 2.600 | 2.161  | 64       |   |
| 345   | 79   | 21   | 67   | 18   | 0.248  | 2.600 | 2.104  | 62       |   |
| Maximum Track Values  |  |  |  |  |  |       | 2.150  | 68       |   |
| Max. Slewing Foot Pads Bearing Pressure (kPa) & Equivalent Bearing Leng |  |  |  |  |  |       | 0.000  | 0.000    | 0 |
| Max. Non-Slewing Foot Pads Bearing Pressure (kPa) & Equivalent Bearing  |  |  |  |  |  |       | 0.000  | 0.000    | 0 |
| <b>Maximum Equivalent Design Values</b>                                 |  |  |  |  |  |       | 2.150  | 68       |   |
| Eccentricity index - X direction (sideways)                             |  |  |  |  |  |       | <b>0.30</b>  |          |   |
| Eccentricity index - Y direction (forwards/backwards)                   |  |  |  |  |  |       | <b>0.24</b>  |          |   |
| Track pressure distribution warning                                     |  |  |  |  |  |       | <b>None</b>  |          |   |
| Slewing foot pad message  |  |  |  |  |  |       | <b>Slewing Foot Pad Pressure OK</b>  |          |   |
| Non-Slewing foot pad message  |  |  |  |  |  |       | <b>Non-Slewing Foot Pad Pressure OK</b>  |          |   |
| <b>BRE LOAD CASE ( 1 or 2 )</b>   |  |  |  |  |  |       |  | <b>1</b> |   |



|               |                             |                |                |           |           |
|---------------|-----------------------------|----------------|----------------|-----------|-----------|
| <b>TESCAR</b> | Weight / Force Applied (kN) | X - Coordinate | Y - Coordinate | Moment Mx | Moment My |
| <b>CF3</b>    |                             |                |                |           |           |



| SLEWING ACTIONS            |     |      |       |     |    |
|----------------------------|-----|------|-------|-----|----|
| Upper Works (slewing)      | 25  | 0.00 | 1.04  | -26 | 0  |
| Suspended Eqpt. on Crowd   | 20  | 0.00 | 1.99  | -39 | 0  |
| Counterweight (slewing)    | 7   | 0.00 | -1.50 | 10  | 0  |
| Other (slewing)            | 0   | 0.00 | 0.00  | 0   | 0  |
| Lower Works (Slewing)      | 23  | 0.00 | -1.12 | 25  | 0  |
| Net Extraction Force       | 0   | 0.00 | 1.99  | 0   | 0  |
| Net Penetration Force      | -44 | 0.00 | 1.99  | 87  | 0  |
| Applied Auxiliary Force    | 0   | 0.00 | 1.80  | 0   | 0  |
| Front Pad 1                | 0   | 0.00 | 0.00  | 0   | 0  |
| Front Pad 2                | 0   | 0.00 | 0.00  | 0   | 0  |
| Rear Pad 1                 | 0   | 0.00 | 0.00  | 0   | 0  |
| Rear Pad 2                 | 0   | 0.00 | 0.00  | 0   | 0  |
| Summary of Slewing Actions | 30  | 0.00 | -1.93 | 58  | -0 |

| Applied Force (kN) | Max. Allowable (kN) | Applied Pressure (kPa) | Foot Pad Area (m <sup>2</sup> ) |
|--------------------|---------------------|------------------------|---------------------------------|
| 0.00               | 48                  | 0                      | 0.00                            |
| -24.00             | -130                | 0                      | 0.00                            |
| 0.00               | 1                   | 0                      | 0.00                            |
| 0                  | 0                   | 0                      | 0.00                            |
| 0                  | 0                   | 0                      | 0.00                            |
| 0                  | 0                   | 0                      | 0.00                            |
| 0                  | 0                   | 0                      | 0.00                            |
| 0                  | 0                   | 0                      | 0.00                            |
| 0                  | 0                   | 0                      | 0.00                            |
| Max. Pad Pressure  | 0                   |                        |                                 |

