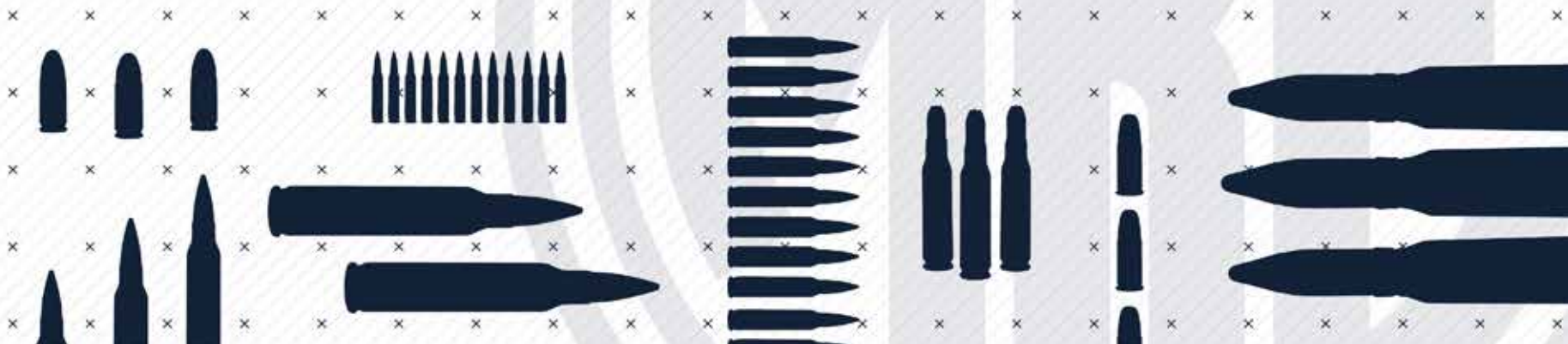


3

SMALL ARMS AMMUNITION



MAKİNE VE KİMYA
ENDÜSTRİSİ







SMALL ARMS AMMUNITION

6	7.65 MM x 17	BALL PISTOL CARTRIDGE	21	7.62 MM x 54R	TRACER CARTRIDGE
6	9 MM x 17	SHORT PISTOL CARTRIDGE	22	7.62 MM x 63	BLANK CARTRIDGE
7	9 MM x 19	PARABELLUM PISTOL CARTRIDGE	24	8.59 MM x 70	SOLID CARTRIDGE
7	9 MM x 19	115 GR PISTOL CARTRIDGE	24	8.59 MM x 70	BALL CARTRIDGE
8	9 MM x 19	MARKER TRAINING CARTRIDGE	25	8.59 MM x 70	AP CARTRIDGE
8	9 MM x 19	BLANK PISTOL CARTRIDGE	25	8.59 MM x 70	API CARTRIDGE
9	9 MM x 20	LONG PISTOL CARTRIDGE	28	12.7 MM x 99(.50 Cal)	BALL (M33) CARTRIDGE
9	9.65 MM (.38 Cal)	SPECIAL (BULLET OUTSIDE) PISTOL CARTRIDGE	28	12.7 MM x 99(.50 Cal)	TRACER (M17) CARTRIDGE
10	.45 CAL	AUTO PISTOL CARTRIDGE	29	12.7 MM x 99(.50 Cal)	M8 CARTRIDGE
10	.40 CAL	AUTO PISTOL CARTRIDGE	29	12.7 MM x 99	ANTI MATERIAL SNIPER CARTRIDGE (API)(M8)
12	5.56 MM x 45	BALL (SS109) CARTRIDGE	30	12.7 MM x 99	SOLID SNIPER CARTRIDGE
12	5.56 MM x 45	TRACER (L110) CARTRIDGE	30	12.7 MM x 99(.50 Cal)	BLANK CARTRIDGE
13	5.56 MM x 45	BLANK CARTRIDGE	31	12.7 MM x 99	ARMOR PIERCING CARTRIDGE (M2)(AP)
13	5.56 MM x 45	POLYMER TIP CARTRIDGE	31	12.7 MM x 99	M20 API-T CARTRIDGE
14	5.56 MM x 45	BALL (M193) CARTRIDGE	34	20 MM x 102	TP CARTRIDGE
14	5.56 MM x 45	MARKER TRAINING CARTRIDGE	34	20 MM x 102	TP-T CARTRIDGE
15	5.7 MM x 28	POLYMER TIP CARTRIDGE	35	20 MM x 102	HEI CARTRIDGE
18	7.62 MM x 51	BALL (M80) CARTRIDGE	35	20 MM x 102	HEI-T CARTRIDGE
18	7.62 MM x 51	ARMOR PIERCING (M61) CARTRIDGE	36	20 MM x 102	API CARTRIDGE
19	7.62 MM x 51	TRACER (M62) CARTRIDGE	36	20 MM x 102	PHALANX M149 (GF1) APDS CARTRIDGE
19	7.62 MM x 51	BLANK CARTRIDGE	37	20 MM x 110	TP (MOD 1101) CARTRIDGE
20	7.62 MM x 51	M118 CARTRIDGE	37	20 MM x 110	TP-T (MOD 1107) CARTRIDGE
20	7.62 MM x 39	STELL CORE CARTRIDGE	38	20 MM x 110	HEI (MOD 1102) CARTRIDGE
21	7.62 MM x 54R	BALL CARTRIDGE	38	20 MM x 110	HEI-T (MOD 1109) CARTRIDGE



