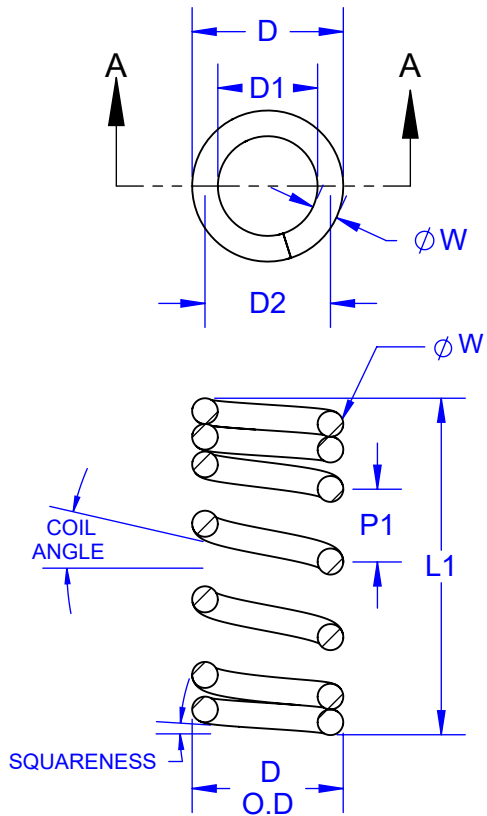


MICRO-COIL SPRING - FREE (WITHOUT LOAD)

FREE (WITHOUT LOAD)



**DIMENSION TABLE 1A
FREE WITHOUT LOAD
(INCH)**

DWG	PART#	ϕD O.D. +/- 10%	L1	ϕW Wire	P1	Active Coils	Total Coils	Coil Deg	$\phi D1$ I.D.	$\phi D2$ Median	Spring Index	Pad Pitch
192050	MCS172G20x50	0.020	0.050	0.0034	0.010	3.3	7.3	10.855°	0.0132	0.0166	4.88	0.03937

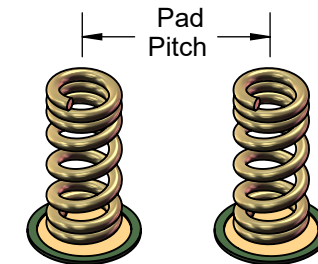
**DIMENSION TABLE 1B
FREE WITHOUT LOAD
(METRIC - mm)**

DWG	PART#	ϕD O.D. +/- 10%	L1	ϕW Wire	P1	Active Coils	Total Coils	Coil Deg	$\phi D1$ I.D.	$\phi D2$ Median	Spring Index	Pad Pitch
192050	MCS172G20x50	0.508	1.27	0.086	0.254	3.3	7.3	10.855°	0.335	0.422	4.88	1.0mm

MODEL



FREE
WITHOUT
LOAD

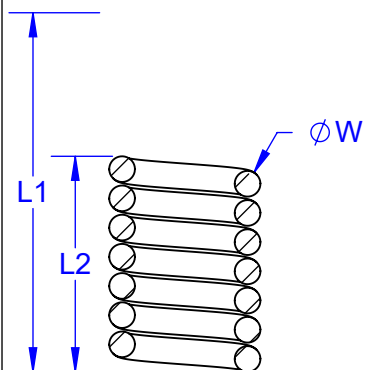
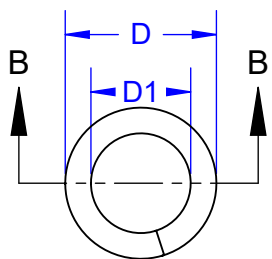


Notes:

1. MATERIAL: BERYLLIUM COPPER - C17200 (ALLOY 25).
2. TEMPER: HARD TEMPER (TD05) PER ASTM B 197.
3. COIL: CYLINDRICAL DOUBLE-CLOSED END - SQUARED (CENG).
4. PLATING: Nickel - Ni 30~60 micro-inch, Gold - Au 10 micro-inch
Ni 0.75~1.5µm, Gold - Au 0.25µm

APPROVALS	DATE	TopLine®			
DRAWN T.Au	12/24/15				
ENG M. Hart	12/24/15	TITLE MCS172G20x50 MICRO-COIL SPRING			
MFG		SCALE 50:1	SIZE A	DRAWING NO. 192050	REV A
QA		DO NOT SCALE DRAWING			SHEET 1 OF 8
CUST					
REVISED					

MICRO-COIL SPRING - FULL COMPRESSION (SOLID)



DIMENSION TABLE 2A
~60% SOLID (FULLY COMPRESSED)
(INCH)

