

# World Best SEALING SOLUTION PROVIDER



## Company's Overview

With professionalism and dedication, we PLUS Manager provide the fundamental and reliable solutions about all sorts of problems of water leak in pumps. This will certainly contribute to the higher productivity, cost reduction, upper quality and improvement in safety & environment, enhancing the operation rate of production facilities.

### VISION STATEMENT

World Best Sealing Solution Provider

### CORE VALUE

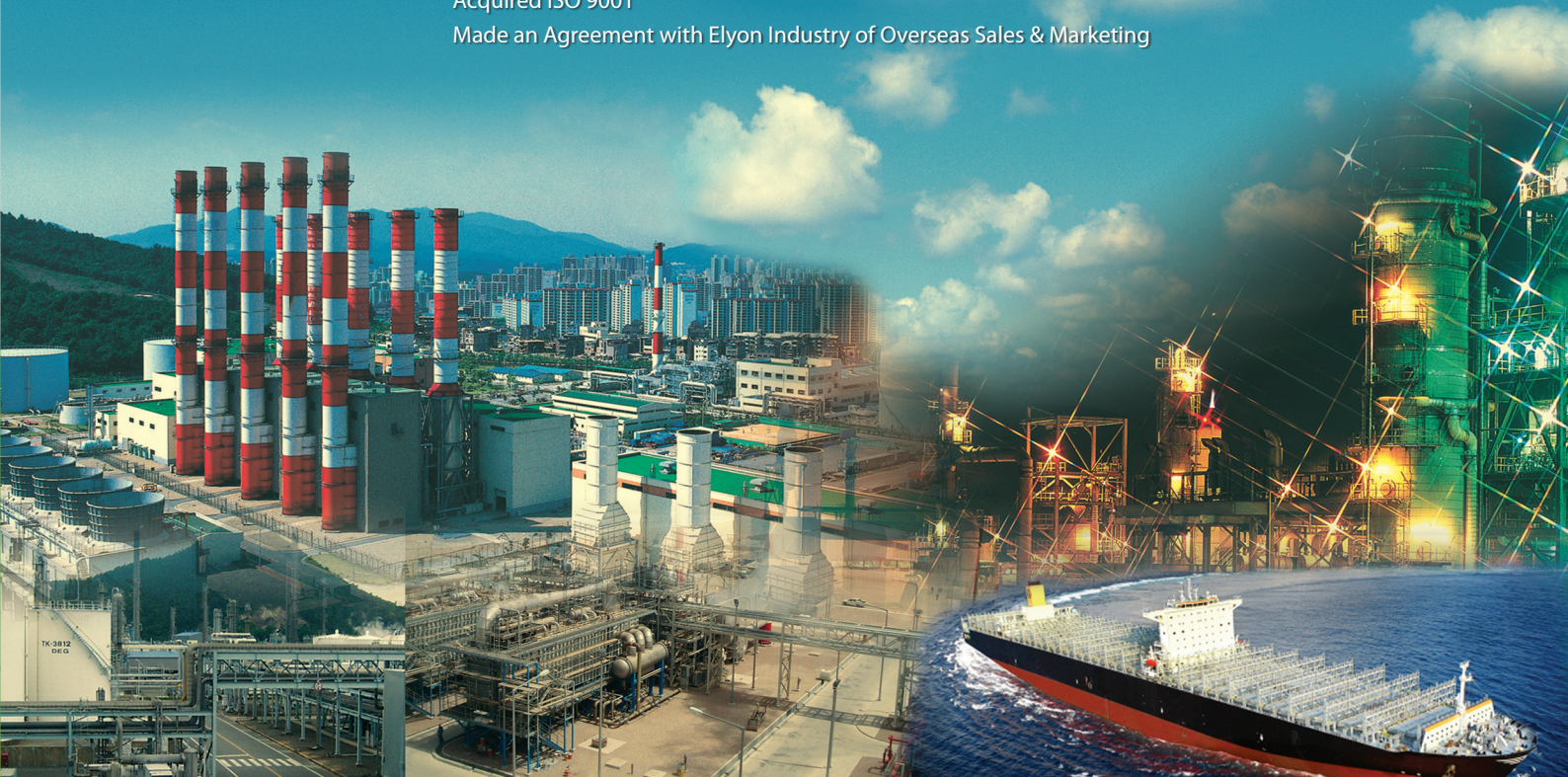
- Professionalism
- Commitment
- Confidence

### CUSTOMER DELIGHT

- Productivity maximize
- Lower cost
- Upper quality
- Safety & environment

# Company's History

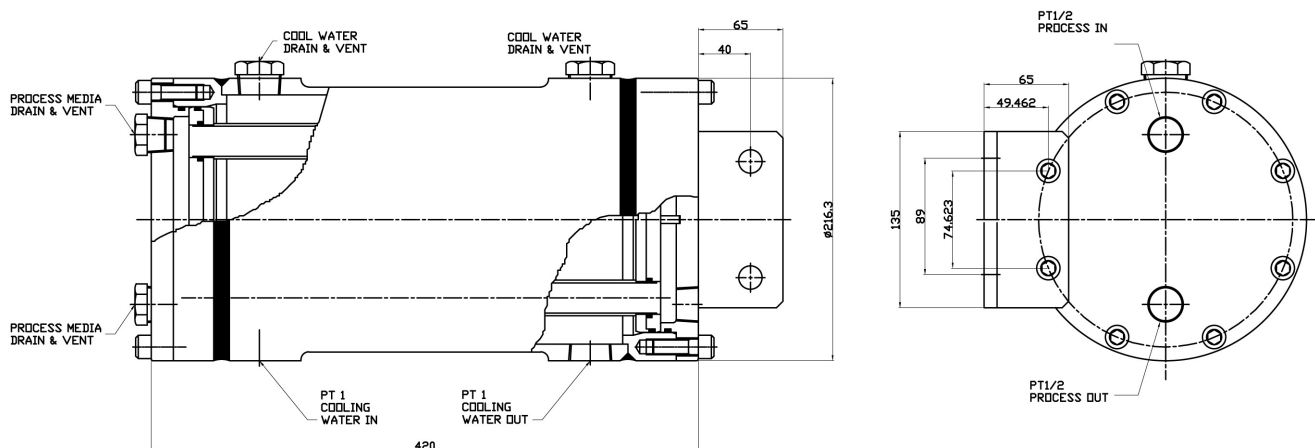
- 2000's Established PLUS Manager Co., Ltd.
- 2003's Graduated from a Incubator of Korea Maritime University  
Started Manufacturing Plant in Noksan National Industrial Complex  
Developed Model "SR, SU, MSU" for Centrifugal Pump  
Developed Model "HC" for Boiler Circulation Pump without cooling  
Started to supply to Shin Shin Machinery Co., Ltd.
- 2004's Developed Model "CSU" for Rotary Gear Pump
- 2006's Developed Mechanical Seal Cooler Model "PCL420N"  
Developed Model "CS160" Compact Size Cartridge Mechanical Seal  
Started to supply to Hyundai Heavy Industries Co., Ltd.
- 2007's Developed Model "S200R" for Submersible Pump  
Started to supply to Shinwoo Heavy Industries Co., Ltd.
- 2008's Developed Model "S200N" for Submersible Pump  
Developed Model "CSR200" for Submersible Pump  
Started to supply to Hyosung Goodsprings Co., Ltd.  
Started to supply to Wilo Pump Co., Ltd.
- 2009's Developed Model "CS280" Compact Size Double Cartridge Mechanical Seal  
Developed Model "SRH" Single Spring Energized Rubber Bellows Seal  
Developed Model "MRH" Multi-spring Energized Rubber Bellows Seal
- 2010's Developed Model "CMR" Multi-spring Double Cartridge Seal  
Started to supply to CW-Hydro Industries Co., Ltd.  
Started to supply Kumjung Industries Co., Ltd.
- 2011's Established Mechanical Seal Research Center
- 2012's Started to supply to Korea Water Resources Corporation  
Started to supply to POSCO  
Started to supply to POSCO C&C  
Started to supply to POSCO CHEMTECH  
Registered Patent Model "MRH" Multi-spring Energized Rubber Bellows Seal  
Acquired ISO 9001  
Made an Agreement with Elyon Industry of Overseas Sales & Marketing



