

RANGE
SHEET No.
298

DATED:
21/05/21

DRAWING CHANGE SHEET

DRAWING TITLE:
HANDLE
RIP CORD ASSEMBLY
(BMK-41)

AFFECTED DRG. NO.

ADRDE/1323 (e)

NEW DRG. NO.

ADRDE/1323 (f)

SHEET 1 of 1

Sl. No.	SHEET NO./ LOCATION	EXISTING	AMENDED	REASON
1.	Sheet no. 02 of 18 (E-2)	MATERIAL:- MARTENSITIC STAINLESS STEEL TUBE, 8±0.1 mm O.D. WALL THICKNESS 1.25±0.05 mm AS PER SPECN NO. AISI; 403	MATERIAL:- AUSTENITIC STAINLESS STEEL TUBE, 8±0.1 mm O.D., WALL THICKNESS 1.25±0.05 mm, GRADE 07Cr18Ni9 AS PER IS: 6603- 2001	OPF(K) vide letter no. CF-1736/Specn/T, dated 23 Dec 2020 and 13.02.2021 requested ADRDE to change the specified material as OPF (K) is not able to procure the specified material. The new proposed material has better corrosion resistance as compared to specified material and being used in Rip cord handle of PTA-R Parachute form last four years without any adverse report. ADRDE letter no. ADRDE/QMS/PG/PAS /AEP/57B, dated 12 May 2021 may be referred.

INITIATED BY

Vipin Kumar
21/05/21
(Vipin Kumar, Sc. 'E')

APPROVED BY

Sudhakar Prasad
21/05/2021
(Sudhakar Prasad, Sc. 'E')

