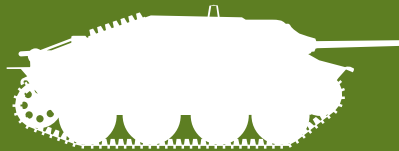


MISSING

LINKS

tweaks list



VEHICLE

Jagdpanzer 38
Sd.Kfz. 138/2 "Hetzer"

MANUFACTURER

Italeri, kit number 209
Dragon, kit numbers 6030, 6060
and 6037

SCALE

1/35

AUTHOR

James Blackwell

DESIGN

Dan Oldfield

VERSION

1.0 November 28, 2001

Each MISSING LINKS Tweaks List is designed to assist the modeller enhance and refine the kit detail. We welcome comments that would help make each Tweaks List a more accurate reference tool.

MISSING LINKS copyright 2001.
All rights reserved.

by James Blackwell

OVERVIEW

During the course of production which first began in March/April 1944, a number of subtle, and not so subtle design changes were introduced to the vehicle's appearance along the way by the two firms involved in its production - BMM & Skoda. This combined with a lot of crossover of these overlapping features up to months after intro dates (presumably due either to the "FILO" or First In, Last Out policy run during manufacturing, or due to Allied bombing disrupting production or component supplies and delivery of parts), can make labelling or pigeon-holing them with complete certainty a little tough.

However amongst the most obvious changes to look for though were the variations to the idler wheels, road wheels, exhausts, engine deck, driver's visor and both inner and outer gun mantlets as well as paint schemes in determining their approximate production date and firm that made them.

But as a rough indication to give an idea of the variety of features observed on them, there were at least:

4 patterns of road wheels

32 bolt wide rim, 32 bolt narrow rim, 32 rivet narrow rim, 16 rivet type

2 styles of drive sprockets

perforated rim, solid rim

9 styles of idlers

12 hole double rim, 12 hole single rim, 6 hole small, 8 hole, 8 hole ribbed, 8 hole spoked, 6 hole big, 4 hole dished, 4 hole flat

2 styles of leaf springs

Early with flat centre section and scoop below, Late with ribbed centre section & no scoop

5 styles of tracks

38(t), Early, Late, Late w/notched tread bar, & ostketten

4 Styles of front fenders

flat with no rear kick up or side thickening, flat with no rear kick up but side thickening at rear, angled with rear kick up & side thickening, 7 wider style on production Starr

2 styles of driver's scopes

Early to Mids; raised cast armoured type, Lates; recessed scopes w/sheetmetal cover

6 styles of Kugellafettes

types I through V & Starr

5 styles of mantlets

Protos & first Earlies; stepped w/machined edge, Earlies; stepped w/o machined edge, Some Earlies; stepped with added chin, Mids to Lates; smooth edged Late, Starrs; narrow bullet-shaped mantlet

6 styles of gun barrel appearance

threaded end exposed, muzzle brake fitted, thread cap fitted, smooth w/o thread, machined groove, machined double step narrow muzzle

4 variations in side skirts

first April Earlies; mounts fixed to outside face + no bends on end pair, May on Earlies; mounts welded to inside face (ie.no rivets) + no bends on end pair, Mids; mounts riveted to inside face + no bends on end pair, Lates; mounts riveted to inside face + bends on end pair,

4 LHS fender tool box designs

Protos & first Earlies; perforated type w/holes on sides too, Earlies & Mids; perforated type w/o holes on sides, Lates; solid type w/angled top, variation; solid type w/flat top

4 tow shackle designs

3 Protos; pig tail type positioned on lower edge, Earlies & Mids; flat plate type w/hook on end, Lates; flat plate type with hook in centre, Lates & Post war; flat type with hook in centre w/brace added

3 types of Gunner's sights

square-topped SflZF 1a on the Earlies, round-topped SflZF 1c seen on the Lates, and the boxy WZF 2/2 seen on the Starr

3 MG shield patterns

Prototype with longer wings, shorter wings, notches in LHS one to hang gurtsac

3 engine deck/hatch configurations

Proto & Early; 1 piece CO's hatch & no filler hatches, early Mid; 2 piece CO's hatch & RHS filler hatch, late Mid & Late; 2 piece CO's hatch & 2 filler hatches

4 exhaust config.s

3 Protos & first 20 Earlies; horizontal muffler with mesh guard, Earlies to Mids; horizontal muffler w/o guard, Lates; short fat cover tube, variation; solid end with pipe

4 muffler pipe housing cover designs

cast round, cast round w/notch, welded square, welded square w/notch

4 rear plate configurations

Proto; bevel on bottom edge & spare tracks positioned high, Early; straight plate w/full width tow bar across top, Early & Mid; no towbar & boarding step added to blowtorch port cover on later ones (c.August), Lates; reduced no. of bolts on tail plate

