ROMET® Limited

ACCEPTANCE PROCEDURE

FOR

ROMET ROTARY METER BODIES

AND/OR

MECHANICAL NON-CONVERTING

AND

CONVERTING MODULES

(RPB-01)

Approved by: _____ **Date**: _____

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1.0 SCOPE

This is a final inspection procedure for the Romet RM rotary meter bodies and/or the mechanical modules, registering in either imperial or metric units of measurement. The rotary meter body is adaptable to accept the following counter or instrument drive modules, with or without pulsers.

a) non-converted index with/without pulser(s)	-	STD CTR
b) non-converted instrument drive without counter	-	STD ID
c) non-converted instrument drive with counter	-	DCID
d) temperature converted index with/without pulser(s)	-	TC
e) temperature converting index with instrument drive	-	TCID

2.0 DEFINITIONS

Certified – a measurement standard having a valid calibration certificate issued by Measurement Canada's Calibration Service Laboratory or by a calibration facility recognized by Measurement Canada.

True – Registered or derived value from a certified standard with a valid Measurement Canada calibration certificate.

Theoretical Converted Volume – the theoretical equivalent metered volume at base temperature conditions.

$V_s = V_r \times T_m$ ---------- Eq. –1

Where: V_s is the converted or standard volume
V_r is the unconverted volume registered by the module
T_m is the temperature multiplier (T_m) from a certified standard

Registered Converted Volume – the registered converted volume of a temperature conversion module (TC or TCID)

Integral Sealing – a module and rotary meter body are treated as one integral device that is sealed together.

Non-Integral Sealing – a method of sealing used where a module is attached to or associated with a rotary meter body, and each component is sealed separately and can receive a separate Acceptance Certificate.

Theoretical Count (T_C) – a calculated value for the theoretical movement of the TC drum, derived from the gear ratio and the temperature value of a certified standard.
Refer to Appendix 4.

Temperature multiplier (T_m) – A temperature multiplier derived from a certified temperature standard, using the following formulas:

Imperial		Metric	
$T_m = \frac{519.67\ °R}{(T_{ga} + 459.67\ °R)}$	or	$T_m = \frac{288.15\ °K}{(T_{ga} + 273.15\ °K)}$	---------- Eq. –2

Where: T_m is the reference temperature multiplier
T_{ga} is the reference gas temperature

Note: The value of T_{ga} for a certified temperature standard is to be corrected to true, based on the Measurement Canada certificate. The certificate must be valid.

Unconverted Volume – volume at line or metered conditions (actual)

3.0 REFERENCES

a) Electricity and Gas Inspection Act and Electricity and Gas Inspection Regulations.

b) Measurement Canada Notice of Approval AG-0316, AG-0495 and AG-0549.

c) Measurement Canada specification LMB-EG-08.

d) Maintenance Manual, Romet 50ft³ Bell Prover and Romet DTS (RPB-02).

e) Romet Bulletin “DTS-01”.

f) Romet Limited Quality System Manual including S-A-01.

g) Maintenance Manual, Romet 40000 CFH/1100 CMH Transfer Prover (RPB-07).

4.0 INSPECTION APPARATUS

4.1 STANDARDS

a) Certified bell prover.

b) Certified temperature standards with the range and units of measurement that are compatible with the TC or TCID module(s) under test.

c) Certified transfer prover.

4.2 EQUIPMENT

a) Measurement Canada authorized Romet “DTS” drive apparatus for TC and TCID modules.

b) Blower test bench.

c) Pulse output cable assembly.

d) Multi-channel pulse counter.

e) Electronic calculator or computer with customized software.

For verifying the pressure body or module only:

a) Meter body(s) of a type and size that is compatible with the STD CTR, STD ID, DCID, TC, TCID module(s) to be inspected (to verify module).

b) STD ID or DCID module with any meter body(s) to be inspected (to verify the meter body).

5.0 NONCONFORMANCE

Any nonconformance or deficiency of a device under inspection will result in rejection and shall be processed by the Sealing Inspector per the Assembly Procedures Manual, A-201 of the Romet Limited Quality System Manual.

6.0 STATIC INSPECTION

6.1 GENERAL

a) If a meter (meter body with the associated module) is presented, determine whether it is to be sealed integrally or non-integrally.

b) If only a meter body or module is presented, verify that it is being sealed as a separate device (refer to the Work Order).

c) Any non-conformance or defect found during the static inspection will result in rejection of the meter body and/or module. In case of a non-conformance refer to Section 5.

6.2 MARKINGS

Shall comply with the work order and the requirements in Appendix # 2.

6.3 METER CONSTRUCTION AND CONDITION

a) The meter body and /or module shall be free of any physical damage, which could affect the performance.

b) The meter body and /or module shall be free of dirt, debris, and other foreign substances.

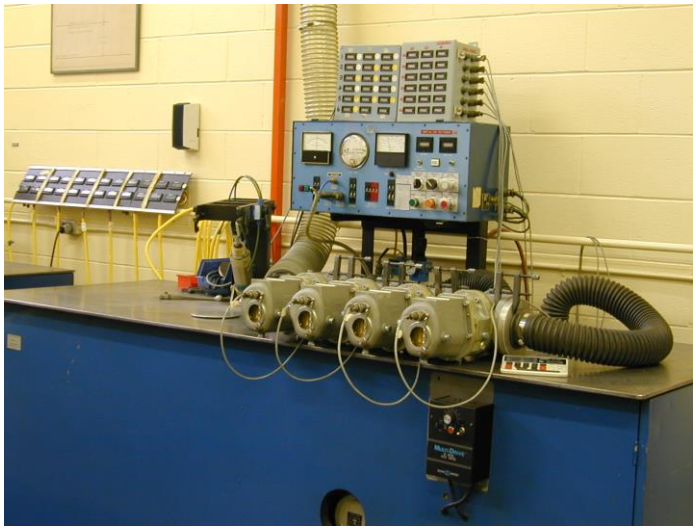
7.0 DYNAMIC INSPECTION

7.1 GENERAL

Minor adjustments to the test equipment or the device being inspected may be made. These adjustments do not constitute a nonconformance (Section 5). In the event that an adjustment is required during or after a test, the test must be repeated. Any component change within the device being tested is not permitted. If the adjustment does impact the metrological performance of the device, the dynamic inspection procedure (Section 7) must be performed in its entirety after completing the adjustment.

If the dynamic inspection procedure is not completed in the same day in its entirety, the devices being inspected are to be tagged **"Device(s) under inspection. Do not touch"** and placed in the bell prover room. Each test procedures that comprise the dynamic inspection must be completed within the same day.

7.2 AMBIENT TEMPERATURE CONVERSION TEST (TC AND TCID MODULES ONLY)



The Blower station with "ganged" TC meters with pulse counters and cables attached (typical).

1. All meter bodies and/or modules are to acclimatized in the proving room for a minimum of 2 hours before commencing this test procedure. The card may be completed by either the Assembly Department Supervisor or a sealing inspector. Testing can not be started if the meter(s) do not have a card indicating that the minimum acclimatization time (2 hours) has been completed. The completed Prover Room Receiving card is to be attached to the work order card.

Prover Room Receiving Card

Customer: _____

Work Order No.: _____

Quantity : _____

Received in the Prover Room

Date: _____

In Time: _____ Test Time: _____

Receiver: _____

2. This test must be completed during the same day to be valid.

3. TC and TCID meters may be tested individually or "ganged" together horizontally (up to a total of six meters of equal size) or vertical stacking (up to three meters maximum). Check work order to determine orientation for testing.

