

RETRACED FROM DRG. No. M45-0468F TO M45-0472F  
FOR HISTORY OF REVISIONS PLEASE REFER ORIGINAL DRAWING  
NOW NTI.

**TECHNICAL INSTRUCTIONS**

1. THESE IDLERS SHALL BE OF LIFE SEAL DESIGN WITHOUT ANY NEED FOR RE-GREASING.
2. BEARING SHALL BE OF SEIZE RESISTANT TYPE BBIB 420206 (30x62x14) OF 'SKF' OR EQUIVALENT OF 'FAG', 'TIMKEN', 'NTN', 'NSK', 'KOYO' & 'SNR' MAKE.
3. DIMENSIONS GIVEN IN THE DRAWING SHALL BE STRICTLY ADHERE TO & NO DEVIATION SHALL BE PERMITTED.
4. RADIAL RUN-OUT OF THE IDLER SHALL NOT BE MORE THAN 0.5 mm AT ANY POINT ALONG THE SHELL LENGTH.
5. ROLLER SHOULD ROTATE FREELY AND SMOOTHLY BY HAND ON ITS AXIS.
6. MAXIMUM PERMISSIBLE LATERAL MOVEMENT OF ROLLER IS 0.5 MM.
7. BLANK SPACE WITHIN SHIELD, LABYRINTH SET, HOUSING COVER AND BUSH SHALL BE FILLED UP WITH LITHIUM BASED LUBRICATING GREASE *of specified make*
8. THE NAME OF THE MANUFACTURER TO BE EMBOSSED AS SHOWN IN END VIEW OF THE DRAWING.
9. THE CONCENTRICITY OF BEARING HOUSING W.R.T. PIPE TO BE MAINTAINED AS SHOWN.
10. THE CHEMICAL COMPOSITION OF 45C8 IS: 7283-92 WILL BE AS PER IS: 1570 (PART-2/SEC-1)-1979
11. BEARING MUST NOT BE HEATED PRIOR TO MOUNTING & MUST ON NO ACCOUNT BE WASHED

**TABLE**

MELT WIDTH	TYPE	DIMENSIONS			SPINDLE		PIPE		ASSEMBLY	
		L	L1	L2	DRG.NO.	WT.KG	DRG.NO.	WT.KG	DRG.NO.	WT.KG
1600	BB-R-17-2	1800	1820	1870	M45-0477D	11.12	M45-0482D	35.24	M45-0472F	49.20
✓ 1400	BB-R-16-2	1600	1620	1670	M45-0476D	9.62	M45-0481D	31.32	M45-0471F	43.78
✓ 1200	BB-R-15-2	1400	1420	1470	M45-0475D	8.23	M45-0480D	27.4	M45-0470F	38.47
1000	BB-R-14-2	1150	1170	1220	M45-0474D	6.52	M45-0479D	22.51	M45-0469F	31.87
800	BB-R-13-2	950	970	1020	M45-0473D	5.81	M45-0478D	18.60	M45-0468 F	27.25

*Handwritten notes:*  
S.K. BHATTACHARYA  
J.P. SINGH  
DGM-PLD  
405  
20/10/97

DRG. NO.	POS. NO.	DESCRIPTION	QTY.	UNIT	TOTAL WT. IN KG.	MATERIAL	REMARKS
-	-	WELD METAL	-	-	0.020	M.S.	
M45-0466 B	13	END CAP	2	0.500	1.000	CI FG200 IS:210-93	
IS:2155-82	12	SNAP HEAD RIVET #6	2	0.008	0.016	HR BAR IS:148-82	
M45-0465	11	BUSH	2	0.006	0.012	NYLON-6	
M45-0464 B	10	HOUSING COVER	2	0.039	0.078	ORA IN SHEET IS:513-86	
M45-0463 B	9	OUTER LABYRINTH	2	0.015	0.030	NYLON-6	
M45-0462 A	8	INNER LABYRINTH	2	0.016	0.032	NYLON-6	
IS:2507-75	7	CIRCLIP LIGHT A30	2	0.012	0.024	BOC6 IS:2507-75	
BBIB 420206	6	SEIZE RESISTANT BALL BEARING 30x62x14	2	0.180	0.360	STD	SEE TI-2
M45-0467 C	5	DUST COVER	2	0.004	0.008	NYLON-6	
M45-0460 C	4	SHIELD	2	0.012	0.024	NYLON-6	
M45-0459 A	3	BEARING HOUSING	2	0.63	1.26	ORA IN SHEET IS:513-86	
SEE TABLE	2	PIPE (ERW)	1	SEE TABLE		YSE 240 IS:9295-93	
SEE TABLE	1	SPINDLE	1	SEE TABLE		45C8 IS:7283-92	