Variants & Features

As a modelling guide there were perhaps 6 main identifiable variants of the gun tanks (unofficially labelled as such in this tweaks list purely for convenience). Generally they sported the following features, though there are many exceptions to be seen (it's also possible to further sub-categorise them into Early, Mid, and Late marks of each variant if desired, though due to the seemingly random mixture of features it then becomes a bit messy).

by James Blackwell

Prototype/0-series

(BMM Fgst. No.s 321001-321003) March/April 1944 Production:

- Perforated rim on drive sprockets
- Early pattern un-reinforced leaf springs without centre rib & scoop at bottom
- 32 bolt wide rim road wheels (825mm Ø)
- 12 hole idlers
- Early pattern/38(t) tracks used
- Lacking armoured final drive housings
- Early 4 bolt track tensioners
- Pig tail front and rear tow hooks on lower edges of front and rear plates
- Straight welded nose plate join
- Type I scalloped edge 6 bolt kugellafette
- Stepped mantlet with flat machined edges on sides
- Straight rear edge to front fenders where they mount
- No jack block carried on RHS front fender (number plate in its place)
- Notek wired to behind edge of glacis
- Armoured driver's visor housing
- Longer shields on Rundumfeuer MG
- Straight support flange/lip on inside face of Loader's LHS hatch
- Locking bar running L-R on CO's front/scope hatch
- One piece rear CO's hatch with centre lock/locking handle on inner face
- No filler hatches
- No muffler pipe hull entry cover housing
- Perforated mesh cover guard over muffler
- Single spare aerial tube on LH hull side
- Perforated LHS fender stowage box
- Convoy light on post
- Jack stowed with baseplate facing to rear
- No skirts
- Plain rear plate with bevelled lower edge and no. plate carried
- No triangular fillets under rear fender overhangs
- Early pattern track tensioners
- 2 lots of 3 spare track links positioned higher on rear plate than following models

Paintjob: plain dark yellow

Early Model

(BMM Fgst. No.s 321004-321023/321024-321073) April/May 1944 Production:

- Standard (non perforated) rim on drive sprockets
- Early pattern reinforced leaf springs without centre rib & scoop at bottom
- 32 bolt wide rim road wheels
- 12 hole idlers
- Early Hetzer track
- Armoured final drive housings
- Integral Early pattern tow shackle extensions front & rear (longer shape & hook on underside at corner)
- Interlocked nose plate join
- Type II or III 2-bolt Kugellafettes (lateral position also varied from overhanging glacis to just inside)
- Stepped mantlet with either machined flat (c.first 20) or smooth edges on sides (c.next 50), plus a small batch with an extra chin added to underside
- Upturned rear edge to front fenders where they mount
- Notek wired to LH hull side
- Armoured driver's visor housing
- Shorter shields on Rundumfeuer MG
- One piece rear CO's hatch
- No filler hatches
- Cast rounded muffler pipe hull entry cover housing (some straight edged, some with a notch in LHS)
- Perforated mesh cover guard over muffler (only on c.first 20)
- 2 bent spare aerial tubes on hull bend line
- Perforated LHS fender stowage box
- Convoy light on post
- Jack stowed with baseplate facing to front
- Skirts fitted without bent front & rear corners & first lot with mounting brackets attached to outside face
- Full width box section tow shackle assembly bolted to rear plate
- Tread plate boarding step added to some later ones on blowtorch port cover
- Early 4 bolt track tensioners
- Triangular fillets under rear fender overhangs
- LHS lot of 3 spare links positioned lower on rear plate, with second lot on RHS engine deck plate corner

Paintjob: plain dark yellow to soft sprayed 2 or 3 colour camo patterns

by James Blackwell

Mid Production

(BMM & Skoda Werke) June-Sept 1944:

Due to the high numbers of Hetzers that were required it was realised early on that one firm alone would not be big enough to handle all production. BMM was the first firm entrusted with the job (during June it turned out 100, 100 in July, 150 in August and 190 in Sept). It wasn't until July/August that its long time pre-war rival Skoda also able to turn out its first releases (10 in July then 20 in August and 30 in Sept).