4. If the meter size is an RM5000/RM140 or smaller, adjust the blower motor so that the Q_{max} rating of the meter is not exceeded. Flow rate can be obtained by "clocking" the unconverted counter of the meter and using the following formula:

$$\text{Flow rate (acfh or } m^3/h) = \frac{\text{Volume}}{\text{Time (seconds)}} \times 3600$$

   Where:
   Volume (cf or m^3) is the reading taken from the unconverted counter wheel.

5. An initial inspection for irregular noise and visual operation (i.e. counters/drives, etc.) shall be performed for each meter body and or module under test with the blower operating for a minimum period of 15 seconds.

6. If the meter and module operate satisfactorily, continue to run the blower until the temperature is stable of all of the meters under test.

7. The Ambient/Blower TC test shall be performed with a certified thermometer located in the inlet differential port of each meter body. The temperature reading after passing approximately 25% of the test volume is to be recorded and used for the error calculation. The temperature reading for the duration of the test may not deviate by more than ±0.5°F/0.3°C from the temperature value recorded.

   Any non-conformance terminates the test (refer to Section 5).

8. The test duration shall be determined by the lowest resolution of either the unconverted (NC) or converted (TC) counter

	Counter Resolution	Minimum Test Volume
Imperial:	0.1 CF	100 CF
	1 CF	1000 CF
	10 CF	10000 CF
Metric:	0.001 m³	1 m³
	0.01 m³	10m³
	0.1 m³	100 m³

9. The start of the test shall commence when the second wheel from the right on the converted counter moves to zero (black bar if no digits are present) and the right hand counter wheel stops moving. The unconverted counter shall be recorded immediately, followed by the converted counter (before it moves again). For the TC modules where the right most position of unconverted counter is not graduated. Remove the access plug from the counter and install an external index that has a graduated drum and markings from 0 to 9. The converted counter can be read to a resolution of 0.1cf or 0.001m^3 by reading the value of right hand digit from the graduated TC drum. The flow to test meter may be interrupted or temporarily reduced to take the readings.

10. The readings shall be taken at the completion of the test in the same manner as detailed in step 9.

11. The flow capacity for the meter body is not to be exceeded during the test.

12. The following calculation is performed using the TC and NC counter volumes.

Error Calculation

$$\% \text{ True Error} = \frac{(TC_2 - TC_1) - (NC_2 - NC_1)\, T_m}{(NC_2 - NC_1)\, T_m} \times 100 \quad \text{or} \quad \left[\frac{(TC_2 - TC_1)}{(NC_2 - NC_1)\, T_m} - 1 \right] \times 100$$

Where:

TC_1 = initial converted counter (TC) reading
TC_2 = final converted counter (TC) reading
NC_1 = initial unconverted counter reading
NC_2 = final unconverted counter reading
T_m = temperature multiplier from a certified temperature standard. Refer to Section 2, Definitions.

13. Refer to Appendix 1 for the allowable error specification. Any non-conformance found will result in the rejection of the module. In case of a non-conformance, refer to Section 5.

14. Record the error results on the ACCEPTANCE CERTIFICATE.

7.3 HIGH AND LOW HORIZONTAL TEMPERATURE CONVERSION TEST (TC & TCID MODULES ONLY)

DTS™

Dynamic Temperature Simulator

1. This test must be completed during the same day to be valid.

2. Install a module(s) in one of the four test stations.

3. Set the two low temperature stations to 32°F ±4°F/0°C ±2°C and the two high temperature stations to 86°F ±4°F/30°C ±2°C.

4. A minimum of 5 minutes is required to allow the test station temperature to stabilize. Fine tuning may be necessary using the +/- temperature control knobs.

5. Exercise the module a minimum of one complete revolution of the graduated TC test drum.

6. Record the graduated test drum reading of each module and the value of the certified temperature standard for each station prior to starting the test.

Note: The certified temperature standard reading for each station shall not deviate during a test by more than ±0.5°F/0.3°C from the temperature value (T_1) recorded at the start of the test. The T_1 value is to be corrected to true using the Measurement Canada certificate. Any non-conformance terminates the test and the Assembly Supervisor shall be notified.

7. Commence the test by turning "ON" the meter drive and adjust the speed to not exceed the flow capacity of the meter type.

8. Complete 10 cycles of the striker arm and count the drum revolutions. Stop the test and record the graduated test drum reading

9. Perform the calculation using the formula below to obtain the true error for temperature conversion of the module.

Error Calculation

$$\%\ True\ Error = \left[\frac{D_2 - D_1 + (No.\ of\ Full\ Drum\ Revolutions\ X\ 10)}{T_c} - 1 \right] x\ 100$$

Note: If the final drum reading is less than the initial test drum reading then add 10 to the final test drum reading

Where:
D_1 – initial test drum reading
D_2 – final test drum reading (+10 if D_2 is less than D_1) (Example (2))
T_c – theoretical count of 10 cycles – refer to the applicable table in Appendix # 4

Example (1):

Imperial:

RM3000TC module
T_1 = 86°F
D_1 = 6.1
D_2 = 7.8
T_c = 31.7451
Number of full drum revolutions = 3

$$\%\ True\ Error = \left[\frac{7.8 - 6.1 + (3 \times 10)}{31.7451} - 1 \right] \times 100$$

% True Error = - 0.14%

Example (2):

Metric:

RM85TC module
T_1 = 30°C
D_1 = 5.9
D_2 = 3.5 (D_2 is less than D_1, add 10)
Therefore:
D_2 = 3.5 + 10 = 13.5
T_c = 47.5260
Number of full drum revolutions = 4

$$\%\ True\ Error = \left[\frac{13.5 - 5.9 + (4 \times 10)}{47.5260} - 1 \right] \times 100$$

% True Error = + 0.16%

Note: For an RM5000 TCID module with a 100CF drive use the T_C table for an RM3000.

10. Record the error results on the ACCEPTANCE CERTIFICATE.

11. Move the module to the high or low temperature station in order to complete the remaining temperature test point.

12. Repeat steps 3 through 9.

13. Remove the module from the DTS and ensure that the striker arm is free of the cam.

14. Refer to Appendix 1 for the allowable error specification. Any non-conformance found will result in the rejection of the module. In case of a non-conformance, refer to Section 5.

7.4 PULSE VERIFICATION

Pulse Output Counter
(A-58-PV)

The verification of the pulse output of a module is performed on the blower test bench and, in the case of TC and TCID modules, it can be performed in conjunction with the ambient temperature conversion test (refer to Section 7.2). Each pulse output is to be verified by a counter.

1. This test must be completed during the same day to be valid.

2. Determine the number of pulse outputs to be verified from the Romet Work Order. Each pulse output must be verified.

3. Determine the specific digit for the unconverted and/or converted counter from the following chart.

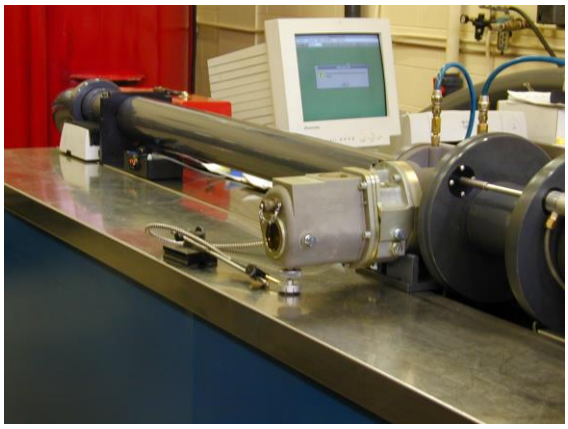
	Counter Multiplier				
Pulse Multiplier	x 1	x 10	x 100	x 1000	x 10000
x 0.1	1	1	1	1	1
x 1	1	1	1	1	1
x 10	2	1	1	1	1
x 100	3	2	1	1	1
x 1000	4	3	2	1	1
x 10000	5	4	3	2	1

4. Complete a minimum of two increments of the specific digit, verifying that the pulse occurs simultaneously with the incrementing of the specific digit. Refer to Appendix 1.

