KOORYOUNG

130mm MULTIPLE LAUNCH ROCKET SYSTEM

2022. 5.

DENEL

CONTENTS

1. History

The first Multiple Launch Rocket System in Korean Army developed at 1980’ s.

- **Basic Type Rocket and Launcher in 1981**
- **Advanced Type Rocket and Launcher in 1989**

Target :

- **▪Concentrations of personnel and light materials.**
- **▪Artillery positions : neutralization of a n artillery position**
- **▪Command counters and other military facilities**

2. 130mm MLRS : OPERATING CONSEPT

BTC

INFORMATION/ORDER

BTCS

TARGET INFORM./
FIRING ORDER

LAUNCHER POSITION
- INS
- GPS
- VMS

FCU

SCU

AUTO AIMING

C4I

TARGET
INFORM

UAV

AN/TPQ -36,37
RADAR

TARGET

2. 130mm MLRS : SYSTEM CONSIST

Launcher

- **36 Tube Launcher K136/K136A1**

Loader Truck

- **Truck K711**
- **Carrier K235A1**
- **72 Rockets**

Measure Equipment

- **Fire control system FIRE DIRECTION CALCULATOR SURFACE WIND MEASURING SYSTEM**

ROCKET

- **Fuze K505**
- **Warhead K37/K38**
- **Rocket Motor K30/K33**

2. 130 mm MLRS : Launcher & Vehicle

Vehicle	M809A1 wheeled 6 X 6.5t truck
Total loaded weight	16.4 ton
Length	7.7 m
Width	2.5 m
Height	2.9 m
Engine output	236 hp
Maximum speed	89 Km/h
No. of Tubes	36
Tube Length	3.4 m
Internal Diameter	133m
Elevation Limits	0 ~ 55°
Traverse Limit	+120°
Drive system	Hydraulic (Manual back up)
Operation Temperature	-32°C ~ +50°C
Rate of Fire	2 rocket/sec