DRG. NO.	POS. NO.	DESCRIPTION	QTY.	UNIT	TOTAL WT. IN KG.	MATERIAL	REMARKS
-	-	BOTTOM ROLLER ASSY.	1	SEE TABLE		ASSLY.	11 SEE TABLE

**BOKARO STEEL PLANT**

SHOP: CD&BPP, RMHP, SP & BF

UNIT: BOTTOM ROLLERS

DESCRIPTION OF DRAWING: BOTTOM ROLLER #152.4mm

DRAWN	K.K.SINGH	DATE	OCT.-97
CHECKED	J.P.SINGH	JOB NO.	8730
SUBMITTED	J.SINGH	M45-0468F TO M45-0472F	
RECOMMENDED	C.P.MISTRY		
APPROVED			

AGREED TO

(B.B. RAM, DGM/HM(M))

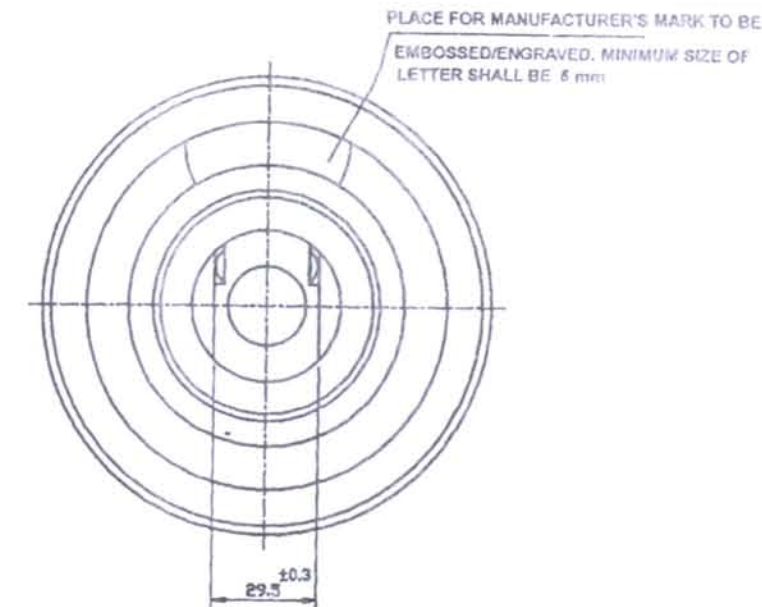
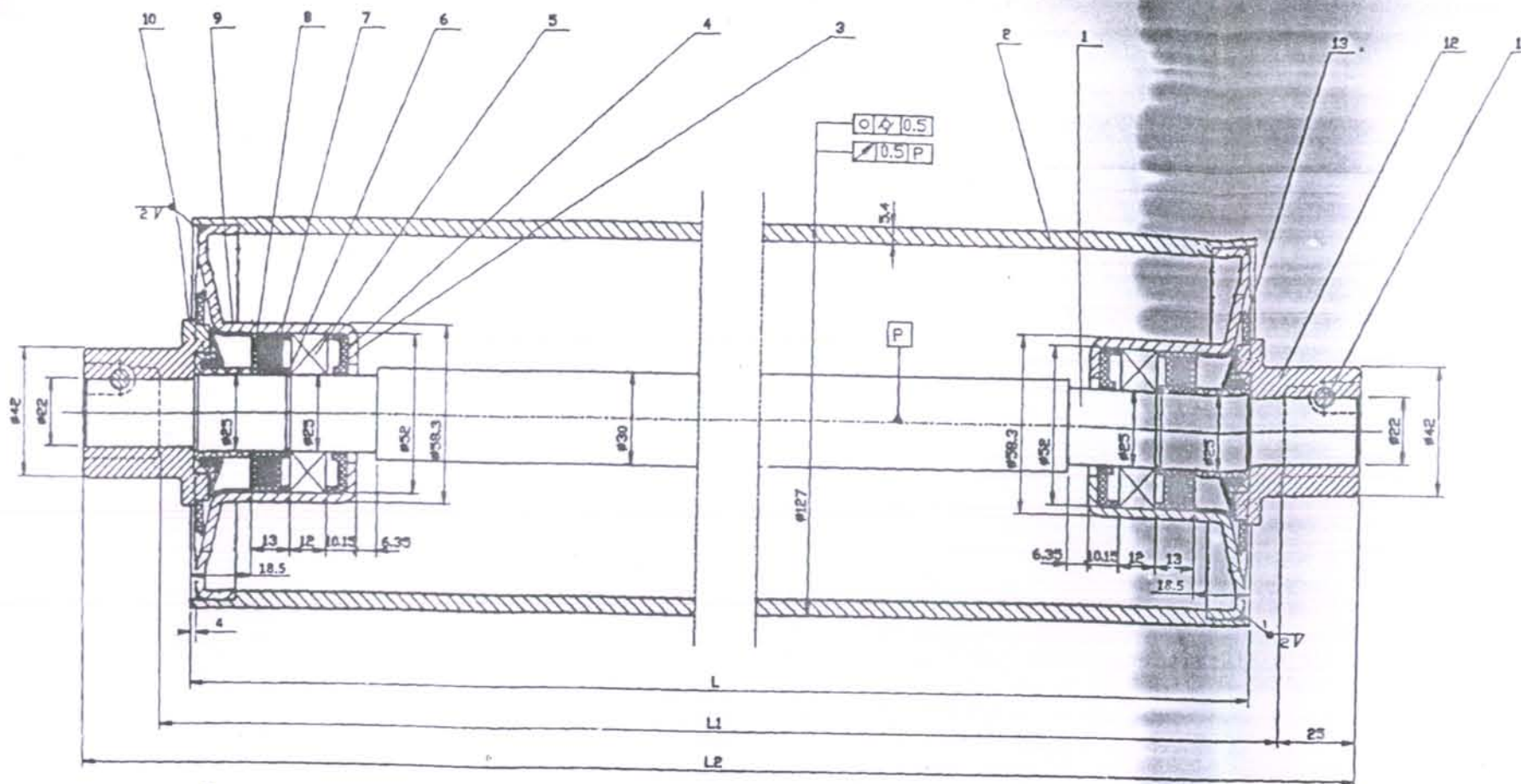
RECOMMENDED BY

