

**GEHL**®

Form No.  
918072  
Revision E  
Sept. 2009

# Model 603

## Compact Excavator

### Serial Number Range

Engine Tier II Models: **AC02513 to AD07207**

Engine Tier III Models: **AH00645 and up**



**Parts Manual**

# INTRODUCTION

When ordering service parts, specify the correct part number, full description, quantity required, the unit model number and serial number. For your safety and continued proper operation, use only genuine GEHL service parts.

The model and serial number for this unit are on a tag located on a panel on the front of the cab.

“Right” and “left” are determined from a position sitting on the operator’s seat and facing forward.

GEHL Company reserves the right to make changes or improvements in the design or construction of any part of the unit without incurring the obligation to install such changes on any previously delivered units.

Refer to the abbreviations table located on this page for special parts descriptions. Standard attaching hardware torque values are also provided near the back of this manual. Metric torque values shown in the illustrations are in Newton-meters and are converted to foot-pounds by multiplying by 0.738.

Specific reference numbers, indicating a complete assembly, are circled in some illustrations. A small bag, pictured in some illustrations, indicates a seal kit (seals, o-rings, etc.). In the exploded view parts list, additional information may follow the Reference Number.

Serial number breaks are indicated as follows:

- (SN 999 and before) - indicates serial numbers up to and including 999.
- (SN 1000 - 2000) - indicates serial numbers between 1000 and 2000.
- (SN 999 and up) - indicates serial numbers including 999 and after.

Serial number exceptions and inclusion are indicated as follows:

- (SN 999 and before except 997) - indicates serial numbers up to and including 999, EXCEPT 997.
- (SN 1000 - 2000 except 1996 including 997) - indicates serial numbers between 1000 and 2000, INCLUDING 997 EXCEPT 1996.

- (SN 2001 and up including 1996) - indicates serial numbers including 2001 and after, INCLUDING 1996.

Unless otherwise specified, all cap screws and bolts are Grade 8.8, cadmium or zinc plated.

**NOTE:** *The following abbreviations may be used herein:*

ASSD .....	Assembled
ASSY .....	Assembly
AR .....	As Required
CB.....	Carriage Bolt
CP .....	Cotter Pin
CS .....	Cap Screw (Hexagon Head)
CYL.....	Cylinder
DIA.....	Diameter
DIN.....	Deutsches Institut für Normung (German Institute for Standardization)
FHCS .....	Flat Head Cap Screw
GR .....	Grade
HB .....	Hexagon Bolt
HLN.....	Hexagon Lock Nut
HN .....	Hexagon Nut
HP.....	High Pressure
HYD .....	Hydraulic
INS .....	Insert
LH.....	Left Hand
LN.....	Lock Nut
LT .....	Left
LW .....	Lock Washer
M .....	Meter or Meters
MM/mm .....	Millimeter
NPT.....	National Pipe Threaded
NSS.....	Not Sold Separately
RH .....	Right Hand
RT .....	Right
SHCS.....	Socket Head Cap Screw
SLTD .....	Slotted
SN .....	Serial Number or Slotted Nut
SQ.....	Square
W/ .....	With
W/O .....	Without
ZO.....	Zinc Oxide
ZY.....	Zinc Yellow

