

**1:35th
SCALE
MODEL**



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MODEL**

VEHICLE KIT K75

CENTURION Mk-5 A.V.R.E. (Assault Vehicle Royal Engineers)



**A superdetailed
model kit comprising
polyurethane resin,
metal, and etched
brass parts.**



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General Instructions

As with any plastic model kit, do not expose the model or parts to extreme heat or naked flames. When sanding or cutting, contain dust particles by wetting the surface, if this is not possible use a good quality face mask. Wash hands when finished.

For bonding parts use cyano-acrylate "Super-glue" after the parts have been tested for fit. Follow the safety instructions on the tube, and use only in a well ventilated room.

This product is not a toy and is for experienced modellers, it also contains small sharp parts. Keep these, tools, adhesives and solvents out of the reach of children and pets.

TOOLS

Essential tools are sharp scalpels, razor saw, needle files, 'wet-or-dry' paper, grades 100, 300, 500, tweezers and flat nosed pliers.

For locating some small parts, and for drilling out lifting lugs etc., a selection of twist drills from 0.5 mm to 5 mm is recommended

GENERAL PROCEDURE

1. Check the parts against the parts listing, study the photographs and any important notes or alternatives suggested in these instructions. Multi-media kits build differently from injection moulded kits, however the technique is straightforward once practised. Parts with a 'greasy' feel should be washed before assembly begins.
2. Remove parts from the casting spru by using a razor saw, or for very large parts use a small hacksaw. Excess plastic should be carved away using a very sharp scalpel or craft knife. Very large sprus can be removed by scribing and 'snapping' them away from the parts, (this saves a lot of sawing). The suggested sequence is to assemble all large parts first, leaving fine detail to the later stages so as to avoid damage.
3. Parts should be 'dry-fitted' first, check fit **BEFORE** bonding. To bond with super glue, place the parts together **THEN** apply a **TINY** quantity of glue (using a wire or old blade) to the gap between parts, the glue will be drawn in.
4. If parts are bent or warped, modify by bending in **VERY HOT** water, or under **GENTLE** heating from a hair dryer. Once at the correct shape cool to set the shape.
5. Due to the hand casting process bubbles may be present in some resin parts, if present they should be filled with epoxy filler, such as 'Milliput'. Sand when set hard. Very small bubbles can be filled with a drop of super-glue from a length of wire, the glue will be drawn into the hole which will fill up. Sand when set hard.
6. Prime the completed model with car type grey primer, this will leave a uniform surface on resin, metal and brass parts for the final paint finish.

K75/76 ASSEMBLY

HULL

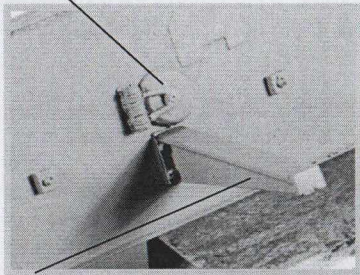
1. Assemble the upper and lower hull castings, fill joins as required, note it is important that the lower hull sides are not allowed to be pushed outwards. If this happens the track rollers will push the top run of track beyond the track guards. If this does happen, compensate by shortening the track roller mounts.
2. Assemble all road wheels, rollers, sprocket and idler parts in pairs, and assemble all six suspension units, four of which will require shock absorbers mounted on both sides.
3. The 3rd suspension unit on each side is very close to the final drive area, as a result the end shock absorber arm sits in a semi-circular cut-out at the front edge of the final drive housing. For this reason it is best to dry-fit the final drives and 3rd suspension units on both sides together to get a good fit. Remove some material from the final drive housing if required.
4. When the suspension units are added to the hull sides, ensure that they are fitted with the inside block underneath the hull floor as far up as it will go. Once fitted add all the roller mounts (L), four of which 'interlock' with the top of the 1st and 3rd suspension mountings.
5. The idler mountings (E) fit onto the face of the lower nose plate, check that the idlers (Track Adjusting wheels) sit vertical.
6. All other suspension components can now be added, and the tracks fitted.
7. For AVRE equipment refer to the next section.
8. Fit all tools and brass items as shown, the rear number plate is supported on two brackets which should be formed into a shallow '_/ ' shape with the '_' on the hull rear, a small light (AA) is fitted at the top. A pair of towing hooks (CT) are also provided for the rear hull lifting points (Z).