(S. MOHAN, GM(MECH))

APPROVED

(K.D. TRIVEDI, GM(M&U))

REVISIONS			
DATE	SYMB	NAME	SIGN.



TABLE

BELT WIDTH	TYPE	L	L1	L2	DRG. NO.	WT. KG	DRG. NO.	WT. KG	DRG. NO.	WT. KG
1200	BB-R-25-2	1400	1420	1470	M45-0545 D	7.31	M45-0548 d	22.66	M45-0542 E	32.37
1000	BB-R-24-2	1150	1170	1220	M45-0544 D	5.92	M45-0547 d	18.61	M45-0541 E	26.93
800	BB-R-23-2	950	970	1020	M45-0543 D	4.8	M45-0546 d	15.38	M45-0540 E	22.58
		DIMENSIONS			SPINDLE		PIPE		ASSEMBLY	

TECHNICAL INSTRUCTIONS

- THESE IDLERS SHALL BE OF LIFE SEAL DESIGN WITHOUT ANY NEED FOR RE-GREASING.
- BEARING SHALL BE OF SEIZE RESISTANT TYPE BB/B 420206 (30x62x14) OF 'SKF' OR EQUIVALENT OF 'FAG', 'TIMKEN', 'NTN', 'NSK', 'KOYO' & 'SNR' MAKE.
- DIMENSIONS GIVEN IN THE DRAWING SHALL BE STRICTLY ADHERE TO & NO DEVIATION SHALL BE PERMITTED.
- RADIAL RUN-OUT OF THE IDLER SHALL NOT BE MORE THAN 0.5 mm AT ANY POINT ALONG THE SHELL LENGTH.
- ROLLER SHOULD ROTATE FREELY AND SMOOTHLY BY HAND ON ITS AXIS.
- MAXIMUM PERMISSIBLE LATERAL MOVEMENT OF ROLLER IS 0.3 mm.
- BLANK SPACE WITHIN SHIELD LABYRINTH SET HOUSING COVER AND BUSH SHALL BE FILLED UP WITH LITHIUM BASED LUBRICATING GREASE OF REPUTED MAKE.
- THE NAME OF THE MANUFACTURER TO BE EMBOSSED AS SHOWN IN END VIEW OF THE DRAWING.
- THE CONCENTRICITY OF BEARING HOUSING WITH PIPE TO BE MAINTAINED AS SHOWN.
- THE CHEMICAL COMPOSITION OF ALL STEELS SHALL BE AS PER IS 1501 PART 2/SEC-1-1979.
- BEARING MUST NOT BE HEATED PRIOR TO MOUNTING & MUST ON NO ACCOUNT BE WASHED.

