

SHEET METAL/ HVAC Pro Calc

*ADVANCED CONSTRUCTION-MATH CALCULATOR
FOR SHEET METAL & HVAC PROFESSIONALS*

MODEL 4090

Pocket Reference Guide



**CALCULATED
INDUSTRIES®**

FAST. ACCURATE. RELIABLE.

SHEET METAL/HVAC PRO

The *Sheet Metal/HVAC Pro* Calc calculator helps you save time and prevent costly errors!

Quickly Solve:

- *Feet-Inches-Fractions, Metric Dimensional Problems and Conversions*
- *Problems Involving All Fractions — 1/2-1/64ths!*
- *Trigonometry Keys*
- *Law of Cosines*
- *Offsets*
- *Fan Laws 1, 2 and 3*
- *Velocity/Velocity Pressure*
- *Right Angle/Rafters*
- *Stair Layout*
- *Areas and Volumes*
- *Circle/Arc, Columns/Cone Area and Volume*
- *And more!*

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KEY DEFINITIONS

Dimension Keys

m	Meters
Conv m	Millimeters
Feet	Feet
Inch	Inch
/	Fraction Bar

Miscellaneous Functions

←	Backspace Key
Conv ×	Clear All
Conv ÷	(1/x) Reciprocal
Conv —	(+/-) Toggle
Conv +	(%) Percent
Conv =	Pref. Settings (see large User's Guide for details)
Conv ◐	Converts between d:m:s and decimal degrees
x²	Squares the value in the display
Conv x³	x³ — Cubes the value in the display

$\sqrt{x}$	Square root
Conv $\sqrt[3]{x}$	Cube root
Conv $/$	Exponent ($\times 10^y$)
M+	(M+) Memory +
Conv M+	(M-) Memory -
Rcl Rcl	Recall and Clear M+
Conv 1	(M1) Storage Register M1
Conv 2	(M2) Storage Register M2
Conv 3	(M3) Storage Register M3
Rcl M+, 1, 2, or 3	Recall M+, M1, M2 or M3

Trig. Keys

Sine	Finds the sine of a degree or undimensioned value
Conv Sine	Arcsine ($\sin^{-1}$) — Gives the angle for the sine value
Cos	Finds the cosine
Conv Cos	Arccosine ($\cos^{-1}$) — Gives the angle for the cosine value
Tan	Finds the tangent

Conv **Tan**

Arctangent ($\tan^{-1}$) —
Gives the angle for the
tangent value

Pythagorean Theorem Keys

- x** Enters or calculates “x” or
the horizontal leg of a right
triangle
- y** Enters or calculates “y” or
the vertical leg of a right
triangle
- r** Enters or calculates “r” or
the hypotenuse (diagonal)
leg of a right triangle
- θ** Enters or calculates the
“theta” or the pitch/slope of
a right triangle

Law of Cosines Keys

- Conv** **9** Calculates angles A, B and
C, as well as triangle area,
given below entries
- Conv** **4** Enters Side “a” of a triangle
- Conv** **5** Enters Side “b” of a triangle
- Conv** **6** Enters Side “c” of a triangle

Offset Keys

- Conv** **(** Calculates offset measurements including: center-line radius, wrapper length/stretch-out, heel radius, throat radius and theta, given below entries
- x** Enters the actual length “x”
- y** Enters the offset “y”
- Conv** **4** Enters length of “end a”

Fan Law Keys

- Conv** **x** **Fan Law 1** — Calculates the missing variable (e.g., “a-new” or “b-new”, for CFM new or RPM new) for Fan Law 1, given the three known variables into the applicable Storage Registers below
- Conv** **y** **Fan Law 2** — Calculates the missing variable (e.g., “a-new” or “b-new”, for CFM new or SP new) for Fan Law 2

Conv **r**

Fan Law 3 — Calculates the missing variable (e.g., “a-new” or “b-new”, for CFM new or BHP new) for Fan Law 3

STORAGE REGISTERS USED FOR FAN LAWS:

Conv **4**

Enters “a-old” or current “a” value

Conv **7**

Enters “a-new”

Conv **5**

Enters “b-old” or current “b” value

Conv **8**

Enters “b-new”

Velocity Pressure/FPM Keys

Conv **0**

VP ◀▶ FPM

Press **Result**

- | | |
|---|---|
| 1 | <i>Calculates velocity (FPM) – assumes entry is velocity pressure</i> |
| 2 | <i>Calculates velocity pressure – assumes entry is velocity (FPM)</i> |