# TABLE OF CONTENTS

Introduction.....	i
Table of Contents.....	1
Decal Locations .....	4
Tools / Service Kits.....	8
Filters, Gaskets and Seals .....	9
Battery.....	11
Diesel Engine .....	12
Engine Mounts .....	14
Cylinder Head & Valve Cover.....	16
Cylinder Block .....	20
Seal, Crankshaft .....	22
Oil Pan .....	24
Camshaft .....	26
Crankshaft & Piston.....	28
Lubrication.....	30
Cooling System.....	32
Fuel Injection System .....	34
Intake Manifold.....	36
Engine Air Filter .....	38
Exhaust System.....	41
Fuel Tank .....	43
Fuel Supply .....	46
Auto Idle/Throttle .....	48
Throttle.....	49
Hydraulic Pump Drive .....	50
Oil Cooler .....	51
Radiator.....	52
Turntable Drive Unit.....	56
Turntable Drive Unit Installation.....	58
Drive Unit .....	60
Drive Unit Installation .....	61
Hydraulic Oil Tank .....	62
Hydraulic Oil Tank Hoses .....	66
Hydraulic Pump/External Parts .....	67
Hydraulic Pump/Internal Parts.....	69
Hydraulic Pump Installation .....	70
Swivel Joint.....	72
Control Valve Fittings .....	73
Control Valve Segments .....	74
Control Valve Fittings .....	75
Control Valve Segments .....	76
Pilot Pressure Hoses.....	77
Joysticks.....	78
Travel Pilot Valve.....	80
Auxiliary Hydraulics Control Valve Installation .....	82
Control Valve For Auxiliary Hydraulics .....	83
Dozer Blade Valve.....	84
Proportional Valve (Option) .....	85
Proportional Valve Installation (Option) .....	86
4/3 Valve (Option) .....	87
4/3 Valve Installation (Option) .....	88
ISO/SAE Valve.....	89
ISO/SAE Valve Installation.....	90
Reversing Valve.....	91
Valve Block .....	92
Distribution Block.....	93
Boom Cylinder.....	94
Boom Cylinder Installation.....	96
Dipper Arm Cylinder .....	97
Dipper Arm Installation .....	98
Bucket Cylinder .....	99
Bucket Cylinder Installation .....	100
Swivel Cylinder .....	101
Swivel Cylinder Installation .....	104
Dozer Blade Cylinder .....	107
Dozer Blade Cylinder Installation .....	108
Instrument Panel .....	109
Relay Box .....	112
Horn .....	114
Radio (Option) .....	115
Boom Work Light.....	116
Rotating Beacon (Option) .....	117
Cab Work Lights, Front (Option) .....	118
Cab Work Light, Rear (Option) .....	120
Wire Harness, Chassis .....	121
Wire Harness, Engine .....	122
Wire Harness, Chassis & Engine .....	123
Wire Harness, Armrest .....	125
Wire Harness, Switch .....	126
Wire Harness, Lighting.....	129
Wire Harness, Cab .....	130
Wire Harness, Proportional Control (Option).....	131
Rubber Track .....	132
Steel Track (Option) .....	133
Undercarriage, Rubber Track .....	134
Undercarriage, Steel Track (Option) .....	135
Track Tensioner, Rubber Track .....	137
Track Tensioner, Steel Track (Option) .....	139
Dozer Blade .....	140
Chassis .....	141
Chassis Lubrication.....	142
Counterweight.....	143
Counterweight, Additional (Option) .....	145
Engine Hood .....	146

## TABLE OF CONTENTS

Tank Cover .....	149	Cab Mirrors.....	172
Partition Wall .....	150	Cab Door.....	173
Undercarriage Covers .....	153	Cab Windshield.....	175
Isolation Mats .....	154	Cab Windows (Except Windshield) .....	179
Chassis Covers .....	156	Operator's Seat .....	180
Boom.....	158	Cab Heater .....	184
Dipper Arm, Short .....	161	Air Conditioning (Option) .....	186
Dipper Arm, Long (Option).....	162	Air Conditioning Compressor (Option)...	187
Cab Mounting .....	164	Air Conditioning Installation .....	189
Cab .....	165	Index .....	191
Cab Frame Trim.....	168	Numerical Index .....	194
Cab Trim .....	171		

## **NOTES**

# DECAL LOCATIONS

## GENERAL INFORMATION

Decal location information is provided to assist in the proper selection and application of new decals, in the event the original decals become damaged or the machine is repainted. Refer to the listing for the illustration reference number, part number, description and quantity of each decal provided in the kit. Refer to the appropriate illustrations for replacement locations.

To ensure proper selection of the correct replacement decals, compare all of the various closeup location drawings to your machine before starting to refinish the unit. Then circle each decal shown (applicable to your machine) while checking off its part number in the listing. After you have verified all the decals needed for replacement, place any extra unnecessary decals aside for disposal.