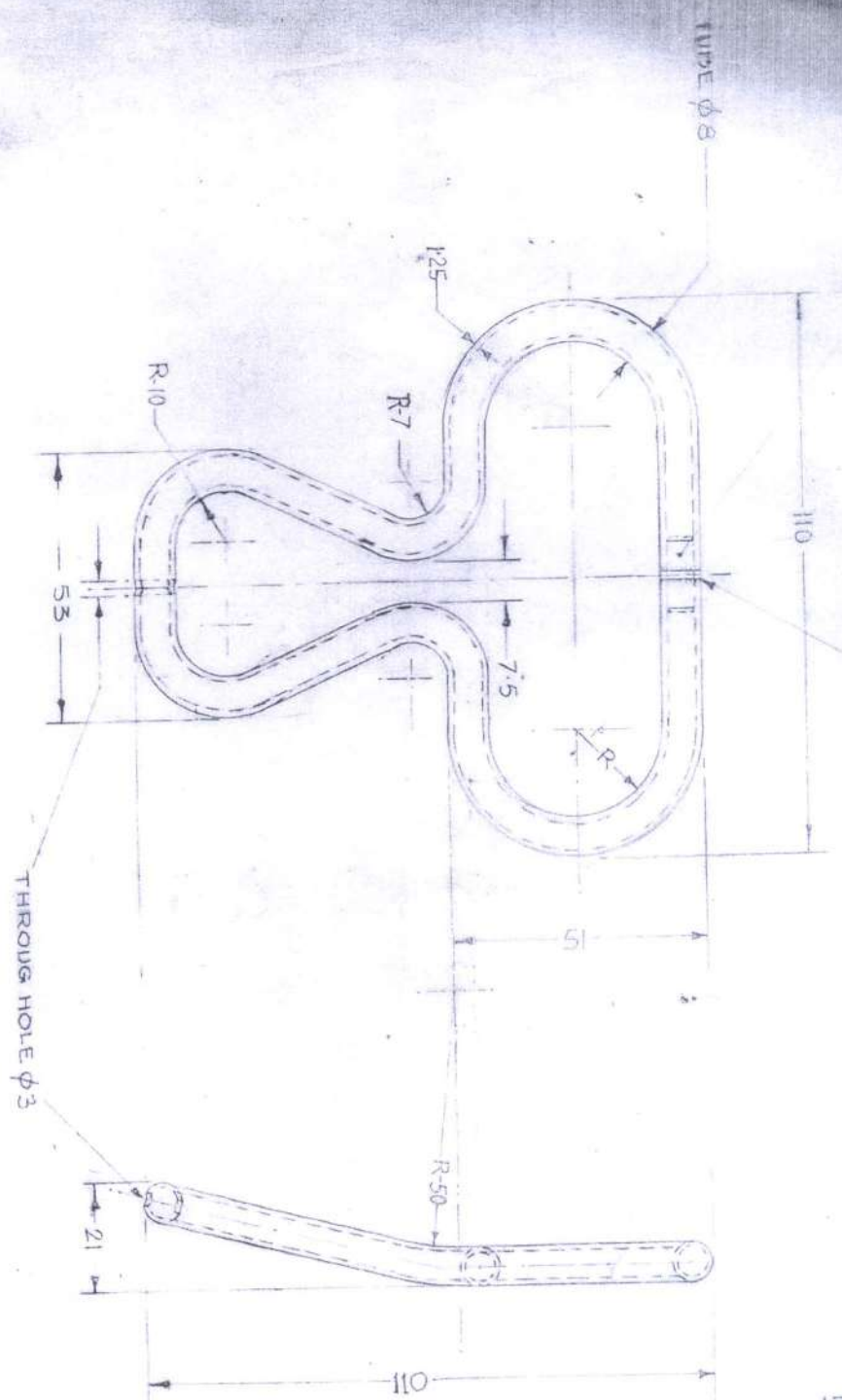
VETTED BY

RCMA (K)
31/05/21
(RCMA (K))

AERIAL DELIVERY RESEARCH AND DEVELOPMENT ESTABLISHMENT
MINISTRY OF DEFENCE
AGRA CANTT

Received by hand from RCMA Kaupur on 31-05-2021

WELD OR BRAZE SEAM TO BE LIQUID TIGHT
FINISH SMOOTH AFTER WELDING OR BRAZING



MATERIAL:-

Austenitic Martensitic STAIN LESS STEEL
TUBING TUBE 8 ± 0.1 mm O.D.
WALL THICKNESS 1.25 ± 0.05 mm
AS PER SPECN IS: 4822-1988
No. AISI: 403

1-OFF



DATE	18/12/18	BY	K. SHARMA
REVISION	AMENDED AS PER CHANGE SHEET No. 158		
BRIEF RECORD			
PROJECT	RIP CORD ASSEMBLY (BMK-41)		

DRN	K. SHARMA	DRD		MATERIAL:	AS ABOVE	APPROVED	ARDE AGRA
CHD	8/12/18	CHK		FINISH:	SMOOTHLY FINISHED & POLISHED BRIGHT		
TRC		PROJ		HEAT TREATMENT:	—		
CONP		SCALE:	1:1	DIMENSIONS ARE IN MM TOLERANCE IS: 2102 (P-1) MEDIUM			
DIMENSIONS ARE IN MM TOLERANCE IS: 2102 (P-1) MEDIUM				HANDLE RIP CORD ASSEMBLY (BMK-41)			
DRG NO. 1323-03 (1/18/18)				PROG. DIRECTOR IIT KANPUR			

4

3

2

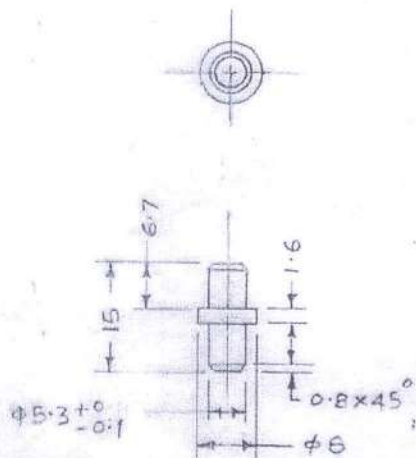
1

SHEET 3 OF 18

1-A

MATERIAL:-

AUSTENITIC STAINLESS STEEL BAR
TO GRADE 07 Cr 18 Ni 9 AS PER
IS: 6603 - 1972 .



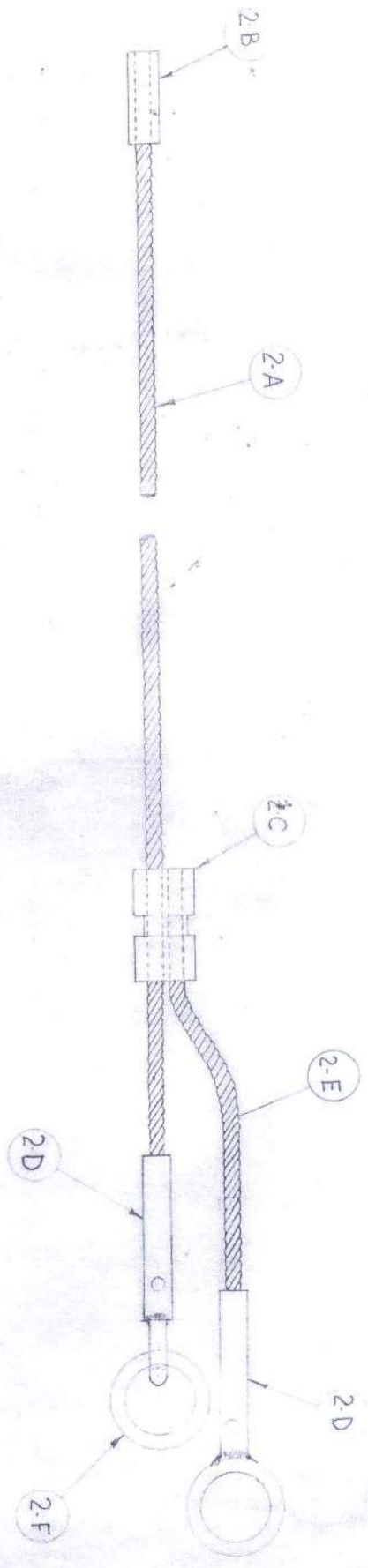
T-OFF



DRN	DATE	ZONE	AUTHORITY	BRIEF RECORD		o/c	PGD
DRN	24-11-98		DRD	MATERIAL:- AS ABOVE			
CHD			o/c	FINISH:- TO BE SMOOTHLY FINISHED & POLISHED BRIGHT.			
TRD			PGD	HEAT TREATMENT:-		APPROVED	
COMP			PROJ. OFFICER				
SCALE: 1:1				TUBE LOCKING PLUG		PROG. DIRECTOR(QA)	
DIMENSIONS ARE IN mm				RIP CORD ASSEMBLY		DRG. No. (d/e)	
TOLERANCE: S. 2102 (PT) MEDIUM				(BMK-41)		ADRDE/1323-02	
						DRD/50/98	

B 7 G B 4 3 2 1

SHEET 4 OF 18



ASSEMBLY - WIRE ROPE



SNO DATE ZONE AUTHORITY

BRIEF RECORD

0 1/2 PGD

DRN	DRD
CHD	TRD
TRD	COMP
SCALE:- 2:1	
DIMENSIONS IN MILLIMETRES	
DIMENSIONS IN CENTIMETRES	
TOLERANCES:-	
15:20(2:19:13)	
MEDIUM	

DRD	DRD
TRD	TRD
COMP	COMP
SCALE:- 2:1	
DIMENSIONS IN MILLIMETRES	
DIMENSIONS IN CENTIMETRES	
TOLERANCES:-	
15:20(2:19:13)	
MEDIUM	

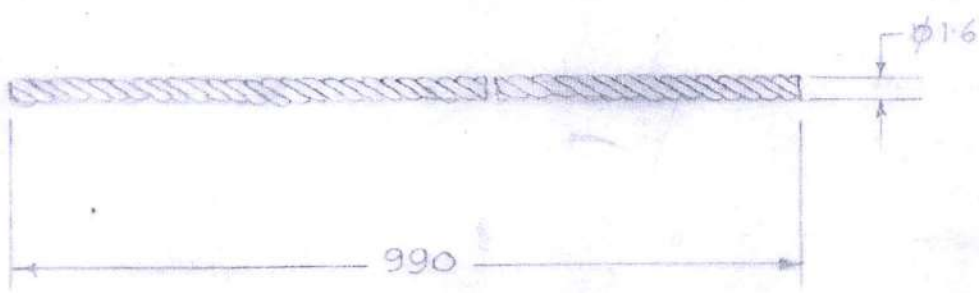
RIP CORD ASSEMBLY (BMK-41)

MATERIAL: FINISH: HEAT TREATMENT:

APPROVED

PROG. DIRECTOR (DRD)
DRG No. (M/10/10/10)
ADRD/11323-03 A
PAB/50708

(2-A)



1- OFF

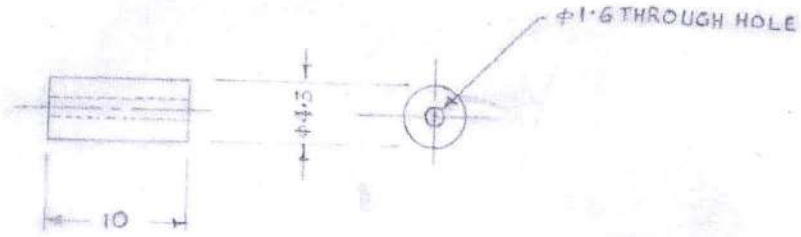
MATERIAL:-

- AIRCRAFT QUALITY NON-CORRODED (PREFORMED) STAINLESS STEEL
- WIRE ROPE ϕ 1.6 mm, CONSTRUCTION 7x7, MINIMUM B.S. 220 kgf (2158 N)
- △ Austenitic stainless steel, wire rope ϕ 1.6 mm, construction 7X7, minimum BS: 220kgf (2158N) as per specification no. AISI:316



