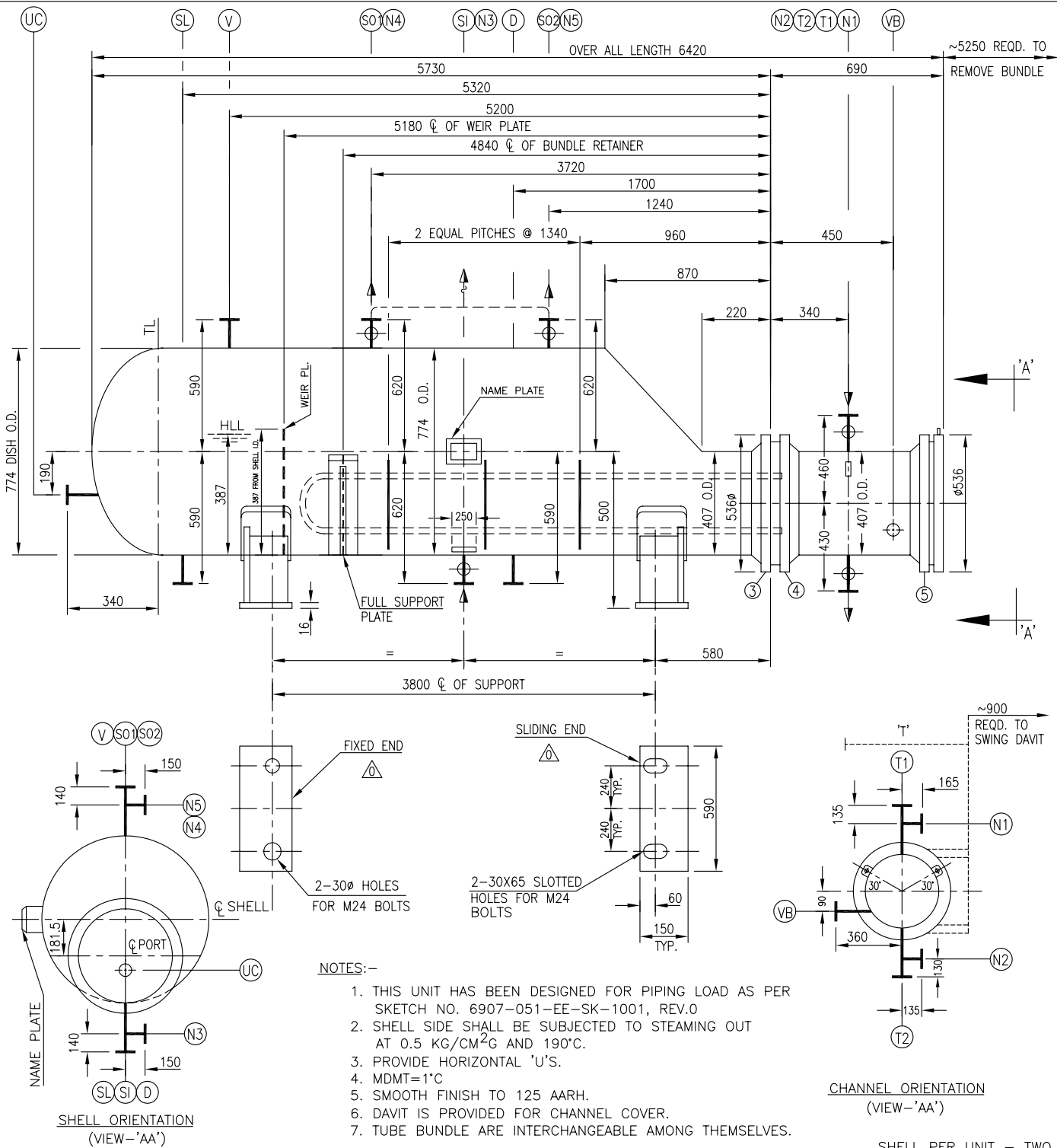


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F-0540-101 REV.2 A4-210X297



TYPE OF EXCH. AKU (H) SERVICE : REGENRATOR REBOILER

SHELL PER UNIT - TWO
NO. OF UNIT - ONE

DESIGN DATA					NOZZLE DATA						
		SHELL SIDE	TUBE SIDE	NOZZLE MARK	SIZE N.B.(INCH)	ASME CLASS	SCH./THK (mm)	TYPE FACING	PAD W X T (mmXmm)	FACE FINISH	DESIGNATION
DESIGN PRESSURE	Kgf/cm ² g	5.0/FV	6.5/FV	T1	6	150	80	WNRF	60X10	NOTE-5	TUBE SIDE INLET
DESIGN TEMPERATURE	°C	140	220	T2	2	150	160	WNRF	-	NOTE-5	TUBE SIDE OUTLET
HYD. TEST PRESSURE	Kgf/cm ² g	6.5	8.45	SI	4	150	120	WNRF	50X12	NOTE-5	SHELL SIDE INLET
FLUID CIRCULATED		LEAN AMINE SOLUTION	STEAM	SO1-2	4	150	120	WNRF	50X12	NOTE-5	SHELL SIDE OUTLET(VAPOUR)
NO. OF PASSES		ONE	TWO	UC	2	150	160	WNRF	-	NOTE-5	UTILITY CONNECTION+BF
WORKING PRESSURE	Kgf/Cm ² g	0.82	3.5	SL	3	150	160	WNRF	40X12	NOTE-5	SHELL SIDE LIQUID OUTLET
WORKING TEMP. (IN/OUT) °C		119.9/121.4	147.2/147.2	V	2	150	160	WNRF	-	NOTE-5	VENT+BF
CORROSION ALLOWANCE	mm	6	3 (ON CS)	D	2	150	160	WNRF	-	NOTE-5	DRAIN+BF
STRESS RELIEVING		YES	-	VB	2	150	160	WNRF	-	NOTE-5	VAPOUR BALANCE
RADIOGRAPHY		FULL	SPOT	N1-N2	1.5	150	160	WNRF	-	NOTE-5	MP CONN.+BF
JOINT EFFICIENCY		1.0	0.85	N3-N5	1.5	150	160	WNRF	-	NOTE-5	MP CONN.+BF
INSULATION	mm	25(HOT)	30(HOT)								