● Customized in Grundfos, KSB, WILO



● COOLER PCL420N



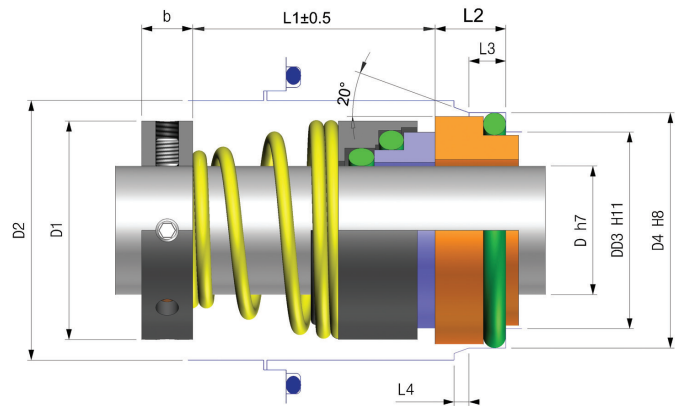
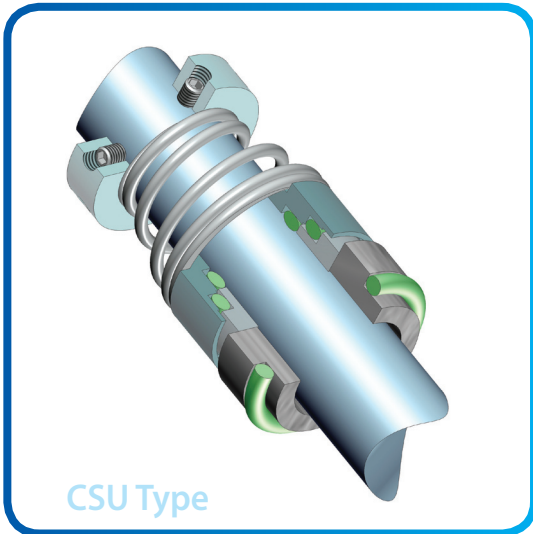
● Design Features

- Being possible vertical and horizontal installation.
- Higher efficiency due to fully circulation of cooling media from inlet to outlet.
- Being possible full disassembling for cleaning.
- Various in size demanding on customer needs.

● Specification

Descriptions	Tube	Shell
Working pressure(bar)	50	20
Working temperature(°C)	220	110
Cooling area(cm <sup>2</sup> )	6000	
Tube length(mm)	360	
Tube size	27.2(3/4)-1.65(0.065")	
Net weight(kg)	40	

\* Cooling effect : 170°C IN → 100~110°C OUT (60~70°C down)



### Performance

Max Pressure ..... 12kg/cm<sup>2</sup>  
 Max Temperature ..... -20 ~ 200°C  
 Max Speed ..... 10m/s  
 Max Viscosity ..... 100,000cp  
 Slurry ..... 7wt%

### Application

- Water Pump
- Chemical Pump
- Hot Fuel Oil
- Sewage Pump

### Material

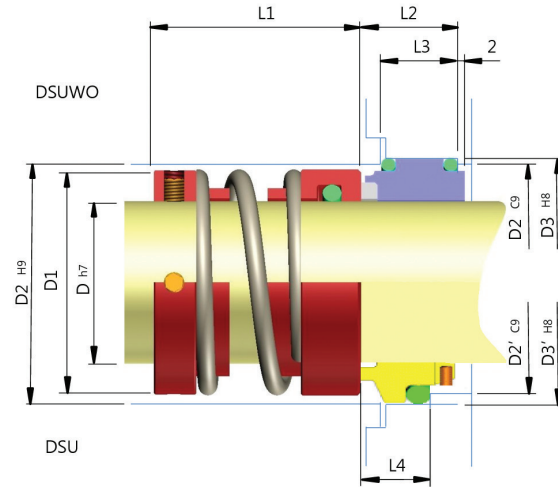
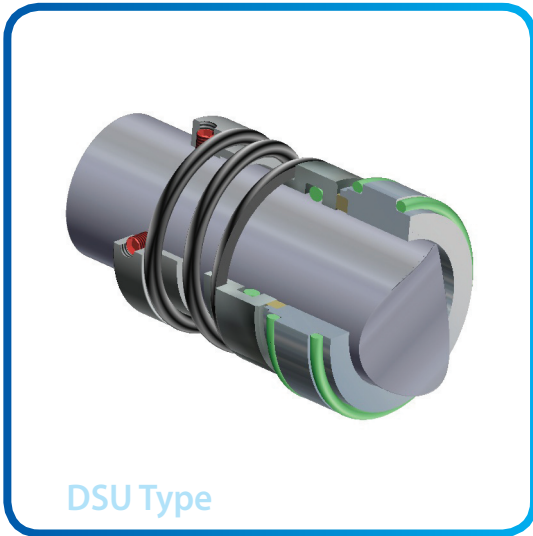
Seal Face ..... Sic to Carbon  
 ..... Sic to Sic  
 O-Ring ..... VITON, NBR etc  
 Metal ..... SUS304, SUS316