RETRACTED FROM DRG. No. M45-0540E TO M45-0542E FOR HISTORY OF REVISIONS PLEASE REFER ORIGINAL DRAWING NOW HTL.

*(J.P.SINGH)*  
DGM/PLD  
*(N.K.JHA)*  
DGM/PLD

DRG. NO.	POST NO.	DESCRIPTION	QTY	UNIT	TOTAL WT. IN KG	MATERIAL	REMARKS
		WELD METAL	-	-	0.2	M.S.	
M45-0539	13	DUST COVER	2	0.002	0.004	NYLON-6	
M45-0538	12	END CAP	2	0.40	0.80	FG 200 IS-218-93	
IS-213-82	11	SNAP HEAD RIVET #6	2	0.006	0.012	HR BAR IS-148-82	
M45-0537	10	BUSH	2	0.005	0.010	NYLON-6	
M45-0536	9	HOUSING COVER	2	0.035	0.070	CR 10 SHEET IS-513-86	
M45-0535	8	OUTER LABYRINTH	2	0.013	0.026	NYLON-6	
M45-0534	7	INNER LABYRINTH	2	0.014	0.028	NYLON-6	
IS-213-82	6	CIRCLIP LIGHT A25	2	0.010	0.020	BOCS IS-2507-72	
IS-148-82	5	SEIZE RESISTANT BALL BEARING SIZE #25x#52x12	2	0.170	0.340	STD.	SEETI-2
M45-0532	4	SHIELD	2	0.014	0.028	NYLON-6	
M45-0531	3	BEARING HOUSING	2	0.52	1.04	CR 10 SHEET IS-513-86	
SEE TABLE	2	PIPE (ERW)	1	SEE TABLE		YS 240 IS-213-83	
SEE TABLE	1	SPINDLE	1	SEE TABLE		45CB IS-213-98	

POST NO.	DESCRIPTION	QTY	UNIT	TOTAL WT. IN KG	MATERIAL	ASSEMBLY DRG. NO.	SC.	DRG. NO.
	ROLLER ASSEMBLY	1	SEE TABLE					SEE TABLE

**BOKARO STEEL PLANT**

SHOP: CO&BPP, SP, RMHP, BF

UNIT: BOTTOM ROLLERS

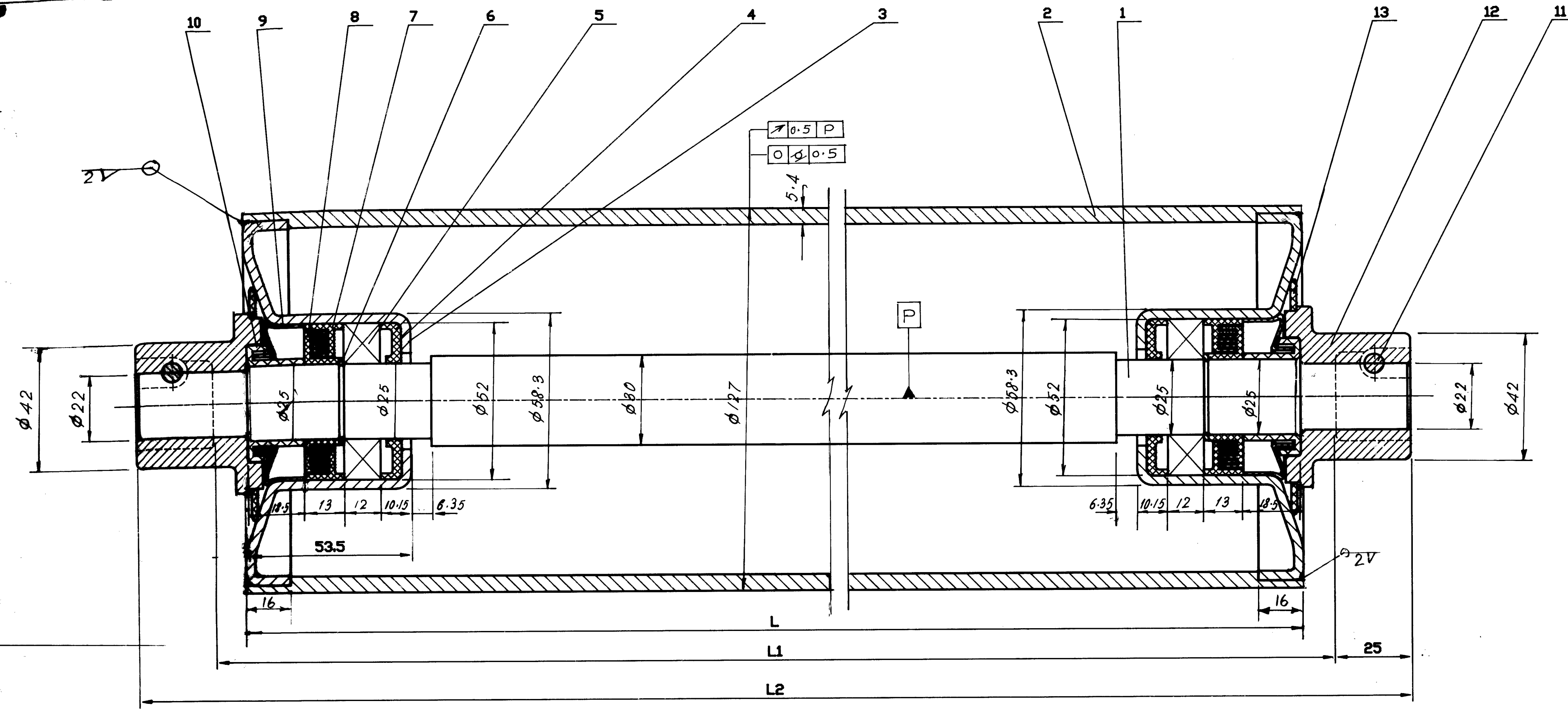
DESCRIPTION OF DRAWING: BOTTOM ROLLER (Ø127MM)

