



**PRODUCT ENGINEERING / V & SB
TECHNICAL DELIVERY CONDITIONS FOR
SUBDELIVERY COMPONENTS OF SOOT BLOWERS**

TSB : 021

Rev. 03

SHEET No. 01 of 04

OIL SEALS

1. **Application** : Used to prevent the leakage of oil and penetration of dust or both and other Harmful particles along the surface of the shaft in gear boxes.
2. **Material** :
 - a. As specified against the Part number.
 - b. Spring made up of austenitic stainless steel to AISI 304.
3. **Workmanship**: Sealing lip shall be well finished, free from burrs, and sharp edges. The shaft / housing should be finished to 3.2 microns.
4. **For dimensions and tolerances refer Annexure 1 and NOTE AT THE END.**
5. **Weight** : Weights have been calculated based on the average density of the Respective material of oil seals as indicated in Annexure 2.
6. **Inspection & Testing** :

Inspection Shall be carried out at BHEL works by BHEL Inspector for the following:

 - a. Check for dimensions.
 - b. Visual inspection for surface defects in the sealing surfaces. Sealing face should be free from any surface defects like nicks, cuts, tears, etc.
 - c. Test certificate for the compliance of material specification is to be obtained from the Supplier.
7. **Packing & Despatch**: These components are to be packed in polythene covers and dispatched in cardboard boxes.
8. **Storage** : Seals shall be stored in a dust and ozone free atmosphere, not to be exposed to sunlight and to severe cold. Exposing to atmosphere will damage the material. Hence it is to be stored under covered area.
9. **Typical designation** : Oil seal of type B with Shaft $\phi 40$ mm and Housing $\phi 63$ mm with width 10 mm shall be designated as **Oil Seal B 40 x 63 x 10.**
10. **Markings** : Oil seal shall be legibly marked at a suitable place with shaft dia., Bore of the housing, Width and trade mark.
11. **Spares** : This is offered as main spares. 5% excess to be ordered for manufacturing reserve.

Rev:03 Dt.10/03/2007.

CONVERTED AS SOFT COPY.

Prepared (K. SRIDHARAN)

DATE:
10/03/2007.

Approved (S. NATARAJAN)

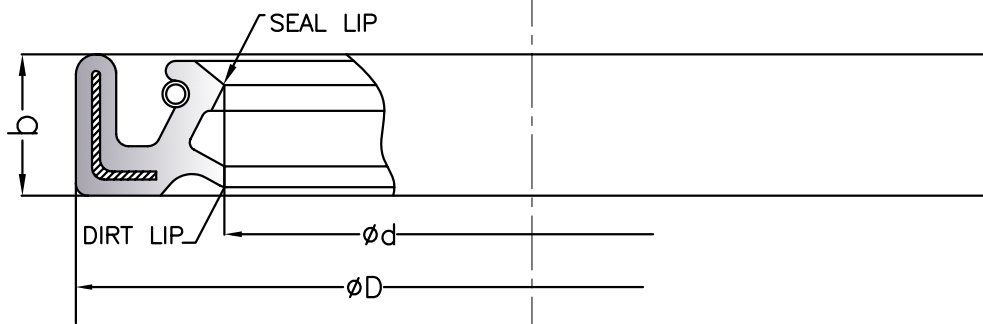


PRODUCT ENGINEERING / V & SB
TECHNICAL DELIVERY CONDITIONS FOR
SUB DELIVERY COMPONENTS OF SOOT BLOWERS

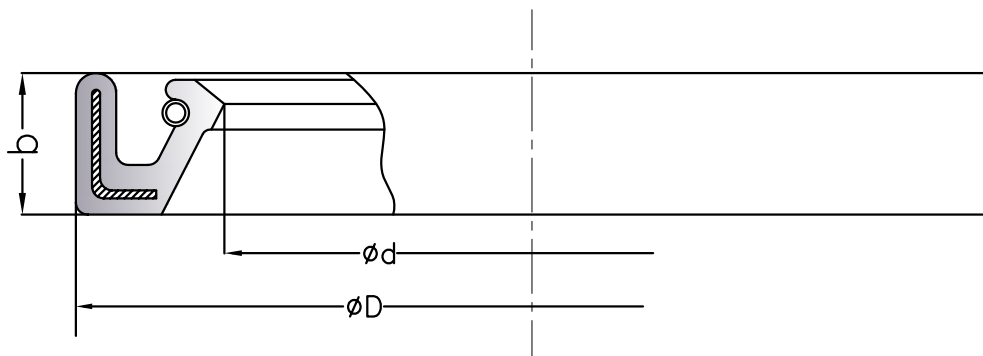
TSB : 021

REV. 03

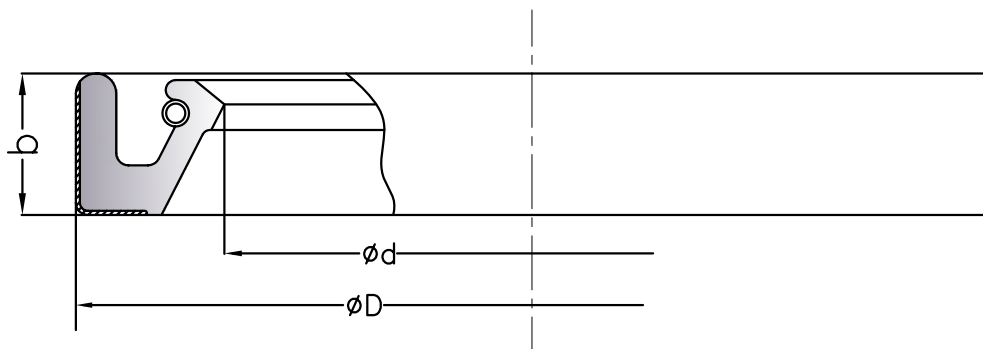
SHEET No. 02 OF 04



Type A- Moulded seal with Metal Insert; single spring Double Lip oil seal.



