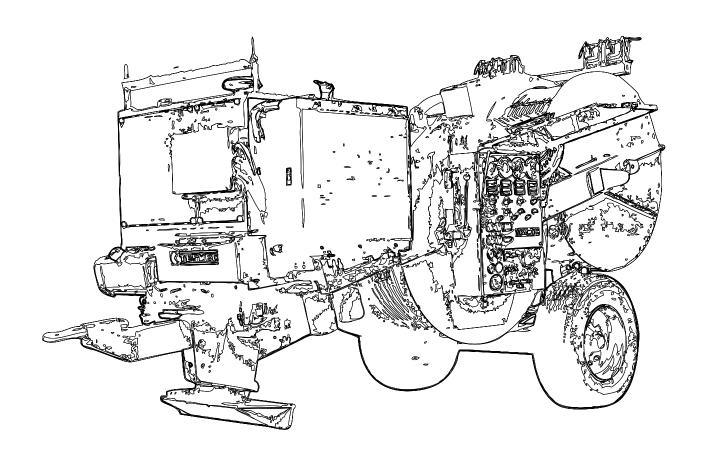
TENSIONERS





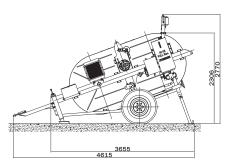
HYDRAULIC TENSIONER FRS 301

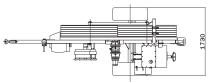
The machine is suitable to string one rope and cable conductor with fibre-optical cables (OPGW). The bull-wheel grooves are made up of high resistance interchangeable nylon sectors











PERFORMANCE

| Max tension | 25 kN |
|-------------|--------|
| Max speed | 5 km/h |

Note: the basic machine performance is calculated at 20°C and at sea level

CHARACTERISTICS

| Bull-wheel diameter | 1500 mm |
|------------------------|---------|
| Max conductor diameter | 36 mm |
| Mass | 1950 kg |
| | |

HYDRAULIC TRANSMISSION

Hydraulic open circuit that provides very sensitive tensioning control and negligible deviations of tension in case of speed change

CONFIGURATION

Negative self-acting hydraulic brake

Hydraulic dynamometer

Hydraulic oil cooling system

Mechanical meter counter

Rigid axle for towing at max speed of 30 km/h with mechanical parking brake

Gearbox with 3 operating positions:

- neutral position (with free bull-wheels for conductor loading and unloading)
- low tension position (1.5 ÷ 5 kN)
- nominal tension position

Mechanical actuated front plough stabiliser

Grounding device on board



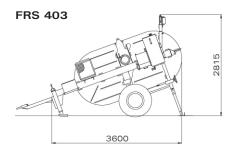
HYDRAULIC TENSIONERS FRS 403 FRS 400

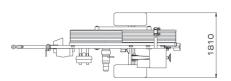
The machine is suitable to string one or two ropes or bundled conductors. The bull-wheel grooves are made up of high resistance interchangeable nylon sectors

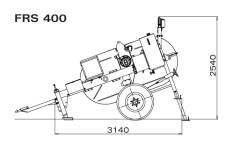


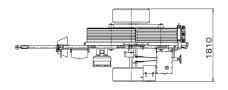












PERFORMANCE

| Max tension | 40 kN |
|-------------|--------|
| Max speed | 5 km/h |

Note: the basic machine performance is calculated at 20°C and at sea level

CHARACTERISTICS Mod. FRS 403

| Bull-wheel diameter | 1500 mm |
|------------------------|---------|
| Max conductor diameter | 34 mm |
| Mass | 2300 kg |

CHARACTERISTICS Mod. FRS 400

| 1200 mm |
|---------|
| 34 mm |
| 1900 kg |
| |

HYDRAULIC TRANSMISSION

Hydraulic open circuit that provides very sensitive tensioning control and negligible deviations of tension in case of speed change

CONFIGURATION

Negative self-acting hydraulic brake

Hydraulic dynamometer

Hydraulic oil cooling system

Mechanical meter counter

Rigid axle for towing at max speed of 30 km/h with mechanical parking brake

Gearbox with 3 operating positions:

- neutral position (with free bull-wheels for conductor loading and unloading)
- low tension position (2 ÷ 6 kN)
- nominal tension position

Mechanical actuated front plough stabiliser

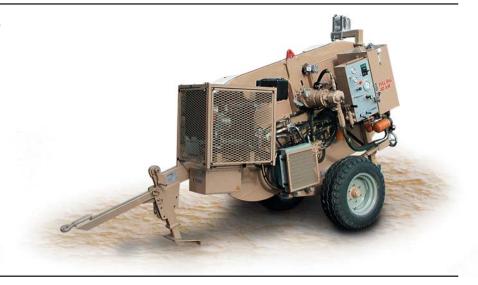
Grounding device on board

ADDITIONAL DEVICES



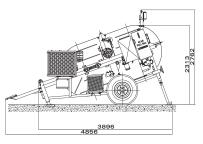
HYDRAULIC TENSIONER FRS 404

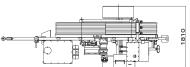
The machine is suitable to string one or two ropes or bundled conductors. The bull-wheel grooves are made up of high resistance interchangeable nylon sectors