TURRET

Turret assembly is straight forward, start with the largest castings, and place the three turret bins (CO,CP,CQ) so that the top rear of each bin is level with the roof corner line. The smoke discharger mounting plates have the front top mounting bars, curved around the turret lift lugs, and when in place sit vertical. The 165mm demolition gun is designed to sit at a very slight elevation, just enough to clear the facine cradle when facing to the front. A 0.30 cal Browning MG and mounting are supplied, and these fit onto the two bars on part (CF), with the gun facing forwards. The loaders hatches are fitted with padlock hasps which should be formed into 'L' shapes facing each other. Brass padlocks are supplied for this, and the turret and hull stowage bins. A comprehensive stowage set (ES) is also included, and can be used as required. The turret has moulded on cam net tie downs, however replacement brass ones (E15) are included for extra realism if required.

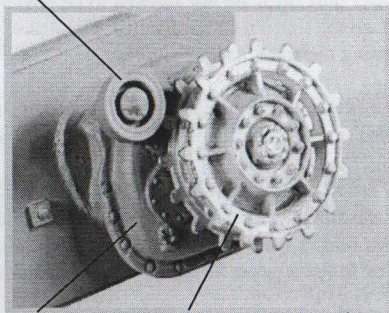
SUSPENSION & LOWER HULL

R (LEFT SIDE ONLY)



Q (Middle position on left side)

P (with tyre)-Both sides



D (Left)

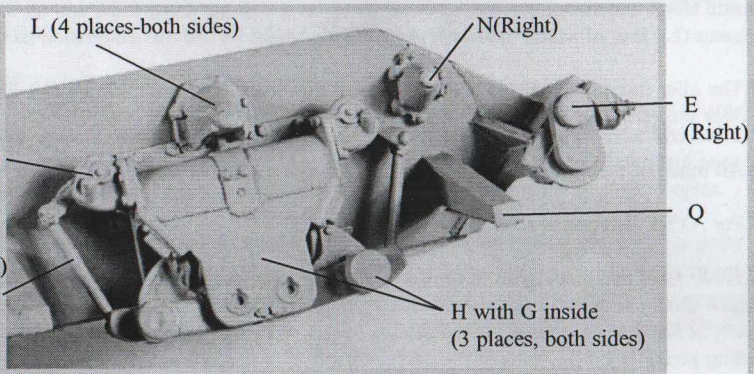
C (2 parts)-Both sides

L (4 places-both sides)

N (Right)

J (L&R)
4 places

K (L&R)
4 places



E (Right)

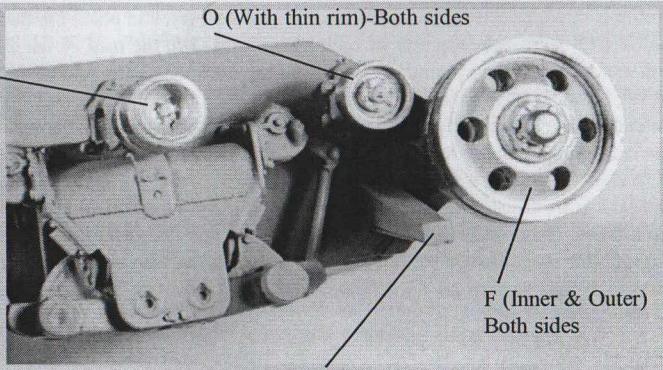
Q

H with G inside
(3 places, both sides)

Shock absorbers and link arms on 1st/3rd units only

O (With thin rim)-Both sides

M (I&O)
8 places



F (Inner & Outer)
Both sides

Q (3 places-both sides)