### Dimensions

SIZE	D	D1	D2	D3	D4	L1	L2	L3	L4	b
011	11	25	27	20(19)	26(25)	20	11.5	8.5	2.0	10
015	15	29	31	25(24)	31(30)	24	11.0	8	2.0	10
018	18	32	34	28(27)	34(33)	24	11.0	8	2.0	10
020	20	34	36	30(29)	36(35)	26	11.0	8	2.0	10
025	25	39	41	35(34)	41(40)	28	12.0	8	2.0	10
028	28	42	44	38(37)	44(43)	28	12.0	9	2.0	10
030	30	44	46	40(39)	46(45)	28	13.0	9	2.0	10
032	32	46	48	42(42)	48(48)	30	13.0	9	2.0	10
035	35	49	51	45(44)	51(50)	30	13.0	10	2.0	10
040	40	56	60	50(51)	56(58)	36	14.0	11	2.0	12
045	45	61	65	55(56)	61(63)	37	14.0	11	2.0	12
050	50	66	70	60(62)	66(70)	45	15.0	12	2.5	12
055	55	71	75	65(67)	71(75)	45	15.0	12	2.5	12
060	60	76	85	72(72)	78(80)	52	16.0	13	2.5	12
065	65	83	90	77(77)	83(85)	52	16.0	13	2.5	12
070	70	90	95	81(83)	90(92)	52	18.0	15	2.5	13
075	75	95	104	86(88)	95(97)	57	18.0	15	2.5	13
080	80	100	109	91(95)	100(105)	57	17.0	15	3.0	13
085	85	105	114	96(100)	105(110)	57	18.0	15	3.0	13
090	90	110	119	101(105)	110(115)	60	18.0	15	3.0	13
095	95	115	124	106(110)	115(120)	60	18.0	15	3.0	13
100	100	120	129	116(115)	125(125)	60	20.0	17	3.0	14

\* Note: ( ) DIN Standard





● Performance

- Max Pressure ..... 12kg/cm<sup>2</sup>
- Max Temperature ..... -20 ~ 200°C
- Max Speed ..... 20m/s
- Max Viscosity ..... 150,000cp
- Slurry ..... 7wt%

● Application

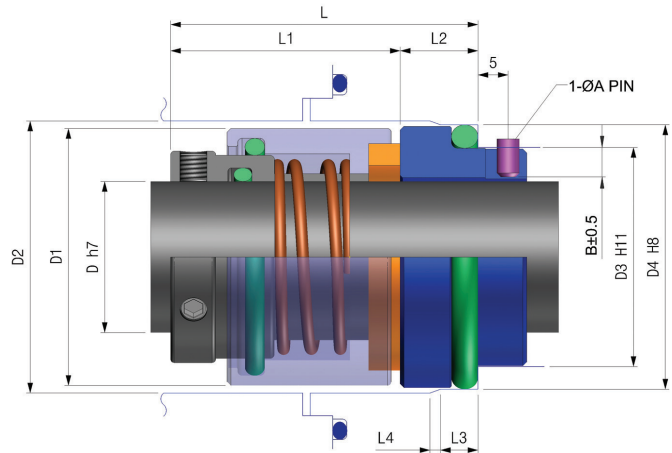
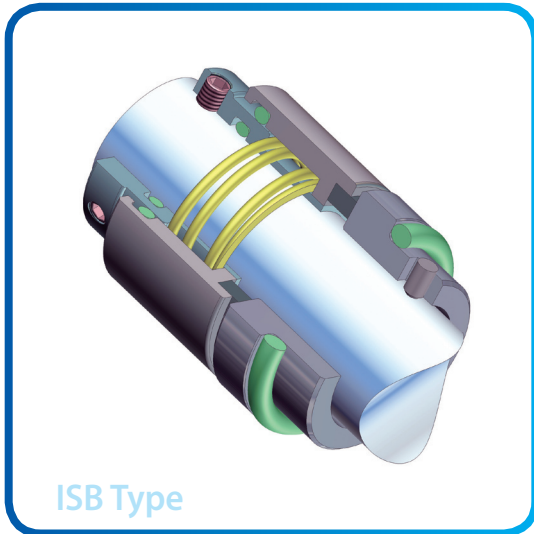
- High Viscosity Fluid, Oil
- Clean Water, Sea Water
- Crystallized Acid
- Alkali, Salt

● Material

- Seal Face ..... Sic to Carbon  
..... Sic to Sic
- O-Ring ..... VITON, NBR etc
- Metal ..... SUS304, SUS316

● Dimensions

SIZE	D	D1	D2	D2'	D3	D3'	L1	L2	L3	L4
020	20	34	36	29	42	35	41	23	18	9.5
022	22	36	38	31	44	37	41	23	18	9.5
025	25	39	41	34	47	40	43	23	18	9.5
028	28	42	44	37	50	43	45	23	18	9.5
030	30	44	46	39	52	45	45	23	18	9.5
032	32	46	48	42	54	48	45	23	18	9.5
035	35	49	51	44	57	50	49	23	18	9.5
038	38	54	58	49	64	56	53	25	20	10
040	40	56	60	51	66	58	55	25	20	10
043	43	59	63	54	69	61	55	25	20	13.5
045	45	61	65	56	71	63	55	25	20	13.5
048	48	64	68	59	74	66	55	25	20	13.5
050	50	66	70	62	76	70	60	25	20	14
052	52	68	72	-	78	-	61	25	20	-
055	55	71	75	67	81	75	61	25	20	14
058	58	76	83	70	89	78	63	28	22	14
060	60	78	85	72	91	80	63	28	22	14
065	65	84	90	77	96	85	67	28	22	14
068	68	87	93	81	99	90	67	30	24	17.5
070	70	90	95	83	101	92	68	30	24	17.5
075	75	95	104	88	110	97	72	30	24	17.5
080	80	100	109	95	115	105	72	31	25	17.5
085	85	107	114	100	120	110	77	31	25	17.5
090	90	112	119	105	125	115	77	31	25	17.5
095	95	119	124	110	130	120	82	31	25	17.5
100	100	124	129	115	135	125	82	31	25	17.5



### ● Performance

Max Pressure ..... 25kg/cm<sup>2</sup>  
 Max Temperature ..... -30 ~ 200°C  
 Max Speed ..... 20m/s  
 Max Viscosity ..... 300,000cp  
 Slurry ..... 7wt%

### ● Application

- Crystallized Acid
- Alkali, Salt
- High Slurry Water
- High Viscosity Oil

### ● Material

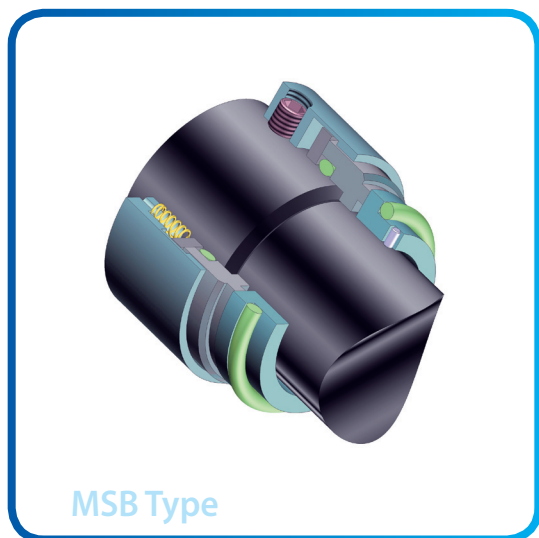
Seal Face ..... Carbon to Sic  
 ..... Sic to Sic  
 O-Ring ..... VITON, NBR etc  
 Metal ..... SUS304, SUS316