5. Record acceptance with a √ on the ACCEPTANCE CERTIFICATE under Pulse Output.

6. Any non-conformance found will result in the rejection of the module. In case of a non-conformance, refer to Section 5.

7.5 UNCONVERTED VOLUME VERIFICATION



Bell Prover (typical)

Transfer Prover

The verification of the accuracy of the unconverted volume is performed on the Bell Prover or Transfer Prover. In the event that one of the two test loops for the bell prover is removed from service (maintenance, nonconformance), the remaining loop may be used to verify meters.

1. All meter bodies and/or modules are to acclimatize in the test room for a minimum of 2 hours before commencing this test procedure. Refer to Section 7.2, step 1

2. The module/meter shall be tested at the test points as specified by Appendix 1. Also refer to the Work Order for any additional test points.

3. This test must be completed during the same day to be valid.

4. All meters having max. capacity 16000CFH or more must be verified at 40000 CFt Transfer Prover, S/N 0501. Only when this Transfer Prover is out of service, these particular meters can be tested on Bell Prover, S/N 56-5772, at max. attainable flow rate. All other meters with max. capacity less than 16000CFH must be verified at Bell Prover, S/N 56-5772.

5. TC & TCID meter/or modules shall be verified by optically sensing a tacho-adapter that is coupled to the unconverted counter. STD ID & DCID meter/or modules shall be verified with an optic sensor mounted to the instrument drive. For meters with a 100-cft/Rev or 1000-cft/Rev mechanical drive, the meter shall be proved by optically sensing an optical reflector (black/white disc) that is coupled to the impellers. The module is verified simultaneously by optically sensing an adapter to the unconverted counter or instrument drive that confirms the gear ratio. The gear ratio displayed must be verified against the gear ratio specified in Appendix 5; for modules only record the gear ratio on the certificate. Electronic meter/or module shall be verified by connecting to the pulse output to the prover and placing the electronic meter/module in the proving mode.

6. Refer to Appendix 1 for the allowable error specification. In case of a non-conformance refer to Section 5.

7. The test results for the unconverted error shall be recorded on the ACCEPTANCE CERTIFICATE under “Press. Body % Error”.

8. The direction of rotation of the instrument drive (STD ID, DCID & TCID only) shall be verified to ensure that it is the same as specified on the work order.

   Additional instrument drive meter test requirements:

   a) DCID counter – complete one rotation of the instrument drive and verify that the unconverted counter registered the same volume as the instrument drive. If the counter wheel is blank, start and finish the test using the “zero” bar on the wheel of the counter. Otherwise, start and finish the test at the same digit.

   b) TCID instrument drive – verify that the TC counter drum and instrument drive registered the same volume for one complete movement, as mentioned above.

9. Acceptance or rejection of the tests specified in step 7 shall be recorded on the ACCEPTANCE CERTIFICATE under “Module ID” with a √ mark. The allowable error is zero.

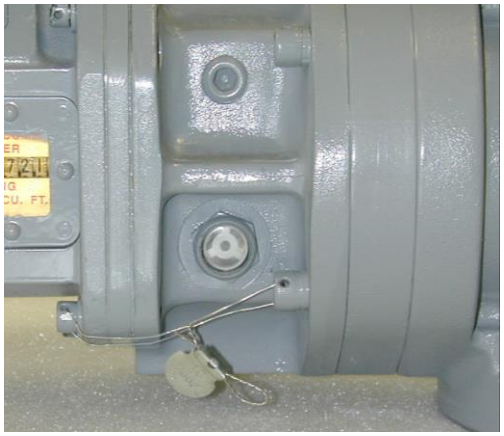
Note: The sequence of the testing operation does not affect the meter’s performance and will be considered flexible and “operator controlled” based on production.

8.0 SEALING AND ACCEPTANCE

Refer to the Romet Limited Quality System Manual, Sealing Criteria Procedures Manual, SC-701. After verifying that the meter and/or module has passed all of the test requirements of Sections 6,7 and 8 apply a wire seal by one of two methods (refer to the Work Order).

8.1 INTEGRAL SEALING METHOD

A single sealing wire is passed through one of the cross-drilled cap screws that secures the module to the meter body and one of the cross-drilled cap screws that secures the magnetic housing to the meter body.



8.2 NON-INTEGRAL SEALING METHOD

a) Meter body – A single sealing wire is passed through the two cross-drilled cap screws that secure the magnetic housing to the meter body.

b) Module – A single sealing wire is passed through the cross-drill studs that extend out from the module cover.

An ACCEPTANCE CERTIFICATE (refer to SC-701, Section 5) shall be issued as the formal record of the device's verification or re-verification.

9.0 PROCESSING OF INSPECTION DOCUMENTATION

All the inspection documents will be handed over to Assembly Department Supervisor.

10.0 TC MODULE COMPONENTS

Romet TC modules manufactured after June 16, 1983 have a graduated test drum index on the left end of the converted volume register as shown in the figure below.

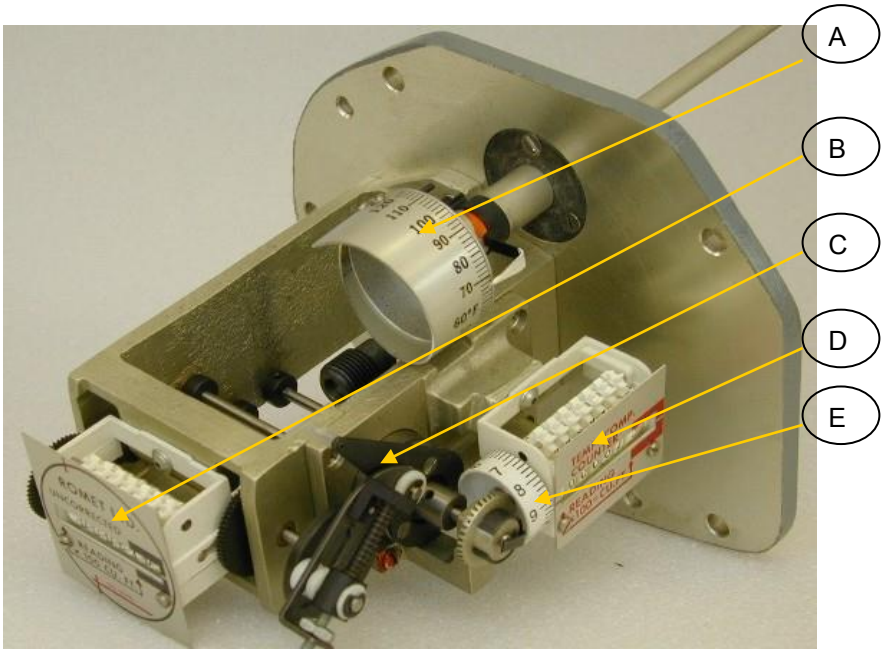
A – Temperature cam

B – Unconverted (NC) counter

C – Striker Arm

D – Temperature converted (TC) counter

E – TC graduated test drum



The TC graduated test drum (E) is marked with 10 major divisions numbered 0 to 9, each of which is marked with 5 minor divisions allowing a reading to the nearest 0.1 (based on half a minor divisions). The reading taken from the graduated drum represents the lowest significant units of the register.