<u>Press</u>	<u>Result</u>
--------------	---------------

- | | |
|---|---|
| 3 | <i>Calculates Metric velocity (MPS) – assumes entry is kPA</i> |
| 4 | <i>Calculates Metric velocity pressure (kPA) – assumes entry is MPS</i> |

Circle/Arc Keys

- | | |
|-------------------------|--|
| Circ | Circle — Calculates circumference and circle area |
| Conv θ | Radius — Enters or calculates circle radius |
| Conv Circ | Arc — Calculates: arc length or degree, chord length, segment area, pie slice area, segment rise, and length of arched wall studs |
| π | Pi (π) — 3.141593 |
| Conv π | ArcK — constant = 0.017453 |

Column/Cone Key

Conv)	Column/Cone — Calculates volume and surface area of column or cone upon consecutive presses of) following Conv
----------------------	---

Right Triangle/Roof Framing Keys

θ (<i>Theta</i>)	Enters/calculates the pitch/slope (amount of “Rise” over 12” of “Run”)
x (<i>Run</i>)	Enters or calculates the horizontal leg of a right triangle
y (<i>Rise</i>)	Enters or calculates the vertical leg of a right triangle
r (<i>Diag</i>)	Enters or calculates the diagonal leg/hypotenuse, or Common rafter length
Hip/V	Calculates length of the regular or irregular Hip/Valley rafter
Conv Hip/V	Enters irregular pitch used to calculate lengths of the irregular Hip/Valley and Jack rafters

Jack

Calculates Jack rafter lengths on the regular-pitched roof side

Conv Jack

Calculates Jack rafter lengths on the irregular-pitched roof side

Stair Layout Key

Stair

Given rise and/or run and stored* variables, calculates or displays:

<u>Press</u>	<u>Result</u>
---------------------	----------------------

- | | |
|----|---------------------------------|
| 1 | Riser Height |
| 2 | Number of Risers |
| 3 | Riser Overage/
Underage |
| 4 | Tread Width |
| 5 | Number of Treads |
| 6 | Tread Overage/
Underage |
| 7 | Stairwell Opening |
| 8 | Stringer Length |
| 9 | Angle of Incline |
| 10 | Run (entered or
calculated) |
| 11 | Rise (entered or
calculated) |

<u>Press</u>	<u>Result</u>
12	Stored Riser Height*
13	Stored Tread Width*
14	Stored Headroom Height*
15	Stored Floor Thickness*

STAIR DEFAULT (STORED) VALUES

- 7-1/2" Desired Riser Height
- 10" Desired Tread Width
- 10" Floor Thickness (used in calculation of Stairwell Opening)
- 6'8" Headroom Height

**Note: See large User's Guide for details on Customizable Stair Settings.*

EXAMPLES

Note: This pocket guide is limited due to space; see large User's Guide for more examples and details on calculator features.

Adding and Subtracting Strings of Dimensions

Add the following measurements:

- 6 feet 2-1/2 inches
- 18.25 inches
- 2.5 meters

Then subtract 5.5 feet:

KEYSTROKE	DISPLAY
6 Feet 2 Inch 1 / 2 +	
1 8 . 2 5 Inch +	
2 . 5 m =	15 FEET 11-3/16 INCH
- 5 . 5 Feet =	10 FEET 5-3/16 INCH

Dividing Dimensions

*Divide 15 feet 3-3/4 inches into thirds
(divide by 3):*

KEYSTROKE	DISPLAY
1 5 Feet 3 Inch 3 / 4 ÷ 3 =	
	5 FEET 1-1/4 INCH

Converting Feet-Inches to Decimal Feet

Convert 5' 7-1/2" to decimal feet, then decimal inches (also, convert to fractional inches):

KEYSTROKE	DISPLAY
5 Feet 7 Inch 1 / 2	5 FEET 7-1/2 INCH
Conv Feet	5.625 FEET
Inch	67.5 INCH
Inch	67-1/2 INCH

Converting Feet-Inches to Meters and Millimeters

Convert 8' 6" to meters and millimeters:

KEYSTROKE	DISPLAY
8 Feet 6 Inch Conv m	2.591 M
m (mm)	2590.8 MM

Converting Fractions to Decimals (and Vice Versa)

Convert 7/32" to decimal inch (and round answer). Then convert 5.875" to the nearest 16ths of an inch:

KEYSTROKE	DISPLAY
7 / 3 2 Conv Inch	0.21875 INCH
	(Answer = 0.219")
5 • 8 7 5 Inch Conv Inch	5-7/8 INCH

Circle Circumference and Area

Find the circumference and area of a circle with a diameter of 25 inches:

KEYSTROKE	DISPLAY
On/C On/C	0.
2 5 Inch Circ	DIA 25 INCH
Circ	CIRC 78-9/16 INCH
Circ	AREA 490.8739 SQ INCH

Rectangular Area and Volume

Find the area and volume:

- Length: 20 feet 6-1/2 inches
- Width: 12 feet 8-1/2 inches
- Height: 18 inches

KEYSTROKE	DISPLAY
2 0 Feet 6 Inch 1 / 2 X	20 FEET 6-1/2 INCH
1 2 Feet 8 Inch 1 / 2 =	261.0503 SQ FEET
X 1 8 Inch =	391.5755 CU FEET

Area of a Triangle

Find the area of a triangle if its base is 45" and altitude/height is 30":

KEYSTROKE	DISPLAY
4 5 Inch ÷ 2 =	22-1/2 INCH
× 3 0 Inch =	675. SQ INCH

Volume of a Cylinder

Find the volume of a cylinder with a diameter of 2 feet 4 inches and a height of 4 feet 6 inches:

Note: Use Column/Cone function.

KEYSTROKE	DISPLAY
1. Enter diameter to find circle area:	
On/C On/C	0.
2 Feet 4 Inch Circ Circ Circ	
	AREA 4.276057 SQ FEET
2. Enter height and find volume:	
4 Feet 6 Inch y Conv)	
	COL 19.24226 CU FEET

Cubed Function

What is 50^3 ?

KEYSTROKE	DISPLAY
On/C On/C	0.
5 0 Conv x^2	125000.

Cubed Root

What are the three dimensions of a cube with a volume of 2028 in³?

KEYSTROKE	DISPLAY
On/C On/C	0.
2 0 2 8 Conv $\sqrt{x}$	12.65773 (INCH)

Scientific Notation

Add 1.78×10^{10} and 3.90×10^9 :

KEYSTROKE	DISPLAY
On/C On/C	0.
1 . 7 8 Conv / 1 0 + 3 . 9	
Conv / 9 =	2.17000×10^{10}

Converting D:M:S

Convert 23°42'39" to decimal degrees:

KEYSTROKE	DISPLAY
On/C On/C	0.
2 3 ° 4 2 ' 3 9	DMS 23.42.39
Conv °	23.71083°

Finding Sine, Cosine, Tangent

Find Sin 12°, Cos 33° and Tan 75°:

KEYSTROKE	DISPLAY
On/C On/C	0.
1 2 Sine	0.207912
3 3 Cos	0.838671
7 5 Tan	3.732051

Finding ArcSin, ArcCos, ArcTan

Find angle A if $\sin A = 0.57544$, $\cos A = 0.06753$ and $\tan A = 0.87421$; round to the nearest whole angle:

KEYSTROKE	DISPLAY
On/C On/C	0.
• 5 7 5 4 4 Conv Sine	35.13045° (35°)
• 0 6 7 5 3 Conv Cos	86.12787° (86°)
• 8 7 4 2 1 Conv Tan	41.16028° (41°)

Using Trigonometry to Find Unknown Side

Using the Pythagorean Theorem ($a^2 + b^2 = c^2$) keys, find Side a ("x") of a right triangle, if Side b ("y") is 6-1/2" and Side c ("r"), the hypotenuse, is 12-1/16":

Note: Use the calculator's x, y and r keys; substitute triangle legs a, b and c for **x**, **y** and **r**.

KEYSTROKE	DISPLAY
On/C On/C	0.
6 Inch 1 / 2 y	Y 6-1/2 INCH
1 2 Inch 1 / 1 6 r	R 12-1/16 INCH
x	X 10-3/16 INCH

Offset Basic Example

If an offset is 5 feet, the actual length 10 feet, and the height of the “end A” equal to 7 feet, calculate all offset values:

KEYSTROKE	DISPLAY
-----------	---------

On/C On/C	0.
-------------------------	----

1. Enter actual length as “x”:

1 0 Feet x	X 10 FEET 0 INCH
--	------------------

2. Enter offset length as “y”:

5 Feet y	Y 5 FEET 0 INCH
-------------------------------	-----------------

3. Enter “end A” as “a”:

7 Feet Conv 4	A STORED 7 FEET 0 INCH
---	------------------------

4. Find Centerline Radius, Wrapper Length, Heel Radius, Throat Radius and Theta:

Conv (	RAD 6 FEET 3 INCH
(	WL 11 FEET 7-1/8 INCH
(	HEEL 9 FEET 9 INCH
(	THRT 2 FEET 9 INCH
(	THET 26.56505°

Law of Cosines/Triangle Area

Using Sides a , b and c , find the corresponding angles A , B and C :

--Side a : 38 feet 5 inches

--Side b : 23 feet 4-9/16 inches

--Side c : 26 feet 1-13/16 inches

KEYSTROKE

DISPLAY

On/C **On/C**

0.

1. Enter side a , b and c :

3 **8** **Feet** **5** **Inch** **Conv** **4**

A STORED 38 FEET 5 INCH

2 **3** **Feet** **4** **Inch** **9** **/** **1** **6** **Conv** **5**

B STORED 23 FEET 4-9/16 INCH

2 **6** **Feet** **1** **Inch** **1** **3** **/** **1** **6** **Conv** **6**

C STORED 26 FEET 1-13/16 INCH

2. Calculate angles A , B and C :

Conv **9**

<A 101.5734°

9

<B 36.59978°

9

<C 41.8268°

3. Calculate triangle area:

9

AREA 299.4929 SQ FEET

Fan Law 1

A 1,250 CFM fan is running at 750 RPM, but it needs to supply 1,400 CFM. What is the RPM required?

KEYSTROKE	DISPLAY
-----------	---------

On/C On/C	0.
-------------------------	----

1. Enter current CFM into “a” old:

1 2 5 0 Conv 4	A STORED 1250.
--	-----------------------

2. Enter new CFM into “a-new”:

1 4 0 0 Conv 7	An STORED 1400.
--	------------------------

3. Enter current RPM into “b” old:

7 5 0 Conv 5	B STORED 750.
---	----------------------

4. Calculate new RPM or “b-new”:

Conv x	RPMn FAN LAW1 840.
----------------------	---------------------------

Fan Law 2

A fan is producing 15,300 CFM at 3.2" SP. If the fan is adjusted to 14,000 CFM, what will the new SP be?

KEYSTROKE	DISPLAY
-----------	---------

On/C On/C	0.
-------------------------	----

1. Enter current CFM into "a" old:

1 5 3 0 0 Conv 4	A STORED 15300.
---	------------------------

2. Enter new CFM into "a-new":

1 4 0 0 0 Conv 7	An STORED 14000.
---	-------------------------

3. Enter current SP into "b" old:

3 • 2 Conv 5	B STORED 3.2
---	---------------------

4. Calculate new SP or "b-new":

Conv y	SP_n FAN LAW2 2.679311
----------------------	---

Fan Law 3

A fan is running at 15,800 CFM using 6.3 BHP. If the CFM is increased to 20,000 CFM, what is the new BHP?

KEYSTROKE	DISPLAY
On/C On/C	0.

1. Enter current CFM into "a" old:

1 **5** **8** **0** **0** **Conv** **4**

A STORED 15800.

2. Enter new CFM into "a-new":

2 **0** **0** **0** **0** **Conv** **7**

An STORED 20000.

3. Enter current BHP into "b" old:

6 **.** **3** **Conv** **5**

B STORED 6.3

4. Calculate new BHP or "b-new":

Conv **r**

BHP_n FAN LAW 3 12.77789

Converting Velocity Pressure

After obtaining velocity pressures (VPs) from taking a traverse, convert the following to feet per minute (FPM):

0.049"

0.123"

0.027"

KEYSTROKE	DISPLAY
On/C On/C	0.
• 0 4 9 Conv 0 *	FPM 886.5445
On/C On/C	0.
• 1 2 3 Conv 0	FPM 1404.608
On/C On/C	0.
• 0 2 7 Conv 0	FPM 658.0887

The VP $\blacktriangleleft\blacktriangleright$ FPM function begins with the last displayed value. If FPM is not displayed with the first press of **Conv **0**, continue pressing **0** until FPM is displayed.*

Converting FPM

Calculate the velocity pressure if the feet per minute (FPM) is 500:

KEYSTROKE	DISPLAY
On/C On/C	0.