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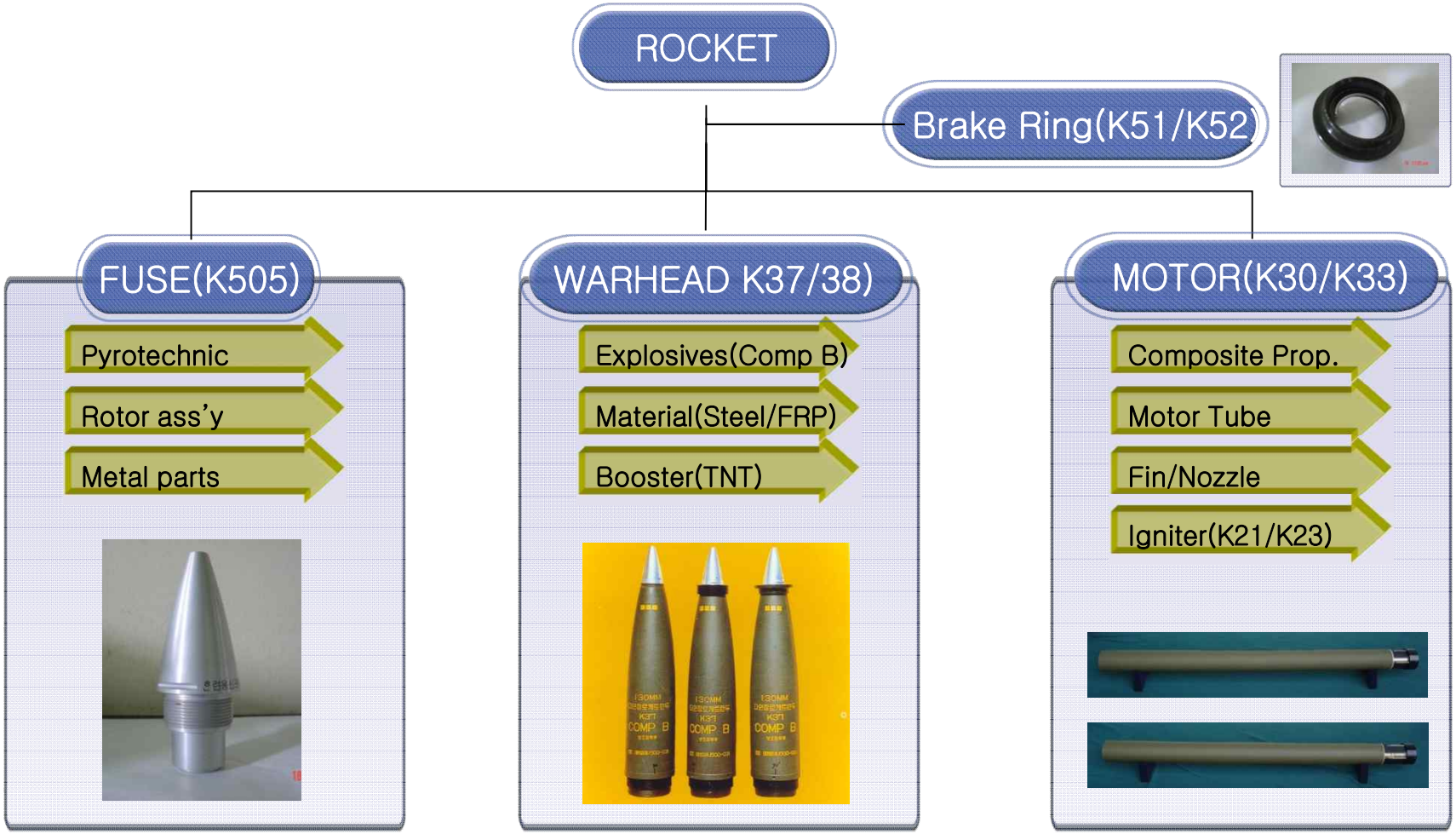
2. 130mm MLRS : ROCKET COMPONENT



2. 130mm MLRS : Basic Properties

Specification		ROCKET K301/K302 (K30 MOTOR)	ROCKET K305/K306 (K33 MOTOR)
SHAPE	DIAMETER	130 mm	131 mm
	WEIGHT	55 kg	64 kg
	LENGTH	2390 mm	2528 mm
OPERATION TEMP.		-40 ℃ ~ +50 ℃	-40 ℃ ~ +60 ℃
POWER	MAX. RANGE	23 km	36 km
	VELOCITY	910 m/sec	1200 m/sec
	BURN TIME	2.64 sec	2.12 sec
	IMPULSE(IT)	10158 lbf-sec	14165 lbf-sec
	ISP	233 sec	245 sec
	ACCURACY	CEP(a) :10~15 mil	**CEP(a) :10~12 mil**
IG.	IG.CURRENT	OPT.10 A, MIN. 4 A	OPT.10 A, MIN. 4 A
	RESISTANCE	0.60 ~ 0.87 Ω	0.60 ~ 0.87 Ω

