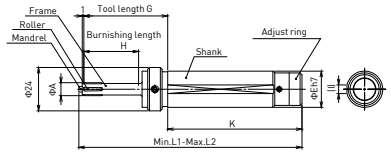
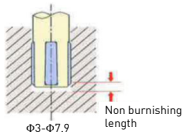
Superoll CSL selection chart

Dimensional drawing(mm)



Non-burnishing length



Hole size (mm)	Non-burnishing length (mm)
3.0 – 7.9	2.0

Tool model	Tool diameter adjustment range A Min. - Max.	Burnishing length H	Tool length G	Shnak Diameter E	Shnak Nominal length K		Overall length L1-L2 Shank length 75	Overall length L1-L2 Shank length 115	Part No. Roller Model	Part No. Roller Q'ty	Part No. Mandrel	Part No. Frame
CSL300□□ (L)	2.95 - 3.15	Standard 30mm Long 50mm	Standard 46mm Long 67mm	ϕ19.05 ϕ20 ϕ22 ϕ25 ϕ25.4	75mm (Actual length74)	115mm (Actual length114)	Standard 120.2mm -123.4mm Long 140.2mm -143.4mm	Standard 160.2mm -163.4mm Long 180.2mm -183.4mm	R01S	3	CM01(L)	FL300(L)
CSL310□□ (L)	3.05 - 3.25								R01S		CM02(L)	FL310(L)
CSL320□□ (L)	3.15 - 3.35								R01S		CM03(L)	FL320(L)
CSL330□□ (L)	3.25 - 3.45								R01S		CM04(L)	FL330(L)
CSL340□□ (L)	3.35 - 3.55								R01S		CM05(L)	FL340(L)
CSL350□□ (L)	3.45 - 3.65								R02S		CM03(L)	FL350(L)
CSL360□□ (L)	3.55 - 3.75								R02S		CM04(L)	FL360(L)
CSL370□□ (L)	3.65 - 3.85								R02S		CM05(L)	FL370(L)
CSL380□□ (L)	3.75 - 3.95								R02S		CM06(L)	FL380(L)
CSL390□□ (L)	3.85 - 4.05								R02S		CM07(L)	FL390(L)
CSL400□□ (L)	3.95 - 4.15								R03S		CM05(L)	FL400(L)
CSL410□□ (L)	4.05 - 4.25								R03S		CM06(L)	FL410(L)
CSL420□□ (L)	4.15 - 4.35								R03S		CM07(L)	FL420(L)
CSL430□□ (L)	4.25 - 4.45								R03S		CM08(L)	FL430(L)
CSL440□□ (L)	4.35 - 4.55								R03S		CM09(L)	FL440(L)
CSL450□□ (L)	4.45 - 4.65	Standard 30mm Long 50mm	Standard 46mm Long 67mm	ϕ19.05 ϕ20 ϕ22 ϕ25 ϕ25.4	75mm (Actual length74)	115mm (Actual length114)	Standard 120.2mm -123.4mm Long 140.2mm -143.4mm	Standard 160.2mm -163.4mm Long 180.2mm -183.4mm	R001	4	CM10(L)	FL450(L)
CSL460□□ (L)	4.55 - 4.75								R001		CM11(L)	FL460(L)
CSL470□□ (L)	4.65 - 4.85								R001		CM12(L)	FL470(L)
CSL480□□ (L)	4.75 - 4.95								R001		CM13(L)	FL480(L)
CSL490□□ (L)	4.85 - 5.05								R001		CM14(L)	FL490(L)
CSL500□□ (L)	4.95 - 5.15								R001		CM15(L)	FL500(L)
CSL510□□ (L)	5.05 - 5.25								R002		CM16(L)	FL510(L)
CSL520□□ (L)	5.15 - 5.35								R002		CM17(L)	FL520(L)
CSL530□□ (L)	5.25 - 5.45								R002		CM18(L)	FL530(L)
CSL540□□ (L)	5.35 - 5.55								R002		CM19(L)	FL540(L)
CSL550□□ (L)	5.45 - 5.65								R002		CM20(L)	FL550(L)
CSL560□□ (L)	5.55 - 5.75								R003		CM16(L)	FL560(L)
CSL570□□ (L)	5.65 - 5.85								R003		CM17(L)	FL570(L)
CSL580□□ (L)	5.75 - 5.95								R003		CM18(L)	FL580(L)
CSL590□□ (L)	5.85 - 6.05								R003		CM19(L)	FL590(L)
CSL600□□ (L)	5.95 - 6.15								R004		CM21(L)	FL600(L)
CSL610□□ (L)	6.05 - 6.25								R004		CM22(L)	FL610(L)
CSL620□□ (L)	6.15 - 6.35								R004		CM23(L)	FL620(L)
CSL630□□ (L)	6.25 - 6.45								R004		CM24(L)	FL630(L)
CSL640□□ (L)	6.35 - 6.55								R004		CM25(L)	FL640(L)
CSL650□□ (L)	6.45 - 6.65								R004		CM26(L)	FL650(L)
CSL660□□ (L)	6.55 - 6.75								R004		CM27(L)	FL660(L)
CSL670□□ (L)	6.65 - 6.85								R004		CM28(L)	FL670(L)
CSL680□□ (L)	6.75 - 6.95								R004		CM29(L)	FL680(L)
CSL690□□ (L)	6.85 - 7.05								R004		CM30(L)	FL690(L)
CSL700□□ (L)	6.95 - 7.15								R004		CM31(L)	FL700(L)
CSL710□□ (L)	7.05 - 7.25								R004		CM32(L)	FL710(L)
CSL720□□ (L)	7.15 - 7.35								R005		CM25(L)	FL720(L)
CSL730□□ (L)	7.25 - 7.45								R005		CM26(L)	FL730(L)
CSL740□□ (L)	7.35 - 7.55								R005		CM27(L)	FL740(L)
CSL750□□ (L)	7.45 - 7.65								R005		CM28(L)	FL750(L)
CSL760□□ (L)	7.55 - 7.75								R005		CM29(L)	FL760(L)
CSL770□□ (L)	7.65 - 7.85								R005		CM30(L)	FL770(L)
CSL780□□ (L)	7.75 - 7.95								R005		CM31(L)	FL780(L)
CSL790□□ (L)	7.85 - 8.05								R005		CM32(L)	FL790(L)

