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Please note this manual is intended for world-wide use and certain options may not be available in all markets.
Specifications are subject to change without notice; please refer to the master price book for exact offering.

Ref. No. McCormick CXPG2004

January 2004

CX75 CX85 CX95 CX105

PRODUCT PHILOSOPHY

The McCormick CX utility tractors represent an industry leading new concept of comfort, functionality and value. They are produced in numerous variations to meet the requirements of customers throughout the world in a wide variety of applications.

The CX is a modern tractor with a choice of transmissions ideally suited to general utility and loader applications. The power output from the brand new engine and PTO matches the needs of the general-usage farmer, while the new hydraulic system and electronic draft control enhance its ability to be used for tillage and cultivation purposes.

The McCormick CX leads the way in terms of comfort and value for this size of tractor, and is clearly aimed at meeting the needs of the farmers of today and tomorrow

How to present the CX tractor to the customer

The Product

- Industry leading new cab with very low noise level
- New latest emission-compliant engines with high maximum torque levels
- New three-speed powershift and power shuttle
- Synchromesh shuttle and powershift combination option
- Increased lift capacity and hydraulic flow to handle all implements

Customer Profile

- A variety of small tractor owners
- New customers requiring greater comfort and a wider range of options
- Customers looking for high productivity in a range of applications

Reasons to buy

- The CX is significantly better than competition
- Wide and spacious cab with excellent visibility and low noise levels
- Wet clutch power shuttle powershift
- Electronic draft control throughout the range
- Synchromesh shuttle combined with powershift option

Key competitors

- MF5400 Series
- New Holland TL TS-A and Case IH JXU
- Renault Celtis
- John Deere 6020 SE versions
- Valtra Mezzo

Please remember

- Do qualify customers carefully
- Do conduct a full drive evaluation
- Do explain technical details and new technology

The modern tractor concept for more productivity and competitiveness in the farming business of today

The McCormick CX tractor range provides the right mix of features and value for all applications.

The utility tractor for loader and general farm work

- Power shuttle wet clutch for comfortable direction changes and long life
- Excellent visibility to the loader and all-round for comfort and safety
- 55° steering angle for a good turning radius
- Two wide doors for easy entry and exit
- Quiet and ergonomic cab for operator comfort
- Easy serviceability for quick and simple daily maintenance

The PTO tractor for grassland farms and harvesting implements

- Simple engagement of the PTO makes the job easier for the operator
- The quick torque rise ensures constant working speeds
- Excellent visibility around the tractor and upward for comfortable operation of tractor and implement
- Front PTO with full engine power capability for front-loaded implements

The fast and comfortable haulage and roading tractor

- Long wheelbase and good weight distribution to give an excellent ride at all speeds
- The right hitch to couple every type of trailer

The ideal tractor on smaller farms for tillage work

- High maximum torque giving good lugging ability
- Good speed choice to enable appropriate working gear
- The increased lift capacity makes it easy to handle larger implements
- The increased hydraulic capacity always gives enough flow for hydraulic motors or implement valve banks
- Electronic draft control makes it easier for the operator to set up rear-mounted implements

The cultivation and crop care tractor

- Increased hitch lift for front and rear mounted implements and sprayer tanks
- Quick torque rise to maintain PTO and ground speed in all conditions
- Ideal weight and balance to minimise ground compaction
- Long service intervals ensures maintenance costs are kept to a minimum

CX75 CX85 CX95 CX105

INTRODUCTION

PRODUCTION

The CX tractors are manufactured in Europe in factories that have been thoroughly modernised utilising the latest manufacturing technology.

The transmission is made in the McCormick factory at St. Dizier, France, where almost 40 million pounds has been spent to make it the most modern tractor transmission production facility in Europe. By manufacturing the complete transmission, complete control is maintained over its quality and reliability.



The tractor final assembly takes place at the Doncaster plant in state-of-the-art assembly processes including hot test rigs before painting and one of the most sophisticated paint facilities of any tractor plant ensures a build quality that meets the QS9000 standard. The facility also holds the ISO14001 for environmental standards and awareness.



INTRODUCTION

CX MODELS AND ENGINE POWER

CX75	73 PS
CX85	84 PS
CX95	90 PS
CX105	102 PS

The McCormick CX tractor brings with it new advances in farm tractor design. These advances are not only intended to meet the needs of today's modern farmer, they anticipate developments and requirements for the future.

Designed so that it can be adapted to any market around the world, with outstanding performance it will be right for arable, mixed or dairy farming operations. This is because the tractor has an enormous choice of factory or field fitted options to meet the customers' requirements.

In addition, the tractor can be supplied with the following options: -

Front PTO

Front Hitch

3 Speed Powershift Transmission with Power Shuttle

Creep Speeds

30 or 40 kph Transmission Speeds

Air or Hydraulic Trailer Brakes

True Ground Speed Sensor

Deluxe Cab

Deluxe Cab Low Profile

Platform Versions with or without ROPS

CX75 CX85 CX95 CX105

INTRODUCTION

PERKINS

Perkins has been a world-wide manufacturer of diesel engines since 1932. This new engine is produced in a state-of-the art facility in Peterborough, England. The plant produces 1,000 engines per day; Perkins annually builds over 400,000 engines world-wide. Some 7.5 million Perkins engines are in service today, a true testimony to proven performance, durability and manufacturing quality.

The new series of engines have undergone stringent engineering testing and had to meet the following criteria:-

Excellent performance

High efficiency

Low noise

Emission compliant

BACKGROUND TO THE NEW 4 CYLINDER ENGINE

Perkins has developed the new 1100 series not only to meet the new legislation of Stage2 Tier 2 but they also aimed to reduce the overall noise level of the engine. Another objective was to increase the service intervals and reduce the overall running costs.

The air induction system builds on the expertise in combustion management used in the 1000 series.

The CX 4-cylinder models use a mechanical fuel control system.

Smoke levels and cold starting capability were also optimised to ensure power and performance in the harshest of environments.

The new 1104 engines provide the customer with performance economy and long life durability.



1104 Engine

ENGINE**Technical Data**

		CX75	CX85	CX95	CX105
Maximum Power to ISO	PS(kW)	73 (54)	84 (62)	90 (66)	102 (75)
Rated speed	rpm	2200			
No. of cylinders/Turbo/ wastegate/intercooler		4 NA	4T	4TWG	4TWG
Capacity	Litres	4.4			
Bore/Stroke	Mm	105/127			
Constant Power range	rpm	NA	1800-2200	2000-2200	1900-2200
Max torque	Nm	294	345	387	415
Engine rpm @ Max. torque	rpm	1400			
Torque rise	%	25	32	33	29
Optimum fuel consumption	G/kWhr	214	217	215	210
Fuel tank capacity	Litres	155			
Engine oil capacity	Litres	7.3			
Oil change intervals	Hours	500			
Alternator	Amp	65			
Fuel pump boost control		no	no	no	yes
Cooling system capacity	Litres	17.5			

NOTE:

PS (Pferdestärke, the German word for metric horsepower)

ISO gross engine power is quoted with no ancillary equipment fitted.

Engine Emission Regulations

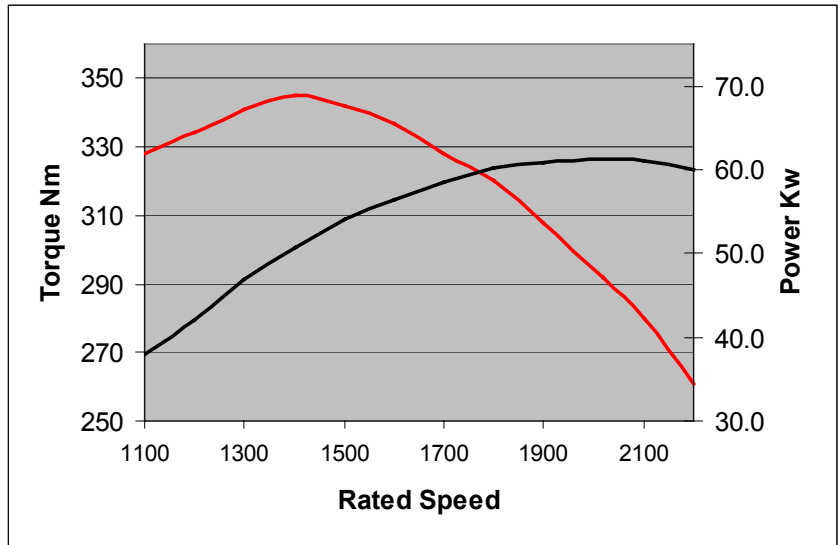
European legislation (Directive 97/68EC) was introduced in February 1998 to regulate emissions from 'Off Highway machines'. On diesel engine vehicles this was introduced in a two tier structure, with Tier I applied in 1999 and Tier II introduced over a period between 2001 and 2004 depending on the horsepower output.

CX75 CX85 CX95 CX105

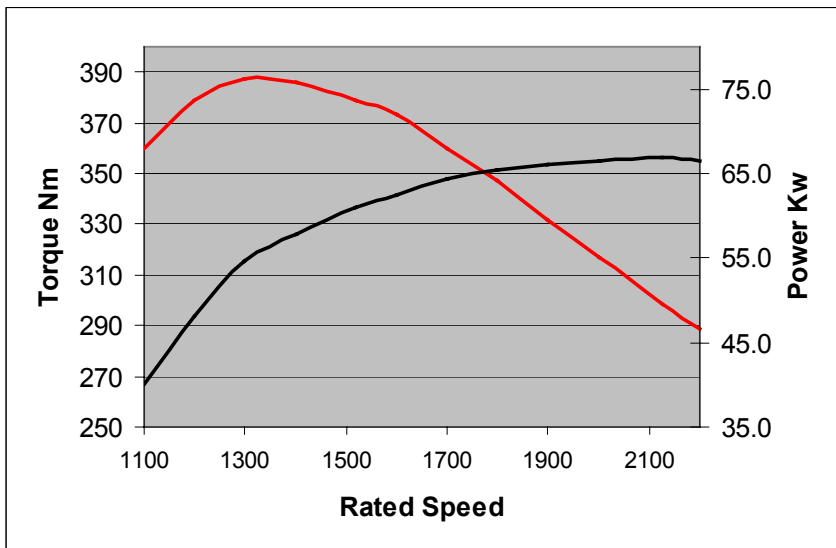
Engine Performance Curves

Performance Curves

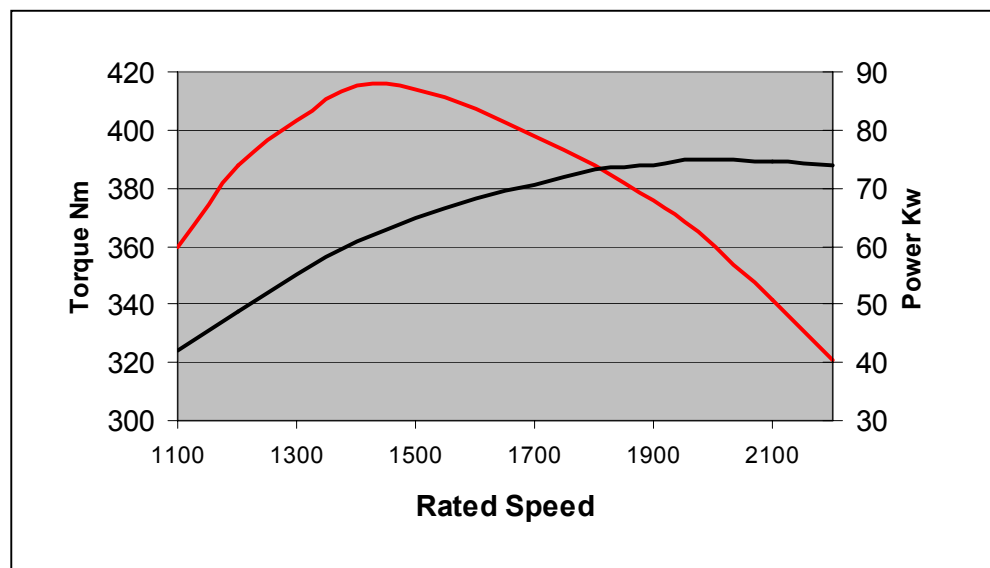
CX85



CX95



CX105



ENGINE

The CX models deliver outstanding levels of performance from the engine. These units produce up to 37% PTO torque rise and operate at 2200rpm rated speed.

The structural engine features a bored block, cross-flow head, new combustion technology.

The new engine block has had a number of manufacturing enhancements which has resulted in consistently machined cooling journals and a bored block design.

Bored block design - provides reliability and easy repair.

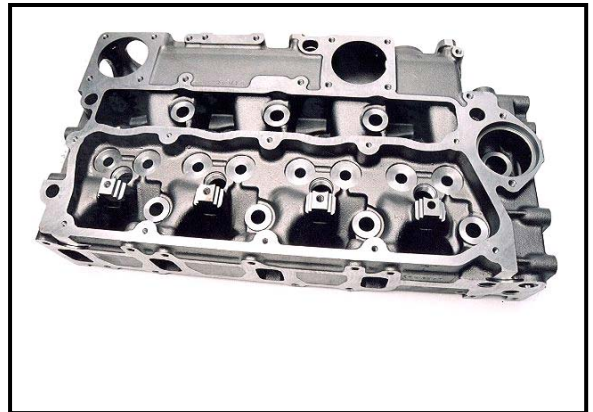


The cross flow cylinder head means the intake and exhaust manifolds are on the opposite sides ensuring no pre-heating of the inlet air can occur.

The combustion process is more efficient as the inlet air is cooler.

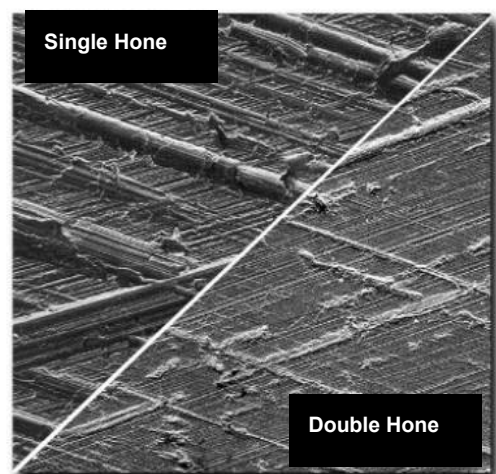
5-hole injectors promote fuel atomisation, fuel combustion, engine performance and fuel efficiencies.

Other improvements to the new engine include a sump edge moulded carrier gasket which has greatly reduced the possibilities of any oil leaks.