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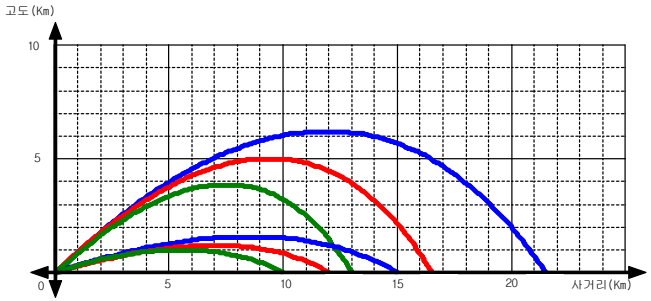
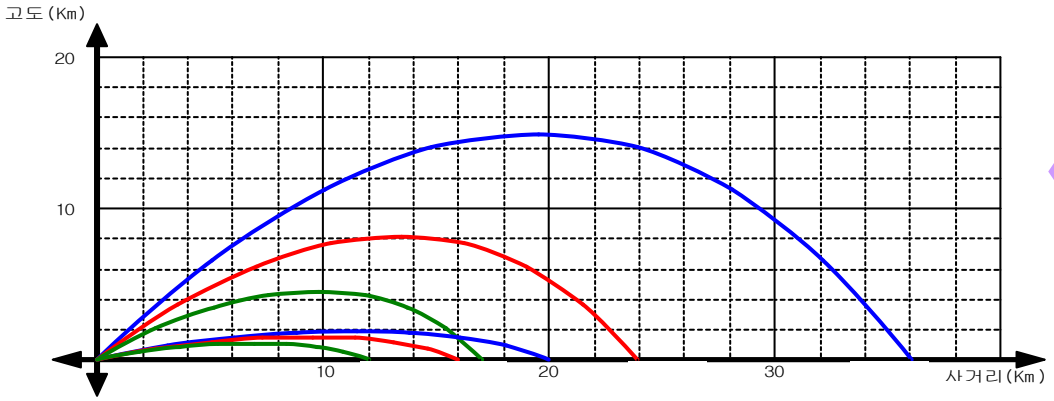
2. 130mm MLRS : RANGE with Brake Ring

ROCKET K301/K302 (K30 MOTOR)



Brake Ring	Firing Angle & Range
Large	Firing Angle : 6~39
	Range : 5.0~13.0km
Small	Firing Angle : 17~41
	Range : 12.0~16.5km
Standard	Firing Angle : 18~42.5
	Range : 15.0~21.5km

ROCKET K305/K306 (K33 MOTOR)

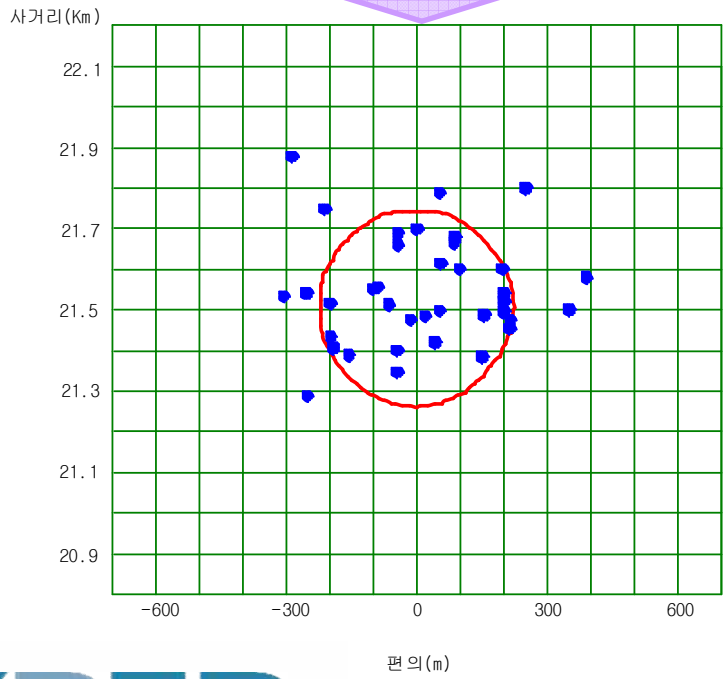


Brake Ring	Firing Angle & Range
Large	Firing Angle: 5~38
	Range: 5.0~17.5km
Small	Firing Angle : 16.5~44
	Range : 16.0~24.0km
Standard	Firing Angle : 18~42.5
	Range : 20.0~36.0km