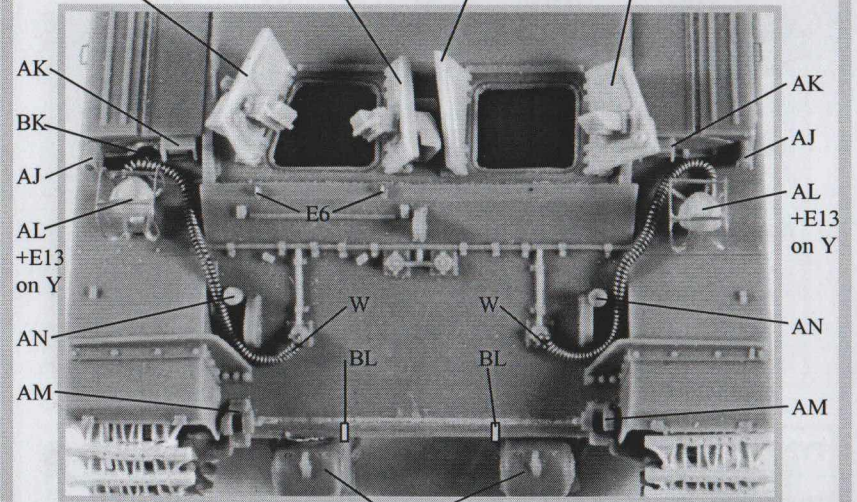
HULL FRONT & DOZER BLADE

AC+AF+AG

AB+AF+AG

AE

AD+AH+AI



AK

BK

AJ

AL

+E13
on Y

AN

AM

E6

W

W

BL

BL

BC

AK

AJ

AL

+E13
on Y

AN

AM

Spare track (BI)-not shown
fits in centre of glacis plate.

BE(1)

BE(2)

BE(3)

BE(4)

BG

Rod
Hoop

BH (Ribs face to front)

Rod hoop

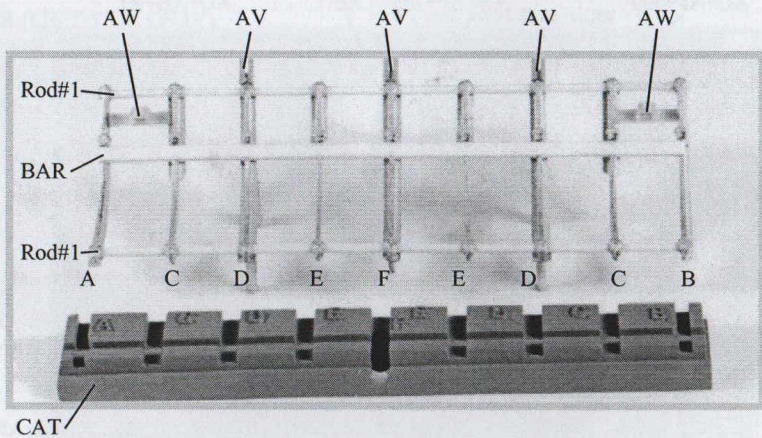
BF

BF

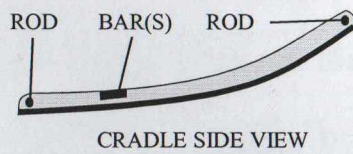
BD

BD

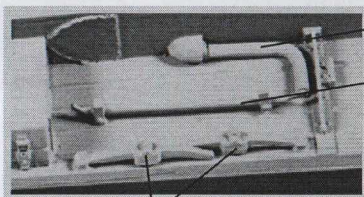
FACINE CRADLE & TOOLS



TYPE-A,B.....Long single flange, facing outwards on both sides.
 TYPE-C.....Short double flange.
 TYPE-D.....Long double flange & Legs.
 TYPE-E.....Very short double flange with curve upwards.
 TYPE-F.....Centre unit with bracket.



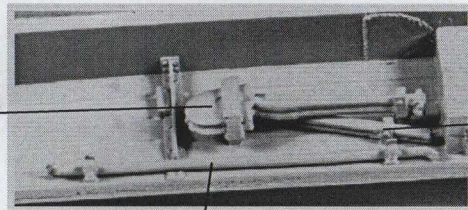
LEFT SIDE STOWAGE



Fit AZ pick handles here (not crowbar as shown)

