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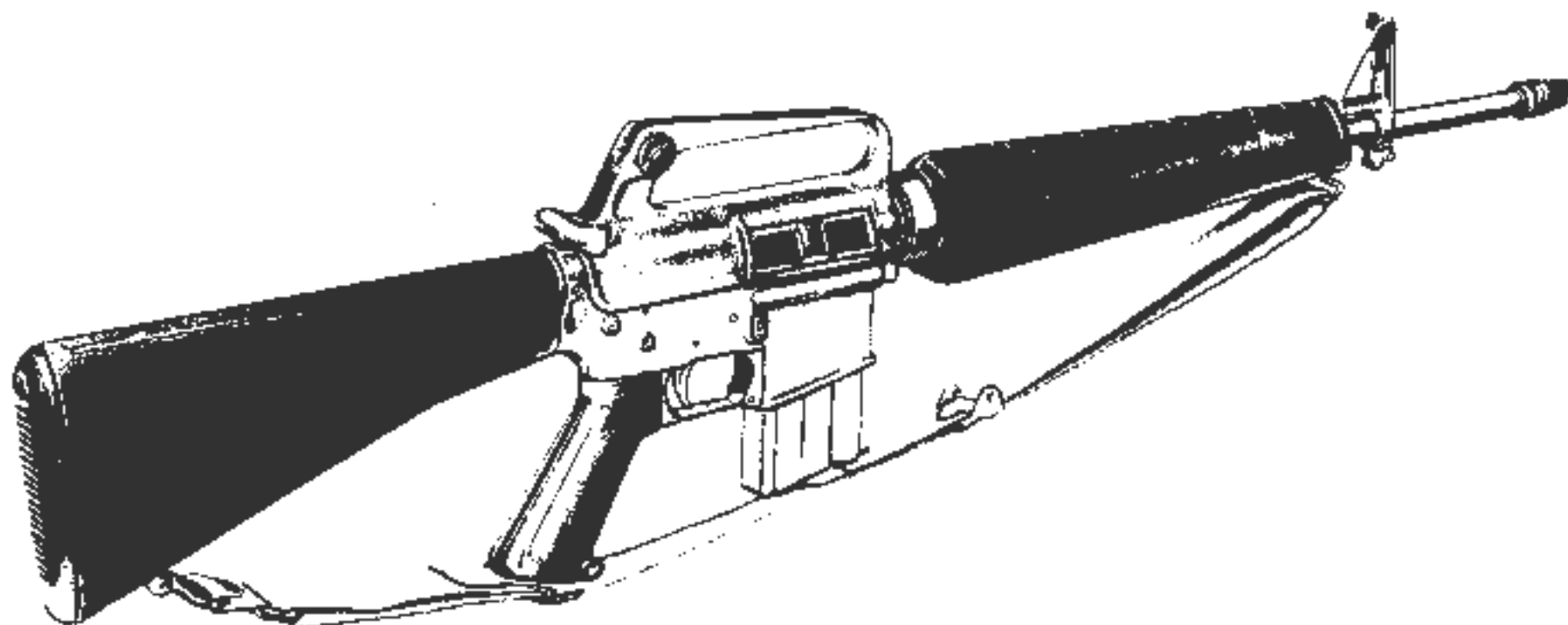
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## Precautions