Note: Romet TC modules manufactured prior to June 16,1983 are not approved for the (quick test) graduated test drum index and have a metallic unmarked drum. The drums are to be removed and replaced with graduated test drums. Refer to nonconformance procedure.

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APPENDIX 1 TEST POINTS AND TOLERANCES

Test Parameter	Test Points	Allowable Error
Temperature Converted Volume	t_h: High 86°F ± 4°F or 30°C ± 2°C t_m: Ambient t_l: Low 32°F ± 4°F or 0°C ± 2°C	± 1% ± 1% ± 1%

Test Parameter	Test Points	Allowable Error
Unconverted Volume	95% ± 5% of the rated flow capacity or maximum achievable flow rate 20% ± 5% of the rated flow capacity	± 1% ± 1%
Note: Flow rate capacity may be limited to the maximum stable flow capacity of the Prover.		

Test Parameter	Test Volume	Allowable Error
Unconverted/converted Pulse	Two increments of the specific digit	None

APPENDIX 2 MARKINGS

Meter body

- Manufacturer name
- Model number
- Measurement Canada approval number
- Serial number
- Capacity (flow)
- Pressure rating
- Flow direction
- Contractor's badge

Note: Serial badge to employ red markings for a TC meter body.

Modules

- Manufacturer name (TC & TCID only)
- Model number (TC & TCID only)
- Base temperature (TC & TCID only)
- Serial number (TC & TCID only)
- Gear ratio
- Direction of rotation (STD ID, DCID & TCID only)
- Pulse weight and type (form "A"), if applicable
- Contractor's badge (only TC & TCID that are being separately sealed)
- Measurement Canada approval number (TC & TCID only)
- Index multiplier
- Instrument drive rate (volume/revolution)

Note: Base Temperature Readout Plate to employ red markings for a TC or TCID modules only.

APPENDIX 3 ADDITIONAL FORMULA

Gear Ratio @ 60°F				Gear Ratio @ 15°C			
RM2000	RM3000 and RM5000 (100 CF/Rev. only)	RM5000 10 CF/Rev. only	RM7000 RM11000* RM16000 RM23000	RM55	RM85 RM140	RM200	RM300 RM450 RM650
28/44	24/72	30/56	30/70 ***(up to 1990, 40/70)**	32/56	28/56	28/70	30/72

APPENDIX 4 THEORETICAL COUNT TABLES

RM2000 TC/TCID

10 AND 100 CF DRIVE

THEORETICAL COUNT OF 10 CYCLES @ 60°F T BASE

$$Tc = \frac{28}{44} \times \frac{459.67 + 60}{459.67 + Tga} \times 100$$

Temperature [°F]	Theoretical Count Tc	Temperature [°F]	Theoretical Count Tc
28.0	**67.8121**	**32.0**	**67.2604**
28.1	67.7982	32.1	67.2467
28.2	67.7843	32.2	67.2330
28.3	67.7704	32.3	67.2194
28.4	67.7565	32.4	67.2057
28.5	67.7426	32.5	67.1920
28.6	67.7287	32.6	67.1784
28.7	67.7149	32.7	67.1648
28.8	67.7010	32.8	67.1511
28.9	67.6871	32.9	67.1375
29.0	**67.6733**	**33.0**	**67.1239**
29.1	67.6594	33.1	67.1102
29.2	67.6456	33.2	67.0966
29.3	67.6318	33.3	67.0830
29.4	67.6179	33.4	67.0694
29.5	67.6041	33.5	67.0558
29.6	67.5903	33.6	67.0422
29.7	67.5765	33.7	67.0286
29.8	67.5627	33.8	67.0150
29.9	67.5489	33.9	67.0015
30.0	**67.5351**	**34.0**	**66.9879**
30.1	67.5213	34.1	66.9743
30.2	67.5075	34.2	66.9608
30.3	67.4937	34.3	66.9472
30.4	67.4800	34.4	66.9337
30.5	67.4662	34.5	66.9201
30.6	67.4524	34.6	66.9066
30.7	67.4387	34.7	66.8930
30.8	67.4249	34.8	66.8795
30.9	67.4112	34.9	66.8660
31.0	**67.3975**	**35.0**	**66.8525**
31.1	67.3837	35.1	66.8390
31.2	67.3700	35.2	66.8254
31.3	67.3563	35.3	66.8119
31.4	67.3426	35.4	66.7985
31.5	67.3288	35.5	66.7850
31.6	67.3151	35.6	66.7715
31.7	67.3014	35.7	66.7580
31.8	67.2877	35.8	66.7445
31.9	**67.2741**	35.9	66.7311
32.0	**67.2604**	**36.0**	**66.7176**

RM2000 TC/TCID

10 AND 100 CF DRIVE
THEORETICAL COUNT OF 10 CYCLES @ 60°F T BASE

$$Tc = \frac{28}{44} \times \frac{459.67 + 60}{459.67 + Tga} \times 100$$

Temperature [°F]	Theoretical Count Tc	Temperature [°F]	Theoretical Count Tc
82.0	**61.0518**	**86.0**	**60.6042**
82.1	61.0405	86.1	60.5931
82.2	61.0292	86.2	60.5820
82.3	61.0180	86.3	60.5709
82.4	61.0067	86.4	60.5598
82.5	60.9955	86.5	60.5487
82.6	60.9842	86.6	60.5377
82.7	60.9730	86.7	60.5266
82.8	60.9617	86.8	60.5155
82.9	60.9505	86.9	60.5044
83.0	**60.9393**	**87.0**	**60.4934**
83.1	60.9280	87.1	60.4823
83.2	60.9168	87.2	60.4712
83.3	60.9056	87.3	60.4602
83.4	60.8944	87.4	60.4491
83.5	60.8832	87.5	60.4381
83.6	60.8720	87.6	60.4270
83.7	60.8608	87.7	60.4160
83.8	60.8496	87.8	60.4050
83.9	60.8384	87.9	60.3939
84.0	**60.8272**	**88.0**	**60.3829**
84.1	60.8160	88.1	60.3719
84.2	60.8048	88.2	60.3609
84.3	60.7936	88.3	60.3499
84.4	60.7825	88.4	60.3388
84.5	60.7713	88.5	60.3278
84.6	60.7601	88.6	60.3168
84.7	60.7490	88.7	60.3058
84.8	60.7378	88.8	60.2948
84.9	60.7266	88.9	60.2838
85.0	**60.7155**	**89.0**	**60.2729**
85.1	60.7044	89.1	60.2619
85.2	60.6932	89.2	60.2509
85.3	60.6821	89.3	60.2399
85.4	60.6709	89.4	60.2289
85.5	60.6598	89.5	60.2180
85.6	60.6487	89.6	60.2070
85.7	60.6376	89.7	60.1961
85.8	60.6264	89.8	60.1851
85.9	60.6153	89.9	60.1742
86.0	**60.6042**	**90.0**	**60.1632**

