

S33 活塞杆密封



单向活塞杆密封



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1.说明

S33 活塞杆密封是单向作用的活塞杆密封,由一个阶梯形的填充聚四氟乙烯密封环和一个 O 形圈组成。O 形圈提供初始密封所需的预紧力,保证在低压时的密封性能,高压时 O 形圈被系统流体挤压,推着密封环靠紧密封面而增加密封力。

2.应用

广泛应用于高压和中压以及重载工况下的液压往复运动系统,适合各种行程以及范围较广的流体和高温场合,可适用较大的活塞杆间隙。可用于注塑机、叉车、农业机械、推土机、挖掘机、锻压机、陶瓷压砖机、轧钢机、伺服阀及机床等。

在许多应用场合,通常要求两个 S33 型密封圈串联在活塞杆上使用,与双作用防尘圈一起使用可达到最佳的密封效果。

3.优点

- 优异的动静密封性能
- 摩擦力小,起动力低,运行平稳,无爬行及粘滞现象
- 可允许较大的挤出间隙,在有污物的介质中可安全使用
- 安装尺寸紧凑,沟槽结构简单
- 不会发生困压,可多只串联安装
- 对强冲击压力有优异的缓冲作用
- 可选材料多,可适用于大多数液压介质,以及宽广的温度和压力范围

4.标准材料

密封环:填充聚四氟乙烯 F013

O 形圈:丁腈橡胶 NBR70

5.其它适用材料

详见密封材料一览表。

6.安装倒角

密封件通常是过盈配合,因此,为了避免在安装过程中损坏密封件,应该在活塞杆上加工安装倒角,倒角角度 β 为 15° – 20° ,倒角长度尺寸 C 如下:

序列号	A	B	C	D	E	F	G	H
C min.	2	3	4	5	7	7	8	12



7.表面粗糙度

表面粗糙度	Ra	Rz	Rmax.
配合表面μm	0.05-0.3	<1.6	<2.5
沟槽表面μm	<1.6	<10.0	<16.0

8.工况要求

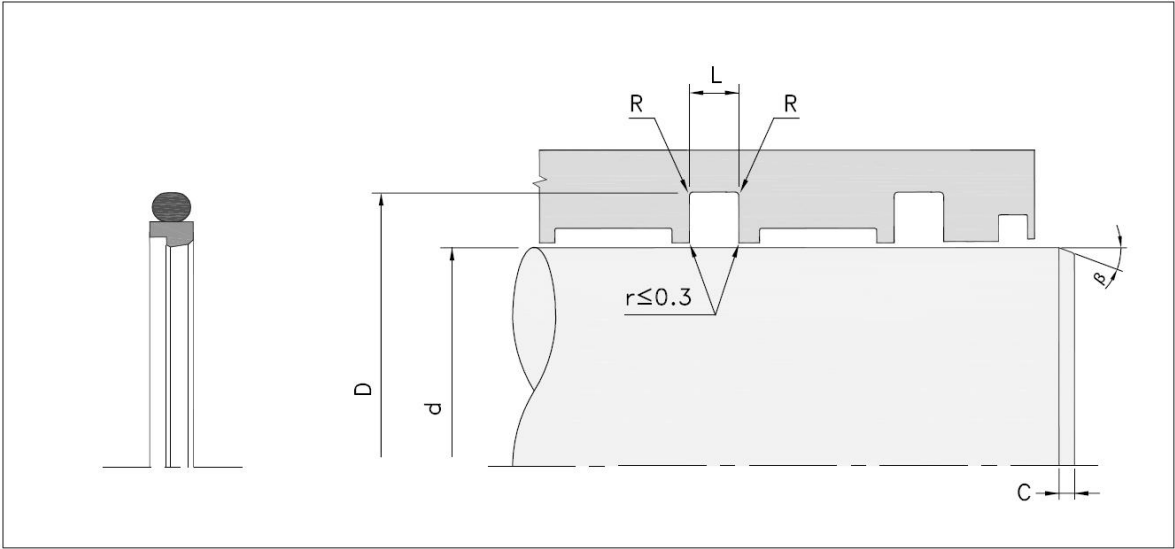
压力：≦60MPa
速度：≦15m/s
温度：-45℃~+200℃（取决于 O 形圈材料）
介质：矿物液压油，抗燃液压油，环保液压油，水、空气和大多数的润滑油、油脂