**NOTE:** Refer to the *SAFETY chapter of the Operator's Manual for the specific information provided on all of the various safety decals furnished in the decal kit(s).*

## NEW DECAL APPLICATION

If there is a decal on a part that is to be replaced, be sure that the decal is applied to the replacement part. Surfaces MUST be free from dirt, dust, grease and other foreign material before applying the new decal. To apply, remove the smaller portion of the decal backing paper and apply this part of the exposed adhesive backing to the clean surface while maintaining proper position and alignment. Peel the other portion of the backing paper off slowly while applying hand pressure to smooth out the decal surface.



## CAUTION

**ALWAYS follow safety precautions on decals. Replace the decals if they are damaged, or if the unit is repainted. If repainting, BE SURE all applicable decals are affixed to your unit.**

### PAINT NOTICE

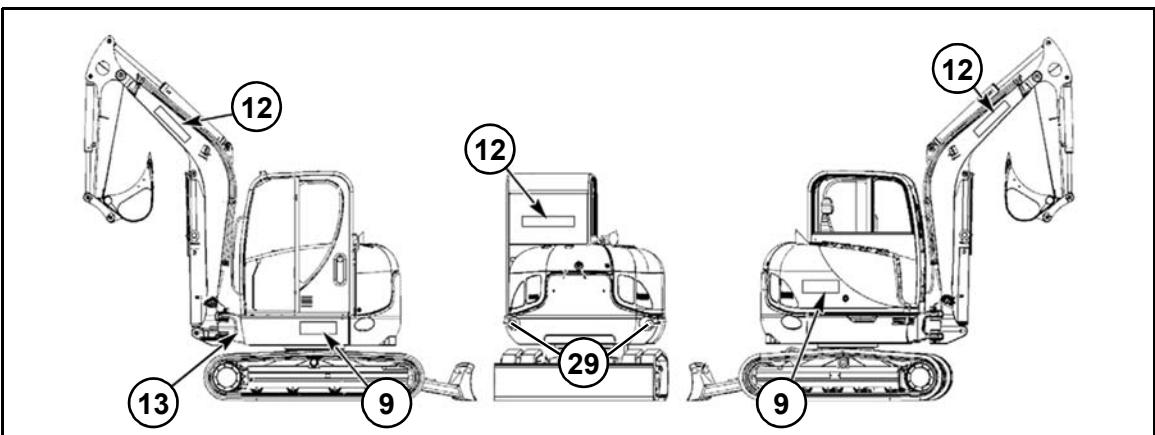
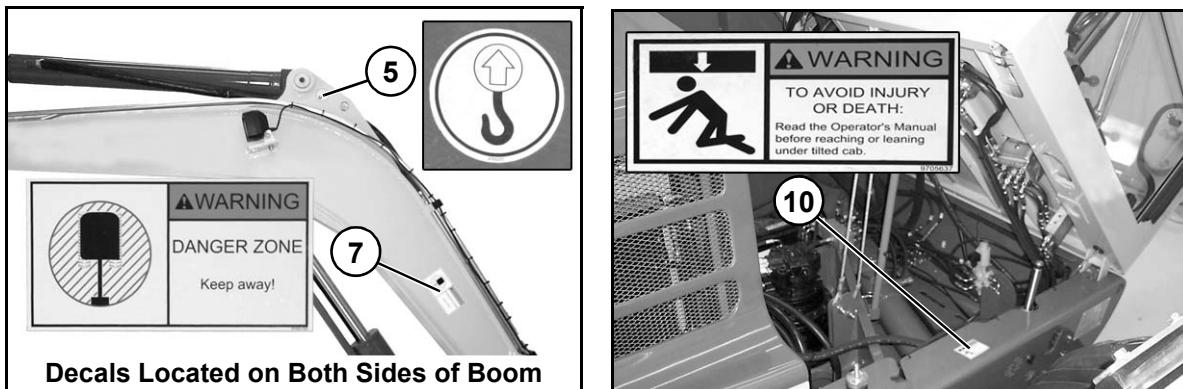
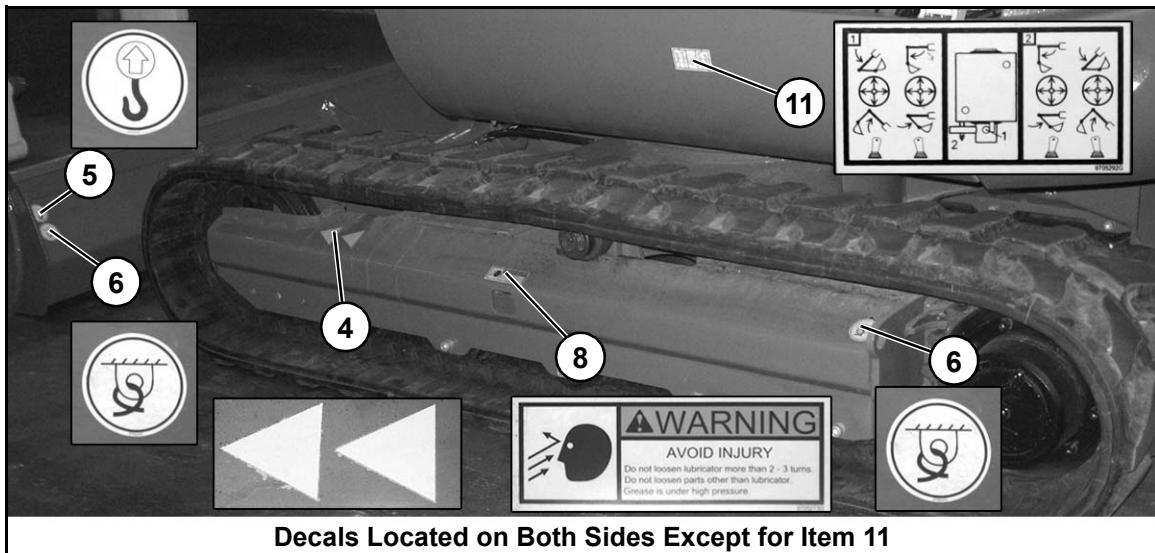
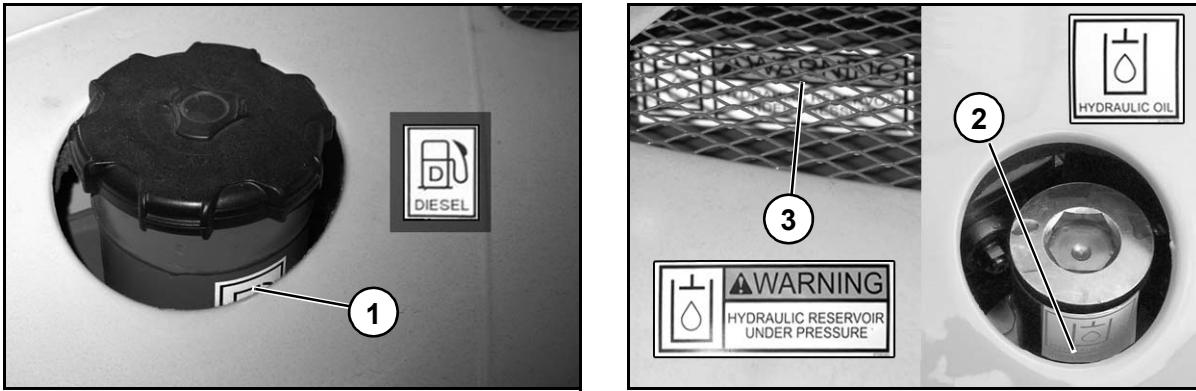
Use this list to order paint for refinishing:

167788	4 qts. ConstructionYellow (GEHL)
167780	4 qts. Light Gray (GEHL)
167774	4 qts. Dark Gray (GEHL)
167789	6 (12.8 oz. Spray Cans) Yellow (GEHL)
167775	6 (12.8 oz. SprayCans) Dark Gray (GEHL)
167781	6 (12.8 oz. Spray Cans) Light Gray (GEHL)