DWG	PART#	φD O.D.	L1	L2	φW Wire	TRAVEL L1 - L2	% Compr	LOAD LBS	φD1 I.D.
192050	MCS172P20x50	0.020	0.050	0.028	0.0034	0.022	60%	0.1687	0.0132



MODEL
SOLID
L = 60%

DIMENSION TABLE 2B
~60% SOLID (FULLY COMPRESSED)
(METRIC - mm)

DWG	PART#	φD O.D.	L1	L2	φW Wire	TRAVEL L1 - L2	% Compr	LOAD gm	φD1 I.D.
192050	MCS172G20x50	0.508	1.27	0.711	0.086	0.559	60%	76g	0.335

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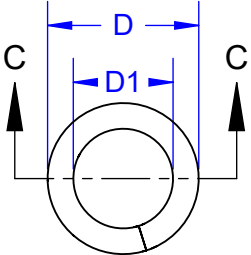
TITLE MCS172G20x50
MICRO-COIL SPRING

SCALE NONE	SIZE A	DRAWING NO. 192050	REV A
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DO NOT SCALE DRAWING

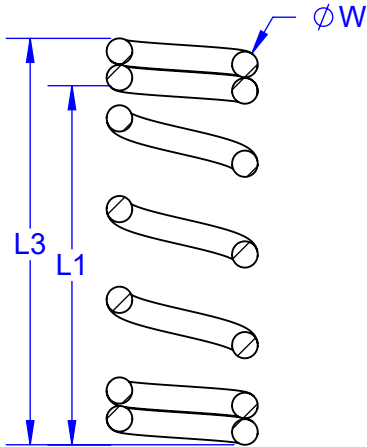
SHEET 2 OF 8

MICRO-COIL SPRING -120% EXTENDED



**DIMENSION TABLE 3A
120% EXTENDED POSITION
(INCH)**

DWG	PART#	ØD O.D.	L1	L3	W	TRAVEL L3 - L1	% Compr	ØD1 I.D.
192050	MCS172G20x50	0.020	0.050	0.060	0.0034	0.010	120%	0.0132



**DIMENSION TABLE 3B
120% EXTENDED POSITION
(METRIC - mm)**

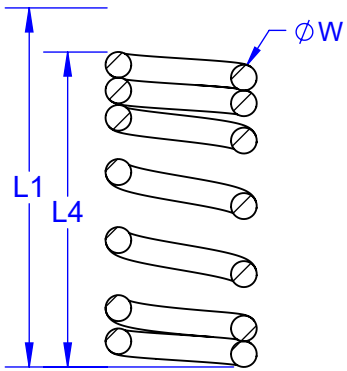
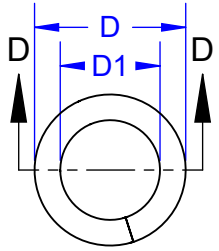
DWG	PART#	ØD O.D.	L1	L3	W	TRAVEL L3 - L1	% Compr	ØD1 I.D.
192050	MCS172G20x50	0.508	1.27	1.52	0.086	0.254	120%	0.335



MODEL
EXTENDED
L = 120%

TopLine®			
TITLE MCS172G20x50 MICRO-COIL SPRING			
SCALE NONE	SIZE A	DRAWING NO. 192050	REV A
DO NOT SCALE DRAWING			SHEET 3 OF 8

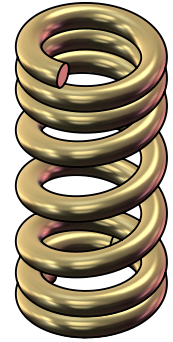
MICRO-COIL SPRING - 90% COMPRESSION



SECTION D-D

**DIMENSION TABLE 4A
POINT 1 COMPRESSION 90%
(INCH)**

DWG	PART#	ϕD O.D.	L1	L4	ϕW Wire	TRAVEL L1 - L4	% Compr	LOAD LBS	$\phi D1$ I.D.
192050	MCS172G20x50	0.020	0.050	0.0450	0.0034	0.0050	90%	0.016	0.0132



MODEL
L = 90%

**DIMENSION TABLE 4B
POINT 1 COMPRESSION 90%
(METRIC - mm)**

DWG	PART#	ϕD O.D.	L1	L4	ϕW Wire	TRAVEL L1 - L4	% Compr	LOAD gm	$\phi D1$ I.D.
192050	MCS172G20x50	0.508	1.27	3	0.086	0.127	90%	7.00g	0.335