9.订货示例

活塞杆直径：100mm
沟槽尺寸：100x115.1x6.3
密封环材料：F013
O 形圈材料：NBR70

订货号	S33	D	01000	- F013	N
型号					
系列号					
杆径 X10					
材料（密封环）					
材料（O 形圈）					

10. 安装尺寸参数



系列号	杆径 d f8/h9	沟槽直径	沟槽宽度	圆角	径向间隙 E max.			O 形圈截面
	推荐标准杆径范围	D H9	L ^{+0.2}	R max.	10MPa	20MPa	40MPa	
A	3.0~7.9	d+4.9	2.2	0.4	0.30	0.20	0.15	1.78
B	8.0~18.9	d+7.3	3.2	0.6	0.40	0.25	0.15	2.62
C	19.0~37.9	d+10.7	4.2	1.0	0.40	0.25	0.20	3.53
D	38.0~199.9	d+15.1	6.3	1.3	0.50	0.30	0.20	5.33
E	200.0~255.9	d+20.5	8.1	1.8	0.60	0.35	0.25	6.99
F	256.0~649.9	d+24.0	8.1	1.8	0.60	0.35	0.25	6.99
G	650.0~999.9	d+27.3	9.5	2.5	0.70	0.50	0.30	8.40
H	≥1000.0	d+38.0	13.8	3.0	1.00	0.70	0.60	12.00

11.规格尺寸表

订货号	杆径 d f8/h9	沟槽直径 D H9	沟槽宽度 L ^{+0.2}	O 形圈尺寸
S33A00030	3.0	7.9	2.2	4.47x1.78
S33A00040	4.0	8.9	2.2	5.60x1.80
S33A00050	5.0	9.9	2.2	6.70x1.80
S33A00060	6.0	10.9	2.2	7.65x1.78
S33B00080	8.0	15.3	3.2	10.77x2.62
S33B00100	10.0	17.3	3.2	12.37x2.62
S33B00120	12.0	19.3	3.2	13.94x2.62
S33B00140	14.0	21.3	3.2	17.12x2.62
S33B00150	15.0	22.3	3.2	17.12x2.62
S33B00160	16.0	23.3	3.2	18.72x2.62
S33B00180	18.0	25.3	3.2	20.29x2.62
S33C00200	20.0	30.7	4.2	23.40x3.53
S33C00220	22.0	32.7	4.2	26.58x3.53
S33C00250	25.0	35.7	4.2	29.75x3.53
S33C00280	28.0	38.7	4.2	32.92x3.53
S33C00300	30.0	40.7	4.2	34.52x3.53
S33C00320	32.0	42.7	4.2	36.09x3.53
S33C00350	35.0	45.7	4.2	37.69x3.53
S33C00360	36.0	46.7	4.2	40.87x3.53
S33D00380	38.0	53.1	6.3	43.82x5.33
S33D00400	40.0	55.1	6.3	43..82x5.33
S33D00420	42.0	57.1	6.3	46.99x5.33
S33D00450	45.0	60.1	6.3	50.17x5.33
S33D00480	48.0	63.1	6.3	53.34x5.33
S33D00500	50.0	65.1	6.3	56.52x5.33
S33D00520	52.0	67.1	6.3	56.52x5.33
S33D00550	55.0	70.1	6.3	59.69x5.33