c	3/8/15	1-A	CHANGE SHEET No. 23	Existing material deleted & new material added.		Niroti	Narayan Singh	
S.No	DATE	ZONE	AUTHORITY	BRIEF RECORD			O/C	PGD
DRN			DRD	MATERIAL:- AS ABOVE			AD RDE, AGRA	
CHD				FINISH:- POLISHED BRIGHT				
TRD			O/C	PGD	HEAT TREATMENT:-			APPROVED
COMP			PROJ. OFFR.					
SCALE:-2:1			DIV. HEAD	WIRE ROPE LARGE RIP CORD ASSEMBLY (BMK-41)			PROG. DIRECTOR (G.A.) DRG. No. 1323-03-01 ADRDE/1323-03-01 DRD/50/98	
DIMENSIONS ARE IN MM								
TOLERANCE IS: 2102 (PE 1) MEDIUM								

(2B)



1-OFF

MATERIAL:-

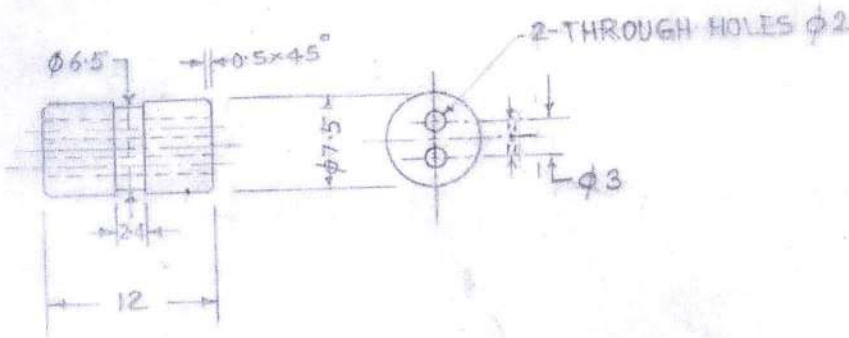
AUSTENITIC STAINLESS STEEL BAR
TO GRADE 07 Cr 13 Ni 9
AS PER IS: 6603 - 1972 IN HALF
HARD CONDITION



S.No	DATE	ZONE	AUTHORITY	BRIEF RECORD	O/C	PGD
DRN	<i>11/10/92</i>		DRD	MATERIAL:- AS ABOVE		ADRDE, AGRA
CHD	<i>11/10/92</i>		<i>Faha</i>	FINISH:- POLISHED BRIGHT		
TRD			<i>2117</i>	HEAT TREATMENT:-		APPROVED
COMP			O/C			<i>slhd</i>
SCALE: 2:1			PROJ. OFFR			PROG. DIRECTOR (QA)
DIMENSIONS ARE IN MM			DIV. HEAD			DRG.No. <i>12102(1E)1</i>
TOLERANCE IS: 2102(1E)1 MEDIUM						ADRDE/1323-03-02
						DRD/50/92

WIRE END LOCKING PLUG
RIP CORD ASSEMBLY
(BMK-41)

2-C



1-OFF

MATERIAL :-

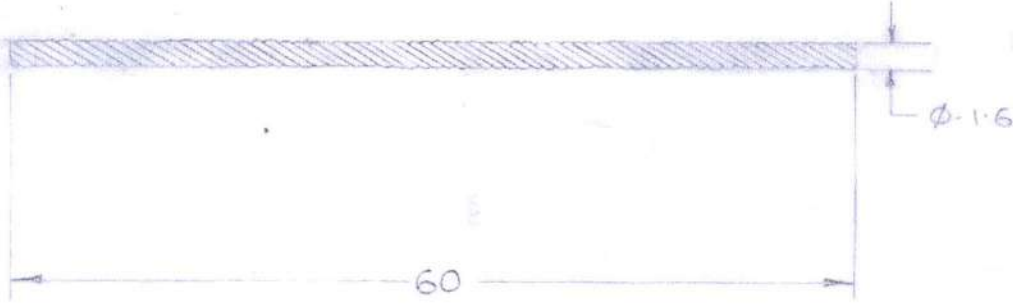
AUSTENETIC STAINLESS STEEL
 BAR TO GRADE 07 Cr 18 Ni 9
 AS PER IS: 6603-1972 IN
 HALF HARD CONDITION