ABOUT US

We are capable of producing the full range of small-caliber ammunition from 5.56 mm to 20 mm with high quality standards.

Through line installation projects implemented across various regions of the world, we share our extensive experience in cartridge production with our customers.





7.65 MM x 17

BALL PISTOL CARTRIDGE



Cartridge Length, mm	25
Cartridge Weight, g	8,33
Velocity, m/s (10 m)	270
Accuracy, cm	Max 9 (at 25 m)
Bullet Weight, g	4,55
Bullet Type	Brass and Lead Antimony Alloyed
Case Material	CuZn30

9 MM x 17

SHORT PISTOL CARTRIDGE



Cartridge Length, mm	24,5
Cartridge Weight, g	9,5
Velocity, m/s (10 m)	270 (at 10 m)
Accuracy, cm	Max 9 (at 20 m)
Bullet Weight, g	6
Bullet Type	Brass and Lead Antimony Alloyed
Case Material	CuZn30

9 MM x 19

PARABELLUM PISTOL CARTRIDGE



Cartridge Length, mm	29,69
Cartridge Weight, g	12,15
Velocity, m/s (10 m)	370 (at 16 m)
Accuracy, cm	Mean Radius Max. 7,6 cm (at 46 m)
Bullet Weight, g	8 ± 0,075
Bullet Type	FMJ, Brass (CuZn30), Lead Core (Lead-Antimony Alloyed)
Case Material	CuZn30

9 MM x 19

115 GR PISTOL CARTRIDGE



Cartridge Length, mm	29,69
Cartridge Weight, g	12,15
Velocity, m/s (10 m)	370 (at 16 m)
Accuracy, cm	Mean Radius Max. 7,6
Bullet Weight, g	7,45
Bullet Type	FMJ, Brass (CuZn30), Lead Core (Lead-Antimony Alloyed)
Case Material	CuZn30



9 MM x 19

MARKER TRAINING CARTRIDGE



Cartridge Length, mm	27,92
Cartridge Weight, g	-
Velocity, m/s (10 m)	-
Accuracy, cm	Mean Radius Max. 9 cm (at 7,5 m)
Bullet Weight, g	0,5
Bullet Type	Plastic
Case Material	CuZn30

9 MM x 19

BLANK PISTOL CARTRIDGE



Cartridge Length, mm	29,3
Cartridge Weight, g	4,7
Case Material	CuZn30

9 MM x 20

LONG PISTOL CARTRIDGE



Cartridge Length, mm	27,5
Cartridge Weight, g	11,35
Velocity, m/s (10 m)	340
Accuracy, cm	Max 9 (at 30 m)
Bullet Weight, g	7,14
Bullet Type	Brass and Lead Antimony Alloyed
Case Material	CuZn30

