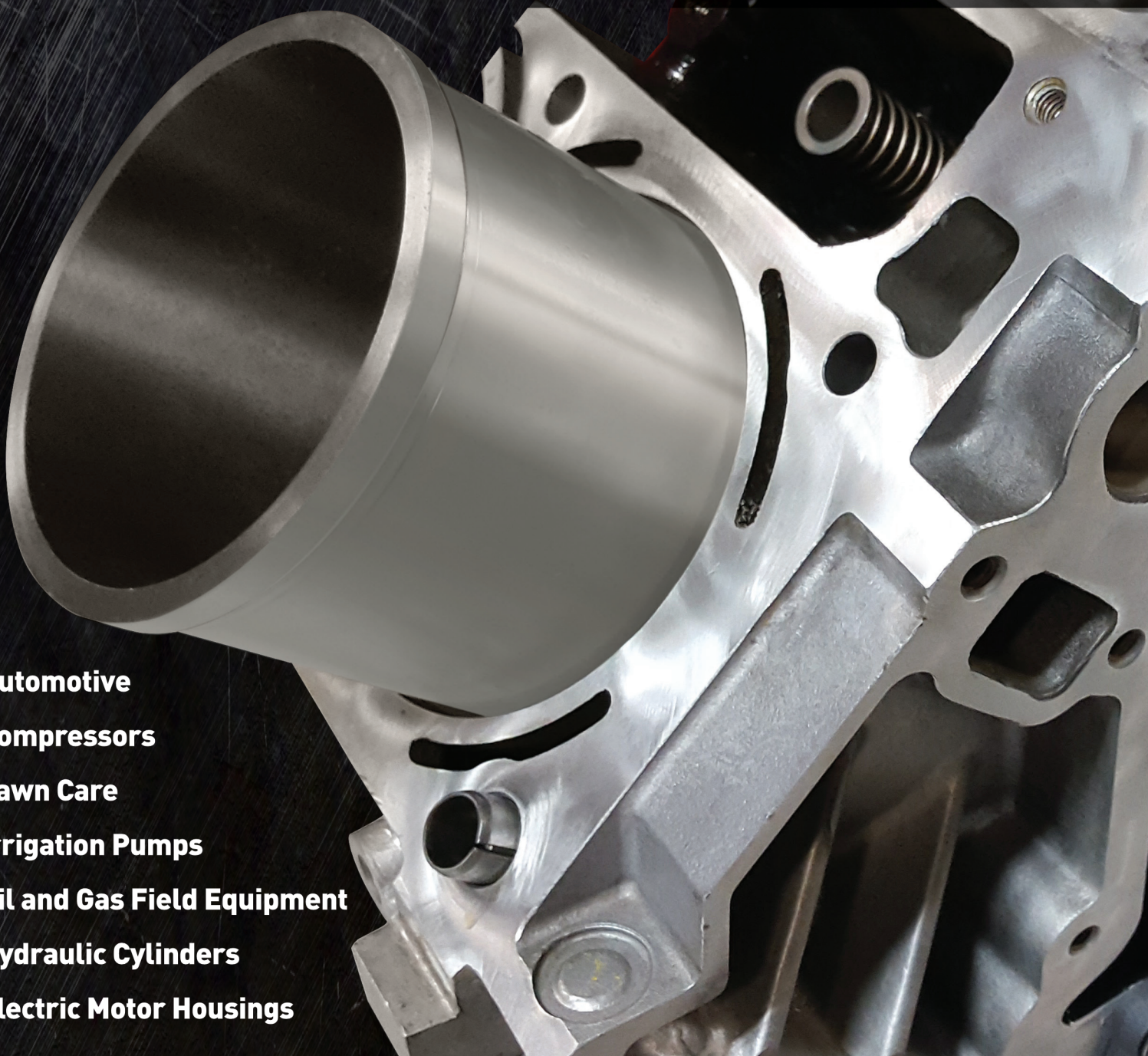
MELLING
CYLINDER SLEEVES™

CATALOG NUMBER
102026-2

CYLINDER SLEEVE
AND SLEEVE ASSIGNMENT CATALOG



- Automotive
- Compressors
- Lawn Care
- Irrigation Pumps
- Oil and Gas Field Equipment
- Hydraulic Cylinders
- Electric Motor Housings

MELLING
CYLINDER SLEEVES™

80TH MELLING
ENGINE PARTS™

Quality Engine Parts
Since 1946

AN ADVANTAGE BY DESIGN

Since 1946, when my grandfather George Melling Sr. and his son Ben started Melling Tool Company in Jackson, Michigan, the Melling brand has been recognized as a leader in supplying quality parts to the engine building industry.

80 years later, demand for our products is stronger than ever and widely preferred by professionals in markets around the world. For those first products shipped four generations ago to our now extensive portfolio of world-class automotive solutions, Melling has given customers multiple reasons to prefer one brand and one standard of quality and performance.

Our Melling Cylinder Sleeves manufacturing division based in Maquoketa, Iowa offers these capabilities.

- **Standard, flanged, high-performance, industrial and heavy-duty sleeves**
- **Short runs, long runs, prototypes, custom and reverse engineering**
- **3 - 5 day turnaround on custom sleeves**
- **Extensive casting material coverage**
- **2” to 8.5” bore diameter and lengths from 5” to 24” in 1/16” increments**
- **Local availability**
- **97% order fill rate**

On behalf of the Melling family and all of our employees, thank you for taking the time to review this catalog and for supporting our family business for 80 years. Melling strives to deliver to you, our valued customers “an advantage by design”.

Sincerely,

Mark Melling
President and CEO



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Cylinder Sleeve Terminology

• **F suffix : Flange d Sleeve** – Cylinder sleeve features a flange at the top which allows it to be set to a particular de pth in the block. Commonly used in high performance applications to enhance dura bility

• **N suffix : Not ch ed Sleeve** – Cylinder sleeve that is designed to provide a more d urable and wear -resistant surface for the pistons maintaining consistent compression. Contribute to enhanced heat dissipation under high stress conditions. Highly beneficial for high -performance engines and increased power output and reliability.

• **Semi -Finished I.D**.: Cylinder s leeve is partially processed and requires further machining for installation. Sleeve may need to be honed or resized to m atch sp ecific engine specs.

• **Finished Honed :** Cylinder sleeve is machined to a precise surface finish and s ize. Allows for better oil distribution and reduced friction. Improves engines efficiency and reduces wear

MELLING CYLINDER SLEEVES™

140 Jacobson Drive • Maquoketa, IA 52060
1 800-621-0169 • 563-652-6806

LIMITED WARRANTY

All products sold by Melling Cylinder Sleeves are warranted to the consumer owner for one (1) year from the date of installation to be free from defects in materials or workmanship.

This warranty does not apply to any product that has been altered, tampered with, such as taken apart, misused, subject to excessive operating conditions, malfunctions becasue of foreign particles such as dirt or pieces of other deteriorating engine components, products used in a vehicle that has been altered for other than intended purposes. Also, performance products are not covered under this warranty including products used for off-road or racing purposes.

If a product fails to conform to this warranty, the product should be returned to the place of purchase, then sent back, prepaid to Melling Cylinder Sleeves. If Melling Cylinder Sleeves determines that this product fails to conform to this warranty, it will either replace the product or refund the original purchase price at the option of Melling Cylinder Sleeves.

THIS LIMITED WARRANTY IS EXCLUSIVE AND IS IN LIEU OF ANY OTHER IMPLIED WARRANTY OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR WARRANTY OF QUALITY, WEATHER EXPRESSED OR IMPLIED, EXCEPT THE WARRANTY OF TITLE. ALL IMPLIED WARRANTIES ARE LIMITED TO THE DURATION OF THE WARRANTY, THE REMEDIES SET FORTH IN THIS WARRANTY ARE EXCLUSIVE.

Some states do not allow limitations on how long an implied warranty lasts or exclusion or limitation of incidental or consequential damages, so the above limitations or exclusions may not apply to you. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

Melling Cylinder Sleeves
140 Jacobson Drive
Maquoketa, IA 52060

The information in this catalog has been gathered from the best available sources. Every possibe effort has been made to verify accuracy. Melling Cylinder Sleeves does not accept responsibility for errors or omissions. Melling Cylinder Sleeves reserves the right to update product specifications at any time without notice.

Before installing any part number listed in this catalog consult the appropriate manufacturer's instruction manual for detailed installation instructions.

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Michigan Made Family Owned
80 MELLING ENGINE PARTS
1946-2026

INSTALLATION PROCEDURE

1) Measure the sleeve O.D., Top - Middle - Bottom, rotate the sleeve 90 degrees, and measure again Top - Middle - Bottom. The average measurement is the size of the sleeve. This measurement is what is used to calculate press or interference fit. Some minor sleeve distortion may have occurred during shipment, however the sleeve will conform to the cylinder shape.

2) Determine the amount of press needed for the application (see page 3 for press recommendations). Stop the boring tool 1/8" to ½"(depending on the type of block, piston travel, oil ring location, length of crack, etc.) from the bottom of the cylinder to leave a step (ledge) for the sleeve to sit on. The cylinder head will hold the sleeve from the top. When the block has been bored out to size to accept the sleeve, change the boring machine cutter to a pointed tool. In order to square the step/ledge, set the tool about .010" (PER SIDE) less than the block has been bored to. Lightly cut away some of the chamfer until the cutter reaches the flat or the top of the step/ledge. This allows the sleeve to sit fully on the step/ledge, not partially on the chamfered edges.

3) Apply a sleeve retainer compound of your choice (optional if not repairing a cracked block) to the outside diameter of the sleeve, then either press or carefully drive the sleeve into the block. Make sure the sleeve is all the way down and bottomed on the step/ledge. Trim the excess sleeve material from the top of the block (with the bottom flat of the boring tool if there is substantial material). Bore the sleeve to the required inside diameter size. With a long sharp file, remove any sleeve protrusion that would cause head gasket problems, or deck the block with a mill. Finally chamfer the top inside diameter of the sleeve.

PRESS FIT RECOMMENDATIONS

2.00" Bore up to 5-1/8" = .003" Press Maximum
5-1/8" Bore up to 6-1/2" = .004" Press Maximum
6-1/2" Bore up to 8-1/2" = .005" Press Maximum

- The above figures are for perfect to normal conditions, not for use in all applications. Please keep in mind that the machinist's past experiences should also be considered. There are numerous factors that will effect the amount of press that should be used.

  Some of these include **BUT ARE NOT LIMITED TO:**

- The location of the damage, crack or hole.

- A long crack or large chunk missing will reduce the press because the damage will open under stress. Increase or decrease the amount of press according to what will seal the damage. Pressure testing is recommended.

- The material and strength integrity of the block (an air cooled aluminum jug vs a high nickel block and a lightweight design vs a rigid type block casting).

- If the remaining cylinders are going to be bored or not. (Remember, the more press the greater the distortion to the surrounding cylinders. This distortion may not become round with just fine honing).

- Not using a step at the bottom of the cylinder means more press should be used to help keep the sleeve from dropping.

Take these factors into consideration and adjust the amount of press for each sleeve installation accordingly!

HIGH PERFORMANCE SLEEVES

Melling “HP” sleeves are made from centrifugally cast, high strength gray iron. It is a lower carbon iron alloyed with chromium, copper and nickel to produce a harder (241-293 BHN) more wear resistant surface. The average tensile strength (45,000 - 50,000 p.s.i) is 1/3 greater than “regular” iron sleeves and nearly all OEM cylinder blocks.

This translates into this proven sleeve material and has been used successfully for years in heavy- duty diesel and performance engines to give longer life with less distortion and enhanced reliability. Our “HP” iron is compatible with all ring materials.

NOMINAL BORE	LENGTH	SEMI-FINISHED I.D. +/- .005	3/32” WALL		1/8” WALL	
			O.D.	SLEEVE #	O.D.	SLEEVE #
4.000	6.250	3.970	4.1905	**CSL136HP**	4.253	**CSL236HP**
4.110	6.875	4.080	4.3000	**CSL1174HP**	4.363	**CSL2274HP**
4.125	6.250	4.095	4.3155	**CSL161HP**	4.378	**CSL261HP**
4.250	7.000	4.220	4.4405	**CSL197HP**	4.503	**CSL297HP**

HIGH PERFORMANCE UNIVERSAL FLANGED SLEEVES

FEATURES

- Provide extra insurance to prevent sleeve movement in performance applications
- Reduce the critical factors that secure standard liners such as press fit, cylinder ledge at the bottom of the bore and heat expansion rates of metals.
- Flanged counter bore thickness in block can be machined .002 less to provide extra sealing against the gasket and head from the flange on the sleeve.
- Bore can be up to .060 larger than standard and still have a 3/32” wall
- Heavy duty 619 material

PART #	STANDARD BORE	I.D.	O.D.	OVERALL LENGTH	FLANGE DIAMETER	FLANGE THICKNESS
590203	3.9375	3.907	4.190	6.750	4.330	0.125
590259	4.000	3.970	4.253	5.500	4.330	0.125
590298	4.000	3.970	4.253	5.875	4.393	0.125
590236	4.000	3.970	4.253	6.250	4.393	0.125
590280	4.000	3.970	4.253	6.500	4.393	0.125
590231	4.050	4.020	4.303	6.125	4.443	0.125
590295	4.050	4.020	4.303	6.3125	4.443	0.125
592274	4.110	4.080	4.363	6.875	4.503	0.125
592256	4.125	4.095	4.378	7.500	4.518	0.125
590261	4.125	4.095	4.378	6.250	4.518	0.125
590297	4.250	4.220	4.503	7.000	4.643	0.125

MELLING CYLINDER SLEEVES™

UNIVERSAL FLANGED SLEEVES

PART #	I.D.	O.D.	OVERALL LENGTH	FLANGE O.D.	FLANGE THICKNESS
CSL105F	3.157	3.378	6.500	3.433	0.090
CSL9326F	3.358	3.513	5.590	3.758	0.188
CSL357F	3.424	3.605	5.221	3.830	0.169
CSL9349F	3.435	3.580	5.585	3.759	0.188
CSL9349F.070	3.435	3.650	5.590	4.445	0.188
CSL307FXV	3.500	3.652	5.750	3.742	0.180
CSL361FD	3.600	3.800	5.250	3.900	0.188
CSL331F	3.632	3.800	5.714	4.053	0.194
CSL9352F	3.679	3.904	5.340	4.140	0.212
CSL356F	3.730	3.904	5.770	4.034	0.182
CSL355F	3.760	4.180	5.600	4.320	0.285
CSL101FD	3.845	4.065	6.750	4.205	0.125
CSL101F.030	3.855	4.095	6.750	4.210	0.125
CSL332F	3.870	4.180	5.525	4.320	0.285
CSL198F	3.960	4.1905	5.500	4.300	0.096
CSL359F.050	4.030	4.350	5.680	4.445	0.285
CSL329F	4.375	4.629	8.125	4.740	0.200
CSL359F	4.030	4.300	5.680	4.395	0.285
CSL360F	3.970	4.250	5.500	4.323	0.285

