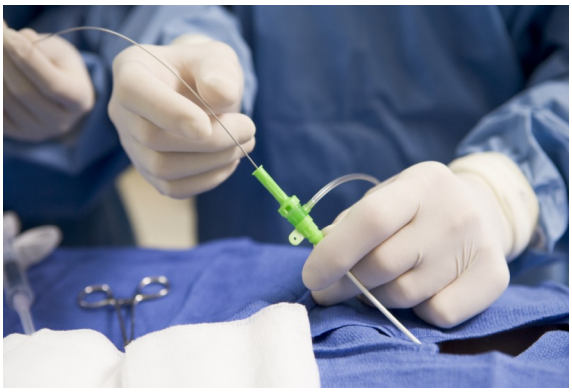
LOOS & CO. INC

MEDICAL TECHNOLOGIES DIVISION

MEDICAL PRODUCTS CONDENSED CATALOG



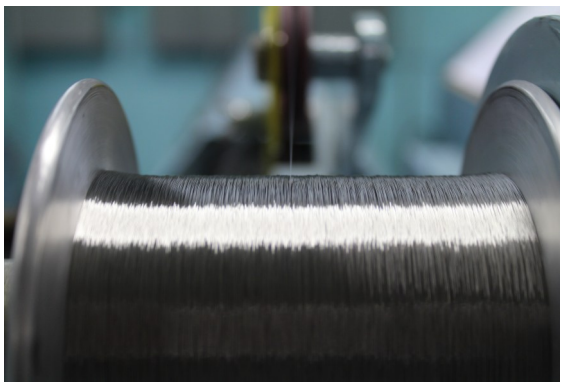


TABLE OF CONTENTS

Products

Materials

CUSTOMER COMMITMENT

MISSION STATEMENT

The Loos and Company Medical Technologies Division supports medical device manufacturers and medical supply distributors by providing the best value in medical wire and cable products through high quality and prompt delivery with competitive pricing.

QUALITY STATEMENT

Loos & Co., Inc. is a world class manufacturer of specialty wire and cable products. Loos and Company Medical Technologies Division is a stand alone production unit within our Pomfret, CT facility, dedicated to producing wire, strand, cable, and assembly products using the highest quality medical grade materials. We are committed to product excellence.

We hold ISO 13485:2003 certification for our quality management system. Because quality and performance matter, trust Loos and Company Medical Technologies Division to deliver.

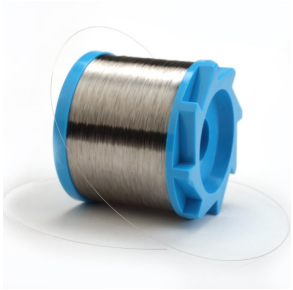
ISO 13485 CERTIFICATION™

Intertek

www.looscomedtech.com sales@loosco.com 800.533.5677

PRODUCTS

ROUND WIRE



Sizes and Capabilities

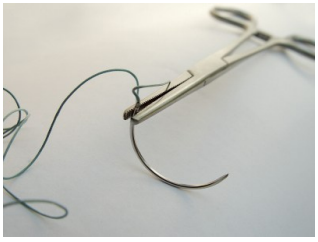
Our bulk packaged wire is available from stock in sizes ranging from .001" to .120" and beyond. We offer custom sizes and finishes to meet your requirements. Spool sizes vary depending on your needs, and custom packaging can be provided upon request.

Materials

The materials used in medical equipment are critical to the performance of the product. The effectiveness of the wire in surgical, therapeutic, and other applications depends upon the physical and chemical characteristics of the alloy employed. Loos and Company Medical Technologies Division draws medical grade wire in stainless steel and high nickel alloys, with additional alloys available upon request. We specialize in stainless steel and high nickel exotic alloys, and hold stock to ensure short lead times. Our alloys include:

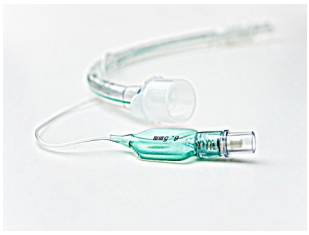
302	321
304V	347
305	400 Series
316LVM	MP35N

As a manufacturer, we are able to draw custom materials and sizes to meet your exact requirements. Contact our sales department via email (sales@loosco.com) to learn more.