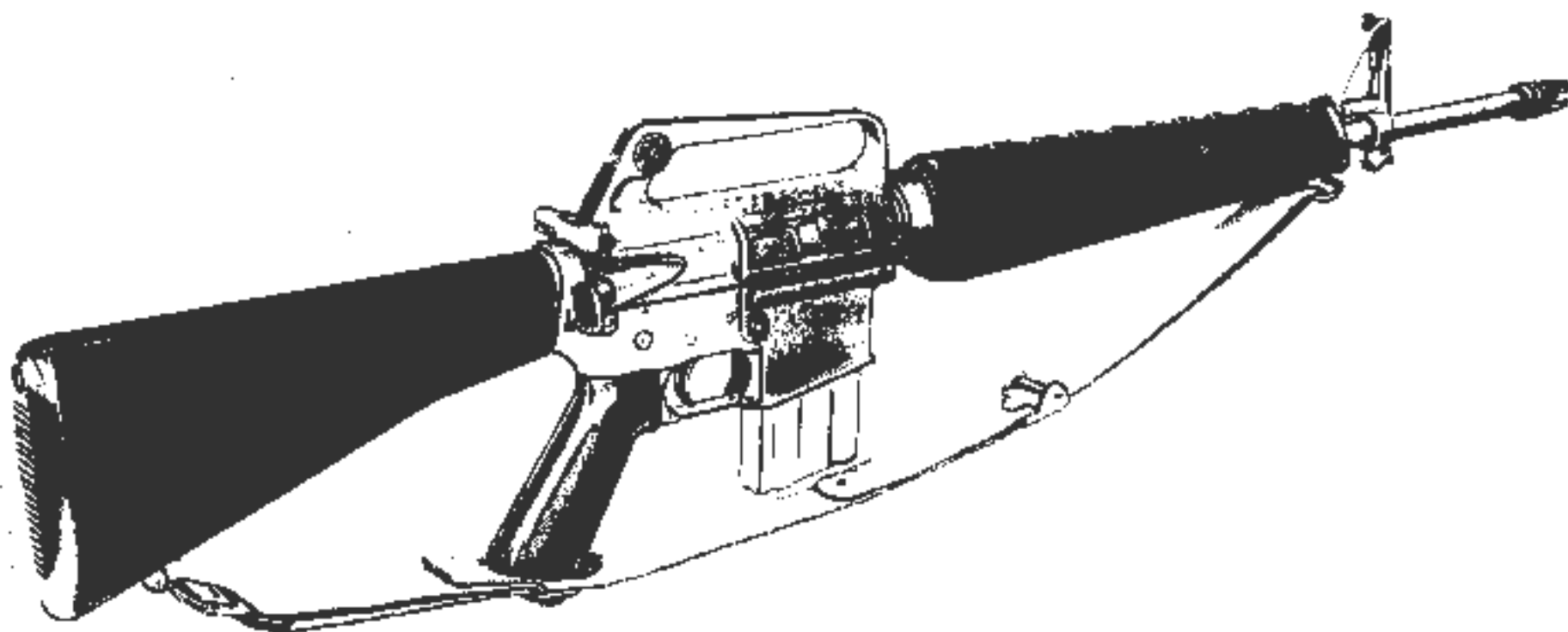
1. Most vapors of cleaning agents are toxic if inhaled in large quantities for extended periods. Use toxic cleaning agents sparingly and only in well ventilated areas.
2. Wash hands thoroughly with soap and water after using cleaning agents. A lanolin base cream may be used after washing.
3. Only the cleaning agents in this manual and a vapor degreaser are authorized for cleaning. Before using a vapor degreaser, the following parts or components shall be removed:

STOCK ASSY, MOLDED:	W/swivel (27, Fig. 9-2)
GRIP, PISTOL:	(21, Fig. 9-2)
GUARD, HAND, GUN: R-H, and L-H.	(1 & 2, Fig. 9-3)
SWIVEL, FRONT:	(10, Fig. 9-3)

When removing stock assembly and pistol grip care should be taken to prevent loss of detents and springs. (22, 23, 33 and 34, Fig. 9-3)



RIFLE, 5.56 MM - M16



RIFLE, 5.56 MM - XM16E1

ORD F9071

Figure 1-1. Rifle, 5.56-MM, M16 and XM16E1.

## CHAPTER I INTRODUCTION

### SECTION 1 PURPOSE AND SCOPE

#### 1-1. GENERAL.

1-2. This manual is published for the information and guidance of personnel responsible for Operation, Organizational, and Direct and General Support Maintenance of 5.56-mm rifles M16 and XM16E1. Pertinent information includes tabulated data, accessories and special tools, preparation for use, storage and shipment, operating instructions, preventive maintenance and lubrication procedures, ammunition, instructions on demolition, inspections, procedures on disassembly, cleaning, repair and assembly. Also included are basic issue items, tools and replacement parts.

**NOTE**  
THE OPERATOR (USER) PORTION OF THIS MANUAL IS CHAPTER I THROUGH VI.

#### 1-3. SUGGESTIONS AND RECOMMENDATIONS.

1-4. U.S. ARMY. The direct reporting of errors, omissions and recommendations for

improving this equipment manual by the individual user is authorized and encouraged. DA Form 2028 will be used for reporting these improvements. This form will be completed in triplicate, using pencil, pen or typewriter, and forwarded by the individual using the manual. The original and one copy will be forwarded direct to:

Commanding General  
Headquarters  
U. S. Army Weapons Command  
ATTN: AMSWE-SMM-P  
Rock Island Arsenal  
Rock Island, Illinois 61202

One information copy will be provided to the individual's immediate supervisor (e.g. officer, noncommissioned officer, supervisor, etc.).

1-5. U.S. AIR FORCE. Publication deficiencies will be reported on AFTO Form 22's and processed in accordance with T.O. 00-5-1.