RM3000 TC/TCID

RM3000 TC/TCID 10 AND 100 CF DRIVE
RM5000 TC/TCID 100 CF DRIVE
THEORETICAL COUNT OF 10 CYCLES @ 60°F T BASE

$$Tc = \frac{24}{72} \times \frac{459.67 + 60}{459.67 + Tga} \times 100$$

Temperature [°F]	Theoretical Count Tc	Temperature [°F]	Theoretical Count Tc
28.0	**35.5206**	**32.0**	**35.2316**
28.1	35.5133	32.1	35.2245
28.2	35.5060	32.2	35.2173
28.3	35.4988	32.3	35.2101
28.4	35.4915	32.4	35.2030
28.5	35.4842	32.5	35.1958
28.6	35.4770	32.6	35.1887
28.7	35.4697	32.7	35.1815
28.8	35.4624	32.8	35.1744
28.9	35.4552	32.9	35.1673
29.0	**35.4479**	**33.0**	**35.1601**
29.1	35.4407	33.1	35.1530
29.2	35.4334	33.2	35.1458
29.3	35.4262	33.3	35.1387
29.4	35.4189	33.4	35.1316
29.5	35.4117	33.5	35.1245
29.6	35.4044	33.6	35.1173
29.7	35.3972	33.7	35.1102
29.8	35.3900	33.8	35.1031
29.9	35.3828	33.9	35.0960
30.0	**35.3755**	**34.0**	**35.0889**
30.1	35.3683	34.1	35.0818
30.2	35.3611	34.2	35.0747
30.3	35.3539	34.3	35.0676
30.4	35.3467	34.4	35.0605
30.5	35.3394	34.5	35.0534
30.6	35.3322	34.6	35.0463
30.7	35.3250	34.7	35.0392
30.8	35.3178	34.8	35.0321
30.9	35.3106	34.9	35.0250
31.0	**35.3034**	**35.0**	**35.0180**
31.1	35.2962	35.1	35.0109
31.2	35.2890	35.2	35.0038
31.3	35.2819	35.3	34.9967
31.4	35.2747	35.4	34.9897
31.5	35.2675	35.5	34.9826
31.6	35.2603	35.6	34.9755
31.7	35.2531	35.7	34.9685
31.8	35.2460	35.8	34.9614
31.9	35.2388	35.9	34.9544
32.0	**35.2316**	**36.0**	**34.9473**

RM3000 TC/TCID

RM3000 TC/TCID 10 CF DRIVE
THEORETICAL COUNT OF 10 CYCLES @ 60°F T BASE

$$Tc = \frac{24}{72} \times \frac{459.67 + 60}{459.67 + Tga} \times 100$$

Temperature [°F]	Theoretical Count Tc	Temperature [°F]	Theoretical Count Tc
82.0	**31.9795**	**86.0**	**31.7451**
82.1	31.9736	86.1	31.7393
82.2	31.9677	86.2	31.7334
82.3	31.9618	86.3	31.7276
82.4	31.9559	86.4	31.7218
82.5	31.9500	86.5	31.7160
82.6	31.9441	86.6	31.7102
82.7	31.9382	86.7	31.7044
82.8	31.9323	86.8	31.6986
82.9	31.9264	86.9	31.6928
83.0	**31.9206**	**87.0**	**31.6870**
83.1	31.9147	87.1	31.6812
83.2	31.9088	87.2	31.6754
83.3	31.9029	87.3	31.6696
83.4	31.8971	87.4	31.6638
83.5	31.8912	87.5	31.6580
83.6	31.8853	87.6	31.6523
83.7	31.8794	87.7	31.6465
83.8	31.8736	87.8	31.6407
83.9	31.8677	87.9	31.6349
84.0	**31.8619**	**88.0**	**31.6291**
84.1	31.8560	88.1	31.6234
84.2	31.8501	88.2	31.6176
84.3	31.8443	88.3	31.6118
84.4	31.8384	88.4	31.6061
84.5	31.8326	88.5	31.6003
84.6	31.8267	88.6	31.5945
84.7	31.8209	88.7	31.5888
84.8	31.8150	88.8	31.5830
84.9	31.8092	88.9	31.5773
85.0	**31.8034**	**89.0**	**31.5715**
85.1	31.7975	89.1	31.5657
85.2	31.7917	89.2	31.5600
85.3	31.7858	89.3	31.5542
85.4	31.7800	89.4	31.5485
85.5	31.7742	89.5	31.5428
85.6	31.7684	89.6	31.5370
85.7	31.7625	89.7	31.5313
85.8	31.7567	89.8	31.5255
85.9	31.7509	89.9	31.5198
86.0	**31.7451**	**90.0**	**31.5141**

RM5000 TC/TCID

10 CF DRIVE
THEORETICAL COUNT OF 10 CYCLES @ 60°F T BASE

$$Tc = \frac{30}{56} \times \frac{459.67 + 60}{459.67 + Tga} \times 100$$

Temperature [°F]	Theoretical Count Tc	Temperature [°F]	Theoretical Count Tc
28.0	**57.0867**	**32.0**	**56.6223**
28.1	57.0750	32.1	56.6107
28.2	57.0633	32.2	56.5992
28.3	57.0516	32.3	56.5877
28.4	57.0399	32.4	56.5762
28.5	57.0282	32.5	56.5647
28.6	57.0165	32.6	56.5532
28.7	57.0049	32.7	56.5418
28.8	56.9932	32.8	56.5303
28.9	56.9815	32.9	56.5188
29.0	**56.9699**	**33.0**	**56.5073**
29.1	56.9582	33.1	56.4959
29.2	56.9466	33.2	56.4844
29.3	56.9349	33.3	56.4729
29.4	56.9233	33.4	56.4615
29.5	56.9116	33.5	56.4500
29.6	56.9000	33.6	56.4386
29.7	56.8884	33.7	56.4272
29.8	56.8768	33.8	56.4157
29.9	56.8651	33.9	56.4043
30.0	**56.8535**	**34.0**	**56.3929**
30.1	56.8419	34.1	56.3814
30.2	56.8303	34.2	56.3700
30.3	56.8187	34.3	56.3586
30.4	56.8071	34.4	56.3472
30.5	56.7955	34.5	56.3358
30.6	56.7839	34.6	56.3244
30.7	56.7724	34.7	56.3130
30.8	56.7608	34.8	56.3016
30.9	56.7492	34.9	56.2902
31.0	**56.7377**	**35.0**	**56.2789**
31.1	56.7261	35.1	56.2675
31.2	56.7145	35.2	56.2561
31.3	56.7030	35.3	56.2448
31.4	56.6914	35.4	56.2334
31.5	56.6799	35.5	56.2220
31.6	56.6684	35.6	56.2107
31.7	56.6568	35.7	56.1993
31.8	56.6453	35.8	56.1880
31.9	56.6338	35.9	56.1767
32.0	**56.6223**	**36.0**	**56.1653**