Applications

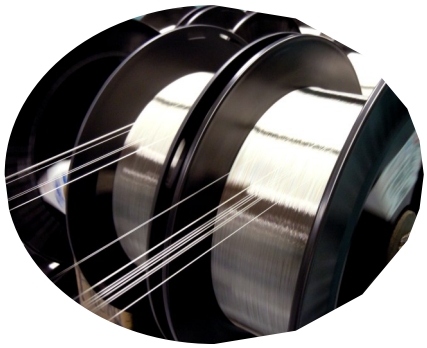
Loos and Company Medical Technologies Division manufactures round wire for a variety of applications, including:



Guidewires	Sutures
Needles	Orthodontics
Braiding	Coiling
Orthopedics	Endoscopics

PRODUCTS

STRAND & CABLE



Our cable products are supported by our experience in miniature cable manufacturing and production. The products we manufacture are specifically designed for applications that require the highest levels of performance. Engineered to exceed the specifications of most applications, our medical grade cables provide the precision and performance required in today's highly specialized surgical products.

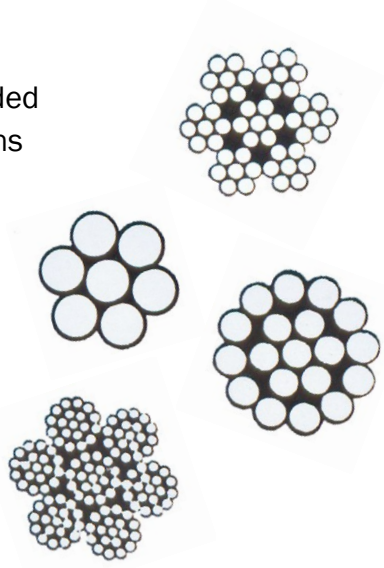
Materials

Loos and Company's medical grade strand and cable is available in any 300 series, 400 series, or high nickel alloy that we draw into wire. We also offer titanium, precious metals and custom alloy options upon request.

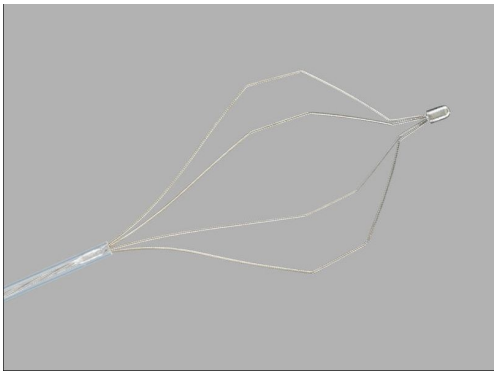
Sizes and Capabilities

Medical cables are available from .006" to .047" diameter, and can be constructed from as few as two to as many as 133 wires, creating the added strength and flexibility you need in your application. Standard constructions include:

2 wire twist	3x3 cable
3 wire twist	3x7 cable
4 wire twist	3x3x3 cable
1x7 strand	7x7 cable
1x19 strand	7x19 cable



As a manufacturer, we are able to strand and close custom materials, constructions, and sizes to meet your exact requirements. Contact our sales department via email (sales@loosco.com) to learn more.



CABLE ASSEMBLIES

Loos and Company Medical Technologies Division manufactures custom cable assemblies to fit each customer's unique needs. Because we produce all of our wire and cable products, and perform all the assembly operations here at our facility, we can offer custom configurations to meet your specialized performance requirements.

Contact our sales department to learn more.

ELASTICORE® EXTRUSION CORE WIRE

ELASTICORE® Wire is a single end wire that is used as a mandrel, or place holder, during the medical tubing extrusion process. Once the tubing polymer has been extruded, the core wire (often a Copper or Silver-Clad Copper) is then elongated to decrease the wire's diameter. The final step of the process is sliding the wire out of its "sheathing", and leaving a round tube for drug delivery, guide wire/device insertion, or other technical application.