1-6. U.S. NAVY. Publication deficiencies will be reported on Publication Change Guide Form PRNC-NWP-5602-5 (Rev. 4-60).

### SECTION 2 DESCRIPTION

#### 1-7. DESCRIPTION.

1-8. Only XM16E1 Rifle has a forward assist assembly with associated parts. Otherwise the M16 has the same components and parts.

#### **Note**

The instructions in this manual when different for each model will be noted accordingly.

1-9. The rifles (figure 1-1) are light-weight, air-cooled, gas-operated, magazine-fed, shoulder or hip guns and are designed for either full automatic or semiautomatic fire. The rifles accommodate a 20-round magazine.

1-10. Barrel is air-cooled and is provided with a flash suppressor, and may serve as a grenade launcher and a front support for the bayonet. The barrel is surrounded by a heat resisting fibre glass material, which serves as a hand guard and forearm. The hand guard has a heat

resisting inner shield. The front and rear sights are adjustable.

1-11. Butt stock is made of a durable synthetic material of high impact strength.

1-12. Rifles are easily opened by pressing the take down pin exposing the working parts, making it convenient for cleaning and inspection.

1-13. The forward assist assembly, when actuated, forces the bolt forward to the locked position (XM16E1).

1-14. Bolt locking action is one of the features of the rifles. The bolt contains locking lugs. Lugs on the barrel extension engage the bolt lugs and lock the bolt firmly in the barrel extension with or without cartridge in chamber. Thus the full force of the explosion of the cartridge is absorbed by the barrel extension and bolt. Receiver is made of light-weight aluminum alloys. The safety, durability and function of the rifles is in no way reduced and the portability and logistical values greatly increased, particularly when air transport is used.

**SECTION 3  
TABULATED DATA**

**1-15. TABULATED DATA.**

1-16. Tabulated data pertaining to the general characteristics and performances are listed as follows:

**Weight**

M16 Rifle without magazine and sling . . . . .	6.3 lb
XM16E1 Rifle without magazine and sling . . . . .	6.5 lb
Sling M1 . . . . .	.4 lb
Empty aluminum magazine . . . . .	.2 lb
Loaded aluminum magazine . . . . .	.7 lb
M16 Rifle with sling and loaded magazine . . . . .	7.4 lb
XM16E1 Rifle with sling and loaded magazine . . . . .	7.6 lb
Telescope . . . . .	.9 lb
Bipod M3 . . . . .	.6 lb
Bipod case . . . . .	.2 lb
Bayonet-Knife M7. . . . .	.6 lb
Scabbard M8A1 . . . . .	.3 lb

**Length**

Rifle with flash suppressor . . . . .	39 in.
Rifle with bayonet-knife . . . . .	44.25 in.
Barrel . . . . .	20 in.
Barrel with flash suppressor . . . . .	21 in.

**Mechanical Features**

Rifling, R. H. 6 grooves - 1 turn in 12"	
Bore maximum . . . . .	.220 in.
Groove maximum . . . . .	.2245 in.
Sight radius . . . . .	19.75 in.

## AR-15, CAR-15, M16

<b>Trigger pull</b>	
Maximum . . . . .	8.5 lbs.
Minimum . . . . .	5.0 lbs.
Method of operation . . . . .	Gas
Type of mechanism . . . . .	Rotating bolt
Method of feeding - magazine . . . . .	20 rds
Cooling . . . . .	Air
<b>Ammunition</b>	
Caliber . . . . .	5.56-mm
Type . . . . .	Ball and tracer
<b>Firing Characteristics</b>	
Muzzle velocity (approximate) . . . . .	3250 fps
Muzzle energy . . . . .	1300 ft - lb
Chamber-pressure . . . . .	52,000 psi
Cyclic rate of fire . . . . .	700/800 rds. per min.
<b>Maximum rate of fire</b>	
Semiautomatic . . . . .	45/65 rds. per min
Automatic . . . . .	150/200 rds. per min
Sustained rate of fire . . . . .	12/15 rds. per min
Maximum range . . . . .	2653 meters
Maximum effective range . . . . .	460 meters

### SECTION 4 ACCESSORIES AND SPECIAL TOOLS

#### 1-17. ACCESSORIES.

1-18. Accessories are listed in Table 1-1. Items listed with (USAF) are applicable for Air Force only.

#### 1-19. SPECIAL TOOLS.

1-20. Special tools tabulated in table 1-2 are listed in chapter IX of this manual. This tabulation contains only those tools utilized in performing the operations described in this manual.