Type B- Moulded seal with Metal Insert spring loaded single Lip oil seal.



Type C- Moulded seal with External Metal strip spring loaded single Lip oil seal.

REV. 03 Dt. 10 / 03 / 2007.

CONVERTED AS SOFT COPY.

PREPARED (K.SRIDHARAN)

DATE :
10 / 03 / 2007

APPROVED (S.NATARAJAN)

ANNEXURE - I
DIMENSIONS OF THE OIL SEALS
ALL DIMENSIONS ARE IN MM

Material Code	Material	Description	Application	TYPE	SHAFT DIA (d1)		HOUSING DIA		WIDTH (b) ± 0.2	Tolerance on OD of the seal*	Ovality on OD of the seal*
					BASIC	TOLERANCE	BASIC	TOLERANCE			
96 353 067 0000	Nitrile	Oil Seal A40 x 63 x 12	a. Two Nos.Per long retract – IE b. One No. Per furnace probe	A	40	+0.011 -0.005	63	0.000 -0.025	12	+ 0.3 + 0.2	0.1
96 353 066 0000	Nitrile	Oil Seal B42 x 63 x 10	a. Two Nos.Per long retract b. One No. Per furnace probe	B	42	±0.05	63	0.000 -0.025	10	+ 0.3 + 0.2	0.1
96 353 159 0000	Nitrile	Oil Seal B30 x 47 x 7	3 Nos.Per Rotary Blower.	B	30	+0.028 +0.015	47	±0.02	7	+ 0.25 + 0.15	0.05
96 353 082 0000	Nitrile	Oil Seal B20 x 32 x 7	1 Nos.Per Wall deslagger.	B	20	-0.020 -0.053	32	+0.059 0.000	7	+ 0.25 + 0.15	0.05
96 353 083 0000	Nitrile	Oil Seal B12.5 x 25 x 8	1 Nos.Per Wall deslagger.	B	12.5	0 -0.027	25	+0.033 0.000	8	+ 0.25 + 0.15	0.05
96 353 311 0000	Viton	Oil Seal C106.4 x 150 x 12	1 Nos.Per LRD II E & II ES.	C	106.4	-0.025 -0.050	150	±0.025	12	± 0.2	0.1
96 353 310 0000	Viton	Oil Seal C98.5 x 140 x 12	1 Nos.Per LRD II E & II ES.	C	98.5	+0.070 -0.030	140	±0.025	12	± 0.2	0.1
96 353 419 0000	Viton	Oil Seal A85 x 120 x 16	LRS IE	A	85	-0.056 -0.080	120	±0.040	16	± 0.13	0.1

* TO BE DECIDED BY THE SUPPLIER TO HAVE EFFECTIVE SEALING.

NOTE :

01. The dimensions Ød and ØD of the seal shall be as decided by the supplier to suit the mating dimensions of the shaft and housing bore for effective sealing.
The interference between Ød & Ød1 (Shaft Dia) can range from 1.25 mm to 3.75 mm.
02. The drawing shows only the overall dimensions. The design of the oil seal is the responsibility of the supplier for its satisfactory performance.

PREPARED (K. SRIDHARAN)

APPROVED (S. NATARAJAN)

TSB : 021 REV. 03
SHEET No. 04 OF 04
DATE: 10/03/2007

ANNEXURE - II
WEIGHTS OF THE OIL SEALS

Material Code	Material	Description	Wt. / piece in grams		
			Material		
			NITRILE	NEOPRENE	VITON
			Average Density (gm/cc)		
			1.5±0.1	1.61±0.1	1.87±0.1
96 353 067 0000	Nitrile	Oil Seal A40 x 63 x 12	32.7	34.8	40.3
96 353 066 0000	Nitrile	Oil Seal B42 x 63 x 10	30	32.3	37.4
96 353 159 0000	Nitrile	Oil Seal B30 x 47 x 7	12.5	13.5	15.6
96 353 082 0000	Nitrile	Oil Seal B20 x 32 x 7	8.55	9.3	10.6
96 353 083 0000	Nitrile	Oil Seal B12.5 x 25 x 8	5.56	5.95	6.9
96 353 311 0000	Viton	Oil Seal C106.4 x 150 x 12	-	-	~100.00
96 353 310 0000	Viton	Oil Seal C98.5 x 140 x 12	-	-	~85.00
96 353 419 0000	Viton	Oil Seal A85 x 120 x 16	-	-	~60.00

PREPARED (K. SRIDHARAN)

APPROVED (S. NATARAJAN)