9.65 MM (.38 Cal)

SPECIAL (BULLET OUTSIDE)
PISTOL CARTRIDGE



	BALL	Special (BULLET OUTSIDE)
Cartridge Length, mm	30,6	38,86
Cartridge Weight, g	15,7	15, 8
Velocity, m/s	180 (10 m)	260
Pressure	Max 1500 kg / cm2	Max 950 kg / cm2
Accuracy	Max 9 cm (at 30 m)	Max 4 cm (at 25 m)
Bullet Weight, g	11,5	10,2
Bullet Type	Brass and Lead Antimony Alloyed	Brass and Lead Antimony Alloyed
Case Material	CuZn30	CuZn30



.45 CAL

AUTO PISTOL CARTRIDGE



Cartridge Length, mm	25
Cartridge Weight, g	8,33
Velocity, m/s (10 m)	270
Accuracy, cm	Max 9 (at 25 m)
Bullet Weight, g	4,55
Bullet Type	Brass and Lead Antimony Alloyed
Case Material	CuZn30

.40 CAL

AUTO PISTOL CARTRIDGE



Cartridge Length, mm	28,8
Cartridge Weight, g	16,7
Velocity, m/s	295
Bullet Weight, g	11,6
Bullet Type	Brass and Lead Core
Case Material	CuZn30
Case Material	CuZn30



5.56 MM x 45

BALL (SS109) CARTRIDGE



Cartridge Length, mm	57,4
Cartridge Weight, g	~12,2
Velocity, m/s (23,7 m)	914,4 ± 12,2
Accuracy (100 m)	Sx and Sy Max 2,2 cm
Bullet Weight, g	4
Case Material	Brass (CuZn 28 or CuZn30)
Bullet Material	Gilding Metal, Steel Core and Lead Core (Lead-Antimony Alloyed)
Penetration (RHA)	At least 90% of the bullets completely penetrate through 3.5 mm steel plate (SAE 1010 or 1020) at a range of 570 meters.

5.56 MM x 45

TRACER (L110) CARTRIDGE



Cartridge Length, mm	57.4
Cartridge Weight, g	~12,5
Velocity, m/s (23,7 m)	880 ± 12
Accuracy	550 m de Sx and Sy Max 300 mm
Bullet Weight, g	4,134
Case Material	Brass (CuZn 28 or CuZn30)
Bullet Material	Copper Plated Steel Jacket, Lead Core (Lead-Antimony Alloyed), Tracer Composition

5.56 MM x45

BLANK CARTRIDGE



Cartridge Length, mm	56
Cartridge Weight, g	~7
Case Material	Brass (CuZn 28 or CuZn30)

5.56 MM x45

POLYMER TIP CARTRIDGE



Cartridge Length, mm	57,4
Cartridge Weight, g	~11,49
Velocity, m/s (23,7 m)	1005 ± 15
Accuracy (100 m)	Sx and Sy Max 3 cm
Bullet Weight, g	3,2
Case Material	Brass (CuZn 28 or CuZn30)
Bullet Material	Polymer Type and Lead Core (Lead-Antimony Alloyed)



5.56 MM x 45

BALL (M193) CARTRIDGE



Cartridge Length, mm	57,4
Cartridge Weight, g	11,5
Velocity, m/s (23,7 m)	964
Accuracy (100 m)	Mean Radius Max. 2,7 cm
Bullet Weight, g	3,55
Bullet Material	Gilding Metal and Lead Core
Case Material	Brass (CuZn 28 or CuZn30)

5.56 MM x 45

MARKER TRAINING CARTRIDGE



Cartridge Length, mm	54,1
Cartridge Weight, g	-
Velocity, m/s (23,7 m)	-
Accuracy (7,5 m)	Mean Radius Max. 20 cm
Bullet Weight, g	0,23
Bullet Material	Plastic
Effective Range	Max. 140 m

5.7 MM x 28

POLYMER TIP CARTRIDGE



Cartridge Length, mm	40,25
Cartridge Weight, g	6,81
Velocity, m/s (23,7 m)	570
Accuracy (100 m)	-
Bullet Weight, g	3,55
Bullet Material	CuZn10 Lead Core and Polymer Tip
Case Material	Brass (CuZn 28 or CuZn30)





