



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 =  $9.81 \times \text{TDL (in kg)} / N$ .

- 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 =  $\text{TDL (in lb)} / N$ .

- 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.		ERP Rev		
RapidCal™ Force-Moment Diagram, 8t		30489502-5		E			
External Design No.:30489502-5		External Design Rev.:E		Status:Approved	Mass:	Units:	1/1