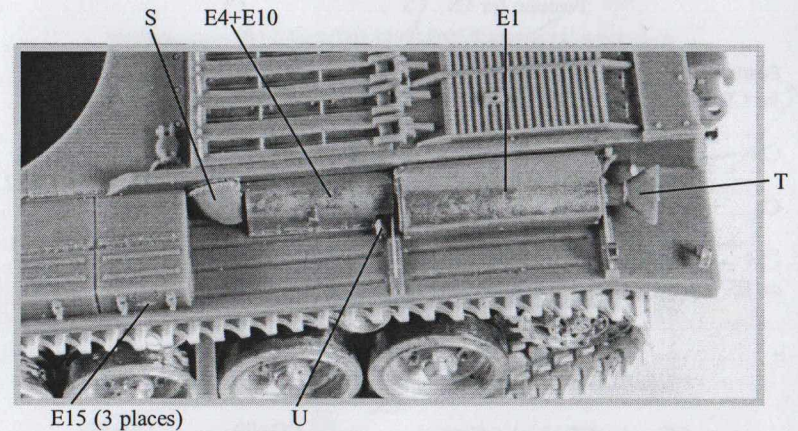
AY

RIGHT SIDE STOWAGE



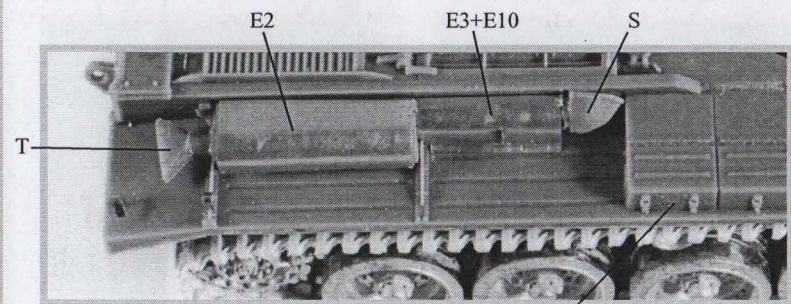
Fit Sledge-hammer here BB

HULL SIDES AND REAR

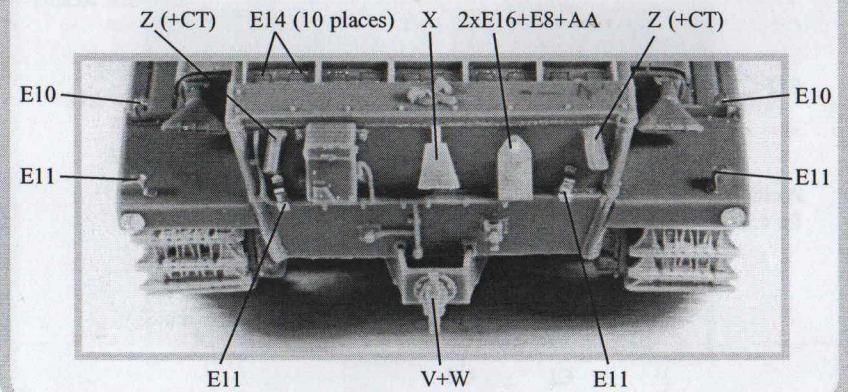


E15 (3 places)

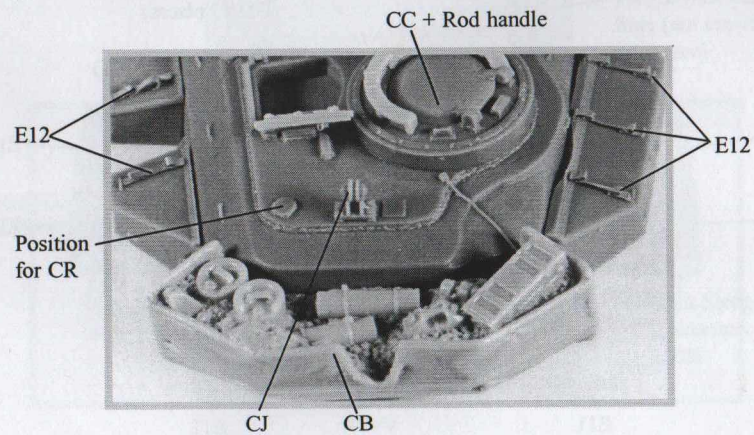
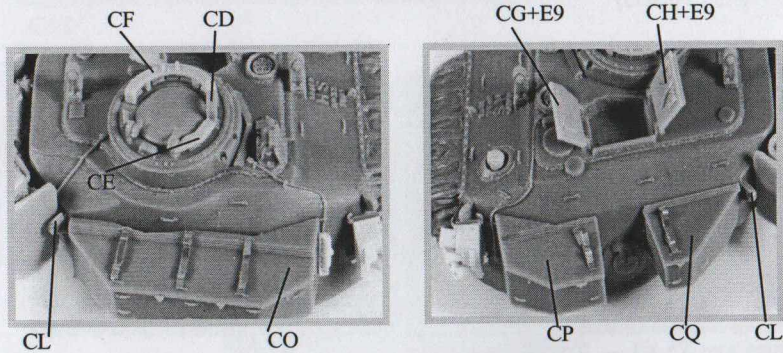
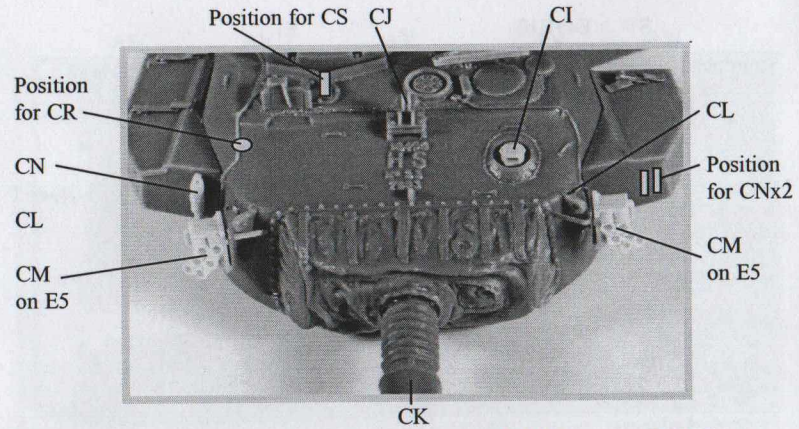
U