| NON-SLEWING ACTIONS            |     |      |       |    |   | Applied Force (kN)         | Max. Allowable (kN) | Applied Pressure (kPa) | Foot Pad Area (m <sup>2</sup> ) |
|--------------------------------|-----|------|-------|----|---|----------------------------|---------------------|------------------------|---------------------------------|
| Lower Works Non-Slewing        | 34  | 0.00 | -0.08 | 3  | 0 | 0                          | 0                   | 0                      | 0.00                            |
| Front Pad 1                    | 0   | 0.00 | 0.00  | 0  | 0 | 0                          | 0                   | 0                      | 0.00                            |
| Front Pad 2                    | 0   | 0.00 | 0.00  | 0  | 0 | 0                          | 0                   | 0                      | 0.00                            |
| Rear Pad 1                     | 0   | 0.00 | 0.00  | 0  | 0 | 0                          | 0                   | 0                      | 0.00                            |
| Rear Pad 2                     | 0   | 0.00 | 0.00  | 0  | 0 | 0                          | 0                   | 0                      | 0.00                            |
| Summary of Non-slewing Actions | 34  | 0.00 | -0.08 | 3  | 0 | Max. Pad Pressure          | 0                   |                        |                                 |
| Total Rig Weight (kN)          | 108 |      |       |    |   | Track Bearing Length (m)   | 2.60                |                        |                                 |
| Resultant of all Actions (kN)  | 64  | 0.00 | -0.94 | 61 | 0 | Track pad width (m)        | 0.45                |                        |                                 |
|                                |     |      |       |    |   | Track Centerline Dist. (m) | 1.87                |                        |                                 |

| Input Data Warning Messages   | Notes |
|-------------------------------|-------|
| Auxiliary Line Force OK       |       |
| Extraction Force OK           |       |
| Penetration Force OK          |       |
| Slewing Footpad Forces OK     |       |
| Non-Slewing Footpad Forces OK |       |

**Notes on Using this Table**

- Auxiliary Line Pull +ve Z direction. Enter applied force (kN) in appropriate yellow box (G11). Note the maximum design force in the adjacent box (H11).
- Extraction Line Pull +ve Z direction. Enter applied force (kN) in appropriate yellow box (G9). Note the maximum design force in the adjacent box (FH9).
- Penetration Force -ve Z direction. Enter applied force (kN) in appropriate yellow box (G10) - must be negative as it imposes an upwards resultant force. Note the maximum design force in the adjacent box (H10).
- Slewing Foot Pad Forces +ve Z direction. Enter applied total force (kN) in appropriate yellow boxes (G12 to G15). Note the maximum the machine can develop is given in the adjacent boxes.
- Non-Slewing Foot Pad Forces -ve Z direction. Enter applied total force (kN) in appropriate yellow boxes (G20 to G23). Note the maximum the machine can develop is given in the adjacent boxes.

Fill in values in all yellow boxes appropriate for this mode -  
 Net extraction or penetration force is the applied value minus the weight of any rope / kelly / chain suspended equipment.  
 By trial and error, adjust Foot Pad Forces to eliminate "error" messages and equalise bearing pressures on both tracks and foot pads (highlighted in red boxes).  
 When applying Auxiliary or Extraction Line Pull, ensure that Penetration Force is zero.