DRAWN	DJK	DATE	JAN'98
CHECKED	J.P.SINGH	JOB NO	8730
SUBMITTED	J.SINGH		
RECOMMENDED			M45-0540E TO
APPROVED			M45-0542E

RECOMMENDED BY: *(S. MOHAN)* GM(M&U)

APPROVED: *(K.D. TRIVEDI)* GM(M&U)

DATE	SYMB	NAME	SIGN.



PLACE FOR MANUFACTURER'S MARK TO BE EMBOSSED. MINIMUM SIZE OF LETTER SHALL BE 5mm.  
 (E) MARKING TO INCLUDE P.O. NO. WITH DATE.

TABLE

BELT WIDTH	TYPE	DIMENSIONS			SPINDLE		PIPE		ASSEMBLY	
		L	L1	L2	DRG. NO.	WT. KG	DRG. NO.	WT. KG	DRG. NO.	WT. KG
1200	B-RB-35-1	430	447	497	M45-0527	2.43	M45-0530D	6.90	M45-0524	11.738
1000	B-RB-34-1	360	377	427	M45-0526	2.04	M45-0529D	5.80	M45-0523	10.248
800	B-RB-33-1	290	307	357	M45-0525	1.60	M45-0528D	4.65	M45-0522	8.658

TECHNICAL INSTRUCTIONS:-

- ROLLER SHOULD ROTATE FREELY AND SMOOTHLY BY HAND ON ITS AXIS.
- PERMISSIBLE DEVIATION OF OUTER SURFACE OF OUTER PIPE w.r.t. SPINDLE AXIS IS 0.5MM.
- MAXIMUM PERMISSIBLE LATERAL MOVEMENT OF ROLLER IS 0.5MM.
- BLANK SPACE WITHIN SHIELD, LABYRINTH SET, HOUSING COVER, BUSH & 20% BEARING SPACE SHALL BE FILLED UP WITH HIGH QUALITY LITHIUM BASED LUBRICATING GREASE LITHIOL-2 OR EQUIVALENT OF REPUTED MAKE.
- NYLON 6 MATERIAL TO BE OF 20% GLASS FILLED AND SHOULD FULFILL THE FOLLOWING PROPERTIES:-
  - (a) YIELD STRENGTH (MPa) : 100
  - (b) SPECIFIC GRAVITY : 1.22-1.30
  - (c) TENSILE STRENGTH (MPa) : 200
  - (d) ELONGATION AT BREAK % : 300
  - (e) HARDNESS ROCK WELL : R150
  - (f) ULTIMATE THERMAL EXPANSION (COEFFICIENT  $K^{-1} \times 10^5$ ) : 8-8.3
  - (g) MELTING TEMPERATURE (°C) : 230

6. THE NAME OF THE MANUFACTURER TO BE EMBOSSED AS SHOWN IN END VIEW OF THE DRAWING.  
 MARKING TO INCLUDE P.O. NO. WITH DATE. (E)  
 7. ITEM TO BE PAINTED WITH TWO COATS OF RED OXIDE PAINT WITH TWO COATS OF WEATHER RESISTANT SYNTHETIC ENAMEL. SHADE OF COLOUR TO BE AS PER ORDERING SPECIFICATION.

