



## 18 MOTORS

| <b>code</b>     | <b>Location</b><br>(see also drawings in the following) | <b>vacuum<br/>cable ID</b> | <b>vacuum<br/>cable type</b> | <b>notes</b>    |
|-----------------|---|----------------------------|------------------------------|-----------------|
| <b>MV.F0.U</b>  | top-screw on F#0  | <b>J1</b>                  | STP, AWG26                   | MV.1 (old code) |
| <b>MV.F0</b>    | fishing-rod on F#0                                      | <b>A1</b>                  | STP, AWG26                   | MV.2            |
| <b>MV.F7</b>    | fishing-rod on F#7                                      | <b>F1</b>                  | STP, AWG26                   | MV.3            |
| <b>MH.F0.1</b>  | trolley on inner structure                              | <b>H1</b>                  | STP, AWG20                   | MH.1            |
| <b>MH.F0.2</b>  | trolley on inner structure                              | <b>I1</b>                  | STP, AWG20                   | MH.2            |
| <b>MH.F0.3</b>  | trolley on inner structure                              | <b>H2</b>                  | STP, AWG20                   | MH.3            |
| <b>MH.F7.1</b>  | balancing mass on F#7                                   | <b>R1</b>                  | PP, AWG24                    | MH.4            |
| <b>MH.F7.2</b>  | balancing mass on F#7                                   | <b>R2</b>                  | PP, AWG24                    | MH.5            |
| <b>MH.MA.TZ</b> | balanc. mass on marion. (for $\vartheta_z$ motion)      | <b>T1</b>                  | PP, AWG24                    | MH.6            |
| <b>MH.MA.TX</b> | balanc. mass on marion. (for $\vartheta_x$ motion)      | <b>T2</b>                  | PP, AWG24                    | MH.7            |
| <b>MH.MA.Z</b>  | Marionetta bottom–gear box. (for Z motion)              | <b>U1</b>                  | STP, AWG26                   | new             |
| <b>MA.F7.U</b>  | F#7 top (for rotation)                                  | <b>Q2</b>                  | PP, AWG24                    | MA.1            |
| <b>MA.F7.D</b>  | F#7 bottom (for rotation)                               | <b>Q1</b>                  | PP, AWG24                    | MA.2            |
| <b>M.F0.AH1</b> | Hor. Accelerometer on top-stage                         | <b>O2</b>                  | STP, AWG26                   |                 |
| <b>M.F0.AH2</b> | Hor. Accelerometer on top-stage                         | <b>M2</b>                  | STP, AWG26                   |                 |
| <b>M.F0.AH3</b> | Hor. Accelerometer on top-stage                         | <b>N2</b>                  | STP, AWG26                   |                 |
| <b>M.F0.AV1</b> | Vert. Accelerometer on F#0                              | <b>K1</b>                  | STP, AWG26                   |                 |
| <b>M.F0.AV2</b> | Vert. Accelerometer on F#0                              | <b>L1</b>                  | STP, AWG26                   |                 |

total number of conductors/tower needed for motors:  $18 \times 7 = 126$  plus  $18 \times 2 = 36$  shields (only for phases).

## 19 COILS

| <b>code</b>  | <b>Location</b><br>(see also drawings in the following) | <b>vacuum<br/>cable ID</b>                       | <b>vacuum<br/>cable type</b>    | <b>notes</b>   |
|--|---|--|---------------------------------|--|
| CH.F0.1<br>CH.F0.2<br>CH.F0.3  | Safety frame ring                                       | G4<br>G6<br>G5                                   | STP, AWG20                      | CH.1<br>CH.2<br>CH.3   |
| CV.F0.1<br>CV.F0.2   | crossbar on F#0<br>crossbar on F#0 (fish.rod side)      | J2<br>J3   | STP, AWG26                      | CV.1<br>CV.2   |
| CH.F7.1<br>CH.F7.2<br>CH.F7.3<br>CH.F7.4<br><br>CV.F7.1<br>CV.F7.2<br>CV.F7.3<br>CV.F7.4 | F#7 legs  | S1<br>S3<br>S5<br>S7<br><br>S2<br>S4<br>S6<br>S8 | STP, AWG20                      | CH.4<br>CH.5<br>CH.6<br>CH.7<br><br>CV.4<br>CV.5<br>CV.6<br>CV.7 |
| C.RM.L<br>C.RM.R<br>C.RM.D<br>C.RM.U<br>C.RM.LL<br>C.RM.LR                               | reference mass  | X2<br>X1<br>X5<br>X6<br>X3<br>X4                 | STP, AWG24,<br>PYRE-ML<br>0.5mm | new  |

total number of conductors for coils:  $19 \times 2 = 38$ , plus 19 shields.