TopLine®

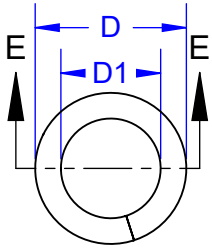
TITLE MCS172G20x50
MICRO-COIL SPRING

SCALE NONE	SIZE A	DRAWING NO. 192050	REV A
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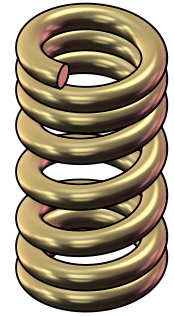
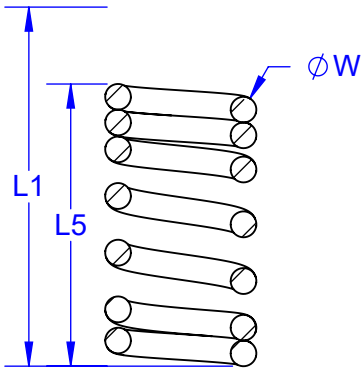
DO NOT SCALE DRAWING

SHEET 4 OF 8

MICRO-COIL SPRING - 75% COMPRESSION



DIMENSION TABLE 5A POINT 2 COMPRESSION 75% (INCH)									
DWG	PART#	ØD O.D.	L1	L5	ØW Wire	TRAVEL L1 - L5	% Compr	LOAD LBS	ØD1 I.D.
192050	MCS172G20x50	0.020	0.050	0.0375	0.0034	0.0125	75%	0.040	0.0132



MODEL
L = 75%

DIMENSION TABLE 5B POINT 2 COMPRESSION 75% (METRIC - mm)									
DWG	PART#	ØD O.D.	L1	L5	ØW Wire	TRAVEL L1 - L5	% Compr	LOAD gm	ØD1 I.D.
192050	MCS172G20x50	0.508	1.27	0.953	0.086	0.318	75%	18.0g	0.335

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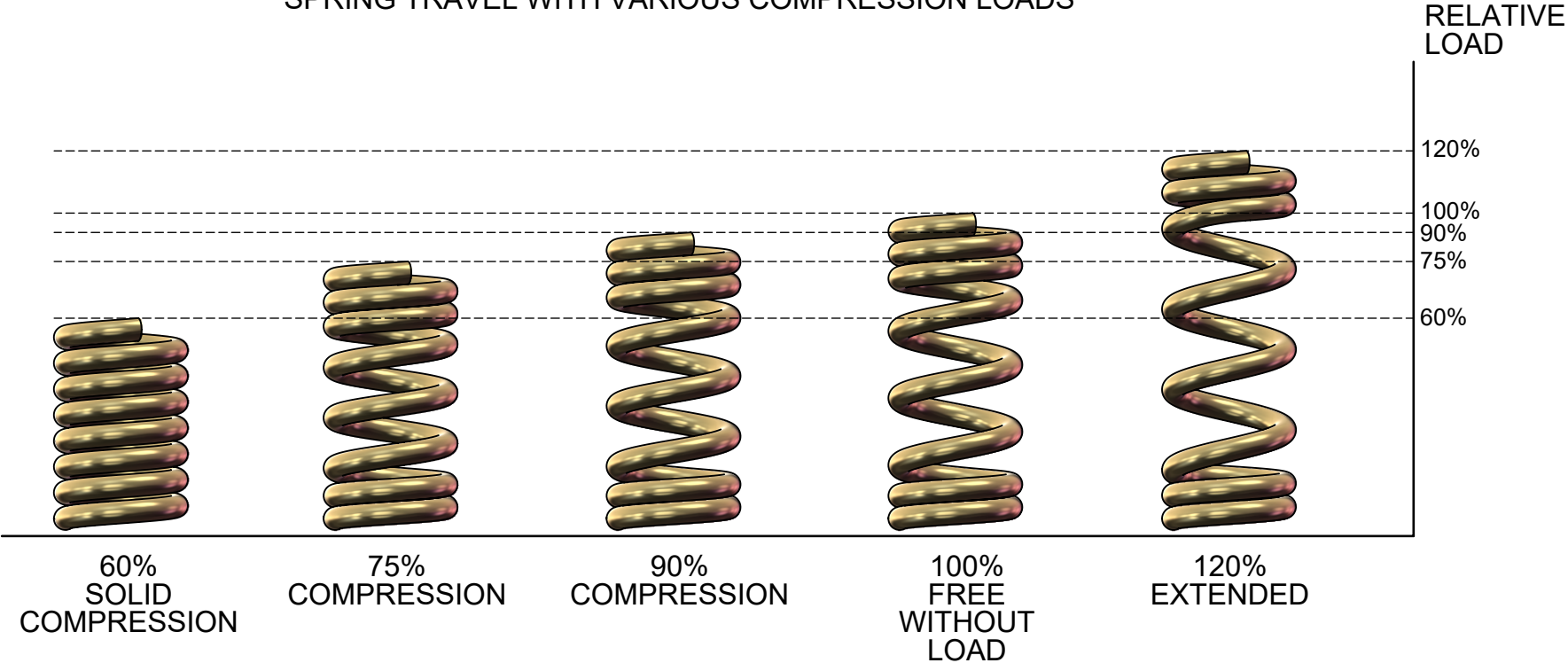
TITLE MCS172G20x50
MICRO-COIL SPRING