O	08.07.2010	ISSUED FOR PURCHASE		AR	RR/PB	AKG			BUNDLE WEIGHT (Kg)		~ 1400 p.shell
A	14.12.2009	ISSUED FOR BIDS/ENGG.		AR	RR/PB	AKG			EMPTY WEIGHT (Kg)		~ 2500 p.shell
NO.	DATE	REVISION		BY	CHKD.	APPROVALS			WT. FULL OF WATER(Kg)		~ 4900 p.shell



ENGINEERS INDIA LTD.
STATIC EQUIPMENT DEPARTMENT
KOLKATA

SETTING PLAN FOR
ITEM NO.: 051-EE-102 A/B
PROJECT : BCPL, LAKWA UNIT: GSU

DRAWING NO.
6907-051-16-46-4027
SHT 1 OF 4

REV.
0

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F-0540-101 REV. 2 A4-210X297

MECHANICAL DETAILS

ITEM NO	051-EE-102A/B	TEMA CLASS R 9TH EDITION. ASME SEC.VIII DIV.1 2007 EDITION + ADDENDA	1
SIZE	750/387X5000 (ST) TYPE	AKU (H); CONNECT IN PARALLEL STACKING NO	2
DUTY/UNIT	1.01X1.2 MMKcal/hr	SURFACE AREA/SHELL 35 Sqm NO OF UNIT-ONE SHELL/UNIT-TWO	3
DESCRIPTION	MATERIAL	DETAILS	Wt(Kg) 4
SHELL	SA516Gr60	O.D. = 774 ; THK. =12.0	5
SHELL CONE	SA516Gr60	O.D. = 774/411 ; THK. =12.0	6
SHELL BONNET	SA516Gr.60	O.D. = 774 ; THK. =12.0 (MIN 10.00) SF= 50.00 TORISPHERICAL	7
SHELL PORT	SA516Gr.60	O.D. = 407 ; THK. =10.0	8
CHANNEL	SA516Gr.60	O.D. = 407 ; THK. =10.0	9
TUBES	SA213 TP316L	O.D. = 20.0 ; THK. =1.6 MIN. LENGTH=5000 (ST) NO=55 'Us' PITCH (NOTE-4)	10
TUBE SHEET	#	DETAIL = 30 ; THK. =45.0 (35+10 CLAD)	11
BAFFLES	SA240 TP316L	TYPE = SUPPORT PLATES ; THK.=6.0 ; NO REQD.=3 ; CUT≅ 20%	12

SA516Gr60+SA240 TP316L CLAD (CHANNEL SIDE)