UNIVERSAL PROGRESSIVE SIZE CHART

BORE DIAMETER	LENGTH +/- 1/64”	WALL THICKNESS	O.D. +/- .001”	I.D. +/- .005”	SLEEVE NUMBER
2.0000	6 1/2	3/32	2.1905	1.970	**CSL450**
2.0000	6 1/2	1/8	2.2530	1.970	**CSL550**
2.0625	6 1/2	3/32	2.2530	2.032	**CSL451**
2.0625	6 1/2	1/8	2.3155	2.032	**CSL551**
2.1250	6 1/2	3/32	2.3155	2.095	**CSL452**
2.1250	6 1/2	1/8	2.3780	2.095	**CSL552**
2.1875	6 1/2	3/32	2.3780	2.157	**CSL453**
2.1875	6 1/2	1/8	2.4405	2.157	**CSL553**
2.2500	6 1/2	3/32	2.4405	2.220	**CSL454**
2.2500	6 1/2	1/8	2.5030	2.220	**CSL554**
2.3125	6 1/2	3/32	2.5030	2.282	**CSL455**
2.3125	6 1/2	1/8	2.5655	2.282	**CSL555**
2.3750	6 1/2	3/32	2.5655	2.345	**CSL456**
2.3750	6 1/2	1/8	2.6280	2.345	**CSL556**
2.3750	7	3/32	2.5655	2.345	**CSL446**
2.4375	6 1/2	3/32	2.6280	2.407	**CSL457**
2.4375	6 1/2	1/8	2.6905	2.407	**CSL557**
2.5000	6 1/2	3/32	2.6905	2.470	**CSL458**
2.5000	6 1/2	1/8	2.7530	2.470	**CSL558**
2.5000	7	3/32	2.6905	2.470	**CSL447**
2.5420	5 3/16	3/32	2.7325	2.512	**CSL633**
2.5625	6 1/2	3/32	2.7530	2.532	**CSL459**
2.5625	6 1/2	1/8	2.8155	2.532	**CSL559**
2.5625	7	3/32	2.7530	2.532	**CSL448**
2.6250	6 1/2	3/32	2.8155	2.595	**CSL460**
2.6250	6 1/2	1/8	2.8780	2.595	**CSL560**
2.6250	7	3/32	2.8155	2.595	**CSL449**
2.6250	8 1/4	3/32	2.8155	2.595	**CSL488**
2.6250	8 1/4	1/8	2.8780	2.595	**CSL588**
2.6770	5 3/4	3/32	2.8675	2.647	**CSL622**
2.6770	5 3/4	1/8	2.9300	2.647	**CSL722**
2.6875	8 1/4	3/32	2.8780	2.657	**CSL461**
2.6875	8 1/4	1/8	2.9405	2.657	**CSL561**
2.7280	5 5/16	3/32	2.9185	2.698	**CSL634**
2.7500	7 1/2	3/32	2.9405	2.720	**CSL401**
2.7500	7 1/2	1/8	3.0030	2.720	**CSL501**
2.7500	8 1/4	3/32	2.9405	2.720	**CSL485**
2.7500	8 1/4	1/8	3.0030	2.720	**CSL585**
2.7950	5 1/4	3/32	2.9855	2.765	**CSL628**
2.7950	5 1/4	1/8	3.0480	2.765	**CSL728**
2.8125	8 1/4	3/32	3.0030	2.782	**CSL462**

“N” Denotes “Notched”

UNIVERSAL PROGRESSIVE SIZE CHART

BORE DIAMETER	LENGTH +/- 1/64”	WALL THICKNESS	O.D. +/- .001”	I.D. +/- .005”	SLEEVE NUMBER
2.8125	8 1/4	1/8	3.0655	2.782	**CSL562**
2.8350	6 1/2	3/32	3.0255	2.805	**CSL604A**
2.8350	6 1/2	1/8	3.0880	2.805	**CSL704A**
2.8740	4 7/8	3/32	3.0645	2.844	**CSL601**
2.8740	4 7/8	1/8	3.1270	2.844	**CSL701**
2.8740	5 1/4	3/32	3.0645	2.844	**CSL607**
2.8740	5 1/4	1/8	3.1270	2.844	**CSL707**
2.8740	6 1/16	3/32	3.0645	2.844	**CSL620**
2.8740	6 1/16	1/8	3.1270	2.844	**CSL720**
2.8750	8 1/4	3/32	3.0655	2.845	**CSL402**
2.8750	8 1/4	1/8	3.1280	2.845	**CSL502**
2.9130	6 1/2	3/32	3.1035	2.883	**CSL605A**
2.9130	6 1/2	1/8	3.1660	2.883	**CSL705A**
2.9375	8 1/4	3/32	3.1280	2.907	**CSL463**
2.9375	8 1/4	1/8	3.1905	2.907	**CSL563**
2.9530	4 7/8	3/32	3.1435	2.923	**CSL606**
2.9530	4 7/8	1/8	3.2060	2.923	**CSL706**
2.9530	6 3/8	3/32	3.1435	2.923	**CSL616**
2.9530	6 3/8	1/8	3.2060	2.923	**CSL716**
2.9720	5 1/8	3/32	3.1625	2.942	**CSL629**
2.9720	5 1/8	1/8	3.2250	2.942	**CSL729**
2.9920	5 1/4	3/32	3.1825	2.962	**CSL610**
2.9920	5 1/4	1/8	3.2450	2.962	**CSL710**
2.9920	7	2mm	3.1530	2.962	**CSL760**
2.9920	7	3/32	3.1825	2.962	**CSL621**
2.9920	7	1/8	3.2450	2.962	**CSL721**
3.0000	6	3/32	3.1905	2.970	**CSL1168**
3.0000	6	1/8	3.2530	2.970	**CSL2268**
3.0000	6 3/8	3/32	3.1905	2.970	**CSL150**
3.0000	6 3/8	1/8	3.2530	2.970	**CSL250**
3.0000	7 1/2	3/32	3.1905	2.970	**CSL154N**
3.0000	7 1/2	1/8	3.2530	2.970	**CSL254N**
3.0000	8 1/4	3/32	3.1905	2.970	**CSL403**
3.0000	8 1/4	1/8	3.2530	2.970	**CSL503**
3.0000	9 1/4	3/32	3.1905	2.970	**CSL486**
3.0000	9 1/4	1/8	3.2530	2.970	**CSL586**
3.0300	5 3/4	3/32	3.2205	3.000	**CSL1116**
3.0300	5 3/4	1/8	3.2830	3.000	**CSL2216**
3.0510	5 1/8	3/32	3.2415	3.021	**CSL631**
3.0510	5 1/8	1/8	3.3040	3.021	**CSL731**
3.0625	8 1/4	3/32	3.2530	3.032	**CSL404**

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BORE DIAMETER	LENGTH +/- 1/64"	WALL THICKNESS	O.D. +/- .001"	I.D. +/- .005"	SLEEVE NUMBER
3.0625	8 1/4	1/8	3.3155	3.032	**CSL504**
3.0710	5 5/8	3/32	3.2615	3.041	**CSL618**
3.0710	5 5/8	1/8	3.3240	3.041	**CSL718**
3.0710	6 3/8	3/32	3.2615	3.041	**CSL1108N**
3.0710	6 3/8	1/8	3.3240	3.041	**CSL2208N**
3.0730	9 1/4	3/32	3.2530	3.043	**CSL433**
3.1250	6	3/32	3.3155	3.095	**CSL1169**
3.1250	6	1/8	3.3780	3.095	**CSL2269**
3.1250	6 7/8	3/32	3.3155	3.095	**CSL170**
3.1250	6 7/8	1/8	3.3780	3.095	**CSL270**
3.1250	8 1/8	3/32	3.3155	3.095	**CSL135**
3.1250	8 1/8	1/8	3.3780	3.095	**CSL235**
3.1250	9	3/32	3.3155	3.095	**CSL405**
3.1250	9	1/8	3.3780	3.095	**CSL505**
3.1250	9 1/4	1/8	3.3780	3.095	**CSL9022**
3.1300	5 3/4	3/32	3.3205	3.100	**CSL1134**
3.1300	5 3/4	1/8	3.3830	3.100	**CSL2234**
3.1500	5 13/16	3/32	3.3405	3.120	**CSL1131**
3.1500	5 13/16	1/8	3.4030	3.120	**CSL2231**
3.1500	6	3/32	3.3405	3.120	**CSL1132**
3.1500	6	1/8	3.4030	3.120	**CSL2232**
3.1500	6 1/4	3/32	3.3405	3.120	**CSL609**
3.1500	6 1/4	1/8	3.4030	3.120	**CSL709**
3.1500	7	2mm	3.3101	3.120	**CSL800**
3.1610	6	3/32	3.3515	3.131	**CSL619**
3.1610	6	1/8	3.4140	3.131	**CSL719**
3.1875	6	3/32	3.3780	3.157	**CSL151**
3.1875	6	1/8	3.4405	3.157	**CSL251**
3.1875	6 1/2	3/32	3.3780	3.157	**CSL105**
3.1875	6 1/2	1/8	3.4405	3.157	**CSL205**
3.1875	7 1/2	3/32	3.3780	3.157	**CSL153**
3.1875	7 1/2	3/32	3.3780	3.157	**CSL153N**
3.1875	7 1/2	1/8	3.4405	3.157	**CSL253**
3.1875	7 1/2	1/8	3.4405	3.157	**CSL253N**
3.1875	9 1/4	3/32	3.3780	3.157	**CSL406A**
3.1875	9 1/4	1/8	3.4405	3.157	**CSL506A**
3.1875	9 1/4	1/8 +.015	3.4555	3.157	**CSL506A.015**
3.1890	5 1/2	3/32	3.3795	3.159	**CSL623**
3.1890	5 1/2	1/8	3.4420	3.159	**CSL723**
3.1890	5 7/8	3/32	3.3795	3.159	**CSL1118N**

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UNIVERSAL PROGRESSIVE SIZE CHART

BORE DIAMETER	LENGTH +/- 1/64”	WALL THICKNESS	O.D. +/- .001”	I.D. +/- .005”	SLEEVE NUMBER
3.1890	5 7/8	1/8	3.4420	3.159	**CSL2218N**
3.1890	7	2mm	3.3495	3.159	**CSL810**
3.2280	5 3/8	3/32	3.4185	3.198	**CSL1105**
3.2280	5 3/8	1/8	3.4810	3.198	**CSL2205**
3.2283	7	2mm	3.3888	3.198	**CSL820**
3.2500	7 1/4	3/32	3.4405	3.220	**CSL1142**
3.2500	7 1/4	1/8	3.5030	3.220	**CSL2242**
3.2500	7 1/2	3/32	3.4405	3.220	**CSL1143**
3.2500	7 1/2	1/8	3.5030	3.220	**CSL2243**
3.2500	8 1/16	1/16	3.3780	3.220	**CSL115NX**
3.2500	8 1/16	3/32	3.4405	3.220	**CSL115N**
3.2500	8 1/16	1/8	3.5030	3.220	**CSL215N**
3.2500	9 1/4	3/32	3.4405	3.220	**CSL407**
3.2500	9 1/4	1/8	3.5030	3.220	**CSL507**
3.2680	5 1/2	3/32	3.4585	3.238	**CSL613**
3.2680	5 1/2	1/8	3.5210	3.238	**CSL713**
3.2680	5 3/4	3/32	3.4585	3.238	**CSL624**
3.2680	5 3/4	1/8	3.5210	3.238	**CSL724**
3.2680	6 1/4	3/32	3.4585	3.238	**CSL611**
3.2680	6 1/4	1/8	3.5210	3.238	**CSL711**
3.2680	7	2mm	3.4282	3.238	**CSL830**
3.2680	7	3/32	3.4584	3.238	**CSL803**
3.2680	7	1/8	3.5210	3.238	**CSL903**
3.3000	8 3/16	3/32	3.4905	3.270	**CSL112**
3.3000	8 3/16	1/8	3.5530	3.270	**CSL212**
3.3030	7	2mm	3.4676	3.273	**CSL840**
3.3070	5 5/8	3/32	3.4975	3.277	**CSL1107**
3.3070	5 5/8	1/8	3.5600	3.277	**CSL2207**
3.3070	6 1/2	3/32	3.4975	3.277	**CSL1128**
3.3070	6 1/2	1/8	3.5600	3.277	**CSL2228**
3.3125	7 9/16	3/32	3.5030	3.282	**CSL107**
3.3125	7 9/16	1/8	3.5655	3.282	**CSL207**
3.3125	9 1/4	3/32	3.5030	3.282	**CSL408**
3.3125	9 1/4	1/8	3.5655	3.282	**CSL508**
3.3300	5 11/16	3/32	3.5205	3.300	**CSL1136**
3.3300	5 11/16	1/8	3.5830	3.300	**CSL2236**
3.3440	7 9/16	3/32	3.5345	3.314	**CSL1144**
3.3440	7 9/16	1/8	3.5970	3.314	**CSL2244**
3.3460	5 1/4	3/32	3.5365	3.316	**CSL602**
3.3460	5 1/4	1/8	3.5990	3.316	**CSL702**
3.3460	6	3/32	3.5365	3.316	**CSL612**

“N” Denotes “Notched”

UNIVERSAL PROGRESSIVE SIZE CHART

BORE DIAMETER	LENGTH +/- 1/64”	WALL THICKNESS	O.D. +/- .001”	I.D. +/- .005”	SLEEVE NUMBER
3.3460	6	1/8	3.5990	3.316	**CSL712**
3.3460	6 1/4	3/32	3.5365	3.316	**CSL617**
3.3460	6 1/4	1/8	3.5990	3.316	**CSL717**
3.3460	7	2mm	3.5069	3.316	**CSL850**
3.3750	6	3/32	3.5655	3.345	**CSL1145**
3.3750	6	1/8	3.6280	3.345	**CSL2245**
3.3750	7 5/16	3/32	3.5655	3.345	**CSL125**
3.3750	7 5/16	1/8	3.6280	3.345	**CSL225**
3.3750	9 1/4	3/32	3.5655	3.345	**CSL409**
3.3750	9 1/4	1/8	3.6280	3.345	**CSL509**
3.3860	5 3/4	3/32	3.5765	3.356	**CSL615**
3.3860	5 3/4	1/8	3.6390	3.356	**CSL715**
3.3860	7	2mm	3.5463	3.356	**CSL860**
3.3860	7	3/32	3.5765	3.356	**CSL804**
3.3860	7	1/8	3.6390	3.356	**CSL904**
3.4000	5 15/16	3/32	3.5905	3.370	**CSL156**
3.4000	5 15/16	1/8	3.6530	3.370	**CSL256**
3.4000	7 1/16	3/32	3.5905	3.370	**CSL155**
3.4000	7 1/16	1/8	3.6530	3.370	**CSL255**
3.4250	5 1/2	3/32	3.6155	3.395	**CSL1138**
3.4250	5 1/2	1/8	3.6780	3.395	**CSL2238**
3.4250	7	2mm	3.5857	3.405	**CSL870**
3.4330	5 13/16	3/32	3.6235	3.403	**CSL603**
3.4330	5 13/16	1/8	3.6860	3.403	**CSL703**
3.4375	5 13/16	3/32	3.6280	3.407	**CSL1146**
3.4375	5 13/16	1/8	3.6905	3.407	**CSL2246**
3.4375	7 1/2	3/32	3.6280	3.407	**CSL152**
3.4375	7 1/2	3/32	3.6280	3.407	**CSL152N**
3.4375	7 1/2	1/8	3.6905	3.407	**CSL252**
3.4375	7 1/2	1/8	3.6905	3.407	**CSL252N**
3.4375	8 1/8	1/16	3.5655	3.407	**CSL119NX**
3.4375	8 1/8	3/32	3.6280	3.407	**CSL119N**
3.4375	8 1/8	1/8	3.6905	3.407	**CSL219N**
3.4375	9 1/4	3/32	3.6280	3.407	**CSL410**
3.4375	9 1/4	1/8	3.6905	3.407	**CSL510**
3.4440	6	3/32	3.6345	3.414	**CSL1129**
3.4440	6	1/8	3.6970	3.414	**CSL2229**
3.4440	6 7/16	3/32	3.6345	3.414	**CSL1171**
3.4440	6 7/16	1/8	3.6970	3.414	**CSL2271**
3.4646	7	2mm	3.6250	3.434	**CSL880**
3.4650	5 7/8	3/32	3.6555	3.435	**CSL614**

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UNIVERSAL PROGRESSIVE SIZE CHART

