

Bill of Material				
Find No.	Company:	Description:	Cost	Purchase/Not Purchase
1	Amazon	IR Infrared Obstacle Avoidance Sensor IR transmitting Arduino	\$ 9.99	Purchase
2	Amazon	5pcs 30A range current Sensor Module Arduino	\$ 11.99	Purchase
3	Amazon	Electric Motor	\$ 9.99	Purchase
4	Amazon	LCD Screen Display Module Blue Backlight X 2	\$ 39.96	Purchase
5	Amazon	ElectroCookie Solerale Breadboard	\$ 8.49	Purchase
6	Amazon	LeMotech Electrical Box 5.9"x3.9"x2.8"	\$ 15.99	Purchase
7	The Home Depot	Black Rubber Cord	\$ 2.64	Purchase
8	Harbor Feight	3pc Poxy Glue	\$ 9.14	Purchase
9	Amazon	Ball Bearings Bore 4mm OD 10mm ID 5mm	\$7.64	Purchase
10	Remington	Magnet Wire, 23 AWG Enameled Copper	\$ 19.09	Not Purchase
11	Master-Carr	- 2 ¼ inch diameter, 6 inches long. Part 9062K42	\$ 80.00	Not Purchase
12	Elemental Motor	Magnets- donated	\$ -	N/a
13	Elemental Motor	Silicon Steel- donated	\$ -	N/a
		Total:	\$214.92	

4

3

2

1

ITEM NO.

PART NUMBER

DESCRIPTION

QTY.

COST

1

Casing for magnets

Casing for magentic rotor

1

16.00

2

Stator Casing

1

32.00

3

Skewed Stator

12 stator arms

1

56.00

4

Rotor for magnets

14 magnets

1

46.00

5

shaft

To keep all all the components together

1

20.00

6

AFBMA 12.1.4.1 - 0040-11 - 8,DE,NC,8_68

Deep grove ball bearing

2

15.99

7

B18.3.1M - 2 x 0.4 x 6 Hex SHCS -- 6NHX

Hex Screw

1

0.50

1

6

4

3

2

6

5

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UNLESS OTHERWISE SPECIFIED:

DIMENSIONS ARE IN INCHES

TOLERANCES:

FRACTIONAL ±

ANGULAR: MACH ± BEND ±

TWO PLACE DECIMAL ±

THREE PLACE DECIMAL ±

INTERPRET GEOMETRIC TOLERANCING PER:

MATERIAL

FINISH

NEXT ASSY

USED ON

APPLICATION

DO NOT SCALE DRAWING

NAME

DATE

DRAWN

CHECKED

ENG APPR.

MFG APPR.

Q.A.

COMMENTS:

TITLE:

SIZE

DWG. NO.

REV

BOM Final Design

SCALE: 1:1

WEIGHT:

SHEET 1 OF 1

4

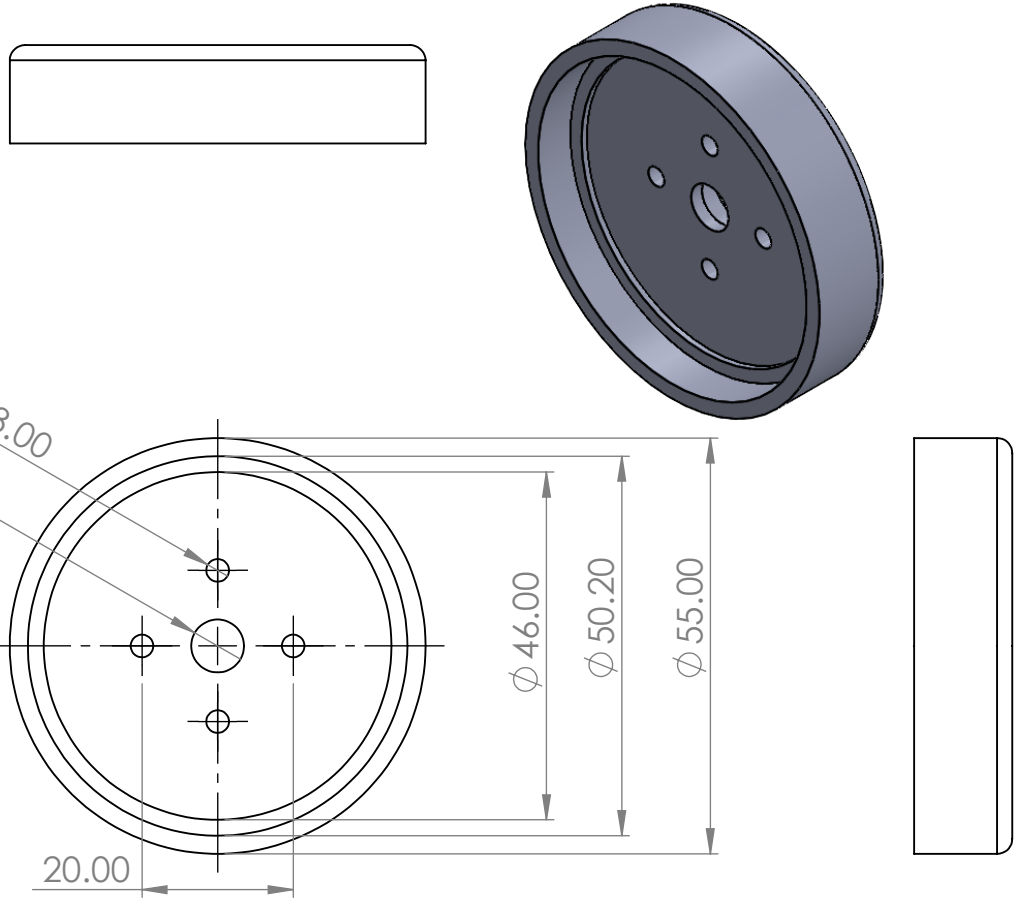
3

2

1

SOLIDWORKS Educational Product. For Instructional Use Only.