7.62 MM x 51

BALL (M80) CARTRIDGE



Cartridge Length, mm	71,12
Cartridge Weight, g	~ 24
Velocity, m/s (23,7 m)	838 ± 9,1
Accuracy (100 m)	Mean Radius Max. 3,5 cm
Bullet Weight, g	9,65 – 0,20
Bullet Material	Gilding Metal, Lead Core (Lead-Antimony Alloyed)
Case Material	Brass (CuZn 28 or CuZn30)

7.62 MM x 51

ARMOR PIERCING (M61) CARTRIDGE



Cartridge Length, mm	71,12
Cartridge Weight, g	24
Velocity, m/s (23,7 m)	838 ± 9,1
Accuracy (100 m)	Mean Radius Max. 3,1 cm
Bullet Weight, g	9,45 ± 0,15
Bullet Material	Copper Plated Steel Jacket, Steel Core and Lead Core (Lead -Antimony Alloyed)
Case Material	Brass (CuZn 28 or CuZn30)
Penetration (RHA)	At Least 80 % of The Bullets Completely Penetrate 10 mm Thickness Mild Steel Plate (SAE 1010 or 1020) at a Range of 91 meters

7.62 MM x 51

TRACER (M62) CARTRIDGE



Cartridge Length, mm	71,12 mm
Cartridge Weight, g	23,6 g
Velocity, m/s (23,7 m)	838 ± 9,1 m/s
Accuracy (100 m)	Mean Radius Max. 4 cm
Tracer	At least 80% of the bullets meet trace quality and trace distance acceptance requirements. (13 m, 140 m, 775 m)
Bullet Weight, g	9,2 ± 0,3 g
Bullet Material	Copper Plated Steel Jacket, Lead Core (Lead - Antimony Alloyed), Tracer Composition

7.62 MM x 51

BLANK CARTRIDGE



Cartridge Length, mm	63,15 mm
Cartridge Weight, g	~13 g
Case Material	CuZn30



7.62 MM x 51

M118 CARTRIDGE



Cartridge Length, mm	71,12
Cartridge Weight, g	26
Velocity, m/s (23,7 m)	784
Accuracy (100 m)	Mean Radius (183 m) max. 2,7 cm
Bullet Weight, g	11,46
Bullet Material	Gilding Metal, Lead Core (Lead-Antimony Alloyed)
Case Material	CuZn30

7.62 MM x 39

STELL CORE CARTRIDGE



Cartridge Length, mm	55,60
Cartridge Weight, g	17,89
Velocity, m/s (23,7 m)	710 ±15
Accuracy (100 m)	Mean Radius Max. 3 cm
Case Material	CuZn30
Bullet Material	Gilding Metal, Steel Core
Bullet Weight, g	7,95

7.62 MM x 54R

BALL CARTRIDGE



Cartridge Length, mm	77,16 mm
Cartridge Weight, g	21,8 g
Velocity, m/s (23,7 m)	808 m/s
Accuracy (100 m)	Mean Radius Max. 3,5 cm
Case Material	CuZn30
Bullet Weight, g	9,6 g
Bullet Material	Gilding Metal and lead core

7.62 MM x 54R

TRACER CARTRIDGE



Cartridge Length, mm	77,16 mm
Cartridge Weight, g	21,8 g
Velocity, m/s (23,7 m)	808 m/s
Accuracy (100 m)	Mean Radius Max. 6 cm
Bullet Weight, g	9,1 g
Bullet Material	Gilding Metal, Steel and Lead Core (Lead-Antimony Alloyed)
Case Material	CuZn30



7.62 MM x 63

BLANK CARTRIDGE



Cartridge Length, mm	62,7
Cartridge Weight, g	24
Case Material	CuZn30



8.59 MM x 70

SOLID CARTRIDGE



Cartridge Length, mm	92,25
Cartridge Weight, g	45
Velocity, m/s	890
Accuracy (100 m)	Mean Radius Max. 1,5 cm
Bullet Weight, g	15,6
Bullet Material	Brass
Case Material	CuZn30