## 2 (couple of) THERMAL PROBES

| <b>code</b>      | <b>location</b>        | <b>vacuum<br/>cable ID</b> | <b>vacuum<br/>cable type</b> | <b>notes</b> |
|------------------|------------------------|----------------------------|------------------------------|--------------|
| T.F0.1<br>T.F0.2 | antispring back on F#0 | A2                         | STP, AWG24                   | TP.1         |
| T.F7.1<br>T.F7.2 | antispring back on F#7 | U2                         | STP, AWG24                   | TP.2         |

total number of conductors for thermal probes:  $2 \times 4 = 8$ , plus  $2 \times 2 = 4$  shields.

## 5 ACCELEROMETERS

| <b>code</b>    | <b>Location</b><br>(see also drawings in the following) | <b>vacuum<br/>cable ID</b> | <b>vacuum<br/>cable type</b> | <b>notes</b> |
|----------------|---|----------------------------|------------------------------|--------------|
| <b>AH.F0.1</b> | top-ring  | <b>O2</b>                  | STP, AWG26                   | AH.1         |
| <b>AH.F0.2</b> | top-ring  | <b>M2</b>                  | STP, AWG26                   | AH.2         |
| <b>AH.F0.3</b> | top-ring  | <b>N2</b>                  | STP, AWG26                   | AH.3         |
| <b>AV.F0.1</b> | crossbar F#0  | <b>K1</b>                  | STP, AWG26                   | AV.1         |
| <b>AV.F0.2</b> | crossbar F#0 (fish.rod side)                            | <b>L1</b>                  | STP, AWG26                   | AV.2         |

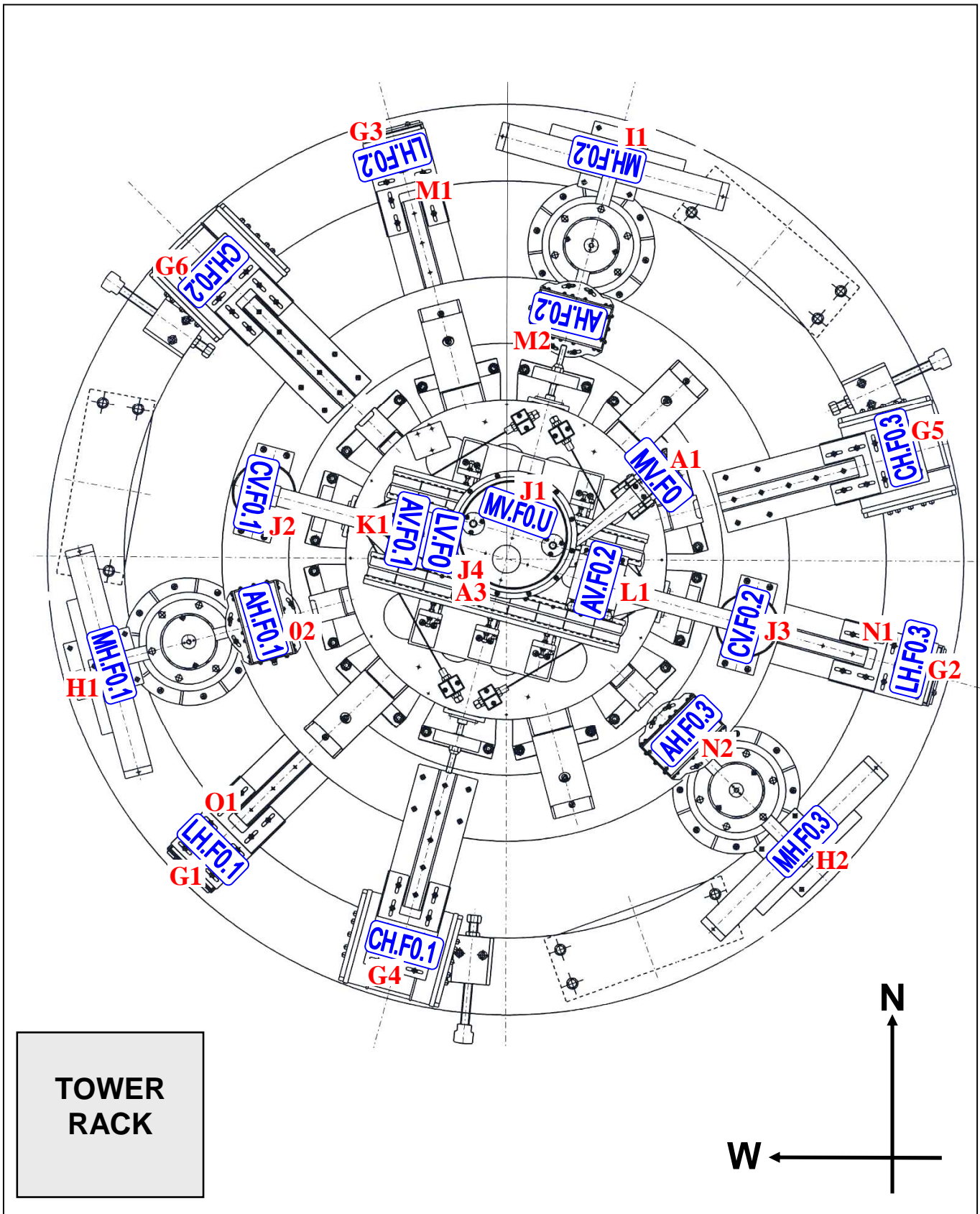
total number of conductors for accelerometers:  $5 \times 13 = 65$ , plus  $5 \times 5 = 25$  shields (motors included).

