

POWER PACKED



What to look for in a compact tractor

1. A high power to weight ratio makes the compact tractor ideal for jobs such as mowing where consistency of performance and low ground pressure are essential.

2. Four wheel drive helps maintain positive traction across slippery surfaces and on jobs where a good 'pull' is needed, such as ground renovation and drainage.

3. The compact tractor can be equipped with attachments which turn it into a mini digger-loader for drainage work and lifting and movement of materials such as soil and top dressings.

4. Wide flotation tyres enable the compact tractor to work on most fine turf surfaces without fear of marking or damage. Care still needs to be taken in soft or wet conditions and when making sharp turns.

5. Specialist attachments have extended the versatility of the compact tractor, enabling it to tackle most tasks around the course throughout the year.

6. A load-carrying, tipping body mounted on the chassis of a specialist turf vehicle helps maintain good balance and weight distribution while keeping the number of wheel marks to a minimum.

7. Most turf vehicles are offered with a range of purpose-built attachments for year-round turf care. British courses will usually respond better to implements designed initially to work under British conditions.

8. Three wheels traditionally give better manoeuvrability than four, although care still needs to be taken when making sharp turns on banks and sloping greens surrounds. Proper user training is vital.

9. Although capable of rapid movement around the course with both a passenger and attachments, most turf vehicles have a reduced ground clearance demanding sensible driving over undulations and peaks.

10. Small diameter wheels of equal size front and rear enhance the turning circle while maintaining a low centre of gravity for good stability.

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MICHAEL BIRD takes a comprehensive look at compact tractors and specialist turf vehicles - and discovers a wealth of choice. On Page 31 Greenkeeper International presents an up to date guide to all that's available. On these pages: what to look for and what you're going to need...

The expression 'horses for courses' could well have been coined to help unravel the dilemma faced by those who are charged with the selection of a new power unit for their turf maintenance needs.

Never has there been a greater choice available, with a host of compact tractors vying with an increasing number of specialist turf vehicles for a share of a growing, and potentially profitable, market for their various manufacturers and their dealers.

Yet, it is not uncommon to hear a whispered admittance of mistakes being made in the final selection. These can range from incorrect specification to the realisation that the power unit is totally unsuited to the work for which it was bought. Thankfully, the last-mentioned situation is not a frequent occurrence due to the importance now being placed on the comparative demonstration.

However, there are still plenty of

opportunities for errors of judgement to creep in, heightened by the excitement of having a new 'toy' with which to 'play'. Having acted in haste, there will be plenty of time to repent, not in leisure, but far more likely in the grey light of dawn on a cold, wet, wintery morning.

So, how do we make sure that the power unit we buy is right for the job and right for the circumstances under which it will be used? The first step is to make a list of the tasks that one expects the new acquisition to undertake. In the case of a course which has been used to a fair amount of foot and hand work, the eventual list could be quite lengthy, encompassing aeration, spraying, top dressing, mowing, loading, lifting, movement of hand tools and materials, brushing and drainage, among others.

Capable of carrying out all these tasks, it is hardly surprising that compact tractors have been described as 'maids of all work'. It would be unfair to complete the adage because they are certainly masters of some jobs. These include those that require a high power to weight ratio, such as mowing; those that demand good traction, such as drainage work; and those where a positive PTO drive is needed to power mounted or trailed attachments such as a Verti-Drain or rotary cultivator.

That said, versatility is seen as the greatest attribute of the compact tractor because it can be used with so many different items of equipment, mounted or trailed, at the front, mid or rear of the power unit. These include a range of cultivators and mowers, front loaders and rear-mounted backhoes, drainage equipment and machines and attachments developed specifically for year-round turf care and maintenance. Indeed, it is not uncommon now to find that attachments designed primarily for use within a specialist turf maintenance system can be used without modification on a compact tractor.

When the Japanese compact tractor first appeared in Britain almost 20 years ago, the fitting of turf tyres was the exception rather than the rule. Over the years the position has reversed, and advances in low ground pressure tyre technology means that these

tractors can be used safely on most fine turf surfaces without fear of marking or damage. There are two provisos to the above statement. Extra care needs to be taken in wet or soft conditions on all parts of the course; while turning too sharply with a compact tractor on fine turf is not recommended, as many users will have discovered to their cost, particularly when using four-wheel drive.

Although four wheels, properly shod, help to spread the weight of the tractor over the greatest surface area to minimise compaction, there are disadvantages, no more so than the one of limited manoeuvrability when compared to a specialist turf maintenance vehicle. The compact tractor needs sufficient ground clearance to carry out the multitude of tasks over all terrains for which it was originally designed, and sold. Good ground clearance demands wheels of adequate diameter, and therein lies the problem: The greater the wheel diameter, the harder it is to provide adequate lock to enable the tractor to 'turn on a sixpence', to coin a phrase.

Recent developments have gone some way to overcoming this shortfall. They include tractors which hinge in the middle and a system which automatically doubles the front axle's speed of rotation when the turning angle exceeds a pre-determined level. The result is said to 'pull' the tractor through its turn, reducing the turning circle and the risk of turf damage.

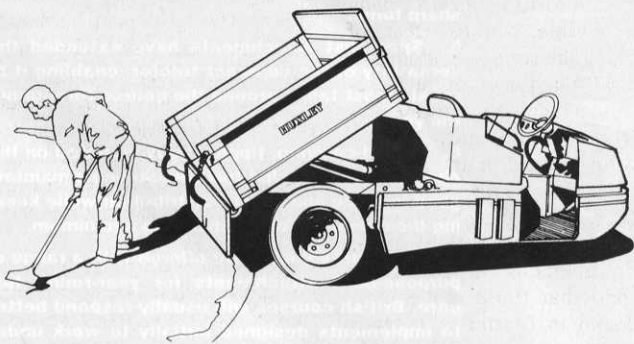
A further disadvantage of the compact tractor is one of lower stability in comparison to a specialist turf vehicle when working across banks or when turning sharply on the sloping approaches to an elevated green. Large diameter wheels raise the centre of gravity of the tractor, reducing its ability to work safely at angles which the ground-hugging turf vehicle can take in its stride.

The relatively high centre of gravity of the compact tractor demands in any case that it should be used with an approved roll-over bar or safety cab. A weather cab is the only option one is likely to need on a turf vehicle, although one manufacturer does fit a roll-over bar as standard.

On that note, it is worth stating

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A forward driving position provides an excellent view over the work while enhancing the balance of the machine, especially when using rear-mounted attachments

here that although a specialist turf vehicle's wide track and low centre of gravity make it inherently more stable than a tractor, accidents can still happen. Three wheeled vehicles, for example, do not have the same level of stability as those with four and the ability to perform tighter turns can lead to potentially unsafe situations when taken to the limit. As a result, it is essential that proper instruction and training in the correct use and handling of the machine is given to all users.

Four wheel drive is regarded as an essential feature for compact tractors carrying out 'draught' work on fine turf, and other smooth surfaces, as wheel slip is a major cause of soil compaction. The grip and pulling power provided by the system can allow operations such as mole draining, ground renovation and soil cultivation to be satisfactorily completed without needing to call in a specialist contractor. Hauling of fully laden trailers also needs the positive traction provided by a 4x4 compact tractor, although the ability to disengage drive to the front axle can be beneficial, especially for tyre-wearing road work.

Most manufacturers offer this option on their tractors.

Other features which help give the compact tractor its all-round versatility include hydrostatic transmission, enabling selection of a forward speed to suit virtually every job; high capacity rear and, in some cases, front hydraulic lift linkages and power take-off shafts; and external hydraulic services for power-operated attachments.

The purpose-built turf maintenance vehicle, on the other hand, should not be regarded as the all-rounder which the compact tractor has to be to fulfil the needs of users ranging from Far Eastern rice growers to North American pig farmers, and from Australian road builders to European landscapers and grounds maintenance professionals. Developed originally as a light-treading, highly manoeuvrable power unit offering speed, low noise and excellent weight distribution, the turf vehicle does exactly what it has been designed to do, and more in a number of cases.

The important point to remember when comparing a turf vehicle with a compact tractor is that the

first-mentioned is a specialist item of equipment, the latter is not. The turf vehicle was introduced as a lightweight unit with a low centre of gravity, exerting minimal pressure on the turf through smooth, wide flotation tyres. It is designed also to be exceptionally manoeuvrable, without fear of damaging the surface, and able to work with a range of purpose-built attachments for the care and maintenance of fine turf.

Although most manufacturers offer their own range of attachments, it is recognised that some perform better than others under certain conditions. As a rule, users will find that those implements developed in Britain with input from UK turf professionals will produce a good result on every job they are pointed at. Development of the turf vehicle over the past 20 years has seen its abilities expand to the point where it can now take virtually all turf maintenance, transport and materials movement operations in its stride.

Load-carrying, tipping bodies positioned above or ahead of the vehicle's rear axle mean that sand, soil, fertiliser and other materials can be moved with min-

imal turf disturbance, leaving only one set of wheel marks. Tractors need either a trailer or transport box to do the same job, with the inherent disadvantage of adding weight where it is not wanted.

Equipment such as a sprayer or top dresser can be mounted direct to the chassis of a turf vehicle, helping maintain the excellent weight distribution which is a principal feature of these machines. Visibility is also of prime importance, and the turf vehicle's forward driving position enhances both the view over the work and the balance of the unit.

Another benefit is the ability to carry loads, and often a passenger, at higher speeds than a tractor, due to the fact that most turf vehicles have all-round automotive-type suspension to iron out humps and bumps. The majority of compact tractors rely solely on their tyres to absorb shock loads and the result can be a bone-jarring ride at anything faster than jogging pace over uneven terrain. The ability to drive fast on turf means, however, that extra care needs to be taken to avoid surface damage, a risk heightened by the turf vehicle's low ground clearance, especially over undulations or crests.

Noise is another factor which has to be considered, especially when working close to an hotel, holiday complex or residential area. The compact tractor's exposed exhaust and often minimal engine sound-proofing make for a noisier working environment than a turf vehicle, where the engine and exhaust are usually located low down beneath the driving position in a padded compartment.

As far as mechanical features are concerned, it is now common to find diesel engines on both compact tractors and specialist turf vehicles. Hydrostatic transmission, rear hydraulic lift and power take-off are also available, and, thanks to advances in hydraulic systems, it is probably only a matter of time before all-wheel drive makes an appearance.

So, as pointed out in the first paragraph, it really is a case of horses for courses. If you want a machine capable of carrying out virtually every job around → 31

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29 → he course without any specific finesse, then a compact tractor will do all, and probably more, that you ask of it.

If, however, you feel your course deserves the light tread of a machine which has been purpose-designed to maintain turf with matched implements

throughout the year, carry loads 'on-board' with minimal risk of surface marking and move about swiftly and quietly without discomfort, then you need to look seriously at a specialist turf vehicle.

At the end of the day, you will probably decide that you

want both and this is likely to be an excellent decision when aiming solely for the optimum solution to year-round course management and maintenance. It's then just a question of persuading the person holding the purse strings! Good luck.

COMPACT TRACTORS UP TO 26HP

Make	Model	Power	Drive	Transmission	PTO	Price
John Deere (0949 60491)	670	19hp	4	M	540	£8556
	755	20hp	4	H	540	£9243
	855	24hp	4	H	540	£10111
Ferrari (061 624 6390)	22-3W	22hp	4	M	540/1000	£8470
Ford (0268 533000)	1220	16.7hp	4	M or H	540	£7616
	1520	22.7hp	4	M or H	540	£9332
Hinomoto (0789 415588)	C144	17hp	2 or 4	M	540/1000	£5770
	C172	20hp	2	M	540/1000	£5880
	C174	20hp	4	M	540/1000	£6600
	C174 HST	20hp	4	H	540/1000	£7300
Honda (081 747 1400)	H 6522	22hp	4	H	540	£9350
Iseki (0954 718981)	TX2140F	16hp	4	M	540/1000	£6135
	TX2160F	18hp	4	M or H	540/1000	£6585
	TU318F	17.5hp	4	M or H	540/1000	£8575
	TU320F	20hp	4	M or H	540/1000	£8985
	TA525F	25hp	4	M	540/1000	£11300
Kubota (0844 216685)	B4200	12.5hp	4	M	540/860	£5420
	B7100	16hp	4	M	540/825	£6630
	B1550	17hp	4	M or H	540/825	£7280
	B1750	20hp	4	M or H	540/825	£8500
	B2150	24hp	4	M or H	540/825	£9015
Lamborghini (0788 891446)	Runner 250	25hp	4	M	540/1000	£8990
Massey Ferguson (0203 531000)	1010	16hp	4	M or H	540/790	£5901
	1020	21hp	4	M or H	540/790	£8132
	1030	26hp	4	M	540/1000	£9135
Same (0788 891446)	Solaris 25	25hp	4	M	540/1000	POA

Key: Drive: 2 = two wheel drive; 4 = four wheel drive; 2 or 4 = model available in either two or four wheel drive versions; Transmission: M = gearbox; H = hydrostatic; PTO: Rear power take-off speed(s) in rpm; POA = Price on application.

SPECIALIST TURF MAINTENANCE VEHICLES

Make	Model	Engine Power/type	Transmission	Wheels	Features	Price
Cushman (0473 270000)	Turf Truckster	22hp, 27hp P	M	3 or 4	2S; H; P	POA
		22hp D				£9965
John Deere (0949 60491)	1800 Utility Vehicle	18hp P	H	4	2S; PS; H; P	£6656
GMV (0532 347699)	Ground Maintenance Vehicle	43hp P	M	4	2S; H; P	£14750
Huxleys (0962 733222)	Huxtruk	23.5hp D	H	3	2S; PS; H; P	£10750
Jacobsen (0536 417777)	Workhorse	23.5hp D	M	3	2S; H; P	£8995
Sisis (0625 503030)	Hydomain Twin 25	25hp D	H	4	2S; PS; H; P	£11990
Toro (0480 476971)	Workman 3000	27hp P	M	4	2S; PS; H; P	£11590
		21hp D				£12590

Key: Engine type: P = petrol, D = diesel; Transmission: M = gearbox, H = hydrostatic; Features: S = number of seats, PS = power steering, H = can be used with hydraulically powered attachments, P = can be used with PTO powered attachments.

● All information was compiled from details supplied by each manufacturer. Prices shown represent the basic starting price for each of the models and are subject to VAT. For space reasons, data has been kept to a minimum and shows solely the base model. For the full specification of any machine, together with its optional equipment and accessories, please contact the supplier's sales department on the telephone number given.



Update

It's official – the BIGGA Turf Management Exhibition 1993 was the best yet – and the forward planning starts NOW to make sure of another big success in 1994!

Information packs, complete with an application form and full details of how to take part in the industry's most popular indoor event, will be sent out to 1993 exhibitors this month. To be sure of the same stand space, exhibitors are urged to act straight away and return their completed application form with their deposit by June 1st at the latest.

Letters of congratulation for the January event have been flooding in. Arthur Harrison, sales director of Sisis Equipment, Macclesfield writes:

"Hearty congratulations to all involved with BTME. To say it goes from strength to strength would be an understatement. This year's exhibition was as good a show as we have experienced anywhere, for many a year.

Particularly encouraging was the greater number of visitors to our stand from an obviously increased attendance. We were impressed by the quality of visitors also, as well as the spectrum of 'non-golf' visitors which have hardly been abundant in previous years. Overseas visitors which we welcomed were from Norway, Sweden, Holland, Germany and France.

With so many shows in the past year attracting adverse comments, it was a pleasure to be present at a successful one and to experience something like the old-time 'buzz' which some thought would never return.

Long may you continue to get it right."

Look out for the start of an amazing new BTME '94 competition in next month's Greenkeeper International.

We've got prize packages worth up to £500 to give away, as BIGGA lets you join in the success of an event we call "the show of the year".

So what's up for grabs? Watch this space and find out!