Specifying Tool model

CSL OOOO A OO L　　例：CSL400A75

- L is added for long burnishing length.
- Shank length (either 75 or 115)
- Shank model (either A, B, F, C or D)
  ※Refer to below table for Shank model
- **Tool model No. = Hole size x 100**

Shank model	A	B	F	C	D
Shank diameter E (mm)	ϕ19.05	ϕ20	ϕ22	ϕ25	ϕ25.4
Cut width I (mm)	4.7	4.9	5.1	5.4	5.5

Burnishing Conditions (Reference)

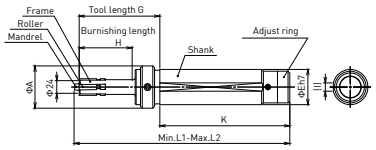
Hole size (mm)	Rotation speed (min^{-1})	Feed rate (mm/rev)
3.0 - 4.5	1,200 - 2,200	0.2 - 0.6
4.5 - 6.0	1,000 - 1,800	0.4 - 0.8
6.0 - 8.0	900 - 1,500	0.5 - 1.0
8.0 - 10.5	800 - 1,200	0.5 - 1.0
10.5 - 14.5	800 - 1,200	0.5 - 1.5

* Burnishing conditions are reference only, and do not guarantee that they will achieve the customers' required values.
* Actual burnishing conditions vary depending on the material and conditions before burnishing, so these values should be used as a reference.

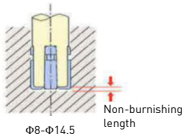
About tool selection

・Select Tool model within Tool diameter adjustment range A to suit a hole size.
・Select the appropriate Tool length G which can keep a clearance 1 to 2mm between Superoll and a workpiece.

