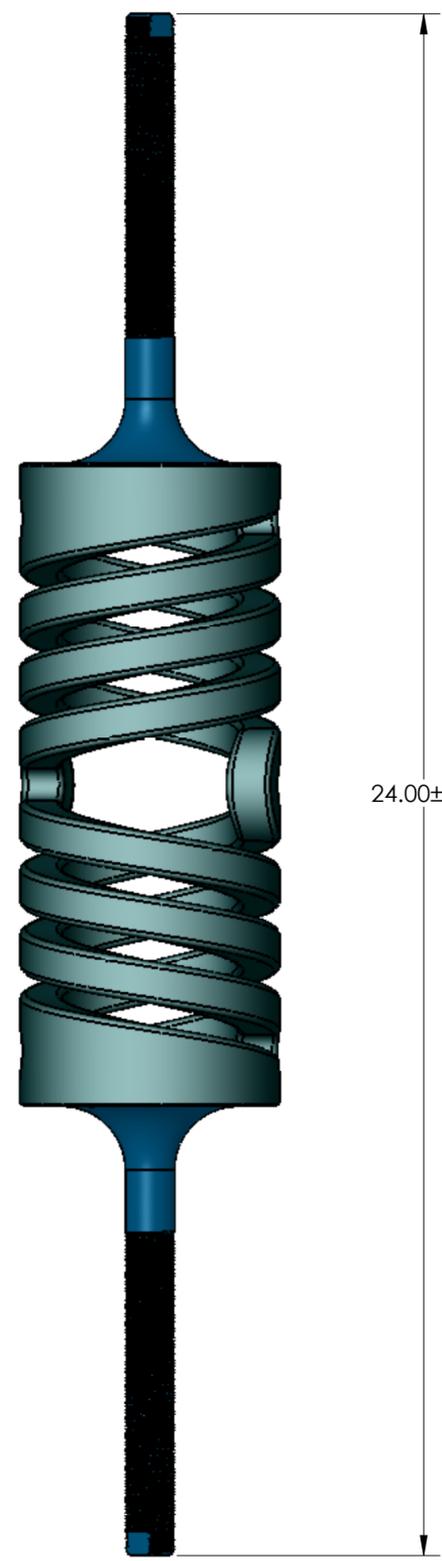


REV	DATE	APPROVAL	DESCRIPTION
B	06/02/2003	DCN E030308-00-E	
C	08/15/2003	DCN E030418-00-E	
E	08/04/2008	A. STEIN	BROKE INTO 2 SEPARATE CONFIGURATIONS. HAM HEPI CONFIG IS SHORTER BY 1.65".



24.00±.06



NOTES:

- 1) BREAK ALL SHARP EDGES.
- 2) AGE C-300 FOR 6 HOURS @ 925 °F
AIR COOL. CERTIFICATE OF HEAT TREAT REQUIRED.
TEST FOR ROCKWELL HARDNESS (1 ONLY). CERTIFICATE REQUIRED.
- 3) JOIN ASSEMBLY PER FOLLOWING PROCEDURE:

WIRE BRUSH THREADS ON MATING PARTS.
SOLVENT CLEAN TO REMOVE OILS.
APPLY SILVER SOLDER PASTE (ALL-STATE SILVER SOLDER OR EQUIVALENT)
TO MATING THREADS ON CLEANED, DRY PARTS.
ASSEMBLE PARTS. CONNECTORS (D020407) MUST SEAT FULLY
TO OBTAIN 24.00" ± .06" OVERALL LENGTH.
BAKE FOR 4 HOURS @ 400 °F.
REMOVE PARTS AND AIR COOL TO 120 °F.
WIRE BRUSH TO REMOVE EXCESS FLUX.
- 4) ELECTROLESS NICKEL PLATE ASM PER FOLLOWING PROCEDURE:

RECOMMENDED SURFACE PREP:
CATHODIC ALKALINE CLEAN, 75 ASF, 1 MIN.
PUMICE SCRUB AND RINSE.
CATHODIC ALKALINE CLEAN, 75 ASF, 15 SEC.
WATER RINSE.
ANODIC IN 25% SULFURIC ACID, 200 ASF, 2 MIN AT ROOM TEMP.
DIP IN CHROMIUM-SULFURIC ACID, 1 MIN.
WATER RINSE HOT.
WATER RINSE COLD.
- PLATING PROCEDURE:
PROTECT 3/4"-20 THREADS ON D020407 PER BEST SHOP PRACTICE.
IMMERSE 1 MIN AND PLATE 1 MIN 30 ASF IN ACID NICKEL CHLORIDE
BATH AT ROOM TEMP. TRANSFER WITHOUT RINSING TO REGULAR
NICKEL PLATING BATH.

CONFIGURATION: **BSC HEPI**
TYPE 00

BILL OF MATERIALS					
ITEM NO.	BSC HEPI	PART NUMBER	DESCRIPTION	CONFIGURATION	MATERIAL
1	1	D020406	DOUBLE START COUNTERWOUND SPRING	-	300 MARAGING STEEL
2	2	D020407	DOUBLE START COUNTERWOUND SPRING CONNECTOR	BSC HEPI	4340 Steel

NOTES: (UNLESS OTHERWISE SPECIFIED)

1. DO NOT SCALE FROM DRAWING.
2. CLEAN THOROUGHLY TO REMOVE ALL OIL, DIRT, AND CHIPS.

DIMENSIONS ARE IN INCHES
TOLERANCES:
.XX ± 0.015
.XXX ± 0.005
ANGULAR ± 0.5 °

MATERIAL: SEE BOM

FINISH: SEE NOTES

DRAWN: HAMMOND, 05/14/2003

CHECKED: []

APPROVED: []

SCALE: 1:2

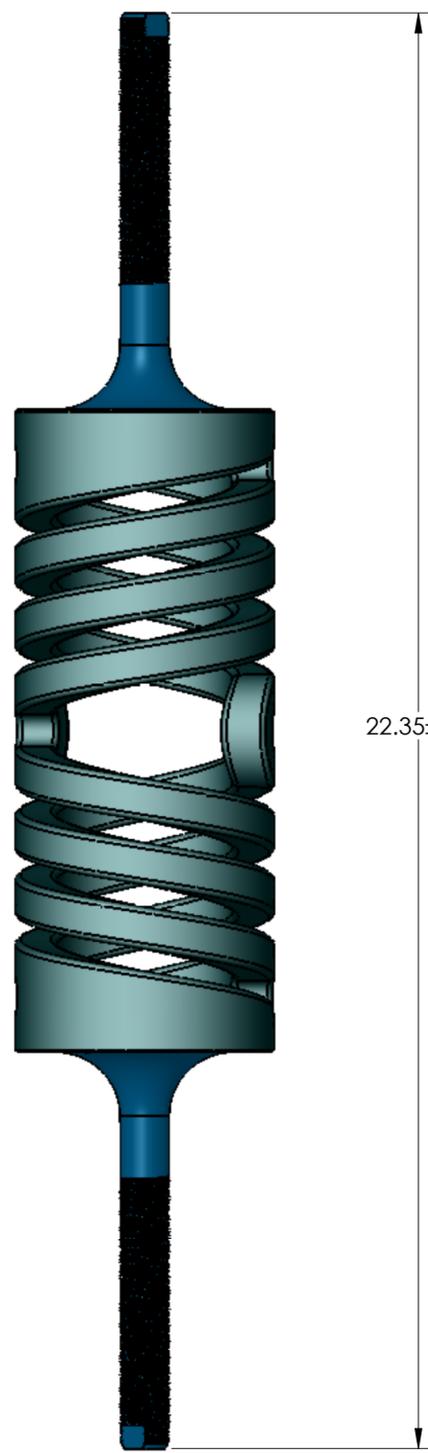
PROJECTION: []

SHEET 1 OF 2

CALIFORNIA INSTITUTE OF TECHNOLOGY
MASSACHUSETTS INSTITUTE OF TECHNOLOGY
IGR, GLASGOW UNIVERSITY GEO 600 GROUP

SYSTEM: ADVANCED LIGO
SUB-SYSTEM: SEI
NEXT ASSY: D030320
PART NAME: DOUBLE START COUNTERWOUND SPRING ASM
SIZE: DWG. NO. D020408
REV. D

REV	DATE	APPROVAL	DESCRIPTION
-	-	-	See Sheet 1.