Enter 500 FPM to calculate velocity pressure (VP):

5 **0** **0** **Conv** **0** **0*** **VP 0.015586**

The VP ◀▶ FPM function begins with the last displayed value. If VP is not displayed with the first press of **Conv **0**, continue pressing **0** until VP is displayed.*

RIGHT ANGLE/FRAMING

Degree of Pitch

If the degree of pitch is 30.45°, what is the percent grade, slope and pitch in inches?

KEYSTROKE

DISPLAY

On/C	On/C	0.
3	0	<∅ 30.45°
•	4	%GRD 58.78702
5	θ	SLP 0.58787
θ		PTCH 7-1/16 INCH
θ		
θ		

Note: To convert Pitch in Inches: Simply enter the pitch in inches first (e.g., **7** **Inch** **θ**), then continuously press the **θ** key to calculate the pitch conversions, as above.

Angle and Hypotenuse

Find the diagonal (hypotenuse) and degree of angle of a right triangle that is 9 feet high and 12 feet long:

KEYSTROKE	DISPLAY
-----------	---------

On/C On/C	0.
-------------------------	----

1. Enter rise and run:

9 Feet y	Y 9 FEET 0 INCH
-------------------------------	------------------------

1 2 Feet x	X 12 FEET 0 INCH
--	-------------------------

2. Solve for diagonal/hypotenuse and pitch in inches and degree of angle:

r	R 15 FEET 0 INCH
----------	-------------------------

θ	<θ 36.8699°
----------	-----------------------

θ θ θ	PTCH 9 INCH
----------------------------	--------------------

Common Rafter Length

Find the point-to-point length of the common rafter on a 7/12-pitched roof with a span of 28 feet. What are the angle cuts?

KEYSTROKE

DISPLAY

On/C **On/C**

0.

1. Enter pitch:

7 **Inch** **θ**

PTCH 7 INCH

2. Enter half the span as the run:

28 **Feet** **÷** **2** **=**

14 FEET 0 INCH

x

X 14 FEET 0 INCH

3. Find the Common and cuts:

r

R 16 FEET 2-1/2 INCH

r

PLMB 30.25644°

r

LEVL 59.74356°

Regular Hip/Valley and Jacks

A roof's pitch is 9/12 and half the total span is 6 feet. Find the lengths of the Common, Hip/Valley and Jack rafters. Also find the cut angles:

*Note: Jack rafters are set at 16" on-center spacing; to change on-center, use **Jack** — e.g., for a 17" o.c., enter **1 7 Jack**.*

KEYSTROKE	DISPLAY
-----------	---------

On/C On/C	0.
-------------------------	----

1. Find the Common rafter length:

6 Feet x	X 6 FEET 0 INCH
9 Inch θ	PTCH 9 INCH
r (Common)	R 7 FEET 6 INCH

2. Find the Hip/Valley rafter length and cut angles; then Jack rafter lengths and cut angles:

Hip/V	H/V 9 FEET 7-1/4 INCH
Hip/V	PLMB 27.94°*
Hip/V	LEVL 62.06°*
Hip/V	CHK1 45.°
Jack	JKOC 16 INCH
Jack	JK 1 5 FEET 10 INCH
Jack	JK 2 4 FEET 2 INCH
Jack	JK 3 2 FEET 6 INCH
Jack	JK 4 0 FEET 10 INCH

KEYSTROKE	DISPLAY
Jack	JK 5 0 FEET 0 INCH
Jack	PLMB 36.87°*
Jack	LEVL 53.13°*
Jack	CHK1 45.°

**Angle answers are rounded.*

Irregular Hip/Valley

A roof has a 9/12 pitch, an irregular pitch of 8/12, and half the span is 6 feet 7 inches. Solve the hip/valley length. On-center spacing is 16" (default):

KEYSTROKE	DISPLAY
On/C On/C	0.
<i>1. Find Common rafter length:</i>	
9 Inch θ	PTCH 9 INCH
6 Feet 7 Inch x	X 6 FEET 7 INCH
r	R 8 FEET 2-3/4 INCH

2. Enter irregular pitch and find irregular Hip rafter:

8 Inch Conv Hip/V	IPCH 8 INCH
Hip/V	IH/V 11 FEET 0-7/8 INCH

STAIRS

Stairs — Given Rise and Run

You're going to build a stairway that has a floor-to-floor height of 10 feet 1 inch, a run of 12 feet 5 inches, and a desired riser height of 7-1/2 inches (default). Find the following: riser height, number of risers, riser overage/underage (if any), tread width, number of treads, tread overage/underage (if any), stairwell opening, stringer length, and angle of incline:

KEYSTROKE	DISPLAY
-----------	---------

On/C On/C	0.
-------------------------	----

1. Enter rise and run:

1 0 Feet 1 Inch y	Y 10 FEET 1 INCH
---	------------------

1 2 Feet 5 Inch x	X 12 FEET 5 INCH
---	------------------

2. Recall stored 7-1/2" desired riser height and find stair values:

Rcl Stair	STORED R-HT 7-1/2 INCH
-------------------------	------------------------

Stair	R-HT $\uparrow$ 7-9/16 INCH
--------------	-----------------------------

Stair	RSRS 16.
--------------	----------

Stair	R+/- 0 INCH
--------------	-------------

Stair	T-WD $\uparrow$ 9-15/16 INCH
--------------	------------------------------

Stair	TRDS 15.
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KEYSTROKE**DISPLAY****Stair****T+/- 0-1/16 INCH****Stair****OPEN 9 FEET 10-1/4 INCH****Stair****STRG 15 FEET 7-5/16 INCH****Stair****INCL 37.27136°**

APPENDIX

Preference Settings

See large User's Guide for details.

Battery and Warranty Information

See large User's Guide for details.

- Your calculator uses Two (2) LR44 batteries.



Battery Warnings

- Remove and immediately recycle or dispose of used batteries according to local regulations and keep away from children. Do NOT dispose of batteries in household trash or incinerate.
- Even used batteries may cause severe injury or death.
- Call a local poison control center for treatment information.
- Compatible battery type is LR44 (2x1.5 V).
- Non-rechargeable batteries are not to be recharged.
- Do not force discharge, recharge, disassemble, heat above manufacturer's specified temperature rating or incinerate. Doing so may result in injury due to venting, leakage or explosion resulting in chemical burns.

- Ensure the batteries are installed correctly according to polarity (+ and -).
- Do not mix old and new batteries, different brands or types of batteries, such as alkaline, carbon-zinc, or rechargeable batteries.
- Remove and immediately recycle or dispose of batteries from equipment not used for an extended period of time according to local regulations.
- Always completely secure the battery compartment. If the battery compartment does not close securely, stop using the product, remove the batteries, and keep them away from children.

WARNING

- **INGESTION HAZARD:** This product contains a button cell or coin battery.
- **DEATH** or serious injury can occur if ingested.
- A swallowed button cell or coin battery can cause **Internal Chemical Burns** in as little as **2 hours**.
- **KEEP** new and used batteries **OUT OF REACH** of **CHILDREN**.
- **Seek immediate medical attention** if a battery is suspected to be swallowed or inserted inside any part of the body.



REPAIR AND RETURN

WARRANTY, REPAIR AND RETURN INFORMATION

Return Guidelines

1. Please read the Warranty in this User's Guide to determine if your Calculated Industries product remains under warranty before calling or returning any device for evaluation or repairs.
2. If your product won't turn on, check the battery as outlined in the User's Guide.
3. If you need more assistance, please go to the website listed below.

www.calculated.com/warranty

WARRANTY

Warranty Repair Service

Calculated Industries ("CI") warrants this product against defects in materials and workmanship for a period of one (1) year from the date of original consumer purchase in the U.S. If a defect exists during the warranty period, CI at its option will either repair (using new or remanufactured parts) or replace (with a new or remanufactured calculator) the product at no charge.

THE WARRANTY WILL NOT APPLY TO THE PRODUCT IF IT HAS BEEN DAMAGED BY MISUSE, ALTERATION, ACCIDENT, IMPROPER HANDLING OR OPERATION, OR IF UNAUTHORIZED REPAIRS ARE ATTEMPTED OR MADE. SOME EXAMPLES OF DAMAGES NOT COVERED BY WARRANTY INCLUDE, BUT ARE NOT LIMITED TO, BATTERY LEAKAGE, BENDING, A BLACK "INK SPOT" OR VISIBLE CRACKING OF THE LCD, WHICH ARE PRESUMED TO BE DAMAGES RESULTING FROM MISUSE OR ABUSE.

To obtain warranty service in the U.S., please go to the website.

www.calculated.com/warranty

Non-Warranty Repair Service

Non-warranty repair covers service beyond the warranty period, or service requested due to damage resulting from misuse or abuse.

Contact Calculated Industries at the website listed below to obtain current product repair information and charges.

www.calculated.com/warranty

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