**ONLY A COMPETENT PERSON MAY USE THIS TABLE !**

**Note: The disclaimer on the first worksheet applies to all tables in this workbook**

| Mode : Penetrating  |  |  |  |  |                              |                  | Transformation from triangular or trapezoidal to an equivalent rectangular pressure distribution under track maintaining the load centroid |          |   |
|---|--|--|--|--|------------------------------|------------------|--|----------|---|
| Relative Angle - Upper Body and Tracks (degrees)                              | Max bearing pressure L.H. track (kN/m <sup>2</sup> ) | Min pressure L.H. track (kN/m <sup>2</sup> ) | Max bearing pressure R.H. track (kN/m <sup>2</sup> ) | Min bearing pressure R.H. track (kN/m <sup>2</sup> ) | Max Track loading dimensions |                  | Equivalent Bearing   |          |   |
|   |  |  |  |  | ecc (m)                      | Bearing Len. (m) | L (m)  | Q (kPa)  |   |
| 0   | 107  | 0  | 107  | 0  | 0.857                        | 1.330            | 0.887  | 81       |   |
| 15  | 75   | 0  | 126  | 0  | 0.826                        | 1.422            | 0.948  | 94       |   |
| 30  | 44   | 0  | 125  | 0  | 0.736                        | 1.691            | 1.128  | 94       |   |
| 45  | 22   | 0  | 113  | 0  | 0.593                        | 2.120            | 1.413  | 85       |   |
| 60  | 9  | 0  | 98   | 3  | 0.407                        | 2.600            | 1.786  | 73       |   |
| 75  | 3  | 1  | 76   | 30   | 0.190                        | 2.600            | 2.220  | 62       |   |
| 90  | 1  | 1  | 59   | 49   | -0.043                       | 2.600            | 2.515  | 56       |   |
| 105   | 3  | 1  | 87   | 19   | -0.276                       | 2.600            | 2.049  | 67       |   |
| 120   | 10   | 0  | 108  | 0  | -0.492                       | 2.423            | 1.615  | 81       |   |
| 135   | 25   | 0  | 129  | 0  | -0.679                       | 1.864            | 1.243  | 97       |   |
| 150   | 52   | 0  | 147  | 0  | -0.822                       | 1.435            | 0.957  | 111      |   |
| 165   | 92   | 0  | 153  | 0  | -0.912                       | 1.165            | 0.777  | 115      |   |
| 180   | 133  | 0  | 133  | 0  | -0.942                       | 1.074            | 0.716  | 100      |   |
| 195   | 153  | 0  | 92   | 0  | -0.912                       | 1.165            | 0.777  | 115      |   |
| 210   | 147  | 0  | 52   | 0  | -0.822                       | 1.435            | 0.957  | 111      |   |
| 225   | 129  | 0  | 25   | 0  | -0.679                       | 1.864            | 1.243  | 97       |   |
| 240   | 108  | 0  | 10   | 0  | -0.492                       | 2.423            | 1.615  | 81       |   |
| 255   | 87   | 19   | 3  | 1  | -0.276                       | 2.600            | 2.049  | 67       |   |
| 270   | 59   | 49   | 1  | 1  | -0.043                       | 2.600            | 2.515  | 56       |   |
| 285   | 76   | 30   | 3  | 1  | 0.190                        | 2.600            | 2.220  | 62       |   |
| 300   | 98   | 3  | 9  | 0  | 0.407                        | 2.600            | 1.786  | 73       |   |
| 315   | 113  | 0  | 22   | 0  | 0.593                        | 2.120            | 1.413  | 85       |   |
| 330   | 125  | 0  | 44   | 0  | 0.736                        | 1.691            | 1.128  | 94       |   |
| 345   | 126  | 0  | 75   | 0  | 0.826                        | 1.422            | 0.948  | 94       |   |
| Maximum Track Values  |  |  |  |  |                              |                  | 0.777  | 115      |   |
| Max. Slewing Foot Pads Bearing Pressure (kPa) & Equivalent Bearing Length     |  |  |  |  |                              |                  | 0.000  | 0.000    | 0 |
| Max. Non-Slewing Foot Pads Bearing Pressure (kPa) & Equivalent Bearing Length |  |  |  |  |                              |                  | 0.000  | 0.000    | 0 |
| <b>Maximum Equivalent Design Values</b>                                       |  |  |  |  |                              |                  | 0.777  | 115      |   |
| Eccentricity index - X direction (sideways)                                   |  |  |  |  |                              |                  | 0.96   |          |   |
| Eccentricity index - Y direction (forwards/backwards)                         |  |  |  |  |                              |                  | 0.72   |          |   |
| Track pressure distribution warning   |  |  |  |  |                              |                  | <b>Track(s) lifting</b>  |          |   |
| Slewing foot pad message  |  |  |  |  |                              |                  | <b>Slewing Foot Pad Pressure OK</b>  |          |   |
| Non-Slewing foot pad message  |  |  |  |  |                              |                  | <b>Non-Slewing Foot Pad Pressure OK</b>  |          |   |
| <b>BRE LOAD CASE ( 1 or 2 )</b>   |  |  |  |  |                              |                  |  | <b>2</b> |   |