Why Choose ELASTICORE® Wire?

ELASTICORE® provides an alternative to the expense of using copper or plated copper core wires in your extrusion process. ELASTICORE® Wire is **annealed stainless steel** wire with an elongation profile that exceeds 30% and **deforms similar to copper**.

ADDITIONAL CHARACTERISTICS

ELASTICORE®'s **surface finish** allows for adequate friction during the extrusion process. Unlike plated copper materials, ELASTICORE® wire won't flake and contaminate equipment or finished product. ELASTICORE® is available in **stock and custom sizes** for a quick turnaround — reducing your lead times and getting your products to customers quicker.

Physical Properties

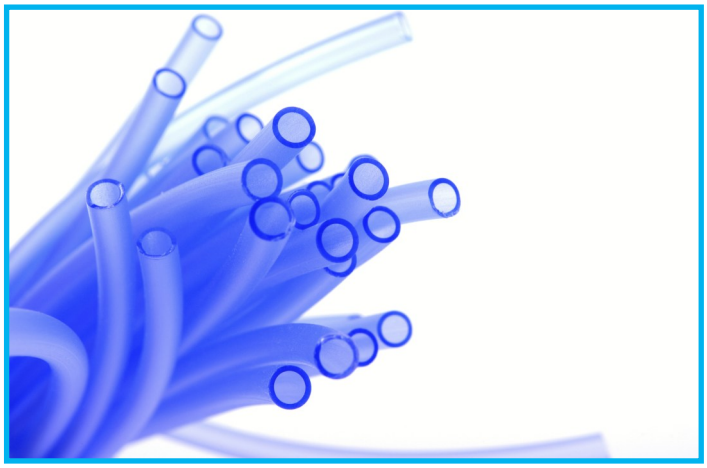
Materials: 300 Series Stainless Steel

Diameters: 0,15 mm to 2,5 mm

Surface Finish: Bright or Matte

Elongation: 30% minimum

Tensile Strength: 690 to 830 MPa



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MATERIALS

302

302 Stainless Steel Properties and Specifications

Austenitic, extremely tough, and ductile, 302 stainless steel is one of the more common chrome-nickel stainless and heat-resisting steels. Cold working will dramatically increase its hardness.

CHEMICAL COMPOSITION (% of weight)*								
Carbon	Manganese	Phosphorus	Sulfer	Silicon	Chromium	Nickel	Molybdenum	Other Elements
0.12	2.00	0.045	0.030	1.00	17.00—19.00	8.00—10.00	-	W—0.10

Unless otherwise noted, % are max allowable
*Per ASTM A313

MECHANICAL PROPERTIES**		
	Full Anneal	Full Hard
Yield Strength	48,000 psi	250,000 psi
Tensile Strength	90,000 psi	281,000 psi
% Elongation	40%	3%

PHYSICAL PROPERTIES**	
Density	0.285 lbs/in^3
Modulus of Elasticity	28.0 x 10^6 psi
Electrical Resistivity	720 µohms-mm
Thermal Conductivity	16.3 W/m K (100° C)

Loos & Co. Inc.
MEDICAL TECHNOLOGIES DIVISION

**Typical values that do not represent all diameters. Actual values and test results provided with each order.

Applications

Loos and Company Medical Technologies Division's stainless steel 302 alloy is used in a variety of applications, including stylets, catheters, guidewires, springs, and needles. This alloy is particularly appealing due to its strength.

Surface Condition

As stainless steel wire is drawn to finer diameters, it develops a highly polished, "bright and shiny" surface appearance. Material over .040" in diameter will have a rougher surface and exhibit a "matte" appearance due to the type of dies used in the drawing process. Custom finishes are available upon request.