S33D00560	56.0	71.1	6.3	62.87x5.33
S33D00600	60.0	75.1	6.3	66.04x5.33
S33D00630	63.0	78.1	6.3	69.22x5.33
S33D00650	65.0	80.1	6.3	69.22x5.33
S33D00700	70.0	85.1	6.3	75.57x5.33
S33D00750	75.0	90.1	6.3	81.92x5.33
S33D00800	80.0	95.1	6.3	85.09x5.33
S33D00850	85.0	100.1	6.3	91.44x5.33
S33D00900	90.0	105.1	6.3	94.62x5.33
S33D00950	95.0	110.1	6.3	100.97x5.33
S33D00000	100.0	115.1	6.3	107.32x5.33
S33D01050	105.0	120.1	6.3	110.49x5.33
S33D01100	110.0	125.1	6.3	116.84x5.33
S33D01150	115.0	130.1	6.3	120.02x5.33
S33D01200	120.0	135.1	6.3	126.37x5.33
S33D01250	125.0	140.1	6.3	129.54x5.33
S33D01300	130.0	145.1	6.3	135.89x5.33
S33D01350	135.0	150.1	6.3	142.24x5.33
S33D01400	140.0	155.1	6.3	145.42x5.33
S33D01450	145.0	160.1	6.3	151.77x5.33
S33D01500	150.0	165.1	6.3	158.12x5.33
S33D01550	155.0	170.1	6.3	158.12x5.33
S33D01600	160.0	175.1	6.3	164.47x5.33
S33D01650	165.0	180.1	6.3	170.82x5.33
S33D01700	170.0	185.1	6.3	177.17x5.33
S33D01750	175.0	190.1	6.3	183.52x5.33
S33D01800	180.0	195.1	6.3	183.52x5.33
S33D01850	185.0	200.1	6.3	189.87x5.33
S33D01900	190.0	205.1	6.3	196.22x5.33
S33D01950	195.0	210.1	6.3	202.57x5.33
S33E02000	200.0	220.5	8.1	208.92x7.0
S33E02050	205.0	225.5	8.1	215.27x6.99
S33E02100	210.0	230.5	8.1	215.27x6.99
S33E02150	215.0	235.5	8.1	227.97x6.99
S33E02200	220.0	240.5	8.1	227.97x6.99
S33E02250	225.0	245.5	8.1	240.67x6.99
S33E02300	230.0	250.5	8.1	240.67x6.99
S33E02350	235.0	255.5	8.1	240.67x6.99
S33E02400	240.0	260.5	8.1	253.37x6.99
S33E02450	245.0	265.5	8.1	253.37x6.99
S33E02500	250.0	270.5	8.1	266.07x6.99
S33F02600	260.0	284.0	8.1	266.07x6.99



S33F02700	270.0	294.0	8.1	278.77x6.99
S33F02800	280.0	304.0	8.1	291.47x6.99
S33F02850	285.0	309.0	8.1	291.47x6.99
S33F02900	290.0	314.0	8.1	304.17x6.99
S33F02950	295.0	319.0	8.1	304.17x6.99
S33F03000	300.0	324.0	8.1	316.87x6.99
S33F03100	310.0	334.0	8.1	316.87x6.99
S33F03200	320.0	344.0	8.1	329.57x6.99
S33F03300	330.0	354.0	8.1	342.27x6.99
S33F03400	340.0	364.0	8.1	354.97x6.99
S33F03500	350.0	374.0	8.1	367.67x6.99
S33F03600	360.0	384.0	8.1	367.67x6.99
S33F03650	365.0	389.0	8.1	380.37x6.99
S33F03700	370.0	394.0	8.1	380.37x6.99
S33F03750	375.0	399.0	8.1	393.07x6.99
S33F03800	380.0	404.0	8.1	393.07x6.99
S33F03900	390.0	414.0	8.1	405.26x6.99
S33F04000	400.0	424.0	8.1	417.96x6.99
S33F04100	410.0	434.0	8.1	417.96x6.99
S33F04200	420.0	444.0	8.1	430.66x6.99
S33F04300	430.0	454.0	8.1	443.36x6.99
S33F04400	440.0	464.0	8.1	456.06x6.99
S33F04500	450.0	474.0	8.1	468.76x6.99
S33F04600	460.0	484.0	8.1	468.76x6.99
S33F04700	470.0	494.0	8.1	481.46x6.99
S33F04800	480.0	504.0	8.1	494.16x6.99
S33F04900	490.0	514.0	8.1	506.86x6.99
S33F05000	500.0	524.0	8.1	506.86x6.99
S33F05100	510.0	534.0	8.1	532.26x6.99
S33F05200	520.0	544.0	8.1	532.26x6.99
S33F05300	530.0	554.0	8.1	557.66x6.99
S33F05400	540.0	564.0	8.1	557.66x6.99
S33F05500	550.0	574.0	8.1	557.66x6.99
S33F05600	560.0	584.0	8.1	582.68x6.99
S33F05700	570.0	594.0	8.1	582.68x6.99
S33F05800	580.0	604.0	8.1	608.08x6.99
S33F05900	590.0	614.0	8.1	608.08x6.99
S33F06000	600.0	624.0	8.1	608.08x6.99
S33F06100	610.0	634.0	8.1	633.48x6.99
S33F06200	620.0	644.0	8.1	633.48x6.99
S33F06300	630.0	654.0	8.1	658.88x6.99
S33F06400	640.0	664.0	8.1	658.88x6.99