8.59 MM x 70

BALL CARTRIDGE



Cartridge Length, mm	91,86
Cartridge Weight, g	-
Velocity, m/s (.... m)	890
Accuracy (232,4 m)	Mean Radius Max. 3,675 cm
Bullet Weight, g	16,4
Bullet Material	Gilding Metal, Lead Core (Lead-Antimony Alloyed)
Case Material	CuZn30

8.59 MM x 70

AP CARTRIDGE



Cartridge Length, mm	91,86
Cartridge Weight, g	46
Velocity, m/s (23,7 m)	890
Bullet Weight, g	16,1
Bullet Material	Brass and Steel Core
Penetration (RHA)	At least 12 mm HB 400 steel plate at 550 m
Case Material	CuZn30

8.59 MM x 70

API CARTRIDGE



Cartridge Length, mm	91,86 mm
Cartridge Weight, g	46
Velocity, m/s (23,7 m)	895
Bullet Weight, g	16,1
Bullet Material	Gilding Metal, Tungsten carbide core, Zirconium tip
Penetration (RHA)	At least 16±0.1 mm SAE 1010 (Rockwell B55-B70 hardness) steel plate at 91±1 m
Case Material	CuZn30





12.7 MM x 99(.50 Cal.)

BALL (M33) CARTRIDGE



Cartridge Length, mm	138,43
Cartridge Weight, g	114
Velocity, m/s	872 (at 23,7 m)
Accuracy, cm	Mean Radius Max. 21,54 (232,4 m)
Bullet Weight, g	41,7
Bullet Material	Gilding Metal, Lead, Tracer Composition
Case Material	CuZn30

12.7 MM x 99(.50 Cal.)

TRACER (M17) CARTRIDGE



Cartridge Length, mm	138,43
Cartridge Weight, g	114
Velocity, m/s (.... m)	872 (at 23,7 m)
Accuracy (232,4 m)	Mean Radius Max. 21,54 (232,4 m)
Bullet Weight, g	41,7
Bullet Material	Gilding Metal, Lead, Tracer Composition
Case Material	CuZn30

12.7 MM x 99(.50 Cal.)

M8 CARTRIDGE



Cartridge Length, mm	138,43
Cartridge Weight, g	114
Velocity, m/s (23,7 m)	887
Accuracy, cm	Mean Radius Max. 12,93 (232,4 m)
Bullet Weight, g	43,60
Bullet Material	Gilding Metal, Steel Core, Chemicals
Case Material	CuZn30
Penetration (RHA)	At least 80 % of the bullets completely perforate DIN 40CrMoV4-6 steel plate 22.2 mm in thickness with Rockwell C30-C45 hardness at 91 m distance from barrel.

12.7 MM x 99

ANTI MATERIAL SNIPER
CARTRIDGE (API) (M8)



Cartridge Length, mm	138,43
Cartridge Weight, g	114
Velocity, m/s (23,7 m)	887
Accuracy (232,4 m)	Mean Radius Max. 1 MoA
Bullet Weight, g	43,6
Bullet Material	Gilding Metal, Steel Core, Incendiary Composition
Case Material	CuZn30



12.7 MM x 99

SOLID SNIPER CARTRIDGE



Cartridge Length, mm	138,43
Cartridge Weight, g	122
Velocity, m/s (23,7 m)	845
Accuracy (232,4 m)	Mean Radius Max. 1 MoA
Bullet Weight, g	51,76
Bullet Material	Brass
Case Material	CuZn30

12.7 MM x 99(.50 Cal.)

BLANK CARTRIDGE



Cartridge Length, mm	99,7
Cartridge Weight, g	55,1
Case Material	CuZn30

12.7 MM x 99

ARMOR PIERCING CARTRIDGE (M2) (AP)



Cartridge Length, mm	138,43
Cartridge Weight, g	114
Velocity, m/s (23,7 m)	887
Accuracy (100 m)	Sx and Sy Max. 5,45 cm
Bullet Weight, g	42,87
Bullet Material	Gilding Metal, Steel Core
Case Material	CuZn30