### ● Dimensions

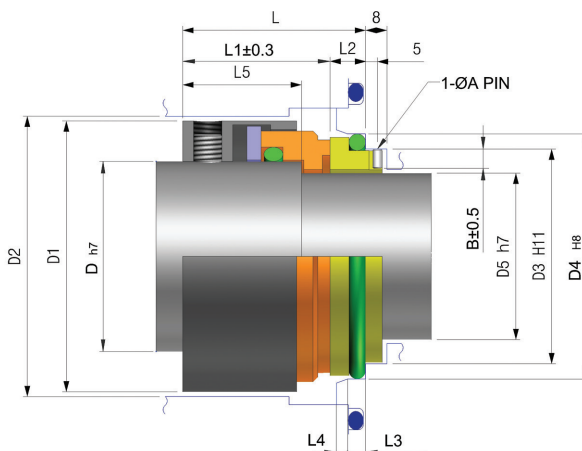
SIZE	D	D1	D2	D3	D4	L	L1	L2	L3	L4	A	B
014	14	28	30	21	25	35	28.5	6.5	5	2.0	-	-
020	20	34	36	29	35	37.5	28.5	9.0	5	2.0	-	-
022	22	36	38	31	37	37.5	28.5	9.0	5	2.0	-	-
024	24	38	40	33	39	40.0	30.5	9.5	5	2.0	-	-
025	25	39	41	34	40	40.0	30.5	9.5	5	2.0	-	-
028	28	42	44	37	43	42.5	32.0	10.5	5	2.0	-	-
030	30	44	46	39	45	42.5	32.0	10.5	5	2.0	3	3.5
032	32	46	48	42	48	42.5	32.0	10.5	5	2.0	3	3.5
033	33	47	49	42	48	42.5	32.0	10.5	5	2.0	3	3.5
035	35	49	51	44	50	42.5	32.0	10.5	5	2.0	3	3.5
038	38	54	58	49	56	45.0	33.5	11.5	6	2.0	4	4.0
040	40	56	60	51	58	45.0	33.5	11.5	6	2.0	4	4.0
043	43	59	63	54	61	45.0	33.5	11.5	6	2.0	4	4.0
045	45	61	65	56	63	45.0	33.5	11.5	6	2.0	4	4.5
048	48	64	68	59	66	45.0	33.5	11.5	6	2.0	4	4.5
050	50	66	70	62	70	47.5	34.5	13.0	6	2.5	4	4.5
053	53	69	73	65	73	47.5	34.5	13.0	6	2.5	4	5.0
055	55	71	75	67	75	47.5	34.5	13.0	6	2.5	4	5.0
058	58	78	83	70	78	52.5	39.0	13.5	6	2.5	4	5.0
060	60	80	85	72	80	52.5	39.0	13.5	6	2.5	4	5.0
063	63	83	88	75	83	52.5	39.0	13.5	6	2.5	4	5.0
065	65	85	90	77	85	52.5	39.0	13.5	6	2.5	4	5.0
068	68	88	93	81	90	52.5	39.0	13.5	7	2.5	4	5.0
070	70	90	95	83	92	60.0	45.0	15.0	7	2.5	4	5.0
075	75	99	104	88	97	60.0	45.0	15.0	7	2.5	4	5.0
080	80	104	109	95	105	60.0	45.0	15.0	7	3.0	4	6.0
085	85	109	114	100	110	60.0	44.0	16.0	7	3.0	4	6.0
090	90	114	119	105	115	65.0	49.0	16.0	7	3.0	4	6.0
095	95	119	124	110	120	65.0	49.0	16.0	7	3.0	4	6.0
100	100	124	129	115	125	65.0	49.0	16.0	7	3.0	4	6.0







MSB Type



### ● Performance

Max Pressure	35kg/cm <sup>2</sup>
Max Temperature	-20 ~ 200°C
Max Speed	20m/s
Max Viscosity	500cp
Slurry	0.5wt%

### ● Application

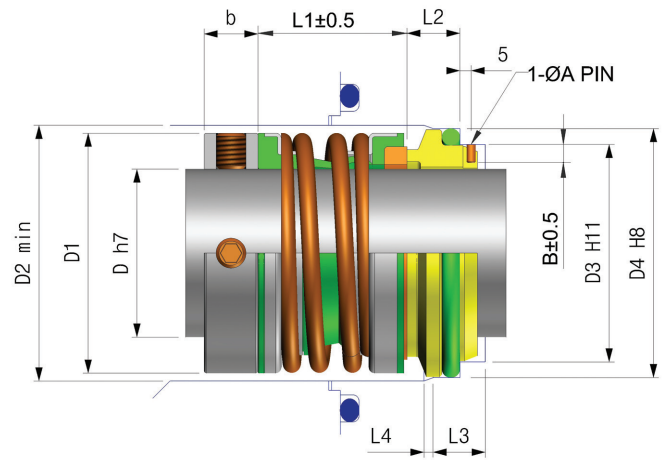
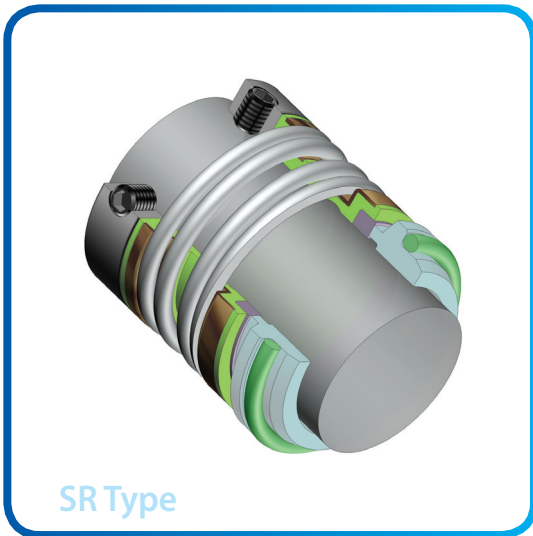
- Non Crystallized Acid
- Alkali, Salt
- Low Slurry Water
- Low Viscosity Oil

### ● Material

Seal Face	Carbon to Sic
	Sic to Sic
O-Ring	VITON, NBR etc
Metal	SUS304, SUS316

### ● Dimensions

SIZE	D	D1	D2	D3	D4	D5	L	L1	L2	L3	L4	L5	A	B
025	25	39	41	29	35	20	44	34	10	5.5	2.0	24	3	3.5
028	28	42	44	33	39	24	44	34	10	5.5	2.0	24	3	3.5
030	30	44	46	34	40	25	44	34	10	5.5	2.0	24	3	3.5
032	32	46	47	37	43	27	44	34	10	5.5	2.0	24	3	3.5
033	33	47	49	37	43	28	44	34	10	5.5	2.0	24	3	3.5
035	35	49	51	39	45	30	44	34	10	5.5	2.0	24	3	3.5
038	38	55	58	42	48	33	45	35	10	5	2.0	25	3	3.5
040	40	57	60	44	50	35	45	35	10	5	2.0	25	3	3.5
042	42	59	62	49	56	37	48	37	11	5	2.0	25	4	4.0
043	43	60	63	49	56	38	48	37	11	5	2.0	25	4	4.0
045	45	62	65	51	58	40	48	37	11	5	2.0	25	4	4.5
048	48	65	68	54	61	43	48	37	11	5	2.0	25	4	4.5
050	50	67	70	56	63	45	48	37	11	6	2.0	25	4	4.5
053	53	70	73	59	66	48	48	37	1	6	2.0	25	4	4.5
055	55	72	75	62	70	50	50	37	13	6	2.5	25	4	4.5
060	60	77	85	67	75	55	50	37	13	6	2.5	25	4	5.0
063	63	80	88	70	78	58	50	37	13	6	2.5	25	4	5.0
065	65	82	90	72	80	60	50	37	13	6	2.5	25	4	5.0
070	70	87	95	77	85	65	50	37	13	6	2.5	25	4	5.0
075	75	92	104	83	92	70	53	38	15	7	2.5	25	4	5.0
080	80	97	109	88	97	75	53	38	15	7	2.5	25	4	5.0
085	85	102	114	95	105	80	53	37.5	15.5	7	3.0	25	4	6.0
090	90	107	119	100	110	85	53	37.5	15.5	7	3.0	25	4	6.0
095	95	112	124	105	115	90	53	37.5	15.5	7	3.0	25	4	6.0
100	100	117	129	110	120	95	53	37.5	15.5	7	3.0	25	4	6.0



● Performance

- Max Pressure ..... 20kg/cm<sup>2</sup>
- Max Temperature ..... -20 ~ 150°C
- Max Speed ..... 10m/s
- Max Viscosity ..... 200,000cp
- Slurry ..... 7wt%

● Application

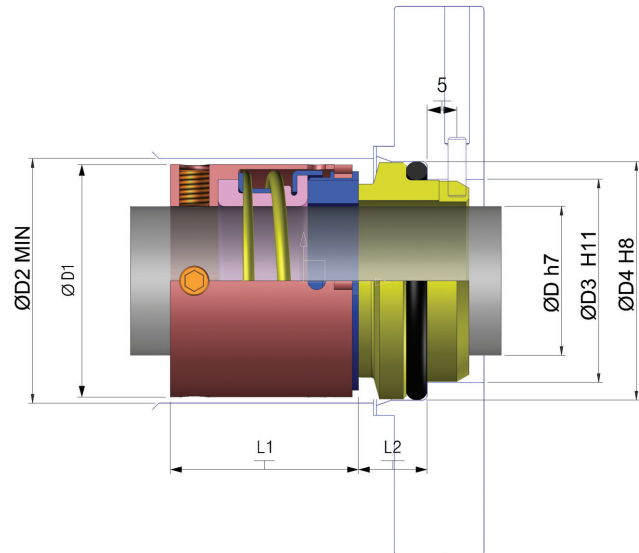
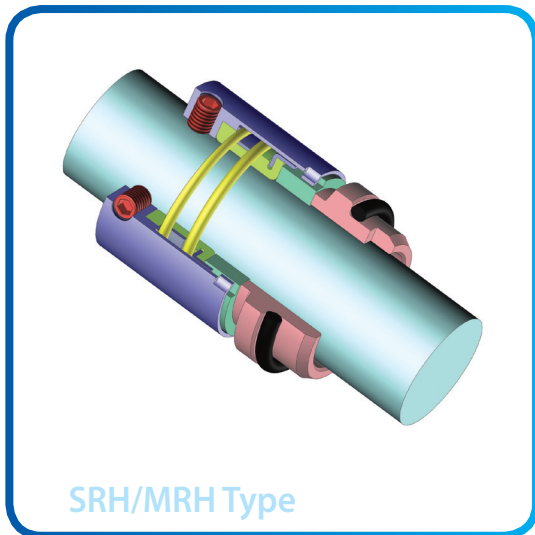
- Water, Sea Water, Oil
- Media Containing Fluid
- Waste Water
- Sewage Application
- High Viscosity Polymer
- Pulp, Paint

● Material

- Seal Face ..... Sic to Carbon
- ..... Sic to Sic
- O-Ring, RB ..... VITON, NBR etc
- Metal ..... SUS304, SUS316

● Dimensions

SIZE	D	D1	D2	D3	D4	L1	L2	b	L3	L4	A	B
012	12	22	24	19	23	26.5	10.0	10.0	4	1.2	-	-
015	15	25	27	23	27	29.0	10.0	10.0	4	1.5	-	-
020	20	34	36	29	35	31.5	10.0	10.0	5	1.5	-	-
025	25	39	41	34	40	34.0	10.0	10.0	5	1.5	-	-
030	30	44	46	39	45	32.5	10.0	10.0	5	1.5	-	-
035	35	49	51	44	50	32.5	10.0	10.0	5	1.5	-	-
040	40	56	60	51	58	34.5	10.5	10.0	6	1.5	-	-
045	45	61	65	56	63	33.2	11.8	12.0	6	2.5	-	-
050	50	66	70	62	70	32.8	14.7	12.0	6	2.5	-	-
055	55	72	75	67	75	36.0	11.5	12.0	6	2.5	-	-
060	60	78	85	72	80	37.5	15.0	12.0	6	2.5	4	5
065	65	83	90	77(75.2)	85(81.2)	39.0	16.5	13(20.5)	6	2.5	4	5
070	70	88	85	83(79.9)	92(85.9)	46.5	16.5	13.0	7	2.5	4	5
075	75	95	104	88	97	46.0	18.0	13.0	7	2.5	4	5
080	80	99.5	109	95	105	46.0	18.2	13.0	7	2.5	4	6
085	85	109	114	100	110	47.5	18.2	13.0	7	2.5	4	6
090	90	114	119	105(103.8)	115(109.8)	52.5	18.2	14(21.3)	7	2.5	4	6
095	95	119	124	110	120	52.5	17.2	14.0	7	2.5	4	6
100	100	124	129	115	125	52.5	17.2	14.0	7	2.5	4	6



### ● Performance

- Max Pressure ..... 30kg/cm<sup>2</sup>
- Max Temperature ..... -30 ~ 200°C
- Max Speed ..... 20m/s
- Slurry ..... 7wt%

### ● Application

- Water, Sea Water, Oil
- Media Containing Fluid
- Waste Water
- Sewage Application
- High Viscosity Polymer
- Pulp, Paint

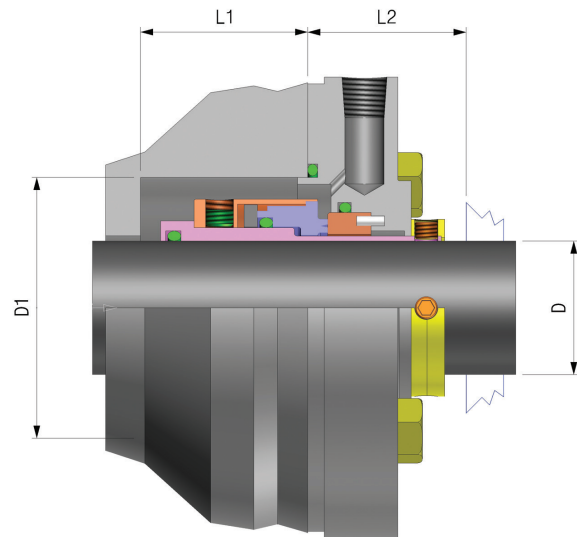
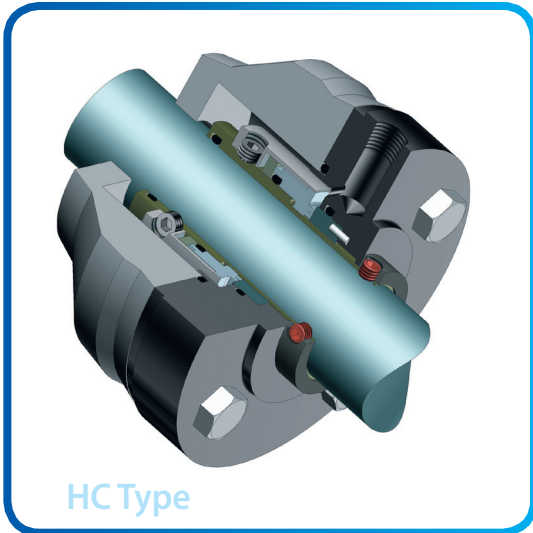
### ● Design Feature

- Single Spring / Multi-Spring Applicable
- Automatic alignment in abnormal shaft movement (run-out, seal face wear, equipment vibration)
- Mechanical Direct Drive : Eliminate overstress of the rubber bellows and reduce seal face slanting
- Non-clog of coil spring : Not affected by build up of solid.
- Special balance : Allow higher pressure and temperature.
- Being the most suitable Seal in large bore double suction pump, waste water, media containing water.
- Being possible cartridge seal solution.

### ● Dimensions

※ Please contact us if you need detail things.





## ● Performance

Max Pressure	20kg/cm <sup>2</sup>
Max Temperature	-40 ~ 200°C (No cooling below 170°C)
Max Speed	25m/s
API PLAN 11 ( API PLAN 21 Over 170°C)	

## ● Application

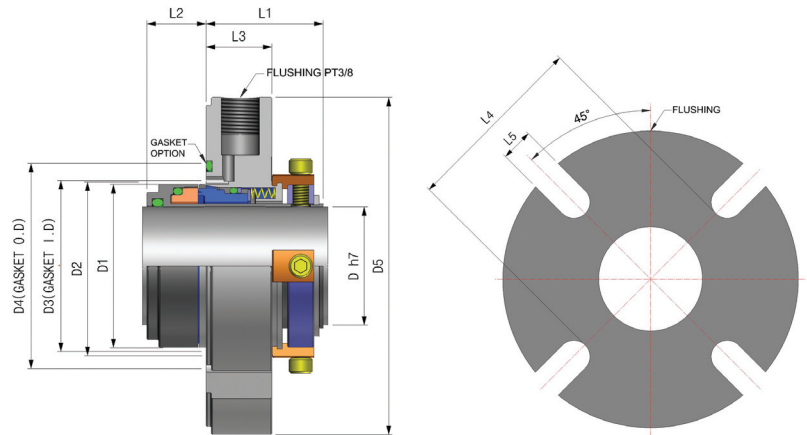
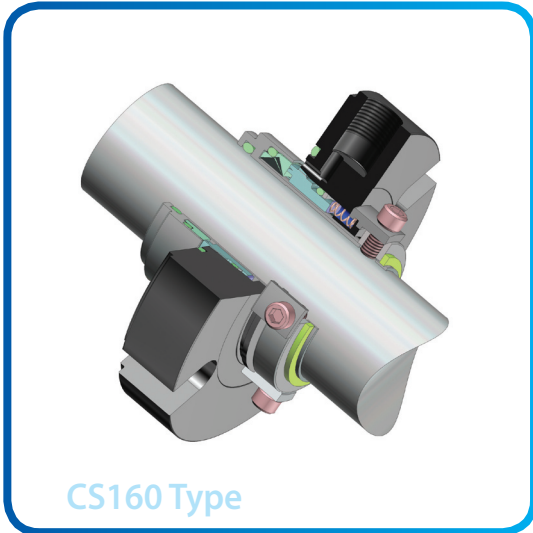
- Boiler circulation pump
- Boiler feed water pump
- Flowserve “QB” Series
- Compatible

## ● Design Feature

- High duty narrow rotating face design
- Spring holder pumping ring design option
- High balance seal face
- Multi flush option
- Lube design reduce heat generation Only API PLAN 11 Below 170°C ( API PLAN 21 Over 170°C)

## ● Dimensions

※ Please contact us if you need detail things.



### ● Performance

Max Pressure .....	20kg/cm <sup>2</sup>
Max Temperature .....	-30 ~ 200°C
Max Speed .....	25m/s
Slurry .....	0.5wt%

### ● Application

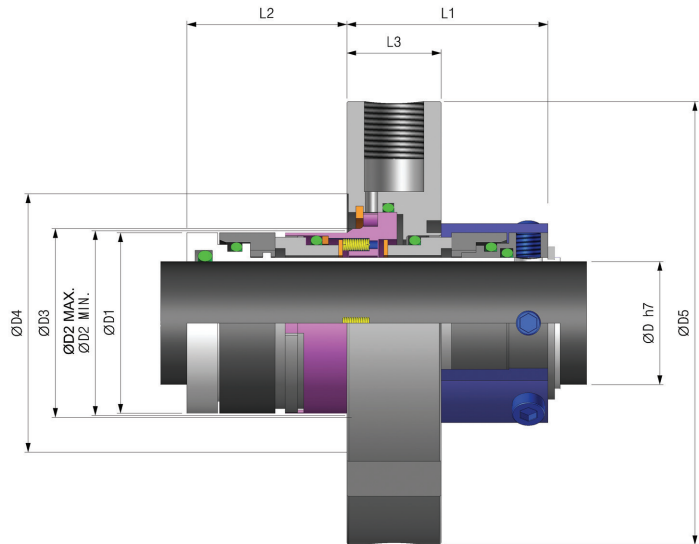
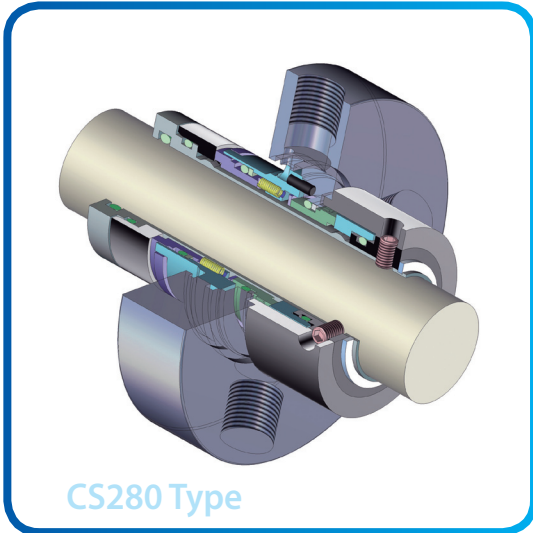
- Water, Slurry Water
- Non Crystallizing Acid,
- Salt
- Alkali, Hydrocarbon
- Hot Water

### ● Design Feature

- Single Cartridge Seal / Quenching option
- Multi-spring isolated fluid Mechanism
- Totally non fretting design
- Narrow Seal Face
- Available improvement conventional seal without modification of seal box

### ● Dimensions

※ Please contact us if you need detail things.



### ● Performance

Max Pressure	20kg/cm <sup>2</sup>
Max Temperature	-30 ~ 200°C
Max Speed	20m/s
Slurry	0.5wt%

### ● Application

- Water, Slurry Water
- Non Crystallizing Acid,
- Salt
- Alkali, Hydrocarbon,
- Hot Water

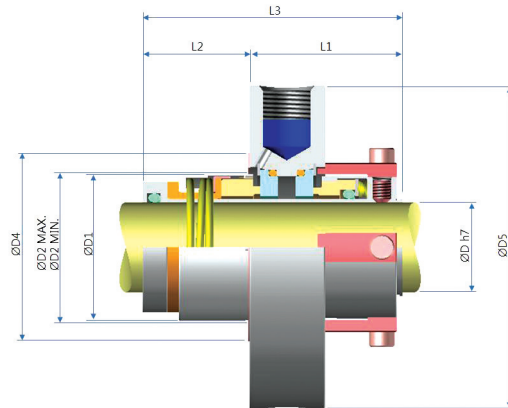
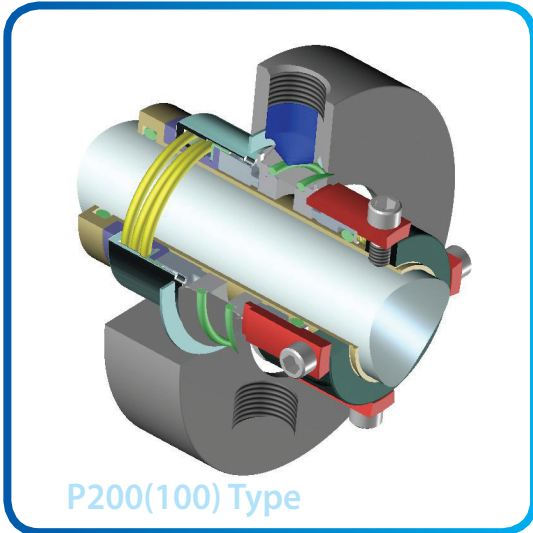
### ● Design Feature

- Back to back double cartridge seal design
- Multi-spring isolated fluid Mechanism
- Totally non treeting design
- Narrow Seal Face
- Available improvement conventional seal without modification of seal box

### ● Dimension

※ Please contact us if you need detail things.





● **Performance**

- Max Pressure ..... 16kg/cm<sup>2</sup>
- Max Temperature ..... -30 ~ 160°C
- Max Speed ..... 20m/sec
- Slurry ..... 30wt%

● **Application**

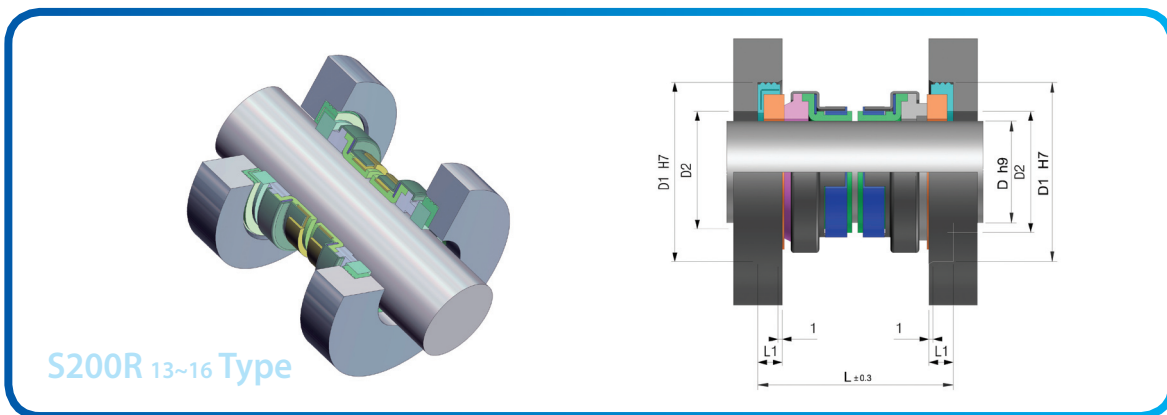
- High Viscosity Fluid
- Pulp, Paint Shop
- Media Containing Fluid
- Waste Water
- Water, Sea Water, Oil
- Sewage Application

● **Design Feature**

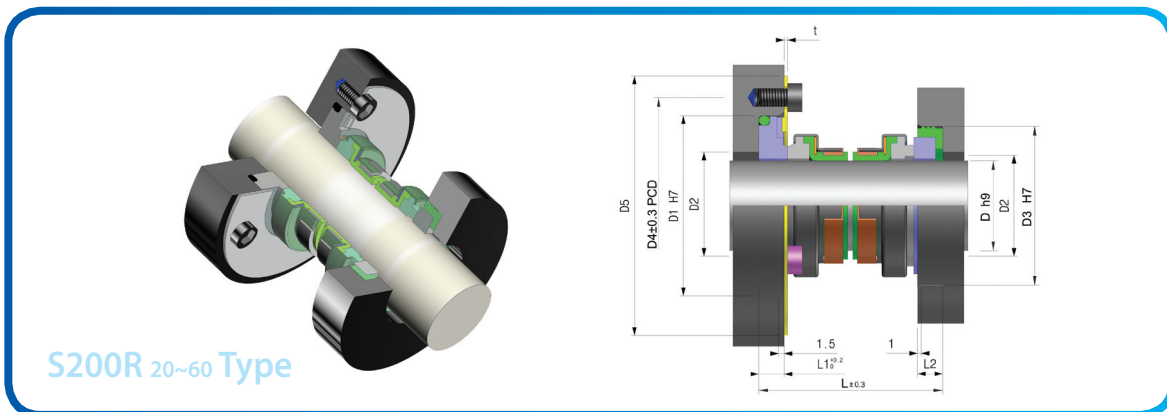
- Single Spring / Multi / Spring Applicable(Based on MRH/SRH)
- Automatic alignment in abnormal shaft movement (run-out, seal face wear, equipment vibration)
- Mechanical Direct Drive : Eliminate overstress of the rubber bellows and reduce seal face slanting
- X-100, X-200 Completely Compatible

● **Dimensions**

※ Please contact us if you need detail things.



