

# European Tractor Pulling Committee



## Limited Super Stocks Rules (LSS)

### A. Chassis

It shall consist of the following:

1. The stock engine block or OEM engine block that will operate with the stock crankshaft for that model without any alterations for chassis mounting.
2. Engine block must remain in original location as specified by manufacturer.
3. All engines must be secured and held rigid to OEM chassis. Engine cannot move independent of rear end/transmission housing.
4. The stock transmission housing or manufacturer's replacement and the stock final drive housing or manufacturer's replacement. Planetaries are considered part of final drive and are not removable. Machining OEM components is allowed. Welding of cast iron is not allowed. Welding of wheel-hub to drive-axle only on the outside of the wheel.
5. The OEM engine block cannot be modified externally, except for normal repair or for mounting of fuel injection equipment.
6. Internal webbing and water jacket must remain intact with provisions to re-bore engine block.
7. A deck plate between the bottom of the cylinder head and the top of the engine block is allowed. The maximum distance between the centreline of the crankshaft and the top of the engine block including deck plate and gasket-material is 410 mm. Deck plate must have same bore diameter as engine, from bottom to top of plate.
8. Any alterations to the chassis shell must have the written approval of the ETPC Tech and Safety Board and the national Tech and Safety Board, before the tractor in question will be considered legal.
9. The chassis and frame must remain stock from the rear of the engine block to the rear of the tractor.
10. The only vehicles that are considered legal in the Limited Superstock class are those that are available as farm tractors with front wheel steering.
11. The clutch housing, transmission case, rear end housing and axle housing must be OEM. Machining OEM components is allowed. Welding of cast iron is not allowed. Non-component Limited Super Stocks allowed to use a steel clutch protection/housing under the following criteria:
  - Replacement steel clutch protection/housing must:
    - Be constructed according ETPC GENERAL RULES in chapter 2.10 point B 1-5.
    - Have external shape as the OEM housing.
    - Have the same length as the OEM housing.
    - Use OEM flange and connecting bolts.

12. One piece engine main cap bearings allowed. One piece main cap not considered a girdle.
13. The use of a spacer between engine block and clutch housing is allowed with a maximum additional thickness of 35 mm. An aluminium spacer-plate cannot be part of the clutch protection.
14. The ETPC will allow component tractors in the Limited Super Stock class under the following criteria:
  - a. Must install a one-piece frame extending from front of tractor to rear axle-housing with an ETPC approved bellhousing (chapter 2 point D) to replace the original clutch housing. Must also install non-cast-iron transmission and rear end to replace the original equipment transmission and rear-end/final drive housing. No cast iron type transmission or rear-end/final drive housing components allowed.
  - b. Drawbar and roll cage must be part of the frame structure.
  - c. Engine block of given brand must remain consistent with that brand sheet metal.
  - d. Engine location of component Limited Super Stocks: centreline of the crankshaft may be below the centreline of rear wheels but must be parallel to the ground +/- 2 degrees. From centreline of rear wheels to centre height of front of crankshaft max. drop of 75 mm. Frame must be parallel to the ground +/- 2 degrees. This equals approximately 100 mm of fall from centreline of rear wheels to the 2900 mm wheelbase point. This to be measured with tyres, hitch and weight in ready-to-pull position.
  - e. All engines in component Limited Super Stock tractors to be mounted no further forward than 1524 mm (60 inches) measured from the centreline of the rear axle to rear of the engine block.
  - f. Crankshaft centreline has to be between top and bottom main rail of the frame. Bottom of main rail maybe no more than 150 mm below centreline of crankshaft from rear of engine to front axle.  
*Note: after introduction of the skid plates under the front of tractors many use the frame to weld the skid plate tubes on, this is not seen as frame part that must be max 150 mm below centre line of crankshaft.*
  - g. All tube ladder type frames must be covered on the outside with steel or aluminium 2 mm thick and run in the same plane as the crankshaft.
  - h. Appearance to remain stock of given brand and model.
  - i. Driveline shielding must conform to the same rules as Modified tractors.
  - j. All component tractors can run a maximum of 2900 mm wheel base, with a maximum overall length of 4000 mm from centre of rear wheel to forward-most point.
  - k. The constructions of component tractors must be pre-approved by national tech inspectors. All dimensions must be measured and, together with pictures, be on a file and signed before the vehicle is allowed to compete. This file has to stay with the tractor and it must be shown upon Tech Inspectors request.