- Standard (non perforated) rim on drive sprockets
- Late pattern reinforced leaf springs with centre rib & no scoop at bottom
- 32 bolt then rivet wide & narrow rim road wheels
- Mixture of idlers introduced of both 12 hole (mainly Skoda) & 8 hole (mainly BMM)
- Early & Late Hetzer track as run progressed
- Armoured final drive housings
- Integral Early pattern tow shackle extensions front & rear (longer shape & hook on underside at corner)
- Interlocked nose plate join
- Type V Kugellafette
- Late unstepped smooth edge mantlet
- Uprturned rear edge to front fenders where they mount
- Notek wired to LH hull side
- Armoured driver's visor housing
- Shorter shields on Rundumfeuer MG
- Initially one two piece rear CO's hatch
- No filler hatches on first batches or 1 added on RHS then 2 on both sides on later ones
- Cast rounded muffler pipe hull entry cover housing (some straight edged, some with a notch in LHS)
- No perforated mesh cover guard over muffler
- 2 bent spare aerial tubes on hull side forward of bend line
- Perforated LHS fender stowage box on first ones and solid on later ones
- Convoy light on post on first ones and solid on later ones
- Jack stowed with baseplate facing to front
- Skirts w/external mount rivets without bent front & rear corners on first ones and bent on later ones
- Tread plate crew boarding step on blowtorch port cover
- Early 4 bolt track tensioners
- Triangular fillets under rear fender overhangs
- LHS lot of 3 spare links positioned lower on rear plate, with second lot on higher on RHS

Paintjob: Factory schemes - BMM Werke; hardedge ambush with sprayed stencilled triangles, Skoda Werke later Mids; hardedge ambush with hand painted yellow & green coloured dots

Late Production

(BMM & Skoda Werke) Sept/Oct 1944 on:

- Standard (non perforated) rim on drive sprockets
- Late pattern reinforced leaf springs with centre rib & no scoop at bottom
- 16 rivet road wheels
- Mixture of idlers introduced of both 8 hole, 8 hole ribbed, 6 hole
- Late Hetzer track
- Armoured final drive housings
- Integral Late pattern tow shackle extensions front & rear (more compact shape & hook on underside in centre)
- Interlocked nose plate join
- Type V Kugellafette
- Stepped mantlet with either machined flat (c.first 20) or smooth edges on sides (c.next 50)
- Uprturned rear edge to front fenders where they mount
- Notek wired to LH hull side
- Recessed Driver's scopes with sheet metal cover
- Shorter shields on Rundumfeuer MG
- Loaders hatch revised from Sept. on with locking bar and hatch handle reversed to opposite hatch halves
- Two piece rear CO's hatch
- Two filler hatches (Skoda repositions the handle on the RHS one to vertical vs. horizontal)
- Welded square muffler pipe hull entry cover housing (some straight edged, some with a notch in LHS)
- Late Flammvernichter exhaust tube at 45° on engine deck
- 2 straight spare aerial tubes forward of hull bend line
- Solid rear LHS fender stowage box
- Convoy light no longer on post but fixed to fender brace
- Jack stowed with baseplate facing to front
- Skirts with bent front & rear corners & external mount rivets
- Bolts around circular access plate reduced on rear plate
- Boarding step on blowtorch port cover
- Late 3 bolt track tensioners
- Triangular fillets under rear fender overhangs
- LHS lot of 3 spare links positioned lower on rear plate, with second lot higher on RHS

Paintjob: Factory schemes - BMM Werke; initially hardedge wide bands of 3-colour camo then later narrower ones, Skoda almost identical scheme of hardedge wide bands of 3-colour camo they carried on right to the end

by James Blackwell

Final Production

(BMM & Skoda Werke) 1945:

- Standard (non perforated) rim on drive sprockets
- Late pattern reinforced leaf springs with centre rib & no scoop at bottom
- 16 rivet road wheels
- Mixture of idlers introduced of both 4 hole dished, & 4 hole flat
- Armoured final drive housings
- Integral Late pattern tow shackle extensions front & rear (more compact shape & hook on underside in centre) with triangular fillet brace added
- Interlocked nose plate join
- Type V Kugellafette
- Stepped mantlet with either machined flat (c.first 20) or smooth edges on sides (c.next 50)
- Uprturned rear edge to front fenders where they mount
- Notek wired to LH hull side
- Recessed Driver's scopes with sheet metal cover
- Large foliage rings welded to front & sides
- Shorter shields on Rundumfeuer MG w/2 notches cut into top LHS to hang gurtsac ammo bag
- Two piece rear CO's hatch
- Engine air outlet grill redesigned with horizontal louvres vs. formerly angled vertical ones
- RHS filler hatch initially reduced to single hinge, then welded up and made integral with engine access hatch with handle relocated to vertical, while LHS one given only 1 hinge not 2
- Welded square muffler pipe hull entry cover housing (some straight edged, some with a notch in LHS)
- Late Flammvernichter exhaust tube at 45° on engine deck
- 2 straight spare aerial tubes forward of hull bend line
- Solid rear LHS fender stowage box
- Convoy light no longer on post but fixed to fender brace
- Jack stowed with baseplate facing to front
- Skirts with bent front & rear corners & external mount rivets
- Boarding step added to some later ones on blowtorch port cover
- Late 3 bolt track tensioners
- Triangular fillets under rear fender overhangs
- LHS lot of 3 spare links positioned lower on rear plate, with second lot higher on RHS
- addition of a shovel & bracket under crowbar on RHS hull rear