BORE DIAMETER	LENGTH +/- 1/64”	WALL THICKNESS	O.D. +/- .001”	I.D. +/- .005”	SLEEVE NUMBER
3.4650	5 7/8	1/8	3.7180	3.435	**CSL714**
3.4840	6 1/4	3/32	3.6745	3.454	**CSL608**
3.4840	6 1/4	1/8	3.7370	3.454	**CSL708**
3.5000	5 1/8	3/32	3.6905	3.470	**CSL104**
3.5000	5 1/8	1/8	3.7530	3.470	**CSL204**
3.5000	5 1/4	3/32	3.6905	3.470	**CSL1112**
3.5000	5 1/4	1/8	3.7530	3.470	**CSL2212**
3.5000	5 1/2	1/16	3.6280	3.470	**CSL1137X**
3.5000	5 1/2	3/32	3.6905	3.470	**CSL1137**
3.5000	5 1/2	1/8	3.7530	3.470	**CSL2237**
3.5000	5 9/16	3/32	3.6905	3.470	**CSL1141**
3.5000	5 9/16	1/8	3.7530	3.470	**CSL2241**
3.5000	5 3/4	3/32	3.6905	3.470	**CSL1122**
3.5000	5 3/4	1/8	3.7530	3.470	**CSL2222**
3.5000	5 7/8	3/32	3.6905	3.470	**CSL1120**
3.5000	5 7/8	1/8	3.7530	3.470	**CSL2220**
3.5000	5 15/16	3/32	3.6905	3.470	**CSL141**
3.5000	5 15/16	1/8	3.7530	3.470	**CSL241**
3.5000	6	3/32	3.6905	3.470	**CSL1111**
3.5000	6	1/8	3.7530	3.470	**CSL2211**
3.5000	7 1/16	3/32	3.6905	3.470	**CSL109**
3.5000	7 1/16	1/8	3.7530	3.470	**CSL209**
3.5000	8 1/16	3/32	3.6905	3.470	**CSL108**
3.5000	8 1/16	1/8	3.7530	3.470	**CSL208**
3.5000	9 1/4	3/32	3.6905	3.470	**CSL411**
3.5000	9 1/4	1/8	3.7530	3.470	**CSL511**
3.5000	9 1/4	1/8 +.015	3.7680	3.470	**CSL511.015**
3.5040	7	2mm	3.6644	3.474	**CSL890**
3.5180	5 1/2	3/32	3.7085	3.488	**CSL1147**
3.5180	5 1/2	1/8	3.7710	3.488	**CSL2247**
3.5510	5 1/4	1/16	3.6780	3.520	**CSL1177X**
3.5510	6 1/4	1/16	3.6780	3.520	**CSL1178X**
3.5625	5 15/16	3/32	3.7530	3.532	**CSL158**
3.5625	5 15/16	1/8	3.8155	3.532	**CSL258**
3.5625	6 7/8	3/32	3.7530	3.532	**CSL102**
3.5625	6 7/8	1/8	3.8155	3.532	**CSL202**
3.5625	7 7/32	3/32	3.7530	3.532	**CSL111**
3.5625	7 7/32	1/8	3.8155	3.532	**CSL211**
3.5625	7 9/16	3/32	3.7530	3.532	**CSL123**
3.5625	7 9/16	1/8	3.8155	3.532	**CSL223**
3.5625	10	3/32	3.7530	3.532	**CSL412**

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UNIVERSAL PROGRESSIVE SIZE CHART

BORE DIAMETER	LENGTH +/- 1/64”	WALL THICKNESS	O.D. +/- .001”	I.D. +/- .005”	SLEEVE NUMBER
3.5625	10	1/8	3.8155	3.532	**CSL512**
3.5750	5 3/8	3/32	3.7655	3.545	**CSL190A**
3.5750	5 3/8	1/8	3.8280	3.545	**CSL290A**
3.5830	5 1/2	3/32	3.7735	3.553	**CSL625**
3.5860	5	3/32	3.7765	3.556	**CSL1172**
3.5860	5	1/8	3.8390	3.556	**CSL2272**
3.5860	6 1/2	3/32	3.7765	3.556	**CSL1130**
3.5860	6 1/2	1/8	3.8390	3.556	**CSL2230**
3.6220	6 1/16	3/32	3.8125	3.592	**CSL630**
3.6220	6 1/16	1/8	3.8750	3.592	**CSL730**
3.6250	6	3/32	3.8155	3.595	**CSL144**
3.6250	6	1/8	3.8780	3.595	**CSL244**
3.6250	6 11/16	3/32	3.8155	3.595	**CSL142**
3.6250	6 11/16	1/8	3.8780	3.595	**CSL242**
3.6250	7	3/32	3.8155	3.595	**CSL134**
3.6250	7	1/8	3.8780	3.595	**CSL234**
3.6250	10 1/4	3/32	3.8155	3.595	**CSL413A**
3.6250	10 1/4	1/8	3.8780	3.595	**CSL513A**
3.6610	5 1/16	3/32	3.8515	3.631	**CSL174**
3.6610	5 1/16	1/8	3.9140	3.631	**CSL274**
3.6610	5 1/2	3/32	3.8515	3.631	**CSL626**
3.6610	5 1/2	1/8	3.9140	3.631	**CSL726**
3.6614	7	2mm	3.8220	3.631	**CSL930**
3.6710	5 1/2	3/32	3.8615	3.641	**CSL1106**
3.6710	5 1/2	1/8	3.9240	3.641	**CSL2206**
3.6800	5 1/8	3/32	3.8705	3.650	**CSL194**
3.6800	5 1/8	1/8	3.9330	3.650	**CSL294**
3.6800	5 1/2	3/32	3.8705	3.650	**CSL1173**
3.6800	5 1/2	1/8	3.9330	3.650	**CSL2273**
3.6800	6	3/32	3.8705	3.650	**CSL124**
3.6800	6	1/8	3.9330	3.650	**CSL224**
3.6875	5 1/8	3/32	3.8780	3.657	**CSL1165**
3.6875	5 1/8	1/8	3.9405	3.657	**CSL2265**
3.6875	6	3/32	3.8780	3.657	**CSL1166**
3.6875	6	1/8	3.9405	3.657	**CSL2266**
3.6875	7 9/16	3/32	3.8780	3.657	**CSL1148**
3.6875	7 9/16	1/8	3.9405	3.657	**CSL2248**
3.6875	10 1/4	3/32	3.8780	3.657	**CSL414**
3.6875	10 1/4	1/8	3.9405	3.657	**CSL514**
3.7190	7 3/4	3/32	3.9095	3.689	**CSL145**
3.7190	7 3/4	1/8	3.9720	3.689	**CSL245**

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UNIVERSAL PROGRESSIVE SIZE CHART

BORE DIAMETER	LENGTH +/- 1/64”	WALL THICKNESS	O.D. +/- .001”	I.D. +/- .005”	SLEEVE NUMBER
3.7360	5 1/2	3/32	3.9265	3.706	**CSL1149**
3.7360	5 1/2	1/8	3.9890	3.706	**CSL2249**
3.7400	6 3/4	0.083	3.909	3.689	**CSL147**
3.7500	5 3/16	3/32	3.9405	3.720	**CSL1181**
3.7500	5 7/8	3/32	3.9405	3.720	**CSL126**
3.7500	5 7/8	1/8	4.0030	3.720	**CSL226**
3.7500	6	3/32	3.9405	3.720	**CSL139**
3.7500	6	1/8	4.0030	3.720	**CSL239**
3.7500	6 1/16	3/32	3.9405	3.720	**CSL117**
3.7500	6 1/16	1/8	4.0030	3.720	**CSL217**
3.7500	7 1/4	3/32	3.9405	3.720	**CSL120**
3.7500	7 1/4	1/8	4.0030	3.720	**CSL220**
3.7500	10 1/4	3/32	3.9405	3.720	**CSL415A**
3.7500	10 1/4	1/8	4.0030	3.720	**CSL515A**
3.7500	10 1/4	1/8 +.015	4.0180	3.720	**CSL515A.015**
3.7810	5 1/2	3/32	3.9710	3.751	**CSL173**
3.7810	5 1/2	1/8	4.0335	3.751	**CSL273**
3.7810	7 7/8	3/32	3.9710	3.751	**CSL146**
3.7810	7 7/8	1/8	4.0335	3.751	**CSL246**
3.8000	5 1/4	3/32	3.9905	3.770	**CSL1133**
3.8000	5 1/4	1/8	4.0530	3.770	**CSL2233**
3.8000	5 7/8	3/32	3.9905	3.770	**CSL1123**
3.8000	5 7/8	3/32	3.9905	3.770	**CSL1123N**
3.8000	5 7/8	1/8	4.0530	3.770	**CSL2223**
3.8000	5 7/8	1/8	4.0530	3.770	**CSL2223N**
3.8000	6	0.048	3.8950	3.770	**CSL138X**
3.8000	6	3/32	3.9905	3.770	**CSL138**
3.8000	6	1/8	4.0530	3.770	**CSL238**
3.8000	6 1/8	3/32	3.9905	3.770	**CSL1101**
3.8000	6 1/8	1/8	4.0530	3.770	**CSL2201**
3.8000	6 3/8	3/32	3.9905	3.770	**CSL183**
3.8000	6 3/8	1/8	4.0530	3.770	**CSL283**
3.8000	6 7/8	3/32	3.9905	3.770	**CSL1124**
3.8000	6 7/8	1/8	4.0530	3.770	**CSL2224**
3.8000	6 15/16	3/32	3.9905	3.770	**CSL143**
3.8000	6 15/16	1/8	4.0530	3.770	**CSL243**
3.8125	6 7/8	3/32	4.0030	3.782	**CSL162**
3.8125	6 7/8	1/8	4.0655	3.782	**CSL262**
3.8125	10 1/4	3/32	4.0030	3.782	**CSL428A**
3.8125	10 1/4	1/8	4.0655	3.782	**CSL528A**
3.8750	5 3/4	3/32	4.0655	3.845	**CSL188**
3.8750	5 3/4	1/8	4.1280	3.845	**CSL288**

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UNIVERSAL PROGRESSIVE SIZE CHART

BORE DIAMETER	LENGTH +/- 1/64"	WALL THICKNESS	O.D. +/- .001"	I.D. +/- .005"	SLEEVE NUMBER	
3.8750	5 7/8	3/32	4.0655	3.845	**CSL122A**	
3.8750	5 7/8	1/8	4.1280	3.845	**CSL222A**	
3.8750	6 1/4	3/32	4.0655	3.845	**CSL181**	
3.8750	6 1/4	1/8	4.1280	3.845	**CSL281**	
3.8750	6 3/8	3/32	4.0655	3.845	**CSL133**	
3.8750	6 3/8	1/8	4.1280	3.845	**CSL233**	
3.8750	6 7/16	3/32	4.0655	3.845	**CSL182**	
3.8750	6 7/16	1/8	4.1280	3.845	**CSL282**	
3.8750	6.700	3/32	4.065	3.845	**CSL901D**	
3.8750	6 3/4	3/32	4.065	3.845	**CSL101FD**	(Flange, Ductile Iron; Flange O.D. 4.200) (Flange Thickness 0.125)
3.8750	7	1/16	4.0030	3.845	**CSL165X**	
3.8750	7	3/32	4.0655	3.845	**CSL165**	
3.8750	7	1/8	4.1280	3.845	**CSL265**	
3.8750	7 1/2	3/32	4.0655	3.845	**CSL101**	
3.8750	7 1/2	1/8	4.1280	3.845	**CSL201**	
3.8750	10 1/4	3/32	4.0655	3.845	**CSL416A**	
3.8750	10 1/4	1/8	4.1280	3.845	**CSL516A**	
3.8750	10 1/4	1/8 +.015	4.1430	3.845	**CSL516A.015**	
3.9100	6	3/32	4.1005	3.880	**CSL116**	
3.9100	6	1/8	4.1630	3.880	**CSL216**	
3.9375	6 3/4	3/32	4.1280	3.907	**CSL103**	
3.9375	6 3/4	1/8	4.1905	3.907	**CSL203**	
3.9375	6 7/8	3/32	4.1280	3.907	**CSL1151**	
3.9375	6 7/8	1/8	4.1905	3.907	**CSL2251**	
3.9375	10 1/4	3/32	4.1280	3.907	**CSL429A**	
3.9375	10 1/4	1/8	4.1905	3.907	**CSL529A**	
3.9650	6	3/32	4.1555	3.935	**CSL1119**	
3.9650	6	1/8	4.2180	3.935	**CSL2219**	
3.9760	6 1/4	3/32	4.1665	3.946	**CSL1152**	
3.9760	6 1/4	1/8	4.2290	3.946	**CSL2252**	
4.0000	5 1/16	3/32	4.1905	3.970	**CSL193**	
4.0000	5 1/16	1/8	4.2530	3.970	**CSL293**	
4.0000	5 1/8	3/32	4.1905	3.970	**CSL1113A**	
4.0000	5 1/8	1/8	4.2530	3.970	**CSL2213A**	
4.0000	5 1/2	3/32	4.1905	3.970	**CSL159**	
4.0000	5 1/2	1/8	4.2530	3.970	**CSL259**	
4.0000	5 5/8	3/32	4.1905	3.970	**CSL127**	
4.0000	5 5/8	1/8	4.2530	3.970	**CSL227**	
4.0000	5 3/4	3/32	4.1905	3.970	**CSL1104**	
4.0000	5 3/4	3/32	4.1905	3.970	**CSL1104N**	
4.0000	5 3/4	1/8	4.2530	3.970	**CSL2204**	
4.0000	5 3/4	1/8	4.2530	3.970	**CSL2204N**	
4.0000	5 7/8	1/16	4.1280	3.970	**CSL198X**	

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UNIVERSAL PROGRESSIVE SIZE CHART

BORE DIAMETER	LENGTH +/- 1/64”	WALL THICKNESS	O.D. +/- .001”	I.D. +/- .005”	SLEEVE NUMBER
4.0000	5 7/8	3/32	4.1905	3.970	**CSL198**
4.0000	5 7/8	1/8	4.2530	3.970	**CSL298**
4.0000	6	3/32	4.1905	3.970	**CSL1170**
4.0000	6 1/16	3/32	4.1905	3.970	**CSL129**
4.0000	6 1/16	1/8	4.2530	3.970	**CSL229**
4.0000	6 1/4	3/32	4.1905	3.970	**CSL136**
4.0000	6 1/4	3/32	4.1905	3.970	**CSL136HP**
4.0000	6 1/4	1/8	4.2530	3.970	**CSL236**
4.0000	6 1/4	1/8	4.2530	3.970	**CSL236HP**
4.0000	6 7/16	3/32	4.1905	3.970	**CSL1153**
4.0000	6 7/16	1/8	4.2530	3.970	**CSL2253**
4.0000	6 1/2	1/16	4.1280	3.970	**CSL180X**
4.0000	6 1/2	3/32	4.1905	3.970	**CSL180**
4.0000	6 1/2	1/8	4.2530	3.970	**CSL280**
4.0000	6 7/8	3/32	4.1905	3.970	**CSL137**
4.0000	6 7/8	1/8	4.2530	3.970	**CSL237**
4.0000	7 7/8	0.060	4.1200	3.970	**CSL157X**
4.0000	7 7/8	3/32	4.1905	3.970	**CSL157**
4.0000	7 7/8	1/8	4.2530	3.970	**CSL257**
4.0000	9 3/8	3/32	4.1905	3.970	**CSL175**
4.0000	9 3/8	1/8	4.2530	3.970	**CSL275**
4.0000	10 1/4	3/32	4.1905	3.970	**CSL417A**
4.0000	10 1/4	1/8	4.2530	3.970	**CSL517A**
4.0000	10 1/4	1/8 +.015	4.2680	3.970	**CSL517A.015**
4.0100	8 3/8	1/16	4.1460	3.985	**CSL641X**
4.0100	8 3/8	3/32	4.2090	3.985	**CSL641**
4.0310	6 3/8	3/32	4.2215	4.001	**CSL1154**
4.0310	6 3/8	1/8	4.2840	4.001	**CSL2254**
4.0400	6 1/2	0.055	4.1500	4.010	**CSL9154**
4.0400	6 3/4	3/32	4.2305	4.010	**CSL160**
4.0400	6 3/4	1/8	4.2930	4.010	**CSL260**
4.0500	6 1/4	3/32	4.2405	4.020	**CSL131**
4.0500	6 1/4	1/8	4.3030	4.020	**CSL231**
4.0500	6 1/4	0.175	4.4030	4.020	**CSL1139**
4.0500	6 5/16	1/16	4.1780	4.020	**CSL195X**
4.0500	6 5/16	3/32	4.2405	4.020	**CSL195**
4.0500	6 5/16	1/8	4.3030	4.020	**CSL295**
4.0625	6 5/16	3/32	4.2530	4.032	**CSL167**
4.0625	6 5/16	1/8	4.3155	4.032	**CSL267**
4.0625	6 1/2	3/32	4.2530	4.032	**CSL1102**
4.0625	6 1/2	1/8	4.3155	4.032	**CSL2202**