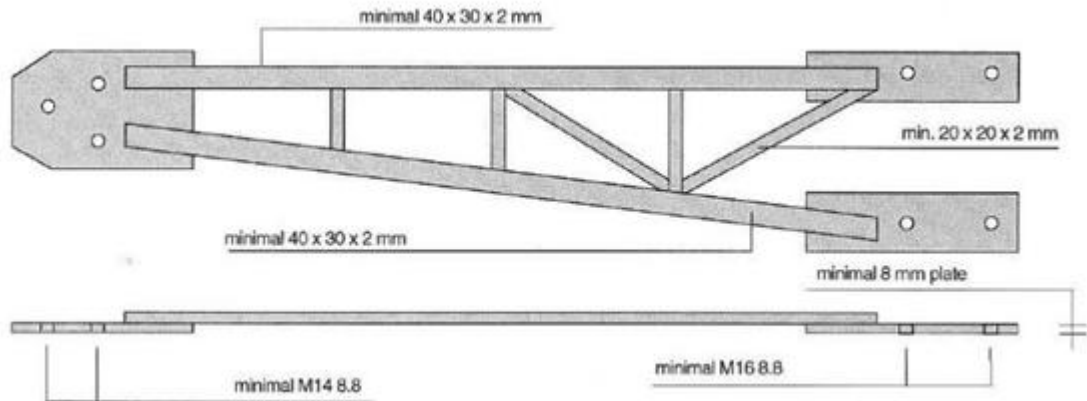
## **B. Frame/sheet metal**

1. Tractor must have hood and grill in place as intended by the manufacturer.
2. Sheet metal can be up or downgraded to present or past manufacturer by approval of ETPC Tech and Safety Board and national Tech and Safety Board.
3. Sheet metal to be stock length and in stock location.
4. Tractor must retain stock appearance.
5. The distance from the centre of the rear axle to that part of the hood that is farthest forward must be the same length as that model of the upgraded sheet metal.
6. Wheelbase rule will apply according to the original chassis, not to the model of the upgraded sheet metal.
7. Maximum wheelbase is 2900 mm unless originally produced with longer wheelbase, in which case the stock length must remain. Maximum length is 4000 mm from centre of rear wheel to forward most portion including weights and weight racks.
8. Limited Superstocks chassis rule A: 1-8 will apply according to the original chassis, not to the model of the upgraded sheet metal.

## C. Frame options

### 1. Tractor must have either:

- a. Safety tie bars made out of steel mounted to rear axle housing with at least four (4) axle housing bolts and extending forward of flywheel area and fastened to side of engine block or main frame with at least three (3) 14 mm steel bolts grade 8.8 (See illustration).



Or

- b. A one piece frame extending from front of tractor to rear axle housing mounting bolts.  
or
  - c. A divisible frame under the following conditions:
    - The steel split-frame construction must extend from front of tractor to rear axle housing mounting bolts.
    - The two pieces have to fit in one another (sliding in construction) in the area where the tractor can be split (clutch area).
    - The two pieces of the frame must be made of tubes or u-shaped steel with a thickness of at least 3 mm.
    - If the frame is made of u-shaped steel it must have a u-shaped connection bar inside min. 500 mm length (250 mm in the rear part and 250 mm in the front part of the u-shaped split frame).
    - If the frame is made out of tubes it must have inner tubes min. 500 mm length. 250 mm in the rear part and 250 mm in the front part of the tube-frame).
    - Rear part of the frame has to be mounted to rear-axle housing with at least four (4) axle-housing bolts and extending forward of flywheel area minimal M16 8.8 minimal M14 8.8 and fastened to side of engine block or motor-plate with at least three (3) M14 mm bolts min. Grade 8.8.
    - Two parts of frame must be locked together with at least two (2) fasteners of 8 mm steel.
    - Two piece frames must be of sufficient strength to support the weight of tractor with the bolts used to split the tractor removed.
2. Tie bars or frame must be of sufficient strength to support the weight of tractor with the bolts used to split the tractor removed.

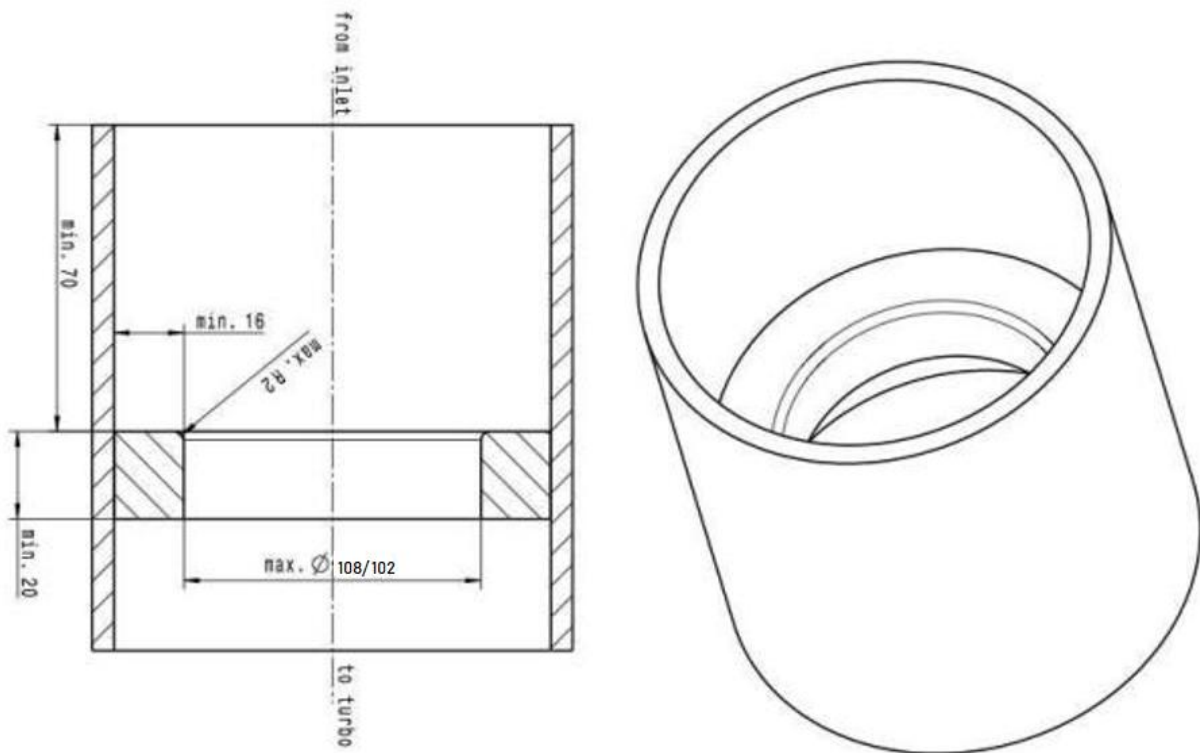
## D. Engines

### 1. Limited Super Stock class limited to:

- Engines that use methanol as fuel:(no other fuels allowed)
  - o Maximum 7636 cc (466 cubic inch)
  - o Existing LSS Tractors registered with the ETPC that were built according to the pre 2023 rules with engine size 8357 cc (510 cubic inch) are allowed but must have an air restrictor  $\varnothing$  102 mm – other dimensions the same as listed under point 2
  - o Air restrictors must be accessible for checking with ETPC size gauge/template

For 2023 season

- Engines 7636 cc (466 cubic inch) with turbo's 4.25 inch inlet diameter require no air restrictor
  - Engines 7636 cc (466 cubic inch) with turbo's >4.25 inch inlet diameter must have a restrictor of  $\varnothing$  108 mm made of metal according to the drawing and dimensions listed under point 2
2. Limited Super Stocks are limited to 1 (one) pressure stage with a maximum of 1 (one) turbo charger. The maximum diameter of the inlet side of the turbo housing is 110 mm (4.25 inch turbo). The maximum size of the turbo inlet allowed is 4.8 inch but for any turbo inlet >4.25 inch an air restrictor must be fitted with the following dimensions
- Internal diameter maximum 108 mm
  - Length maximum 100 mm.
  - Max length from the compressor wheel blade to the restrictor 50 mm
  - Minimum length from the compressor wheel blade to the restrictor 20 mm
  - Air restrictors must be accessible for checking with ETPC size gauge/template