FLANGE NO.	TYPE	MATERIAL	A	BCD	B	Go	G1	H	T	GASKET DATA			BOLT DATA		Wt (Kg)	
										O.D.(D)	WIDTH	TYPE	NO	BOLT DIA		
3	2	SA266CL4	536.0	488.0	387.0	10.0	15.0	25.0	47.0	456.0	10	1	20	M20		14
4	2	SA266CL4	536.0	488.0	387.0	10.0	15.0	25.0	40.0	456.0	10	4	20	M20		15
5	2	SA266CL4	536.0	488.0	387.0	10.0	15.0	25.0	40.0	456.0	10	4	20	M20		16
																17
																18
																19

DESCRIPTION	GASKET MATL.	BOLTING MATERIAL	DESCRIPTION	MATERIAL	REMARKS	Wt(Kg)	
FLANGE 3	(3 THK) IJA	SA193GrB7/SA194Gr2H	CHANNEL COVER	SA516Gr60	DETAIL- 7 ; THK,T1 = 46	20	
FLANGE 4	(3 THK)SS316L JA	SA193GrB7/SA194Gr2H	PARTITION PL.	SA516Gr60	THK = 14; T1=10, T2=13, DETAIL-15	21	
FLANGE 5	(3 THK) IJA	SA193GrB7/SA194Gr2H	IMP. PLATE	SA240 TP316L	THK = 6	22	
—	—	—	SUPPORT PL.	SA516Gr60	THK = 16	23	
—	—	—	WEIR PLATE	SA516Gr60	THK = 16	24	
SHELL NOZZLES.	SS316 SP.WD. NOTE-5	SA193GrB7/SA194Gr2H	TIE RODS	SA479 Gr.316L	DIA. = (NOTE4) NOS.=(NOTE4)	25	
CHANNEL NOZZ.	SS316 SP.WD. NOTE-5	SA193GrB7/SA194Gr2H	SPACERS	SA213 TP316L	O.D. = (NOTE-4) THK.=(NOTE-4)	26	
	SHELL SIDE.	CHANNEL SIDE.	Wt(Kg)	SEALING STRIPS	—	WIDTH = THK = NOS.=	27
NOZZLE NECK	SA106GrB	SA106GrB		SLIDING STRIPS	—	WIDTH = THK = NOS.=	28
NOZZLE FLGS.	SA105	SA105		SADDLE PLATE	IS2062 Gr.B	DETAIL AS PER EIL STD 7-15-0004	29
PAD/WRAPPER PL.	SA516Gr60	SA516Gr60		NAME PL /BKT.	SS/SA516Gr60	DETAIL AS PER EIL STD 7-15-0017	30
GUSSET/LUGS	SA516Gr60	SA516Gr60		EYEBOLT/PLUG.	SA105 / SA182 Gr.F316L	SIZE: (NOTE4) NOS.= (NOTE4)	31
COUPLING/PLUGS	—	—		BUNDLE RETAINER/GUSSET	SA516Gr60	THK. = 16 (NOTE-6)	32
							33
							34
TEST RING- NO		TEST FLANGE- YES		TUBE TO TUBE SHEET JOINT- WELDED AS PER FIG. 2 OF 6-15-0003			

NOTES:-

1 ALL DIMENSIONS ARE IN mm. UNLESS OTHERWISE STATED

2 FOR CONSTRUCTIONAL DETAIL AND NOMENCLATURE REFER STD. 7-15-0001,7-15-0002

3 ALL OVER ∇ FINISH REQUIRED UNLESS OTHERWISE STATED.

4 REFER GUIDELINES FOR PREPARING TUBE LAYOUT AND TUBE LAYOUT DRG NO. 6907-51-05-45-4102, REV.0

5 SPIRAL WOUND GASKETS FOR NOZZLES SHALL BE 4.5 THK WITH GRAFIL FILLER AND 3.2 THK CS OUTER RING. DIMENSIONS AS PER ASME B16.20.

6 REFER SKETCH 6907-051-EE-SK-1002 FOR DETAIL OF BUNDLE RETAINER.

7 ALL CS BASE METAL, WELD METAL & HAZ ON SHELL SIDE INCLUDING CS BASE MATERIAL OF TUBE SHEET SHALL BE SUBJECTED TO PWHT AND HARDNESS SHALL BE LIMITED TO 200BHN AND SHALL COMPLY WITH THE SPEC. 6-15-0091.