Dimensional drawing (mm)



Non-burnishing length



Hole size (mm)	Non-burnishing length (mm)
8.0 – 14.5	0.8

Tool model	Tool diameter adjustable range A Min. - Max.	Burnishing length H	Tool length G	Shnak Diameter E	Shnak Nominal length K		Overall length L1-L2 Shank length 75	Overall length L1-L2 Shank length 115	Part No. Roller Model	Part No. Roller Q'ty	Part No. Mandrel	Part No. Frame
CSL800□□ (L)	7.95 - 8.15	Standard 30mm Long+W20 50mm	Standard 46mm Long 67mm	ϕ19.05 ϕ20 ϕ22 ϕ25 ϕ25.4	75mm (Actual length74)	115mm (Actual length114)	Standard 120mm -123.2mm Long 140mm -143.2mm	Standard 160mm -163.2mm Long 180mm -183.2mm	B006R	4	CM33(L)	FL800(L)
CSL810□□ (L)	8.05 - 8.25								B006R		CM34(L)	FL810(L)
CSL820□□ (L)	8.15 - 8.35								B006R		CM35(L)	FL820(L)
CSL830□□ (L)	8.25 - 8.45								B006R		CM36(L)	FL830(L)
CSL840□□ (L)	8.35 - 8.55								B006R		CM37(L)	FL840(L)
CSL850□□ (L)	8.45 - 8.65								B006R		CM38(L)	FL850(L)
CSL860□□ (L)	8.55 - 8.75								B006R		CM39(L)	FL860(L)
CSL870□□ (L)	8.65 - 8.85								B006R		CM40(L)	FL870(L)
CSL880□□ (L)	8.75 - 8.95								B006R		CM41(L)	FL880(L)
CSL890□□ (L)	8.85 - 9.05								B006R		CM42(L)	FL890(L)
CSL900□□ (L)	8.95 - 9.15								B007R		CM33(L)	FL900(L)
CSL910□□ (L)	9.05 - 9.25								B007R		CM34(L)	FL910(L)
CSL920□□ (L)	9.15 - 9.35								B007R		CM35(L)	FL920(L)
CSL930□□ (L)	9.25 - 9.45								B007R		CM36(L)	FL930(L)
CSL940□□ (L)	9.35 - 9.55								B007R		CM37(L)	FL940(L)
CSL950□□ (L)	9.45 - 9.65								B007R		CM38(L)	FL950(L)
CSL960□□ (L)	9.55 - 9.75								B007R		CM39(L)	FL960(L)
CSL970□□ (L)	9.65 - 9.85								B007R		CM40(L)	FL970(L)
CSL980□□ (L)	9.75 - 9.95								B007R		CM41(L)	FL980(L)
CSL990□□ (L)	9.85 - 10.05								B007R		CM42(L)	FL990(L)
CSL1000□□ (L)	9.95 - 10.15								B007R		CM43(L)	FL1000(L)
CSL1010□□ (L)	10.05 - 10.25								B007R		CM44(L)	FL1010(L)
CSL1020□□ (L)	10.15 - 10.35								B007R		CM45(L)	FL1020(L)
CSL1030□□ (L)	10.25 - 10.45								B007R		CM46(L)	FL1030(L)
CSL1040□□ (L)	10.35 - 10.55								B007R		CM47(L)	FL1040(L)
CSL1050□□ (L)	10.45 - 10.65								B008R		CM38(L)	FL1050(L)
CSL1060□□ (L)	10.55 - 10.75								B008R		CM39(L)	FL1060(L)
CSL1070□□ (L)	10.65 - 10.85								B008R		CM40(L)	FL1070(L)
CSL1080□□ (L)	10.75 - 10.95								B008R		CM41(L)	FL1080(L)
CSL1090□□ (L)	10.85 - 11.05								B008R		CM42(L)	FL1090(L)
CSL1100□□ (L)	10.95 - 11.15								B008R		CM43(L)	FL1100(L)
CSL1110□□ (L)	11.05 - 11.25								B008R		CM44(L)	FL1110(L)
CSL1120□□ (L)	11.15 - 11.35								B008R		CM45(L)	FL1120(L)
CSL1130□□ (L)	11.25 - 11.45								B008R		CM46(L)	FL1130(L)