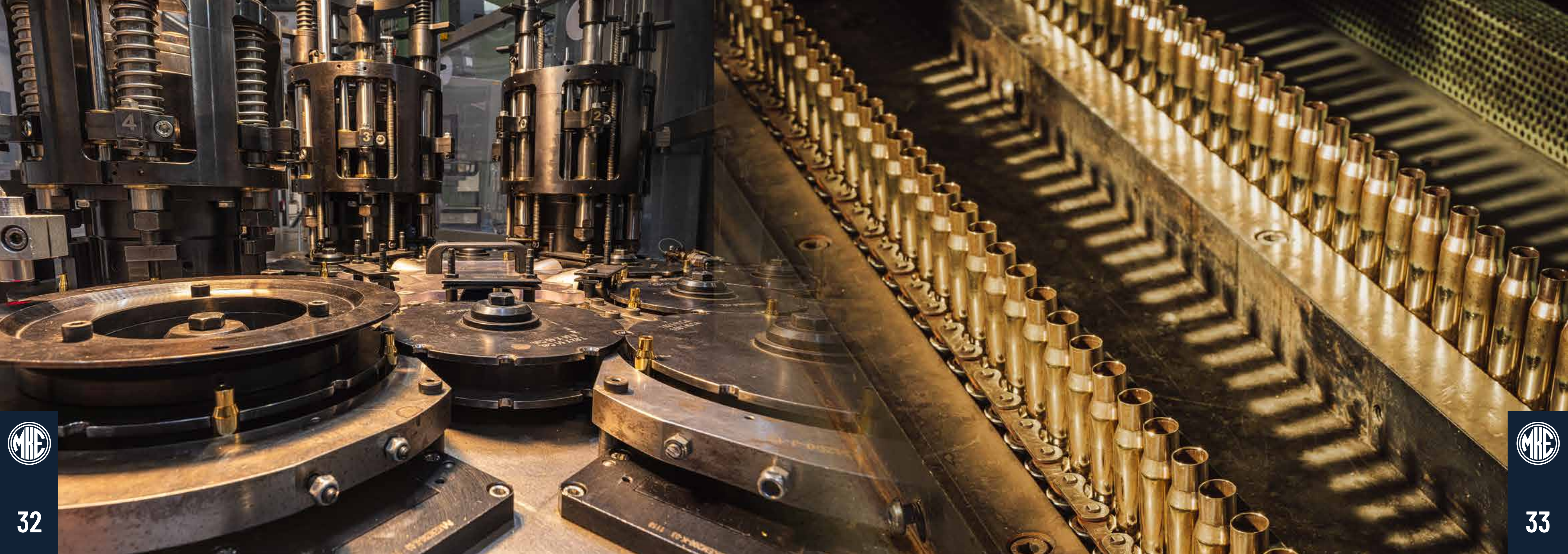
12.7 MM x 99

M20 API-T CARTRIDGE



Cartridge Length, mm	138,43
Cartridge Weight, g	122
Velocity, m/s (23,7 m)	1036
Accuracy (232,4 m)	Mean Radius Max. 12,93 cm
Bullet Weight, g	43,6
Bullet Material	Steel Core, Incendiary composition, Tracer Composition





20 MM x 102

TP CARTRIDGE



Cartridge Length, mm	168,02
Cartridge Weight, g	255
Velocity, m/s (23,7 m)	1030 ±15
Accuracy (232,4 m)	Max 16,15 cm
Case Model Number	M103
Case Material	Brass (CuZn30)
Bullet Shell Material	Steel (Ç1025)
Bullet Fuze Type	Aluminum Fuze
Primer	M52 A3 B1 Electrical Primer
Bullet Weight, g	100

20 MM x 102

TP-T CARTRIDGE



Cartridge Length, mm	168,02
Cartridge Weight, g	254
Velocity, m/s (23,7 m)	1030 ±15
Accuracy (232,4 m)	Max 26,92 cm
Case Model Number	M103
Case Material	Brass (CuZn30)
Bullet Shell Material	Steel (Ç1025)
Bullet Fuze Type	Aluminum Fuze
Primer	M52 A3 B1 Electrical Primer
Bullet Weight, g	95