“N” Denotes “Notched”

UNIVERSAL PROGRESSIVE SIZE CHART

BORE DIAMETER	LENGTH +/- 1/64”	WALL THICKNESS	O.D. +/- .001”	I.D. +/- .005”	SLEEVE NUMBER
4.0625	10 1/4	3/32	4.2530	4.032	**CSL489**
4.0625	10 1/4	1/8	4.3155	4.033	**CSL589**
4.0625	11	3/32	4.2530	4.032	**CSL430**
4.0625	11	1/8	4.3155	4.032	**CSL530**
4.0820	6 7/8	3/32	4.2725	4.052	**CSL1155**
4.0820	6 7/8	1/8	4.3350	4.052	**CSL2255**
4.0940	6	3/32	4.2845	4.064	**CSL179**
4.0940	6	1/8	4.3468	4.064	**CSL279**
4.0940	6 1/4	3/32	4.2840	4.064	**CSL1179N**
4.0940	6 1/4	1/8	4.3467	4.074	**CSL2279N**
4.1100	6 7/8	3/32	4.3005	4.080	**CSL1174**
4.1100	6 7/8	3/32	4.3005	4.080	**CSL1174HP**
4.1100	6 7/8	1/8	4.3630	4.080	**CSL2274**
4.1100	6 7/8	1/8	4.3630	4.080	**CSL2274HP**
4.1250	6 1/16	3/32	4.3155	4.095	**CSL164**
4.1250	6 1/16	1/8	4.3780	4.095	**CSL264**
4.1250	6 1/4	3/32	4.3155	4.095	**CSL161**
4.1250	6 1/4	3/32	4.3155	4.095	**CSL161HP**
4.1250	6 1/4	1/8	4.3780	4.095	**CSL261**
4.1250	6 1/4	1/8	4.3780	4.095	**CSL261HP**
4.1250	6 3/8	3/32	4.3155	4.095	**CSL1109**
4.1250	6 3/8	1/8	4.3780	4.095	**CSL2209**
4.1250	6 1/2	3/32	4.3155	4.095	**CSL172**
4.1250	6 1/2	1/8	4.3780	4.095	**CSL272**
4.1250	6 3/4	1/16	4.2530	4.095	**CSL130X**
4.1250	6 3/4	3/32	4.3155	4.080	**CSL130**
4.1250	6 3/4	1/8	4.3780	4.095	**CSL230**
4.1250	7 1/2	3/32	4.3155	4.095	**CSL1156**
4.1250	7 1/2	1/8	4.3780	4.095	**CSL2256**
4.1250	10 1/4	3/32	4.3155	4.095	**CSL418A**
4.1250	10 1/4	1/8	4.3780	4.095	**CSL518A**
4.1250	10 1/4	1/8 +.015	4.3930	4.095	**CSL518A.015**
4.1400	7 3/4	0.090	4.3220	4.110	**CSL640**
4.1400	8	0.080	4.3005	4.110	**CSL9138**
4.1500	6 1/8	3/32	4.3405	4.120	**CSL118**
4.1500	6 1/8	1/8	4.4030	4.120	**CSL218**
4.1875	6 3/4	3/32	4.3780	4.157	**CSL186**
4.1875	6 3/4	1/8	4.4405	4.157	**CSL286**
4.1875	7 7/8	1/8	4.4405	4.157	**CSL591**
4.1875	10 1/4	3/32	4.3780	4.157	**CSL490**
4.1875	12 1/4	3/32	4.3780	4.157	**CSL432A**
4.1875	12 1/4	1/8	4.4405	4.157	**CSL532A**

“N” Denotes “Notched”

UNIVERSAL PROGRESSIVE SIZE CHART

BORE DIAMETER	LENGTH +/- 1/64”	WALL THICKNESS	O.D. +/- .001”	I.D. +/- .005”	SLEEVE NUMBER
4.2100	7 7/8	0.0550	4.3200	4.180	**CSL1180X**
4.2100	7 7/8	3/32	4.4025	4.180	**CSL1180**
4.2100	7 7/8	1/8	4.4630	4.180	**CSL2280**
4.2330	6 1/4	3/32	4.4235	4.203	**CSL1158**
4.2330	6 1/4	1/8	4.4860	4.203	**CSL2258**
4.2500	6	3/32	4.4405	4.220	**CSL199**
4.2500	6	1/8	4.5030	4.220	**CSL299**
4.2500	6 1/2	1/16	4.3780	4.220	**CSL196X**
4.2500	6 1/2	3/32	4.4405	4.220	**CSL196**
4.2500	6 1/2	1/8	4.5030	4.220	**CSL296**
4.2500	7	1/16	4.3780	4.220	**CSL197X**
4.2500	7	3/32	4.4405	4.220	**CSL197**
4.2500	7	3/32	4.4405	4.220	**CSL197HP**
4.2500	7	1/8	4.5030	4.220	**CSL297**
4.2500	7	1/8	4.5030	4.220	**CSL297HP**
4.2500	7 1/2	3/32	4.4405	4.220	**CSL106**
4.2500	7 1/2	1/8	4.5030	4.220	**CSL206**
4.2500	12 1/4	3/32	4.4405	4.220	**CSL419A**
4.2500	12 1/4	1/8	4.5030	4.220	**CSL519A**
4.2500	12 1/4	1/8 +.015	4.5180	4.220	**CSL519A.015**
4.3000	7 1/2	3/32	4.4905	4.270	**CSL187**
4.3000	7 1/2	1/8	4.5530	4.270	**CSL287**
4.3125	6 3/4	3/32	4.5030	4.282	**CSL1159**
4.3125	6 3/4	1/8	4.5655	4.282	**CSL2259**
4.3125	12 3/4	3/32	4.5030	4.282	**CSL420A**
4.3125	12 3/4	1/8	4.5655	4.282	**CSL520A**
4.3200	6 3/4	3/32	4.5105	4.290	**CSL121**
4.3200	6 3/4	1/8	4.5730	4.290	**CSL221**
4.3200	7	3/32	4.5105	4.290	**CSL114**
4.3200	7	1/8	4.5730	4.290	**CSL214**
4.3300	7 3/4	3/32	4.5210	4.300	**CSL110**
4.3420	6 1/4	1/16	4.4660	4.312	**CSL169X**
4.3420	6 1/4	3/32	4.5325	4.312	**CSL169**
4.3420	6 1/4	1/8	4.5950	4.312	**CSL269**
4.3500	5 7/8	3/32	4.5405	4.320	**CSL1114**
4.3500	5 7/8	1/8	4.6030	4.320	**CSL2214**
4.3600	6	3/32	4.5505	4.330	**CSL128**
4.3600	6	1/8	4.6130	4.330	**CSL228**
4.3600	6 1/4	3/32	4.5505	4.330	**CSL1125**
4.3600	6 1/4	1/8	4.6130	4.330	**CSL2225**
4.3600	6 7/8	3/32	4.5505	4.330	**CSL1160**
4.3600	6 7/8	1/8	4.6130	4.330	**CSL2260**
4.3750	7 1/2	3/32	4.5655	4.345	**CSL1161**

“N” Denotes “Notched”

UNIVERSAL PROGRESSIVE SIZE CHART

BORE DIAMETER	LENGTH +/- 1/64”	WALL THICKNESS	O.D. +/- .001”	I.D. +/- .005”	SLEEVE NUMBER
4.3750	7 1/2	1/8	4.6280	4.345	**CSL2261**
4.3750	12 1/4	3/32	4.5655	4.345	**CSL421A**
4.3750	12 1/4	1/8	4.6280	4.345	**CSL521A**
4.3750	12 1/4	1/8 +.015	4.6430	4.345	**CSL521A.015**
4.3750	12 3/4	3/32	4.5655	4.345	**CSL487**
4.3750	12 3/4	1/8	4.6280	4.345	**CSL587**
4.3800	9	0.104	4.5880	4.350	**CSL9133**
4.4000	8 1/2	3/32	4.5905	4.370	**CSL1176**
4.4000	8 1/2	1/8	4.6530	4.370	**CSL2276**
4.4375	12 1/4	0.1388	4.7150	4.407	**CSL662**
4.4375	12 3/4	3/32	4.6280	4.407	**CSL427**
4.4375	12 3/4	1/8	4.6900	4.407	**CSL527**
4.5000	7 3/8	3/32	4.6905	4.470	**CSL1167**
4.5000	7 3/8	1/8	4.7530	4.470	**CSL2267**
4.5000	7 3/4	3/32	4.6905	4.470	**CSL1126**
4.5000	7 3/4	1/8	4.7530	4.470	**CSL2226**
4.5000	8	3/32	4.6905	4.470	**CSL1126X**
4.5000	8	1/8	4.7530	4.470	**CSL2226X**
4.5000	8	1/8 + .020	4.7730	4.470	**CSL2226X.020**
4.5000	8 1/4	3/32	4.6905	4.470	**CSL1162**
4.5000	8 1/4	1/8	4.7530	4.470	**CSL2262**
4.5000	8 3/4	1/8	4.7530	4.470	**CSL276 ANGLE TOP**
4.5000	8 3/4	3/32	4.6905	4.470	**CSL1175**
4.5000	8 3/4	1/8	4.7530	4.470	**CSL2275**
4.5000	9	3/32	4.6905	4.470	**CSL1163**
4.5000	9	1/8	4.7530	4.470	**CSL2263**
4.5000	12 1/4	3/32	4.6905	4.470	**CSL422A**
4.5000	12 1/4	1/8	4.7530	4.470	**CSL522A**
4.5000	12 1/4	1/8 +.015	4.7680	4.470	**CSL522A.015**
4.5625	7 1/2	3/32	4.7530	4.532	**CSL1117**
4.5625	7 1/2	1/8	4.8150	4.532	**CSL2217**
4.5625	7 5/8	3/32	4.7525	4.532	**CSL168**
4.5625	7 5/8	1/8	4.8150	4.532	**CSL268**
4.5625	12 1/2	3/32	4.7525	4.532	**CSL431**
4.5625	12 1/2	1/8	4.8150	4.532	**CSL531**
4.6250	12 1/2	3/32	4.8155	4.595	**CSL423**
4.6250	12 1/2	1/8	4.8780	4.595	**CSL523**
4.6875	13	3/32	4.8780	4.657	**CSL464**
4.6875	13	1/8	4.9405	4.657	**CSL564**
4.7500	14	3/32	4.9405	4.720	**CSL465**
4.7500	14	1/8	5.0030	4.720	**CSL565**

“N” Denotes “Notched”

UNIVERSAL PROGRESSIVE SIZE CHART

BORE DIAMETER	LENGTH +/- 1/64”	WALL THICKNESS	O.D. +/- .001”	I.D. +/- .005”	SLEEVE NUMBER
4.7500	12 1/4	1/8	5.0030	4.720	**CSL9014**
4.8750	7 5/8	3/32	5.0655	4.845	**CSL113**
4.8750	7 5/8	1/8	5.1280	4.845	**CSL213**
4.8750	13	1/8	5.1280	4.845	**CSL525**
5.0000	13	1/8	5.2530	4.970	**CSL526**
5.0000	13	1/8 +.015	5.2680	4.970	**CSL526.015**
5.0000	14	3/32	5.1915	4.970	**CSL426**
5.0625	14	1/8	5.3165	5.032	**CSL566**
5.1250	7 1/4	3/32	5.3155	5.095	**CSL1164**
5.1250	7 1/4	1/8	5.3790	5.095	**CSL2264**
5.1250	14	1/8	5.3790	5.095	**CSL567**
5.2500	14 1/4	1/8	5.5040	5.220	**CSL568**
5.3750	14 1/4	1/8	5.6290	5.345	**CSL569**
5.5000	17 1/2	1/8	5.7540	5.470	**CSL570**
5.6250	17 1/2	1/8	5.8790	5.595	**CSL571**
5.7500	17 1/2	1/8	6.0040	5.720	**CSL572**
5.7500	17 1/2	1/8 + .032	6.0640	5.720	**CSL9157**
5.8750	17 1/2	1/8	6.1290	5.845	**CSL573**
6.0000	17 1/2	1/8	6.2540	5.970	**CSL574**
6.1250	17 1/2	1/8	6.3790	6.095	**CSL575**
6.2500	17 1/2	1/8	6.5040	6.220	**CSL576**
6.5000	17	1/8	6.7540	6.470	**CSL577**
6.7500	17	1/8	7.0050	6.720	**CSL578**
7.0000	17	3/32	7.1925	6.960	**CSL479**
7.0000	17	1/8	7.2550	6.970	**CSL579**
7.2500	22	1/8	7.5050	7.220	**CSL580**
7.5000	22	1/8	7.7550	7.470	**CSL581**
7.7500	22	1/8	8.0050	7.720	**CSL582**
7.8640	11 3/8	0.1325	8.1290	7.834	**CSL9095**
7.9680	22	0.1755	8.3180	7.938	**CSL9079**
8.0000	22	1/8	8.2550	7.970	**CSL583**
8.5000	24	1/8	8.7550	8.470	**CSL584**

“N” Denotes “Notched”

FINISHED CYLINDER SLEEVE APPLICATIONS

ALLIS CHALMERS

APPLICATION	PART#	STANDARD BORE	I.D.	O.D.	OVERALL LENGTH	FLANGE DIAMETER	FLANGE THICKNESS	
B, BE, B15, B125 Gas Engines	**CSL338FS**	3.375	3.375		6.5625	3.994	0.248	Includes seal kit
D2200, D2800, D2900, 433, 433T 649, 649T Diesel Engines & G2800 Gas Engine	**CSL336FS**	3.875	3.875		8.125	4.627	0.319	Includes seal kit

CASE

APPLICATION	PART#	STANDARD BORE	I.D.	O.D.	OVERALL LENGTH	FLANGE DIAMETER	FLANGE THICKNESS	
A-267D, A-401D Diesel Engines	**CSL343FS**	4.125	4.125		9.781	4.997	0.252	Includes seal kit
A-301, A-301D (After S/N 7070351) & A-301DF, A-451D Diesel Engines	**CSL342FS**	4.375	4.375		10.200	5.172	0.252	Includes seal kit
A-301BD, A-451BD, A-451BDT Diesel Engines	**CSL340FS**	4.375	4.375		10.200	5.125	0.252	Includes seal kit

CADILLAC/CHEVROLET/GM

APPLICATION	PART#	STANDARD BORE	I.D.	O.D.	OVERALL LENGTH	FLANGE DIAMETER	FLANGE THICKNESS	
2.0/2.2 - 4 Cyl. - 2002-09 Ecotec	**CSL9326F**	3.390	3.358	3.512	5.595	3.795	0.188	Semi finished I.D.
2.3-A,B - 4 Cyl. - 1971-77 Vega	**CSL307FXV**	3.500	3.500	3.652	5.750	3.742	0.180	I.D. Is finished honed
2.4 - 4 Cyl. 2006-12 Ecotec	**CSL9349F**	3.465	3.435	3.580	5.590	3.758	0.188	Semi finished I.D.
2.4 - 4 Cyl. 2006-12 Ecotec	**CSL9349F.070**	3.465	3.435	3.650	5.590	3.758	0.188	Semi finished I.D.
2.8-T- 4 Cyl. - 2004-06 Vortec	**CSL331F**	3.661	3.632	3.800	5.694	4.054	0.195	Semi finished I.D.
2.9-9 - 4 Cyl. - 2007-08 Vortec	**CSL356F**	3.760	3.730	3.904	5.770	4.035	0.182	Semi finished I.D.
3.5-6 - 5 Cyl. - 2004-06 Vortec	**CSL331F**	3.661	3.632	3.800	5.694	4.054	0.195	Semi finished I.D.
3.7-E - 5 Cyl. - 2007-08 Vortec	**CSL356F**	3.760	3.730	3.904	5.770	4.035	0.182	Semi finished I.D.
4.2-S - 6 Cyl. - 2002-08 Vortec	**CSL331F**	3.661	3.632	3.800	5.694	4.054	0.195	Semi finished I.D.
5.3 (Gen IV) - 8 Cyl. - 2006-09 AL Block	**CSL355F**	3.780	3.760	4.180	5.600	4.320	0.285	Semi finished I.D.
5.7-G,S - 8 Cyl. - 1997-04 (LS1)	**CSL332F**	3.900	3.870	4.180	5.600	4.320	0.285	Semi finished I.D.
6.0-U,H - 8 Cyl. - 2005-09 (LS2)	**CSL359F**	4.060	4.030	4.300	5.680	4.395	0.285	Semi finished I.D.
6.2-W - 8 Cyl. - 2008-13 (LS3) Corvette	**CSL359F.050**	4.060	4.030	4.350	5.680	4.445	0.285	Semi finished I.D.
6.2 - 8 Cyl. - 2007-19 Vin Codes: 2,6,7,8,9,F,J,P,T & W	**CSL360F**	4.000	3.970	4.250	5.500	4.320	0.285	Semi finished I.D.