CYLINDER BORES

After the cylinder bores have been honed to size, they receive a second plateau honing operation. This removes any 'peaks and humps' that have been left behind by the first honing process. The result is an improved engine break in period and reduced risk of oil consumption during the early hours of the engines life.

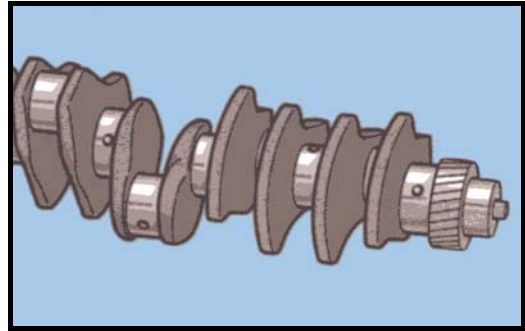


CX75 CX85 CX95 CX105

ENGINE

CRANKSHAFTS

Made from a molybdenum alloy steel. This allows the journals to be hardened for high load, long life performance. The 4-cylinder engines are fitted with a contra rotating balance unit which reduces secondary engine vibration.



Enhanced engine life, smoother operation and comfort.

INTEGRAL OIL COOLER

The engine oil cooler is located in the left hand side the cylinder block. This eliminates the need for pipes and not only reduces the risk of leakage, but also enhances the cooling capabilities.



Improved efficiency and no maintenance requirements.

TURBOCHARGER

The Garrett manufactured turbocharger is matched to the engine to deliver the peak level of performance. Wastegate turbochargers are fitted on the CX95 and CX105 models.

A wastegate turbo provides a higher boost pressure at a lower engine rpm whilst releasing excessive boost pressure at high engine rpm. Pressure is released through valve. This ensures correct fuel to air mix ratios at mid to low engine speed. Operators will benefit from fewer downshifts and increased performance.



Greater productivity and lugging ability. Smooth clean running.

ENGINE

NOISE REFINEMENT

The gear tooth manufacturing process has been enhanced in which the gear to gear contact is tighter. This results in less backlash and noise.

The noise in this area is further reduced with the introduction of a new two-piece pressed steel timing cover plate.

Reduced by-stander noise levels by up to 3 dB(A).



FUEL INJECTION SYSTEM

Correct fuel atomisation and timing is equally as important as correct air flow in ensuring a clean burn efficient power unit. A rotary distribution injection pump delivers high-pressure fuel to the centrally mounted injectors.

A timing pin means the removal and replacement of the injection pump can be carried out whilst maintaining accurate injection timing.



Delphi DP200

The CX105 is equipped with aneroid control and different injectors compared to the CX95 model.

Controlled high-pressure fuel delivery produces economical, cleaner power. Servicing costs are reduced by timing pin accuracy.

ELECTRIC LIFT PUMP

An electric lift pump has been incorporated into the filter head.

The self-venting pumps prevent the need for the operator to bleed the fuel system.

All fuel system components are located on the left-hand side of the engine ensuring a compact fuel delivery circuit.

Leak-free unit and increased durability.



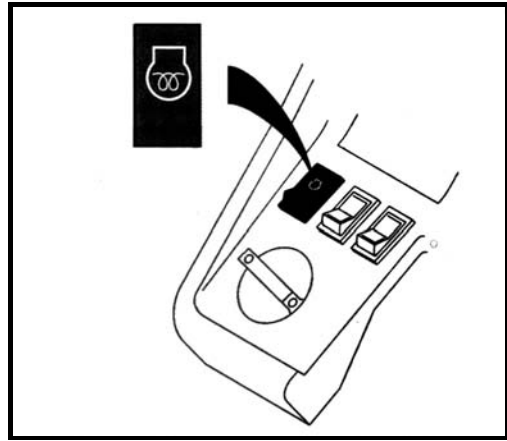
CX75 CX85 CX95 CX105

ENGINE

COLD STARTING

The cold starting consists of a set of glow plugs, one per cylinder.

The plugs are energised electrically using a switch when conditions dictate that the engine requires additional starting aid.



COOLING SYSTEM

All models are fitted with a water pump that is gear driven from the timing gears and allows the pump and the fan to work at their optimum speeds.

A higher volume water flow rate and a fast viscous fan provide optimum cooling to ensure efficient engine performance.



Positive gear pump drive.

DRY TYPE AIR CLEANER

A dual element dry type air cleaner is fitted. A service light on the instrument panel warns the operator of the need to service the filter.

Access is quick and easy by tilting the hood and releasing the over centre catches.



FUEL TANK

The fuel tank is located on the left side of the tractor and can be easily refilled from the ground. The fuel capacity is 155 litres on all models.



ENGINE

EXHAUST SYSTEM

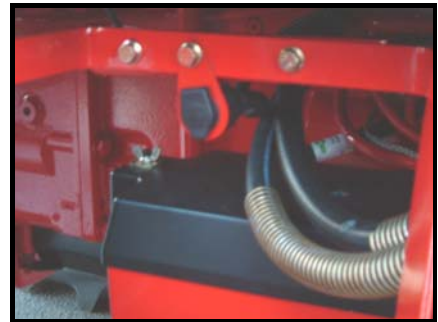
All tractors have 'A' post exhaust as standard combined with the tilting bonnet.

The exhaust incorporates the silencer baffles within the stack pipe. This eliminates the need for large bulky exhaust silencers sat on top of the engine.



BLOCK HEATERS

Block heaters are available in both 110 and 240 volt versions. An electrical socket just below the cab right hand step allows for easy connection of mains voltage.



KEY OPERATED SHUT-OFF

A key operated fuel shut-off system makes engine stopping quick and simple.

Easy key switch shut-off enhances the CX quality image and safety.



KEY FEATURES

- Latest emission compliant engines
- High torque rise
- Exceptionally quiet running
- "A" Post muffler
- Outstanding cold starting performance
- Built in a state-of-the-art facility
- Dual element air cleaner
- Quiet bystander noise level
- Large 155L fuel tank
- 500 hour oil change intervals

CX75 CX85 CX95 CX105

TRANSMISSION

TRANSMISSION OPTIONS

This range of tractor is available with various transmission options.
These are subject to local market legislation and frequency of order.

XtraShift Power shuttle Options

New 24 x 24 3 speed powershift with power shuttle

New 36 x 36 3 speed powershift with power shuttle plus creep speed

TECHNICAL DATA

XtraShift Transmission	CX75	CX85	CX95	CX105
No of speeds with power shuttle	24/24			
No of speeds with power shuttle & creeper	36/36			
No of ranges	2 fully synchronised			
Transmission hydraulic oil capacity litres	52			
Oil Change interval hours	1000			
Type of diff. lock rear axle	Hydraulically engaged pin type			
Distance between rear axle flanges	1.56m			

Synchro Shuttle Options

8-speed this is the lowest specification and has eight forward and eight reverse speeds.

16-speed this is a 2 speed powershift option giving sixteen forward and eight reverse.

24-speed this uses the powershift version plus 8 additional creep speeds down to 300 metres per hour.

Maximum forward speed can be from 26 to 38kph dependent on tyres and transmission build.

Model	CX75	CX85	CX95	CX105
No of speeds std transmission	8/8			
No of speeds with 2 speed powershift	16/8			
No of speeds with 2 speed powershift & creep speed	24/12			
No of ranges	2 fully synchronised			
Oil Change interval hours	1000			
Type of diff. lock rear axle	Hydraulically engaged pin type			
Distance between rear axle flanges	1.56m			
Main clutch type synchromesh shuttle	Self-adjusting single dry diaphragm			
Clutch diameter mm	304			

TRANSMISSION

Customer Requirements

- **Efficient use of engine power to the wheels**
- **Choice of speeds to perform the task**
- **Easy forward reverse directional changes**
- **Smooth long life clutch**

The transmissions are precision manufactured in the McCormick owned St Dizier plant France. This is a modern facility having total control of quality and component engineering resulting in reliability and durability. All gears and shafts are machined to exacting tolerances for long life and quiet running. The transmission internal hydraulic pump provides lubrication and pressure for the multi disc clutches. This oil circuit also maintains the correct fluid level to minimise horsepower losses and provide correct lubrication.

XTRASHIFT TRANSMISSION

This unit provides a 3-speed powershift that includes a power shuttle with wet type multi disc clutches. Independent clutches for both forward and reverse have been thoroughly proven on the higher horsepower models in the McCormick MC & MTX ranges. The powershift clutches are also the same design.

The transmission provides 24 forward and 24 reverse speeds and may have a factory fit option of a creep speed taking the total number of speeds to 36 forward and 36 reverse.



The front section of the transmission is completely different from the current 16 speed synchromesh shuttle unit and it also eliminates the single plate dry clutch.

POWER SHUTTLE

The tractor also features the well positioned left hand control shuttle lever found on MC & MTX McCormick tractors. This lever allows the operator to move from forward to reverse without clutching. The lever also has a neutral position for starting and convenient stopping during operations such as round baling or loader cycles.

The design of the clutches ensures long life trouble free operation. A hydraulic valve mounted on the RH side of the transmission controls the unit and this valve is controlled through an electronic controller for accurate smooth operation.



CX75 CX85 CX95 CX105

TRANSMISSION

SHUTTLE LEVER Neutral to Forward or Reverse (Automatic Start Control)

If the shuttle lever is moved from neutral to either forward or reverse, the tractor will engage drive progressively for a smooth take-up. This can be done at any engine rpm and in any gear below 3rd high. This feature is also available when using the de-clutch button whilst the tractor is stationary.



DE-CLUTCH BUTTON

This feature allows the operator to make a gear change on the speed lever without having to depress the clutch pedal. The button is located on the front face of the lever. This means in roading operations the operator can change through speeds 1 to 4 and at the same time move the powershift switch to the desired speed.



THREE SPEED POWERSHIFT

A thumb switch mounted to the gear lever selects the powershift speeds. This allows the operator to select the desired speed without having to depress the clutch within each of the four speeds. The speed chart over the page shows the excellent spacing of the gears. The speed increase between 1st & 2nd is 23% and 18% from 2nd to 3rd. A display on the instrument panel shows the powershift speed selected.



This feature makes the CX XtraShift a clear leader in transmission technology in this hp sector.

CLUTCH PEDAL

The XtraShift employs an electrically operated clutch pedal that is wired to an electronic control module which operates all the transmission functions. Operators will find that the tractor control will be made easier if a higher gear is selected when reversing up to implements (Example 4th low instead of 1st low). This is because more torque is required to move the unit and therefore the clutches will behave in a more traditional manner.

The multi-disc clutches are oil cooled and therefore dissipate any heat build up during the shuttle or clutch modulation.

TRANSMISSION

RANGE SECTION

Two fully synchronised ranges (High & Low) provide field and road speeds with the ability to start in high range 1st gear with a loaded trailer.

Full synchronisation allows easier shifting increasing productivity

CREEP SPEED

This is a factory option and provides an additional 12 forward and 12 reverse creep speeds for specialised operations, offering speeds down to 300 metres per hour at rated engine r.p.m.

The 3 speed powershift also operates in creep speed allowing smooth speed progression.

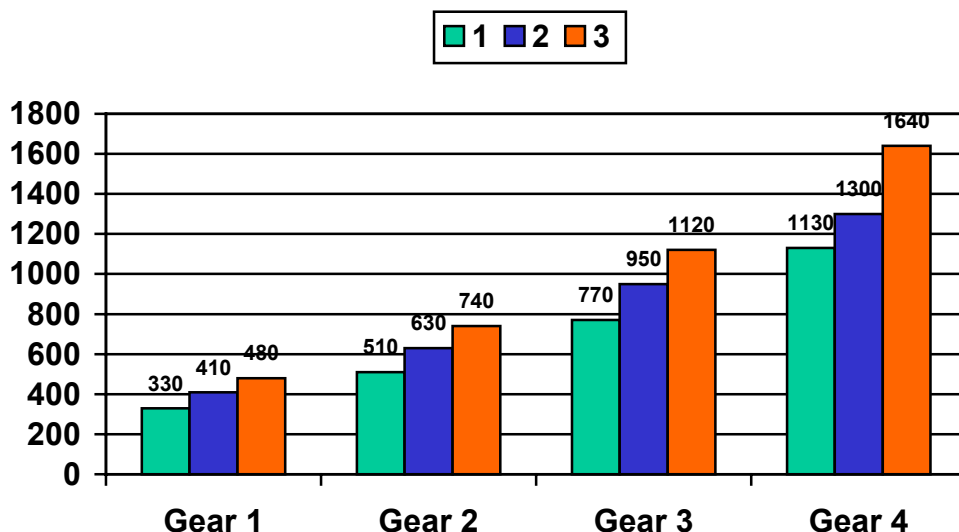


LUBRICATION SYSTEM

A dedicated internal hydraulic pump provides oil for transmission lubrication and cooling of the multi disc clutches. On XtraShift models this pump has double the flow of the synchromesh shuttle units. This oil circuit also maintains the correct fluid level throughout the transmission to minimise horsepower losses.

Using a separate pump ensures no loss hydraulic flow to the remote couplers.

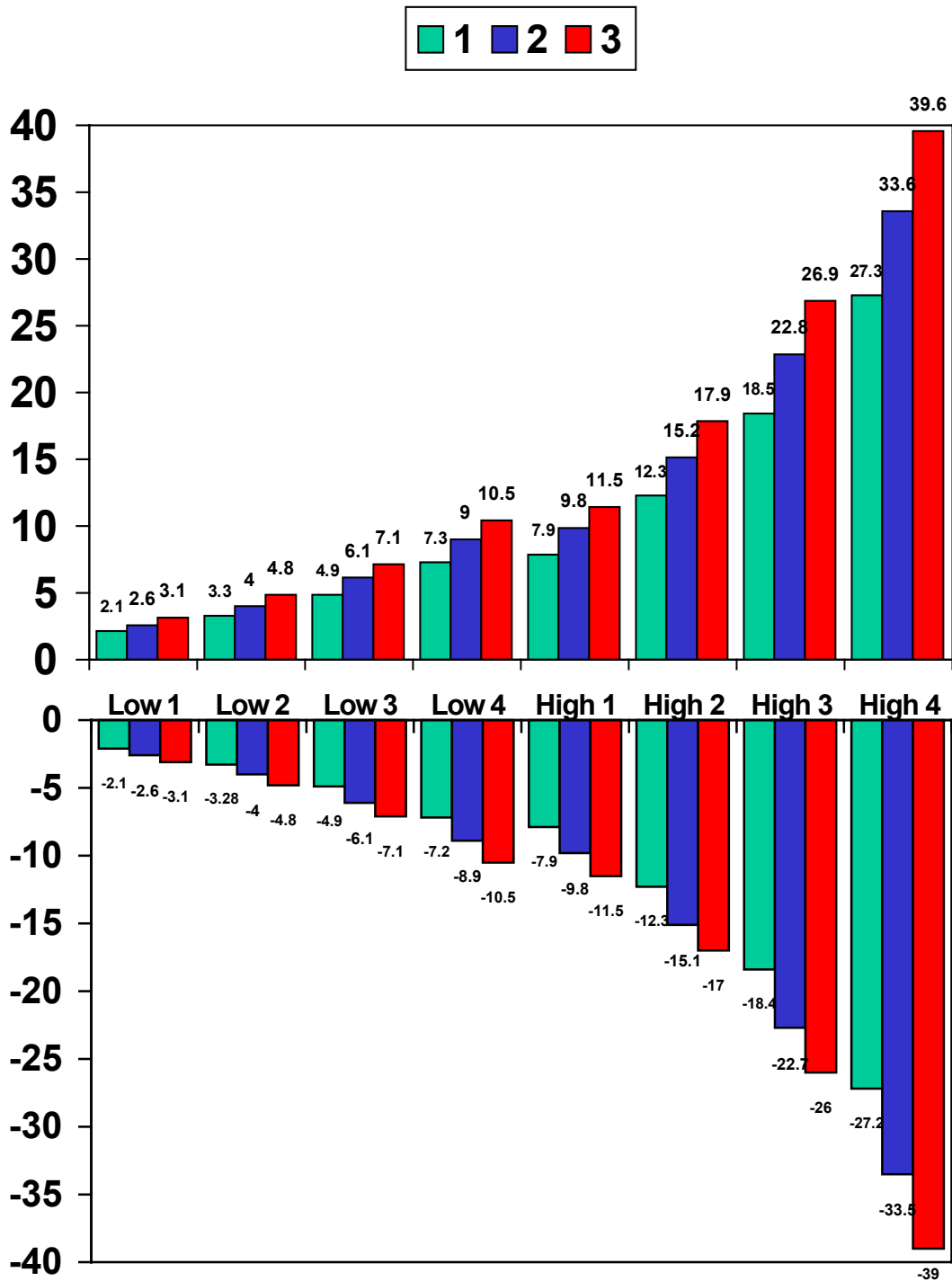
Creep Speeds metres per hour 40km/hr 18.4R34 Tyres @rated speed 2200 rpm



CX75 CX85 CX95 CX105

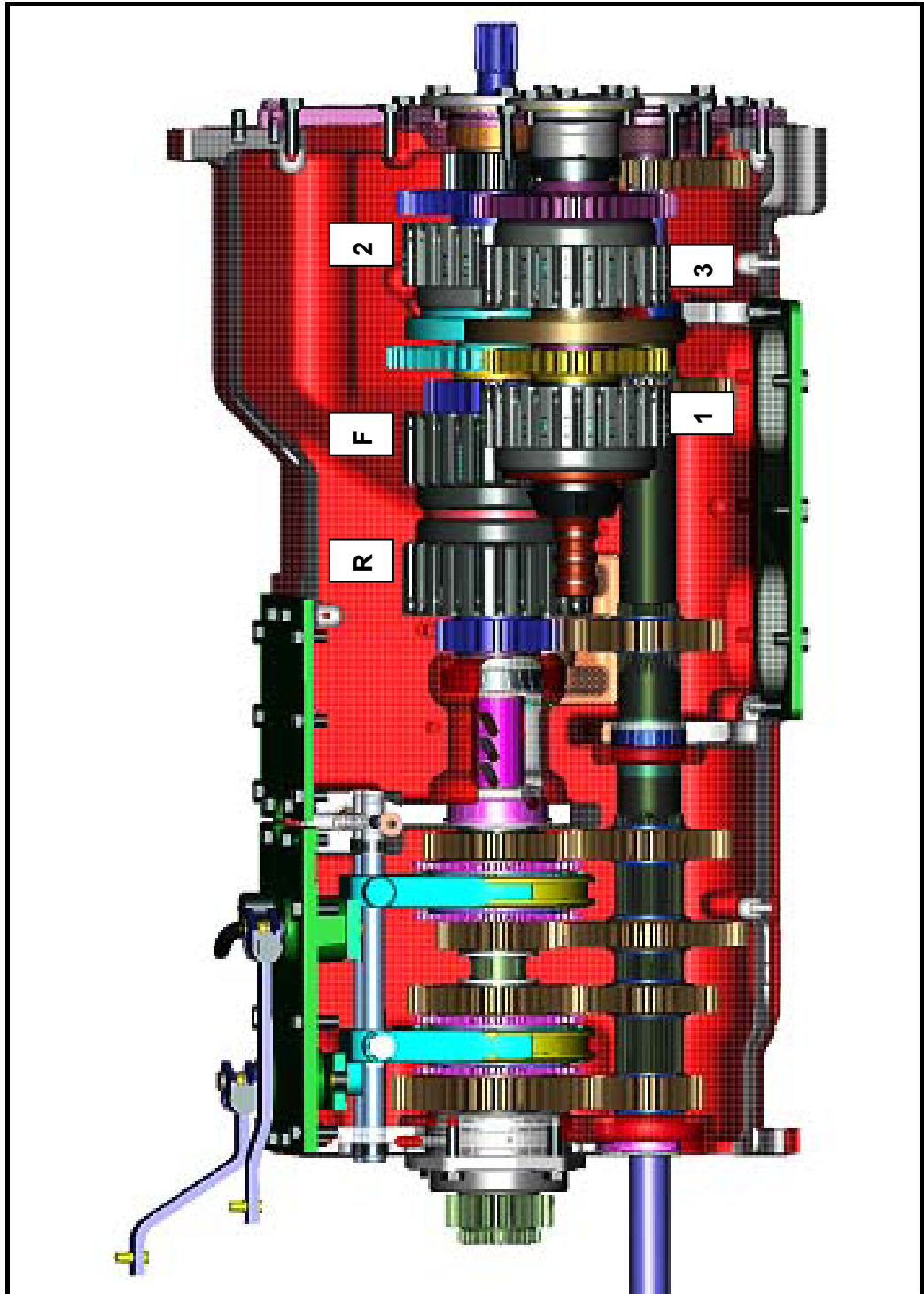
TRANSMISSION

XtraShift Speed Chart 40km/hr 18.4R34 Tyres @rated speed 2200 rpm



TRANSMISSION

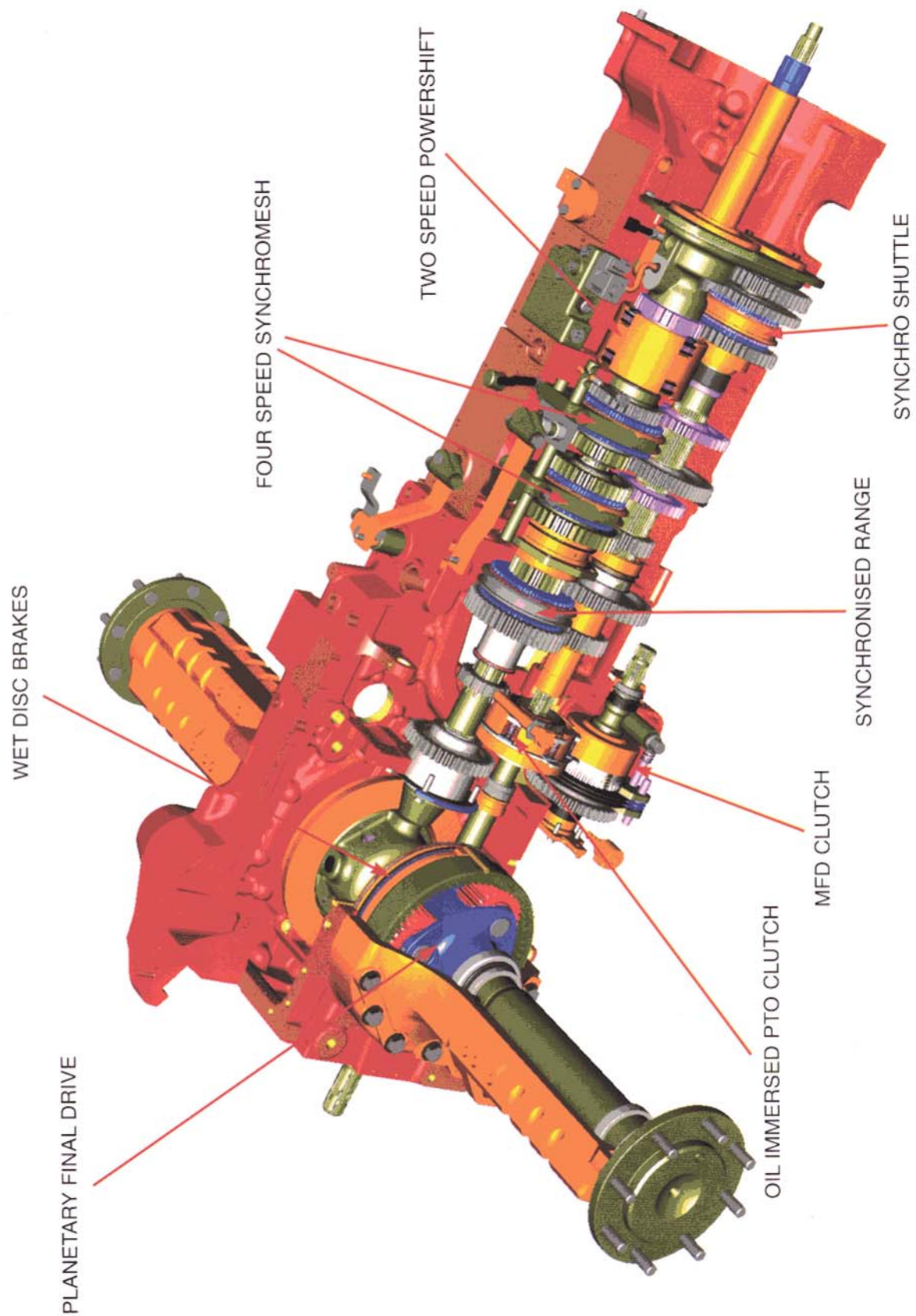
Cross Section View of XtraShift Transmission



F & R = Shuttle Clutches
1 2 3 = Powershift Clutches

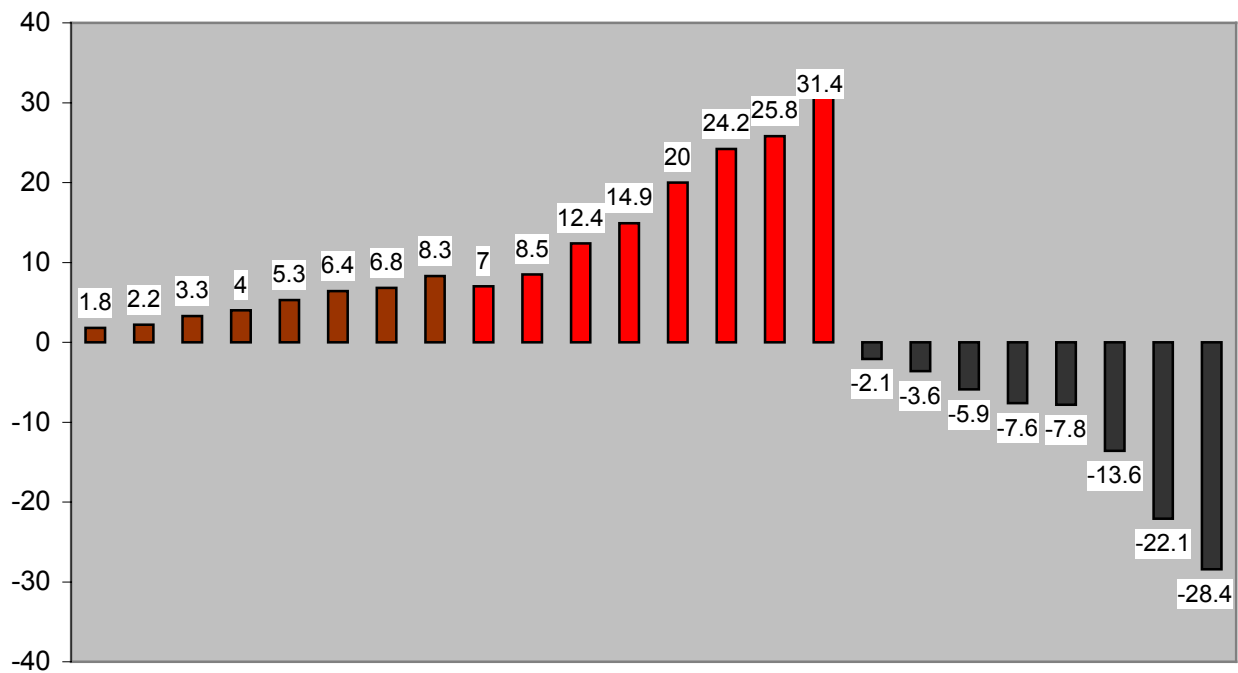
CX75 CX85 CX95 CX105

TRANSMISSION DRIVE LAYOUT SYNCHRO SHUTTLE

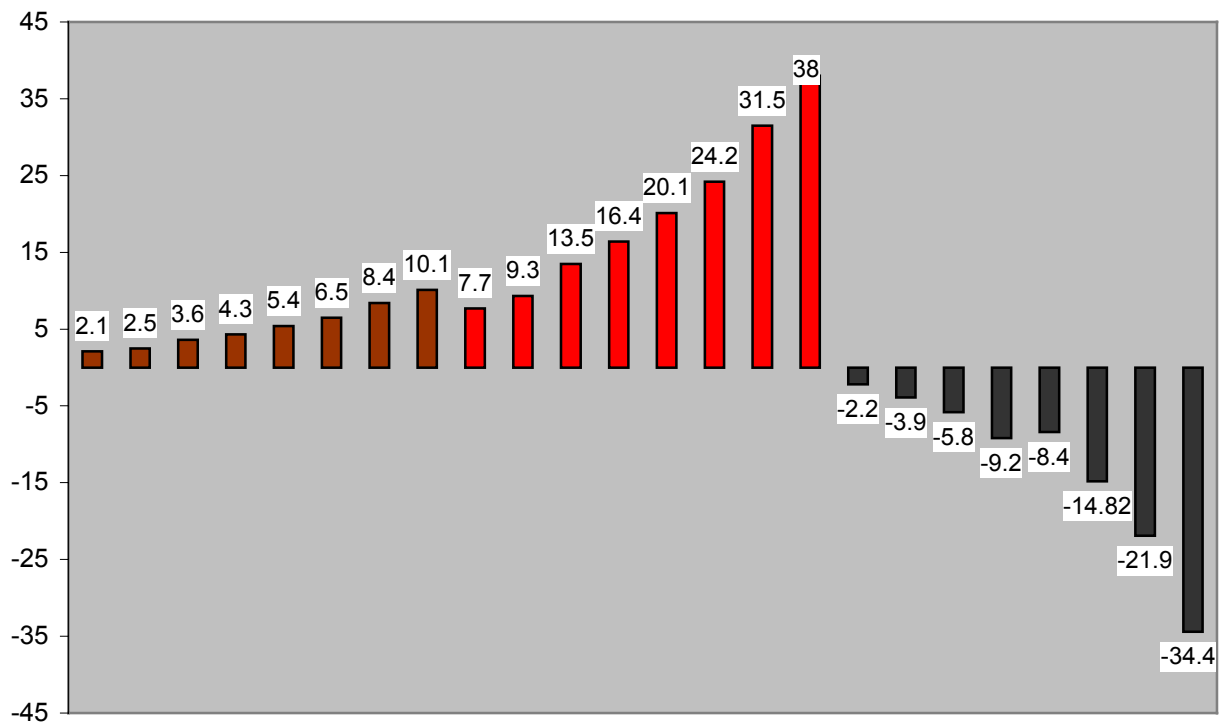


TRANSMISSION

Travel speeds at rated engine rpm 2200 30 km/Hr 16F x 8R fitted with 16.9R34 tyres