20 MM x 102

HEI CARTRIDGE



Cartridge Length, mm	Max 168,02
Cartridge Weight, g	258
Velocity, m/s (23,7 m)	1030 ±15
Accuracy (232,4 m)	Max 16,15 cm
Case Model Number	M103
Case Material	Brass (CuZn30)
Bullet Shell Material	Steel (Ç 1040)
Fuze	M505 A3
Primer	M52 A3 B1 Electrical Primer
Link Type	M12 or M14 Link
Bullet Weight, g	101

20 MM x 102

HEI-T CARTRIDGE



Cartridge Length, mm	Max 168,02
Cartridge Weight, g	263
Velocity, m/s (23,7 m)	1030 ±15
Accuracy (232,4 m)	Max 26,92 cm
Case Model Number	M103
Case Material	Brass (CuZn30)
Bullet Shell Material	Steel (Ç 1040)
Fuze	M505 A3
Primer	M52 A3 B1 Electrical Primer
Link Type	M12 or M14 Link
Bullet Weight, g	103



20 MM x 102

API CARTRIDGE



Cartridge Length, mm	167,43
Cartridge Weight, g	258
Velocity, m/s (23,7 m)	1030
Accuracy (232,4 m)	Max 16,15 cm
Case Model Number	M103
Case Material	Brass (CuZn30)
Bullet Shell Material	Steel, Aluminum, Incendiary Composition
Fuze	Aluminum
Primer	M52 A3 B1 Electrical Primer
Link Type	M12 or M14 Link
Bullet Weight, g	88 g

20 MM x 102

PHALANX M149 (GF1) APDS CARTRIDGE



Cartridge Length, mm	168 mm
Cartridge Weight, g	253
Velocity, m/s (23,7 m)	1036 m/s
Accuracy (100 m)	Mean Radius Max. 10,3 cm
Case Model Number	M103
Case Material	Brass (CuZn30)
Bullet Shell Material	Polyamide, Steel, Aluminum
Primer	M52 A3 B1 Electrical Primer
Bullet Weight, g	93 g

20 MM x 110

TP (MOD 1101) CARTRIDGE



Cartridge Length, mm	Max 178
Cartridge Weight, g	215
Velocity, m/s (23,7 m)	945
Accuracy (232,4 m)	max 16,15 cm
Case Model Number	MKE MOD 1001 CASE
Case Material	Brass (CuZn30)
Bullet Shell Material	Steel (Ç1025)
Bullet Fuze Type	Aluminum Fuze
Primer	12.7 mm (.50 Cal) Primer
Bullet Weight, g	97

20 MM x 110

TP-T (MOD 1107) CARTRIDGE



Cartridge Length, mm	Max 178
Cartridge Weight, g	220
Velocity, m/s (23,7 m)	945
Accuracy (232,4 m)	Max 26,92 cm
Case Model Number	MKE MOD 1001 CASE
Case Material	Brass (CuZn30)
Bullet Shell Material	Steel (Ç1025)
Bullet Fuze Type	Aluminum Fuze
Primer	12.7 mm (.50 Cal) Primer, Boxer
Bullet Weight, g	97



20 MM x 110

HEI (MOD 1102) CARTRIDGE



Cartridge Length, mm	Max 178
Cartridge Weight, g	220
Velocity, m/s (24 m)	945
Accuracy (232,4 m)	Max 16,15 cm
Case Model Number	MKE MOD 1001 CASE
Case Material	Brass (CuZn30)
Bullet Shell Material	Steel (Ç1040)
Bullet Fuze Type	M505 A3 Fuze
Primer	12.7 mm (.50 Cal) Primer
Bullet Weight, g	97

20 MM x 110

HEI-T (MOD 1109) CARTRIDGE



Cartridge Length, mm	Max 178
Cartridge Weight, g	223
Velocity, m/s (24 m)	945
Accuracy (232,4 m)	Max 26,92 cm
Case Model Number	MKE MOD 1001 CASE
Case Material	Brass (CuZn30)
Bullet Shell Material	Steel (Ç1040)
Bullet Fuze Type	M505 A3 Fuze
Primer	12.7 mm (.50 Cal) Primer, Boxer
Bullet Weight, g	103