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SN _o	DATE	ZONE	AUTHORITY	BRIEF RECORD			o/c	PGD	
DRN	<i>Final</i>		DRD	MATERIAL:- AS SPECIFIED ABOVE			A DRDE, AGRA		
CHD	<i>at work</i>			FINISH:- TO BE SMOOTHLY FINISHED & POLISHED BRIGHT.					
TRD				HEAT TREATMENT :-			APPROVED		
COMP			o/c	PGD					
SCALE:-	2:1	PROJ. OFFR.	DIV. HEAD	TWIN WAY FERRULE RIP. CORD ASSEMBLY (BMK-41)			PROG. DIRECTOR (Q.A) DRG. No. <i>(a) (b) (c) (d) (e)</i> ADRDE/1323-03-03 DRD/50/98		
DIMENSIONS ARE IN mm									
TOLERANCE IS: 2102 (Pt 1) MEDIUM									

(2E)



1- OFF

MATERIAL:-

AIRCRAFT QUALITY NON-CORRODED
(PREFORMED) STAINLESS STEEL
WIRE ROPE ϕ 1.6 mm, 7X7 CONSTRUCTION,
& MIN. B.S. 220 kgf (2158 N)

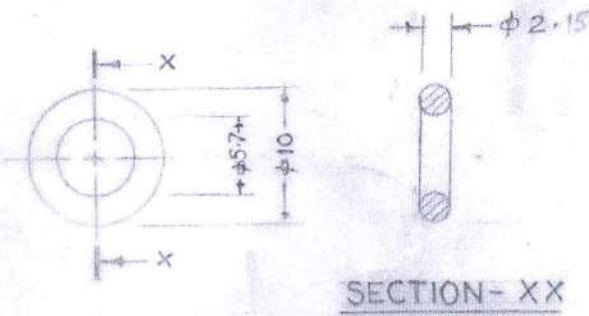
\triangle AUSTENITIC STAINLESS STEEL WIRE ROPE ϕ 1.6 mm
CONSTRUCTION 7X7, MINIMUM BS:220 kgf (2158N)
AS PER SPECIFICATION No. AISI:316



d	16-5-16	ADRDE/QMS/PG PAS/AEP/57B	AMENDED AS PER CHANGE SHEET No.51	
S.No.	DATE	ZONE	AUTHORITY	BRIEF RECORD
DRN	24-11-18		DRD	MATERIAL:- AS ABOVE
CHK			PGD	ADRDE, AGRA
TRD				FINISH:- TO BE SMOOTHLY FINISHED AND POLISHED BRIGHT
COMP				HEAT TREATMENT
SCALE	2:1	PROJ OFFER	DIV HEAD	APPROVED. -
DIMENSIONS ARE IN MM	WIRE ROPE SMALL RIP CORD ASSEMBLY (BMK-41)			PROG. DIRECTOR (QA)
TOLERANCE IS: 2102 (PT) MEDIUM				DRG.No. (e) ADRDE/1323-03-05 (a)(b)(c)