0	08.07.2010	ISSUED FOR PURCHASE	A.R	RR/PB	AKG		
A	14.12.2009	ISSUED FOR BIDS/ENGG.	A.ROY	RR/PB	AKG		
NO.	DATE	REVISION	BY	CHKD.	APPROVALS		



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STATIC EQUIPMENT DEPARTMENT
KOLKATA

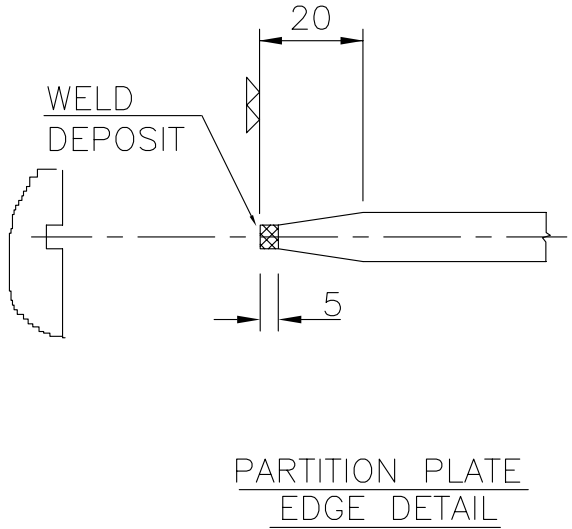
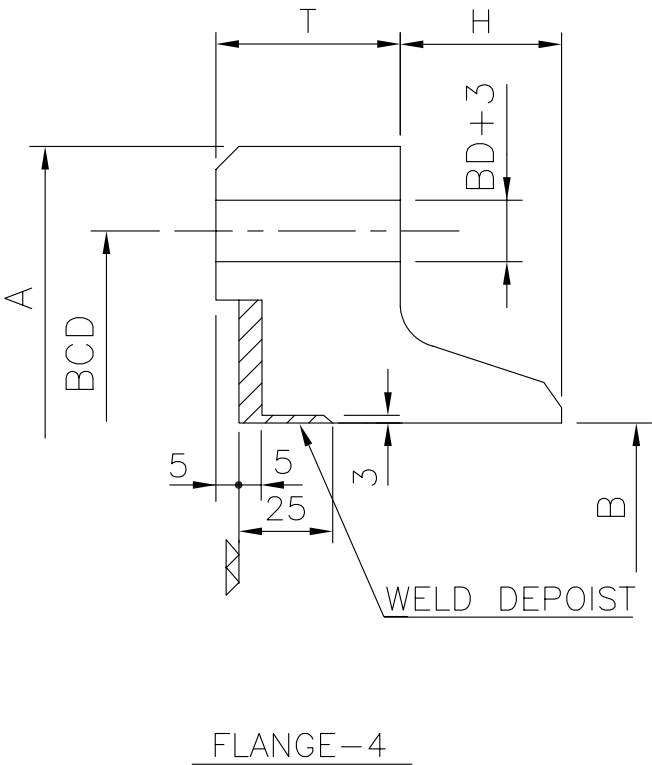
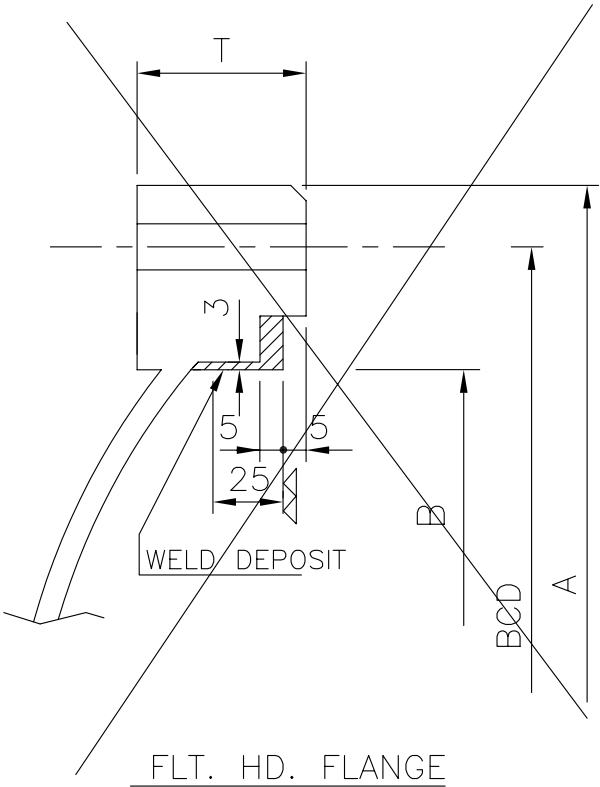
SECTION DRAWING FOR
ITEM NO.: 051-EE-102 A/B
PROJECT: BCPL, LAKWA UNIT: GSU