**AR-15, CAR-15, M16**

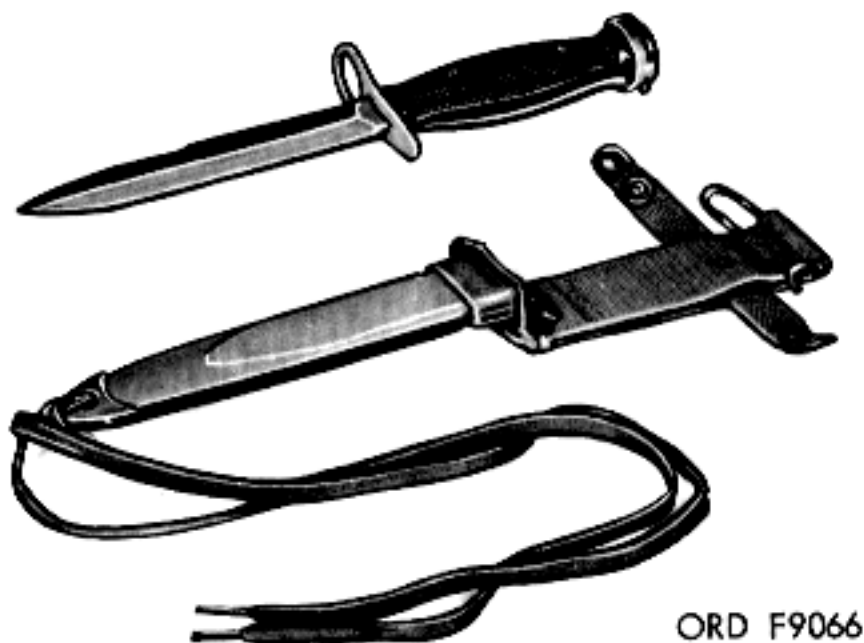
**Table 1-1. Accessories**

Item	Identifying Number	Figure Number
Bayonet-Knife M7	11010077	1-2
Bipod, Rifle, XM3	62122	1-3
Case, Bipod	62309	1-4
Case, Scope (USAF,	63136	-NI
Grease, Rifle, 5cc cntr.	5621059	1-5
Scabbard, Bayonet-Knife M8A1	7268112	1-2
Scope, Assembly (USAF)	62142	-NI
Scope, Mount Assembly (USAF)	62215	-NI

-NI NOT ILLUSTRATED  
(USAF) UNITED STATES AIR FORCE

**Table 1-2. Special Tools**

Item	Identifying Number	References Fig.	Use
Rod, cleaning, small arms, M11	11010020	1-6 3-6	Used with cleaning brush to clean barrel bore.
Brush, cleaning, small arms	11010021	1-7 3-6	To clean barrel bore.
Wrench, combination, barrel nut and flash suppressor	11010033	1-8 8-4	To remove and install barrel nut and slip ring.
Jaw, barrel remover	11010032	1-9 8-4	Used with adapter to remove and install barrel nut and slip ring.
Gage, firing pin protrusion	7799735	1-10 8-6	To check firing pin protrusion.
Gage, headspace (field type)	7799734	1-11 8-7	To gage headspace.



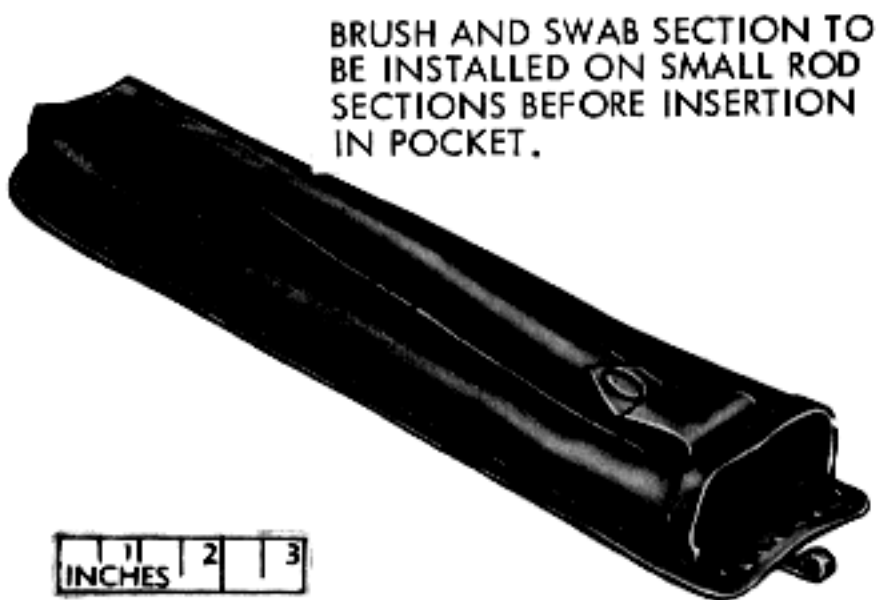
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Figure 1-2. Bayonet-Knife M7 and Bayonet-Knife Scabbard M8A1 (Fig. 3-3)



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Figure 1-3. Rifle Bipod, XM3 (Fig. 3-3)



BRUSH AND SWAB SECTION TO BE INSTALLED ON SMALL ROD SECTIONS BEFORE INSERTION IN POCKET.