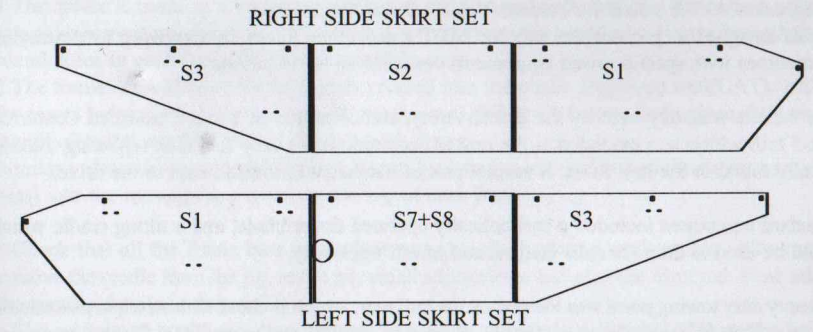
E15 (3 places)



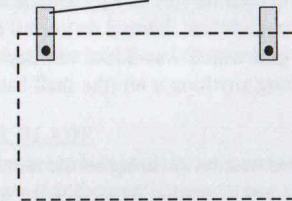
TURRET



BRASS FITTINGS



SKIRT HANGERS (E6)

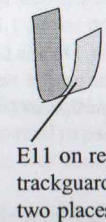
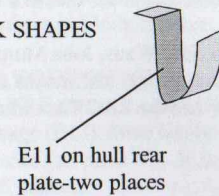


SKIRT BOLTS (E5)

FIT HOOPS (S4) INTO HOLE PAIRS IN SKIRT PLATES AND GLUE FROM BEHIND.

Assemble each skirt plate with hangers in place behind the oval slots in the skirt, fit bolts over the front of each slot. Add the hoops, and then fit the completed units to the trackguard sides.

HOOK SHAPES



E10 on ex-haust pipe covers, two places.

K75/76 EXTRA NOTES**THE VEHICLE**

The Centurion AVRE Mk-5 was a purpose designed vehicle for the Royal Engineers, and the designation AVRE stands for Assault Vehicle Royal Engineers.

It was designed to prepare the way for MBT's and other forces by removing or destroying (sometimes with special towed equipment) obstacles or fortifications.

The vehicle was only used by the British Army, and consisted of a much modified Centurion Mk-5 hull which was extended at the rear to accommodate a new fuel tank replacing the one usually found in the hull front. A second pair of hatches was located next to the driver.

Standard equipment included a hydraulically operated dozer blade, and a tilting cradle which could be used to drop (or roll) facines, and to roll track-way.

A heavy duty towing point was located on the hull rear, which is fitted with an explosive release system. This is primarily used for the Centurion AVRE trailer and the Giant viper mine clearance systems, both of which were designed to be used with this vehicle. (We produce both trailers as K96 and K97 respectively)

Main armament consisted of the 165mm demolition gun which was a low velocity accurate weapon firing a massive HE shell capable of demolishing anything it hit (the shell has 6 times the explosive effect of a 120mm HESH round).

The model depicts a standard vehicle, with crew applied hessian covering on the turret basket. Some crews made minor modifications to the stowage, but in general most vehicles were very similar. The production kit contains a solid idler set, however some vehicles used a spoked unit which is available from us.

A full skirt plate set is also included, note that when used for dozing operations the skirts were often removed.

MASTER MODEL

The master model was designed and produced by Derek Hansen, and is the first in a family of Centurion models.