2. 130mm MLRS : Final Target Hit Pattern

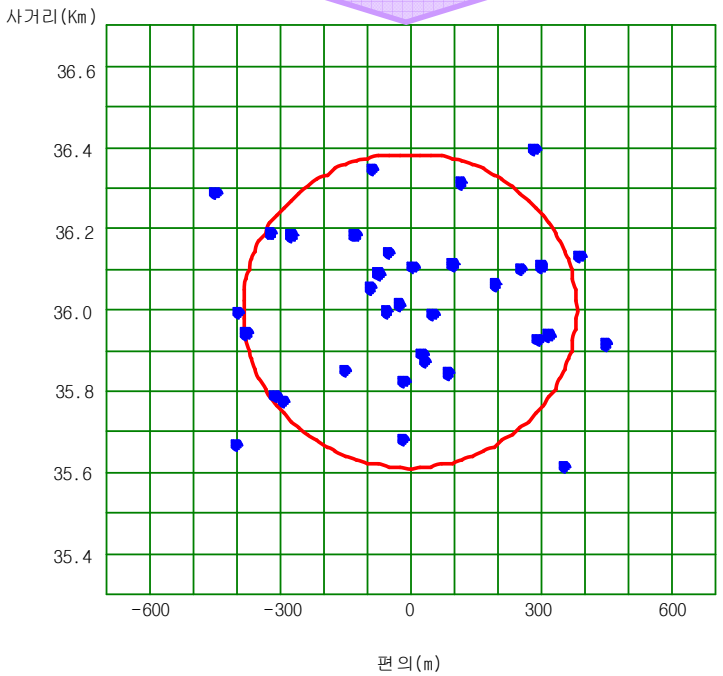
ROCKET K301/K302
(K30 MOTOR)