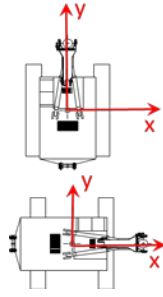


|               |                             |                |                |           |           |
|---------------|-----------------------------|----------------|----------------|-----------|-----------|
| <b>TESCAR</b> | Weight / Force Applied (kN) | X - Coordinate | Y - Coordinate | Moment Mx | Moment My |
| <b>CF3</b>    |                             |                |                |           |           |

|                           |     |      |       |     |   |
|---------------------------|-----|------|-------|-----|---|
| <b>SLEWING ACTIONS</b>    |     |      |       |     |   |
| Upper Works (slewing)     | 25  | 0.00 | 1.04  | -26 | 0 |
| Suspended Eqpt. on Crowd  | 20  | 0.00 | 1.99  | -39 | 0 |
| Counterweight (slewing)   | 7   | 0.00 | -1.50 | 10  | 0 |
| Other (slewing)           | 0   | 0.00 | 0.00  | 0   | 0 |
| Lower Works (Slewing)     | 23  | 0.00 | -1.12 | 25  | 0 |
| Net Extraction Force      | 28  | 0.00 | 1.99  | -56 | 0 |
| Net Penetration Force     | 0   | 0.00 | 1.99  | 0   | 0 |
| Applied Auxiliary Force   | 0   | 0.00 | 1.80  | 0   | 0 |
| Front Pad 1               | 0   | 0.00 | 0.00  | 0   | 0 |
| Front Pad 2               | 0   | 0.00 | 0.00  | 0   | 0 |
| Rear Pad 1                | 0   | 0.00 | 0.00  | 0   | 0 |
| Rear Pad 2                | 0   | 0.00 | 0.00  | 0   | 0 |
| Summary of Slewing Action | 102 | 0.00 | 0.84  | -85 | 0 |

|                    |                     |
|--------------------|---------------------|
| Applied Force (kN) | Max. Allowable (kN) |
| 47.80              | 48                  |
| 0.00               | -130                |
| 0.00               | 1                   |

|                        |                                 |
|------------------------|---------------------------------|
| Applied Pressure (kPa) | Foot Pad Area (m <sup>2</sup> ) |
| 0                      | 0.00                            |
| 0                      | 0.00                            |
| 0                      | 0.00                            |
| 0                      | 0.00                            |
| 0                      | 0.00                            |
| Max. Pad Pressure      | 0                               |



|                                |     |      |       |     |   |                            |                     |                        |                                 |  |
|--------------------------------|-----|------|-------|-----|---|----------------------------|---------------------|------------------------|---------------------------------|--|
| <b>NON-SLEWING ACTIONS</b>     |     |      |       |     |   | Applied Force (kN)         | Max. Allowable (kN) | Applied Pressure (kPa) | Foot Pad Area (m <sup>2</sup> ) |  |
| Lower Works Non-Slewing        | 34  | 0.00 | -0.08 | 3   | 0 | 0                          | 0                   | 0                      | 0.00                            |  |
| Front Pad 1                    | 0   | 0.00 | 0.00  | 0   | 0 | 0                          | 0                   | 0                      | 0.00                            |  |
| Front Pad 2                    | 0   | 0.00 | 0.00  | 0   | 0 | 0                          | 0                   | 0                      | 0.00                            |  |
| Rear Pad 1                     | 0   | 0.00 | 0.00  | 0   | 0 | 0                          | 0                   | 0                      | 0.00                            |  |
| Rear Pad 2                     | 0   | 0.00 | 0.00  | 0   | 0 | 0                          | 0                   | 0                      | 0.00                            |  |
| Summary of Non-slewing Actions | 34  | 0.00 | -0.08 | 3   | 0 | Max. Pad Pressure 0        |                     |                        |                                 |  |
| Total Rig Weight (kN)          | 108 |      |       |     |   | Track Bearing Length (m)   | 2.60                |                        |                                 |  |
| Resultant of all Actions (kN)  | 136 | 0.00 | 0.60  | -82 | 0 | Track pad width (m)        | 0.45                |                        |                                 |  |
|                                |     |      |       |     |   | Track Centerline Dist. (m) | 1.87                |                        |                                 |  |