We would particularly like to thank Don Bartlett, Dennis Lunn, Eric Watts, John Murphy, Reid Gwillim and Geoff Stobart for their help during the research phase, and thanks also to J. Bottomley, M.E.Osbourne, R.Fleming, M.Hazzard, Ken Jones and the RAC Tank Museum for help with this model, and the releases to follow.

PAINTING

The standard finish is overall green (Humbrol 155) with black patches, and due to the nature of the beast, plenty of mud and dust! Gulf vehicles were painted in Light Stone (Xtracolour Paint X813)

FACINES

The most common modern facine is of the poly-pipe variety and can be made from 'milk-shake' type straws, 140mm long and 80mm diameter, it is wrapped with cable, and generally has nets covering each end. The tubes are connected internally by chains, but we would suggest you leave these off to preserve your sanity!

K75/76 AVRE EQUIPMENT ASSEMBLY**FACINE/TRACKWAY CRADLE (Ignore for K76)**

1. The cradle is made as a separate model, sort the nine metal frames into the correct order using the picture and diagrams. Make sure that the 1.6mm rod supplied will pass through the round holes in each frame BEFORE assembly starts.

2. The frames should have the front ends pressed into the cradle alignment tool (CAT), with the round hole aligned with the long slot in the tool. When all frames are in place slide one length of rod along the slot and through each frame.

Similarly slide the second rod through all the back holes, and press the rectangular bar (or bars) into the rectangular cut-out on the top of each frame.

3. Check that all the frame bars are in line and glue the back rod, and top bar. When set remove the cradle from the jig, make any small adjustments and glue the front rod. Now add the smaller details to the cradle.

4. The completed cradle can now be used as a guide to place the hinges (AM) on the hull front, note that the pin ends on parts (AM) face inwards. When in the 'UP' position the round 'feet' on frames type-D rest on the bump stops (AN), and the small turnbuckle (AO) fits between the lug on frame-F, and the bracket on the middle of the glacis plate. Drill a 0.5mm hole through the middle of the turnbuckle, and fit a small length of rod to act as a 'tommy bar'.

DOZER BLADE

1. The dozer blade is made as a separate model, sort the lower and upper arms into the correct order, note that the small brackets on upper arms (BE2 & BE3) point upwards. Add the rod hoops, and parts (BF), part (BH) is hinged and rises when the blade fills with spoil, normally it hangs downwards with the ribs to the front.

2. Press the ends of all lower arms into the hinges on the back of the blade, and insert the pivot ends into both ram units (BC), offer these up to the lower glacis plate and position the blade to be in the centre of the hull. The ram units should be glued to the lower glacis and belly plates.

3. Add the upper arms and use the small brackets on (BE2 & BE3) as a guide to position the small blade travel lock brackets (BL) on the nose.

OTHER EQUIPMENT

1. The AVRE carries a pair of headlamp/spot-lamp units which consist of parts (AL) fitted inside a cage (E13), these can be mounted in pairs either on the cradle (on parts AW), on the track-guards (on parts Y), or on the rear transmission deck mountings moulded onto the main hull casting.

2. In all cases these lights are connected by a coiled cable made from solder (W) wound around a 0.5mm rod, and connected from the back of the lamp (AL) to the lower cable outlets on the hull front.

3. A pair of towing cables are provided, each should be made from two 95mm lengths of brass cable, lay each pair side by side, and glue a loop of brass (spare bits from brass frets) around each end, and the middle. Glue a hawser eye (CU) on one end of each pair. Form each cable into a gentle curve, and glue the free end of each into the hawser double eye (CV), which in turn sits in the hull rear mounting (X).

The hooks (E10) on the exhaust covers, hold either the cable end, or the cable just behind the eye. Cables should form a gentle curve, with no sharp bends.