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MATERIALS

304V

304V Stainless Steel Properties and Specifications

304V alloy exhibits excellent strength and formablity. This particular alloy is electric-arc melted and then vacuum-arc remelted. Through this process, 304V is extremely pure and has minimal contaminants.

CHEMICAL COMPOSITION (% of weight)*								
Carbon	Manganese	Phosphorus	Sulfer	Silicon	Chromium	Nickel	Molybdenum	Other
0.080	2.00	0.045	0.030	1.00	18.00–20.00	8.00–10.50	-	W–0.100

Unless otherwise noted, % are max allowable
*Per ASTM A313

MECHANICAL PROPERTIES**		
	Full Anneal	Full Hard
Yield Strength	48,000 psi	280,000 psi
Tensile Strength	90,000 psi	335,000 psi
% Elongation	40%	2.5%

PHYSICAL PROPERTIES**	
Density	0.286 lbs./in^3
Modulus of Elasticity	28.5 x 10^6 psi
Electrical Resistivity	720 µohms-mm
Thermal Conductivity	16.36 W/m k (100° C)

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MEDICAL TECHNOLOGIES DIVISION

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Note: Low Carbon 304V is available upon request for applications involving high temperature, or where cutting, grinding, and/or straightening will be performed. Contact us for additional details.

Applications

Loos and Company Medical Technologies Division's stainless steel 304V alloy is used in a variety of applications, including stylets, catheters, guidewires, springs, and needles. This alloy is particularly appealing due to its ability to be easily welded and its superior strength.

Surface Condition

As stainless steel wire is drawn to finer diameters, it develops a highly polished, "bright and shiny" surface appearance. Material over .040" in diameter will have a rougher surface and exhibit a "matte" appearance due to the type of dies used in the drawing process. Custom finishes are available upon request.

MATERIALS

316LVM

316LVM Stainless Steel Properties and Specifications

316LVM alloy is vacuum melted to achieve the high levels of purity and cleanliness required by the medical industry. It has excellent resistance to physiological environments, to general and intergranular corrosion, to pitting, and crevice corrosion.

CHEMICAL COMPOSITION (% of weight)*								
Carbon	Manganese	Phosphorus	Sulfer	Silicon	Chromium	Nickel	Molybdenum	Other
0.030	2.00	0.025	0.010	0.75	17.0—19.0	13.0—15.0	2.25—3.00	W—0.10

Unless otherwise noted, % are max allowable
*Per ASTM F138

MECHANICAL PROPERTIES**		
	Full Anneal	Full Hard
Yield Strength	45,000 psi	205,000 psi
Tensile Strength	90,000 psi	245,000 psi
% Elongation	40%	2.8%

PHYSICAL PROPERTIES**	
Density	0.287 lbs./in^3
Modulus of Elasticity	27.9 x 10^6 psi
Electrical Resistivity	740 µohms-mm
Thermal Conductivity	16.3 W/m K (100° C)

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Applications

Loos and Company Medical Technologies Division's stainless steel 316LVM alloy is used in a variety of applications, including suture wire, orthopaedic cable, catheters, stylets, and many more. This alloy is known for its corrosion resistance and is often used for permanent implants.

Surface Condition

As stainless steel wire is drawn to finer diameters, it develops a highly polished, "bright and shiny" surface appearance. Material over .040" in diameter will have a rougher surface and exhibit a "matte" appearance due to the type of dies used in the drawing process. Custom finishes are available upon request.

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PACKAGING AND LABELING

Packaging

We provide our wire and cable on spools to meet your specifications. All of our products are precision wound to make your payoff operation completely hassle free. When ordering, please provide us with your specific reel, spool or bobbin requirement.

Labeling

All of our materials are packaged and labeled with product and order information. As a standard, we include the part number, lot number, and order number on all labels and packaging. Complete chemical analysis, heat, and performance characteristics are provided with every shipment to complete our product certifications.

LOOS AND COMPANY STOCKING PROGRAM

Working with a short lead time?