RM5000 TC/TCID

10 CF DRIVE
THEORETICAL COUNT OF 10 CYCLES @ 60°F T BASE

$$Tc = \frac{30}{56} \times \frac{459.67 + 60}{459.67 + Tga} \times 100$$

Temperature [°F]	Theoretical Count Tc	Temperature [°F]	Theoretical Count Tc
82.0	**51.3956**	**86.0**	**51.0189**
82.1	51.3861	86.1	51.0095
82.2	51.3766	86.2	51.0002
82.3	51.3672	86.3	50.9908
82.4	51.3577	86.4	50.9815
82.5	51.3482	86.5	50.9722
82.6	51.3388	86.6	50.9628
82.7	51.3293	86.7	50.9535
82.8	51.3198	86.8	50.9442
82.9	51.3104	86.9	50.9349
83.0	**51.3009**	**87.0**	**50.9255**
83.1	51.2915	87.1	50.9162
83.2	51.2820	87.2	50.9069
83.3	51.2726	87.3	50.8976
83.4	51.2631	87.4	50.8883
83.5	51.2537	87.5	50.8790
83.6	51.2443	87.6	50.8697
83.7	51.2348	87.7	50.8604
83.8	51.2254	87.8	50.8511
83.9	51.2160	87.9	50.8418
84.0	**51.2065**	**88.0**	**50.8326**
84.1	51.1971	88.1	50.8233
84.2	51.1877	88.2	50.8140
84.3	51.1783	88.3	50.8047
84.4	51.1689	88.4	50.7955
84.5	51.1595	88.5	50.7862
84.6	51.1501	88.6	50.7769
84.7	51.1407	88.7	50.7677
84.8	51.1313	88.8	50.7584
84.9	51.1219	88.9	50.7492
85.0	**51.1125**	**89.0**	**50.7399**
85.1	51.1032	89.1	50.7307
85.2	51.0938	89.2	50.7214
85.3	51.0844	89.3	50.7122
85.4	51.0750	89.4	50.7029
85.5	51.0657	89.5	50.6937
85.6	51.0563	89.6	50.6845
85.7	51.0469	89.7	50.6753
85.8	51.0376	89.8	50.6660
85.9	51.0282	89.9	50.6568
86.0	**51.0189**	**90.0**	**50.6476**

RM7000 TC/TCID 11000 TC/TCID 16000 TC/TCID 23000 TC/TCID

10 AND 100 CF DRIVE
THEORETICAL COUNT OF 10 CYCLES @ 60°F T BASE

$$Tc = \frac{30}{70} \times \frac{459.67 + 60}{459.67 + Tga} \times 100$$

Temperature [°F]	Theoretical Count Tc	Temperature [°F]	Theoretical Count Tc
28.0	**45.6693**	**32.0**	**45.2978**
28.1	45.6600	32.1	45.2886
28.2	45.6506	32.2	45.2794
28.3	45.6413	32.3	45.2702
28.4	45.6319	32.4	45.2610
28.5	45.6226	32.5	45.2518
28.6	45.6132	32.6	45.2426
28.7	45.6039	32.7	45.2334
28.8	45.5946	32.8	45.2242
28.9	45.5852	32.9	45.2150
29.0	**45.5759**	**33.0**	**45.2059**
29.1	45.5666	33.1	45.1967
29.2	45.5572	33.2	45.1875
29.3	45.5479	33.3	45.1784
29.4	45.5386	33.4	45.1692
29.5	45.5293	33.5	45.1600
29.6	45.5200	33.6	45.1509
29.7	45.5107	33.7	45.1417
29.8	45.5014	33.8	45.1326
29.9	45.4921	33.9	45.1234
30.0	**45.4828**	**34.0**	**45.1143**
30.1	45.4735	34.1	45.1052
30.2	45.4642	34.2	45.0960
30.3	45.4550	34.3	45.0869
30.4	45.4457	34.4	45.0778
30.5	45.4364	34.5	45.0686
30.6	45.4272	34.6	45.0595
30.7	45.4179	34.7	45.0504
30.8	45.4086	34.8	45.0413
30.9	45.3994	34.9	45.0322
31.0	**45.3901**	**35.0**	**45.0231**
31.1	45.3809	35.1	45.0140
31.2	45.3716	35.2	45.0049
31.3	45.3624	35.3	44.9958
31.4	45.3532	35.4	44.9867
31.5	45.3439	35.5	44.9776
31.6	45.3347	35.6	44.9685
31.7	45.3255	35.7	44.9595
31.8	45.3162	35.8	44.9504
31.9	45.3070	35.9	44.9413
32.0	**45.2978**	**36.0**	**44.9323**

RM7000 TC/TCID 11000 TC/TCID 16000 TC/TCID 23000 TC/TCID

10 AND 100 CF DRIVE
THEORETICAL COUNT OF 10 CYCLES @ 60°F T BASE

$$Tc = \frac{30}{70} \times \frac{459.67 + 60}{459.67 + Tga} \times 100$$

Temperature [°F]	Theoretical Count Tc	Temperature [°F]	Theoretical Count Tc
82.0	**41.1165**	**86.0**	**40.8151**
82.1	41.1089	86.1	40.8076
82.2	41.1013	86.2	40.8001
82.3	41.0937	86.3	40.7927
82.4	41.0862	86.4	40.7852
82.5	41.0786	86.5	40.7777
82.6	41.0710	86.6	40.7703
82.7	41.0634	86.7	40.7628
82.8	41.0559	86.8	40.7553
82.9	41.0483	86.9	40.7479
83.0	**41.0407**	**87.0**	**40.7404**
83.1	41.0332	87.1	40.7330
83.2	41.0256	87.2	40.7255
83.3	41.0181	87.3	40.7181
83.4	41.0105	87.4	40.7106
83.5	41.0029	87.5	40.7032
83.6	40.9954	87.6	40.6958
83.7	40.9879	87.7	40.6883
83.8	40.9803	87.8	40.6809
83.9	40.9728	87.9	40.6735
84.0	**40.9652**	**88.0**	**40.6660**
84.1	40.9577	88.1	40.6586
84.2	40.9502	88.2	40.6512
84.3	40.9426	88.3	40.6438
84.4	40.9351	88.4	40.6364
84.5	40.9276	88.5	40.6289
84.6	40.9201	88.6	40.6215
84.7	40.9126	88.7	40.6141
84.8	40.9050	88.8	40.6067
84.9	40.8975	88.9	40.5993
85.0	**40.8900**	**89.0**	**40.5919**
85.1	40.8825	89.1	40.5845
85.2	40.8750	89.2	40.5771
85.3	40.8675	89.3	40.5697
85.4	40.8600	89.4	40.5624
85.5	40.8525	89.5	40.5550
85.6	40.8450	89.6	40.5476
85.7	40.8375	89.7	40.5402
85.8	40.8301	89.8	40.5328
85.9	40.8226	89.9	40.5254
86.0	**40.8151**	**90.0**	**40.5181**

RM11000 TC/TCID
UP TO 1990
10 & 100 CF DRIVE
THEORETICAL COUNT OF 10 CYCLES @ 60°F T BASE

$$Tc = \frac{40}{70} \times \frac{459.67 + 60}{459.67 + Tga} \times 100$$

Temperature [° F]	Theoretical Count Tc	Temperature [° F]	Theoretical Count Tc
28.0	**60.8925**	**32.0**	**60.3971**
28.1	60.8800	32.1	60.3848
28.2	60.8675	32.2	60.3725
28.3	60.8550	32.3	60.3602
28.4	60.8426	32.4	60.3480
28.5	60.8301	32.5	60.3357
28.6	60.8176	32.6	60.3235
28.7	60.8052	32.7	60.3112
28.8	60.7927	32.8	60.2990
28.9	60.7803	32.9	60.2867
29.0	**60.7679**	**33.0**	**60.2745**
29.1	60.7554	33.1	60.2622
29.2	60.7430	33.2	60.2500
29.3	60.7306	33.3	60.2378
29.4	60.7182	33.4	60.2256
29.5	60.7057	33.5	60.2134
29.6	60.6933	33.6	60.2012
29.7	60.6809	33.7	60.1890
29.8	60.6685	33.8	60.1768
29.9	60.6561	33.9	60.1646
30.0	**60.6438**	**34.0**	**60.1524**
30.1	60.6314	34.1	60.1402
30.2	60.6190	34.2	60.1280
30.3	60.6066	34.3	60.1159
30.4	60.5943	34.4	60.1037
30.5	60.5819	34.5	60.0915
30.6	60.5695	34.6	60.0794
30.7	60.5572	34.7	60.0672
30.8	60.5448	34.8	60.0551
30.9	60.5325	34.9	60.0429
31.0	**60.5202**	**35.0**	**60.0308**
31.1	60.5078	35.1	60.0187
31.2	60.4955	35.2	60.0065
31.3	60.4832	35.3	59.9944
31.4	60.4709	35.4	59.9823
31.5	60.4586	35.5	59.9702
31.6	60.4462	35.6	59.9581
31.7	60.4339	35.7	59.9460
31.8	60.4217	35.8	59.9339
31.9	60.4094	35.9	59.9218
32.0	**60.3971**	**36.0**	**59.9097**