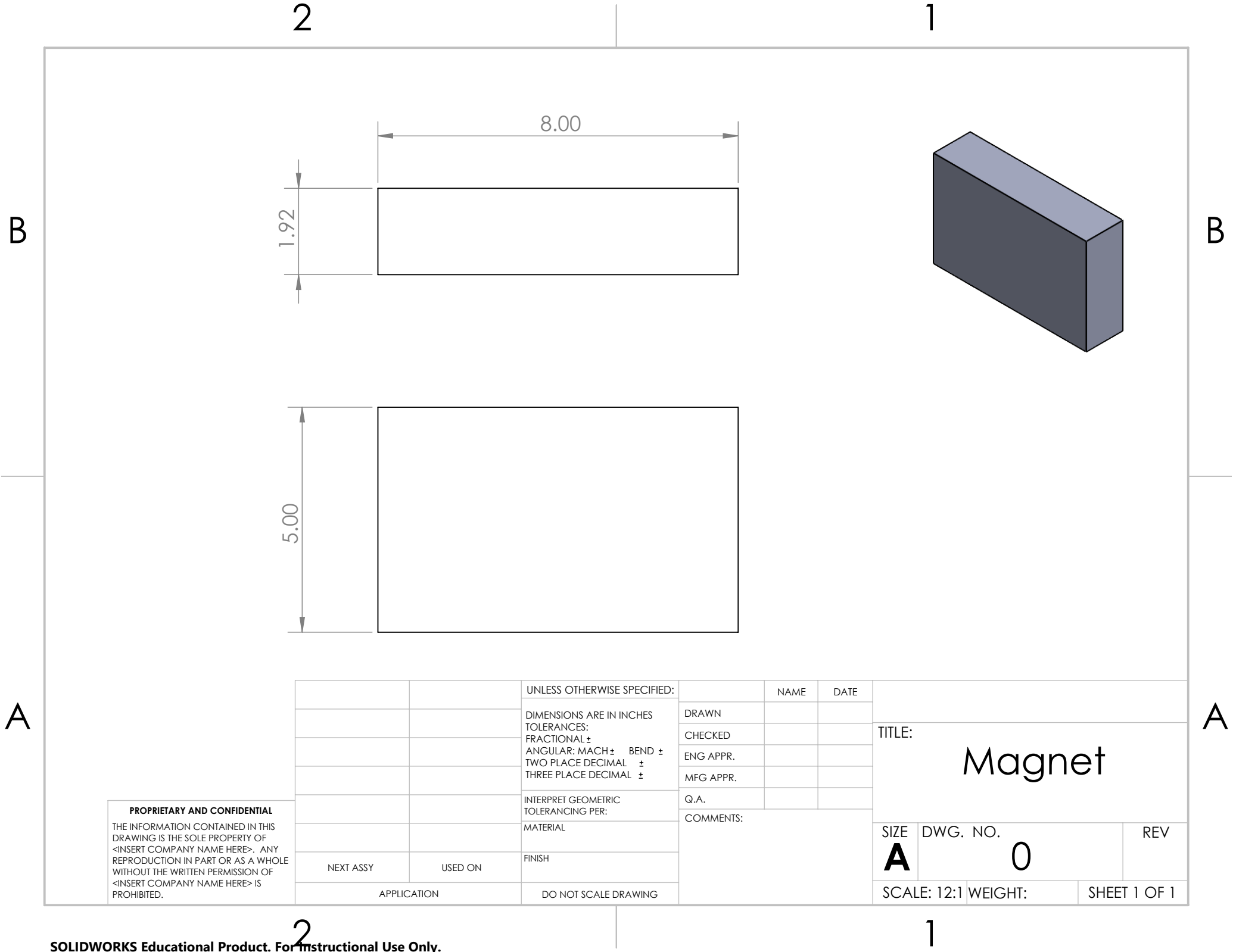
ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	Casing for magnets	Casing for magentic rotor	1



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		UNLESS OTHERWISE SPECIFIED:		NAME	DATE
		DIMENSIONS ARE IN INCHES	DRAWN		
		TOLERANCES:	CHECKED		
		FRACTIONAL ±	ENG APPR.		
		ANGULAR: MACH ± BEND ±	MFG APPR.		
		TWO PLACE DECIMAL ±	Q.A.		
		THREE PLACE DECIMAL ±	COMMENTS:		
		INTERPRET GEOMETRIC TOLERANCING PER:			
		MATERIAL			
NEXT ASSY	USED ON	FINISH			
	APPLICATION	DO NOT SCALE DRAWING			

TITLE:		
Casing for magentic rotor		
SIZE	DWG. NO.	REV
A	Casing Rotor	
SCALE: 1:1	WEIGHT:	SHEET 1 OF 1