|                                    |              |
|------------------------------------|--------------|
| <b>Input Data Warning Messages</b> | <b>Notes</b> |
| Auxiliary Line Force OK            |              |
| Extraction Force OK                |              |
| Penetration Force OK               |              |
| Slewing Footpad Forces OK          |              |
| Non-Slewing Footpad Forces OK      |              |

**Notes on Using this Table**

Auxiliary Line Pull +ve Z direction. Enter applied force (kN) in appropriate yellow box (G11). Note the maximum design force in the adjacent box (H11).  
 Extraction Line Pull +ve Z direction. Enter applied force (kN) in appropriate yellow box (G9). Note the maximum design force in the adjacent box (FH9).  
 Penetration Force -ve Z direction. Enter applied force (kN) in appropriate yellow box (G10) - must be negative as it imposes an upwards resultant force. Note the maximum design force in the adjacent box (H10).  
 Slewing Foot Pad Forces +ve Z direction. Enter applied total force (kN) in appropriate yellow boxes (G12 to G15). Note the maximum the machine can develop is given in the adjacent boxes.  
 Non-Slewing Foot Pad Forces -ve Z direction. Enter applied total force (kN) in appropriate yellow boxes (G20 to G23). Note the maximum the machine can develop is given in the adjacent boxes.

Fill in values in all yellow boxes appropriate for this mode -  
 Net extraction or penetration force is the applied value minus the weight of any rope / kelly / chain suspended equipment.  
 By trial and error, adjust Foot Pad Forces to eliminate "error" messages and equalise bearing pressures on both tracks and foot pads (highlighted in red boxes).  
 When applying Auxiliary or Extraction Line Pull, ensure that Penetration Force is zero.