SCALE NONE	SIZE A	DRAWING NO. 192050	REV A
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DO NOT SCALE DRAWING

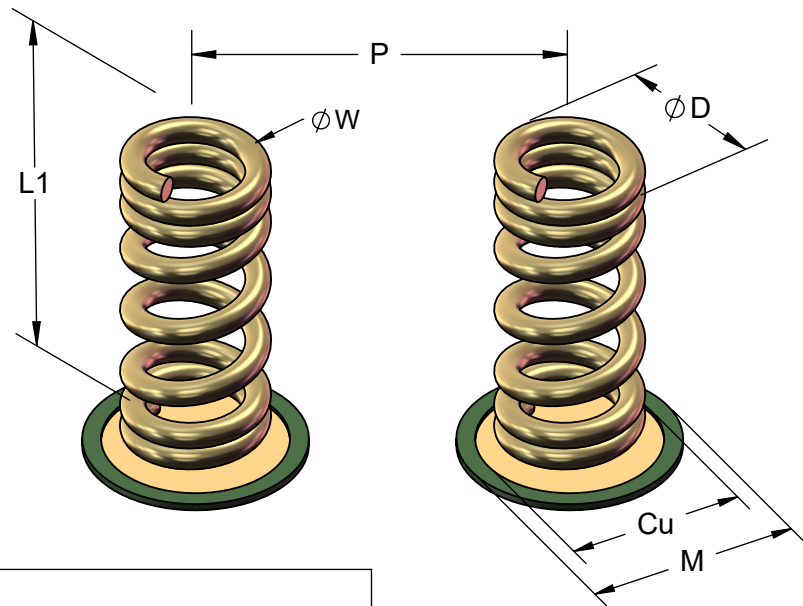
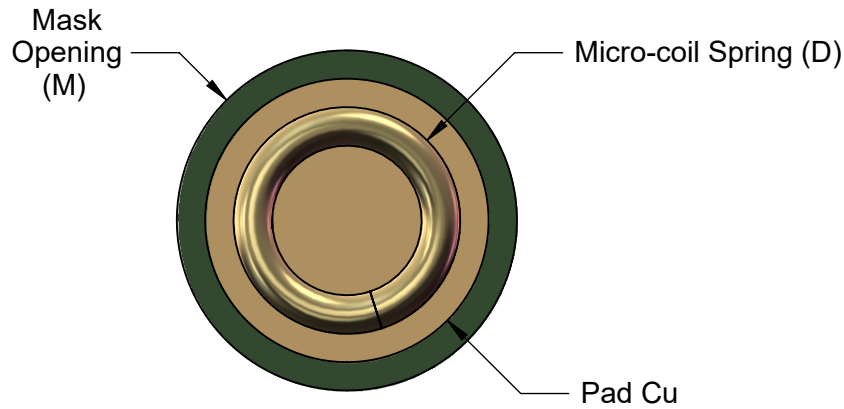
SHEET 5 OF 8

SPRING TRAVEL WITH VARIOUS COMPRESSION LOADS



TopLine[®]			
TITLE MCS172G20x50 MICRO-COIL SPRING			
SCALE 50:1	SIZE A	DRAWING NO. 192050	REV A
DO NOT SCALE DRAWING			SHEET 6 OF 8

PC BOARD PAD
SMD - SOLDER MASK DEFINED PAD



SOLDER MASK DEFINED PAD (SMD)

DIMENSION TABLE 6A
(INCH)

DWG	PART#	ØD O.D.	L1	ØW Wire	P Pad Pitch	ØCu Pad	ØM Mask Open	Stencil Thickness
192050	MCS172G20x50	0.020	0.050	0.0034	0.03937	0.030	0.0250	0.006

SOLDER MASK DEFINED PAD (SMD)

DIMENSION TABLE 6B
(METRIC - mm)

DWG	PART#	ØD O.D.	L1	ØW Wire	P Pad Pitch	ØCu Pad	ØM Mask Open	Stencil Thickness
192050	MCS172G20x50	0.508	1.27	0.086	1.0mm	0.762	0.635	150µm

Notes: PCB BOARD DIMENSIONS ARE PRESENTED ONLY AS A GUIDELINE.
DESIGNERS SHOULD USE THEIR OWN EXPERIENCE WHEN DESIGNING PCB.

