

## **Rotate and Translate in Trimble Survey Controller**

**Scenario:** You have a plat for a boundary survey you are performing that is tied to grid and lists the bearings and distances for each property line. You are unable to occupy and backsight any of the corners, so you wish to set your own assumed control to start your survey and tie two property corners in order to rotate and translate your control to match the plat. For this example points 1,2, and 3 are traverse points and points 100 and 101 are iron pins side shot from the traverse. Points 1000 and 1001 are the values keyed in from the plat that corresponds to points 100 and 101.



From the Survey Controller main menu tap on Cogo.



M Job: BOUN	DARY	🛞 🗱 ┥€ 8:42	ok
Files	Key in	Compute inverse Compute point Compute area Compute azimuth Compute distance Compute average Subdivide a line Subdivide an arc Transformations	80% 80% .000 +0 .000 0 10 ites
Exit	<u>r</u> oño	Traverse Taped distances Calculator	h to er

Tap on Transformations.

<b>#</b>	Transformations	🍥 🗱 📢 11:07 🛛 ok
Sele	ect transformation types —	80%
	✓ Rotate	🗳 S 5.000
	Scale	0 +0 1 5.000
	✓ Translate	<u>M</u> ap Menu
╏└──		Favorites
		S <u>w</u> itch to
Esc		Next

Tap on Rotate and Translate. Tap on Next.



<b>#</b>	Rotate		(۲)	' ┥€ 1	1:08	ok
Origin	point:	 Rotation:				D 80%
100		0°00'00"				
Northir	ng:	Easting:			£	S
?		?			-	5.000
Elevati ?	ion:				<b>%</b>	+0 5.000
					M	<u>l</u> ap
					M	<u>e</u> nu
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					S <u>w</u> it	:ch to
Back					Er	nter

Enter the origin point for the rotation. Tap on  $\mathbf{D}$  next to the Rotation box.

🏄 Rotate	🔊 🗱 📢	1:10 ok
Origin point:		80%
Northing: 4992.547sft	Easting: 5047.650sft	🗳 S 5.000
Elevation: 99.674sft		
		<u>М</u> ар
		M <u>e</u> nu
		F <u>a</u> vorites
		S <u>w</u> itch to
Back		Enter

Tap on Calculator.



<b>#</b>	Calcul	ator :	Rotat	ion	(	ت 🕲	<b>   </b> € 1	1:11 ok
					C		₫ ×	80%
					X \$ Y	♦	Мет	🔒 s
					R₩	• • •	1⁄x	<b>*</b> 5.000
7	8	9	÷	SIN	>DMS	>D.dd	√x	1 5.000
4	5	6	X	cos	DMS+	DMS-	LOG	<u>M</u> ap
	2	<u>_</u>		тан	<b>D</b> 1 <b>D</b>		-	M <u>e</u> nu
	<b>_</b>	3	_		РЖ	КУР	ГЛ Л	F <u>a</u> vorites
0	•	た	+	Ε±	-		HIFT	S <u>w</u> itch to
Esc	Azimuth Distance Accept						Enter	

Tap on Azimuth.

🏄 Con	npute azimuth	🍥 🗱 📢 1	1:15 ok
Method:			50%
Between	two points  🔻		
From point	: To point:		7
Computed	bearing:		
			<u>M</u> ap
			M <u>e</u> nu
			F <u>a</u> vorites
			S <u>w</u> itch to
Esc			Enter

Enter the point numbers to calculate the first azimuth and tap Enter.

🏄 Compute azimuth	🛞 🗱 📢 1	1:17 ok
Method:		50%
Between two points 🛛 👻		
From point: To point:		
100	▶	
Computed bearing (grid): N1°44'43''E		
		<u>M</u> ap
		M <u>e</u> nu
		F <u>a</u> vorites
		S <u>w</u> itch to
Esc Store		Accept



The computed bearing is displayed. Tap on Accept.

🏄 Calculator : Rotation 🛛 🛞 📰 ┥ 11:18								1:18 ok
					C	▼₹	1×	50%
					X\$Y	♦	Мет	•
1°44'	42.78	95504	25"		R₩	0 T TT	1⁄x	2
7	8	9	÷	SIN	>DMS	>D.dd	√x	
4	5	6	X	cos	DMS+	DMS-	LOG	<u>M</u> ap
				тан			The second secon	M <u>e</u> nu
		3	_		РЖ		л Л	F <u>a</u> vorites
0	•	ヤ_	+	Ε±	-	JS	HIFT	S <u>w</u> itch to
Esc	Azimuth Distance Accept							Enter

The computed bearing is automatically entered in the calculator. Tap Azimuth again.