FINISHED CYLINDER SLEEVE APPLICATIONS

CUMMINS

APPLICATION	PART#	STANDARD BORE	I.D.	O.D.	OVERALL LENGTH	FLANGE DIAMETER	FLANGE THICKNESS	
14L OHV, NT-NH 855 OE# 3055099 Diesel Engine	**CSL335FS**	5.500	5.500	6.200	11.290	6.560	0.355	I.D. Is finished honed (Includes O-Rings)

FORD INDUSTRIAL / TRACTOR

APPLICATION	PART#	STANDARD BORE	I.D.	O.D.	OVERALL LENGTH	FLANGE DIAMETER	FLANGE THICKNESS	
120 - 4 Cyl. - 1939-51 2N, 8N, 9N	**CSL301F**	3.188	3.188	3.270	6.500	3.342	0.051	0.040 Wall I.D. Is finished honed
120 - 4 Cyl. - 1939-51 2N, 8N, 9N	**CSL105F**	3.188	3.157	3.378	6.500	3.433	0.090	0.095 Wall
134 - 4 Cyl. - 1953-65 NAA, NAB 500 - 700 Series	**CSL307F**	3.438	3.438	3.651	6.940	3.742	0.181	0.109 Wall I.D. Is finished honed
172 - 4 Cyl. - 1955-65 800, 900 Series Gas, Kerosene & LPG	**CSL308F**	3.900	3.900	4.101	6.940	4.242	0.181	0.100 Wall I.D. Is finished honed

FORD

APPLICATION	PART#	STANDARD BORE	I.D.	O.D.	OVERALL LENGTH	FLANGE DIAMETER	FLANGE THICKNESS	
5.0L - V8 - 2011- 24 Coyote F-150, Mustang	**CSL361FD**	3.630	3.600	3.800	5.250	3.900	0.188	Semi finished I.D.
6.4L - V8 - 2008- 10 F-250SD, F-350SD, F-450SD, F-550SD	**CSL101FD**	3.860	3.845	4.065	6.750	4.205	0.125	Semi finished I.D.
6.4L - V8 - 2008- 10 F-250SD, F-350SD, F-450SD, F-550SD	**CSL101F.030**	3.875	3.855	4.095	6.750	4.210	0.125	Semi finished I.D.

HERCULES

APPLICATION	PART#	STANDARD BORE	I.D.	O.D.	OVERALL LENGTH	FLANGE DIAMETER	FLANGE THICKNESS	
DJXC	**CSL333F**	3.750	3.750	3.999	8.940	4.085	1.192	I.D. Is finished honed

NAVISTAR / IHC

APPLICATION	PART#	STANDARD BORE	I.D.	O.D.	OVERALL LENGTH	FLANGE DIAMETER	FLANGE THICKNESS	
RD372, 406, 450, 450A, RED50	**CSL325F**	4.375	4.375	4.503	8.690	4.565	0.125	I.D. Is finished honed

TOYOTA

APPLICATION	PART#	STANDARD BORE	I.D.	O.D.	OVERALL LENGTH	FLANGE DIAMETER	FLANGE THICKNESS	
1MZFE 3.0L - V6 - 1994-2006	**CSL357F**	87MM	3.424	3.605	5.221	3.83	0.170	Semi finished I.D.
3MZFE 3.3L - V6 - 2004-2009	**CSL358F**	92MM	3.602	3.744	5.143	4.005	0.160	Semi finished I.D.

MELLING CYLINDER SLEEVES™

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CUSTOM SLEEVE ORDER FORM

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Company Name (if applicable) _____

Street Address _____

City _____ State _____ Zip Code _____

Phone _____ Fax _____ Email _____

Payment Information

☐ Check/Money Order
☐ Mastercard ☐ VISA ☐ Discover Card ☐ American Express

Card Number ☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐ Exp. Date _____

Name on Card _____

Card Billing Address _____

City _____ State _____ Zip Code _____

Shipping Information

Return Shipping Requested

☐ Next Day Air
☐ 2nd Day Air
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☐ Standard Ground

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☐ Same as address above

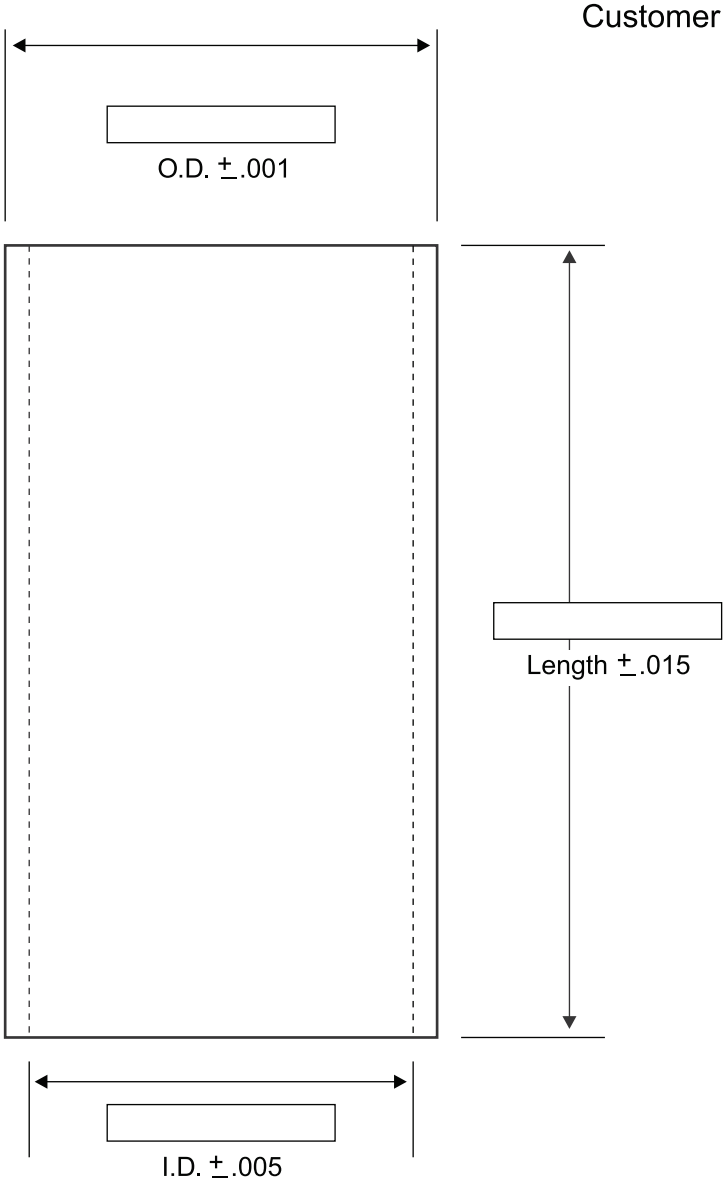
MELLING CYLINDER SLEEVES™

www.mellingcylindersleeves.com

Custom Sleeve Information Template

Customer Quantity _____

A.



Customer # (if applicable) _____Contact Name _____

Phone _____ Fax _____

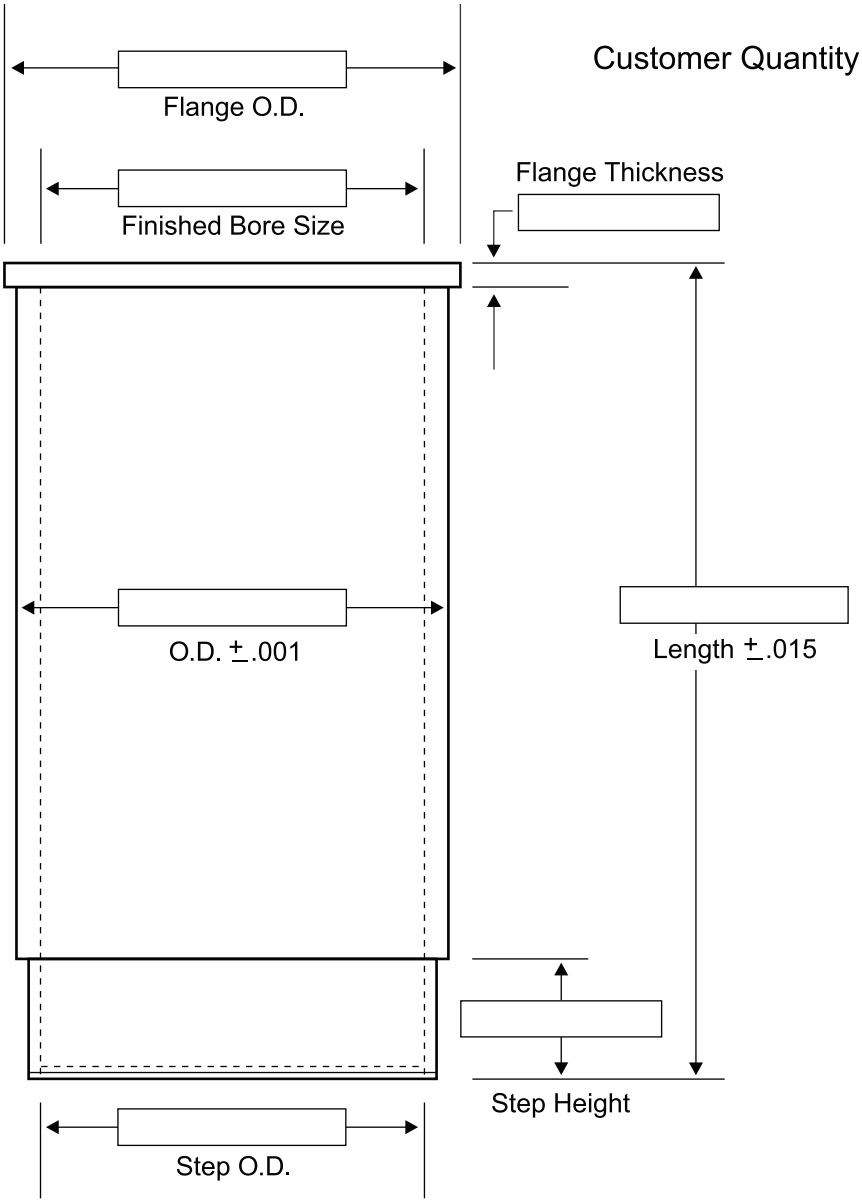
Email _____

MELLING CYLINDER SLEEVES™

www.mellingcylindersleeves.com

B.

Customer Quantity _____



Customer # (if applicable) _____Contact Name _____

Phone _____ Fax _____

Email _____

CYLINDER SLEEVE NUMERIC LISTING

	SLEEVE NUMBER	BORE DIAMETER	LENGTH +/- 1/64”	WALL THICKNESS	O.D. +/- .001”	I.D. +/- .005”
	CSL101	3.8750	7 1/2	3/32	4.0655	3.845
(Flange O.D. 4.200 x .125)	**CSL101FD**	3.8750	6 3/4	3/32	4.065	3.845
	CSL102	3.5625	6 7/8	3/32	3.7530	3.532
	CSL103	3.9375	6 3/4	3/32	4.1280	3.907
	CSL104	3.5000	5 1/8	3/32	3.6905	3.470
	CSL105	3.1875	6 1/2	3/32	3.3780	3.157
	CSL106	4.2500	7 1/2	3/32	4.4405	4.220
	CSL107	3.3125	7 9/16	3/32	3.5030	3.282
	CSL108	3.5000	8 1/16	3/32	3.6905	3.470
	CSL109	3.5000	7 1/16	3/32	3.6905	3.470
	CSL110	4.3300	7 3/4	3/32	4.5210	4.300
	CSL111	3.5625	7 7/32	3/32	3.7530	3.532
	CSL112	3.3000	8 3/16	3/32	3.4905	3.270
	CSL113	4.8750	7 5/8	3/32	5.0655	4.845
	CSL114	4.3200	7	3/32	4.5105	4.290
	CSL115N	3.2500	8 1/16	3/32	3.4405	3.220
	CSL115NX	3.2500	8 1/16	1/16	3.3780	3.220
	CSL116	3.9100	6	3/32	4.1005	3.880
	CSL117	3.7500	6 1/16	3/32	3.9405	3.720
	CSL118	4.1500	6 1/8	3/32	4.3405	4.120
	CSL119N	3.4375	8 1/8	3/32	3.6280	3.407
	CSL119NX	3.4375	8 1/8	1/16	3.5655	3.407
	CSL120	3.7500	7 1/4	3/32	3.9405	3.720
	CSL121	4.3200	6 3/4	3/32	4.5105	4.290
	CSL122A	3.8750	5 7/8	3/32	4.0655	3.845
	CSL123	3.5625	7 9/16	3/32	3.7530	3.532
	CSL124	3.6800	6	3/32	3.8705	3.650
	CSL125	3.3750	7 5/16	3/32	3.5655	3.345
	CSL126	3.7500	5 7/8	3/32	3.9405	3.720
	CSL127	4.0000	5 5/8	3/32	4.1905	3.970
	CSL128	4.3600	6	3/32	4.5505	4.330
	CSL129	4.0000	6 1/16	3/32	4.1905	3.970
	CSL130	4.1250	6 3/4	3/32	4.3155	4.080
	CSL130X	4.1250	6 3/4	1/16	4.2530	4.095
	CSL131	4.0500	6 1/4	3/32	4.2405	4.020
	CSL133	3.8750	6 3/8	3/32	4.0655	3.845
	CSL134	3.6250	7	3/32	3.8155	3.595
	CSL135	3.1250	8 1/8	3/32	3.3155	3.095
	CSL136	4.0000	6 1/4	3/32	4.1905	3.970
	CSL136HP	4.0000	6 1/4	3/32	4.1905	3.970
	CSL137	4.0000	6 7/8	3/32	4.1905	3.970
	CSL138	3.8000	6	3/32	3.9905	3.770
	CSL138X	3.8000	6	0.048	3.8950	3.770
	CSL139	3.7500	6	3/32	3.9405	3.720
	CSL141	3.5000	5 15/16	3/32	3.6905	3.470

