

90mm Gun M3

Carriage and mount:	90mm GMC M36 in mount M4(T8), medium tank M26 in mount M67(T99E2),
Length of Chamber (to Rifling):	24.8 inches
Length of Rifling:	152.4 inches
Length of Chamber (to projectile base):	20.8 inches (boat-tailed projectiles)
Travel of Projectile in Bore:	156.4 inches (boat-tailed projectiles)
Length of Bore:	177.15 inches, 50.0 calibers
Depth of Breach Recess:	9.00 inches
Length of Muzzle to rear face of Breach:	186.15 inches, 52.5 calibers
Additional length, Muzzle Brake, etc.:	16.0 inches, Muzzle Brake M3 on Late production
Overall length:	202.2 inches with muzzle brake
Diameter of Bore:	3.543 inches
Chamber Capacity:	300 cubic inches
Weight Complete (without muzzle brake):	2,300 pounds
Weight, muzzle Brake M3	149.5 pounds
Total Weight:	2,450 pounds
Type of Breechblock:	Semiautomatic, verticle sliding wedge.
Rifling:	32 groves, unifom right hand twist, one turn in 32 calibers
Ammunition:	Fixed
Primer:	Percussion
Weight Complete Round in pounds:	APC M82 early 42.75, M82 late 43.87, HVAP T30E16 37.13, AP T33 43.82, HE M71 41.93
Weight, Projectile in pounds:	APC M82 early 24.11, HVAP M304(T30E16) 16.80, AP T33 24.06, HE M71 23.29
Maximum Powder Pressure:	38,000 psi
Maximum Rate of Fire:	8 rounds a minute
Muzzle Velocity:	APC M82 early 2650Ft/sec, M82 late 2800Ft-sec, HVAP T30E16 3350ft-sec, AP T33 2800ft-sec, HE M71 2700ft-sec
Muzzle Energy of Projectile:	
$KE=1/2MV^2$ Rotational energy is neglected and valuse are based on long tons (2,240 pounds)	
	APC M82 early 1174 ft-tons, M82 late 1310 ft-tons, HVAP T30E16 1307 ft-tons, AP T33 1310 ft-tons, HE M71 1177 ft-tons
Maximum Range test stannd In yards:	APC M82 early 20400 yards, M82 late 21400yards, HVAP T30E16 15700 yards, AP T33 21000 yards, HE M71 19560 yards

Gun Penetration Tables

Shell Name	500 Yards	1000 Yards	1500 Yards	2000 yards
Homogenous Armor at 30 degrees obliquity				
APC M82 Projectile (APCBC/HE-T) early	4.7 inches (120mm)	4.4 inches (112mm)	4.1 inches (104mm)	3.8 inches (96mm)
APC M82 Projectile (APCBC/HE-T) late	5.1 inches (129mm)	4.8 inches (122mm)	4.5 inches (114mm)	4.2 inches (106mm)
HVAP M304 Shot (APCR-T)	8.7 inches (221mm)	7.9 inches (199mm)	7.0 inches (176mm)	6.1 inches (156mm)
AP T33 Shot (APBC-T)	4.7 inches (119mm)	4.6 inches (117mm)	4.5 inches (114mm)	4.3 inches (109mm)
Homogenous Armor at 55 degrees obliquity		1000 Yards		2000 yards
APC M82 Projectile (APCBC/HE-T) early		2.3 inches (58mm)		2.0 inches (51mm)
APC M82 Projectile (APCBC/HE-T) late		2.5 inches (64mm)		2.2 inches (56mm)
HVAP M304 Shot (APCR-T)		2.9 inches (74mm)		1.8 inches (46mm)
AP T33 Shot (APBC-T)		2.5 inches (64mm)		2.3 inches (58mm)

Chart created by the Sherman tank site with data from Hunnicutt's Sherman, Pershing and Firepower books and various technical manuals.

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Notes: