

Color Key:  
 Red: RapidCal™ Equipment  
 Black: Tank and foundation  
 Blue: Customer Provided  
 Cyan: Weigh Module

See Table For Sub-Plate Drawing Number

Model	Drawing No.
0970 / 0970 Redundant RingMount	30650134-1
SWB305 / SWB505 / SWB605 / SWB805 MultiMount	30650134-2
SWC415 / SWC515 / SWC615 PinMount	30650134-3

Forces on the Sub-plate:

- a. N = number of RapidCal™ Modules used in the calibration process.
- b. Total Dead Load (TDL) is the dead load of the empty scale during calibration, including mixers, cooling jackets, etc. in kg or lb.

Metric Units:

- c. Max Calibration Force (CFm) is the max tensile force applied by each RapidCal™ Module to a sub-plate and tank lug during calibration.

$$CFm \text{ (Newtons)} = 9.81 \times \text{Scale Capacity (in kg)} / N.$$

- d. The Dead Force per leg (DF) in Newtons =  $9.81 \times TDL \text{ (in kg)} / N.$

- e. The forces (in Newtons) on the sub-plate due to the tank and RapidCal™ Module are shown in Detail 1. These can be stated as a single force and torque (N.m) as shown in Detail 1a, where E2 (in m) is the distance between the leg and RapidCal Module center lines.

Imperial Units:

- f. Max Calibration Force (CFm) is the max tensile force applied by each RapidCal™ Module to a sub-plate and tank lug during calibration.

$$CFm \text{ (in lb)} = \text{Scale Capacity (in lb)} / N.$$

- g. The Dead Force per leg (DF) in lb =  $TDL \text{ (in lb)} / N.$

- h. The forces (in lb) on each sub-plate due to the tank and a RapidCal™ Module are shown in Detail 1. These can also be stated as a single force and torque (ft-lb) as shown in Detail 1a, where E2 (in ft) is the horizontal distance between the leg and RapidCal™ Module center lines.

Assumptions:

The scale will be calibrated at Scale Capacity. (The maximum load the scale is designed to weigh.)

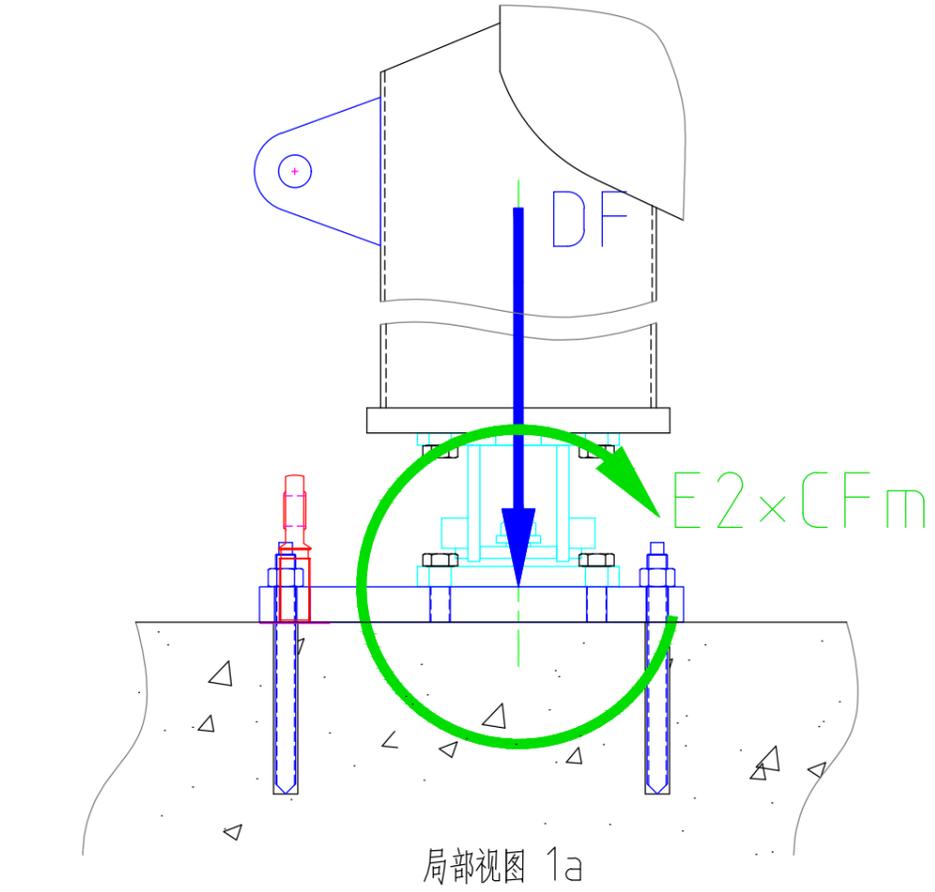
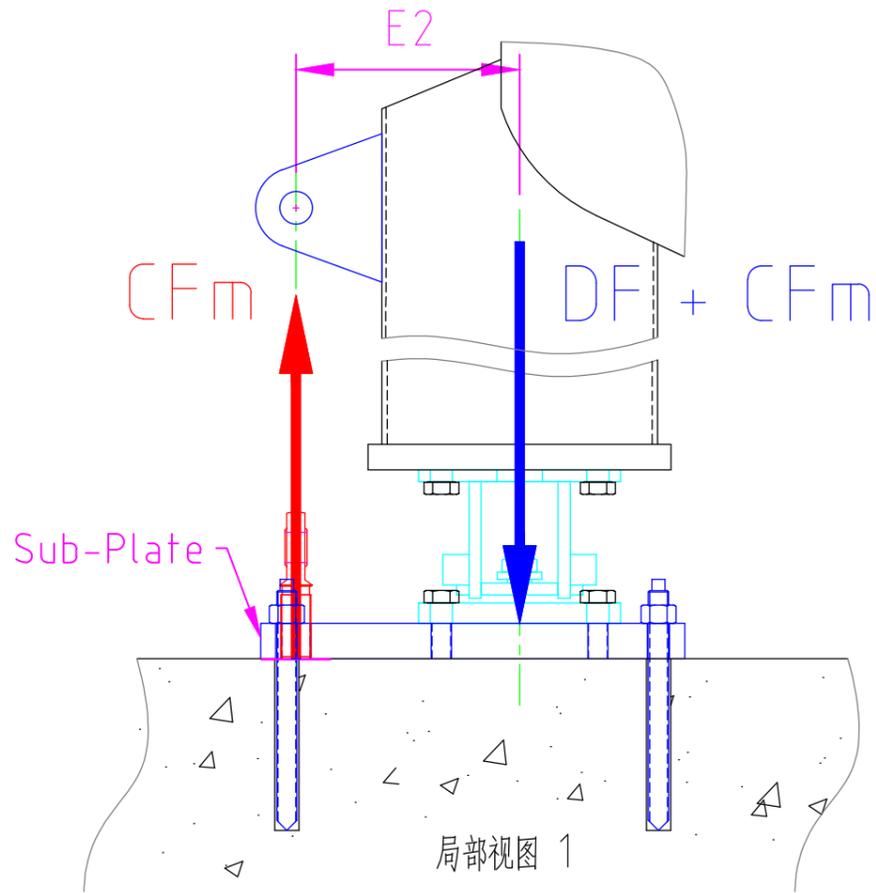
TDL is evenly distributed on all legs, if not, calculate and use DF for the lightest leg.

**Warning: Other considerations may apply to anchor selection, e.g., with tanks subject to wind forces.**

Notes:

1. All information pertaining to METTLER TOLEDO's RapidCal™ shall be treated confidentially.
2. Concrete foundation must be designed to withstand the upward Max. Calibration Force (CFm) on the sub-plate with a suitable factor of safety.
3. Use Hilti HVU2 with suitable rod adhesive anchor system or equivalent. The concrete, anchor spacing and installation details must comply with the anchor manufacturer's requirements for the applied force CFm applied to the sub-plate. Consider the effect of multiple such sub-plates on the same foundation.
4. Tank lug drawing refer to 30489502-1

<b>METTLER TOLEDO</b>	MTCZ	Drawn	wang-722	12/17/2020	Scale	
	CN-213125 ChangZhou	Change			Format mt_A3	
Refer to protection notice ISO 16016 / Schutzvermerk ISO 16016 beachten		Note				Replaces
Description	RapidCal 力-力矩	ERP NO.	30489502-5			ERP Rev
<b>RapidCal™ Force-Moment Diagram, 8t</b>					<b>E</b>	
External Design No.: 30489502-5	External Design Rev.: E	Status: Approved	Mass:	Units:	1/1	



颜色说明:  
 红色: RapidCal™ 设备  
 黑色: 料罐和基础  
 蓝色: 用户提供  
 青色: 称重模块

详细锚固板图纸代号见下表

模块	Drawing No.
0970 / 0970 Redundant RingMount	30650134-1
SWB305 / SWB505 / SWB605 / SWB805 MultiMount	30650134-2
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锚固板受力情况:

- a. N = 标定过程中使用标定模块的数量.
  - b. 总静载荷(TDL)是在标定过程中空料罐的重量, 包括搅拌器, 冷却管等, 单位为磅或千克.  
公制单位:
  - c. 最大标定载荷是指在标定过程中, 通过每个标定模块加载到锚固板和料罐支腿上的最大拉力.  
 $CFm$  (牛顿) =  $9.81 \times \text{料罐容量 (千克)} / N$ .
  - d. 每个罐腿承受的静载荷(DF)(牛顿) =  $9.81 \times TDL$  (千克) / N.
  - e. 局部视图1显示了每块锚固板与料罐和标定模块之间的力(牛顿). 这些力也可以用单点力和力矩(牛顿.米)来表示, 如局部视图1a所示, 其中d(米)为罐腿与标定模块中心线的水平距离.  
英制单位:
  - f. 最大标定载荷是指在标定过程中, 通过每个标定模块加载到锚固板和料罐支腿上的最大拉力.  
 $CFm$  (磅) = 料罐容量 (磅) / N.
  - g. 每个罐腿承受的静载荷(DF)(磅) =  $TDL$  (磅) / N.
  - h. 局部视图1显示了每块锚固板与料罐和标定模块之间的力(磅). 这些力也可以用单点力和力矩(英尺-磅)来表示, 如局部视图1a所示, 其中d(英尺)为罐腿与标定模块中心线的水平距离.
- 假设:  
 料罐在额定容量范围内被标定(最大载荷等于最大设计重量).  
 TDL均匀分布在每个罐腿上, 如果不是, 计算并使用受力最小的支腿的DF.
- 注意: 选择锚栓时也应同时考虑其他因素, 例如风载对料罐的影响.
- 注释:  
 1. 所有与梅特勒-托利多 RapidCal™ 的相关信息均应保密.  
 2. 混凝土基础必须能够承受最大向上标定载荷 (CFm), 并且要有适当的安全系数, 同时需考虑到同一个基础会受到多个载荷的作用.  
 3. 使用喜利得 HVU2型高性能药剂包和合适的螺杆或类似产品. 由于施加载荷作用在锚固板上, 混凝土强度, 锚栓间距和安装细节必须遵从锚固板制造商要求. 同时要考虑多个锚固板在同一基础上的安装间距.  
 4. 料罐支耳图纸参考 30489502-1

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