B

B

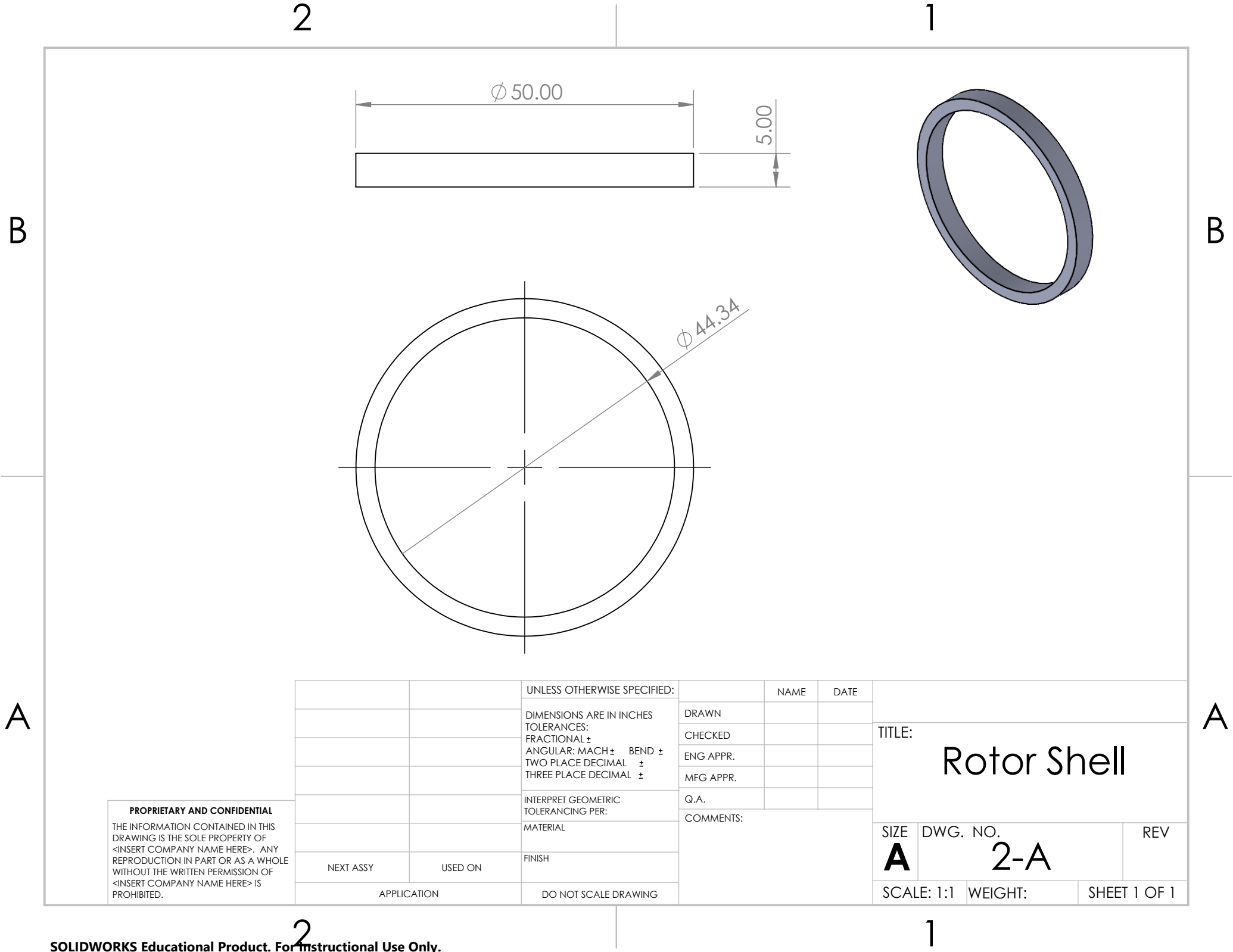
A

A

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		UNLESS OTHERWISE SPECIFIED:		NAME	DATE
		DIMENSIONS ARE IN INCHES	DRAWN		
		TOLERANCES:	CHECKED		
		FRACTIONAL $\pm$	ENG APPR.		
		ANGULAR: MACH $\pm$ BEND $\pm$	MFG APPR.		
		TWO PLACE DECIMAL $\pm$	Q.A.		
		THREE PLACE DECIMAL $\pm$	COMMENTS:		
		INTERPRET GEOMETRIC			
		TOLERANCING PER:			
		MATERIAL			
NEXT ASSY	USED ON	FINISH			
APPLICATION		DO NOT SCALE DRAWING			