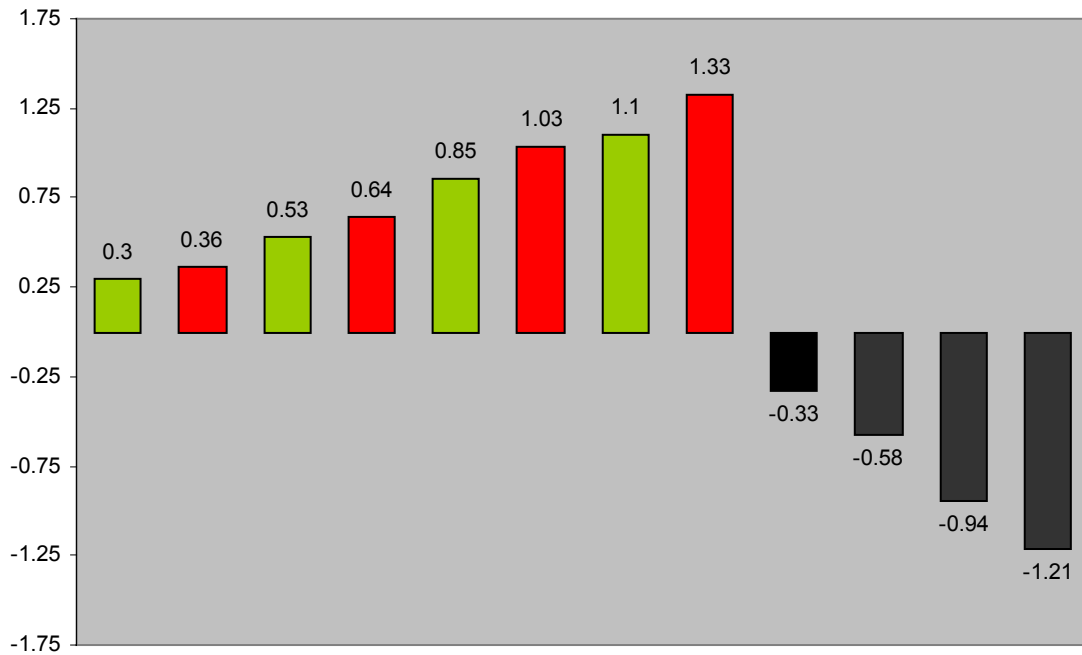
Travel speeds at rated engine rpm 2200 40 km/Hr 16F x 8R fitted with 16.9R34 tyres



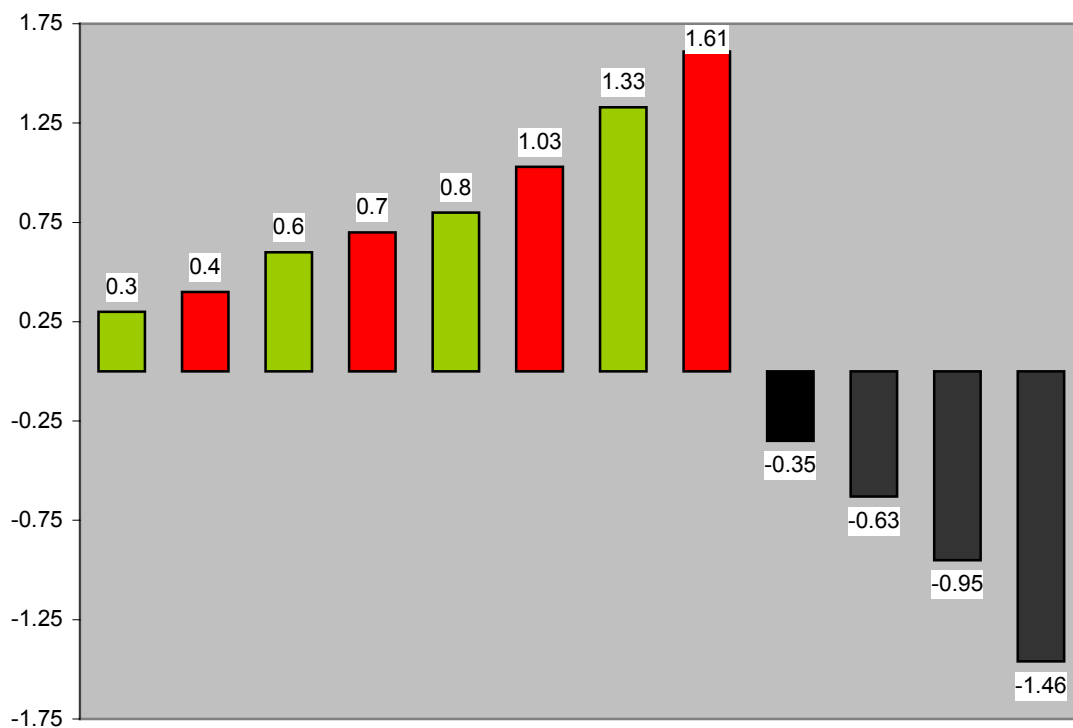
CX75 CX85 CX95 CX105

TRANSMISSION

Travel speeds at rated engine rpm 2200 30 km/Hr creep speeds with 16.9R34 tyres.



Travel speeds at rated engine rpm 2200 40 km/Hr creep speeds with 16.9R34 tyres



TRANSMISSION

CLUTCH SYNCHRO SHUTTLE TYPE

These models have a single plate clutch diaphragm. This multi-finger release design allows a smooth drive take-up as the clamping load applied to the plate is uniform.

It is made of a very hard wearing cerametallic material for long life. This material dissipates clutch heat better than a traditional organic plate.

The CX75 has a 5-paddle plate whilst the CX85, 95 and 105 use a 7-paddle design to handle the additional horsepower.



SELF ADJUSTING CLUTCH

The clutch is hydraulically operated and requires low pedal effort to operate. It is self adjusting therefore eliminating service maintenance.

The tractor design allows for easy splitting at the clutch housing should the clutch require replacement, this coupled with the single plate design helps keep costs lower.



Clutches will last longer reducing costs and easy pedal operation improves driver comfort.

CX75 CX85 CX95 CX105

TRANSMISSION

SYNCHRONISED SHUTTLE

All tractors are fitted with the highly efficient synchro shuttle transmission to ensure easy operation and smooth directional changes. The operator depresses the clutch pedal and moves the steering column- mounted shuttle lever to effect the change of direction.

The speed ratio between forward and reverse is almost identical. This means the operator selects the appropriate forward gear and speed matches in reverse.



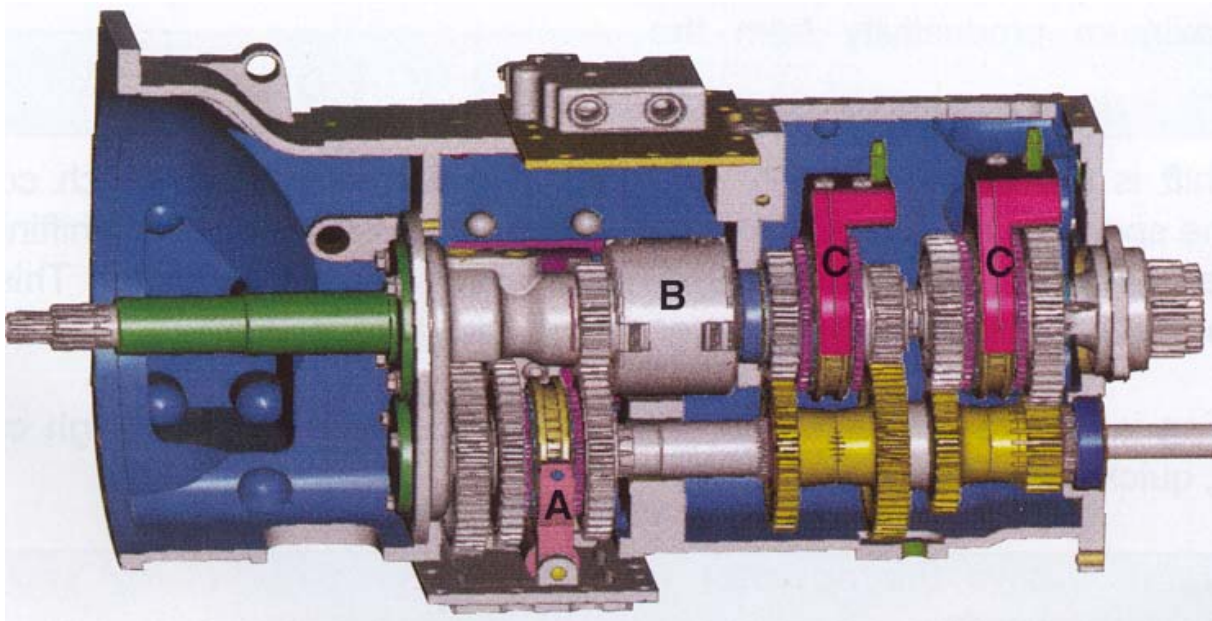
A fully synchronised shuttle means easy operation and improved cycle times compared to standard transmissions

The shuttle location is at the front of the transmission and therefore is not subjected to high inertia forces, this helps reduce the time between gear shifting.

The shuttle also incorporates a neutral position ideal for loader work and other operations that require periodic pauses. The shuttle lever is controlled by the left hand allowing the right hand to operate loader or hitch controls.

This design is the best and has been adopted from the MC tractor. Operators will be able to perform multiple tasks quickly and easily.

A) Synchro Shuttle B) Powershift C) Speed Synchronisers



TRANSMISSION

FOUR SPEED SYNCHROMESH

The standard model offers four fully synchronised gears that provide a wide range of working speeds. These are operated by a conveniently located lever just to the right of the operator. Positive smooth shifting is guaranteed by the strut type high inertia synchronisers that run on sliding rails for positive low effort operation. The fully lubricated system ensures these units operate under any conditions.

Smooth effortless shifting enhances productivity and reduces driver fatigue.



2 SPEED POWERSHIFT (Synchro Shuttle Option)

This unit is only a factory fitted option for all models. The powershift increases the number of gears to 16 forward and 8 reverse.

It provides a change on-the-go with no interruption of power. By engaging the powershift, speed is reduced by 17% giving a 20% increase in torque. This allows the tractor to pull through difficult conditions without declutching.

When operating with P.T.O. equipment, optimum forward speeds can be selected, ensuring maximum productivity from the implement.



The powershift is electro-hydraulically operated by a switch conveniently located on the speed lever. The powershift switch may be operated whilst shifting the speed lever between gears, for example on road haulage pulling a heavy trailer. This allows the operator to achieve the maximum road speed as quickly as possible.

Engine braking is assured in all gears. There is no torque wind-up in high or low which means easy, quick gear shifts.

The powershift allows the operator to achieve high productivity and maximum versatility with total safety.

CX75 CX85 CX95 CX105

TRANSMISSION

RANGE SECTION

Two fully synchronised ranges (High & Low) provide field and road speeds with the ability to start in high range 1st gear with a loaded trailer.

Full synchronisation allows easier shifting increasing productivity

CREEP SPEED SYNCHRO SHUTTLE

This is a factory option and provides an additional 8 forward and 4 reverse creep speeds for specialised operations, offering speeds down to 300 metres per hour at rated engine r.p.m.

DIFFERENTIAL LOCK

The differential lock is hydraulically operated by a simple rocker switch. A warning light on the instrument panel informs the operator it is engaged.

This engagement method eliminates the need to hold a pedal down therefore operator comfort is enhanced and speed of operation is quicker and easier.

FINAL DRIVE

All models use a planetary type final drive system. This design distributes the output load from the differential evenly and smoothly to the axle.



KEY FEATURES

- Power Shuttle wet clutch XtraShift
- 3 speed powershift XtraShift
- Synchromesh shuttle with neutral
- Left hand shuttle control all models
- Forward reverse speed matching
- Fully synchronised transmission
- Pressure lubrication system
- Low horsepower loss
- Planetary final drives

BRAKES

Customer Requirements

- **Efficiency**
- **Low pedal effort**
- **Maintenance free**
- **Safety**
- **Longevity**

SERVICE BRAKES

The brakes are hydraulically operated wet discs that are self adjusting and self equalising.

The brake pedals are pendant type with low effort operation. These are locked together for road work and operated independently for improved turning. The discs are kept cool by direct pressure fed transmission and hydraulic oil to ensure optimum efficiency and eliminate brake fade under severe operations.

All four wheel drive cab models feature front axle drive engagement when the brakes are applied; this enhances braking capability and safety.

Positive stopping assured whether in 2 or 4 wheel drive.



BRAKE RESERVOIR

The brake reservoir is continually kept full by the self topping supply from the oil cooler. This means the operator does not have to add fluid to the system.

Maintenance free high efficiency brakes provide maximum safety and performance.



CX75 CX85 CX95 CX105

BRAKES

BOOSTED BRAKE OPTION (Code 24AM AN AP)

The CX may be equipped with power boosted foot brakes which are designed to reduce the pedal effort required to stop heavier loads. The brake master cylinder is assisted from the main hydraulic system when the brake pedal is activated. This feature is a factory installed option only. This can be used with the two trailer brake options (Air or Hydraulic).

PARKING BRAKE

This is a multi-disc assembly located within the transmission. Two wheel drive models have the brake acting on the pinion shaft. All four wheel drive models use a brake located in the drop box assembly. A red warning light alerts the operator when the brake is applied plus an audible warning when the speed lever is engaged. The brake lever is placed conveniently to the operator's left and can easily be applied or released. It securely holds the tractor when applied, with the engine stopped the four-wheel drive versions brake through all wheels.



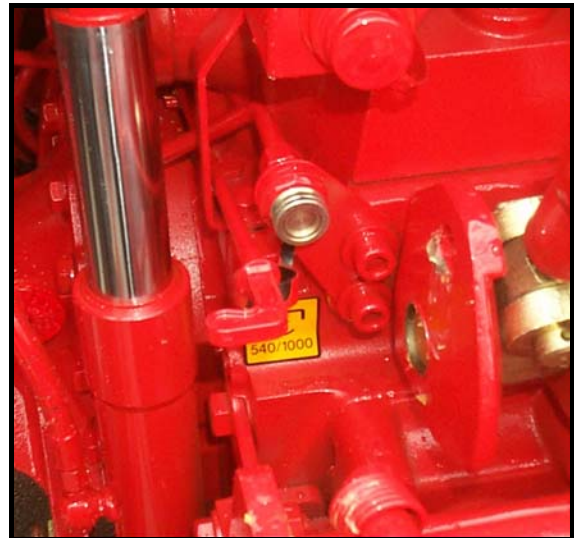
A positive parking brake which can be easily serviced

TRAILER BRAKE SYSTEMS (Optional)

A choice of factory fitted hydraulic or air systems are available to suit the needs of different markets around the world.

HYDRAULIC TYPE (Code 24AE)

This single line system is powered from the hydraulic circuit. When either pedal is depressed oil is directed out through the trailer brake connector at the rear of the tractor to the trailer braking system.



AIR BRAKES (Code 24AK)

A multi-purpose system offers both single and dual line operation. The belt driven air compressor sits neatly at the front of the engine and supplies air to power the system.

A pressure gauge keeps the operator informed of the system pressure.

The CX tractor fits the customers' needs providing safer operation of heavy trailers and tankers.

FOUR-WHEEL DRIVE

	ALL MODELS
Manufacturer	Carraro
Differential lock	Limited slip
Interaxle ratio	1.407
Castor angle	6°
Steering angle	55°
Minimum turning radius (Metres) 2 wd / 4wd	4.4 / 4.48

Customer Requirements

- **Traction**
- **Stability**
- **Low maintenance**
- **Manoeuvrability**
- **Maximum ground clearance**

DRIVE AND AXLE

The front axle is made by Carraro. Large pivot bearings on the axle provide a secure mounting point and long-life operation. The axle has a high static load capability which makes the tractor very suitable for front loader work or fitting a front linkage for increased versatility.

Well designed axle mounting provides security and durability.



DRIVE CLUTCH

Drive comes from the main pinion shaft into the four wheel drive assembly located under the centre of the tractor. The engagement is by an electro-hydraulic clutch. This may be operated on the move, under load. Mechanical spring pressure engages the clutch plates, whilst hydraulic pressure releases them.

Easy operation and a fail safe system on all versions.



CX75 CX85 CX95 CX105

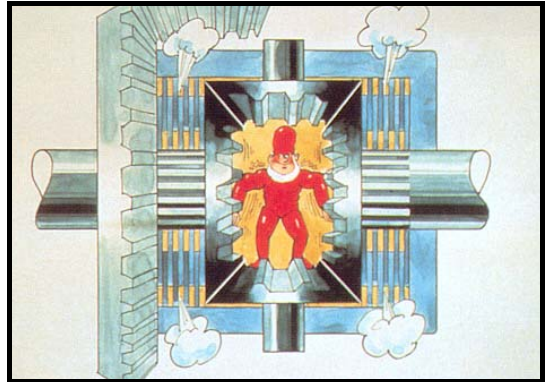
FOUR-WHEEL DRIVE

DRIVE SHAFT

The drive shaft is totally shielded to prevent crop wrapping. A sculptured engine oil sump allows an excellent ground clearance to be maintained.

A well proven self-energising limited slip differential which provides automatic balance of torque to ensure good traction.

Traction is maintained even in bad conditions and reliability is enhanced.



6° CASTOR ANGLE

Turning circles are greatly reduced by the ability of the wheels to achieve a 55° angle. This has been achieved by the 6° castor angle which allows the wheel to make tighter turns.

Sealed double universal joints are used on each output shaft providing efficient power transfer resulting in smoother turning.

No daily maintenance is required, only six grease points every 50 hours.

This means minimum damage to crops and soil structure, and enhances component life.

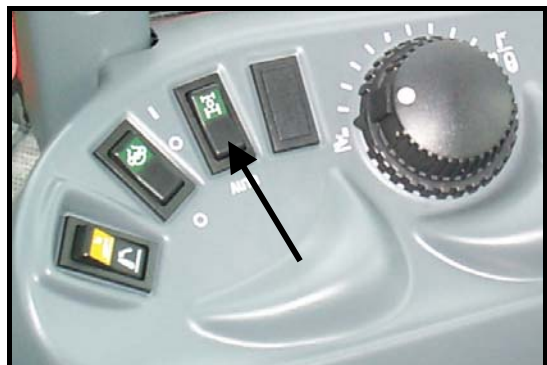


AUTO DISENGAGEMENT

The front axle may be operated in the permanent drive mode or automatic mode. In automatic the drive is disengaged by depressing either brake pedal, upon releasing the brake drive is re-engaged.

The electric switch operating the four-wheel drive is located on the right hand console adjacent to the differential lock switch, and has three positions ON, OFF, and AUTO.

Operator productivity and efficiency increased during tight turning.



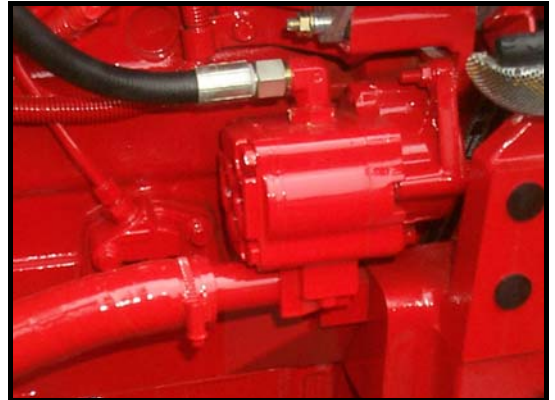
FOUR-WHEEL DRIVE

STEERING

All models have hydrostatic steering for optimum operator comfort and fatigue-free steering. Oil is supplied by a dedicated engine driven pump producing 30 litres/min.

Only 3 turns of the wheel from full lock to lock on two wheel drive and 4.5 on MFD.

Hydrostatic steering gives the operator total control with no kick back. Dedicated oil supply and easy lock to lock turning allows quick manoeuvring and enhances operator comfort.



The central steering cylinder is well protected from accidental damage.

TRACK WIDTH AND STEERING ANGLE SETTINGS

The front wheels are fully adjustable from 1299 mm to 1894 mm (11.2 x 24 tyres) in 95 mm steps to suit different crop and implement requirements.

The steering angle is adjusted by a single bolt at either side to prevent the wheels from fouling at narrow track settings.



FRONT FENDERS (Optional)

These are available on two and four-wheel drive models. They are fully adjustable to ensure the tyre is covered at all track settings. Different widths are available to suit a variety of tyre options.

The front fenders provide greater safety and keep the tractor cleaner therefore improving operation and durability.



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TWO-WHEEL DRIVE AXLES

All CX tractors are available in 2 wheel drive versions; these are restricted to 30km/hr to comply with local legislation in some countries.

2WD FRONT AXLE Utility Bolster (Code 10EF/EC)

All CX models have the box section construction axle with the long bolster (Utility Bolster) Adjustable in 50 mm stages each side from 1320 mm to 1960 mm. Maximum permissible static load is 1620 kg.

The high spindle is most typically used with the following tyres 34", 36", 38" diameter rear tyres.

Code 10EF low spindle axle height =154mm

Code 10EC high spindle axle height =227mm



2WD WIDE FRONT AXLE Utility Bolster (Code 10CS/CT)

This is the same axle as above except the track widths vary from 1524mm to 2032mm

Code 10CT low spindle axle height =154mm

Code 10CS high spindle axle height =227mm



2WD FRONT AXLE (Code 10DE) ROW CROP BOLSTER (not shown)

The row crop bolster has a higher axle pivot point and therefore gives more under axle beam clearance than the utility type. The wheel base is shorter by 80mm. The axle adjusts in 50 mm stages each side from 1320mm to 2080mm. Maximum permissible static load is 1620kg.

KEY FEATURES

- Independent steering pump
- Limited slip differential
- 6-degree castor angle
- 55-degree steering angle
- Steering cylinder protected
- Optional front fenders two and four-wheel drive
- Choice of axle types (Two-wheel drive)

BALLAST WEIGHTS

FRONT WEIGHTS

Front weights are available in various configurations to ensure the correct stability and performance. Weights are easily fitted to the weight bracket (Code 27LZ) which can accommodate up to nine 45kg weights.

Code 27LT = 6 front weights (front clevis must be fitted)

Code 27LV = 7 front weights only

Code 27LW = 9 front weights only

Code 27LX = Centre clevis weight 100kg (occupies 3 weight spaces)



REAR WHEEL WEIGHTS

Rear wheel weights are available to enhance the tractors performance in certain conditions.

The weights are available in the following configuration

Each wheel weight weighs 54kg

Code 27HR = 1st set 1 either side 108kg

Code 27HS = Additional set 1 either side (must have 27HR)

AXLE LOADINGS & WEIGHTS

2WD	Deluxe Cab	Low Profile Cab	2 Post ROPS
Min. shipping weight kg	3355	3235	3230
Weight distribution (front/rear) %	37/63		
Maximum front axle load kg	2430		
4WD			
Min. shipping weight kg	3765	3545	3640
Weight distribution (front/rear) %	41/59		
Maximum front axle load kg	2900		
Maximum rear axle load 2/4wd kg	4800		

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POWER TAKE OFF

TECHNICAL DATA

	CX75	CX85	CX95	CX105
Engagement type	Hydraulic Manual Control			
Modulation	Yes			
Dual Shaft system	Optional			
EPRM @540rpm/1000rpm	1954/2000			
EPRM @540rpm/ on 1000rpm lower shaft	1080			
Shiftable 540/750 PTO	Optional			
EPRM @540rpm/750rpm	2000			
EPRM @540rpm with 750 rpm selected	1448			
Shiftable 540/1000 PTO	Optional			
EPRM @540rpm/1000rpm	2000			
EPRM @540rpm with 1000 rpm selected	1080			
Power @ 540/1000 rpm PS/kW Manufacturers nominal rating	60/45	68/50	75/55	84/62



POWER TAKE OFF

Customer Requirements

- **Smooth drive take-up**
- **Power and economy**
- **Easy shaft connecting**
- **Safe operation**

The CX Series tractors have an independent PTO system. A choice of PTO outputs are available to suit market requirements.

Options are:-

**Single speed 540 (6-spline shaft)
(Code 05BE)**



Dual speed (Code 05BH)
540/1000 2 shafts 6/21-spline

Note this is also available with two 6 spline shafts in some markets Code 05BN



Shiftable Type

Single shaft 6-spline only with choice of:-

A. 540/750 Code 05BJ

B. 540/1000 Code 05BK

This shaft **cannot** be changed to a 21 spline output.



PTO SHAFT

The output shaft may be rotated by hand when the engine is stopped making it easier to connect the drive shaft.

The versatile easy to use PTO system allows customers to maximise engine horsepower and achieve maximum versatility.

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POWER TAKE OFF

DRIVE CLUTCH

A hydraulic wet multi plate clutch transmits the power to either the 540 rpm or the 1000 rpm output shafts. The clutch is located in the rear part of the transmission and is oil cooled to prolong its life and performance characteristics.

A built in drag brake prevents the power shaft from rotating when it is not in use.

Should the need arise to service the clutch pack, access is gained via a plate underneath the housing. No major strip down of the transmission is required.

Smooth drive take-up is provided to ensure less stress on the equipment. Reduced down time keeps the machine costs lower and minimises the interruption.

OPERATION

A conveniently placed engagement lever in the rear right hand console ensures smooth drive take-up.

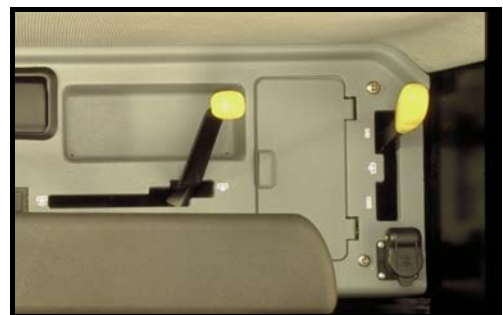
The PTO lever activates a safety start switch when it is in the disengage position providing safety to the operator and bystanders.

Smooth drive engagement keeps shock loads down and increases component drive line life.



SHIFTABLE PTO VERSION

This has a single shaft output with two speed capability which allows the operator to optimise the tractors horsepower to the specific operation. For low power requirements select the high speed PTO and throttle back the engine rpm to achieve 540 rpm at the shaft.



KEY FEATURES

- **High efficiency**
- **Single lever operation**
- **Independent wet clutch**
- **Free rotating shaft**
- **Reduced maintenance costs**

HYDRAULICS**TECHNICAL DATA**

All Models	
Pump type	Gear
Pump capacity ltr/min	60
Type of sensing	Electronic Top Link
Max lift capacity no assistor ram kg	2040
Max lift capacity 1 assistor ram kg	2957
Max lift capacity 2 assistor rams kg	3875
Lift link ends horizontal no assistor ram kg	1972
Lift link ends horizontal with 1 assistor ram kg	2914
Lift link ends horizontal with 2 assistor rams kg	3816
Lift full range @ 610 mm OECD kg	1075
Lift full range @ 610 mm OECD 1 assistor ram kg	1587
Lift full range @ 610 mm OECD 2 assistor rams kg	2280
Category type	Cat II
External control	Optional
Max. flow to remote valve ltr	60
Oil take out 2wd/4wd std fill /overfill (20 ltr) ltr	20/40

Note:- A position control only version is available. Check chains or telescopic stabilisers may be specified.



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HYDRAULICS

Customer Requirements

- Generous oil supply
- Matched lifting capacity
- Logical control layout
- Easy to maintain system
- Choice of remote valves
- Fully compatible 3-point linkage

HYDRAULIC SYSTEM

All models have a high capacity hydraulic system designed to allow the operator to maintain full control over both tractor and implement in all ground conditions.

A dedicated gear pump supplies oil for rapid response of all hydraulic services. First priority is the three point hitch and on to remote valves. The main hitch pump delivers 60 litres/min on all models.



High flow provides rapid high capacity hydraulic power to handle any operation.

RESERVOIR AND HYDRAULIC FILTER

The transmission and hydraulic share the common reservoir, this ensures ample oil is available. The system can be safely overfilled when operating loaders and large trailers.

A large single element filter protects the transmission and hydraulic system. The filter incorporates a bypass valve and screen for safety in the event of neglect or blockage. As the unit is externally mounted, serviceability is greatly enhanced and downtime is kept to a minimum.

HYDRAULIC OIL COOLER

An oil cooler protects the system and ensures that the hydraulic oil works at optimum temperature. Opening the bonnet allows quick easy cleaning.



HYDRAULICS

ELECTRONIC HITCH RESPONSE (EHR) SYSTEM

The EHR system gives the operator precise, accurate hitch control at his finger tips. The well laid out controls similar to the MC range of McCormick tractors allows the operator to set the system to meet all applications and conditions.



ENABLE LIGHT

Each time the tractor is started the system automatically checks the location of the lift arms in conjunction with the position dial setting. If they are not matched an amber light on the hitch raise/ lower switch will flash. The hitch will not operate if the light is flashing (hitch disabled). To enable the system, the operator has to simply move the position dial to the actual lift arm setting and synchronise the two components. The amber light will stop flashing and the hitch is ready for operation.

This very important safety feature prevents the hitch from inadvertently moving when the tractor is started.

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HYDRAULICS

HITCH RAISE/LOWER SWITCH

A conveniently located raise/lower switch is a major benefit for the operator during field operations. Simply toggle the switch and the hitch will raise to full height or lower back to the original setting.

A **Float Facility** is also available from the same switch. Pulse twice and hold down the lower cycle of the switch and the system goes into float facility. This is particularly useful in hard soil conditions, allowing the implement weight to penetrate the ground. Release the switch and the system automatically returns to the settings in load control.



Quick and easy to use, reducing operator fatigue and shortening turnaround time.

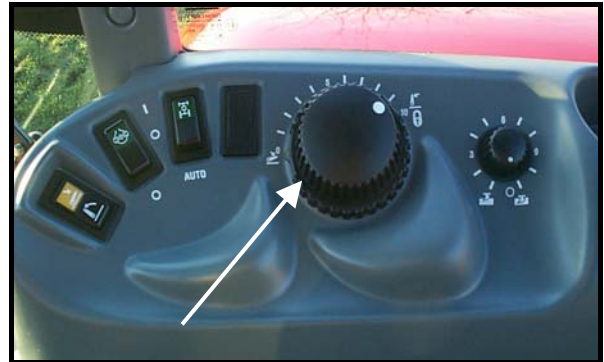
POSITION CONTROL

This is used to set the linkage height when operating with equipment typically above the ground such as mowers, sprayers, etc.

The large dial sets the working position of the hitch. Move fully clockwise to transport setting.

A button on the side of the knob provides a transport locking facility.

The outer ring below the main control knob is a mechanical stop which enables easy return of the position dial back to a previous setting. This is useful for certain implements that have to be adjusted or moved during the working day.



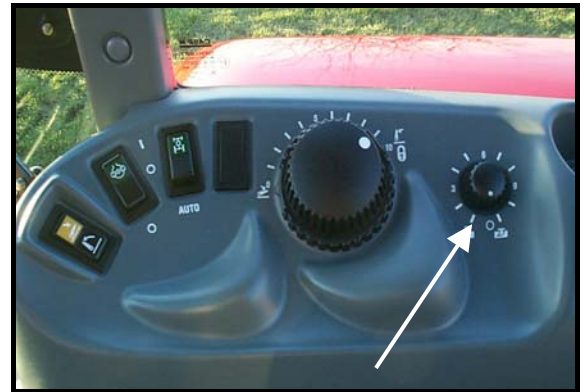
Note: When using position control always turn the load control dial fully clockwise to O (OFF).

HYDRAULICS

LOAD CONTROL

The tractor uses a sophisticated electronic control module to accurately sense and operate the Draft Control System.

The smaller dial next to Position Control is called Load Control. At position O (fully clockwise) the system is off. Turning towards a lower number will cause the draft reaction at an early stage. A typical setting is 5-7 using fully mounted equipment. The tractor must be moving forward before the draft system will activate.

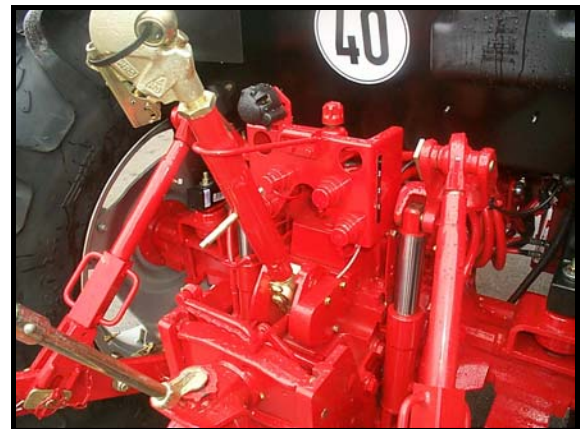


TOP LINK LOAD SENSING PIN

The EHR load sensing system is controlled with great accuracy using an electronic load sensing pin that the top link is attached to. No mechanical linkage is used and the system gives instant response to changes in draft loads.

The system is extremely sensitive and will handle not only positive but negative forces.

With an electronic system the loads imposed on the top link can be more accurately controlled. This design eliminates the use of mechanical measuring forces that are often exceeded and therefore the draft loads cannot be controlled. The second benefit is no adjustments are required throughout the tractor's lifetime.



Total control in all conditions and lifetime accuracy.

RIDE CONTROL (OPTIONAL CODE 27JL)

Ride control is used for transporting three-point-hitch mounted implements and reduces the amount of implement induced hitch 'bounce'. This is achieved by the electronic hitch controller, which counteracts the shock loading by adjusting the lift arm geometry.

Less shock loadings and improved handling especially on the road.



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HYDRAULICS

DROP SPEED (A)

This dial adjusts the hitch speed of drop when using either the raise/lower switch or Position Dial. The operator has total control over fully mounted implements preventing possible damage to either the implement or the tractor. The maximum lowering speed is obtained by setting the dial at number 11.

RAISE RESPONSE CONTROL (B)

This controls the rate at which the hitch responds to changes in draft load, enabling the operator to select a response rate which is best suited to the implement and soil conditions. It prevents erratic responses which are inherent in mechanical sensing systems.

TRAVEL CONTROL (C)

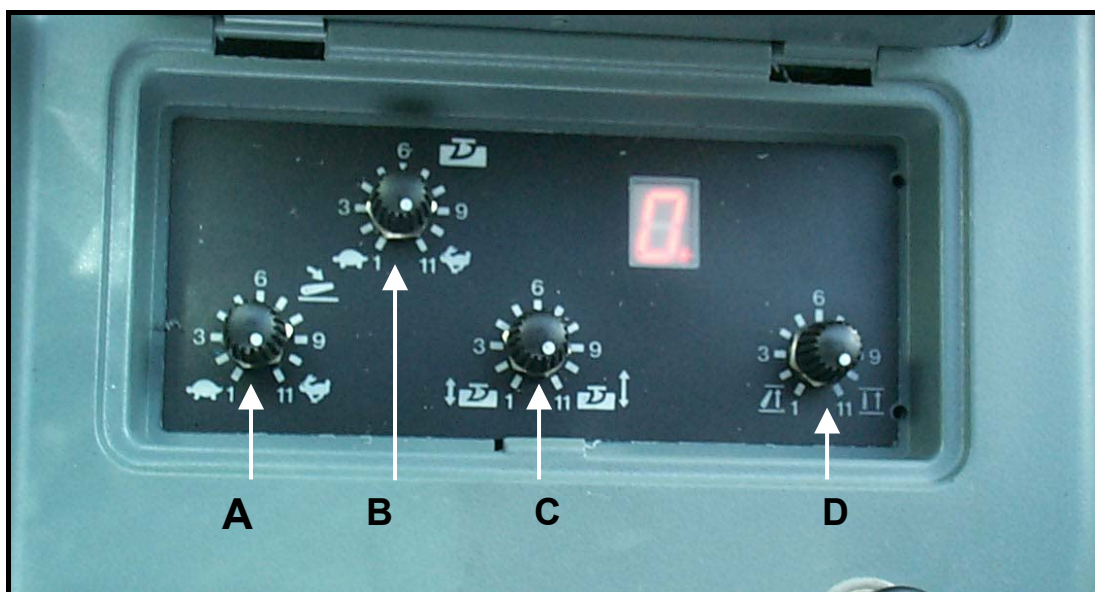
The travel control adjusts the amount of hitch movement that occurs when responding to the draft load changes. By moving this dial the operator can fine tune the amount of movement and match the implement operation to the soil conditions. At number 11 the system will have maximum travel.

HEIGHT LIMITER (D)

Used to set the maximum height of the three point linkage, this control will operate for both the raise/ lower switch and Position Dial. This should be used when operating certain P.T.O. driven implements to avoid potential shaft damage.

LED DISPLAY (E)

The electronic hitch is a self-monitoring system. When the system is operating correctly the code "O" will be displayed. Other code numbers displayed allows the service engineer to quickly diagnose the problem. Down-time is saved by quickly finding and correcting the fault.



HYDRAULICS

REMOTE VALVES

A total of three rear operating remote valves may be fitted to all models. These valves are double acting with a float facility for operating equipment such as hydraulic motors.

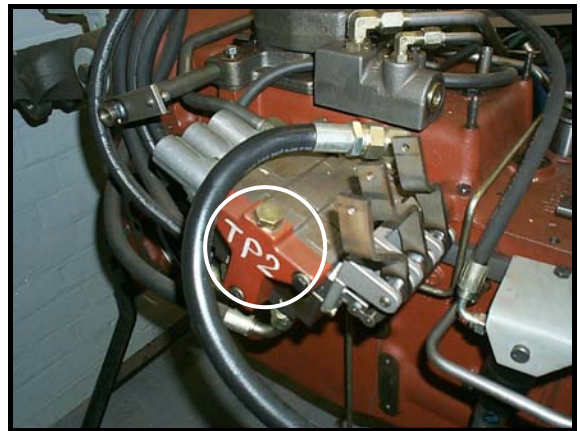
NOTE: When fitting a LiftMaster 2000 front end loader there could be a maximum of four remote valves fitted. Two valves are dedicated for the loader operation, whilst the remaining two valves are for rear operations.

Up to 60 litres are available at the remote couplings, enough to satisfy all major operations.

POWER BEYOND FACILITY

Situated at the remote valves, a power beyond connection is fitted as standard equipment and provides a supply of oil direct to a separate valve chest or hydraulic requirement, i.e. Silage cutter, etc.

**No need to utilise a remote valve.
Allows unsightly pipe work to be neatly
located out of sight.**



HYDRAULIC COUPLERS

Breakaway couplers are conveniently located for easy identification and can be connected or disconnected under pressure.

SPILLAGE COLLECTOR (Optional) Code 27EC ED EE

A reservoir neatly located on the rear chassis collects excess oil during the connecting and disconnecting of the couplings. The reservoir can be removed and periodically emptied.



The simple and effective coupling system saves time and reduces operator frustration.

No unnecessary spillage of oil on the ground or down the rear of the tractor.

CX75 CX85 CX95 CX105

HYDRAULICS

HYDRAULIC FREE FLOW RETURN (Optional) Code 27MA

This option allows oil to be returned directly to the reservoir without any restrictions. This is typically used when operating hydraulic motors.



THREE POINT HITCH

The three point hitch assembly is made from high quality steel forgings for maximum resistance to wear and fatigue. The system is designed to Cat II standards. The drop arm assemblies are fully adjustable using the built-in adjusting handle.

The linkage may be specified with ball ends telescopic or claw type depending on model and market preference. When the top link is not in use it can be conveniently locked in an upright position.

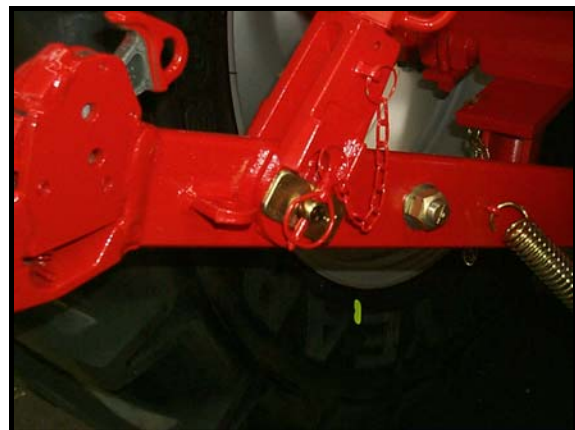


**High strength means lifetime reliability.
Category II claw ends give good
compatibility with European equipment
and saves the operator time and
frustration.**

LOWER LINK FLOAT

Simple, quickly adjustable blocks on the lower links can be rotated through 90° to hold the links rigid or allow them to float. This is primarily used on wide implements or those equipped with depth wheels.

**The quick change, from rigid to floating
lower links, saves operator time and
frustration and provides a strong,
reliable system of control.**



HYDRAULICS

ASSISTOR RAMS (Optional)

To meet the demands of larger three point mounted equipment the tractors may be equipped with additional assistor rams that increase lift capacity.

Either single or twin assistor rams may be fitted at the factory or field installed.

Outstanding lift capacity means the CX Series can handle a full range of implements that are matched to the tractor's pulling ability.



HITCH FENDER CONTROLS (Optional) Code 27BC

The hitch can be operated from either of the rear fenders, using push buttons for raise and lower. These controls are positioned so that the operator stands clear of the tractor and implement.

When these controls are used, the hitch control in the cab is automatically disabled.