S33G06500	650.0	677.3	9.5	663x8.4
S33G06560	656.0	683.3	9.5	669x8.4
S33G06600	660.0	687.3	9.5	673x8.4
S33G06700	670.0	697.3	9.5	683x8.4
S33G06800	680.0	707.3	9.5	693x8.4
S33G06850	685.0	712.3	9.5	698x8.4
S33G06900	690.0	717.3	9.5	703x8.4
S33G07000	700.0	727.3	9.5	713x8.4
S33G07100	710.0	737.3	9.5	723x8.4
S33G07200	720.0	747.3	9.5	733x8.4
S33G07300	730.0	757.3	9.5	743x8.4
S33G07400	740.0	767.3	9.5	753x8.4
S33G07500	750.0	777.3	9.5	763x8.4
S33G07600	760.0	787.3	9.5	773x8.4
S33G07700	770.0	797.3	9.5	783x8.4
S33G07800	780.0	807.3	9.5	793x8.4
S33G07900	790.0	817.3	9.5	803x8.4
S33G08000	800.0	827.3	9.5	813x8.4
S33G08100	810.0	837.3	9.5	823x8.4
S33G08200	820.0	847.3	9.5	833x8.4
S33G08300	830.0	857.3	9.5	843x8.4
S33G08400	840.0	867.3	9.5	853x8.4
S33G08500	850.0	877.3	9.5	863x8.4
S33G08600	860.0	887.3	9.5	873x8.4
S33G08700	870.0	897.3	9.5	883x8.4
S33G08800	880.0	907.3	9.5	893x8.4
S33G08850	885.0	912.3	9.5	898x8.4
S33G08900	890.0	917.3	9.5	903x8.4
S33G09000	900.0	927.3	9.5	913x8.4
S33G09100	910.0	937.3	9.5	923x8.4
S33G09200	920.0	947.3	9.5	933x8.4
S33G09300	930.0	957.3	9.5	943x8.4
S33G09400	940.0	967.3	9.5	953x8.4
S33G09500	950.0	977.3	9.5	963x8.4
S33G09550	955.0	982.3	9.5	968x8.4
S33G09600	960.0	987.3	9.5	973x8.4
S33G09700	970.0	997.3	9.5	983x8.4
S33G09800	980.0	1007.3	9.5	993x8.4
S33G10000	1000.0	1027.3	9.5	1003x8.4
S33H10000	1000.0	1038.0	13.8	1016x12.0
S33H10350	1035.0	1073.0	13.8	1051x12.0
S33H10400	1040.0	1078.0	13.8	1056x12.0



S33H10500	1050.0	1088.0	13.8	1066x12.0
S33H10600	1060.0	1098.0	13.8	1076x12.0
S33H10800	1080.0	1108.0	13.8	1086x12.0
S33H11000	1100.0	1138.0	13.8	1116x12.0
S33H11200	1120.0	1158.0	13.8	1136x12.0
S33H11500	1150.0	1188.0	13.8	1166x12.0
S33H11800	1180.0	1218.0	13.8	1196x12.0
S33H12000	1200.0	1238.0	13.8	1216x12.0
S33H12500	1250.0	1288.0	13.8	1266x12.0
S33H12800	1280.0	1318.0	13.8	1296x12.0
S33H13000	1300.0	1338.0	13.8	1316x12.0
S33H13300	1330.0	1368.0	13.8	1346x12.0
S33H13500	1350.0	1388.0	13.8	1366x12.0
S33H14000	1400.0	1438.0	13.8	1416x12.0
S33H15000	1500.0	1538.0	13.8	1516x12.0
S33H16000	1600.0	1638.0	13.8	1616x12.0
S33H17000	1700.0	1738.0	13.8	1716x12.0
S33H18000	1800.0	1838.0	13.8	1816x12.0
S33H19000	1900.0	1938.0	13.8	1916x12.0
S33H20000	2000.0	2038.0	13.8	2016x12.0

注：以上为 S33 标准型的尺寸，轻型和重型及所有直径 2500mm 以内的其它尺寸均可供货。