S200R 13~16 Type



S200R 20~60 Type

### ● Performance

Max Pressure ..... 3kg/cm<sup>2</sup>  
 (Below ø 19 : 2kg/cm<sup>2</sup>)  
 Max Temperature ..... -20 ~ 70°C  
 Max Speed ..... 10m/s

### ● Application

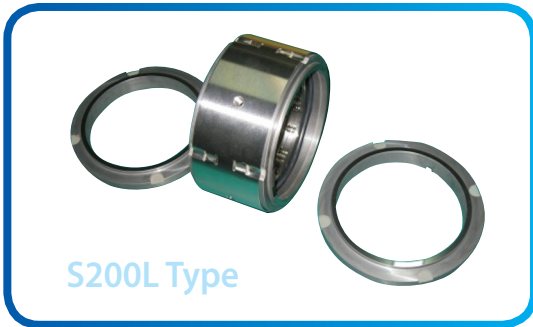
- Submersible Pump
- Submersible Waste Water Pump

### ● Material

Seal Face .....  
 Sic to Sic / Carbon to Ceramic  
 Sic to Sic / Carbon to Sic  
 Rubber Bellows ..... NBR  
 Metal ..... SUS304

### ● Dimension

SIZE	D	D1	D2	D3	D4	D5	L	L1	L2	t
13	13	25	17	-	-	-	36	5	-	-
14	14	30	20	-	-	-	36	5	-	-
15	15	30	20	-	-	-	36	5	-	-
16	16	30	20	-	-	-	36	5	-	-
20	20	44	23	38	60	72	49	7	7	1.0
25	25	50	28	44	60	72	51	7	7	1.0
30	30	57	33	50	70	82	59	9	8	1.0
35	35	64	38	58	80	94	61	9	8	1.2
40	40	70	43	64	85	100	64.5	11	9	1.2
45	45	70	48	66	90	105	65	10	9	1.0
50	50	80	53	72	95	109	69.5	10	9	1.2
60	60	95	63	85	110	125	85.0	13	15	1.2
70	70	105	73	95	120	135	85.0	13	15	1.2



S200L Type

### Performance

- Max Pressure ..... 12kg/cm<sup>2</sup>
- Max Temperature ..... -50 ~ 200°C
- Max Speed ..... 20m/s

### Application

- Submersible Pump
- Water, Oil, etc
- Media containing solid in waste water and sewage applications

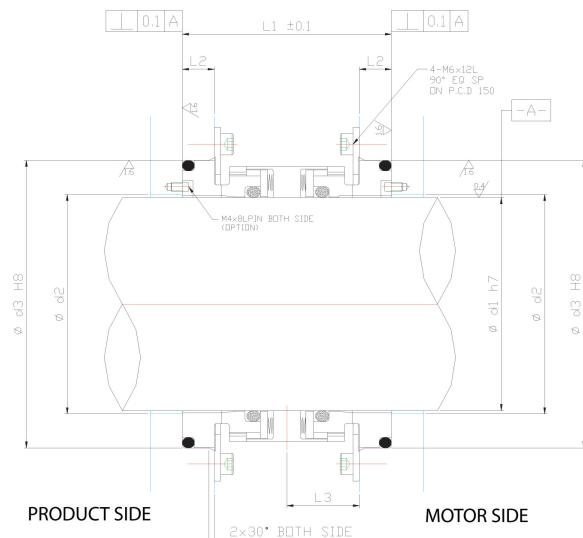
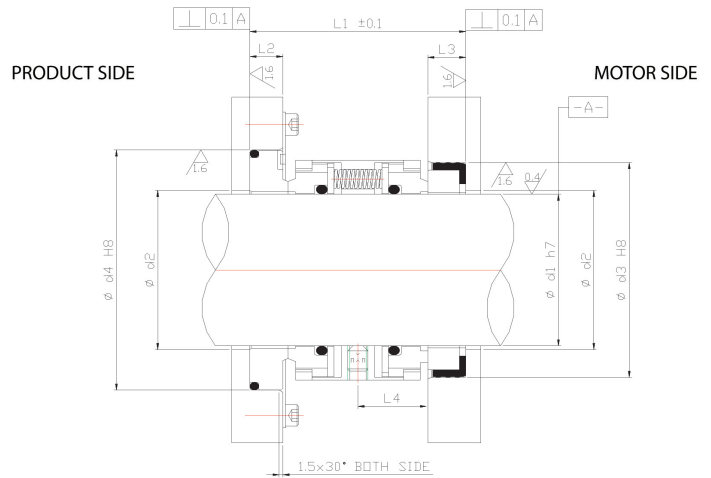
### Design Feature

- Free load structure and easy installation.
- No need any power or instrument when installation.
- Easy installation.
- Least effect reducing of sealing force depending on wear of seal face.
- Long life time.

### Dimensions

SIZE	d1	d2	d3	d4	L1	L2	L3	L4
035	35	38.0	54	54(57)	60	8.5	8.0	[21.5]
040	40	43.0	68	68(70)	65	10.5	9.0	[22.5]
045	45	48.0	68	68(70)	65	10.5	9.0	[22.5]
050	50	53.0	75	75(80)	75	10.0	12.0	[25.0]
060	60	63.0	85	85(95)	85	13.0	15.0	[27.5]
070	70	73.0	95	95(105)	85	13.0	15.0	[27.5]
080	80	83.0	115	-	98(105)	15.0	[34.0]	-
090	90	93.0	125	-	98(105)	15.0	[34.0]	-
100	100	103.0	135	-	98(105)	15.0	[34.0]	-
110	110	113.0	145	-	102(105)	15.0	[36.0]	-
120	120	123.0	155	-	102(105)	15.0	[36.0]	-
130	130	133.0	165	-	105	15.0	[37.5]	-
140	140	143.0	175	-	105	15.0	[37.5]	-
150	150	153.0	182	-	105	16.0	[36.5]	-
160	160	163.0	195	-	106	16.0	[37.0]	-
170	170	173.0	207	-	106	16.0	[37.0]	-
180	180	183.0	220	-	106	16.0	[37.0]	-

NOTE. 1. ( ) DEPENDING ON CUSTOMER.  
2. [ ] REFERENCE DIMENSION.





**Overseas Sales & Marketing**



*Purpose & Passion*

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