DRD/50/P2

2-F



3-OFF

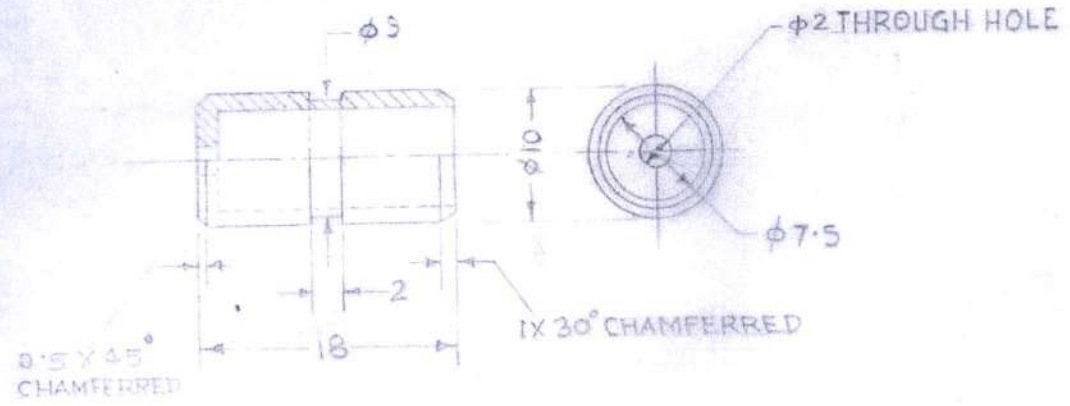
FINISH:-

TO BE SMOOTHLY FINISHED & Cd-PLATED TO A MIN. THICKNESS OF 0.012 mm AND CHROMATE PASSIVATED AS PER IS: 1572-1968



SN.	DATE	ZONE	AUTHORITY	BRIEF RECORD		o/c	PGD
DRN	24-11-98		DRD	MATERIAL:- STEEL WIRE AS PER IS: 280-1372 IN HALF HARD CONDITION.	ADRDE, AGRA		
CHD				FINISH:- AS SPECIFIED ABOVE			
TRD				HEAT TREATMENT:-	APPROVED.		
COMPL							
SCALE:- 2:1			PROJ. OFFR. DIV. HEAD		PROG DIRECTOR (QA) DRG No. (a)(b)(c)(d)(e) ADRDE/1323-03-06 DRD/50/98		
DIMENSIONS ARE IN MM TOLERANCE IS: 2102 (Pt 1) MEDIUM.				RING RIP CORD ASSEMBLY (BMK-41)			

3A



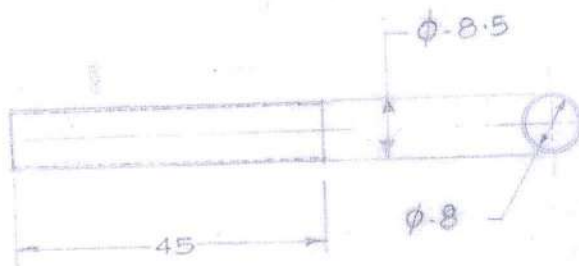
2-OFF

MATERIAL:- AUSTENETIC
 STAINLESS STEEL BAR TO
 GRADE 07 CR 18 NI 9 AS PER
 IS: 6603-1972.



S.No		DATE	ZONE	AUTHORITY	BRIEF RECORD		o/c PGD	
DRN	<i>[Signature]</i>			DRD	MATERIAL:- AS SPECIFIED ABOVE		ADRDE, AGRA	
CHD	<i>[Signature]</i>			<i>[Signature]</i>	FINISH:- TO BE SMOOTHLY FINISHED & POLISHED BRIGHT.			
TRD				o/c	PGD	HEAT TREATMENT :-		APPROVED:
COMP				PROV. OFFR.	<i>[Signature]</i>			<i>[Signature]</i>
SCALE:- 2:1		DIV. HEAD		<i>[Signature]</i>				PROG. DIRECTOR (Q.A)
DIMENSIONS ARE IN MM				FERRULE				DRG No. <i>[Number]</i>
TOLERANCE IS: 2102 (P.E.I)				RIP CORD ASSEMBLY				ADRDE/1323-04-01
MEDIUM				(BMK-41)				DRD/41/99

3-B

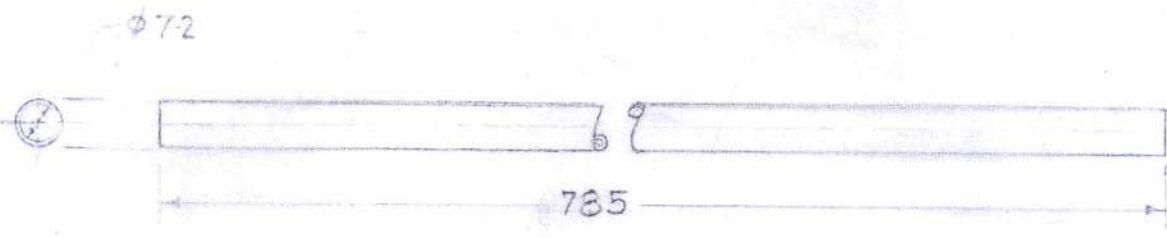


2-OFF



R.No.	DATE	ZONE	AUTHORITY	BRIEF RECORD		0 1/2 PGD
DRN	TRD	CTD	COMP	DRD	MATERIAL: PVC SLEEVE YELLOW BEST TRADE QUALITY.	ADRDE, AGRA
SCALE:- (1:1)	PROJ. OFFR.	DIV. HEAD	HEAT TREATMENT	FINISH:-	APPROVED	
DIMENSIONS IN MILLIMETRES TOLERANCE IS 2102 (PE-1) MEDIUM				SLEEVE YELLOW PVC RIP CORD ASSEMBLY (BMK-41)		PROG. DIRECTOR (OR) DRG No. (a)(b)(c)(d)(e) ADRDE/1323-04-02 DRD/50/98