## 5 LVDTs

| <b>code</b>    | <b>Location</b><br>(see also drawings in the following) | <b>vacuum<br/>cable ID</b> | <b>vacuum<br/>cable type</b> | <b>notes</b> |
|----------------|---|----------------------------|------------------------------|--------------|
| <b>LH.F0.1</b> | Primary on top-ring                                     | <b>O1</b>                  | STP, AWG26                   | LH.1         |
|                | Secondary on inner structure                            | <b>G1</b>                  | STP, AWG20                   |              |
| <b>LH.F0.2</b> | Primary on top-ring                                     | <b>M1</b>                  | STP, AWG24                   | LH.2         |
|                | Secondary on inner structure                            | <b>G3</b>                  | STP, AWG24                   |              |
| <b>LH.F0.3</b> | Primary on top-ring                                     | <b>N1</b>                  | STP, AWG24                   | LH.3         |
|                | Secondary on inner structure                            | <b>G2</b>                  | STP, AWG24                   |              |
| <b>LV.F0</b>   | primary on F#0 crossbar                                 | <b>J4</b>                  | STP, AWG26                   | LV.1         |
|                | secondary on F#0 body                                   | <b>A3</b>                  | STP, AWG26                   |              |
| <b>LV.F7</b>   | F#7   | <b>F2</b>                  | STP, AWG26                   | LV.2         |