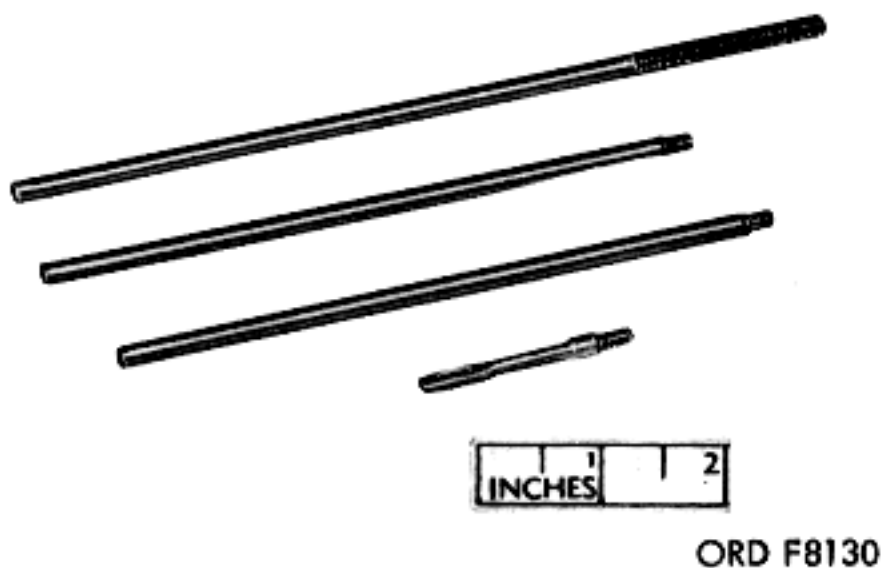
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Figure 1-4. Bipod Case - 62309



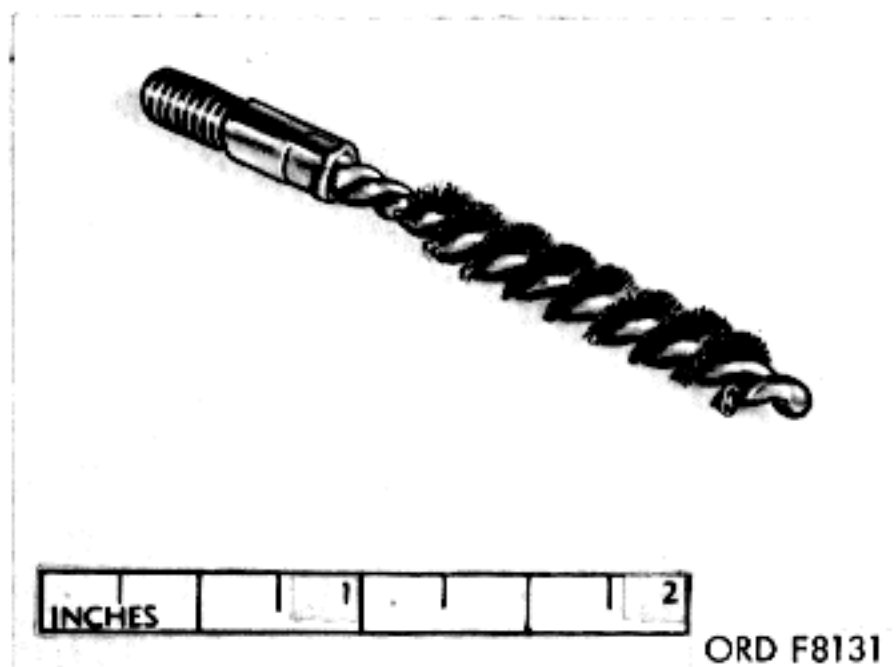
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Figure 1-5. Rifle Grease - 5 cc Container - 5621059



ORD F8130

Figure 1-6. Small Arms Cleaning Rod - 11010020 (Fig. 3-6)



ORD F8131

Figure 1-7. Small Arms Cleaning Brush - 11010021 (Fig. 3-6)