RM11000 TC/TCID
UP TO 1990
10 & 100 CF DRIVE
THEORETICAL COUNT OF 10 CYCLES @ 60°F T BASE

$$Tc = \frac{40}{70} \times \frac{459.67 + 60}{459.67 + Tga} \times 100$$

Temperature [° F]	Theoretical Count Tc	Temperature [° F]	Theoretical Count Tc
82.0	**54.8220**	**86.0**	**54.4201**
82.1	54.8119	86.1	54.4102
82.2	54.8018	86.2	54.4002
82.3	54.7916	86.3	54.3902
82.4	54.7815	86.4	54.3803
82.5	54.7714	86.5	54.3703
82.6	54.7613	86.6	54.3604
82.7	54.7512	86.7	54.3504
82.8	54.7411	86.8	54.3405
82.9	54.7311	86.9	54.3305
83.0	**54.7210**	**87.0**	**54.3206**
83.1	54.7109	87.1	54.3106
83.2	54.7008	87.2	54.3007
83.3	54.6907	87.3	54.2908
83.4	54.6807	87.4	54.2809
83.5	54.6706	87.5	54.2709
83.6	54.6605	87.6	54.2610
83.7	54.6505	87.7	54.2511
83.8	54.6404	87.8	54.2412
83.9	54.6304	87.9	54.2313
84.0	**54.6203**	**88.0**	**54.2214**
84.1	54.6103	88.1	54.2115
84.2	54.6002	88.2	54.2016
84.3	54.5902	88.3	54.1917
84.4	54.5802	88.4	54.1818
84.5	54.5701	88.5	54.1719
84.6	54.5601	88.6	54.1621
84.7	54.5501	88.7	54.1522
84.8	54.5401	88.8	54.1423
84.9	54.5300	88.9	54.1324
85.0	**54.5200**	**89.0**	**54.1226**
85.1	54.5100	89.1	54.1127
85.2	54.5000	89.2	54.1028
85.3	54.4900	89.3	54.0930
85.4	54.4800	89.4	54.0831
85.5	54.4700	89.5	54.0733
85.6	54.4600	89.6	54.0634
85.7	54.4501	89.7	54.0536
85.8	54.4401	89.8	54.0438
85.9	54.4301	89.9	54.0339
86.0	**54.4201**	**90**	**54.0241**

RM55 TC/TCID

THEORETICAL COUNT OF 10 CYCLES @ 15°C TBASE

$$Tc = \frac{32}{56} \times \frac{273.15 + 15}{273.15 + Tga} \times 100$$

Temperature [°C]	Theoretical Count Tc	Temperature [°C]	Theoretical Count Tc
-2.0	**60.7255**	**28.0**	**54.6761**
-1.9	60.7031	28.1	54.6580
-1.8	60.6807	28.2	54.6398
-1.7	60.6584	28.3	54.6217
-1.6	60.6360	28.4	54.6036
-1.5	60.6137	28.5	54.5855
-1.4	60.5914	28.6	54.5674
-1.3	60.5691	28.7	54.5493
-1.2	60.5468	28.8	54.5313
-1.1	60.5246	28.9	54.5132
-1.0	**60.5023**	**29.0**	**54.4952**
-0.9	60.4801	29.1	54.4771
-0.8	60.4579	29.2	54.4591
-0.7	60.4357	29.3	54.4411
-0.6	60.4136	29.4	54.4231
-0.5	60.3914	29.5	54.4051
-0.4	60.3693	29.6	54.3872
-0.3	60.3471	29.7	54.3692
-0.2	60.3250	29.8	54.3513
-0.1	60.3029	29.9	54.3333
0	**60.2809**	**30.0**	**54.3154**
0.1	60.2588	30.1	54.2975
0.2	60.2367	30.2	54.2796
0.3	60.2147	30.3	54.2617
0.4	60.1927	30.4	54.2438
0.5	60.1707	30.5	54.2260
0.6	60.1487	30.6	54.2081
0.7	60.1268	30.7	54.1903
0.8	60.1048	30.8	54.1724
0.9	60.0829	30.9	54.1546
1.0	**60.0610**	**31.0**	**54.1368**
1.1	60.0391	31.1	54.1190
1.2	60.0172	31.2	54.1012
1.3	59.9953	31.3	54.0835
1.4	59.9735	31.4	54.0657
1.5	59.9516	31.5	54.0480
1.6	59.9298	31.6	54.0302
1.7	59.9080	31.7	54.0125
1.8	59.8862	31.8	53.9948
1.9	59.8644	31.9	53.9771
2.0	**59.8427**	**32.0**	**53.9594**

RM85 TC/TCID RM 140 TC/TCID

THEORETICAL COUNT OF 10 CYCLES @ 15°C TBASE

$$Tc = \frac{28}{56} \times \frac{273.15 + 15}{273.15 + Tga} \times 100$$

Temperature [°C]	Theoretical Count Tc	Temperature [°C]	Theoretical Count Tc
-2.0	**53.1348**	**28.0**	**47.8416**
-1.9	53.1152	28.1	47.8257
-1.8	53.0956	28.2	47.8099
-1.7	53.0761	28.3	47.7940
-1.6	53.0565	28.4	47.7781
-1.5	53.0370	28.5	47.7623
-1.4	53.0175	28.6	47.7465
-1.3	52.9980	28.7	47.7307
-1.2	52.9785	28.8	47.7149
-1.1	52.9590	28.9	47.6991
-1.0	**52.9396**	**29.0**	**47.6833**
-0.9	52.9201	29.1	47.6675
-0.8	52.9007	29.2	47.6517
-0.7	52.8813	29.3	47.6360
-0.6	52.8619	29.4	47.6202
-0.5	52.8425	29.5	47.6045
-0.4	52.8231	29.6	47.5888
-0.3	52.8037	29.7	47.5731
-0.2	52.7844	29.8	47.5574
-0.1	52.7651	29.9	47.5417
0	**52.7457**	**30.0**	**47.5260**
0.1	52.7264	30.1	47.5103
0.2	52.7072	30.2	47.4946
0.3	52.6879	30.3	47.4790
0.4	52.6686	30.4	47.4634
0.5	52.6494	30.5	47.4477
0.6	52.6301	30.6	47.4321
0.7	52.6109	30.7	47.4165
0.8	52.5917	30.8	47.4009
0.9	52.5725	30.9	47.3853
1.0	**52.5533**	**31.0**	**47.3697**
1.1	52.5342	31.1	47.3541
1.2	52.5150	31.2	47.3386
1.3	52.4959	31.3	47.3230
1.4	52.4768	31.4	47.3075
1.5	52.4577	31.5	47.2920
1.6	52.4386	31.6	47.2765
1.7	52.4195	31.7	47.2609
1.8	52.4004	31.8	47.2455
1.9	52.3814	31.9	47.2300
2.0	**52.3623**	**32.0**	**47.2145**