Paintjob: Factory Schemes - BMM Werke; initially hardedge wide bands of 3-colour camo then later narrower ones, Skoda almost identical scheme of hardedge wide bands of 3-colour camo they carried on right to the end with the yellow used ranging from a cream through to a warmer tone

Starr

(BMM Werke) Sept/Oct 1944:

2 types were done - one test rig, three 0-series prototypes and ten 0-series vehicles which were basically all standard gun tank hulls pulled from the production line with the new gun, rigid mount and mantlet installed, and one example of the planned production prototype which was a heavily revised Hetzer design with many changes also mounting this gun.

0-Series:

- On the whole from the 6 known shots found to date of the 7 0-series used in Prague during the uprising with the Wehrmacht Garrison (3) & KG Milowitz (4), they resembled the standard Lates in the Sept/Oct '44 batch from BMM so all features as per that listing, apart from the following deviations;
- Mixture of idlers incl. 12 hole and 6 hole
- Starr Kugellafette (some with and some w/o U-shaped lifting hook)
- Starr mantlet (some with and some w/o U-shaped lifting hook)

Paintjob: BMM Werke; initially hardedge wide bands of 3-colour camo then later narrower ones, Skoda almost identical scheme of hardedge wide bands of 3-colour camo they carried on right to the end

Lone Tatra-engined Production Prototype:

This is the one seen in the BMM yard heavily photographed all round, but it is later sent to the Wehrmacht Garrison in Prague during April and is involved briefly in the fighting during the uprising on May 5. The shot on p.84 of the MBI Hetzer book shows it abandoned with its engine immobilised at Břevnově a few days later by May 8 during their retreat. Features also essentially similar to standard Lates with these exceptions;

- Tow shackles replaced with large welded U-hooks on front & rear plates
- Idlers were of 6 hole ribbed type
- Front & rear fenders widened and also run up sides
- Starr Kugellafette (w/o U-shaped lifting hook)
- Starr mantlet (w/o U-shaped lifting hook)
- Roof plate revised with new WZF 2/2 Gunner's scope now in circular rotating mount not banana-shaped sliding plate, and CO's split hatch redesigned with integral 360° traverse housing in centre
- Due to new Tatra 8 cylinder engine installed the engine deck plate is totally redesigned too with air outlet for engine bay moved to top edge near loader's hatch, an air intake box added to centre of deck, a new exhaust pipe used, and the filler hatches relocated
- The rear plate is also redesigned with a large square access hatch and a full width tow bar along the bottom edge

Paintjob: BMM Werke; hardedge bands of 3-colour camo

by James Blackwell

KIT TWEAKS

Italeri Late Model (No.209)

Lower Hull - Front

- Add 3 bolt heads to the final drive housing inner faces on both left and right sides (Grandt Line GL-127 hex nuts)
- Add missing bolt heads on inside faces of wheel rims & centre hubs to match the outer pattern if desired (Grandt Line GL-127s hex nuts & bolts) - or just mud them up!
- Replace poorly detailed rubber band tracks with individual links or just heavily mud up

Lower Hull - Rear

- Add wingnuts to both spare track brackets on rear plate
- Add 2 missing tabs to rear fender overhang fillet corners where they rest on rear tow eyes from strip
- Add tow cables from Tamiya Pz.IV tow eyes and nylon string to mounting tow eye
- Add lead foil straps with buckles for securing tow cable to 3 hooks on rear plate
- Add tread plate crew mounting step to blowtorch port cover from p-e off-cut

Upper Hull

- Add wingnut to jack block on RHS front mudguard
- Replace poor kit Notek Light with better one and add solder conduit & plug on LH hull side
- Insert 2 missing Driver’s vision blocks into holes from strip or parts box
- Shave off and redo tie-downs in fire wire
- Drill in 3 sunken securing screw holes to sides & top of saukopf and scribe screw slot, plus add 2 digit casting number by Slaters if desired to centre behind top screw hole
- Add 2 reinforcing braces under gun mantlet to each side
- Add gun elevation stopper to top of kugellafette from 40 thou strip
- Add 3 digit casting no. by Slaters to top of Kugellafette
- Replace kit gun barrel with turned one if desired (Elefant, Jordi Rubio, Hots etc.). Length from mantlet front should be c.47mm
- Add missing gun sight from parts box or scratch
- Rundumfeur RC MG-34 on roof needs lot of work; including new scratchbuilt cradle and linkages from strip, wire and very fine spring, replace poor kit gun itself with better one (eg. Cal-scale or Dragon etc. MG-34 with butt removed), add gurtsac & belt or Tamiya drum mag (also add single bullet visible entering breech from drum mag), add spent link coming out of breech RHS from centre section cut down from a full plastic ammo belt, add missing gun sight scope under

selected detail sets 1

ABER

- | | |
|-------------------------|--------------------|
| #35112 Hetzer Early/Mid | #35113 Hetzer Late |
| #35114 Hetzer Fenders | |