CYLINDER SLEEVE NUMERIC LISTING

SLEEVE NUMBER	BORE DIAMETER	LENGTH +/- 1/64”	WALL THICKNESS	O.D. +/- .001”	I.D. +/- .005”
CSL142	3.6250	6 11/16	3/32	3.8155	3.595
CSL143	3.8000	6 15/16	3/32	3.9905	3.770
CSL144	3.6250	6	3/32	3.8155	3.595
CSL145	3.7190	7 3/4	3/32	3.9095	3.689
CSL146	3.7810	7 7/8	3/32	3.9710	3.751
CSL147	3.7400	6 3/4	.083	3.9070	3.689
CSL150	3.0000	6 3/8	3/32	3.1905	2.970
CSL151	3.1875	6	3/32	3.3780	3.157
CSL152	3.4375	7 1/2	3/32	3.6280	3.407
CSL152N	3.4375	7 1/2	3/32	3.6280	3.407
CSL153	3.1875	7 1/2	3/32	3.3780	3.157
CSL153N	3.1875	7 1/2	3/32	3.3780	3.157
CSL154N	3.0000	7 1/2	3/32	3.1905	2.970
CSL155	3.4000	7 1/16	3/32	3.5905	3.370
CSL156	3.4000	5 15/16	3/32	3.5905	3.370
CSL157	4.0000	7 7/8	3/32	4.1905	3.970
CSL157X	4.0000	7 7/8	0.060	4.1200	3.970
CSL158	3.5625	5 15/16	3/32	3.7530	3.532
CSL159	4.0000	5 1/2	3/32	4.1905	3.970
CSL160	4.0400	6 3/4	3/32	4.2305	4.010
CSL161	4.1250	6 1/4	3/32	4.3155	4.095
CSL161HP	4.1250	6 1/4	3/32	4.3155	4.095
CSL162	3.8125	6 7/8	3/32	4.0030	3.782
CSL164	4.1250	6 1/16	3/32	4.3155	4.095
CSL165	3.8750	7	3/32	4.0655	3.845
CSL165X	3.8750	7	1/16	4.0030	3.845
CSL167	4.0625	6 5/16	3/32	4.2530	4.032
CSL168	4.5625	7 5/8	3/32	4.7525	4.532
CSL169	4.3420	6 1/4	3/32	4.5325	4.312
CSL169X	4.3420	6 1/4	1/16	4.4660	4.312
CSL170	3.1250	6 7/8	3/32	3.3155	3.095
CSL172	4.1250	6 1/2	3/32	4.3155	4.095
CSL173	3.7810	5 1/2	3/32	3.9710	3.751
CSL174	3.6610	5 1/16	3/32	3.8515	3.631
CSL175	4.0000	9 3/8	3/32	4.1905	3.970
CSL179	4.0940	6	3/32	4.2845	4.064
CSL180	4.0000	6 1/2	3/32	4.1905	3.970
CSL180X	4.0000	6 1/2	1/16	4.1280	3.970
CSL181	3.8750	6 1/4	3/32	4.0655	3.845
CSL182	3.8750	6 7/16	3/32	4.0655	3.845
CSL183	3.8000	6 3/8	3/32	3.9905	3.770
CSL186	4.1875	6 3/4	3/32	4.3780	4.157
CSL187	4.3000	7 1/2	3/32	4.4905	4.270
CSL188	3.8750	5 3/4	3/32	4.0655	3.845
CSL190A	3.5750	5 3/8	3/32	3.7655	3.545

CYLINDER SLEEVE NUMERIC LISTING

SLEEVE NUMBER	BORE DIAMETER	LENGTH +/- 1/64”	WALL THICKNESS	O.D. +/- .001”	I.D. +/- .005”
CSL193	4.0000	5 1/16	3/32	4.1905	3.970
CSL194	3.6800	5 1/8	3/32	3.8705	3.650
CSL195	4.0500	6 5/16	3/32	4.2405	4.020
CSL195X	4.0500	6 5/16	1/16	4.1780	4.020
CSL196	4.2500	6 1/2	3/32	4.4405	4.220
CSL196X	4.2500	6 1/2	1/16	4.3780	4.220
CSL197	4.2500	7	3/32	4.4405	4.220
CSL197HP	4.2500	7	3/32	4.4405	4.220
CSL197X	4.2500	7	1/16	4.3780	4.220
CSL198	4.0000	5 7/8	3/32	4.1905	3.970
CSL198X	4.0000	5 7/8	1/16	4.1280	3.970
CSL199	4.2500	6	3/32	4.4405	4.220
CSL201	3.8750	7 1/2	1/8	4.1280	3.845
CSL202	3.5625	6 7/8	1/8	3.8155	3.532
CSL203	3.9375	6 3/4	1/8	4.1905	3.907
CSL204	3.5000	5 1/8	1/8	3.7530	3.470
CSL205	3.1875	6 1/2	1/8	3.4405	3.157
CSL206	4.2500	7 1/2	1/8	4.5030	4.220
CSL207	3.3125	7 9/16	1/8	3.5655	3.282
CSL208	3.5000	8 1/16	1/8	3.7530	3.470
CSL209	3.5000	7 1/16	1/8	3.7530	3.470
CSL211	3.5625	7 7/32	1/8	3.8155	3.532
CSL212	3.3000	8 3/16	1/8	3.5530	3.270
CSL213	4.8750	7 5/8	1/8	5.1280	4.845
CSL214	4.3200	7	1/8	4.5730	4.290
CSL215N	3.2500	8 1/16	1/8	3.5030	3.220
CSL216	3.9100	6	1/8	4.1630	3.880
CSL217	3.7500	6 1/16	1/8	4.0030	3.720
CSL218	4.1500	6 1/8	1/8	4.4030	4.120
CSL219N	3.4375	8 1/8	1/8	3.6905	3.407
CSL220	3.7500	7 1/4	1/8	4.0030	3.720
CSL221	4.3200	6 3/4	1/8	4.5730	4.290
CSL222A	3.8750	5 7/8	1/8	4.1280	3.845
CSL223	3.5625	7 9/16	1/8	3.8155	3.532
CSL224	3.6800	6	1/8	3.9330	3.650
CSL225	3.3750	7 5/16	1/8	3.6280	3.345
CSL226	3.7500	5 7/8	1/8	4.0030	3.720
CSL227	4.0000	5 5/8	1/8	4.2530	3.970
CSL228	4.3600	6	1/8	4.6130	4.330
CSL229	4.0000	6 1/16	1/8	4.2530	3.970
CSL230	4.1250	6 3/4	1/8	4.3780	4.095
CSL231	4.0500	6 1/4	1/8	4.3030	4.020
CSL233	3.8750	6 3/8	1/8	4.1280	3.845
CSL234	3.6250	7	1/8	3.8780	3.595

CYLINDER SLEEVE NUMERIC LISTING

SLEEVE NUMBER	BORE DIAMETER	LENGTH +/- 1/64"	WALL THICKNESS	O.D. +/- .001"	I.D. +/- .005"
CSL235	3.1250	8 1/8	1/8	3.3780	3.095
CSL236	4.0000	6 1/4	1/8	4.2530	3.970
CSL236HP	4.0000	6 1/4	1/8	4.2530	3.970
CSL237	4.0000	6 7/8	1/8	4.2530	3.970
CSL238	3.8000	6	1/8	4.0530	3.770
CSL239	3.7500	6	1/8	4.0030	3.720
CSL241	3.5000	5 15/16	1/8	3.7530	3.470
CSL242	3.6250	6 11/16	1/8	3.8780	3.595
CSL243	3.8000	6 15/16	1/8	4.0530	3.770
CSL244	3.6250	6	1/8	3.8780	3.595
CSL245	3.7190	7 3/4	1/8	3.9720	3.689
CSL246	3.7810	7 7/8	1/8	4.0335	3.751
CSL250	3.0000	6 3/8	1/8	3.2530	2.970
CSL251	3.1875	6	1/8	3.4405	3.157
CSL252	3.4375	7 1/2	1/8	3.6905	3.407
CSL252N	3.4375	7 1/2	1/8	3.6905	3.407
CSL253	3.1875	7 1/2	1/8	3.4405	3.157
CSL253N	3.1875	7 1/2	1/8	3.4405	3.157
CSL254N	3.0000	7 1/2	1/8	3.2530	2.970
CSL255	3.4000	7 1/16	1/8	3.6530	3.370
CSL256	3.4000	5 15/16	1/8	3.6530	3.370
CSL257	4.0000	7 7/8	1/8	4.2530	3.970
CSL258	3.5625	5 15/16	1/8	3.8155	3.532
CSL259	4.0000	5 1/2	1/8	4.2530	3.970
CSL260	4.0400	6 3/4	1/8	4.2930	4.010
CSL261	4.1250	6 1/4	1/8	4.3780	4.095
CSL261HP	4.1250	6 1/4	1/8	4.3780	4.095
CSL262	3.8125	6 7/8	1/8	4.0655	3.782
CSL264	4.1250	6 1/16	1/8	4.3780	4.095
CSL265	3.8750	7	1/8	4.1280	3.845
CSL267	4.0625	6 5/16	1/8	4.3155	4.032
CSL268	4.5625	7 5/8	1/8	4.8150	4.532
CSL269	4.3420	6 1/4	1/8	4.5950	4.312
CSL270	3.1250	6 7/8	1/8	3.3780	3.095
CSL272	4.1250	6 1/2	1/8	4.3780	4.095
CSL273	3.7810	5 1/2	1/8	4.0335	3.751
CSL274	3.6610	5 1/16	1/8	3.9140	3.631
CSL275	4.0000	9 3/8	1/8	4.2530	3.970
CSL276 ANGLE TOP	4.5000	8 3/4	1/8	4.7530	4.470
CSL279	4.0940	6	1/8	4.3468	4.064
CSL280	4.0000	6 1/2	1/8	4.2530	3.970
CSL281	3.8750	6 1/4	1/8	4.1280	3.845
CSL282	3.8750	6 7/16	1/8	4.1280	3.845
CSL283	3.8000	6 3/8	1/8	4.0530	3.770

CYLINDER SLEEVE NUMERIC LISTING

SLEEVE NUMBER	BORE DIAMETER	LENGTH +/- 1/64”	WALL THICKNESS	O.D. +/- .001”	I.D. +/- .005”
CSL286	4.1875	6 3/4	1/8	4.4405	4.157
CSL287	4.3000	7 1/2	1/8	4.5530	4.270
CSL288	3.8750	5 3/4	1/8	4.1280	3.845
CSL290A	3.5750	5 3/8	1/8	3.8280	3.545
CSL293	4.0000	5 1/16	1/8	4.2530	3.970
CSL294	3.6800	5 1/8	1/8	3.9330	3.650
CSL295	4.0500	6 5/16	1/8	4.3030	4.020
CSL296	4.2500	6 1/2	1/8	4.5030	4.220
CSL297	4.2500	7	1/8	4.5030	4.220
CSL297HP	4.2500	7	1/8	4.5030	4.220
CSL298	4.0000	5 7/8	1/8	4.2530	3.970
CSL299	4.2500	6	1/8	4.5030	4.220
CSL401	2.7500	7 1/2	3/32	2.9405	2.720
CSL402	2.8750	8 1/4	3/32	3.0655	2.845
CSL403	3.0000	8 1/4	3/32	3.1905	2.970
CSL404	3.0625	8 1/4	3/32	3.2530	3.032
CSL405	3.1250	9	3/32	3.3155	3.095
CSL406A	3.1875	9 1/4	3/32	3.3780	3.157
CSL407	3.2500	9 1/4	3/32	3.4405	3.220
CSL408	3.3125	9 1/4	3/32	3.5030	3.282
CSL409	3.3750	9 1/4	3/32	3.5655	3.345
CSL410	3.4375	9 1/4	3/32	3.6280	3.407
CSL411	3.5000	9 1/4	3/32	3.6905	3.470
CSL412	3.5625	10	3/32	3.7530	3.532
CSL413A	3.6250	10 1/4	3/32	3.8155	3.595
CSL414	3.6875	10 1/4	3/32	3.8780	3.657
CSL415A	3.7500	10 1/4	3/32	3.9405	3.720
CSL416A	3.8750	10 1/4	3/32	4.0655	3.845
CSL417A	4.0000	10 1/4	3/32	4.1905	3.970
CSL418A	4.1250	10 1/4	3/32	4.3155	4.095
CSL419A	4.2500	12 1/4	3/32	4.4405	4.220
CSL420A	4.3125	12 3/4	3/32	4.5030	4.282
CSL421A	4.3750	12 1/4	3/32	4.5655	4.345
CSL422A	4.5000	12 1/4	3/32	4.6905	4.470
CSL423	4.6250	12 1/2	3/32	4.8155	4.595
CSL426	5.0000	14	3/32	5.1915	4.970
CSL427	4.4375	12 3/4	3/32	4.6280	4.407
CSL428A	3.8125	10 1/4	3/32	4.0030	3.782
CSL429A	3.9375	10 1/4	3/32	4.1280	3.907
CSL430	4.0625	11	3/32	4.2530	4.032
CSL431	4.5625	12 1/2	3/32	4.7525	4.532
CSL432A	4.1875	12 1/4	3/32	4.3780	4.157
CSL433	3.0730	9 1/4	3/32	3.2530	3.043
CSL446	2.3750	7	3/32	2.5655	2.345

CYLINDER SLEEVE NUMERIC LISTING

SLEEVE NUMBER	BORE DIAMETER	LENGTH +/- 1/64”	WALL THICKNESS	O.D. +/- .001”	I.D. +/- .005”
CSL447	2.5000	7	3/32	2.6905	2.470
CSL448	2.5625	7	3/32	2.7530	2.532
CSL449	2.6250	7	3/32	2.8155	2.595
CSL450	2.0000	6 1/2	3/32	2.1905	1.970
CSL451	2.0625	6 1/2	3/32	2.2530	2.032
CSL452	2.1250	6 1/2	3/32	2.3155	2.095
CSL453	2.1875	6 1/2	3/32	2.3780	2.157
CSL454	2.2500	6 1/2	3/32	2.4405	2.220
CSL455	2.3125	6 1/2	3/32	2.5030	2.282
CSL456	2.3750	6 1/2	3/32	2.5655	2.345
CSL457	2.4375	6 1/2	3/32	2.6280	2.407
CSL458	2.5000	6 1/2	3/32	2.6905	2.470
CSL459	2.5625	6 1/2	3/32	2.7530	2.532
CSL460	2.6250	6 1/2	3/32	2.8155	2.595
CSL461	2.6875	8 1/4	3/32	2.8780	2.657
CSL462	2.8125	8 1/4	3/32	3.0030	2.782
CSL463	2.9375	8 1/4	3/32	3.1280	2.907
CSL464	4.6875	13	3/32	4.8780	4.657
CSL465	4.7500	14	3/32	4.9405	4.720
CSL479	7.0000	17	3/32	7.1925	6.960
CSL485	2.7500	8 1/4	3/32	2.9405	2.720
CSL486	3.0000	9 1/4	3/32	3.1905	2.970
CSL487	4.3750	12 3/4	3/32	4.5655	4.345
CSL488	2.6250	8 1/4	3/32	2.8155	2.595
CSL489	4.0625	10 1/4	3/32	4.2530	4.032
CSL490	4.1875	10 1/4	3/32	4.3780	4.157
CSL501	2.7500	7 1/2	1/8	3.0030	2.720
CSL502	2.8750	8 1/4	1/8	3.1280	2.845
CSL503	3.0000	8 1/4	1/8	3.2530	2.970
CSL504	3.0625	8 1/4	1/8	3.3155	3.032
CSL505	3.1250	9	1/8	3.3780	3.095
CSL506A	3.1875	9 1/4	1/8	3.4405	3.157
CSL506A.015	3.1875	9 1/4	1/8 +.015	3.4555	3.157
CSL507	3.2500	9 1/4	1/8	3.5030	3.220
CSL508	3.3125	9 1/4	1/8	3.5655	3.282
CSL509	3.3750	9 1/4	1/8	3.6280	3.345
CSL510	3.4375	9 1/4	1/8	3.6905	3.407
CSL511	3.5000	9 1/4	1/8	3.7530	3.470
CSL511.015	3.5000	9 1/4	1/8 +.015	3.7680	3.470
CSL512	3.5625	10	1/8	3.8155	3.532
CSL513A	3.6250	10 1/4	1/8	3.8780	3.595
CSL514	3.6875	10 1/4	1/8	3.9405	3.657
CSL515A	3.7500	10 1/4	1/8	4.0030	3.720
CSL515A.015	3.7500	10 1/4	1/8 +.015	4.0180	3.720