The external controls on both sides of the tractor save operator time and frustration because they make hitching up implements a safe and simple



STABILISERS

Telescopic stabilisers allow the linkage to sway or be held rigid, no spanners are required to adjust them. This design is superior to check chains which tend to stretch and rust so they cannot be adjusted.

The upper hole (A) is used to hold implements rigid throughout the lift cycle. The lower hole (B) is used for implements that require float in the lower position and held tight when raised.

Check chains may be specified in place of the telescopic stabilisers



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HYDRAULICS

ADDITIONAL HYDRAULIC OIL RESERVOIR (Optional)

A field-installed hydraulic tank kit is available to further increase the capacity of CX tractors.

The tractor can be overfilled by a limited quantity, however there may be occasions when even more oil is required, particularly when using large three stage twin ram trailers.

The oil reservoir fits neatly under the right hand side of the tractor and provides an additional capacity of 25 Litres. The unit is piped direct into the rear transmission frame and therefore avoids any cavitation during the tipping cycle.

The hydraulic tank kit unit can be ordered from the McCormick parts operation under the following number. 452183A1



KEY FEATURES

- **Electronic precise hitch control**
- **Wide choice of operator settings**
- **Matched lifting capacity**
- **Up to three valves**
- **Exceptional flow from remotes**
- **Simple stabiliser setting**
- **Large oil reservoir for trailer tipping**

DRAWBARS & TRAILER HITCHES

SWINGING DRAWBAR (USA & CANADA ONLY)

Standard version Code 23AC

Heavy duty version Code 23AQ (pictured)

A traditional swinging drawbar is available when no trailer hitches or automatic pick-up hitches are specified. The drawbar can be adjusted for length to suit different operations such as P.T.O. work. This drawbar is not available with a hammerstrap or clevis



SWINGING DRAWBAR

Standard version (Code 23AE) (pictured)

Heavy Duty (Code 23AN/AP)

Heavy Duty offset (Code 23AR)

This is the same design as above except it is fitted with a clevis (hammerstrap) which is bolted to the drawbar



The offset version is cranked at the pin end to allow for two height settings

SHORT CROSS DRAWBAR (Code 27BE)

Sometimes referred to as a linkage drawbar this cross bar can be raised and lowered by the three point linkage. This should not be used for pulling heavy loads and the hitch point can make the tractor unstable if fully raised.



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TRAILER HITCHES

NOTE: ALL TRAILER HITCHES MUST BE MATCHED TO THE PARTICULAR P.T.O. SYSTEM I.E. SHIFTABLE OR FIXED

The fully adjustable ladder type trailer hitch provides the customers with total flexibility. The height can easily be adjusted for different trailers such as forage wagons or four wheel trailers.

The unit is available with the following clevis types.

TRAILER HITCH WITH PITON FIXE MANUAL CLEVIS WITH DRAWBAR (Code 23CC/CF) (pictured)

Designed to handle high vertical loads typical on European trailers. This is supplied with the manual clevis.



TRAILER HITCH WITH PITON FIXE AUTO CLEVIS & DRAWBAR (Code 23CK)

This hitch is the same configuration as above however, the clevis pin will automatically lock instead of having to be manually located.



TRAILER HITCH AUTOMATIC CLEVIS (Code 23BW) with drawbar (Code 23BV BX) without drawbar (pictured)

The clevis pin automatically locks as the trailer drawbar enters the jaw. This is TUEV approved.



SLIDING REAR HITCH CAT C (Code 23BA)

This is used in markets such as Italy for towing trailers. The clevis is adjustable and has a manual pin.

TRAILER HITCHES

REMOTE TRAILER HITCH (Code 27GD)

For use when the automatic clevis is fitted, this allows the operator to release the trailer clevis from the seat therefore saving time and greater convenience.



AUTOMATIC PICK-UP HITCH Dromone (Code 23DC/DF) (pictured)

A positive latching mechanism makes operation simple and ensures total safety when transporting heavy trailers. It is mechanically released by a handle in the lower right hand corner behind the operator's seat.

A storage bracket on the L.H. side is provided for the interchangeable drawbar or hook which is not in use.



AUTOMATIC PICK-UP HITCH Trima (Code 23DJ/DK)

Similar in design to the above this unit is primarily offered in Scandinavia markets.

AUTO HITCH MIRROR (Code 27GE)

A mirror mounted to the rear window provides increased visibility for easier operation.



Productivity is improved, time wasting delays and damage to trailers are also avoided.

KEY FEATURES

- **Easy to use automatic pick-up hitch**
- **Wide choice of trailer hitches**
- **Integrated factory fitted attachments**

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FRONT HITCH

Customer Requirements

- Easy implement attachment
- Simple operation
- Useful lift capabilities
- Quick and neat linkage storage



FRONT HITCH (Code 25AH)

Available as a factory fitted or field option. This hitch has been designed to provide optimum performance and compatibility whilst maintaining good stability and operator vision.

The front hitch is controlled from a remote valve lever on the right hand console.

The hitch maximum lift capacity is 3000 kg.

Double acting rams for power down situations

Top link storage facility

FRONT HITCH STORAGE

The lower links can be folded up vertically when not in use. They can also be set in a float position allowing implements to follow the ground contours.

FRONT HITCH

FRONT PTO (Code 25AG Hitch & PTO)

The PTO is driven directly from the engine crankshaft and capable of transmitting full engine power. There is a choice of 540 or 1000 speeds from the factory. The PTO is engaged by a hydraulic clutch operated via a rocker switch on the right hand instrument console.

The PTO shaft rotates anti-clockwise when looking from the front



The front PTO option provides greater versatility and more flexibility. The design maximises output and field performance.

Note. When front hitch is fitted the tractor may be equipped with additional alternative headlights to meet legislation in certain markets, these are identified in section 27 of the price list. Codes KH KJ KL KM

On deluxe cabs these are fitted alongside the roof work lights. Low Profile models are mounted adjacent to the side lights.

KEY FEATURES

- **High lift capacity**
- **Full hp capability**
- **No loss of manoeuvrability**
- **Fully supported side frame**
- **Easy stowage position**

CX75 CX85 CX95 CX105

CONTROL CENTRE

Customer Requirements

- Comfortable & Quiet
- Spacious
- User friendly controls
- Excellent vision

These tractors are sold on a world-wide basis with each market having different requirements. The customer has the opportunity to select a control centre that will meet his needs.

McCormick has two cab versions available - **Deluxe** and **Low Profile**. The tractor is also available in a **Platform** version. This model features all of the right hand controls and benefits of the cab tractor.

Both cab versions are available in a variety of configurations:

Deluxe No air-conditioning
 Opening front windscreen
 With air-conditioning

Low Profile Fixed windscreen no roof window
 Opening front windscreen with roof window
 With air-conditioning

The interior layout is very similar, however the Low Profile version has slight changes:
Ventilation system has been relocated to allow for the Low Profile fixture.
Unique Low Profile design incorporating upward vision window.

The CX control centre is one of the most innovative designs on the market today.

PLATFORM VERSION

The CX range is available in certain markets as a platform model.

For most European regions this comes in the form of a **4-Post ROPS** frame with canopy.

Tractors for North America and Asia Pacific regions are generally equipped with a **2-Post Foldable ROPS** frame, this option is limited to certain markets due to legal requirements covering operator protection.

All platform tractors have a flat floor design and can be equipped with most of the options enjoyed by cab models. This means a customer enjoys all the benefits associated with a shuttle/powershift transmission, high flow hydraulics and the option of electronic draft control



CONTROL CENTRE

Whether it is the Deluxe or the Low Profile version both cabs offer the same standard of high quality workmanship. The ergonomically laid out controls, spaciousness and quiet environment enables the driver to achieve long hours of productive operation without fear of fatigue.

STEPS AND ACCESS

Two rear hinged wide opening doors make access easy from either side of the control centre. Wide self-cleaning steps allow safe and comfortable entry. Spacious interior and a flat floor mean controls are positioned without causing any obstruction or injury.

Safe entry and exit. Flat floor matting allows for a safe, clean working area.



OPERATOR'S SEAT

A choice of seats are available from the mechanical suspension to the super deluxe air suspension system. The wide deep cushioned air suspension seat is the ultimate in driver luxury. A full range of movement in all directions including swivel adjustment enhances comfort during frequent rear vision operations.

Seat Code 17AU pictured

NOTE: Mechanical suspension is not available with swivel facility. The swivel cannot be used in the Low Profile cabs.

All seats are fitted with a seat belt as standard



The super deluxe seat offers cushion depth/length adjustment, integrated back rest extension, active carbon layer in the seat cushion.

The operator will maintain productivity by having a comfortable environment and seating position along with greater safety.

PASSENGER SEAT

(Code 27FC) (Code 27FD with seat belt)

This seat allows a colleague to ride in safety and comfort. When not in use it folds neatly into a storage position, not restricting access in any way.



The seat is designed so as not to compromise operator comfort or control.

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CONTROL CENTRE

STEERING WHEEL

The choice of a fixed or optional tilting/telescopic steering column is available. Using a single lever operation the steering wheel can be quickly and easily adjusted. Self-cancelling turn signals may also be specified.

A steering wheel position to suit any operator and operation.

VISIBILITY

All-round vision allows the operator to see his work whatever the task. The full length front windscreen provides uninterrupted forward viewing. Rear vision is equally as good both upwards and downwards to the hitch whilst the rear window opens wide to prevent any obstruction.

Vision to either side is clear with full length glass doors and narrow cab posts. The side windows open forward allowing for natural ventilation.



ROOF WINDOW LOW PROFILE (Optional)

A unique feature of the low profile cab is the upper window. This gives the operator unsurpassed vision to front end loaders especially when stacking bales or loading over a high trailer.

SUN SHADE FOR ROOF WINDOW

This is a two piece visor which covers the roof window and front screen. This comes as standard equipment within the cab code section 3



OPENING FRONT WINDOW (Optional)

An 85-degree opening front windscreen also allows additional ventilation. The wide opening means it will not impair the operator's forward vision.

All the control centre glass is green tinted and curved to cut down glare and heat penetration.



CONTROL CENTRE

FIXED MIRRORS (Code 27AF)

Rear view mirrors are mounted onto the cab "A" post preventing movement each time the doors are opened and closed.

TELESCOPIC MIRRORS (Code 27AC)

Telescopic mirrors allow the operator to see clearly behind. Quick, easy adjustment, without the use of spanners, will extend the mirrors to give clear vision behind the largest of trailers.



INTERIOR MIRROR (Code 27AE)

This provides additional vision and fits in the upper right hand corner of the cab window.

FLASHING BEACON

(Optional Code 27KC DLX Code 27KP LP cab)

A legal requirement for certain markets. The beacon is easy to mount and dismount and can be clearly seen by other vehicles.

LIGHTING

An additional 3 work lights can be fitted to either cab version giving excellent night time vision.

(One left hand rear fender work light is fitted as standard)

The location of the lights differs depending upon the cab.

Deluxe cab has the additional lights in the roof.

LP cabs have the lights on the front cab "A" post and rear fenders.

A superb lighting package means the productive working day can be extended for as long as necessary.



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CONTROL CENTRE

CONTROL CENTRE VENTILATION (DELUXE)

The blower in the cab provides a small positive pressure which helps keep the dust outside. Air is drawn through ventilation ducts at the side of the cab where the dust concentration is less. A hinged panel in the left hand side of the cab roof allows easy cab filter removal for simple cleaning.

Careful design helps to ensure a clean operator environment.



ROOF HATCH (Deluxe)

On non air-conditioned tractors a roof hatch is fitted which may be opened for additional ventilation or an alternative emergency escape route.



HEATING SYSTEM (DELUXE)

A roof mounted heater provides hot air for cab heating and for demisting the whole glass area of the control centre. The controls are simple, easily accessible and seven adjustable louvres allow all parts of the control centre to be reached. Re circulation louvres at the rear allows the temperature to rapidly warm up within the cab.

The powerful heating and demisting system allows all weather operation and saves time by keeping glass clear. As a result it improves safety. The air-conditioning system is designed as an integral part of the control centre.

AIR CONDITIONING

A factory fitted air-conditioning system is also available for both the **high and low roof cabs**. This helps ensure the operator is comfortable in all types of climatic conditions.

SUN VISOR DLX & LP without sun roof

A fully adjustable sun visor provides a welcome relief during those periods in the day when the sun is an awkward distraction.



CONTROL CENTRE

VENTILATION (LOW PROFILE)

The blower unit is conveniently located in the left hand corner of the cab. Air is drawn in through ducts located at the top of the cab. An air filter within the blower unit can be quickly removed and cleaned.

HEATING SYSTEM (LOW PROFILE)

Comprehensive air louvres on the instrument console provide rapid windscreen demisting. Fully adjustable louvres on the blower unit direct air to all areas of the cab. A re-circulation grille on the blower unit allows the temperature to quickly warm up within the cab.



The blower and heater controls are located on the unit to the left of the driver.

The rapid and efficient heating and ventilation system enables the operator to work the tractor whatever the weather conditions.

REAR FENDERS

A choice of rear fenders are available for either cab:



Code 22BC Narrow 1.95m width



Code 22BD Wide 2.05m width

Code 22BE Extra wide 2.21m

Includes side and rear contoured extensions as on MTX models.



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CONTROL CENTRE

REAR EXTENSIONS NARROW FENDER 1.95m (Code 27CG.)

These can be fitted to the narrow fender to prevent debris being thrown up onto the windows as well as keeping the rear lights clean.

They can be retro fitted by ordering the following part numbers

310777A3 RH fender extension

310778A3 LH fender extension



Cleaner cab windows not only enhance the appearance but reduce the risk of accidents occurring during operation

WINDSHIELD WASH/WIPER

A front windshield two speed wash/wiper is controlled from the panel above the operator's head. The unit may be equipped with an intermittent position.

Low Profile versions have the control switch mounted in the centre post.



REAR WASH/WIPER (Code 27AN)

A centre mounted rear wash/wiper is available. The centrally mounted motor reduces obstruction to the driver's rear vision.

The accessible wiper control contributes to ease of tractor operation in all weathers

TOOLBOX (Code 27RC)

A toolbox is located on the right hand side of the tractor and can be quickly and easily detached from the tractor for safe keeping



CONTROL CENTRE

IN-CAB ENTERTAINMENT

Radio ready cabs allow the customer to fit the entertainment equipment of his choice.

For Low Profile versions a radio kit is available for mounting in the roof to the right of the operator.



CABLE ACCESS

Cables are easily passed into the cab through this convenient panel in the right hand corner, the rear window glass is designed to allow it to close, therefore keeping out dirt and debris.