ACCURATE ARMOR

- | | |
|----------------------------|--------------------------------------|
| Traxpax #T38 Hetzer Tracks | Traxpax #T51 Hetzer Ostketten Tracks |
|----------------------------|--------------------------------------|

CMK/HOTS BARREL

- | | |
|--|---|
| #033 7.5cm PaK 39 L/48 w/ Kugellafette IV Early Type | #034 7.5cm PaK 39 L/48 w/ Kugellafette IV Late Type |
| #035 7.5cm PaK 39 L/48 w/ Kugellafette V Early Type | #036 7.5cm PaK 39 L/48 w/ Kugellafette V Late Type |
| #037 7.5cm PaK 39 L/48 w/ Kugellafette III | #038 7.5cm PaK 39 L/48 w/ Starr Mantlet |

EDUARD

- | | |
|-----------------------------|----------------------------|
| #35343 Hetzer (Italeri Kit) | #35385 Hetzer (Dragon Kit) |
|-----------------------------|----------------------------|

- MG in shield gap, add 2 hex bolts from P&D added to each side of gun shield
- Add missing scopes to Loader’s and CO’s positions and redo curved guards if desired in finer strip
- Cut open moulded shut CO’s rear hatch if desired to fit figure or show off interior
- Detail inside faces of crew hatches with bolts, strip and wire handles etc. as per refs
- Add wingnut to spare track bracket on sloping engine deck
- Add mounting brackets and bolts to sides of exhaust pipe housing duct from strip & GL 127 hex bolts
- Add real mesh over engine bay air outlet grill from fine extruded diamond wire mesh cut to shape and add wingnut on sliding panel locking point next to it. Also add sliding cover from strip if desired
- Add 2 missing mounting plates and bolts from strip & Grandt Line GL 127 hex bolts to aerial mount
- Replace aerial base with more accurate one from Tamiya Sd.Kfz.251 spare and add small wingnut to neck
- Add missing boltcutters to RHS rear fender section with strip bracket
- Add missing jack to Rear RHS fender from parts box and add brackets
- 2 missing spare aerals added from wire filaments to LH hull side and mounted in holder (which is oddly bent in kit due to being patterned off a damaged one at Bovington and needs straightening
- Cut down height of fender stowage bin and add 2 hasps to sides with Historex buckles

by James Blackwell

Dragon Early Model (No.6030)

Lower Hull - Front & Sides

- Add 9 missing bolts to inner faces of final drive housings in line with outer ones (with Grandt Line GL-127s hex nuts & bolts)
- The leaf springs in all Dragon kits they do are a hybrid to save them doing them twice, thus are technically incorrect for any. So for Earlies to early Mids, remove the moulded strip down the centre section, and for Lates, keep it, but fill in the scoop at the bottom of the centre section.
- Add missing bolt heads on inside faces of wheel rims & centre hubs to match the outer pattern if desired (GL-127s) - or just mud them up!
- Fill ejector pin marks on rear idlers
- Kit tracks needed per side = c.93 (or when laid out length = 29.5cm)

Lower Hull - Rear

- Fill rear plate/sidewall joint and re-scribe it/add weld bead onto sides instead, as rear plate was full width not sitting inside the two side walls as kit oddly depicts
- Add missing triangular fillets to underside of rear fender overhangs down to rear tow shackles from .10 thou card (though check photos refs to confirm vehicle modelled has them as intro date was during the run)
- Add tow cables and retaining straps & buckles to 3 hooks on rear plate

Upper Hull

- Redo jack block if desired from basswood and lead foil and add securing wingnut (or at the very least scribe in wood grain to kit one)
- Remove ejector pin mark on LHS fender
- Add better Notek with wire conduit, foil clips and socket to LH hull side
- Cut off and redo tie downs in fine wire
- Add 3 splash strips to gun aperture of kugellafette
- Add 3 digit cast no. to top of kugellafette
- Almost impossible to fit elevating mechanism in properly without a lot of cutting and filing
- Add 2 reinforcing braces under gun mantlet to each side
- Add casting strip to top edge of mantlet
- Add casting no. to mantlet if desired (2 digit on BMM ones)
- * An option is to putty up the lower edge of mantlet to do the reinforced chin variation seen on some
- Replace kit gun barrel (which has odd raised ring instead of thread cap groove near muzzle), with turned

selected detail sets 2

ELEFANT

#35306 7.5cm PaK 39 L/48

FRIULMODEL

#ATL-15 Hetzer Early Track #ATL-35 Hetzer Late Track

JORDI RUBIO

#JR27 7.5cm PaK 39 L/48 #JR52 7.5cm PaK 39 L/48
(Threaded Muzzle)