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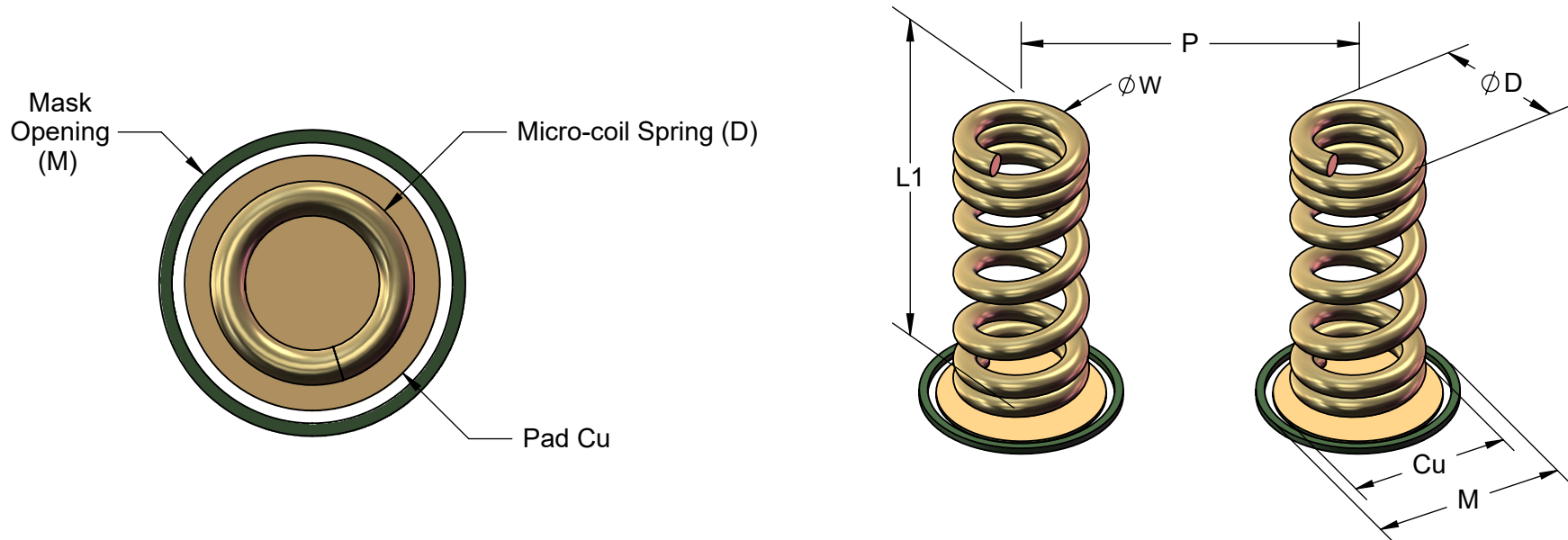
TITLE MCS172G20x50
MICRO-COIL SPRING

SCALE NONE	SIZE A	DRAWING NO. 192050	REV A
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DO NOT SCALE DRAWING

SHEET 7 OF 8

**PC BOARD PAD
NSMD - NON SOLDER MASK DEFINED PAD**



NON-SOLDER MASK DEFINED PAD (NSMD)

**DIMENSION TABLE 7A
FREE WITHOUT LOAD
(INCH)**

DWG	PART#	ϕD O.D.	L1	ϕW Wire	P Pad Pitch	ϕCu Pad	ϕM Mask Open	Stencil Thickness
192050	MCS172G20x50	0.020	0.050	0.0034	0.03937	0.025	0.030	0.008

NON-SOLDER MASK DEFINED PAD (NSMD)

**DIMENSION TABLE 7B
FREE WITHOUT LOAD
(METRIC - mm)**

DWG	PART#	ϕD O.D.	L1	ϕW Wire	P Pad Pitch	ϕCu Pad	ϕM Mask Open	Stencil Thickness
192050	MCS172G20x50	0.508	1.27	0.086	1.0mm	0.635	0.762	150 μ m

**Notes: PCB BOARD DIMENSIONS ARE PRESENTED ONLY AS A GUIDELINE.
DESIGNERS SHOULD USE THEIR OWN EXPERIENCE WHEN DESIGNING PCB.**

TopLine[®]

TITLE MCS172G20x50
MICRO-COIL SPRING

SCALE NONE	SIZE A	DRAWING NO. 192050	REV A
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SHEET 8 OF 8