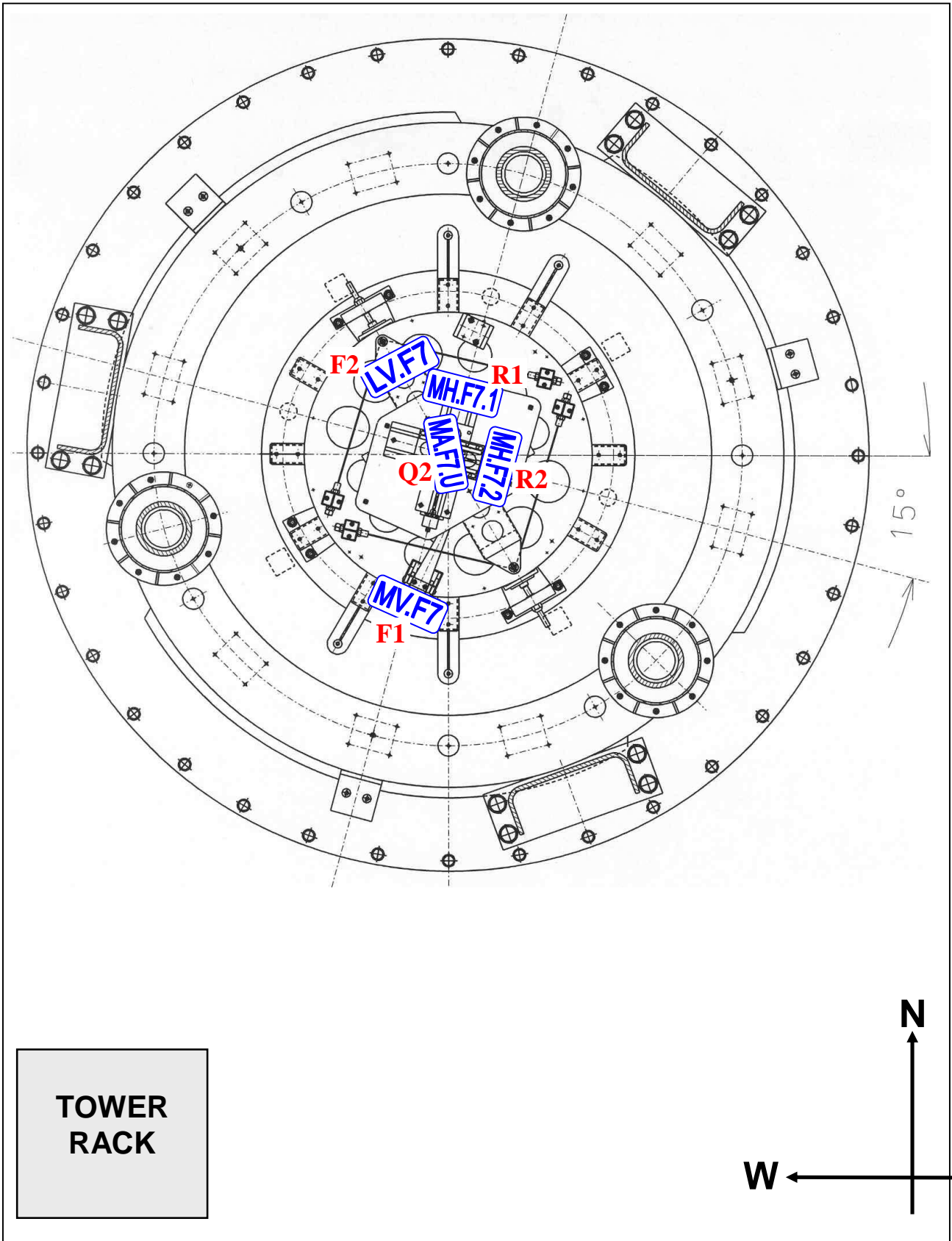
total number of conductors for LVDTs:  $5 \times 4 = 20$ , plus  $5 \times 2 = 10$  shields.