CYLINDER SLEEVE NUMERIC LISTING

SLEEVE NUMBER	BORE DIAMETER	LENGTH +/- 1/64”	WALL THICKNESS	O.D. +/- .001”	I.D. +/- .005”
CSL516A	3.8750	10 1/4	1/8	4.1280	3.845
CSL516A.015	3.8750	10 1/4	1/8 +.015	4.1430	3.845
CSL517A	4.0000	10 1/4	1/8	4.2530	3.970
CSL517A.015	4.0000	10 1/4	1/8 +.015	4.2680	3.970
CSL518A	4.1250	10 1/4	1/8	4.3780	4.095
CSL518A.015	4.1250	10 1/4	1/8 +.015	4.3930	4.095
CSL519A	4.2500	12 1/4	1/8	4.5030	4.220
CSL519A.015	4.2500	12 1/4	1/8 +.015	4.5180	4.220
CSL520A	4.3125	12 3/4	1/8	4.5655	4.282
CSL521A	4.3750	12 1/4	1/8	4.6280	4.345
CSL521A.015	4.3750	12 1/4	1/8 +.015	4.6430	4.345
CSL522A	4.5000	12 1/4	1/8	4.7530	4.470
CSL522A.015	4.5000	12 1/4	1/8 +.015	4.7680	4.470
CSL523	4.6250	12 1/2	1/8	4.8780	4.595
CSL525	4.8750	13	1/8	5.1280	4.845
CSL526	5.0000	13	1/8	5.2530	4.970
CSL526.015	5.0000	13	1/8 +.015	5.2680	4.970
CSL527	4.4375	12 3/4	1/8	4.6900	4.407
CSL528A	3.8125	10 1/4	1/8	4.0655	3.782
CSL529A	3.9375	10 1/4	1/8	4.1905	3.907
CSL530	4.0625	11	1/8	4.3155	4.032
CSL531	4.5625	12 1/2	1/8	4.8150	4.532
CSL532A	4.1875	12 1/4	1/8	4.4405	4.157
CSL550	2.0000	6 1/2	1/8	2.2530	1.970
CSL551	2.0625	6 1/2	1/8	2.3155	2.032
CSL552	2.1250	6 1/2	1/8	2.3780	2.095
CSL553	2.1875	6 1/2	1/8	2.4405	2.157
CSL554	2.2500	6 1/2	1/8	2.5030	2.220
CSL555	2.3125	6 1/2	1/8	2.5655	2.282
CSL556	2.3750	6 1/2	1/8	2.6280	2.345
CSL557	2.4375	6 1/2	1/8	2.6905	2.407
CSL558	2.5000	6 1/2	1/8	2.7530	2.470
CSL559	2.5625	6 1/2	1/8	2.8155	2.532
CSL560	2.6250	6 1/2	1/8	2.8780	2.595
CSL561	2.6875	8 1/4	1/8	2.9405	2.657
CSL562	2.8125	8 1/4	1/8	3.0655	2.782
CSL563	2.9375	8 1/4	1/8	3.1905	2.907
CSL564	4.6875	13	1/8	4.9405	4.657
CSL565	4.7500	14	1/8	5.0030	4.720
CSL566	5.0625	14	1/8	5.3165	5.032
CSL567	5.1250	14	1/8	5.3790	5.095
CSL568	5.2500	14 1/4	1/8	5.5040	5.220
CSL569	5.3750	14 1/4	1/8	5.6290	5.345
CSL570	5.5000	17 1/2	1/8	5.7540	5.470

CYLINDER SLEEVE NUMERIC LISTING

SLEEVE NUMBER	BORE DIAMETER	LENGTH +/- 1/64"	WALL THICKNESS	O.D. +/- .001"	I.D. +/- .005"
CSL571	5.6250	17 1/2	1/8	5.8790	5.595
CSL572	5.7500	17 1/2	1/8	6.0040	5.720
CSL573	5.8750	17 1/2	1/8	6.1290	5.845
CSL574	6.0000	17 1/2	1/8	6.2540	5.970
CSL575	6.1250	17 1/2	1/8	6.3790	6.095
CSL576	6.2500	17 1/2	1/8	6.5040	6.220
CSL577	6.5000	17	1/8	6.7540	6.470
CSL578	6.7500	17	1/8	7.0050	6.720
CSL579	7.0000	17	1/8	7.2550	6.970
CSL580	7.2500	22	1/8	7.5050	7.220
CSL581	7.5000	22	1/8	7.7550	7.470
CSL582	7.7500	22	1/8	8.0050	7.720
CSL583	8.0000	22	1/8	8.2550	7.970
CSL584	8.5000	24	1/8	8.7550	8.470
CSL585	2.7500	8 1/4	1/8	3.0030	2.720
CSL586	3.0000	9 1/4	1/8	3.2530	2.970
CSL587	4.3750	12 3/4	1/8	4.6280	4.345
CSL588	2.6250	8 1/4	1/8	2.8780	2.595
CSL589	4.0625	10 1/4	1/8	4.3155	4.033
CSL591	4.1875	7 7/8	1/8	4.4405	4.157
CSL601	2.8740	4 7/8	3/32	3.0645	2.844
CSL602	3.3460	5 1/4	3/32	3.5365	3.316
CSL603	3.4330	5 13/16	3/32	3.6235	3.403
CSL604A	2.8350	6 1/2	3/32	3.0255	2.805
CSL605A	2.9130	6 1/2	3/32	3.1035	2.883
CSL606	2.9530	4 7/8	3/32	3.1435	2.923
CSL607	2.8740	5 1/4	3/32	3.0645	2.844
CSL608	3.4840	6 1/4	3/32	3.6745	3.454
CSL609	3.1500	6 1/4	3/32	3.3405	3.120
CSL610	2.9920	5 1/4	3/32	3.1825	2.962
CSL611	3.2680	6 1/4	3/32	3.4585	3.238
CSL612	3.3460	6	3/32	3.5365	3.316
CSL613	3.2680	5 1/2	3/32	3.4585	3.238
CSL614	3.4650	5 7/8	3/32	3.6555	3.435
CSL615	3.3860	5 3/4	3/32	3.5765	3.356
CSL616	2.9530	6 3/8	3/32	3.1435	2.923
CSL617	3.3460	6 1/4	3/32	3.5365	3.316
CSL618	3.0710	5 5/8	3/32	3.2615	3.041
CSL619	3.1610	6	3/32	3.3515	3.131
CSL620	2.8740	6 1/16	3/32	3.0645	2.844
CSL621	2.9920	7	3/32	3.1825	2.962
CSL622	2.6770	5 3/4	3/32	2.8675	2.647
CSL623	3.1890	5 1/2	3/32	3.3795	3.159
CSL624	3.2680	5 3/4	3/32	3.4585	3.238
CSL625	3.5830	5 1/2	3/32	3.7735	3.553

CYLINDER SLEEVE NUMERIC LISTING

SLEEVE NUMBER	BORE DIAMETER	LENGTH +/- 1/64"	WALL THICKNESS	O.D. +/- .001"	I.D. +/- .005"
CSL626	3.6610	5 1/2	3/32	3.8515	3.631
CSL628	2.7950	5 1/4	3/32	2.9855	2.765
CSL629	2.9720	5 1/8	3/32	3.1625	2.942
CSL630	3.6220	6 1/16	3/32	3.8125	3.592
CSL631	3.0510	5 1/8	3/32	3.2415	3.021
CSL633	2.5420	5 3/16	3/32	2.7325	2.512
CSL634	2.7280	5 5/16	3/32	2.9185	2.698
CSL640	4.1400	7 3/4	0.090	4.3220	4.110
CSL641	4.0100	8 3/8	3/32	4.2090	3.985
CSL641X	4.0100	8 3/8	1/16	4.1460	3.985
CSL662	4.4375	12 1/4	0.1388	4.7150	4.407
CSL701	2.8740	4 7/8	1/8	3.1270	2.844
CSL702	3.3460	5 1/4	1/8	3.5990	3.316
CSL703	3.4330	5 13/16	1/8	3.6860	3.403
CSL704A	2.8350	6 1/2	1/8	3.0880	2.805
CSL705A	2.9130	6 1/2	1/8	3.1660	2.883
CSL706	2.9530	4 7/8	1/8	3.2060	2.923
CSL707	2.8740	5 1/4	1/8	3.1270	2.844
CSL708	3.4840	6 1/4	1/8	3.7370	3.454
CSL709	3.1500	6 1/4	1/8	3.4030	3.120
CSL710	2.9920	5 1/4	1/8	3.2450	2.962
CSL711	3.2680	6 1/4	1/8	3.5210	3.238
CSL712	3.3460	6	1/8	3.5990	3.316
CSL713	3.2680	5 1/2	1/8	3.5210	3.238
CSL714	3.4650	5 7/8	1/8	3.7180	3.435
CSL715	3.3860	5 3/4	1/8	3.6390	3.356
CSL716	2.9530	6 3/8	1/8	3.2060	2.923
CSL717	3.3460	6 1/4	1/8	3.5990	3.316
CSL718	3.0710	5 5/8	1/8	3.3240	3.041
CSL719	3.1610	6	1/8	3.4140	3.131
CSL720	2.8740	6 1/16	1/8	3.1270	2.844
CSL721	2.9920	7	1/8	3.2450	2.962
CSL722	2.6770	5 3/4	1/8	2.9300	2.647
CSL723	3.1890	5 1/2	1/8	3.4420	3.159
CSL724	3.2680	5 3/4	1/8	3.5210	3.238
CSL726	3.6610	5 1/2	1/8	3.9140	3.631
CSL728	2.7950	5 1/4	1/8	3.0480	2.765
CSL729	2.9720	5 1/8	1/8	3.2250	2.942
CSL730	3.6220	6 1/16	1/8	3.8750	3.592
CSL731	3.0510	5 1/8	1/8	3.3040	3.021
CSL760	2.9920	7	2mm	3.1530	2.962
CSL800	3.1500	7	2mm	3.3101	3.120
CSL803	3.2680	7	3/32	3.4584	3.238
CSL804	3.3860	7	3/32	3.5765	3.356

CYLINDER SLEEVE NUMERIC LISTING

SLEEVE NUMBER	BORE DIAMETER	LENGTH +/- 1/64”	WALL THICKNESS	O.D. +/- .001”	I.D. +/- .005”
CSL810	3.1890	7	2mm	3.3495	3.159
CSL820	3.2283	7	2mm	3.3888	3.198
CSL830	3.2680	7	2mm	3.4282	3.238
CSL840	3.3030	7	2mm	3.4676	3.273
CSL850	3.3460	7	2mm	3.5069	3.316
CSL860	3.3860	7	2mm	3.5463	3.356
CSL870	3.4250	7	2mm	3.5857	3.405
CSL880	3.4646	7	2mm	3.6250	3.434
CSL890	3.5040	7	2mm	3.6644	3.474
CSL901D	3.8750	6.700	3/32	4.0650	3.845
CSL903	3.2680	7	1/8	3.5210	3.238
CSL904	3.3860	7	1/8	3.6390	3.356
CSL930	3.6614	7	2mm	3.8220	3.631
CSL1101	3.8000	6 1/8	3/32	3.9905	3.770
CSL1102	4.0625	6 1/2	3/32	4.2530	4.032
CSL1104	4.0000	5 3/4	3/32	4.1905	3.970
CSL1104N	4.0000	5 3/4	3/32	4.1905	3.970
CSL1105	3.2280	5 3/8	3/32	3.4185	3.198
CSL1106	3.6710	5 1/2	3/32	3.8615	3.641
CSL1107	3.3070	5 5/8	3/32	3.4975	3.277
CSL1108N	3.0710	6 3/8	3/32	3.2615	3.041
CSL1109	4.1250	6 3/8	3/32	4.3155	4.095
CSL1111	3.5000	6	3/32	3.6905	3.470
CSL1112	3.5000	5 1/4	3/32	3.6905	3.470
CSL1113A	4.0000	5 1/8	3/32	4.1905	3.970
CSL1114	4.3500	5 7/8	3/32	4.5405	4.320
CSL1116	3.0300	5 3/4	3/32	3.2205	3.000
CSL1117	4.5625	7 1/2	3/32	4.7530	4.532
CSL1118N	3.1890	5 7/8	3/32	3.3795	3.159
CSL1119	3.9650	6	3/32	4.1555	3.935
CSL1120	3.5000	5 7/8	3/32	3.6905	3.470
CSL1122	3.5000	5 3/4	3/32	3.6905	3.470
CSL1123	3.8000	5 7/8	3/32	3.9905	3.770
CSL1123N	3.8000	5 7/8	3/32	3.9905	3.770
CSL1124	3.8000	6 7/8	3/32	3.9905	3.770
CSL1125	4.3600	6 1/4	3/32	4.5505	4.330
CSL1126	4.5000	7 3/4	3/32	4.6905	4.470
CSL1126X	4.5000	8	3/32	4.6905	4.470
CSL1128	3.3070	6 1/2	3/32	3.4975	3.277
CSL1129	3.4440	6	3/32	3.6345	3.414
CSL1130	3.5860	6 1/2	3/32	3.7765	3.556
CSL1131	3.1500	5 13/16	3/32	3.3405	3.120
CSL1132	3.1500	6	3/32	3.3405	3.120
CSL1133	3.8000	5 1/4	3/32	3.9905	3.770
CSL1134	3.1300	5 3/4	3/32	3.3205	3.100