TITLE:					
Magnet					
SIZE	DWG. NO.			REV	
A	0				
SCALE: 12:1		WEIGHT:		SHEET 1 OF 1	



B

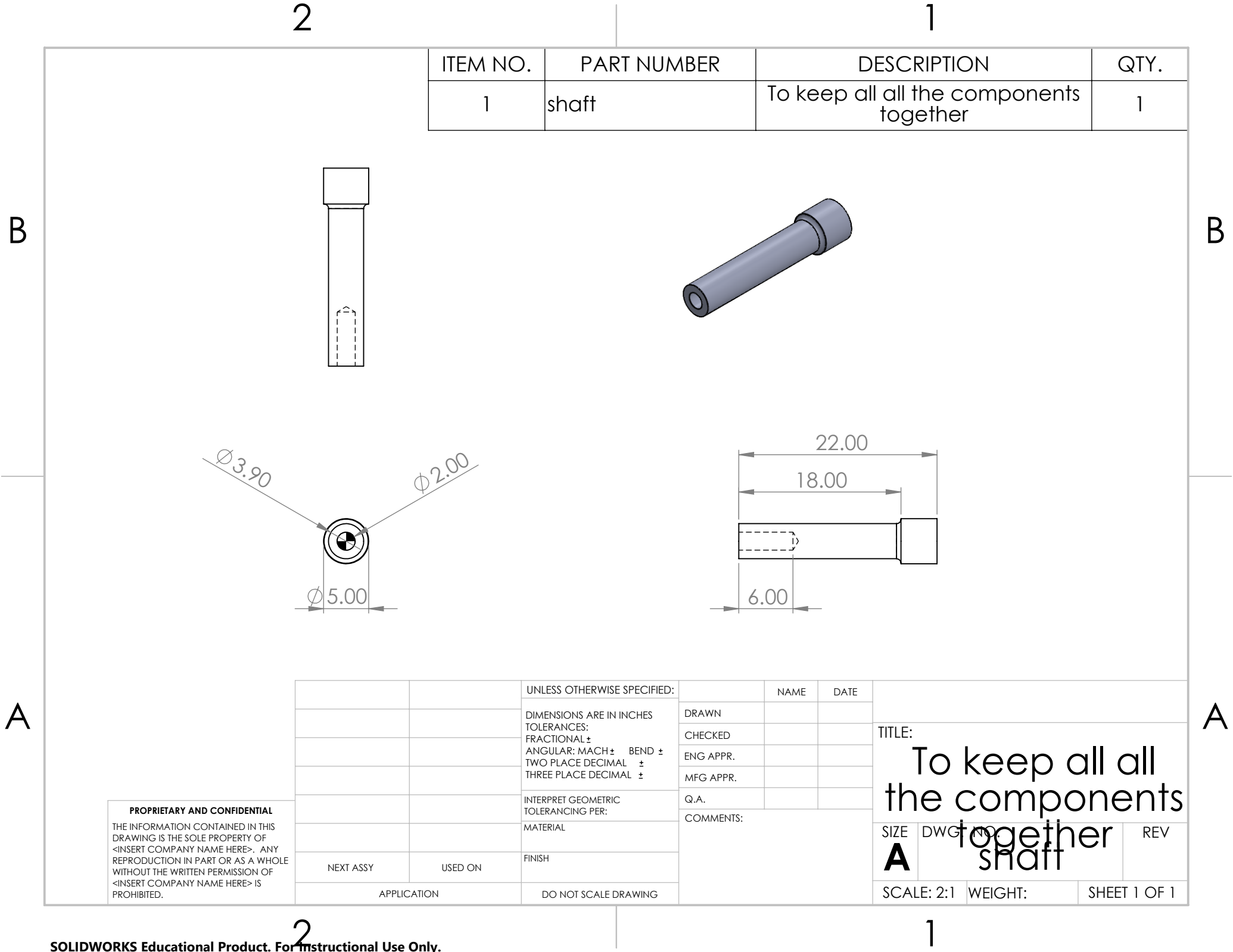
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A