**TOP-STAGE devices**



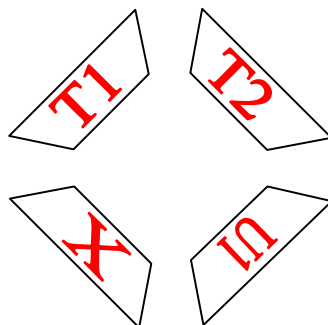
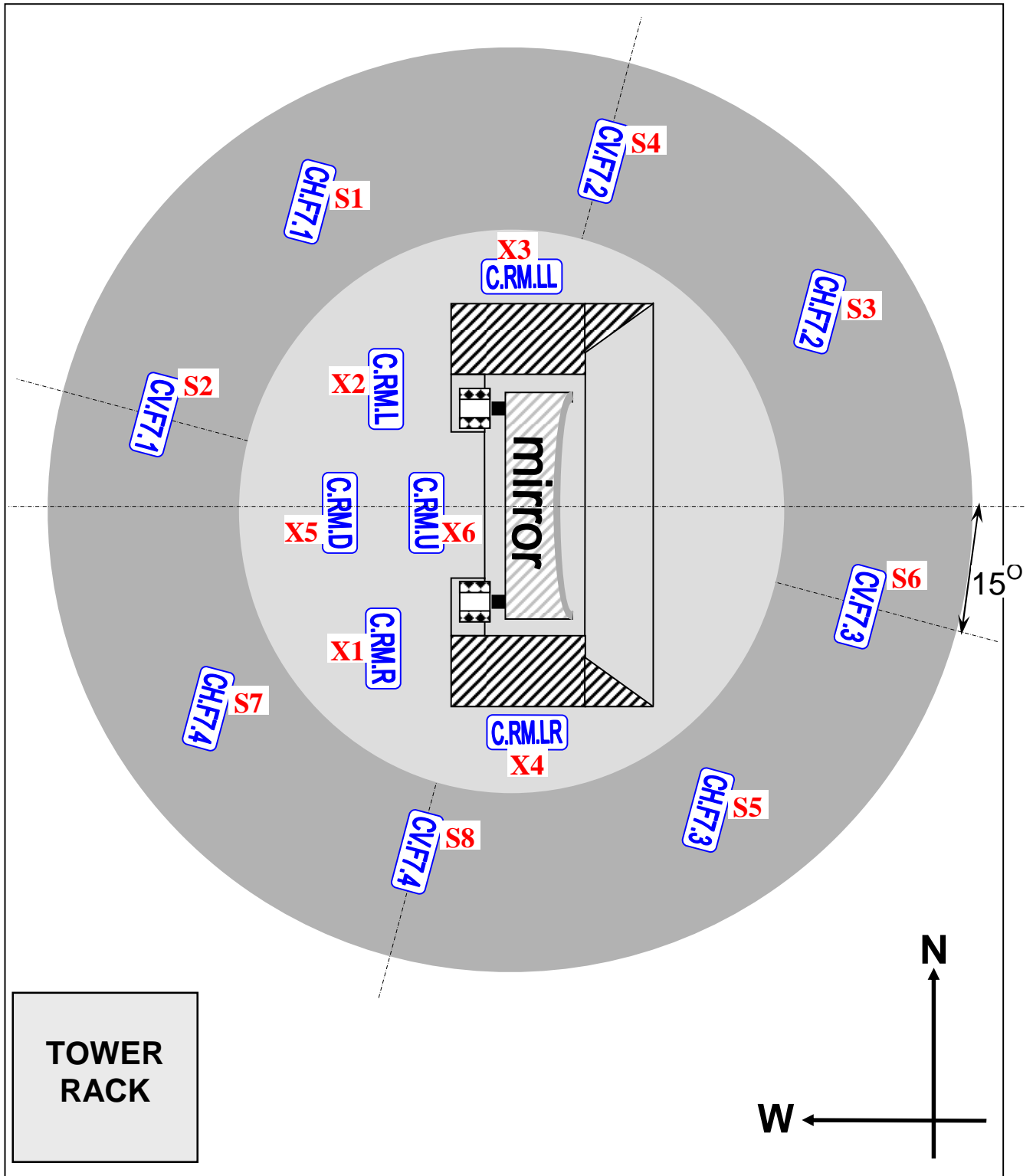
**FILTER #7 devices**