Implement monitors are conveniently located for easy reading.



MOUNTING POINTS

Monitors for sprayers and electrical control boxes can be attached to the front, centre or rear cab posts using the pre-drilled holes.

POWER SOCKETS

Two in-cab power sockets, one located at the front on the steering column, one on the rear right hand console provide auxiliary power for monitors, CB radios and other 12-volt equipment. An external 7-pin trailer socket provides an electrical supply for implements or trailer warning lights.

All CX tractors are pre-wired ready to accept connections into features such as monitors and display units.

Additional power supplies increase the operating flexibility and conveniently located positions eliminate unsightly cabling.



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INSTRUMENTATION

A comprehensive instrument cluster provides the operator with all the information on the tractor's performance and possible malfunctions.

Available with either an analogue or deluxe digital display each cluster goes through a self-test procedure each time the ignition is switched on to ensure all warning systems are correctly functioning.

DELUXE DIGITAL DISPLAY

The bank of lights at the top of the cluster alert the operator of any warning or that the selected function is in operation. A large master light will flash telling the operator a potential problem exists.

The dual read-out display allows all working speeds to be quickly seen at the touch of a button.

The upper display shows forward speed in either Mph or Kph.

The lower display alternates between engine speed and P.T.O. speed depending on the operator's selection.



AREA MEASURE AND DISTANCE COUNTER

By using two of the touch pads below the digital display, the operator can press the area function pad and the upper display will show either "A" for acres or "H" for hectares. The lower display will show the total area worked. Press and release a second time and the lower display will change to show area per hour worked. If the pad is held in, the display will alternate between the two.

Pressing the other touch pad will display the distance counter. The upper digital display will show either ("ft") feet or ("m") metres with the lower display showing total distance travelled. Press a second time and it will display distance in either ("m") miles or ("km") kilometres.

Useful when marking out for drill or sprayer calibration.

Other useful features include:

Low level fuel warning lights

Digital clock

Hour meter registering engine running hours and tenth's of hours

Programmable service timer.

Wheel slip percentage read-out (if equipped with radar)

INSTRUMENTATION

RADAR SENSOR

Code 27JF & 27JE (UK market)

This feature provides accurate forward speeds to be measured and displayed on the digital instrument package. When the radar sensor is fitted the digital instrument cluster will display the percentage wheel slip in the form of arrows and blocks at the top of the cluster. Each symbol represents 2% and the green sector above indicates the optimum operating efficiency.

ANALOUGE INSTRUMENTATION

Similar to the digital cluster this provides engine rpm and forward speeds using a traditional analogue type display. P.T.O. rpm is marked off on the engine scale.

Gauges show fuel level and water temperature.



KEY FEATURES

- Choice of control centre or platform models
- Excellent ventilation
- Superb all-round visibility
- Ergonomically laid out controls
- Comprehensive instrumentation
- Comfortable quiet working environment (73dBA)
- Easy access, wide steps, wide opening doors

CX75 CX85 CX95 CX105

SERVICEABILITY

DAILY CHECKS

Daily checks on the CX models are quick and easy. The engine oil dipstick is removed without lifting the bonnet and a visual inspection of the coolant level can be made through the screened side panel. At the rear of the tractor a dipstick provides checks for the transmission and hydraulic oil levels.



ENGINE OIL FILTER

The spin-on engine oil filter is easy to remove and should be changed at 500 hour service intervals.

Longer servicing intervals

By making service clean and simple, it is more likely to get done correctly.

ENGINE ACCESS

The engine hoodsheet is simply opened by a pull lever, it is hinged at the rear, gas struts securely support the hood in the raised position. This allows complete access to the engine.



SERVICEABILITY

OIL COOLER ACCESS

After opening the hoodsheet complete access is allowed to the oil, air-conditioning condenser and water radiator area. Simply loosen the retaining nut and the cooler hinges forward for enhanced radiator access.

No need to struggle with difficult access. Complete engine exposure is accomplished very simply.



TRANSMISSION AND HYDRAULIC OIL

As mentioned in the daily checks a dipstick at the rear of the tractor allows the oil level to be checked quickly. The transmission and hydraulics both use a common reservoir which allows a large volume of oil to be used for tipping trailers, etc.

A large capacity oil filter ensures that the oil is kept in top condition. This filter is changed at 500-hour intervals.

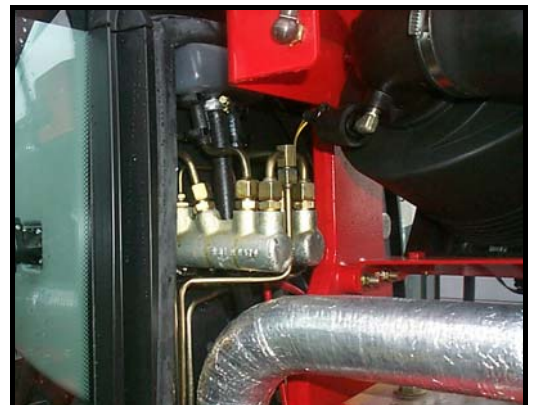


High reliability and long life are ensured by the transmission and hydraulic system oil protection system. Easy filter changes save time.

BRAKE “KEEP FILL” RESERVOIR

The reservoir for the hydraulic brakes is automatically kept full by the hydraulic system. There is no need to check or top up the fluid at regular intervals. (Note this reservoir is not fitted if power boosted brakes are equipped)

Careful design has minimised the time required for servicing and maintenance.



CX75 CX85 CX95 CX105

GENERAL

BATTERY

A standard 650 amp or heavy duty 810 amp battery is mounted under the right hand side of the control centre below a quickly detachable protective cover. This mounting keeps the battery away from the heat of the engine and makes it easy to check.

The sensible mounting of the battery improves the reliability of the tractor starting system to save time and reduce frustration.



MASTER DISCONNECT SWITCH (Code 27JK)

This isolates the electrical system required for certain markets. This is located under the bonnet adjacent to the air filter.



ELECTRICAL FUSES

The electrical system is protected by fuse panels mounted either side of the instrument cluster. Each automotive type fuse is fully identified to make fault finding and replacement easier.

Not only is the electrical system fully protected, repairs and fault diagnosis are made simpler to save on downtime.



DIMENSIONS

2WD	Deluxe Cab	Low Profile Cab
Wheelbase mm	2371	
4WD		
Wheelbase mm	2356	
Ground clearance under pick-up hitch mm	348	
Overall length (rear links-front weights) mm	4209	
Overall width across rear fenders mm	2147 (wide fenders) 1964 (narrow fenders)	

OVERALL HEIGHT CHART

		CX Low Profile Cab		CX Deluxe Cab	
Axle Centre Line to Roof		1800	70.87	2000	78.4
Tyre Size	Static Loaded Radius	mm	Inches	mm	Inches
13.6R28	610	2410	94.88	2610	102.76
14.9R28	640	2440	96.06	2640	103.94
16.9R28	670	2470	97.24	2670	105.12
14.9R30	665	2465	97.05	2665	104.92
16.9R30	695	2495	98.23	2695	106.10
18.4R30	720	2520	99.21	2720	107.09
480/70R30	695	2495	98.23	2695	106.10
12.4R32	640	2440	96.06	2640	103.94
16.9R34	745	2545	100.20	2745	108.07
18.4R34	770	2570	101.18	2770	109.06
480/70R34	745	2545	100.20	2745	108.07
520/70R34	770	2570	101.18	2770	109.06
540/65R34	745	2545	100.20	2745	108.07
540/70R34	770	2570	101.18	2770	109.06
600/65R34	744	2544	100.16	2744	108.03
12.4R36	690	2490	98.03	2690	105.91
13.6R36	715	2515	99.02	2715	106.89
13.6R38	740	2540	100.00	2740	107.87

This chart shows the overall height of the tractor on the different tyre sizes.

NOTE: The static loaded radius will vary between tyre manufacturers creating a slight difference to the overall heights.

The static loaded radius figure quoted in the chart above is the European standard of a non-loaded tyre.

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LIFTMASTER 2000 FRONT END LOADER

The LiftMaster 2000 front end loaders are specially designed for the CX Series. The sub frame is a full length concept with rear mounting to the axle housings. This structural design adds strength and rigidity, whilst the 'Quick hitch' couplers ensure loader removal is quick and effective.



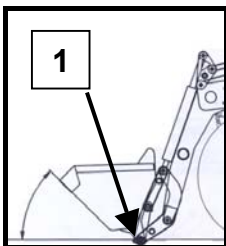
Specification data

		CX SERIES
Lifting capacity		
*Lift capacity @ pivot point. Ground level		2142kg
*Lift capacity @ pivot point. Max height		2422kg
Breakaway capacity (with bucket)		4890kg
Lifting height		
Height at pivot points		3.88 metres
Height with bucket in dump position		2.99 metres
Lifting time		
Lift from ground to max height	(Seconds)	4.5 at engine rated speed
Weight		
Without attachment		308kg
Other features		
Parallel linkage		Standard
Twin accumulator shock absorbers		Optional

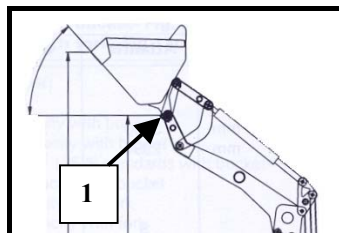
NOTE: Lift capacity includes 120 kg bucket.
The factory **does not** offer a counterbalance weight block. It is recommended that for counterbalance purposes the following rear wheel weights are fitted.

CX = 6 x 54kg rear wheel weights (3 per side)

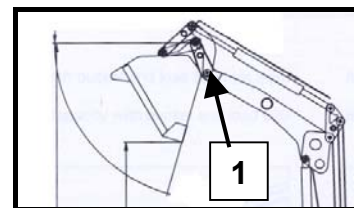
Working angles from pivot point (1)



Bucket crowd 45°



Bucket tilt 48°



Bucket dump 74°

LIFTMASTER 2000 FRONT END LOADER

JOYSTICK CONTROL

A joystick to the driver's right allows the driver total control of the front loader.

Options

There is a choice of a 2 or 3 function joystick.

2 function = raise/lower and tilt fore/aft.

3 function = raise/lower, tilt fore/aft plus additional valve block for operating grab.

NOTE:

The third function is activated from the electric switch at the front of the joystick.



'QUICK HITCH' COUPLINGS

Quick, clean coupling fitment and removal ensures the operator does not have to individually connect couplings and encounter the problems such as pressurised pipes and oil spillage.

NOTE:

There is the possibility to have the loader with individual Couplings. (No quick hitch)



ACCUMULATORS (Optional)

Connected to the lifting circuit, two nitrogen filled shock accumulators are available. These not only help protect the hydraulic system, but enhance the ride comfort over rough ground.

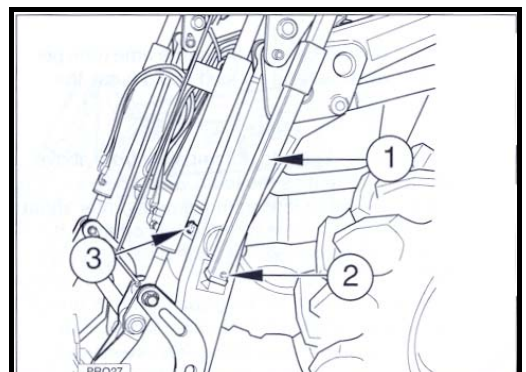


LOADER DETACH

The loader can be removed from its sub frame quickly, safely and easily. Two support legs (1), which are permanently fixed to the frame are pulled out and swung down into position.

Two retaining pins located to the rear of the loader frame and securing the lower part of the loader are removed. A 'jack handle' on the end of the support leg frame (2) allows the operator to raise the loader and release it from its upper mountings.

The operator can now simply drive the tractor out leaving the loader in position.



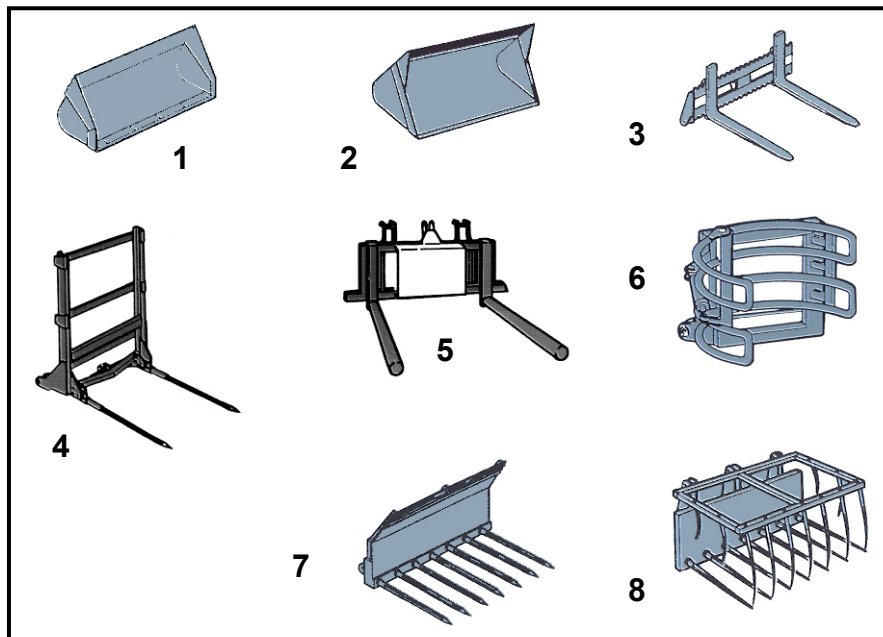
CX75 CX85 CX95 CX105

LIFTMASTER 2000 FRONT END LOADER

ATTACHMENTS

A variety of attachments are available for the McCormick front loaders including:

- 1) Earth bucket. (Std 1794mm / large 2200mm)
- 2) Grain bucket. (Std 1794mm / large 2200mm)
- 3) Pallet forks. (Special order only)
- 4) Bale fork.
- 5) Round bale fork with clamp.
- 6) Round bale fork with grab. (Bale size 1.8 x 1.2 m)
- 7) Manure fork (1645mm wide)
- 8) Manure fork with grapple (1645mm wide)



EURO HITCH (Tool Carrier)

In addition to the attachments, there is also a 'Euro hitch' option that allows the customers to fit other certain manufacturer's attachments.

NOTE:

Attachments from other loaders **will not fit** on the McCormick loader **without** the Euro hitch.

Key features

- Quick loader detach
- Full length sub-frame design
- Parallel linkage standard
- 'Quick hitch' couplings
- Joystick control