PARTS LISTING

HULL and FITTINGS

A	HULL TOP	1
B	LOWER HULL	1
C	SPROCKET (INNER & OUTER)	4m
D	FINAL DRIVE (L & R)	2
E	IDLER MOUNTING (L & R)	2m
F	IDLER (INNER & OUTER)	4m
G	SUSPENSION SPRING	6
H	SUSPENSION MOUNTING PLATE	6
I	ROADWHEEL (INNER & OUTER)	24
J	SHOCK ABSORBER (LEFT & RIGHT)	8
K	LINK ARM (LEFT & RIGHT)	8m
L	TRACK ROLLER MOUNT	8
M	MID ROLLER (INNER & OUTER)	16
N	FRONT ROLLER MOUNT (LEFT & RIGHT)	2
O	FRONT ROLLER	2
P	REAR ROLLER	2
Q	SKIRT PLATE LOWER SUPPORT	6m
R	AMMUNITION LOADING HATCH	1
S	EXHAUST OUTLET PIPE	2m
T	EXHAUST SILENCER (LEFT & RIGHT)	2
U	AUX ENGINE EXHAUST PIPE	1m
V	REAR TOWING HOOK MOUNT	1
W	REAR TOWING HOOK	1
X	CABLE CENTRE SUPPORT	1
Y	TRACKGUARD SPOTLAMP MOUNT	2
Z	UPPER LIFTING LUG	2
AA	NUMBER PLATE LIGHT	1
AB	DRIVERS HATCH (LEFT)	1
AC	DRIVERS HATCH (RIGHT)	1
AD	CO-DRIVERS HATCH (LEFT)	1
AE	CO-DRIVERS HATCH (RIGHT)	1
AF	DRIVERS PERISCOPE (INNER)	1
AG	DRIVERS PERISCOPE (OUTER)	2
AH	CO-DRIVERS PERISCOPE (INNER)	1
AI	CO-DRIVERS PERISCOPE (OUTER)	1
AJ	SIDELIGHT UNIT	2
AK	FIRE PULL HANDLE	2
AL	HEADLAMP/ SPOT LAMP	2
AM	CRADLE PIVOT (LEFT & RIGHT) (K75)	2
AN	CRADLE BUMP STOP (K75)	2
AO	CRADLE SECURING TURNBUCKLE (K75)	1m
AP	CRADLE STRUT TYPE-A (K75)	1m
AQ	CRADLE STRUT TYPE-B (K75)	1m
AR	CRADLE STRUT TYPE-C (K75)	2m
AS	CRADLE STRUT TYPE-D (K75)	2m
AT	CRADLE STRUT TYPE-E (K75)	2m
AU	CRADLE STRUT TYPE-F (K75)	1m
AV	CRADLE FRONT TIE POINT (K75)	3
AW	SPOT LAMP MOUNT (LEFT & RIGHT) (K75)	2
AX	SPADES IN HOLDER	1m
AY	PICK HEAD	2m
AZ	PICK HANDLES IN HOLDER	1m
BA/BB	CROWBAR/SLEDGEHAMMER	2m
DA	DECK HATCH SPRING	4
DB	DRIVERS HATCH CATCH	2
BI	SPARE TRACK IN HOLDER	1m
BJ	TRACK LENGTH	10
BK	HORN	1
BM	HULL LIFTING LUG (Not required on K75/76)	2
BN	LOWER NOSE TOWING LUG	1
BO	TRACK LINK	20
ED	TOWING HOOK	2
EG	HAWSER EYE	2
EH	HAWSER DOUBLE EYE	1
DOZER BLADE UNIT		
BC	DOZER RAM UNIT	2
BD	LOWER ARM (LEFT & RIGHT)	4m#
BE	UPPER ARM (TYPES 1 to 4)	4
BF	CRADLE NUDGE BRACKET	2

BG	DOZER BLADE	1
BH	BLADE 'FULL' EXTENSION	1
BL	BLADE TRAVEL LOCK	2

TURRET and FITTINGS

CA	TURRET MAIN CASTING	1
CB	TURRET BASE	1
CC	COMMANDERS HATCH	1
CD	FRONT PERISCOPE SHIELD	1
CE	RIGHT PERISCOPE SHIELD	1
CF	LEFT PERISCOPES SHIELD	1
CG	LOADERS HATCH (FRONT)	1
CH	LOADERS HATCH (REAR)	1
CI	LOADERS PERISCOPE	1
CJ	TOP CABLE ROLLER GUIDE	2
CK	GUN BARREL	1
CL	LIFTING LUG	4
CM	SMOKE DISCHARGER (LEFT & RIGHT)	2
CN	FIRE EXTINGUISHER (LATE TYPE)	3
CO	TURRET BIN (RIGHT)	1
CP/CQ	TURRET BIN (FRONT & REAR LEFT)	2
CR	AERIAL MOUNTING (CLANSMAN)	2
CS	30 CAL CUPOLA MOUNTING	1
CT	30 CAL CRADLE	1
CU	30 CAL AMMO BOX	1
CV	30 CAL M.G.	1
CW	30 CAL EXTENSION BRACKET	1
CX	30 CAL EXTENSION HANDLE	1
CY	30 CAL SUPPORT CLIP	1
CZ	30 CAL CO-AX MUZZLE	1
EA	VANE SIGHT	1
EB	AERIAL (VHF-LARKSPUR)	3
EC	FIRE EXTINGUISHER (EARLY TYPE)	3
EE/EF	30 CAL TURRET STOWAGE CLIP	2
EI	TURRET BASKET	1