MODEL KASTEN

#SK-28 Hetzer Early Track #SK-29 Hetzer Late Track

ROYAL MODEL

#116 Hetzer Part 1 #117 Hetzer Part 2

VERLINDEN PRODUCTIONS

#1097 Hetzer Engine & Compartment #1692 Hetzer Interior

- one (Elefant, Jordi Rubio, Hots etc.). Length from mantlet front should be c.47mm
- Fill 2 ejectors on sliding Gunner's scope plate
- Drill out lens end of Gunner's sight and add 4 small rivets and 4 small screw holes to square top
- Add oval locking handles and tabs to CO's hatch inner faces
- Add scalloped hatch lip to outer edge of LHS Loader's hatch inner face
- Add locking handle and locking bar retaining brackets to RHS Loafer's hatch inner face
- Scratch up MG cradle for Rundumfeuer roof MG from strip (or use Show Modelling one)
- Add 2 hex bolt heads to each side of MG shield
- Add small MG sighting periscope under MG barrel
- Remove butt from MG34 and add peg to rear
- Add drum mag to MG
- Add various wingnuts; on sliding mesh grill plate slot, spare track
- Add waffle baseplate to jack from .10x.20 strip and position it 180 degrees to instructions with baseplate facing front of vehicle plus detail up brackets
- Add tool bracket clamps to centre of crowbar, spare aerials, & add clamp handle to boltcutters
- Add 2 spare aerials if desired on LHS
- Add better aerial mount and aerial to RHS w/small wingnut on shaft
- Add aerial

by James Blackwell

Dragon Mid Production "Command" Model (No.6060)

Lower Hull - Front & Sides

- Add 9 missing bolts to inner faces of final drive housings in line with outer ones (with Grandt Line GL-127s hex nuts & bolts)
- The leaf springs in all Dragon kits they do are a hybrid to save them doing them twice, thus are technically incorrect for any. So for Earlies to early Mids, remove the moulded strip down the centre section, and for Lates, keep it, but fill in the scoop at the bottom of the centre section.
- Add missing bolt heads on inside faces of wheel rims & centre hubs to match the outer pattern if desired (GL-127s) – or just mud them up!
- Fill ejector pin marks on rear idlers
- Tracks needed per side = c.93 (or when laid out length = 29.5cm)

Lower Hull - Rear

- Fill rear plate/sidewall joint and rescribe it/add weld bead onto sides instead, as rear plate was full width not sitting inside the two side walls as kit oddly depicts
- Add missing triangular fillets to underside of rear fender overhangs down to rear tow shackles from .10 thou card
- Add tow cables and retaining straps & buckles to 3 hooks on rear plate
- Add tread plate crew boarding step to blow torch cover port

Upper Hull

- Redo jack block if desired from basswood and lead foil and add securing wingnut (or at the very least scribe in wood grain to kit one)
- Remove ejector pin mark on LHS fender
- Add better Notek with wire conduit, foil clips and socket to LH hull side
- Cut off and redo tie downs in fine wire
- Add 3 splash strips to gun aperture of kugellafette
- Add 3 digit cast no. to top of kugellafette

- Almost impossible to fit elevating mechanism in properly without a lot of cutting and filing
- Add 2 reinforcing braces under gun mantlet to each side
- Add casting strip to top edge of mantlet
- Add casting no. to mantlet if desired (2 digit on BMM ones)
- Replace kit gun barrel (which has odd raised ring instead of thread cap groove near muzzle), with turned one (Elefant, Jordi Rubio, Hots etc.). Length from mantlet front should be c.47mm
- Fill 2 ejectors on sliding Gunner's scope plate
- Drill out lens end of Gunner's sight and add 4 small rivets and 4 small screw holes to square top
- Move RHS roof Pilsen socket forward c.1-1.5mm so doesn't foul CO's front hatch when opened
- Add oval locking handles and tabs to CO's hatch inner faces
- Add scalloped hatch lip to outer edge of LHS Loader's hatch inner face
- Add locking handle and locking bar retaining brackets to RHS Loafer's hatch inner face
- Scratch up MG cradle for Rundumfeuer roof MG from strip (or use Show Modelling one)
- Add 2 hex bolt heads to each side of MG shield
- Add small MG sighting periscope under MG barrel
- Remove butt from MG-34 and add peg to rear
- Add drum mag to MG
- Use alternate Late deck provided to do option of filling the LHS filler hatch in for late Mid if desired
- Add various wingnuts; on sliding mesh grill plate slot, spare track
- Add waffle baseplate to jack from .10x.20 strip and position it 180 degrees to instructions with baseplate facing front of vehicle
- Add tool bracket clamps to centre of crowbar, spare aerials, & add clamp handle to boltcutters
- Add 2 spare aerials if desired on LHS
- Add better aerial mount and aerial to RHS w/small wingnut on shaft
- Add aerial

by James Blackwell

Dragon Late Model/Flamm (No.6037)