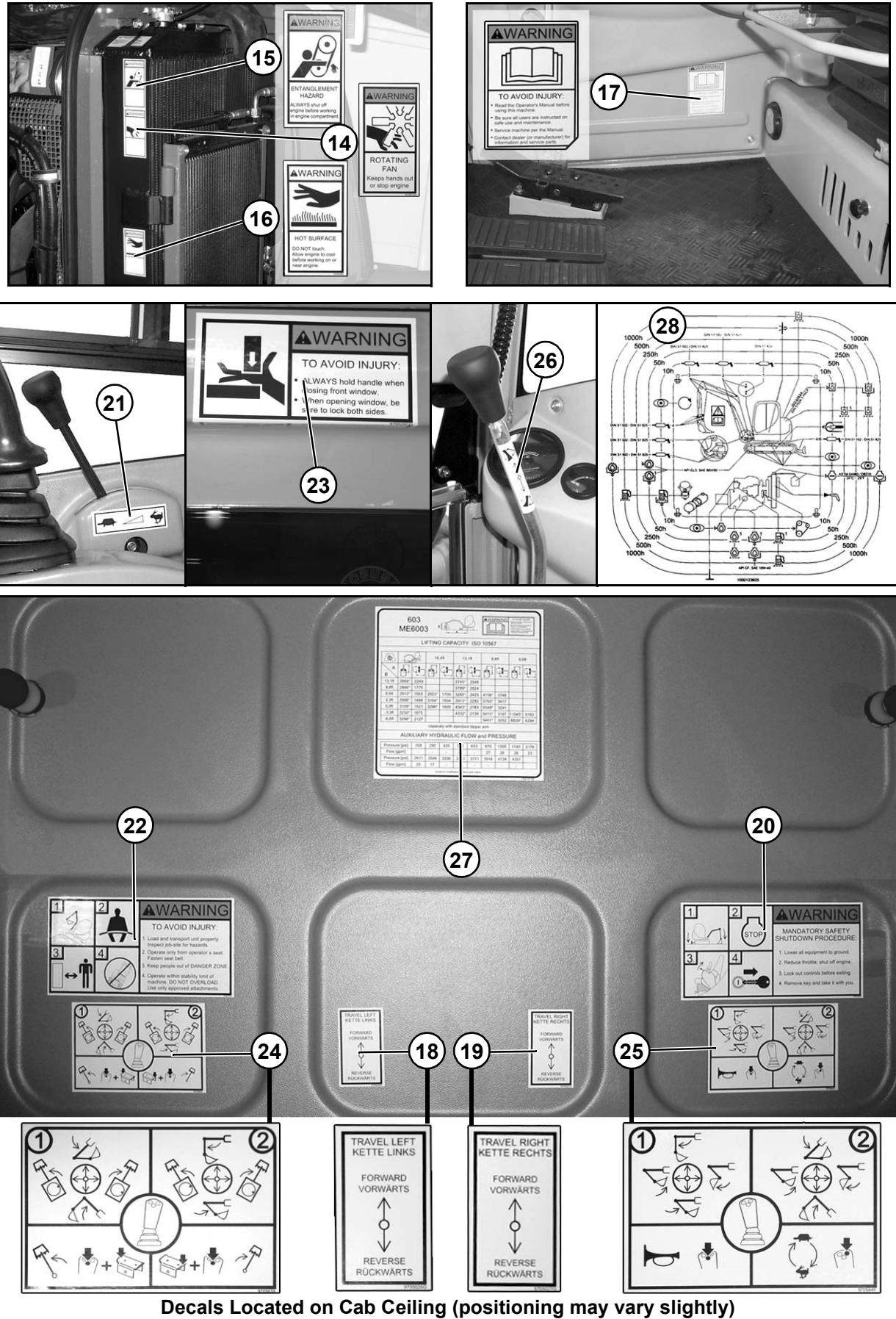
The decal kit for the 603 Compact Excavators is listed below:

Ref. No.	Part No.	Description & Quantity
	177437	603 Decal Kit
1	161965	Decal/Diesel Fuel
2	161966	Decal/Hydraulic Oil
3	161969	Decal/Warning Hyd Reservoir
4	161970	Decal/Arrow (2 Places)
5	161981	Decal/Lift Point (4 Places)
6	161982	Decal/Tiedown Point (4 Places)
7	161985	Decal/Warning Keep Away (2 Places)
8	163975	Decal/Warning Avoid Injury (2 Places)
9	173333	Decal/603 (2 Places)
10	177441	Decal/Warning Avoid Injury
11	177442	Decal SAE/ISO Control
12	183935	Decal/Gehl 5.50 x 23.34 (3 Places)
13	184043	Decal/Gehl 3.75 x 15.92 (white)
14	161987	Decal/Warning Rotating Fan (2 Places)
15	163977	Decal/Warning Entanglement Hazard
16	163978	Decal/Warning Hot Surface (2 Places)
17	161986	Decal/Warning Read Manual
18	162450	Decal/Travel Left
19	162451	Decal/Travel Right
20	163973	Decal/Warning Mandatory Shutdown
21	163974	Decal/Throttle Speed
22	163976	Decal/Warning Avoid Injury
23	164854	Decal/Warning Avoid Injury
24	177443	Decal/Controls SAE/ISO Lt
25	177444	Decal/Controls SAE/ISO Rt
26	177871	Decal/Dozer Blade Up/Down
27	205513	Decal/Lift Capacity
28	205842	Lubrication Chart
29	177765	Reflector (2 Places)