DRAWING NO.	REV.
6907-051-16-46-4027	0
SHT 2 OF 4	

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EIL-1641-540 A4-210 X 297

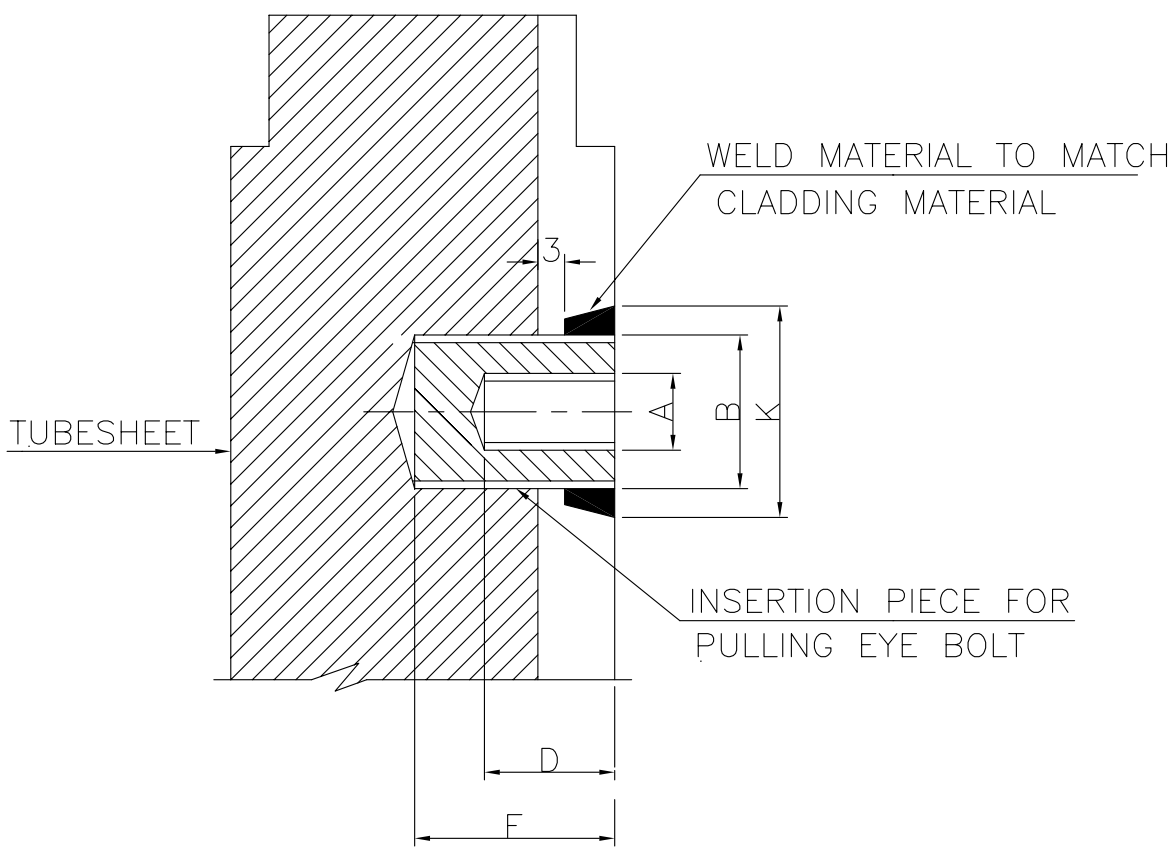
NO.	DATE	REVISIONS	BY	CH'K	APPROVALS		
0	08.07.10	ISSUED FOR PURCHASE	A.R	RR/PB	AKG		



NOTE:-
1. FOR WELD DEPOSIT MATERIAL SPECIFICATION REFER SECTION DRG. OF RELEVANT ITEM.

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EIL-1641-540 A4-210 X 297

NO.	DATE	REVISIONS	BY	CH'K	APPROVALS		
0	08.07.10	ISSUED FOR PURCHASE	A.R	RR/PB	AKG		



NOM. SIZE A	B	K	D	F
M16	M28	38	24	32
M20	M30	40	30	39
M22	M33	43	33	43
M24	M36	46	36	46
M27	M42	52	41	52
M30	M48	58	45	57
M33	M52	62	50	63
M36	M56	66	54	68
M39	M64	74	59	74
M42	M64	74	63	79
M45	M64	74	68	85
M48	M72	82	72	90
M56	M80	90	84	104