(This kit is actually a Late not a Mid as the box top implies)

Lower Hull – Front & Sides

- Add 9 missing bolts to inner faces of final drive housings in line with outer ones (with Grandt Line GL-127s hex nuts & bolts)
- The leaf springs in all Dragon kits they do are a hybrid to save them doing them twice, thus are technically incorrect for any. So for Earlies to early Mids, remove the moulded strip down the centre section, and for Lates, keep it, but fill in the scoop at the bottom of the centre section.
- Add missing bolt heads on inside faces of wheel rims & centre hubs to match the outer pattern if desired (GL-127s) – or just mud them up!
- Fill ejector pin marks on rear idlers
- Tracks needed per side = c.93 (or when laid out length = 29.5cm)

Lower Hull - Rear

- Fill rear plate/sidewall joint and rescribe it/add weld bead onto sides instead, as rear plate was full width not sitting inside the two side walls as kit oddly depicts
- Add missing triangular fillets to underside of rear fender overhangs down to rear tow shackles from .10 thou card
- Add tow cables and retaining straps & buckles to 3 hooks on rear plate
- Add tread plate crew boarding step to blow torch cover port

Gun Tank's Main Gun

- Add 3 splash strips to gun aperture of kugellafette
- Add 3 digit cast no. to top of kugellafette
- Almost impossible to fit elevating mechanism in properly without a lot of cutting and filing
- Add 2 reinforcing braces under gun mantlet to each side
- Add casting strip to top edge of mantlet
- Add casting no. to mantlet if desired (2 digit on BMM ones)
- Replace kit gun barrel (which has odd raised ring instead of thread cap groove near muzzle), with turned one (Elefant, Jordi Rubio, Hots etc.). Length from mantlet front should be c.47mm

Flamm Hetzer's main Gun

- Only 2 known examples of the 20 built for use in Op. Nordwind by Flamm Pz.Kp.s 352 & 353 have appeared to date in published refs (5 shots of “S-14” and one of the one in Gros Rederching), so its difficult to model others with any certainty based on such a small sample. But re these two known examples;
- If modelling “S14” in snow covered field near

- Oermingen; scratch new 8 hole spoked idler wheels, leave jack block off and added threaded shaft for wingnut, extend RHS spare track bracket to hold 8 links not 7, add unique curved Gunner's scope MG guard on roof, mash end section of sheet metal barrel tube up as per shots, remove Loader's & CO's scopes & guards, bend engine deck spare track bracket backwards, callsign is in white not red as supplied in kit
- If modelling one seen against building under snow in Gros Rederching; use kit's 6 hole idlers, add only 1 link to RHS spare track bracket, batter sheet metal gun tube slightly by redoing last section in lead foil
- Add missing scope under glare guard on top of kugellafette
- Add 4 small bolt heads to top of glare guard
- Add muzzle of flame projector and igniter barrels inside sheet metal barrel

Upper Hull

- Redo jack block if desired from basswood and lead foil and add securing wingnut (or at the very least scribe in wood grain to kit one)
- Remove ejector pin mark on LHS fender
- Add better Notek with wire conduit, foil clips and socket to LH hull side
- Cut off and redo tie downs in fine wire
- Fill 2 ejectors on sliding Gunner's scope plate
- Drill out lens end of Gunner's sight and change square top to later model round top (ie. SflZF 1a & 1c)
- Move RHS roof Pilsen socket forward c.1-1.5mm so doesn't foul CO's front hatch when opened
- Add oval locking handles and tabs to CO's hatch inner faces
- Add scalloped hatch lip to outer edge of LHS Loader's hatch inner face
- Add locking handle and locking bar retaining brackets to RHS Loafer's hatch inner face
- Scratch up MG cradle for Rundumfeuer roof MG from strip (or use Show Modelling one)
- Add 2 hex bolt heads to each side of MG shield
- Add small MG sighting periscope under MG barrel
- Remove butt from MG34 and add peg to rear
- Add drum mag or gurtsac to MG
- Add various wingnuts; on sliding mesh grill plate slot, spare track
- Add waffle baseplate to jack from .10x.20 strip and position it 180 degrees to instructions with baseplate facing front of vehicle
- Add tool bracket clamps to centre of crowbar, spare aerials, & add clamp handle to boltcutters
- Add 2 spare aerials if desired on LHS
- Add better aerial mount and aerial to RHS w/small wingnut on shaft
- Add aerial