CYLINDER SLEEVE NUMERIC LISTING

SLEEVE NUMBER	BORE DIAMETER	LENGTH +/- 1/64”	WALL THICKNESS	O.D. +/- .001”	I.D. +/- .005”
CSL1136	3.3300	5 11/16	3/32	3.5205	3.300
CSL1137	3.5000	5 1/2	3/32	3.6905	3.470
CSL1137X	3.5000	5 1/2	1/16	3.6280	3.470
CSL1138	3.4250	5 1/2	3/32	3.6155	3.395
CSL1139	4.0500	6 1/4	0.175	4.4030	4.020
CSL1141	3.5000	5 9/16	3/32	3.6905	3.470
CSL1142	3.2500	7 1/4	3/32	3.4405	3.220
CSL1143	3.2500	7 1/2	3/32	3.4405	3.220
CSL1144	3.3440	7 9/16	3/32	3.5345	3.314
CSL1145	3.3750	6	3/32	3.5655	3.345
CSL1146	3.4375	5 13/16	3/32	3.6280	3.407
CSL1147	3.5180	5 1/2	3/32	3.7085	3.488
CSL1148	3.6875	7 9/16	3/32	3.8780	3.657
CSL1149	3.7360	5 1/2	3/32	3.9265	3.706
CSL1151	3.9375	6 7/8	3/32	4.1280	3.907
CSL1152	3.9760	6 1/4	3/32	4.1665	3.946
CSL1153	4.0000	6 7/16	3/32	4.1905	3.970
CSL1154	4.0310	6 3/8	3/32	4.2215	4.001
CSL1155	4.0820	6 7/8	3/32	4.2725	4.052
CSL1156	4.1250	7 1/2	3/32	4.3155	4.095
CSL1158	4.2330	6 1/4	3/32	4.4235	4.203
CSL1159	4.3125	6 3/4	3/32	4.5030	4.282
CSL1160	4.3600	6 7/8	3/32	4.5505	4.330
CSL1161	4.3750	7 1/2	3/32	4.5655	4.345
CSL1162	4.5000	8 1/4	3/32	4.6905	4.470
CSL1163	4.5000	9	3/32	4.6905	4.470
CSL1164	5.1250	7 1/4	3/32	5.3155	5.095
CSL1165	3.6875	5 1/8	3/32	3.8780	3.657
CSL1166	3.6875	6	3/32	3.8780	3.657
CSL1167	4.5000	7 3/8	3/32	4.6905	4.470
CSL1168	3.0000	6	3/32	3.1905	2.970
CSL1169	3.1250	6	3/32	3.3155	3.095
CSL1170	4.0000	6	3/32	4.1905	3.970
CSL1171	3.4440	6 7/16	3/32	3.6345	3.414
CSL1172	3.5860	5	3/32	3.7765	3.556
CSL1173	3.6800	5 1/2	3/32	3.8705	3.650
CSL1174	4.1100	6 7/8	3/32	4.3005	4.080
CSL1174HP	4.1100	6 7/8	3/32	4.3005	4.080
CSL1175	4.5000	8 3/4	3/32	4.6905	4.470
CSL1176	4.4000	8 1/2	3/32	4.5905	4.370
CSL1177X	3.5510	5 1/4	1/16	3.6780	3.520
CSL1178X	3.5510	6 1/4	1/16	3.6780	3.520
CSL1179N	4.0940	6 1/4	3/32	4.2840	4.064
CSL1180X	4.2100	7 7/8	0.0550	4.3200	4.180
CSL1180	4.2100	7 7/8	3/32	4.4025	4.180

CYLINDER SLEEVE NUMERIC LISTING

SLEEVE NUMBER	BORE DIAMETER	LENGTH +/- 1/64"	WALL THICKNESS	O.D. +/- .001"	I.D. +/- .005"
CSL1181	3.7500	5 3/16	3/32	3.9405	3.720
CSL2201	3.8000	6 1/8	1/8	4.0530	3.770
CSL2202	4.0625	6 1/2	1/8	4.3155	4.032
CSL2204	4.0000	5 3/4	1/8	4.2530	3.970
CSL2204N	4.0000	5 3/4	1/8	4.2530	3.970
CSL2205	3.2280	5 3/8	1/8	3.4810	3.198
CSL2206	3.6710	5 1/2	1/8	3.9240	3.641
CSL2207	3.3070	5 5/8	1/8	3.5600	3.277
CSL2208N	3.0710	6 3/8	1/8	3.3240	3.041
CSL2209	4.1250	6 3/8	1/8	4.3780	4.095
CSL2211	3.5000	6	1/8	3.7530	3.470
CSL2212	3.5000	5 1/4	1/8	3.7530	3.470
CSL2213A	4.0000	5 1/8	1/8	4.2530	3.970
CSL2214	4.3500	5 7/8	1/8	4.6030	4.320
CSL2216	3.0300	5 3/4	1/8	3.2830	3.000
CSL2217	4.5625	7 1/2	1/8	4.8150	4.532
CSL2218N	3.1890	5 7/8	1/8	3.4420	3.159
CSL2219	3.9650	6	1/8	4.2180	3.935
CSL2220	3.5000	5 7/8	1/8	3.7530	3.470
CSL2222	3.5000	5 3/4	1/8	3.7530	3.470
CSL2223	3.8000	5 7/8	1/8	4.0530	3.770
CSL2223N	3.8000	5 7/8	1/8	4.0530	3.770
CSL2224	3.8000	6 7/8	1/8	4.0530	3.770
CSL2225	4.3600	6 1/4	1/8	4.6130	4.330
CSL2226	4.5000	7 3/4	1/8	4.7530	4.470
CSL2226X	4.5000	8	1/8	4.7530	4.470
CSL2226X.020	4.5000	8	1/8 + .020	4.7730	4.470
CSL2228	3.3070	6 1/2	1/8	3.5600	3.277
CSL2229	3.4440	6	1/8	3.6970	3.414
CSL2230	3.5860	6 1/2	1/8	3.8390	3.556
CSL2231	3.1500	5 13/16	1/8	3.4030	3.120
CSL2232	3.1500	6	1/8	3.4030	3.120
CSL2233	3.8000	5 1/4	1/8	4.0530	3.770
CSL2234	3.1300	5 3/4	1/8	3.3830	3.100
CSL2236	3.3300	5 11/16	1/8	3.5830	3.300
CSL2237	3.5000	5 1/2	1/8	3.7530	3.470
CSL2238	3.4250	5 1/2	1/8	3.6780	3.395
CSL2241	3.5000	5 9/16	1/8	3.7530	3.470
CSL2242	3.2500	7 1/4	1/8	3.5030	3.220
CSL2243	3.2500	7 1/2	1/8	3.5030	3.220
CSL2244	3.3440	7 9/16	1/8	3.5970	3.314
CSL2245	3.3750	6	1/8	3.6280	3.345
CSL2246	3.4375	5 13/16	1/8	3.6905	3.407
CSL2247	3.5180	5 1/2	1/8	3.7710	3.488

CYLINDER SLEEVE NUMERIC LISTING

SLEEVE NUMBER	BORE DIAMETER	LENGTH +/- 1/64”	WALL THICKNESS	O.D. +/- .001”	I.D. +/- .005”
CSL2248	3.6875	7 9/16	1/8	3.9405	3.657
CSL2249	3.7360	5 1/2	1/8	3.9890	3.706
CSL2251	3.9375	6 7/8	1/8	4.1905	3.907
CSL2252	3.9760	6 1/4	1/8	4.2290	3.946
CSL2253	4.0000	6 7/16	1/8	4.2530	3.970
CSL2254	4.0310	6 3/8	1/8	4.2840	4.001
CSL2255	4.0820	6 7/8	1/8	4.3350	4.052
CSL2256	4.1250	7 1/2	1/8	4.3780	4.095
CSL2258	4.2330	6 1/4	1/8	4.4860	4.203
CSL2259	4.3125	6 3/4	1/8	4.5655	4.282
CSL2260	4.3600	6 7/8	1/8	4.6130	4.330
CSL2261	4.3750	7 1/2	1/8	4.6280	4.345
CSL2262	4.5000	8 1/4	1/8	4.7530	4.470
CSL2263	4.5000	9	1/8	4.7530	4.470
CSL2264	5.1250	7 1/4	1/8	5.3790	5.095
CSL2265	3.6875	5 1/8	1/8	3.9405	3.657
CSL2266	3.6875	6	1/8	3.9405	3.657
CSL2267	4.5000	7 3/8	1/8	4.7530	4.470
CSL2268	3.0000	6	1/8	3.2530	2.970
CSL2269	3.1250	6	1/8	3.3780	3.095
CSL2271	3.4440	6 7/16	1/8	3.6970	3.414
CSL2272	3.5860	5	1/8	3.8390	3.556
CSL2273	3.6800	5 1/2	1/8	3.9330	3.650
CSL2274	4.1100	6 7/8	1/8	4.3630	4.080
CSL2274HP	4.1100	6 7/8	1/8	4.3630	4.080
CSL2275	4.5000	8 3/4	1/8	4.7530	4.470
CSL2276	4.4000	8 1/2	1/8	4.6530	4.370
CSL2279N	4.0940	6 1/4	1/8	4.3467	4.074
CSL2280	4.2100	7 7/8	1/8	4.4360	4.180
CSL9014	4.7500	12 1/4	1/8	5.0030	4.720
CSL9022	3.1250	9 1/4	1/8	3.3780	3.095
CSL9073	3.1250	9 1/4	3/32	3.3155	3.095
CSL9079	7.9680	22	0.1755	8.3180	7.938
CSL9095	7.8640	11 3/8	0.1325	8.1290	7.834
CSL9133	4.3800	9	0.104	4.5880	4.350
CSL9138	4.1400	8	0.080	4.3005	4.110
CSL9154	4.0400	6 1/2	0.055	4.1500	4.010
CSL9157	5.7500	17 1/2	1/8 + .032	6.0640	5.720

FRACTION / DECIMAL EQUIVALENT CHART

1/64”	.015625”
1/32”	.03125”
3/64”	.046875”
1/16”	.0625”
5/64”	.078125”
3/32”	.09375”
7/64”	.109375
1/8”	.125”
9/64”	.140625”
5/32”	.15625”
11/64”	.171875”
3/16”	.1875”
13/64”	.203125”
7/32”	.21875”
15/64”	.234375
1/4”	.250”
17/64”	.265625”
9/32”	.28125”
19/64”	.296875”
5/16”	.3125”
21/64”	.328125”
11/32”	.34375”
23/64”	.359375”
3/8”	.375”
25/64”	.390625”
13/32”	.40625”
27/64”	.421875”
7/16”	.4375”
29/64”	.453125”
15/32”	.46875”
31/64”	.484375”
1/2”	.500”

33/64”	.515625”
17/32”	.53125”
35/64”	.546875”
9/16”	.5625”
37/64”	.578125”
19/32”	.59375”
39/64”	.609375
5/8”	.625”
41/64”	.640625”
21/32”	.65625”
43/64”	.671875”
11/16”	.6875”
45/64”	.703125”
23/32”	.71875”
47/64”	.734375
3/4”	.750”
49/64”	.765625”
25/32”	.78125”
51/64”	.796875”
13/16”	.8125”
53/64”	.828125”
27/32”	.84375”
55/64”	.859375”
7/8”	.875”
57/64”	.890625”
29/32”	.90625”
59/64”	.921875”
15/16”	.9375”
61/64”	.953125”
31/32”	.96875”
63/64”	.984375”
1”	1.00”

METRIC CONVERSION - 1mm = .03937

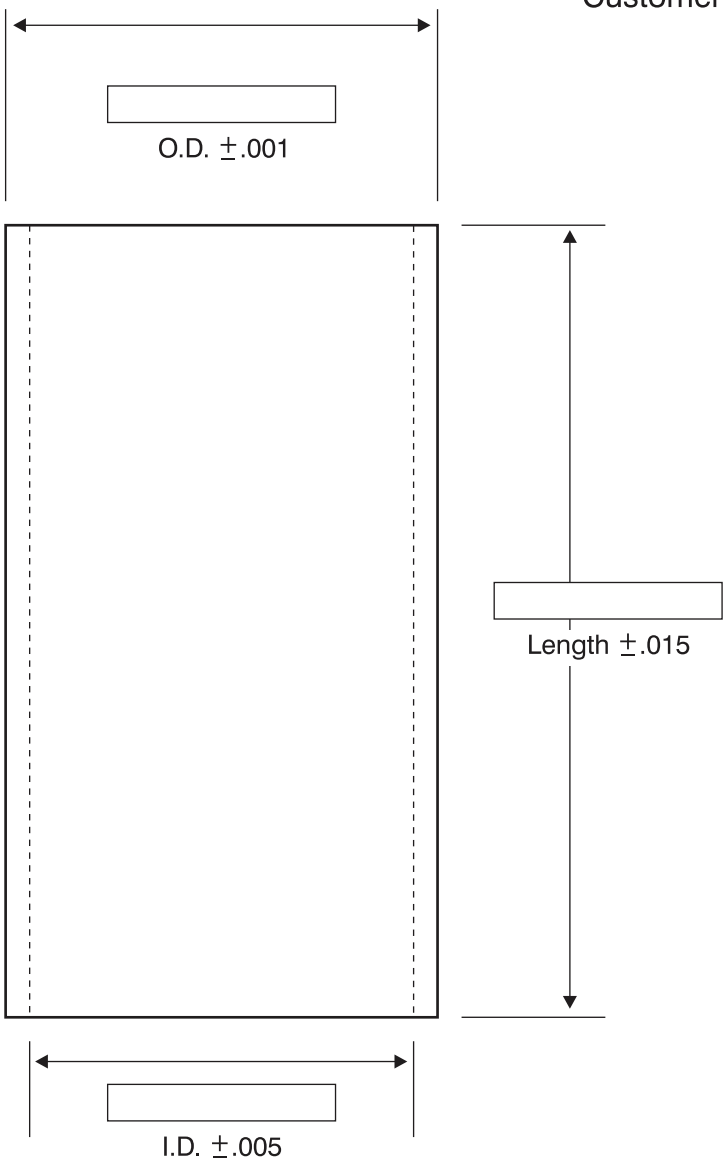
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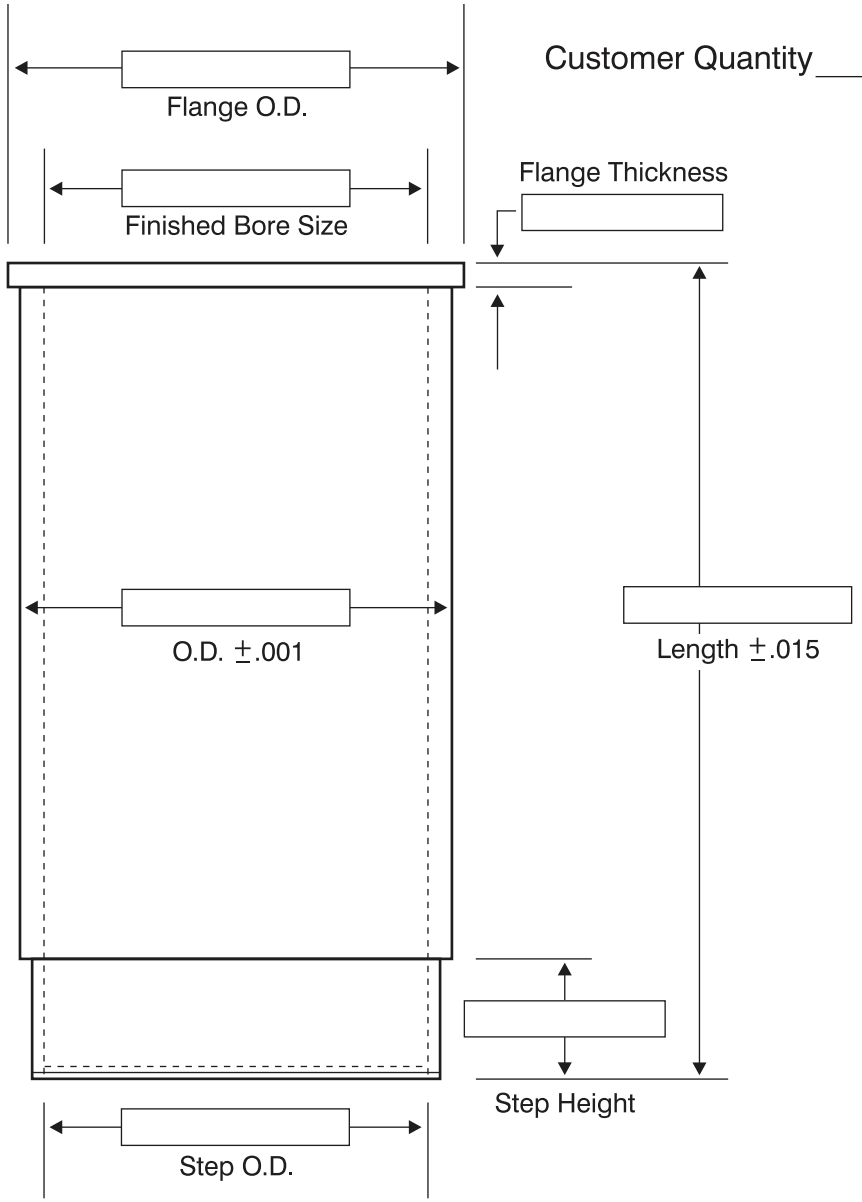
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