**ONLY A COMPETENT PERSON MAY USE THIS TABLE !**

**Note: The disclaimer on the first worksheet applies to all tables in this workbook**

|   |  |  |  |  |                              |                  |  |         |   |
|---|--|--|--|--|------------------------------|------------------|--|---------|---|
| <b>Mode : Extracting</b>  |  |  |  |  |                              |                  | Transformation from triangular or trapezoidal to an equivalent rectangular pressure distribution under track maintaining the load centroid |         |   |
| Relative Angle - Upper Body and Tracks (degrees)                        | Max bearing pressure L.H. track (kN/m <sup>2</sup> ) | Min bearing pressure L.H. track (kN/m <sup>2</sup> ) | Max bearing pressure R.H. track (kN/m <sup>2</sup> ) | Min bearing pressure R.H. track (kN/m <sup>2</sup> ) | Max Track loading dimensions |                  | Equivalent Bearing   |         |   |
|   |  |  |  |  | ecc (m)                      | Bearing Len. (m) | L (m)  | Q (kPa) |   |
| 0   | 145  | 0  | 145  | 0  | 0.605                        | 2.086            | 1.390  | 109     |   |
| 15  | 116  | 0  | 165  | 0  | 0.584                        | 2.149            | 1.433  | 124     |   |
| 30  | 86   | 0  | 173  | 0  | 0.521                        | 2.337            | 1.558  | 130     |   |
| 45  | 61   | 1  | 169  | 2  | 0.422                        | 2.600            | 1.756  | 127     |   |
| 60  | 41   | 8  | 154  | 30   | 0.292                        | 2.600            | 2.015  | 118     |   |
| 75  | 27   | 14   | 127  | 64   | 0.142                        | 2.600            | 2.317  | 107     |   |
| 90  | 20   | 18   | 102  | 93   | -0.020                       | 2.600            | 2.560  | 99      |   |
| 105   | 29   | 12   | 136  | 56   | -0.182                       | 2.600            | 2.236  | 111     |   |
| 120   | 43   | 6  | 162  | 21   | -0.333                       | 2.600            | 1.935  | 123     |   |
| 135   | 63   | 0  | 177  | 0  | -0.462                       | 2.514            | 1.676  | 133     |   |
| 150   | 91   | 0  | 182  | 0  | -0.561                       | 2.216            | 1.477  | 137     |   |
| 165   | 123  | 0  | 175  | 0  | -0.624                       | 2.028            | 1.352  | 131     |   |
| 180   | 154  | 0  | 154  | 0  | -0.645                       | 1.964            | 1.310  | 115     |   |
| 195   | 175  | 0  | 123  | 0  | -0.624                       | 2.028            | 1.352  | 131     |   |
| 210   | 182  | 0  | 91   | 0  | -0.561                       | 2.216            | 1.477  | 137     |   |
| 225   | 177  | 0  | 63   | 0  | -0.462                       | 2.514            | 1.676  | 133     |   |
| 240   | 162  | 21   | 43   | 6  | -0.333                       | 2.600            | 1.935  | 123     |   |
| 255   | 136  | 56   | 29   | 12   | -0.182                       | 2.600            | 2.236  | 111     |   |
| 270   | 102  | 93   | 20   | 18   | -0.020                       | 2.600            | 2.560  | 99      |   |
| 285   | 127  | 64   | 27   | 14   | 0.142                        | 2.600            | 2.317  | 107     |   |
| 300   | 154  | 30   | 41   | 8  | 0.292                        | 2.600            | 2.015  | 118     |   |
| 315   | 169  | 2  | 61   | 1  | 0.422                        | 2.600            | 1.756  | 127     |   |
| 330   | 173  | 0  | 86   | 0  | 0.521                        | 2.337            | 1.558  | 130     |   |
| 345   | 165  | 0  | 116  | 0  | 0.584                        | 2.149            | 1.433  | 124     |   |
| Maximum Track Values  |  |  |  |  |                              |                  | 1.477  | 137     |   |
|   |  |  |  |  |                              |                  | Pad Area (m <sup>2</sup> )   |         |   |
| Max. Slewing Foot Pads Bearing Pressure (kPa) & Equivalent Bearing Leng |  |  |  |  |                              |                  | 0.000  | 0.000   | 0 |
| Max. Non-Slewing Foot Pads Bearing Pressure (kPa) & Equivalent Bearing  |  |  |  |  |                              |                  | 0.000  | 0.000   | 0 |
| <b>Maximum Equivalent Design Values</b>                                 |  |  |  |  |                              |                  | 1.477  | 137     |   |
| Eccentricity index - X direction (sideways)                             |  |  |  |  |                              |                  | <b>0.67</b>  |         |   |
| Eccentricity index - Y direction (forwards/backwards)                   |  |  |  |  |                              |                  | <b>0.50</b>  |         |   |
| Track pressure distribution warning                                     |  |  |  |  |                              |                  | <b>Track(s) lifting</b>  |         |   |
| Slewing foot pad message  |  |  |  |  |                              |                  | <b>Slewing Foot Pad Pressure OK</b>  |         |   |
| Non-Slewing foot pad message  |  |  |  |  |                              |                  | <b>Non-Slewing Foot Pad Pressure OK</b>  |         |   |
| <b>BRE LOAD CASE ( 1 or 2 )</b>   |  |  |  |  |                              |                  | <b>2</b>   |         |   |







**Schedule of Piling Rig Component Weights, Dimensions, Forces and Pressures**

Note: The disclaimer on the first worksheet applies to all tables in this workbook

|                    |  |                       |                   |
|--------------------|--|-----------------------|-------------------|
| Rig Manufacturer : | <b>TESCAR</b>                          | Rig Type & Serial No. | <b>CF3 #3166</b>  |
| Operation mode:    | <b>Hitachi 70 LC-3 / Supporto ALTO</b> | Date:                 | <b>23/07/2018</b> |
| Completed by:      | <b>LG</b>                              | Checked by:           | <b>LF</b>         |