CSL1140□□ (L)	11.35 - 11.55								B008R		CM47(L)	FL1140(L)
CSL1150□□ (L)	11.45 - 11.65								B008R		CM48(L)	FL1150(L)
CSL1160□□ (L)	11.55 - 11.75								B008R		CM49(L)	FL1160(L)
CSL1170□□ (L)	11.65 - 11.85								B008R		CM50(L)	FL1170(L)
CSL1180□□ (L)	11.75 - 11.95								B008R		CM51(L)	FL1180(L)
CSL1190□□ (L)	11.85 - 12.05								B008R		CM52(L)	FL1190(L)
CSL1200□□ (L)	11.95 - 12.15								B009R		CM43(L)	FL1200(L)
CSL1210□□ (L)	12.05 - 12.25								B009R		CM44(L)	FL1210(L)
CSL1220□□ (L)	12.15 - 12.35								B009R		CM45(L)	FL1220(L)
CSL1230□□ (L)	12.25 - 12.45								B009R		CM46(L)	FL1230(L)
CSL1240□□ (L)	12.35 - 12.55								B009R		CM47(L)	FL1240(L)
CSL1250□□ (L)	12.45 - 12.65								B009R		CM48(L)	FL1250(L)
CSL1260□□ (L)	12.55 - 12.75								B009R		CM49(L)	FL1260(L)
CSL1270□□ (L)	12.65 - 12.85								B009R		CM50(L)	FL1270(L)
CSL1280□□ (L)	12.75 - 12.95								B009R		CM51(L)	FL1280(L)
CSL1290□□ (L)	12.85 - 13.05								B009R		CM52(L)	FL1290(L)
CSL1300□□ (L)	12.95 - 13.15								B009R		CM53(L)	FL1300(L)
CSL1310□□ (L)	13.05 - 13.25								B009R		CM54(L)	FL1310(L)
CSL1320□□ (L)	13.15 - 13.35								B009R		CM55(L)	FL1320(L)
CSL1330□□ (L)	13.25 - 13.45								B009R		CM56(L)	FL1330(L)
CSL1340□□ (L)	13.35 - 13.55								B009R		CM57(L)	FL1340(L)
CSL1350□□ (L)	13.45 - 13.65								B010R		CM48(L)	FL1350(L)
CSL1360□□ (L)	13.55 - 13.75								B010R		CM49(L)	FL1360(L)
CSL1370□□ (L)	13.65 - 13.85								B010R		CM50(L)	FL1370(L)
CSL1380□□ (L)	13.75 - 13.95								B010R		CM51(L)	FL1380(L)
CSL1390□□ (L)	13.85 - 14.05								B010R		CM52(L)	FL1390(L)
CSL1400□□ (L)	13.95 - 14.15								B010R		CM53(L)	FL1400(L)
CSL1410□□ (L)	14.05 - 14.25								B010R		CM54(L)	FL1410(L)
CSL1420□□ (L)	14.15 - 14.35								B010R		CM55(L)	FL1420(L)
CSL1430□□ (L)	14.25 - 14.45								B010R		CM56(L)	FL1430(L)
CSL1440□□ (L)	14.35 - 14.55								B010R		CM57(L)	FL1440(L)
CSL1450□□ (L)	14.45 - 14.65								B010R		CM58(L)	FL1450(L)
CSL1460□□ (L)	14.55 - 14.75								B010R		CM59(L)	FL1460(L)
CSL1470□□ (L)	14.65 - 14.85								B010R		CM60(L)	FL1470(L)
CSL1480□□ (L)	14.75 - 14.95								B010R		CM61(L)	FL1480(L)
CSL1490□□ (L)	14.85 - 15.05								B010R		CM62(L)	FL1490(L)

* Non-burnishing length above is the length where a clearance of 0.5mm is retained between Superoll and a workpiece bottom surface.
* To minimize non-burnishing length for Superoll burnishing, grind off Mandrel protruded length from Roller tip to the same position as Roller tip after setting a tool diameter.

© 2021 SUGINO MACHINE LIMITED　www.sugino.com
Included details are current as of March 2021. Unauthorized copying or reprinting is prohibited.