RM200 TC/TCID

THEORETICAL COUNT OF 10 CYCLES @ 15°C TBASE

$$Tc = \frac{28}{70} \times \frac{273.15 + 15}{273.15 + Tga} \times 100$$

Temperature [°C]	Theoretical Count Tc	Temperature [°C]	Theoretical Count Tc
-2.0	**42.5078**	**28.0**	**38.2733**
-1.9	42.4922	28.1	38.2606
-1.8	42.4765	28.2	38.2479
-1.7	42.4609	28.3	38.2352
-1.6	42.4452	28.4	38.2225
-1.5	42.4296	28.5	38.2098
-1.4	42.4140	28.6	38.1972
-1.3	42.3984	28.7	38.1845
-1.2	42.3828	28.8	38.1719
-1.1	42.3672	28.9	38.1592
-1.0	**42.3516**	**29.0**	**38.1466**
-0.9	42.3361	29.1	38.1340
-0.8	42.3205	29.2	38.1214
-0.7	42.3050	29.3	38.1088
-0.6	42.2895	29.4	38.0962
-0.5	42.2740	29.5	38.0836
-0.4	42.2585	29.6	38.0710
-0.3	42.2430	29.7	38.0584
-0.2	42.2275	29.8	38.0459
-0.1	42.2120	29.9	38.0333
0	**42.1966**	**30.0**	**38.0208**
0.1	42.1812	30.1	38.0082
0.2	42.1657	30.2	37.9957
0.3	42.1503	30.3	37.9832
0.4	42.1349	30.4	37.9707
0.5	42.1195	30.5	37.9582
0.6	42.1041	30.6	37.9457
0.7	42.0887	30.7	37.9332
0.8	42.0734	30.8	37.9207
0.9	42.0580	30.9	37.9082
1.0	**42.0427**	**31.0**	**37.8958**
1.1	42.0273	31.1	37.8833
1.2	42.0120	31.2	37.8709
1.3	41.9967	31.3	37.8584
1.4	41.9814	31.4	37.8460
1.5	41.9661	31.5	37.8336
1.6	41.9509	31.6	37.8212
1.7	41.9356	31.7	37.8088
1.8	41.9203	31.8	37.7964
1.9	41.9051	31.9	37.7840
2.0	**41.8899**	**32.0**	**37.7716**

RM300 TC/TCID RM450 TC/TCID RM650 TC/TCID

THEORETICAL COUNT OF 10 CYCLES @ 15°C TBASE

$$Tc = \frac{30}{72} \times \frac{273.15 + 15}{273.15 + Tga} \times 100$$

Temperature [°C]	Theoretical Count Tc	Temperature [°C]	Theoretical Count Tc
-2.0	**44.2790**	**28.0**	**39.8680**
-1.9	44.2627	28.1	39.8548
-1.8	44.2464	28.2	39.8415
-1.7	44.2301	28.3	39.8283
-1.6	44.2138	28.4	39.8151
-1.5	44.1975	28.5	39.8019
-1.4	44.1812	28.6	39.7887
-1.3	44.1650	28.7	39.7756
-1.2	44.1487	28.8	39.7624
-1.1	44.1325	28.9	39.7492
-1.0	**44.1163**	**29.0**	**39.7361**
-0.9	44.1001	29.1	39.7229
-0.8	44.0839	29.2	39.7098
-0.7	44.0677	29.3	39.6966
-0.6	44.0516	29.4	39.6835
-0.5	44.0354	29.5	39.6704
-0.4	44.0192	29.6	39.6573
-0.3	44.0031	29.7	39.6442
-0.2	43.9870	29.8	39.6311
-0.1	43.9709	29.9	39.6180
0	**43.9548**	**30.0**	**39.6050**
0.1	43.9387	30.1	39.5919
0.2	43.9226	30.2	39.5789
0.3	43.9066	30.3	39.5658
0.4	43.8905	30.4	39.5528
0.5	43.8745	30.5	39.5398
0.6	43.8584	30.6	39.5267
0.7	43.8424	30.7	39.5137
0.8	43.8264	30.8	39.5007
0.9	43.8104	30.9	39.4877
1.0	**43.7945**	**31.0**	**39.4748**
1.1	43.7785	31.1	39.4618
1.2	43.7625	31.2	39.4488
1.3	43.7466	31.3	39.4359
1.4	43.7307	31.4	39.4229
1.5	43.7147	31.5	39.4100
1.6	43.6988	31.6	39.3970
1.7	43.6829	31.7	39.3841
1.8	43.6670	31.8	39.3712
1.9	43.6512	31.9	39.3583
2.0	**43.6353**	**32.0**	**39.3454**

APPENDIX 5 GEAR RATIOS

IMPERIAL METERS: READOUT PER REV. = 10 CF

Meter size	Gear ratio (± 2/1000)
RM600	1253.25:1
RM1000	1253.25:1
RM1500	900.00:1
RM2000	652.74:1
RM3000	450.00:1
RM5000	272.22:1
RM7000	163.33:1
RM11000	100.62:1
RM16000	92.13:1
RM23000	71.01:1

IMPERIAL METERS: READOUT PER REV. = 100 CF

Meter size	Gear ratio (± 2/1000)
RM2000	6527.47:1
RM3000	4500.00:1
RM5000	2722.22:1
RM7000	1633.33:1
RM11000	1006.25:1
RM16000	921.36:1
RM23000	710.14:1
RM25000	521.75:1
RM38000	352.04:1
RM56000	240.81:1

IMPERIAL METERS: READOUT PER REV. = 1000 CF

Meter size	Gear ratio (± 2/1000)
RM38000	3520.40:1
RM56000	2408.12:1

SOFT METRIC METERS: READOUT PER REV. = 0.1 m^3

Meter size	Gear ratio (± 2/1000)
RM16	442.30:1
RM30	442.30:1
RM40	318.47:1
RM55	230.37:1
RM85	159.09:1

SOFT METRIC METERS: READOUT PER REV. = 1 m^3

Meter size	Gear ratio (± 2/1000)
RM140	964.28:1
RM200	573.82:1
RM300	355.38:1
RM450	323.26:1
RM650	250.84:1
RM700	184.15:1
RM1100	124.34:1
RM1600	85.01:1

SOFT METRIC METERS: READOUT PER REV. = 10 m^3

Meter size	Gear ratio (± 2/1000)
RM1100	1243.47:1
RM1600	850.18:1

HARD METRIC METERS: READOUT PER REV. = 0.1 m^3

Meter size	Gear ratio (± 2/1000)
G10	442.30:1
G16	442.30:1
G25	318.46:1
G40	208.33:1
G65	139.28:1

HARD METRIC METERS: READOUT PER REV. = 1 m^3

Meter size	Gear ratio (± 2/1000)
G100	848.07:1
G160	454.32:1
G250	323.26:1
G400	250.83:1
G400-150	184.15:1
G650	124.34:1
G1000	85.01:1

HARD METRIC METERS: READOUT PER REV. = 10 m^3

Meter size	Gear ratio (± 2/1000)
G650	1243.47:1
G1000	850.18:1