by James Blackwell

further reading 1

BOOKS

- Hetzer - Jagdpanzer 38* by Francev, Kliment & Kopecký, MBI Publishing, Prague 2001 Outstanding Ref!
- Jagdpanzer 38 "Hetzer" 1944-1945* by Tom Jentz & Hilary Doyle, New Vanguard Series No.36, Osprey Publishing, London 2001 - very good overall summary
- Jagdpanzer- Jagdpanzer 38(t) to Jagtiger* by Tom Jentz & Hilary Doyle, Panzertracts No.9, Darlington Publications, Maryland 1997 - good overall summary
- Leichte Jagdpanzer* by Spielberger, Doyle & Jentz, Motor buch Verlag Pubs. Stuttgart 1992 (Ger. Lang. But v.good photo & dwg. coverage and technical info)
- Groundpower No.53 Oct 1998*, Delta Publishing, Tokyo 1998 - walkaround of RMC Shriveham's G-13
- Groundpower No.89 Oct 2001*, Delta Publishing, Tokyo 2001 - Hetzer Part 1 (Mostly Technical Pics)
- Groundpower No.90 Nov 2001*, Delta Publishing, Tokyo 2001 - Hetzer Part 2 (Combat Pics & Variants)
- Groundpower No.91 Dec 2001*, Delta Publishing, Tokyo 2001 - Hetzer Part 3 (Misc. & Museum Pics)
- Hetzer - Jagdpanzer 38(t) and G-13* by Horst Schiebert, Schiffer Publishing, Penns. 1990
- Jagdpanzer 38(t) "Hetzer Part 1"* by Janusz Ledwoch, Polish Wydawnictwo Series No.45, Warsaw 1997
- Jagdpanzer 38(t) "Hetzer Part 2"* by Janusz Ledwoch, Polish Wydawnictwo Series No.56, Warsaw 1998
- WWII German Jagdpanzer "Hetzer"* Tank Magazine Special No.8 April 1983 Vol.6 No.5
- Panzer Magazine - July 1983*, Sunday Art Publishing, Tokyo 1983 - useful Hetzer feature article
- Jagd Model Fibel 1* - Model Art Special No.567 Tokyo 2000 (good Hetzer section covering a few kits)
- Czechoslovak Armoured Fighting Vehicles 1918-45* by Charles Kliment & Vadim Francev, Schiffer Publishing, Penns. 1997
- Model Graphix Mags* (1990s Asst.) - for outstanding Hetzer Detail sketches in their "Achtung Panzer" Series instalments [No.s 79-85]

further reading 2

MODEL MAGS

Gun tanks

- Military Modelling Sep. 1993* David Parker - Cromwell 1/15th resin kit built
- Tamiya Model Magazine No.36 1993* Marcus Nicholls - Cromwell 1/15th resin kit built
- Steelmasters Magazine No.14* Thomas Anderson - Prototype conversion article
- Military Modeller - Oct. 1988* M. Krabbenhoft - Italeri kit detailed
- Military Modeller - July 1989* R. Tipton - Italeri kit detailed
- Tamiya Model Magazine No.47 1995* Angus Creighton - Review of Dragon Early
- Tamiya Model Magazine No.50 1995* Angus Creighton - Review of Dragon Late.
- Armour Modelling No.1 1997* -making a Final Skoda Werke Hetzer May '45
- Military Modelling No.7 1999* Steve Zaloga - Modelling a Hetzer from the ROA.
- Military In Scale Sept. 1999* Mike Morton - Building and detailing up Dragon Late
- Boresite Nov. 1999* Lou Augello - Adding Verlinden's engine compartment to Dragon kit.
- Military Miniatures In Review Vol.14* Pat Stansell - Dragon kit detailed
- Starr**
- *Jagdpanzer 38(t) "Starr" - p.37 Military Modelling No.13 1997* Fraser Gray, DML/New Connection conversion of Tatra version built plus pics of real one
- Berge Hetzer**
- Military Miniatures In Review Vol.11/12* Carlos D'Arcy - DML/New Connection conversion.
- Armour Modelling No.1 1997* Camo and markings
- Military In Scale Jan 2000* Gary Edmundson - Build review of New Connections conversion kit
- Afkl. 75mm Hetzer**
- Military Modeller April 1990* Duane Pfister - Short 75 conversion project
- sIG 33 Afkl. Hetzer**
- Armour Modelling No.10 1998* Mashiro Doi - Build up of New Connection conversion kit