**Main Components - Slewing:**

| Item  | Mass (kg)    | Weight (kN) | X - Coordinate | Y - Coordinate | Moment Mx (kNm) | Moment My (kNm) |
|---|--------------|-------------|----------------|----------------|-----------------|-----------------|
| <b>Slewing Components Totals/Resultant (with θ=0)</b> |              |             |                |                |                 |                 |
| UPPER WORKS   | 2,500        | 25          | 0.00           | 1.04           | -26             | 0               |
| LOWER WORKS   | 2,300        | 23          | 0.00           | -1.12          | 25              | 0               |
| SUSPENDED EQUIPMENT CONNECTED TO CROWD SYSTEM         | 2,000        | 20          | 0.00           | 1.99           | -39             | 0               |
| COUNTERWEIGHT   | 700          | 7           | 0.00           | -1.50          | 10              | 0               |
| OTHER   | 0            | 0           | 0.00           | 0.00           | 0               | 0               |
| <b>TOTAL/RESULTANT (with θ=0)</b>                     | <b>7,500</b> | <b>74</b>   | <b>0.00</b>    | <b>0.39</b>    | <b>-29</b>      | <b>0</b>        |

**Foot Pads - Slewing :**

| Description (Forces must be -ve) | Bearing Area   | Max. Pad Loading | X - Coordinate | Y - Coordinate | Actual Shape | Actual Dimension |
|----------------------------------|----------------|------------------|----------------|----------------|--------------|------------------|
|                                  | m <sup>2</sup> | kN               | m              | m              |              |                  |
| Front Pad 1                      | 0.00           | 0                | 0.00           | 0.00           | None         | None             |
| Front Pad 2                      | 0.00           | 0.00             | 0.00           | 0.00           | None         | None             |
| Rear Pad 1                       | 0.00           | 0.00             | 0.00           | 0.00           | None         | None             |
| Rear Pad 2                       | 0.00           | 0.00             | 0.00           | 0.00           | None         | None             |

**Forces - Slewing**

|                                | Force | X - Coordinate | Y - Coordinate |  |
|--------------------------------|-------|----------------|----------------|--|
|                                | kN    | m              | m              |  |
| Maximum Extraction Force (kN)  | 48    | 0.00           | 1.99           | Must be inline with suspended equip't.     |
| Maximum Penetration Force (kN) | -130  | 0.00           | 1.99           | -ve Must be inline with suspended equip't. |
| Maximum Auxiliary Force (kN)   | 1     | 0.00           | 1.80           |  |

**Main Components - Non-Slewing:**

| Item  | Mass (kg)              | Weight (kN) | X - Coordinate | Y - Coordinate | Moment Mx (kNm) | Moment My (kNm) |
|---|------------------------|-------------|----------------|----------------|-----------------|-----------------|
| <b>Lower Works Non-Slewing (undercarriage/tracks etc)</b> | Tracks & Undercarriage | 3500        | 0.00           | -0.08          | 3               |                 |
|   |                        |             | 0.00           | 0.00           |                 |                 |
|   |                        |             | 0.00           | 0.00           |                 |                 |
| <b>TOTAL/RESULTANT (with θ=0)</b>                         | <b>3,500</b>           | <b>34</b>   | <b>0.00</b>    | <b>-0.08</b>   | <b>3</b>        | <b>0</b>        |
| <b>TOTAL RIG MASS</b>                                     | <b>11,000</b>          |             |                |                |                 |                 |