top view



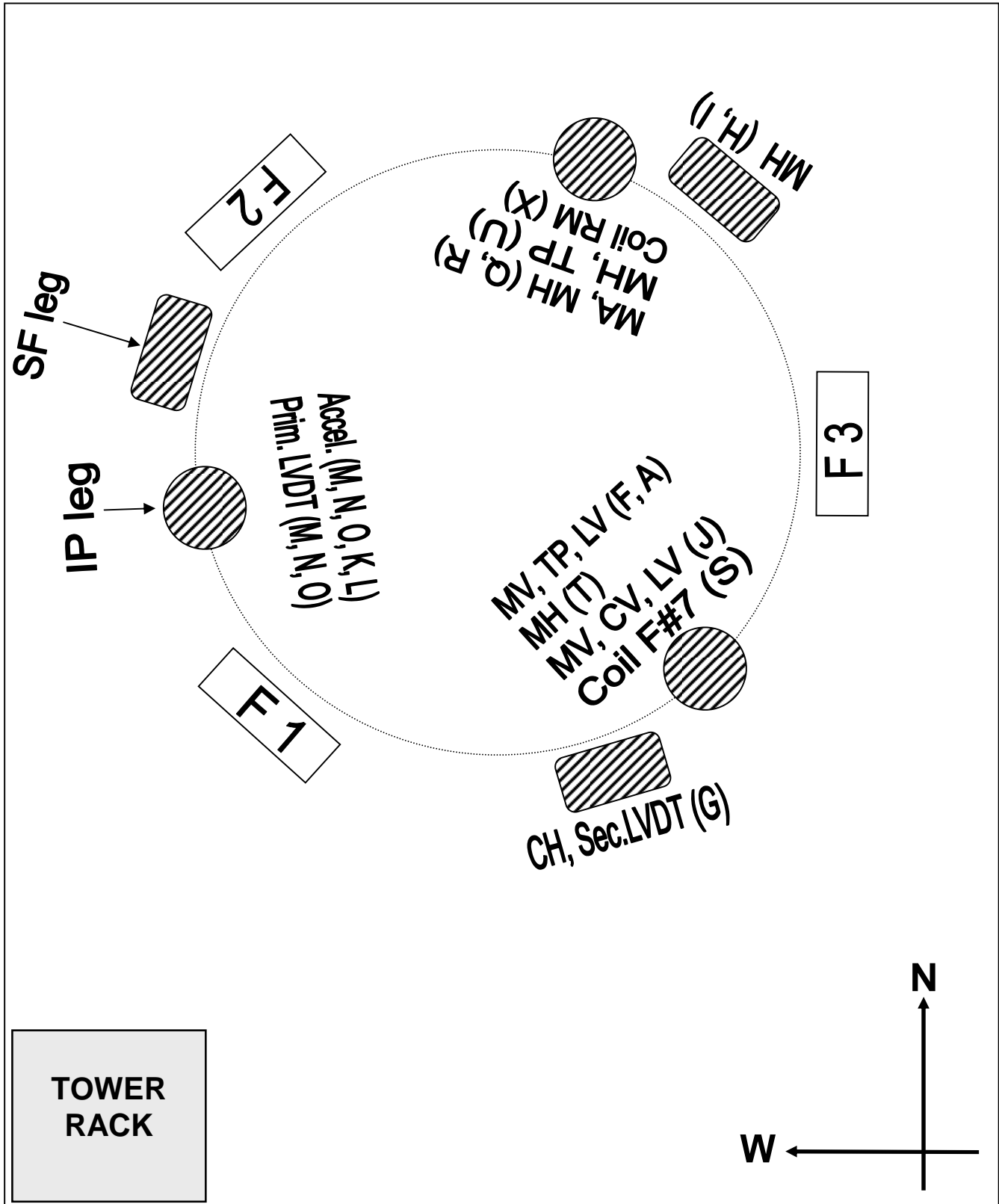
location of F#7 and RefMass coils

top view

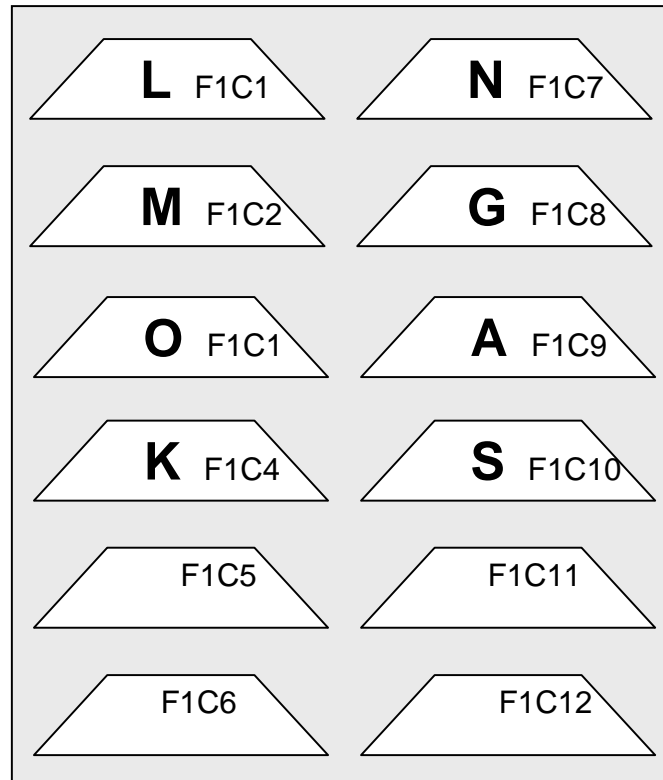


Layout of DB25 connectors on marionetta top

Cable arrangement along IP legs





Connector location on flangesFlange **F1** (air side view)Flange **F2** (air side view)