30



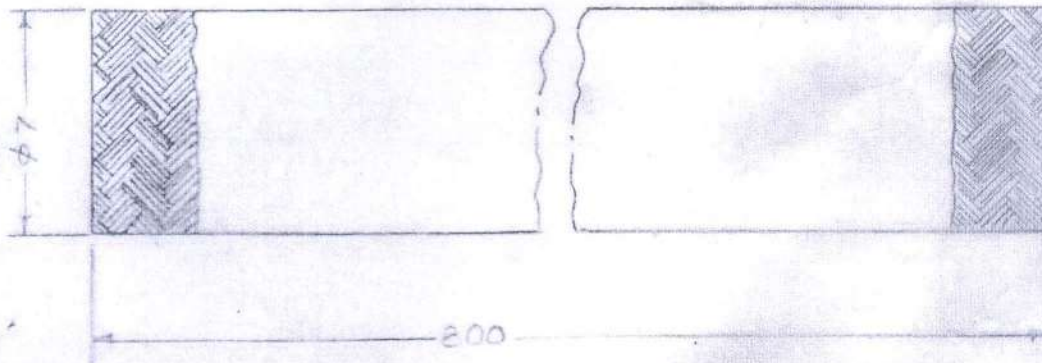
1-OFF



R.No.	DATE	ZONE	AUTHORITY	BRIEF RECORD		o/c	PGD
DRN	<i>[Signature]</i>		DRD	MATERIAL: PVC SLEEVE BLACK	ADDRDE, AGRA		
END	<i>[Signature]</i>			BEST TRADE QUALITY			
TRD		24-11-98	L PGD	FINISH:-			
COMP		o/c		HEAT TREATMENT:-		APPROVED	
SCALE: 1:1	PROJ. OFFR <i>[Signature]</i>		DIY. HEAD <i>[Signature]</i>		<p style="text-align: center;">SLEEVE BLACK PVC RIP CORD ASSEMBLY (BMK-41)</p> <p style="text-align: right;"><i>[Signature]</i> PROG DIRECTOR (G.A.)</p>		
DIMENSIONS ARE IN mm							
TOLERANCE IS: 2102 (P.L.) MEDIUM							
				DRG No. <i>[Signature]</i> (s)(e)		ADRDE/1323-04-03	
						DRD/50/98	

3-D

4x4 CONSTRUCTION,



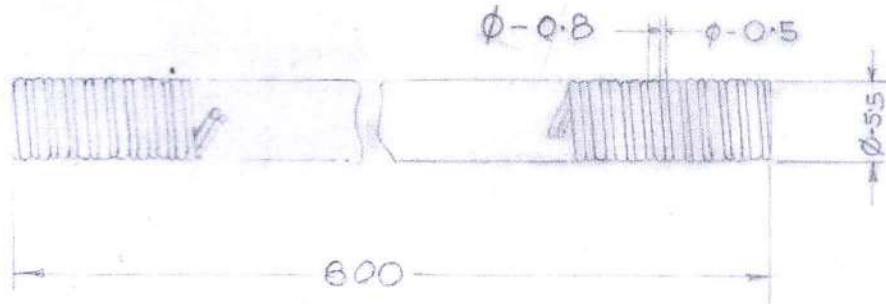
1-OFF

MATERIAL:- STAINLESS STEEL
WIRE GRADE 07 CF 18 NI 9
AS PER IS : 6528-1972.



R.No.	DATE	ZONE	AUTHORITY	BRIEF RECORD		a/c	PGD
DRN	<i>King</i>		DRD	MATERIAL:- AS SPECIFIED ABOVE		A DRDE, AGRA	
CHD	<i>Sh</i>		<i>DRD</i>	FINISH:- TO BE SMOOTHLY FINISHED & POLISHED BRIGHT.			
TRD			<i>DRD</i>	HEAT TREATMENT:-		APPROVED	
COMP			<i>DRD</i>			<i>Sh</i>	
SCALE	5:1		PROJ. OFFR			PROG DIRECTOR (QA)	
DIMENSIONS ARE IN MM		TOLERANCE IS 2102 (PT 7) MEDIUM		<p>WIRE MESH SHEATH. RIP CORD ASSEMBLY (BMK-41)</p>			
				DRG No. <i>(a)(b)(c)(d)(e)</i> A DRDE/1323-04-04 DRD/50/98			