**Front Foot Pads - Non-Slewing**

| Description | Bearing Area   | Max. Pad Loading | X - Coordinate | Y - Coordinate | Actual Shape | Actual Dimension |
|-------------|----------------|------------------|----------------|----------------|--------------|------------------|
|             | m <sup>2</sup> | kN               | m              | m              |              |                  |
| Front Pad 1 |                |                  |                |                |              |                  |
| Front Pad 2 |                |                  |                |                |              |                  |
| Rear Pad 1  |                |                  |                |                |              |                  |
| Rear Pad 2  |                |                  |                |                |              |                  |

| Tracks                                     |      | Slewing           |     |
|--|------|-------------------|-----|
| Track bearing length (m)                   | 2.60 | Can the Rig Slew? | YES |
| Track pad width (m)                        | 0.45 |                   |     |
| Distance between centrelines of tracks (m) | 1.87 |                   |     |

| MODE        | Pressure Summary for Platform Design (unfactored) |                        |  | BRE LOAD CASE (1 or 2) | Eccentricity Index                          |   | Winch Forces |
|-------------|---|------------------------|--|------------------------|---|---|--------------|
|             | Equiv. Track Length (m)                           | Equiv. Track Width (m) | Equiv. Uniform Bearing Pressure, q <sub>eq</sub> (kPa) |                        | Eccentricity index - X direction (sideways) | Eccentricity index - Y direction (forwards/backwards) |              |
| Standing    | 2.17  | 0.45                   | 66   | 1                      | 0.29  | 0.23  | 0            |
| Travelling  | 2.17  | 0.45                   | 66   | 1                      | 0.29  | 0.23  | 0            |
| Handling    | 2.15  | 0.45                   | 68   | 1                      | 0.30  | 0.24  | 1            |
| Penetrating | 0.78  | 0.45                   | 115  | 2                      | 0.96  | 0.72  | -24          |
| Extracting  | 1.48  | 0.45                   | 137  | 2                      | 0.67  | 0.50  | 48           |
| Other       | Not Used  | -                      | -  | 0                      | -   | -   | 0            |

| MODE        | ERROR FOR TRACK  | Auxiliary Line          | Extraction Force    | Penetration Force    |
|-------------|------------------|-------------------------|---------------------|----------------------|
| Standing    | Zero Pressure    | Auxiliary Line Force OK | Extraction Force OK | Penetration Force OK |
| Travelling  | None             | Auxiliary Line Force OK | Extraction Force OK | Penetration Force OK |
| Handling    | None             | Auxiliary Line Force OK | Extraction Force OK | Penetration Force OK |
| Penetrating | Track(s) lifting | Auxiliary Line Force OK | Extraction Force OK | Penetration Force OK |
| Extracting  | Track(s) lifting | Auxiliary Line Force OK | Extraction Force OK | Penetration Force OK |
| Other       | None             | Auxiliary Line Force OK | Extraction Force OK | Penetration Force OK |

| MODE        | ERROR MESSAGES FOR FOOT PAD FORCES |                               | ERROR MESSAGES FOR FOOT PAD PRESSURES |                                  |
|-------------|------------------------------------|-------------------------------|---------------------------------------|----------------------------------|
|             | INPUT DATA                         |                               | OUTPUT DATA                           |                                  |
| Standing    | Slewing Footpad Forces OK          | Non-Slewing Footpad Forces OK | Slewing Foot Pad Pressure OK          | Non-Slewing Foot Pad Pressure OK |
| Travelling  | Slewing Footpad Forces OK          | Non-Slewing Footpad Forces OK | Slewing Foot Pad Pressure OK          | Non-Slewing Foot Pad Pressure OK |
| Handling    | Slewing Footpad Forces OK          | Non-Slewing Footpad Forces OK | Slewing Foot Pad Pressure OK          | Non-Slewing Foot Pad Pressure OK |
| Penetrating | Slewing Footpad Forces OK          | Non-Slewing Footpad Forces OK | Slewing Foot Pad Pressure OK          | Non-Slewing Foot Pad Pressure OK |
| Extracting  | Slewing Footpad Forces OK          | Non-Slewing Footpad Forces OK | Slewing Foot Pad Pressure OK          | Non-Slewing Foot Pad Pressure OK |
| Other       | Slewing Footpad Forces OK          | Non-Slewing Footpad Forces OK | Slewing Foot Pad Pressure OK          | Non-Slewing Foot Pad Pressure OK |

Note: The disclaimer on the first worksheet applies to all tables in this workbook



**Notes**  
MAX WORKING RADIUS 2,15m.