22.35±.06



NOTES:



- 1) BREAK ALL SHARP EDGES.
- 2) AGE C-300 FOR 6 HOURS @ 925°F
AIR COOL. CERTIFICATE OF HEAT TREAT REQUIRED.
TEST FOR ROCKWELL HARDNESS (1 ONLY). CERTIFICATE REQUIRED.
- 3) JOIN ASSEMBLY PER FOLLOWING PROCEDURE:

WIRE BRUSH THREADS ON MATING PARTS.
SOLVENT CLEAN TO REMOVE OILS.
APPLY SILVER SOLDER PASTE (ALL-STATE SILVER SOLDER OR EQUIVALENT)
TO MATING THREADS ON CLEANED, DRY PARTS.
ASSEMBLE PARTS. CONNECTORS (D020407) MUST SEAT FULLY
TO OBTAIN 22.35"±.06" OVERALL LENGTH.
BAKE FOR 4 HOURS @ 400°F.
REMOVE PARTS AND AIR COOL TO 120°F.
WIRE BRUSH TO REMOVE EXCESS FLUX.
- 4) ELECTROLESS NICKEL PLATE ASM PER FOLLOWING PROCEDURE:

RECOMMENDED SURFACE PREP:
CATHODIC ALKALINE CLEAN, 75 ASF, 1 MIN.
PUMICE SCRUB AND RINSE.
CATHODIC ALKALINE CLEAN, 75 ASF, 15 SEC.
WATER RINSE.
ANODIC IN 25% SULFURIC ACID, 200 ASF, 2 MIN AT ROOM TEMP.
DIP IN CHROMIUM-SULFURIC ACID, 1 MIN.
WATER RINSE HOT.
WATER RINSE COLD.
- PLATING PROCEDURE:
PROTECT 3/4"-20 THREADS ON D020407 PER BEST SHOP PRACTICE.
IMMERSE 1 MIN AND PLATE 1 MIN 30 ASF IN ACID NICKEL CHLORIDE
BATH AT ROOM TEMP. TRANSFER WITHOUT RINSING TO REGULAR
NICKEL PLATING BATH.

CONFIGURATION: **HAM HEPI**
TYPE 01

BILL OF MATERIALS					
ITEM NO.	HAM HEPI	PART NUMBER	DESCRIPTION	CONFIGURATION	MATERIAL
1	1	D020406	DOUBLE START COUNTERWOUND SPRING	-	300 MARAGING STEEL
2	2	D020407	DOUBLE START COUNTERWOUND SPRING CONNECTOR	HAM HEPI	4340 Steel

NOTES: (UNLESS OTHERWISE SPECIFIED)

1. DO NOT SCALE FROM DRAWING.
2. CLEAN THOROUGHLY TO REMOVE ALL OIL, DIRT, AND CHIPS.

DIMENSIONS ARE IN INCHES
TOLERANCES:
.XX ± 0.015
.XXX ± 0.005
ANGULAR ± 0.5 °

MATERIAL: SEE BOM
FINISH: SEE NOTES

DRAWN: HAMMOND, 05/14/2003
CHECKED: []
APPROVED: []

SCALE: 1:2
PROJECTION: []

CALIFORNIA INSTITUTE OF TECHNOLOGY
MASSACHUSETTS INSTITUTE OF TECHNOLOGY
IGR, GLASGOW UNIVERSITY GEO 600 GROUP

SYSTEM: ADVANCED LIGO
SUB-SYSTEM: SEI
NEXT ASSY: D030320
PART NAME: DOUBLE START COUNTERWOUND SPRING ASM

SIZE: C
DWG. NO.: D020408
REV.: D

SHEET 2 OF 2