# DECAL LOCATIONS



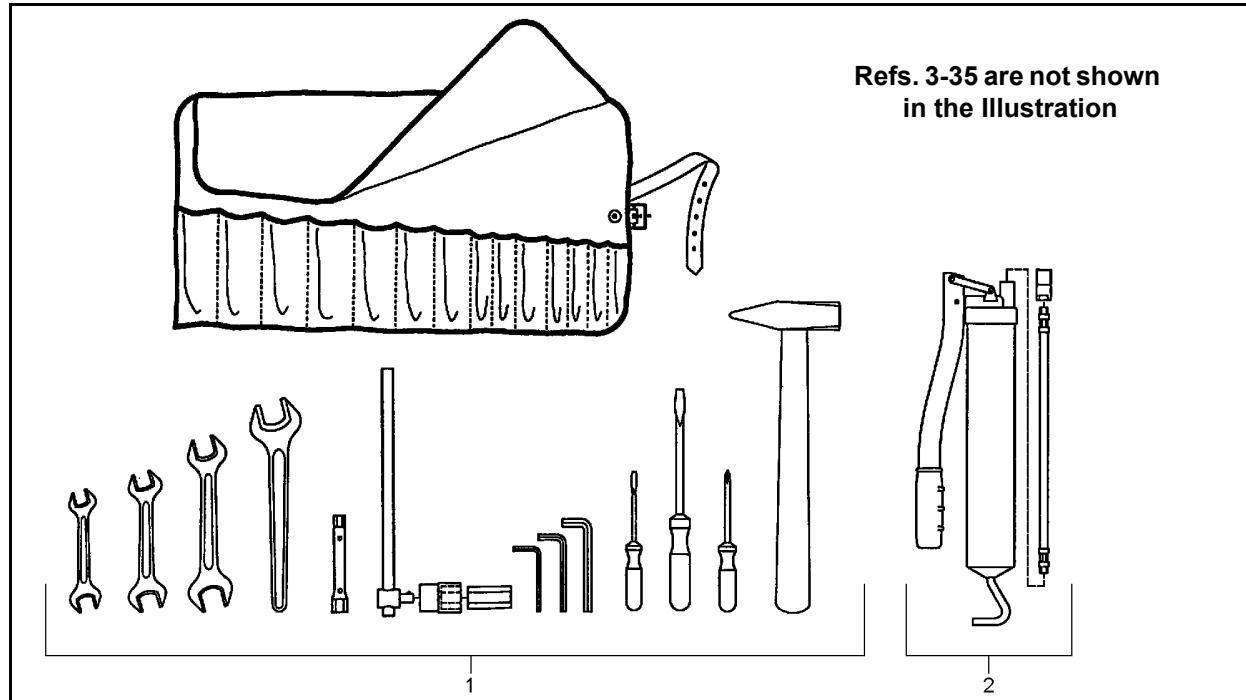
# DECAL LOCATIONS



## **NOTES**

# 603 - TOOLS / SERVICE KITS

1000125272



Ref. No.	Part No.	Description	Qty.	Ref. No.	Part No.	Description	Qty.
1	177855	TOOL KIT	1	21	195387	DIAL INDICATOR (incl. in 195348 Timing Kit Tool)	1
2	179733	GREASE GUN	1	22	195388	30MM EXT ROD (incl. in 195348 Timing Kit Tool)	1
3	184467	HYDRAULIC GAUGE KIT	1	23	195389	M14 ADAPTOR (incl. in 195348 Timing Kit Tool)	1
4	186011	TEST PORT, 4MP-M16X2, 1/4 NPT	1	24	195390	M16 ADAPTOR (incl. in 195348 Timing Kit Tool)	1
5	183877	TEST PORT, 3/4-16 UNF	1	25	195391	ADAPTOR NUT (incl. in 195348 Timing Kit Tool)	1
6	184472	TEST GAUGE, 1000PSI	1	26	195392	CLAMP (incl. in 195348 Timing Kit Tool)	Set of 2
7	184473	TEST GAUGE, 6000PSI	1	27	195393	COMPRESSION ADAPTOR TOOL (Yanmar; TNE78—TNE106, TNV82/84/88)	1
8	184475	TEST HOSE, 120" (Used with Gauge Kits)	1	28	195394	COMPRESSOR ADAPTOR TOOL (Yanmar; 4TNV94/91/106)	1
9	184476	ADAPTER, 4FP-M16X2BLKHD (Used with Gauge Kits)	1	29	195395	1/4NPT ADAPTOR TOOL (Yanmar)	1
10	184474	TEST GAUGE, 10,000PSI	1	30	241766	DIAGNOSTIC TOOL (Yanmar TNV Tier III)	1
11	420-34912	ROD SEAL INSTALL TOOL, 3/4" X 1-1/4" DIAMETER SEALS	1	31	272813	FIELD TEST COOLANT STRIP (1 Kit from Coolant Analysis Kit)	1
12	420-34913	ROD SEAL INSTALL TOOL, 1-1/2" X 2" DIAMETER SEALS	1	32	272806	HYDRAULIC OIL ANALYSIS KIT (GEHL)	Set of 10
13	420-34914	ROD SEAL INSTALL TOOL, 2" X 3" DIAMETER SEALS	1	33	272809	ENGINE OIL ANALYSIS KIT (GEHL)	Set of 10
14	272814	OIL VACUUM PUMP (incl. in Engine Oil Analysis Kit)	1	34	272811	FUEL ANALYSIS KIT (GEHL)	1
15	272815	COOLANT VACUUM PUMP (incl. in Coolant Analysis Kit)	1	35	272812	COOLANT ANALYSIS KIT (GEHL)	Set of 10
16	272816	1/4" PLASTIC TUBING, 100' (incl. in Analysis Kit)	1	<b>*Analysis Kits - Contact your dealer.</b>			
17	195344	TRAIN KIT TOOL (Yanmar TNV)	1				
18	195345	INJECTOR PULLER (Yanmar; Wrench-type)	1				
19	195346	INJECTOR PULLER (Yanmar; Slide-hammer adapter)	1				
20	195348	TIMING KIT TOOL (Yanmar TNV)	1				

**Thanks for your reading.**  
**Please click here to download complete manual**  
**instantly.**  
**And can also choose other manuals.**

**Feel free --->write to me with any questions.**  
**Our service email:**  
**manuals007@hotmail.com**