



DEUTSCHER
MOWERS

Deutscher

H660 (Series 2)



OWNER'S INSTRUCTION MANUAL
AND PARTS LIST

INDEX

<u>Page No.</u>	<u>Topic</u>
1.	Index and Assembly Instructions
2.	Safety Instructions
3.	Maintenance and Storage
4.	ETC ETC

ASSEMBLY INSTRUCTIONS

HANDLE ATTACHMENT (Pre delivery) (Refer to Figure 1)

1. Connect the handles to the side rails of the chassis using four 75mm M8 bolts, while making sure that the ball on gearbox linkage "A" connects with the slotted tubular lever "B." The ball and the tube should be greased to make gear changes easier. The 75mm bolt through the rear hole on the right of the mower (facing forward) will need to be inserted from underneath. Fasten the four nuts securely.
2. Insert a $\frac{3}{4}$ " circlip into the groove in the end of the tubular lever "B".
3. Fully loosen nut "C" and connect rod "D" to the drive clutch lever "E" using the washer and split pin. Retighten nut "C".
4. Connect the clutch return spring to the top of the drive clutch lever and to pin "F".
5. Connect the rod "G" to the foot pedal assembly using a washer and split pin.
6. Connect the height adjusting rod H to the curved lever "J" using the bolt nut and washer provided.
7. **See Figure 2.** Place tank straps "L" in the tank bracket "K" slots and bend tabs up and back against the bracket. Bolt the tank bracket to the handle bar assembly using three round headed bolts, with the round heads of two bolts against the fuel tank. Place the fuel tank in position and attach the straps at their lower end using two bolts.
8. Attach the throttle control to the handle bars ensuring the cable is free of sharp bends. Ensure both "choke" and "stop" positions are achieved using the throttle lever.
9. Connect the fuel line from the tank to the engine.

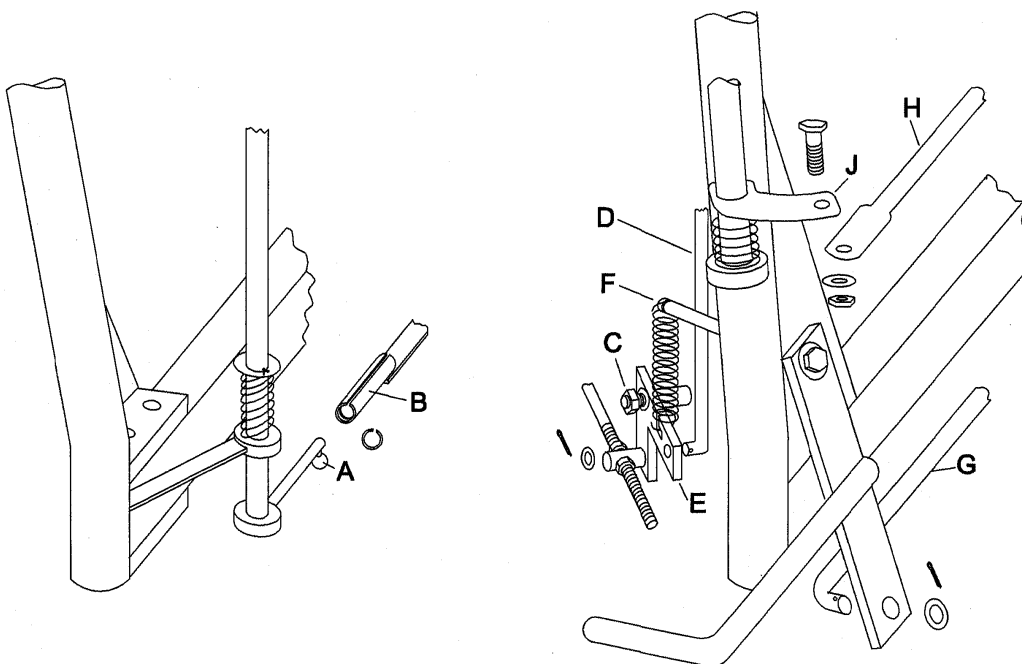


Figure 1. DEALER ASSEMBLY

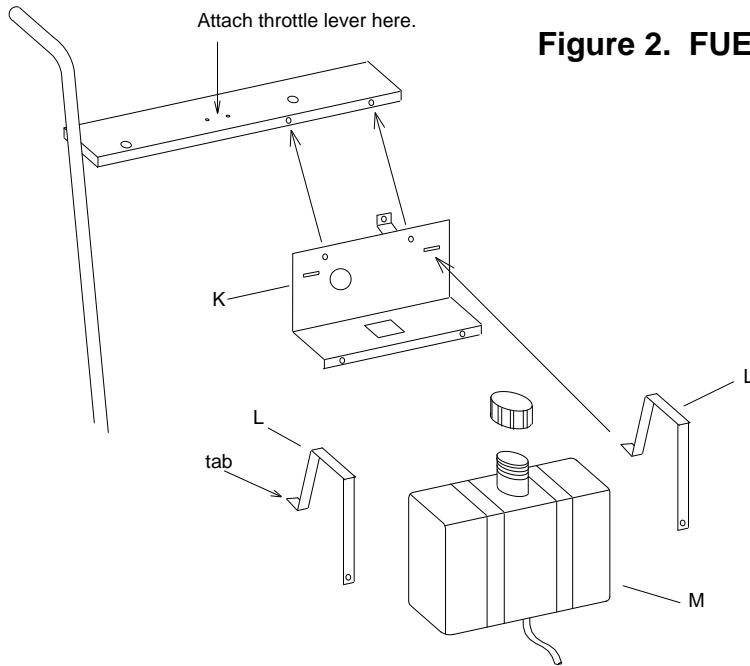


Figure 2. FUEL TANK ATTACHMENT

ENGINE PREPARATION (Pre delivery)

1. Remove the dipstick and add oil as per the instructions in the engine manual.
2. Add unleaded petrol to the petrol tank.
3. Follow the starting procedure listed below, and check there are no abnormal vibrations, and that the gear lever, forward drive lever, height adjustment lever and blade clutch are functioning satisfactorily.

SAFETY INSTRUCTIONS!



BEFORE STARTING:

- Know your controls. Read the owners manuals thoroughly. Learn how to stop the engine quickly in an emergency.
- Inspect the area to be mown, remove all debris and obstacles that may be in the path of the mower. Do not attempt to shift obstacles while mower is going.
- **Damaged blades and worn bolts are major hazards.** Before starting, always visually inspect to see that blades, blade bolts and cutter assemblies are not worn or damaged.
- Replace worn or damaged blades and bolts in sets to preserve balance.
- Refuel outdoors only. Do not smoke while refuelling engine. Add fuel before starting the engine. Never remove cap off the fuel tank or add petrol while the engine is running or the engine is hot. If petrol is spilled, do not attempt to start the engine but move the machine away from the area of the spill and avoid creating any source of ignition until the petrol vapours have dissipated.
- Do not allow children or people unfamiliar with these instructions to use the mower.
- With prolonged use, hearing protection should be worn.
- Never mow while barefoot or wearing open sandals, or thongs. Wear long trousers and heavy shoes.
- Apply sunscreen; wear appropriate clothing, a hat and sunglasses to avoid sunburn.
- It is advisable to wear suitable eye protection when operating the mower.

STARTING:

- Disengage all blades and drive clutches and shift gear lever into neutral before starting the engine.
- Start the mower carefully according to instructions and with feet well away from blades and not in front of the discharge chute.

OPERATION:

- Never mow while people, especially children, or pets are nearby.
- Mow only in daylight or in good artificial light. Stay alert for holes in the terrain and other hidden hazards.
- Never direct discharge of material towards bystanders.
- Avoid operating the equipment in wet grass, where feasible.
- Do not put hands and feet near or under rotating parts. Keep clear of the discharge opening at all times.
- Never pick up or carry a mower while the engine is running.
- Use extreme caution when reversing or pulling mower towards you.
- Do not carry passengers.
- Walk, never run.
- Slopes:
 - Do not mow excessively steep slopes.
 - Exercise extreme caution when on slopes.
 - For pedestrian controlled mowers, mow across the face of slopes, never up and down and exercise extreme caution when changing direction on slopes.
- Use low throttle settings when engaging the ground drive, especially in high gears. Reduce speed on slopes and in sharp turns to prevent overturning or loss of control.
- Stop the blades when crossing surfaces other than grass and when transporting the mower to and from the area to be mowed.
- Do not operate the engine in a confined space where dangerous carbon monoxide fumes can collect.
- Stop the engine:
 - Whenever you leave the mower, even for an instant.
 - Before re-fuelling.
- Stop the engine and disconnect the spark-plug lead, or turn off and remove key:
 - Before clearing blockages or unclogging chute:
 - Before checking, cleaning or working on the mower:
 - After striking a foreign object, inspect the mower for damage and make repairs before restarting and operating the mower:
 - If mower starts to vibrate abnormally stop the engine immediately.
- Watch out for traffic when crossing or near roadways.
- Before leaving the operator's position:
 - Disengage the cutter engagement lever,
 - Change into neutral and set the parking brake,
 - Stop the engine and or remove key.

-
- **Do not modify mower in any way, or use the mower with out the shields and guards in place, they are for your protection.**
-

MAINTENANCE and STORAGE:



- Keep all nuts, bolts and screws tight to be sure the equipment is in safe working condition.
- Do not use pressure-cleaning equipment.
- Never store the equipment with petrol in the tank inside a building where fumes can reach an open flame or spark.
- Allow the engine to cool before storing in any enclosure.
- To reduce the fire hazard, keep the engine, silencer, battery compartment and petrol storage are free of grass, leaves, or excessive grease.
- Replace worn or damaged parts for safety;
- Replace faulty silencers.
- If the fuel tank has to be drained, do this out-doors.
- Do not change the engine governor settings or over speed the engine. Operating an engine at excessive speed can increase the hazard to personal injury.
- Be careful during adjustment of the mower to prevent entrapment of the fingers between moving blades and fixed parts of the mower.
- Store fuel in a cool place in a container specifically designed for the purpose. In general, plastic containers are unsuitable.
- When the mower is to be parked, stored or left unattended, lower the cutting deck.

SPECIFICATIONS:

ENGINE: Honda and Briggs and Stratton engines are used, see engine owner's manual supplied with the mower.

GEARBOX: Deutscher Gear box houses two forward gears and reverse, incorporating a differential gearbox in an oil bath alloy housing.

Recommended oil EPX 85w/140
Capacity: 750ml

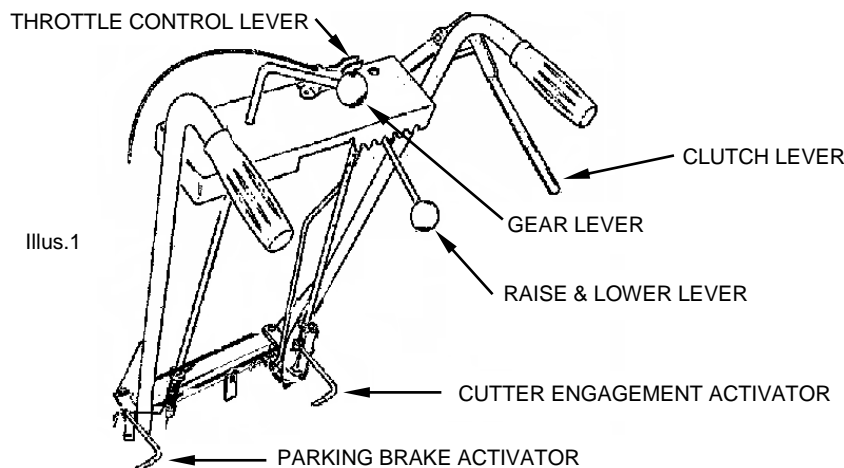
SPEED RANGE: Low gear: 2.2 kph @ 2500rpm.
 High gear: 3.6 kph @ 2500rpm.
 Reverse gear: 1.7 kph @ 2500rpm.

TYRES: Rear: 13-500-6 Pressure, 20psi
 Front 250 x 4 Pressure, 20psi

CUTTING HEAD: 660mm cut, 2 x blades,
 6 cutting height positions from 30mm-88mm.

GENERAL: Length: 1600mm,
 Width: 640mm,
 Height: 960mm,
 Weight: 120kg

CONTROLS: illus. 1



PRE-START CHECK:

Your Deutscher Mower comes to you tested and ready to operate, with engine and gearbox filled with oil.

- Read all safety instructions and know how to stop engine quickly in any emergency.
- Know your controls – Where they are and their function.
- Use fresh unleaded petrol. Do not mix oil with petrol.
- Ensure drive and cutter mechanisms are placed in neutral or disengaged.

OPERATION:

TO START THE ENGINE (Manual start):

- When engine is cold, move throttle lever to CHOKE position.
- When engine is hot, move throttle lever to high throttle position.
- Slowly pull starter cord until starter pawls engage and rope stops then pull with force turning the engine over. Repeat this procedure if the engine does not start.
Once engine is running shift throttle lever from Choke position to desired operating position.

TO STOP THE ENGINE: (Manual start)

- Push throttle lever to STOP position.

TO START THE ENGINE (Electric start version):

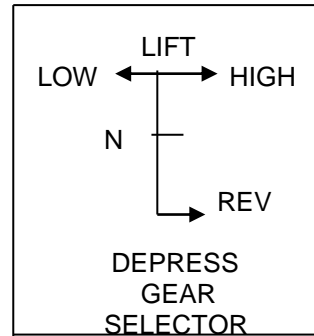
- When engine is cold, move throttle lever to CHOKE position.
- When engine is hot, move throttle lever to high throttle position.
- Turn key to start position and release once engine is running.
- Once engine is running shift throttle lever from Choke position to desired operating position.

TO STOP THE ENGINE: (Electric start version)

- Turn key to OFF position.

TO DRIVE MOWER:

- Release park brake.
- Select gear, Low forward: Raise and turn left
High forward: Raise and turn right
Reverse: Push down and turn right
- Clasp clutch lever and hold to hand grip, releasing,
To stop.

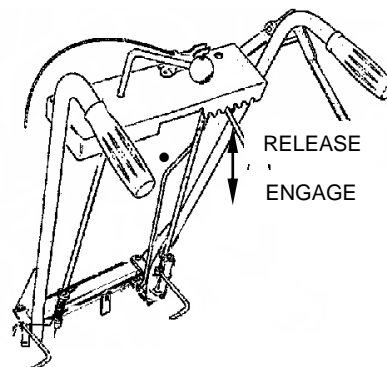


WARNING! Use low throttle settings when Engaging the traction-clutch, especially in high gears

TO ENGAGE CUTTER DRIVE:

- Set throttle setting to a position as not to stall engine on engagement.
- Place right foot on lever and press down and lock into position.
- To release, lift lever up with right foot.

ILLUS. 2



MOWING ACROSS SLOPES AND REVERSING

- As mentioned in the Safety Instructions, reduce speed on slopes and in sharp turns to prevent overturning and loss of control. Mow across the face of slopes, never up and down.
- Wear suitable boots for the terrain. Do not continue mowing if you are slipping while walking. Exercise extreme caution if the grass is damp.
- Do not mow an area with a slope greater than 10 degrees to the horizontal.
- Be extremely cautious when reversing. This is particularly important on slopes. Wear non slip footwear and keep well back from the mower to ensure your footing is steady. Instantly release the drive lever if you feel yourself slipping.
- When parking a mower on a slope, ensure the engine is turned off AND THE PARKING BRAKE IS ENGAGED, before leaving the mower. This applies even if you leave the mower for an instant.

TRANSPORTING AND LIFTING THE MOWER

It is far safer to use ramps or a lifting device to put the mower onto a trailer or utility tray, rather than attempting to lift it. Never attempt to lift the mower on your own.

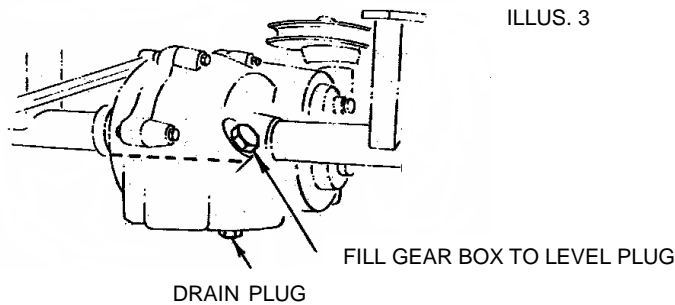
MAINTENANCE:

THE MANUFACTURES RESERVE THE RIGHT TO ALTER, CHANGE OR VARY THE SPECIFICATIONS OF THE MACHINE OR ANY OF THE COMPONENT PARTS AT ANY TIME WITHOUT NOTICE.

LUBRICATION CHART				
Lubrication.		Daily	20hrs	100hrs
Engine,	Refer engine manual.			
Gearbox				
Check			X	
Change	Gear oil	EPX 85w/140		X
King pins	Oil		X	
Raise & lower frame slides	Grease		X	
Gear control linkages	Oil	X		
Clutch control linkages	Oil	X		
Height control linkages	Oil	X		
Throttle cable	Oil		X	

GEARBOX:

Use gear oil 85w/140 Capacity = 750ml



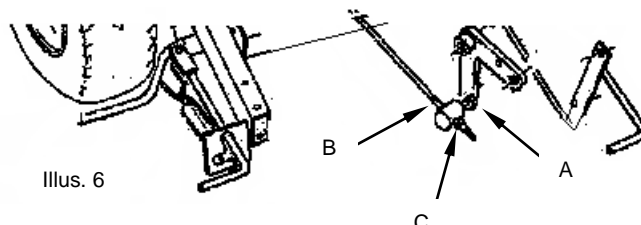
GEARBOX BELT: **illus 6**

REPLACEMENT



- Before any inspection or replacements of the belts and associated parts turn engine off and pull spark plug lead off spark plug.
- Be careful during adjustment of the mower to prevent entrapment of the fingers between moving blades and pulley's fixed parts of the mower.

- Remove belt guide. Part No 1619
- Remove nut "A" from adjustment pivot and remove from crank arm.
- Remove belt from pulleys and slide over clutch adjustment rod.
- To fit new belt, place belt over clutch adjustment rod and rap around pulleys.
- Replace adjustment pivot to crank arm and tighten nut "A".
- Refit belt guide. (ensure guide is bolted on the inside of the engine mounting plate)
- Adjust clutch: See CLUTCH ADJUSTMENT.

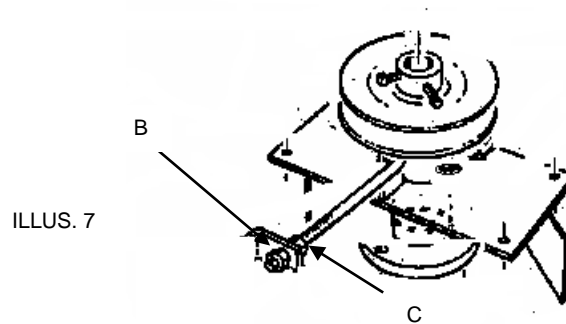


CUTTER BELT: REPLACEMENT

See Illustration 7 on the next page.



- Before replacements of the belts and associated parts turn engine off and pull spark plug lead off spark plug.
 - Be careful during adjustment of the mower to prevent entrapment of the fingers between moving blades, pulleys and fixed parts of the mower.
-
- Remove belt guide P No 1619 by unbolting from engine mounting plate.
 - Remove gearbox belt from engine pulley.
 - Ensure cutter belt is disengaged.
 - Move cutter height lever to mid height position.
 - Loosen “C” nut and brake lever stop to ensure belt is loose.
 - Remove old belt and replace new belt feeding it around the pulleys and keeping the belt on the inside of the guide pins.
 - Place cutter in engaged position and adjust belt by adjusting nuts “C” & “B”.
 - Belt should have 20mm slack. **DO NOT OVER TIGHTEN!**
 - Adjust brake lever stop to ensure cutter spindle stops when disengaged.
 - Replace gearbox belt and refit belt guide. (Note: Belt guide bolted inside engine mounting plate.)
 - Run and test to ensure all adjustments are correct.



CUTTER SPINDLE BRAKE:

ADJUSTMENT



- Before replacements of the belts and associated parts turn engine off and pull spark plug lead off spark plug.
 - Be careful during adjustment of the mower to prevent entrapment of the fingers between moving blades, pulleys and fixed parts of the mower.
-
- Loosen nut holding brake lever stop to chassis and slide forward until brake pad prevents cutter pulley from rotating when cutters are disengaged.
 - Make sure brake pad is clear of cutter pulley when engaged.
 - Tighten nut holding brake lever stop to chassis.

CLUTCH ADJUSTMENT FOR TRANSMISSION:

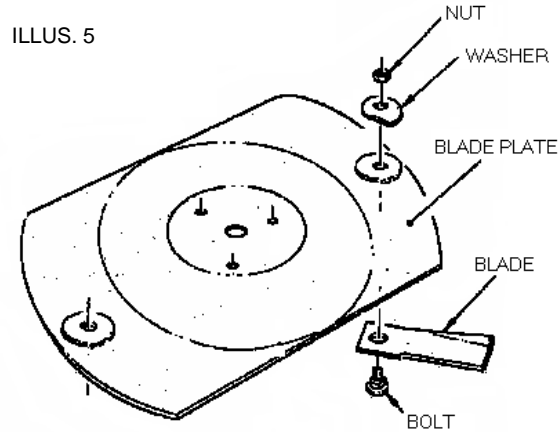
See illus. 6

- Loosen nut “C” and tighten nut “B”.
- Make sure belt is entirely free when clutch lever is disengaged.
- DO NOT OVER-TIGHTEN BELT.

BLADES:

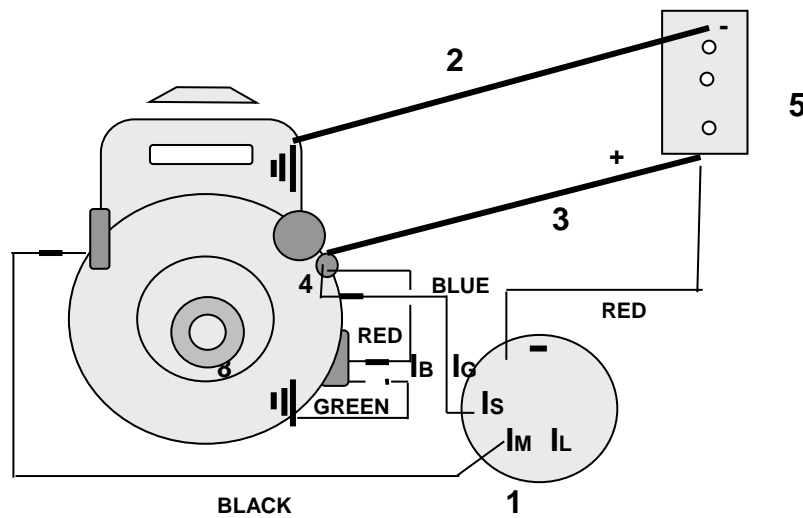


- Before any inspection or replacements of the blades and associated parts turn engine off and pull spark plug lead off spark plug.
- Be careful during adjustment of the mower to prevent entrapment of the fingers between moving blades and fixed parts of the mower.
- It is important that you visually inspect the blades, bolts and nuts to ensure that they are in a safe operating condition; this should be done before each mowing period.
- Always replace blades and bolts in kit form as to prevent any vibrations that may damage the mower and cause personal injury.



WIRING DIAGRAM:

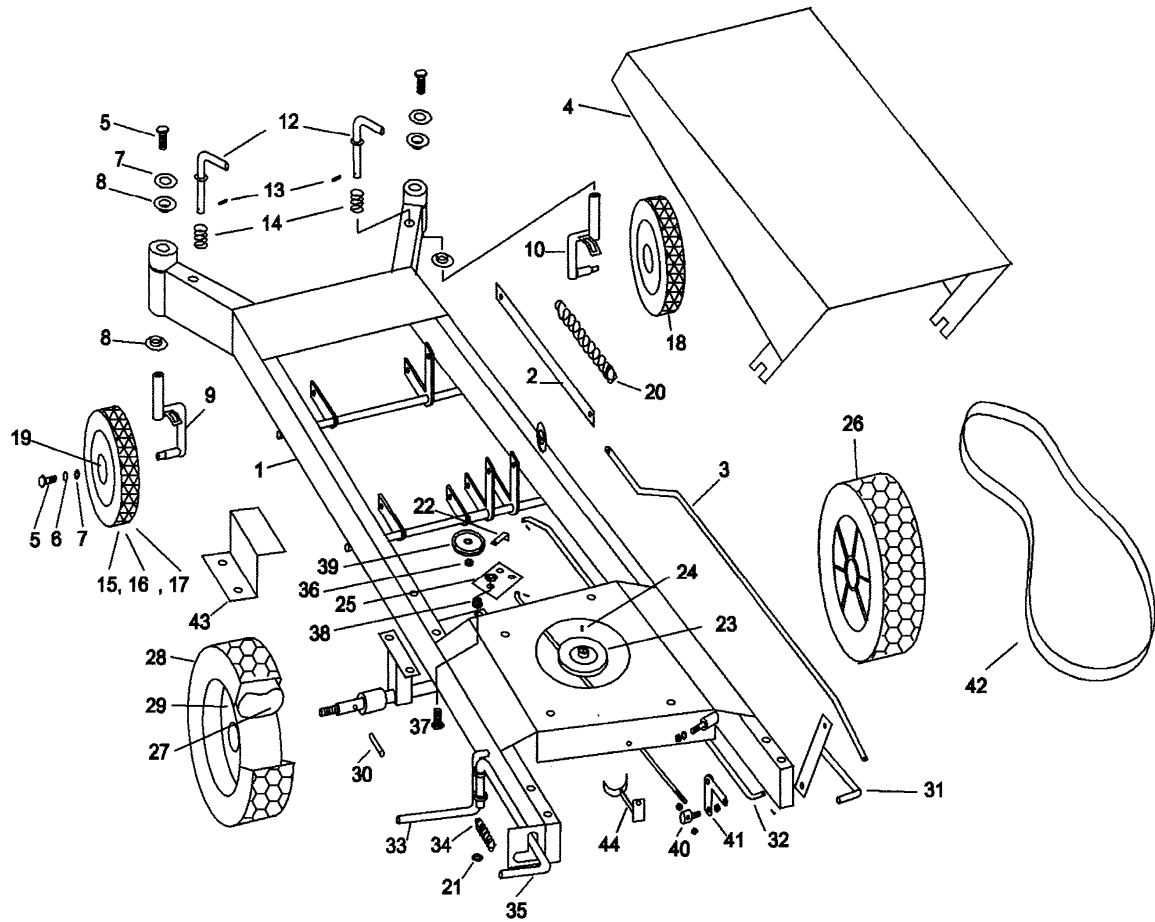
HONDA GXV390 UT1 DAEU



Item	Part No.	Part Description
1	1261	Key Switch
2	1368	Battery lead 330mm
3	1373	Battery lead 250mm
4	R322	Loom assembly
5	H315	Battery 12 Volt

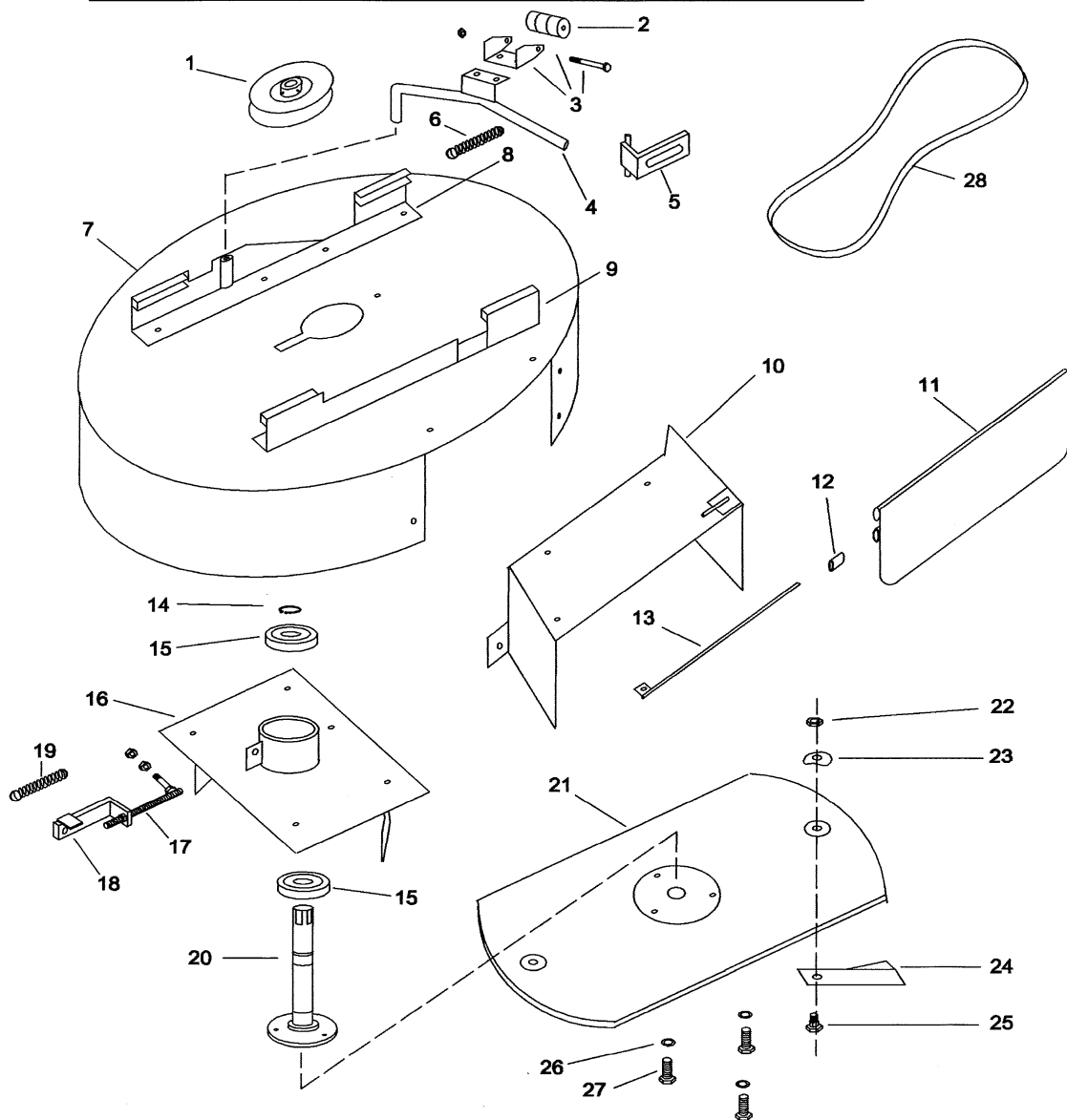
WARNING: Incorrect wiring may result in damage to the engines electrical system. Only qualified and or competent electrical technicians should attempt any repairs or alterations.

CHASSIS



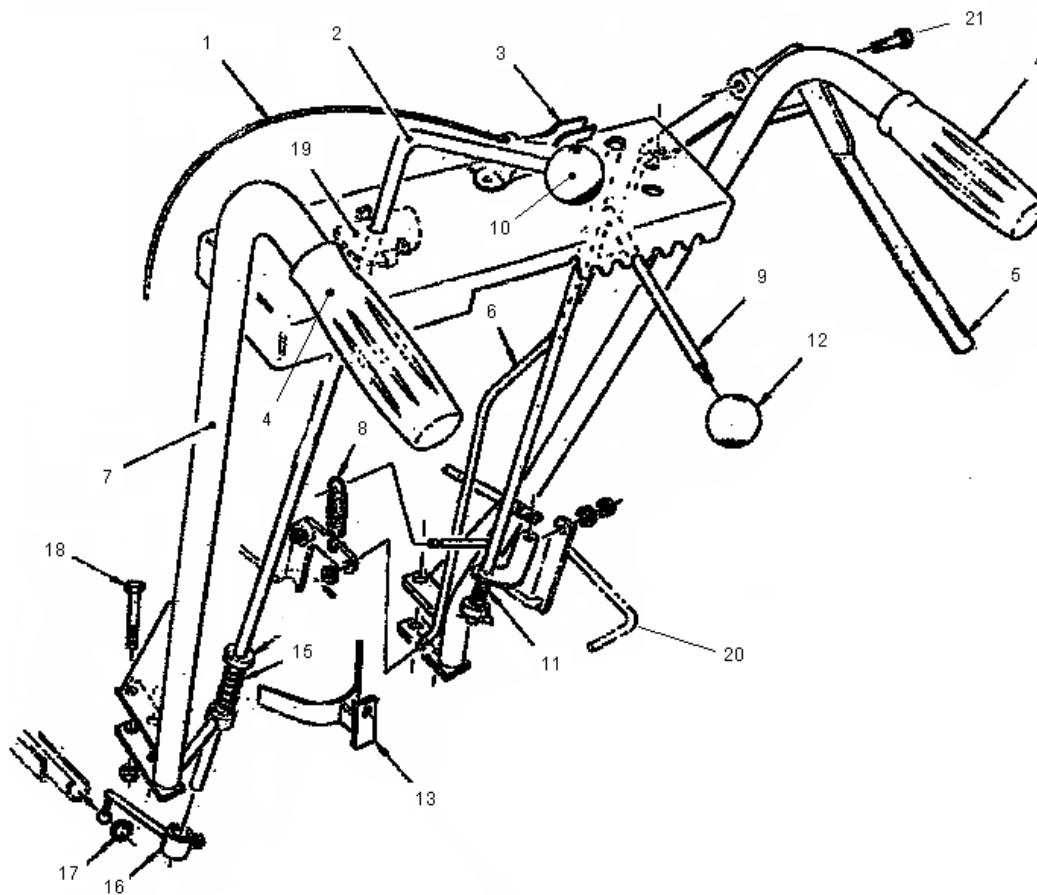
Item No	Part No	Part Description	Item No	Part No	Part Description
1	1768	Chassis Assembly	23	1489	Pulley, engine
2	1463	Connecting rod, front	24	1492	Key
3	1464	Raise & lower rod, rear	25	1493	Plate, clutch pulley
4	1465	Top cover.	26	1496	Wheel complete
5	1017	Bolt 8mm x 20	27	1497	Tube 13-500-6
6	1018	Spring washer 8mm	28	1498	Tyre 13-500-6
7	1019	Flat washer 8mm	29	HD123	Rim assembly
8	3015	Flanged Bush	30	1501	Pin, axle drive
9	1477	King pin & stub axle RH	31	1502	Pedal, blade engage
10	1472	King pin & stub axle LH	32	1505	Rod, cutter engage.
11		Not used	33	1460	Brake rod
12	1478	Lock pin	34	1506	Spring
13	1479	Roll pin	35	1507	Brake pedal, parking
14	1480	Spring	36	(1510)	<i>Bearing, old part. See 39</i>
15	1481	Tyre 250-4	37	H59	Bolt(1495)& nut (1511)
16	Y556	Rim & bearings	38	1781	Stepped bush
17	1483	Tube 250-4	39	1522	Pulley & bearing assembly
18	H616	Wheel complete	40	1514	Pin, pivot
19	1484	Bearing 6203	41	1517	Arm, crank
20	1487	Spring	42	1579	Gear box belt.
21		Not used	43	1429	Belt guard, B&S
22	1488	Belt guide, idler pulley	44	1619	Belt guide, engine.
			45	5002	Bronze bush, flanged.

CUTTER ASSEMBLY



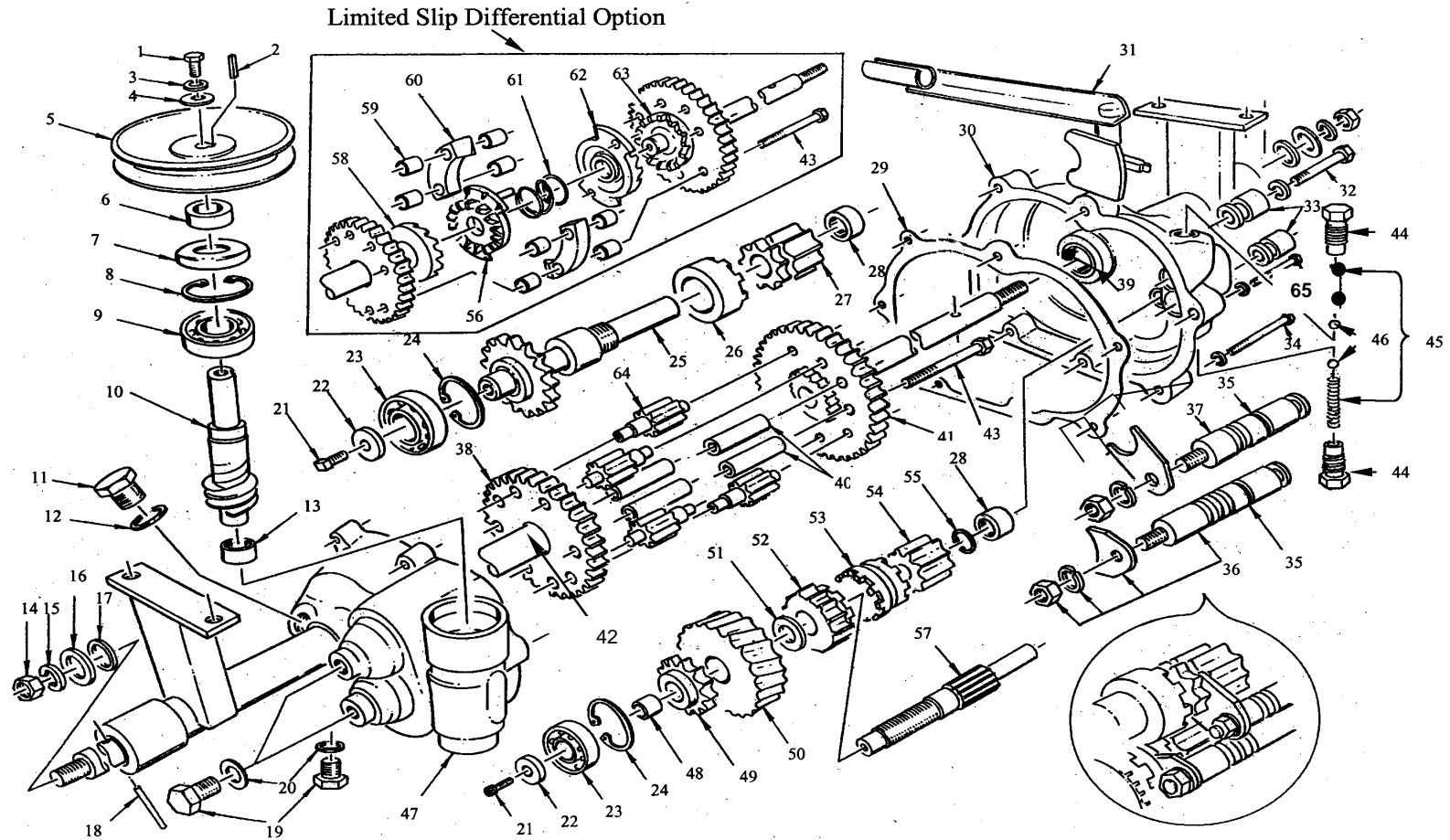
Item	Part No	Part Description	Item	Part No	Part Description
1	1646	Pulley	16	3107	Housing, spindle
2	2092	Brake disc x 4	17	1558	Push rod
3	2093	Brake pad assembly	18	1585	Connector, push rod
4	3085	Brake lever	19	1563	Spring, deck retract
5	3095	Brake lever stop	20	3098	Spindle & flange
6	1549	Spring, brake lever	21	1576	Blade plate
7	1530	Main guard	22	1306	Blade nut
8	3099	Deck attachment assy LH	23	1305	Blade washer, belville
9	3104	Deck attachment assy RH	24	1303	Blade x 2
10	1533	Side chute	25	1307	Blade bolt
11	1536	Flap,	26	1060	Spring washer 3/8" flat
12	2095	Nylon bush X 2	27	1304	Bolt, blade plate x 3
13	1541	Hinge bar		H650	Blade, nut, bolt washer X 2
14	1897	Circlip		H652	Nut,bolt & washer.x 2
15	1898	Bearing, spindle 6205	28	1578	V-belt, cutter,B66
	H660	Cutting deck complete		H661	Main Guard Inc chute & flap

HANDLE BARS & CONTROLS



Item	New	Part Description	Item	New	Part Description
	No			No	
1	1580	Cable, throttle	12	1618	Knob 3/8" ID
2	1583	Gear lever	13	1619	Guide, gearbox belt
3	1584	Lever, throttle	14		(Not used)
4	1586	Hand grip	15	1624	Spring
5	1587	Clutch lever	16	1625	Selector arm and ball
6	1590	Vert. Clutch rod	17	1629	Circlip, int 19mm
7	1592	Handle bars	18	1630	Bolt, nut and washer
8	1506	Spring	19	1631	Gear selector plate
9	1612	Height lever	20	1502	Activator, blades
10	1618	Knob 3/8W ID	21	1495	Pivot bolt and nut
11	1617	Spring			

GEARBOX ASSEMBLY

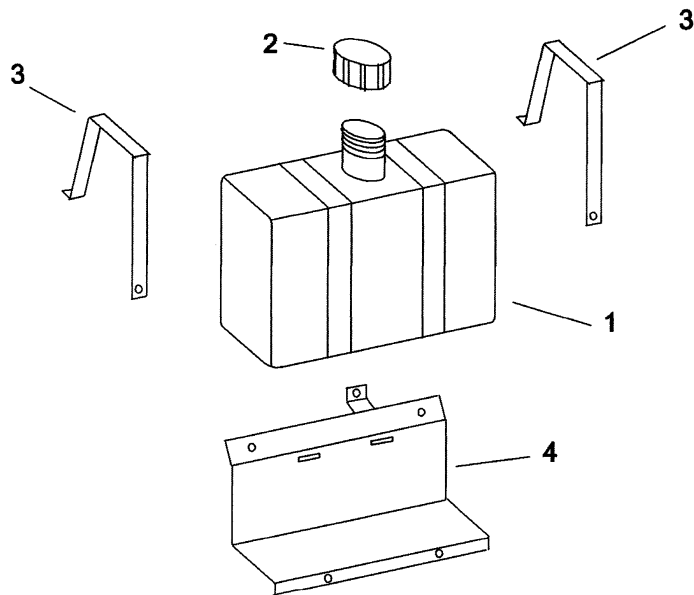


GEARBOX ASSEMBLY

Item No	Part No	Part Description	Qty	Item No	Part No	Part Description	Qty
1	1100	Screw, pulley	1	35	1690	O-ring	2
2	1640	Key	1	36	1691	Selector tappet Forward	1
3	1641	Spring washer	1	37	1695	Selector tappet reverse	1
4	1642	Washer	1	38	1739	High crown gear	1
5	1643	Pulley	1	39	1699	Bearing, needle, axle	4
6	1650	Spacer	1	40	1700	Spacer, diff.	4
7	1651	Seal 25x40x7	1	41	1701	Low crown gear	1
8	1652	Circlip 40mm	1	42	1702	Axle	2
9	1484	Bearing 6203	1	43	1704	Bolt, diff	4
10	1653	Input spindle	1	44	1705	Spring holder	2
11	1654	Plug 3/4" UNF	1	45	1706	Spring	2
12	1655	Fibre washer 3/4"	1	46	1707	Ball	2
13	1656	Bearing roller B128	1	47	1708	Housing R.H.	1
14	1657	Nut, axle 5/8" UNF	2	48	1714	Sleeve, bearing	1
15	1658	Spring washer	2	49	1715	Reverse gear 13 teeth	1
16	1315	Flat washer	2	50	1716	Bronze worm gear	1
17	1659	Seal, axle 7/8"x1,3/8"x1/4"	2	51	1717	Washer, hardened	1
18	1501	Drive pin, axle	2	52	1740	High gear pinion & clutch	1
19	1661	Plug, 1/2" BSF	3	53	1719	Double clutch	1
20	1662	Fibre washer 1/2"	3	54	1720	Pinion, low gear	1
21	1663	Screw	2	55	1721	Circlip, 14mm	1
22	1637	Washer	2	56	1722	Sliding clutch with pins L.H.	1
23	1664	Bearing 6202	2	57	1723	Forward spindle	1
24	1665	Circlip 35mm	2	58	1724	Axle & clutch L.H. LSD	1
25	1666	Reverse spindle & gear	1	59	1725	Spacer	8
26	1669	Reverse clutch	1	60	1726	Clutch spreader bar	2
27	1670	Reverse sliding gear	1	61	1727	Spring	1
28	1671	Bearing, roller B98	2	62	1728	Sliding clutch R.H.	1
29	1672	Gasket	1	63	1729	Axle & clutch R.H. LSD	4
30	1673	Housing L.H.	1	64	1730	Diff spider gear	4
31	1680	Gear selector arm	1	65	1639	Bolt,5/16"x1-1/4"w	1
32	1688	Bolt, selector	2	--	HD151	Bar tread tyre LSD	2
33	1711	Selector guide	2	--	HD120	Gearbox complete	1
34	1689	Bolt, housing, 1/4"x2"UNF	6	--			

FUEL TANK / SUNDRY PARTS

13



Item	Part No	Part Description	Item	Part No	Part Description
1	1746	Tank, 6.5lt	-	D2720	Paint, Deutscher Green 1lt tin
2	1329	Cap, fuel tank	-	H641	Decal set
3	1747	Strap			
4	1748	Bracket, tank			

WARRANTY POLICY:

- DEUTSCHER MOWERS PTY. LTD. Will warrant the repair or replacement, free of charge, any parts of the mower, that are defective in materials or workmanship or both for a period of:
24months from the date of purchase.
- This does not cover normal wear abuse or incorrect service procedures as set out in the owner's manual. Parts such as blades, blade bolts, tyres and v-belts, which can be subjected, to use beyond their normal intended working capacity are also excluded.
- This warranty is void if parts other than genuine have been used or if repairs or modifications have been made without the manufacturer's written authority.
- This warranty does not obligate the manufacturer, agents or dealers to cover transport costs incurred in the repair or replacement of any defective part.
- The engine on this mower is covered by the engine manufacturer's warranty supplied with the mower. For your nearest engine dealer, Phone: Briggs & Stratton: 1800 650 042
Honda M.P.E.: 1800 241173

All claims to be referred to your local authorised dealer

FOR YOUR RECORD:

Model of Mower:.....H660.....

Serial Number:.....

Date of Purchase.....

Mower Purchased From

.....

.....

Remember: Proof of purchase is the responsibility of the owner and is necessary prior to warranty work being under taken. An authorised dealer using genuine spare parts must carry out repairs or your warranty will be void.

Manufactured in Australia by:
DEUTSCHER MOWERS PTY LTD
711 Creswick Road, Ballarat 3350
Ph 03 53395708 FX 03 53393189
Web www.deutschermowers.com.au