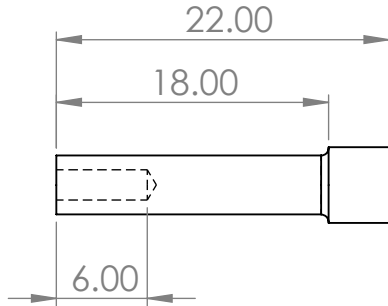
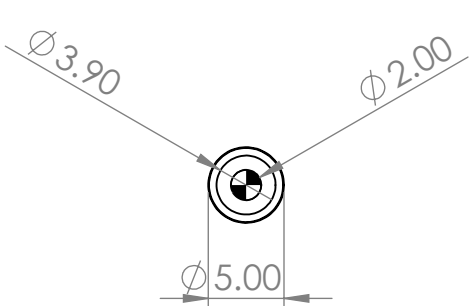
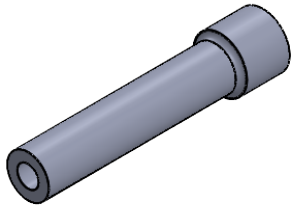
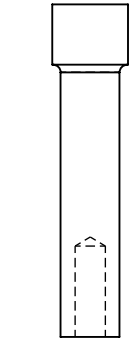
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		UNLESS OTHERWISE SPECIFIED:		NAME	DATE	TITLE: Rotor Shell		
		DIMENSIONS ARE IN INCHES	DRAWN					
		TOLERANCES:	CHECKED					
		FRACTIONAL ±	ENG APPR.					
		ANGULAR: MACH ± BEND ±	MFG APPR.					
		TWO PLACE DECIMAL ±	Q.A.			SIZE	DWG. NO.	REV
		THREE PLACE DECIMAL ±	COMMENTS:			A	2-A	
		INTERPRET GEOMETRIC TOLERANCING PER:				SCALE: 1:1	WEIGHT:	SHEET 1 OF 1
		MATERIAL						
NEXT ASSY	USED ON	FINISH						
APPLICATION		DO NOT SCALE DRAWING						



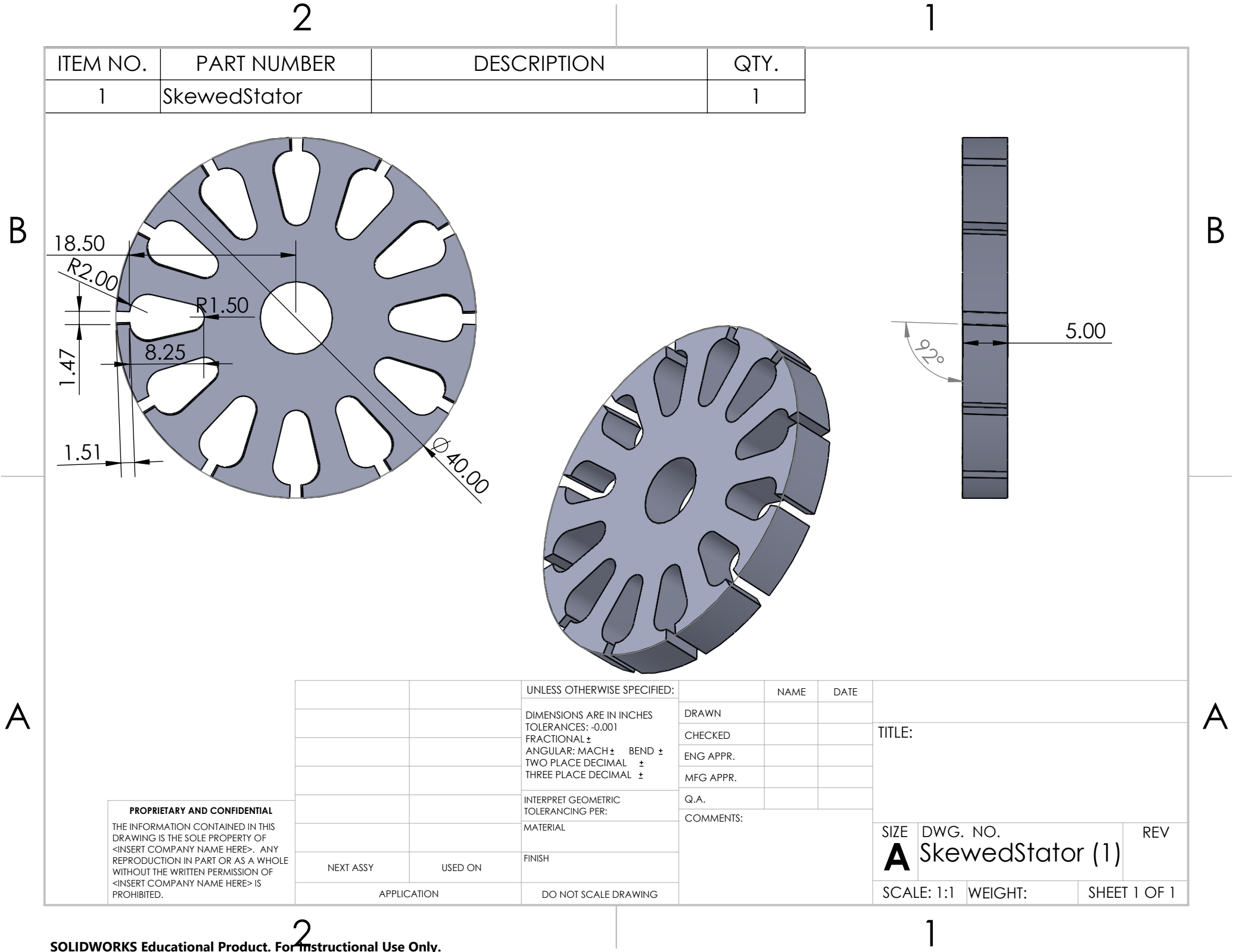
ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	shaft	To keep all all the components together	1