CEP : 75%
REP : 56%
DEP : 53%

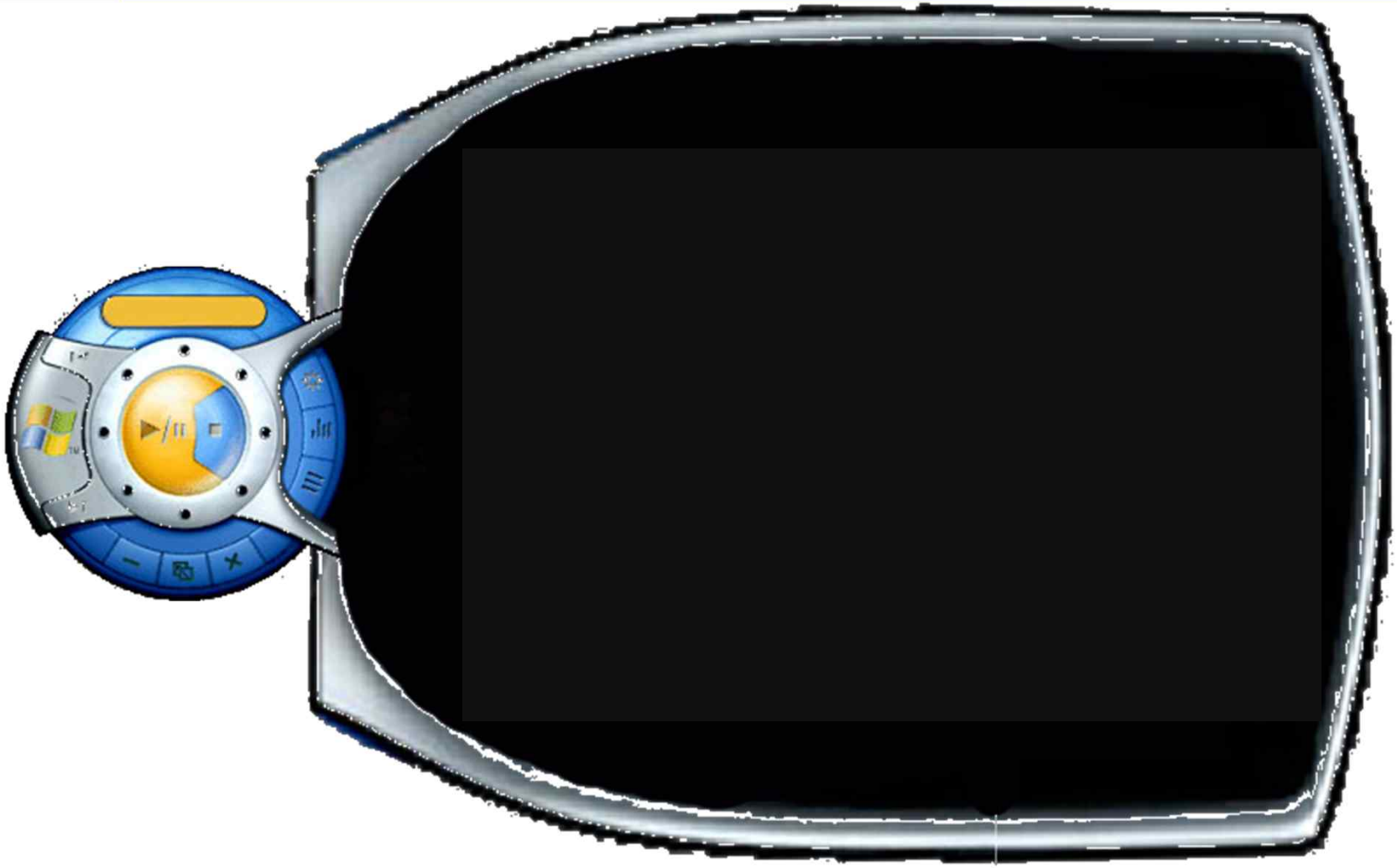


ROCKET K305/K306
(K33 MOTOR)

CEP : 81%
REP : 61%
DEP : 58%



2. 130mm MLRS : FIRING TEST



3. FUZE(K505) : PROPRTIES

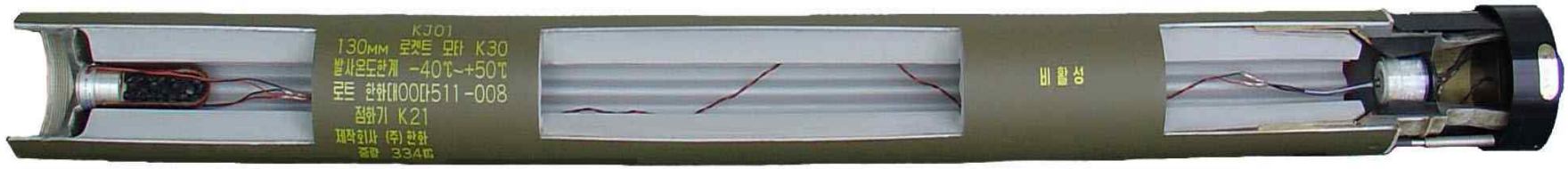
SPECIFICATION		KDS 1390-1008
FUNCTION MODE		**POINT DETONATING**
SHAPE	**Thread Size**	**2-12UNS-1A**
	Dia.	60.2 mm Max.
	Weight	453 g
	Length	152.85 mm Max.
NON ARMING		13 G
ARMING CONDITION		20.75 G Min.
ARMING TIME		1.07 ~ 1.36 sec at 40 G
ARMING DELAY		362 m Min.
Operating Temperature		-54 ℃ ~ 66 ℃
Storage Temperature		-54 ℃ ~ 66 ℃
SAFETY		MIL-STD-1316D Compliant

4. WARHEAD : PROPRTIES

SPECIFICATION		BASIC(K37)	ADVANCED(K38)
NSN		1340-37-294-0004	1340-37-294-0011
DOD		KJ 03	KJ 25
SHAPE	Dia.	130 mm	131 mm
	Weight	20.3kg	20.37 kg
	Length	557 mm	557 mm
CASE		Steel SKTM-17A	FRP with STEEL BALL
EXPLOSIVES		Comp.-B, 6.53 kg	2.8 kg
LETHAL AREA		1333 ㎡	2393 ㎡
DESTROY AREA		1816 ㎡	1487 ㎡
SUPPLEMENTARY CHG.		TNT 136 gr.	TNT 136 gr.
FUZE		K505 PD	K505 PD