3-E



1-OFF

MATERIAL: STAINLESS STEEL
WIRE SPRING AS PER
IS: 4454 (PART IV)-1975



RNO		DATE	ZONE	AUTHORITY	BRIEF RECORD		OVC	PGD
DRN	SP			DRD	MATERIAL:- AS SPECIFIED ABOVE		ADRDE AGRA	
CHD	PROJ			OVC	FINISH:- TO BE SMOOTHLY FINISHED & POLISHED BRIGHT			
TRD				PGD	HEAT TREATMENT		APPROVED	
COMP				PROJ. OFFR				
SCALE -				DIV. HEAD			PROG. DIRECTOR (SA)	
2:1					COIL SPRING		DRG No. (21)1323-04-05	
DIMENSIONS ARE IN mm					RIP CORD ASSEMBLY		ADRDE/1323-04-05	
TOLERANCE IS: 2102 (P.J.) MEDIUM					(BMK-41)		DRD/50/98	

4

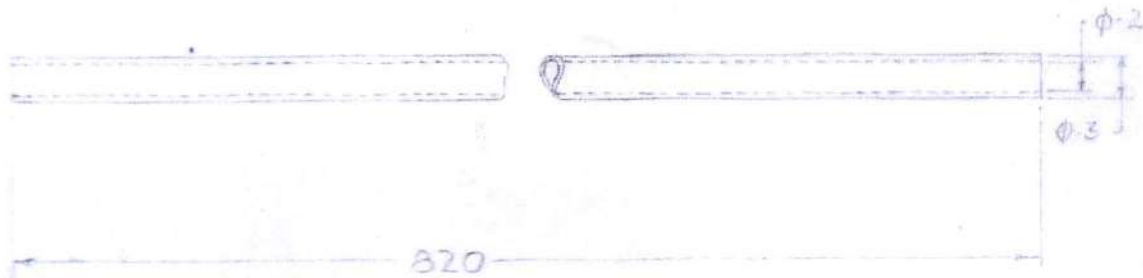
3

2

1

SHEET 17 OF 18

3-F



1 OFF



R No	DATE	ZONE	AUTHORITY	BRIEF RECORD	0 1/2 PGD
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DRW	mail	DRD	MATERIAL :- NYLON SLEEVE TRANSPARENT BEST TRADE SIV
CHD	manu	PGD	FINISH :-
TRD			
COMP			

SCALE :- 2:1	PROJ. OFFR DIV. HEAD	HEAT TREATMENT
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DIMENSIONS ARE IN mm	SLEEVE TRANSPARENT RIP CORD ASSEMBLY (BMK-41)
TOLERANCE :- IS: 2102 (Pt 3) MEDIUM	

ADRDE, AGRA

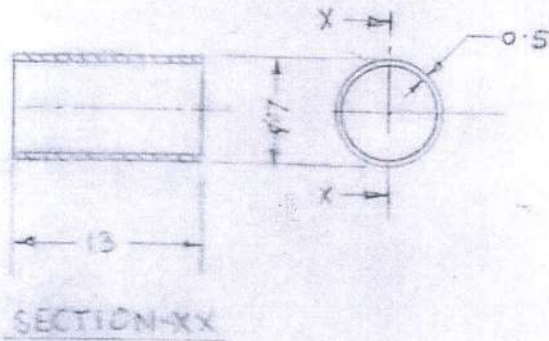
APPROVED.

SKH D.
PROG. DIRECTOR (QA)

DRG No. (a)(b)(c)(d)(e)
ADRDE/1323-04-06

DRD/50/98

36



2-OFF



R.N. DATE ZONE AUTHORITY

BRIEF RECORD

o/c PGD

DRAWN S.C. SHARMA
 CHKD. SK. RAMANI
 TRD
 COMP.

DRD
 5/11/98
 o/c
 PGD

MATERIAL: STAINLESS STEEL
 TUBE AS PER IS: 4022-1968
 FINISH: TO BE SMOOTHLY
 FINISHED & POLISHED BRIGHT

ADRDE

SCALE: 2:1

PROJ. OFFR. JBN
 DIV. HEAD. DMS

HEAT TREATMENT

APPROVED

DIMENSIONS ARE IN mm
 TOLERANCE IS 2102 (P. J)
 MEDIUM

METALLIC SLEEVE INNER
 RIP CORD ASSEMBLY
 (BMK-41)

PROJ. DIRECTOR (G A)
 DRG No. 1323-04-07
 ADRDE/1323-04-07