AGREED TO

Sd/ D. J. RAMAIAH AGM I/C (M) RMHP  
 Sd/ D. N. MISHRA AGM I/C (M) RMHP  
 Sd/ N. V. KAMATH AGM I/C (M) SP  
 Sd/ G. L. GARG AGM I/C (M) CO&BPP

NOTE

BEARING SHOWN BE OF SKF OR FAG MAKE ONLY.  
 (C) BEARING POS NO 5 TO BE FROM SKF/FAG/ABL/NTN/SPZ ONLY. (Basis of this is Technical Details provided to Committee and approved by GM (Mnt) - Maint)  
 XIDE-1784 DT 3.3.03. (d)  
 \* Bharat Petroleum Corporation Ltd, M/S. Balmer Lawrie & Co Ltd., Bharat shell Ltd., Hindustan petroleum corporation Ltd., I.B.P. Company Ltd., IOC Ltd., Tide Water Oil CO. (India) Ltd., Castrol India Ltd., Exxon Mobil Lubricant Pvt Ltd., Total Finacell Guwa Ltd.

(d) Revision done in light of discussion with GM (Maint) on 29.09.04 for *[signature]*

\* REF. POK/20/30956/S-240/126 Dt. 25.11.07

Revision - E  
 1. TECHNICAL REQUIREMENT 7. ADDED.  
 2. DETAIL OF MANUFACTURING MARK REVISED.  
 (S. K. BHATTACHARYA)

REVISIONS *			
DATE	SYMB	NAME	SIGN.
18.11.02	(A)	J.P. SINGH	
	(B)	J.P. SINGH	
03.03	(C)	J.P. SINGH	

DRG. NO.	POS NO	DESCRIPTION	QTY	UNIT	TOTAL WT IN KG	MATERIAL	REMARKS
		WELD METAL	-	-	02	MS	
M45-0539	13	DUST COVER	2	0.002	0.004	NYLON-6	WITHOUT GLUE
M45-0538	12	END CAP	2	0.40	0.80	FG 200 IS:210-93	
IS:2155-82	11	SNAP HEAD Ø6 RIVET	2	0.006	0.012	HR BAR IS:1148-82	
M45-0537	10	BUSH	2	0.005	0.010	NYLON-6	
M45-0536	9	HOUSING COVER	2	0.035	0.070	CR DD SHEET IS:513-86	
M45-0535	8	OUTER LABYRINTH	2	0.013	0.026	NYLON-6	
M45-0534	7	INNER LABYRINTH	2	0.014	0.028	NYLON-6	
IS:3075P43-87	6	CIRCLIP LIGHT A25	2	0.010	0.020	BOC6 IS:2507-75	
BBIB 420205	5	SIZE RESISTANT BALL DRG. SIZE Ø25/Ø52X12	2	0.170	0.340	SKF/FAG MAKE	SEE NOTE
M45-0532	4	SHIELD	2	0.014	0.028	NYLON-6	
M45-0531	3	BEARING HOUSING	2	0.52	1.04	CR DD SHEET IS:513-86	
SEE TABLE	2	PIPE (ERW)	1	SEE TABLE	45CR	YST-210-240 IS:7853-92	
SEE TABLE	1	SPINDLE	1	SEE TABLE	45CR	IS:7853-92	

IDLER ASSEMBLY	1	SEE TABLE	ASSLY.	-	11	SEE TABLE
POS NO	DESCRIPTION	QTY	UNIT	MATERIAL	GASSLY. DRG. NO.	SC. DRG. NO

BOKARO STEEL PLANT	
SHOP	CO&BPP, SP, RMHP, BF
UNIT	TROUGHING IDLERS
DESCRIPTION OF DRAWING	TROUGHING IDLER (Ø127MM)
DRAWN	D.K.M.
CHECKED	J.P. SINGH
SUBMITTED	J.SINGH
RECOMMENDED	C.P. MISTRY
APPROVED	
DATE	OCT '97
ISS NO	8730
DATE	M45-0522 AE TO Rev 5
DATE	M45-0524 AE Rev 1