3. All turbo charged inline engines must have a cable totally surrounding the engine block and head. See ETPC General Rules chapter 2, par. I-13 for details.
4. Engine cylinder head(s) must be OEM agricultural type for that brand engine and matching the original engine block, no mixing of brand. Within a brand it is allowed to make a combination of cylinder head and engine block (e.g. 40 serie JD engine with 50 serie head). There must be a minimum of 150 units produced of this engine block and cylinder head(s). Replacement cylinder head(s) used must be available under the part number from the manufacturer of that engine brand as listed in the original parts catalogue for that particular engine. If the brand no longer manufactures that cylinder head(s) and an alternative supplier now produces them these are acceptable as long as they are approved as a 'true' replacement copy by the original brand manufacturer and conform to all other rules.

For all engines designed as 'water cooled' within the cylinder head system the original water channels must be present as per the original production cylinder head(s) casting

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used in serial production. The original cylinder head(s) must be able to fit and work with the standard agricultural tractor engine as intended in normal daily use within agriculture – operationally not just functionally (i.e. must continue to work continuously over a number of hours).“Air cooled’ cylinder head(s) must be as per original serial production casting.

No recasting of cylinder head(s). Recasting will be defined as the process of manufacturing with an alternative mould/template to the one used in serial production. Aftermarket machining and modifications allowed on the cylinder head(s) casting. No alterations to the casting allowed that will alter the original air inlet and outlet positions or bolt pattern. Bolt pattern head to block must be as original.

Connection side of inlet and exhaust manifolds must be 90 degrees with head gasket or OEM.

If there is any question of legality of cylinder head(s) it is up to the team to prove that the engine block and cylinder head combination is legal. If it cannot be confirmed that it is a legal combination ETPC will enforce the maximum penalty of a 1 year and 10 days ban for that tractor and team.

5. An intercooler is not allowed
6. Water injection is allowed
7. Fuel is allowed only in the runners to the intake port and head not in the Intake manifold and tubing
8. Cam shaft must be in original OEM location for the engine type used
9. Conversion from 4-stroke into 2-stroke is prohibited
10. Downsizing or upsizing is allowed
11. Maximum 1 (one) spark plug per cylinder

#### **E. Clutches**

1. Only mechanically activated clutches are permitted. Hydraulic engagement is allowed.
2. Clutches and clutch protections: see ETPC GENERAL RULES chapter 2, par. D.

#### **F. Shatter Blankets**

1. Shatter blankets must be on the inside of the tiebar or one piece frame and the tiebar must be fastened forward of the rear of the engine block. However, in some occasions there is no space for the blanket inside of the tiebar or the one piece frame, in that case as written approval from ETPC or affiliated organisation must be available to Tech inspectors.

#### **G. Firewall/deflection shield**

1. Steel deflection sheet between driver and engine from top of the hood to top of torque tubes or transmission or clutch housing from side shield to side shield, minimum 2 mm thick. This also serves as a flash fire shield.

#### **H. Starting Chemicals**

1. All ether bottles (or starting aids) must be placed outside of engine compartment.

#### **I. On board fire control systems**

1. Limited Superstock tractors that require tools for removal of side shields must be equipped with an on board fire control system. On board system nozzles must be in engine compartment.
2. Limited Superstock tractors utilising on board fire control extinguishing systems must place one nozzle on each side of engine, inside the engine compartment. Not to be attached to the sheet metal.

## **J. Legality**

1. If the ETPC or national organisation doubts the legality of any entry, or upon protest by another contestant in that class, contestant in question must verify that 150 units of the tractor in question have been manufactured (notarised statement from the manufacturer), furnish parts numbers, and prove to the Board's satisfaction that the tractor is legal.

## **K. Tyres**

1. Maximum rim size 38 inches.
2. Maximum tire size with 38"rim: 580/70R38 (20.8-38),  
with 34"rim 620/75R34 (23.1-34)  
and with 32"rim: 650/75R32 (24.5-32).