Loos and Company Medical Technologies Division focuses on what matters most, our customers. This is why we maintain a robust stocking program. We have a large inventory of common sizes and materials on hand in order to provide short lead times. We are also able to supply small amounts of product for research and development purposes.

Contact us today via email (sales@loosco.com) or by phone (860.928.7981) to find out more.

TECHNICAL INFORMATION

WIRE CONVERSION CHART

Use this chart to determine how many meters of any given diameter wire you would like to order. If you have any specific questions, please email us (sales@loosco.com).

Diameter (in)	ft/lb	Diameter (in)	ft/lb	Diameter (in)	ft/lb	Diameter (in)	ft/lb
0.0010	371,022	0.0085	5,132	0.0160	1,449	0.0235	672
0.0015	164,899	0.0090	4,581	0.0165	1,363	0.0255	571
0.0020	92,756	0.0095	4,111	0.0170	1,284	0.0280	473
0.0025	59,364	0.0100	3,710	0.0175	1,212	0.0305	399
0.0030	41,225	0.0105	3,365	0.0180	1,145	0.0330	341
0.0035	30,288	0.0110	3,086	0.0185	1,084	0.0360	286
0.0040	23,189	0.0115	2,805	0.0190	1,028	0.0403	228
0.0045	18,322	0.0120	2,577	0.0195	976	0.0450	183
0.0050	14,841	0.0125	2,375	0.0200	928	0.0490	155
0.0055	12,265	0.0130	2,195	0.0205	883	0.0530	132
0.0060	10,306	0.0135	2,086	0.0210	841	0.0580	110
0.0065	8,782	0.0140	1,892	0.0215	803	0.0625	95
0.0070	7,572	0.0145	1,765	0.0220	767	0.0670	83
0.0075	6,596	0.0150	1,649	0.0225	733	0.0720	72
0.0080	5,797	0.0155	1,544	0.0230	701	0.9000	46

MECHANICAL PROPERTIES FOR TYPES 302, 304, AND 316L

Finished Diameter (Inches)	Type 302 and 304 Spring Temper (KSI)		Type 302 and 304 Hyten (KSI)		Type 316LVM Spring Temper (KSI)	
	Min	Max	Min	Max	Min	Max
Up to .009 in.	325	355	425	455	245	275
Over .009 to .010	320	350	420	450	245	275
Over .010 to .011	318	348	418	448	240	270
Over .011 to .012	316	346	410	440	240	270
Over .012 to .013	314	344	405	435	240	270
Over .013 to .014	312	342	400	430	240	270
Over .014 to .015	310	340	395	425	240	270
Over .015 to .016	308	338	390	420	235	265
Over .016 to .017	306	336	386	416	235	265
Over .017 to .018	304	334	384	414	235	265
Over .018 to .020	300	330	380	412	235	265
Over .020 to .022	296	326	380	410	235	265
Over .022 to .024	292	322	-	-	235	265
Over .024 to .026	291	320	-	-	235	265
Over .026 to .028	289	318	-	-	235	265

Finished Diameter (Inches)	Type 302 and 304 Spring Temper (KSI)		Type 302 and 304 Hyten (KSI)		Type 316LVM Spring Temper (KSI)	
	Min	Max	Min	Max	Min	Max
Over .028 to .031	285	315	-	-	235	265
Over .031 to .034	282	310	-	-	235	265
Over .034 to .037	280	308	-	-	235	265
Over .037 to .041	275	304	-	-	235	265
Over .041 to .045	272	300	-	-	230	260
Over .045 to .050	267	295	-	-	230	230
Over .050 to .054	265	293	-	-	225	255
Over .054 to .058	261	289	-	-	220	250
Over .058 to .063	258	285	-	-	220	250
Over .063 to .070	252	281	-	-	215	245
Over .070 to .075	250	278	-	-	210	240
Over .075 to .080	246	275	-	-	210	240
Over .080 to .087	242	271	-	-	205	235
Over .087 to .095	238	268	-	-	205	235
Over .095 to .105	232	262	-	-	200	230

*Spring temper values are in accordance with ASTM A313

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