5. ROCKET MOTOR

BASIC(K30 MOTOR)



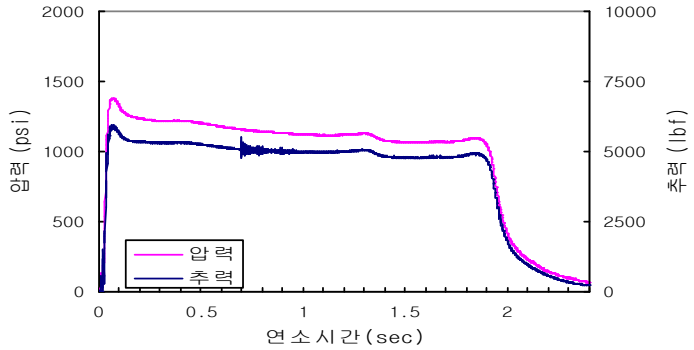
ADVANCED(K33 MOTOR)

5. ROCKET MOTOR : PROPRTIES

SPECIFICATION		BASIC(K30MOTOR)	ADVANCED(K33MOTOR)
NSN		**1340-37-294-0002**	**1340-37-294-0018**
DOD		**KJ 01**	**KJ 15**
SHAPE	**Dia.**	130 mm	131 mm
	Weight	34 kg	43 kg
	Length	1798 mm	1930 mm
COMPONENT	CASE	Non-Integral type (3t)	Integral type(4t)
	PROPELLANT	CTPB composite, 19.7kg	HTPB composite, 26.2kg
	INSULATOR	NBR Tube	NBR/Kevlar Tube
	O-RING	FRONT & REAR each 1 ea	REAR 2 ea
	NOZZLE FIN	FLAT TYPE 4 FINS	CANT TYPE 4 FINS
	IGNITER	K21	K23
	ASSEMBLING	**24 THREAD BOLT**	LOCKING WIRE

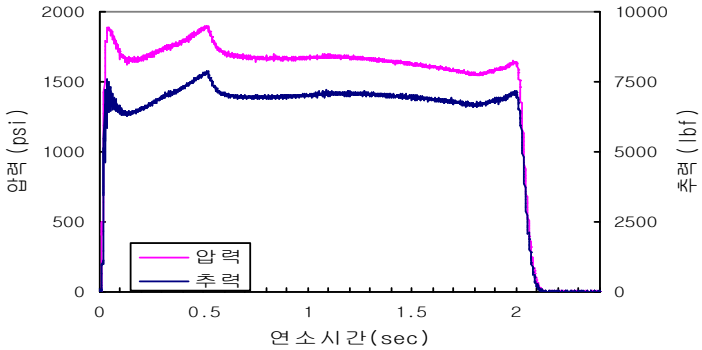
5. ROCKET MOTOR : GROUND BURING TEST

BASIC(K30 MOTOR)



Propellant Wt.	19.70 kg
BURNING RATE	10.88 mm/sec
BURNING TIME	2.65 sec
AVG. PRESSURE	1154 psia
AVG. IMPULSE	5070 lbf
TOTAL IMPULSE	10158 lbf-sec
ISP	233 sec

ADVANCED(K33 MOTOR)



Propellant Wt.	26.18 kg
BURNING RATE	18.25 mm/sec
BURNING TIME	2.12 sec
AVG. PRESSURE	1650 psia
AVG. IMPULSE	7020 lbf
TOTAL IMPULSE	14165 lbf-sec
ISP	245 sec

5. ROCKET MOTOR : GROUND BURNING TEST