BRASS SKIRT SET-2 (K75 Only)

S1	FRONT PLATE	2
S2	MIDDLE PLATE (RIGHT)	2
S3	REAR PLATE	2
S4	CAM NET TIE DOWN	22*
S5	SKIRT PLATE SECURING BOLT	22*
S6	SKIRT PLATE MOUNTING	22*
S7	MIDDLE PLATE (LEFT)	1
S8	SKIRT LOADING HOLE COVER	1

BRASS AVRE DETAIL SET

E1/E2	SILENCER COVER (LEFT/ RIGHT)	2
E3/E4	EXHAUST PIPE COVER (RIGHT/LEFT)	2
E5	SMOKE DISCHARGER MOUNT PLATE	2
E6	DRIVERS SCREEN CLIP	3*
E7	PADLOCK	12*
E8	NUMBER PLATE	3*
E9	LOADERS HATCH PADLOCK HASP	2
E10	CABLE GUIDE (SMALL)	4
E11	CABLE GUIDE (LARGE)	4
E12	STOWAGE STRAP	6*
E13	HEADLAMP/SPOT LAMP GUARD CAGE	2
E14	REAR DECK HANDLE	11*
E15	CAM NET TIE DOWN / HANDLE	33*
E16	NUMBER PLATE SUPPORT	2

OTHER MATERIALS/TOOLS

W	SOFT WIRE/SOLDER	
Rod	THIN BRASS OR PLASTIC ROD	
Rod#1	CRADLE TIE ROD (K75)	
Bar	CRADLE TIE BAR (K75)	
CAT	CRADLE ALIGNMENT TOOL (K75)	
Cable	BRASS TOWING CABLE (DOUBLE)	
ES	EXTRA STOWAGE ITEMS (Assorted)	

NOTES

These may be supplied in both resin and metal, use just one set.

DEK75/76 CENTURION A.V.R.E.

This decal sheet is designed to give the modeller a varied set of decals to complete one of seven different vehicles that have seen service with the British Army. Four of These suit K75, early Centurion AVRE seeing service in either BAOR or Northern Ireland and the other three for late vehicles in the Gulf where they last saw service before disposal.

Decals should be applied by cutting out the individual marking and dip it into luke warm water. Once it has softened sufficiently (usually only after a few seconds) slide the decal onto the model as close to the intended position as possible. A small amount of adjustment to its position will be possible. When in place dab gently with a small piece of tissue so that any bubbles are pushed out. If the decal covers strong detail it may be necessary to coat it with a proprietary softening agent so that it shapes itself around the detail.

Unit/Regiment Markings should be fitted to the front hull and rear of the engine deck. The Royal Engineers in Northern Ireland showed the badge on the turret sides and large letter 'Royal Engineers' on the side skirts.

Units in the Gulf showed the registration and unit identification mark on the first skirt plate as the blade obscures its recognition on the front. The Bull's Head is displayed on the blade mud flap and also on the side of the 165 mm demolition gun. Call sign markings are applied the side armour/side skirt.




Decals designed by Rob Tearle and Derek Hansen.
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Accurate Armour

DEK75/76 Centurion AVRE Tanks Early and Late

ARM OF SERVICE MARK
UNIT/REGIMENT MARKING
INDIVIDUAL TANK CALL-SIGN
VEHICLE REGISTRATIONS,
AND NAMES

K75	Early vehicles Suez, Aden, W. Germany	}			02 ZR 14
			"	"	00 BA 70
			"	"	43 BA 84
	Northern Ireland	}			09 BA 64

K76	Gulf War	}			11BA46	11	
			"		4/3/B	BA	46
			"		02 BA 58	02	BA
					07 ZR 12	07	
					4/3/A BRAWNY	ZR	
						12	

- ALL VEHICLES**
-  Early Bridge class plate on front hull or fender
 -  Late Bridge class plate on front hull or fender
 -  Union Flag front and rear fenders
 -  First aid box
 -  Convoy warning plate Centre of lower rear hull