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		UNLESS OTHERWISE SPECIFIED:		NAME	DATE
		DIMENSIONS ARE IN INCHES	DRAWN		
		TOLERANCES:	CHECKED		
		FRACTIONAL ±	ENG APPR.		
		ANGULAR: MACH ± BEND ±	MFG APPR.		
		TWO PLACE DECIMAL ±	Q.A.		
		THREE PLACE DECIMAL ±	COMMENTS:		
		INTERPRET GEOMETRIC			
		TOLERANCING PER:			
		MATERIAL			
NEXT ASSY	USED ON	FINISH			
		DO NOT SCALE DRAWING			

TITLE: To keep all all the components together shaft			
SIZE A	DWG NO.	REV	
SCALE: 2:1	WEIGHT:	SHEET 1 OF 1	

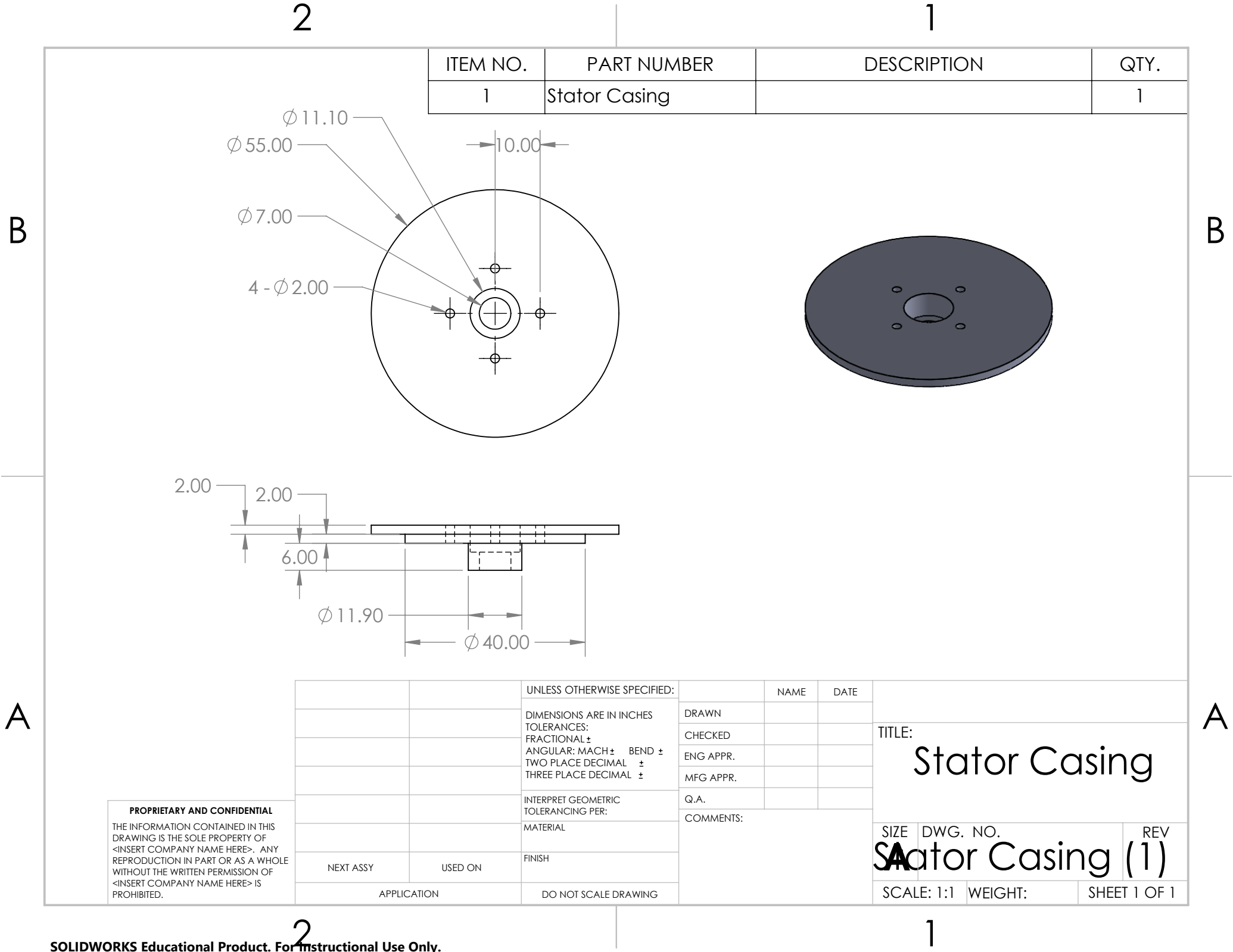


ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	SkewedStator		1

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		UNLESS OTHERWISE SPECIFIED:		NAME	DATE
		DIMENSIONS ARE IN INCHES	DRAWN		
		TOLERANCES: -0.001	CHECKED		
		FRACTIONAL ±	ENG APPR.		
		ANGULAR: MACH ± BEND ±	MFG APPR.		