🏄 Compute az	imuth	⑧ # ◀€ 1	1:20 ok
Method:			50%
Between two poi	nts 🔻		
From point:	To point:		
1000	▶ 1001	•	<u></u>
Computed bearing:			
?			
			<u>M</u> ap
			M <u>e</u> nu
			F <u>a</u> vorites
			S <u>w</u> itch to
Esc			Enter

Type in the points to compute the second bearing and tap Enter.



🏄 Compute azimuth	🛞 # ◀€ 1	1:21 ok
Method:		50%
Between two points 🛛 🔻		_
From point: To point:		
1000	▶	
Computed bearing (grid): N57°28'10''W		
		<u>M</u> ap
		M <u>e</u> nu
		F <u>a</u> vorites
		S <u>w</u> itch to
Esc Store		Accept

The computed bearing is now displayed. Tap on Accept.

<b>#</b>	Calcul	ator :	Rotat	ion	🍥 🗱 ┥€ 11:30 🛛 ok			
					C		z ×	50%
1°44'	42.78	95504	25"		X \$ Y	♦	Мет	
302°:	31'50.	00000	0"		R₩	0 T TT	1⁄x	~
7	8	9	÷	SIN	>DMS	>D.dd	√x	
4	5	6	X	cos	DMS+	DMS-	LOG	Map
4	2	2		тан	D\D	0.0	The second secon	<u>Me</u> nu
	<b>_</b>	<u> </u>			F7K		"	F <u>a</u> vorites
0	•	た	+	Ε±	4	┛	SHIFT	S <u>w</u> itch to
Esc	Azimuth Distance Accept							Enter

The bearing has automatically been changed to an azimuth and entered in the calculator. Tap on  $\square$ .



<b>#</b>	Calcul	ator :	Rotat	ion	(	ت ۱	' ┥€ 1	1:32 ok
					С	▼▼	1×	50%
					X\$Y	Ŷ	Мет	۵
-300	°47'07	.2104	50"		R₩	0 T TT	1⁄x	-
7	8	9	÷	SIN	>DMS	>D.dd	√x	
4	5	6	X	cos	DMS+	DMS-	LOG	Map
	2	2		ТАН	P>P	B/b	π	M <u>e</u> nu
	<b>_</b>	<u> </u>				Ľ	<u> </u>	F <u>a</u> vorites
0	•	*-	+	E±	<b></b>	JS	HIFT	S <u>w</u> itch to
Esc	Azimuth Distance Accept							Enter

The rotation angle between the two bearings has been calculated. Tap on 🔀 to change the sign as needed. Tap on Accept.

🎢 Rotate	) 🕂 🛱 🎯	11:34 ok
Origin point:	Rotation:	50%
Northing: 4992.547sft	Easting: 5047.650sft	1
Elevation: 99.674sft		
		<u>М</u> ар
		M <u>e</u> nu
		F <u>a</u> vorites
		S <u>w</u> itch to
Back		Next

The rotation angle has automatically been entered. Tap on Next.



🏄 Translate		🍥 🗱 📢 1	1:36 ok
Method: Two points ▼ From point: 100 ▶ Δ North: ?	To point: 1000 ∆ East: ?	Þ	50%
Δ Elevation:			<u>M</u> ap
?			M <u>e</u> nu
			F <u>a</u> vorites
			S <u>w</u> itch to
Back			Enter

The Translate screen opens. Enter the beginning point and the ending point for the translation. Tap on Enter.



The translation deltas are computed. Tap on Next.



🏄 Select points 🛛 🛞 🗱 📢				€ 1	1:38 ok	
Met	Name		Code			50%
IW	√ ▲1		NAIL			-
10			NAIL	IAIL h	h	- 3
	√ <u>A</u> 3 √ K 100		NAIL IPF			
14						
ΔE	✓ 101					<u>M</u> ap
?	<ul><li>● 1000</li><li>● 1001</li></ul>		PLAT			M <u>e</u> nu
						F <u>a</u> vorites
					1	S <u>w</u> itch to
Bac	All	None	Filter	7		Accept

Select the points you wish to rotate. The filter button at the bottom allows you to select points by type. Tap Accept.



Our 3 traverse points and 2 iron rods have now been transformed. You can check your transformation by inversing between your sideshots on the iron rods and the plat coordinates of the iron rods.

You can change from bearings to azimuths in the units section of the properties of current job.