SMALL ARMS AMMUNITION ASSEMBLY LINE



MADE IN TÜRKİYE



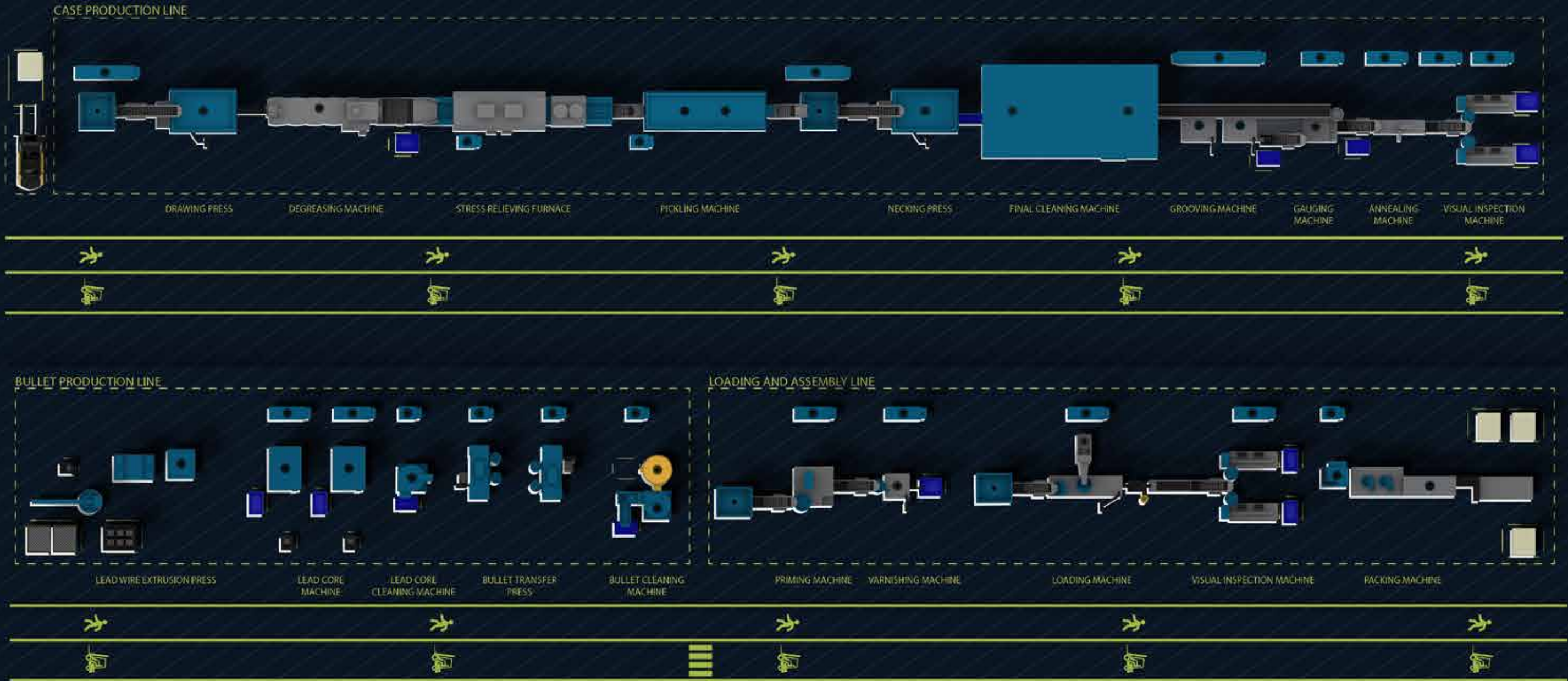
CASE



BULLET



CARTRIDGE







EMNİYET MAHALLESİ DÖĞOL CAD. NO: 2 ANADOLU MEYDANI 06560 ANKARA/TÜRKİYE
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