		TWO PLACE DECIMAL ±	Q.A.		
		THREE PLACE DECIMAL ±	COMMENTS:		
		INTERPRET GEOMETRIC TOLERANCING PER:			
		MATERIAL			
NEXT ASSY	USED ON	FINISH			
APPLICATION		DO NOT SCALE DRAWING			

TITLE:			SIZE	DWG. NO.	REV
			A	SkewedStator (1)	
SCALE: 1:1		WEIGHT:	SHEET 1 OF 1		



ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
1	Stator Casing		1

		UNLESS OTHERWISE SPECIFIED:		NAME	DATE
		DIMENSIONS ARE IN INCHES TOLERANCES: FRACTIONAL ± ANGULAR: MACH ± BEND ± TWO PLACE DECIMAL ± THREE PLACE DECIMAL ±	DRAWN		
			CHECKED		
			ENG APPR.		
			MFG APPR.		
		INTERPRET GEOMETRIC TOLERANCING PER:	Q.A.		
		MATERIAL	COMMENTS:		
		FINISH			
NEXT ASSY	USED ON				
APPLICATION		DO NOT SCALE DRAWING			

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TITLE: Stator Casing			
SIZE	DWG. NO.	REV	
SCALE: 1:1	WEIGHT:	SHEET 1 OF 1	