TENSIONER PERFORMANCE

| Max tension | 40 kN |
|-------------|--------|
| Max speed | 5 km/h |

PULL-BACK PERFORMANCE

| Max pull | 40 kN |
|-----------|----------|
| Max speed | 0,8 km/h |

Note: the basic machine performance is calculated at 20°C and at sea level

CHARACTERISTICS

| mm |
|------|
|) kg |
| |

ENGINE

| Diesel | 25 kW (34 hp) |
|-------------------|---------------|
| Cooling system | water |
| Electrical system | 12 V |

HYDRAULIC TRANSMISSION

Hydraulic open circuit that provides very sensitive tensioning control and negligible deviations of tension in case of speed change

CONFIGURATION

Negative self-acting hydraulic brake

Hydraulic dynamometer

Hydraulic oil cooling system

Mechanical meter counter

Rigid axle for towing at max speed of 30 km/h with mechanical parking brake

Gearbox with 3 operating positions:

- neutral position (with free bull-wheels for conductor loading and unloading)
- low tension position (2 ÷ 6 kN)
- nominal tension position

Hydraulic power pack to control up to 2 separate drum stands with hydraulic motor, not independent control

Mechanical actuated front plough stabiliser

Grounding device on board

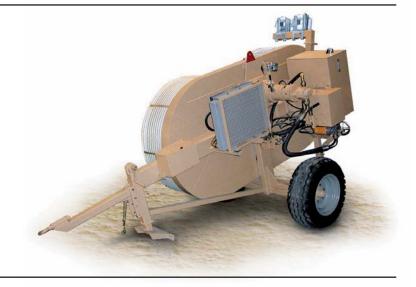
ADDITIONAL DEVICES

037 Preheating device for use up to -30° C



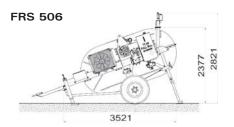
HYDRAULIC TENSIONERS FRS 506 FRS 500

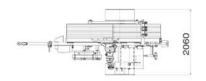
The machine is suitable to string one or two ropes or bundled conductors. The bull-wheel grooves are made up of high resistance interchangeable nylon sectors

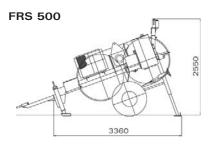


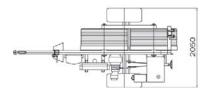












PERFORMANCE

| Max tension | 75 kN |
|-------------|--------|
| Max speed | 5 km/h |

Note: the basic machine performance is calculated at 20°C and at sea level

CHARACTERISTICS Mod. FRS 506

| Bull-wheel diameter | 1500 mm |
|------------------------|---------|
| Max conductor diameter | 34 mm |
| Mass | 2900 kg |
| | |

CHARACTERISTICS Mod. FRS 500

| Bull-wheel diameter | 1200 mm |
|------------------------|---------|
| Max conductor diameter | 34 mm |
| Mass | 2400 kg |

HYDRAULIC TRANSMISSION

Hydraulic open circuit that provides very sensitive tensioning control and negligible deviations of tension in case of speed change

CONFIGURATION

Negative self-acting hydraulic brake

Hydraulic dynamometer

Hydraulic oil cooling system

Mechanical meter counter

Rigid axle for towing at max speed of 30 km/h with mechanical parking brake

Gearbox with 3 operating positions:

- neutral position (with free bull-wheels for conductor loading and unloading)
- low tension position (5 ÷ 20 kN)
- nominal tension position

Mechanical actuated front plough stabiliser

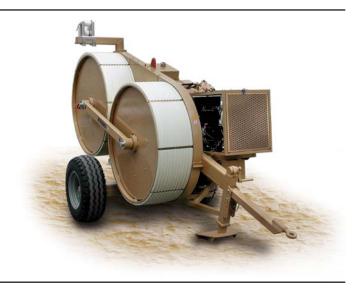
Grounding device on board

ADDITIONAL DEVICES



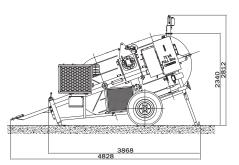
HYDRAULIC TENSIONER FRS 507

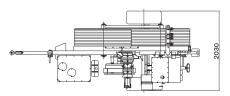
The machine is suitable to string one or two ropes or bundled conductors. The bull-wheel grooves are made up of high resistance interchangeable nylon sectors











TENSIONER PERFORMANCE

| Max tension | 75 kN |
|-------------|--------|
| Max speed | 5 km/h |

PULL-BACK PERFORMANCE

| Max pull | 75 kN |
|-----------|----------|
| Max speed | 0,7 km/h |

Note: the basic machine performance is calculated at 20°C and at sea level

CHARACTERISTICS

| Bull-wheel diameter | 1500 mm |
|------------------------|---------|
| Max conductor diameter | 34 mm |
| Mass | 3100 kg |
| | |

ENGINE

| Diesel | 25 kW (34 hp) |
|-------------------|---------------|
| Cooling system | water |
| Electrical system | 12 V |

HYDRAULIC TRANSMISSION

Hydraulic open circuit that provides very sensitive tensioning control and negligible deviations of tension in case of speed change

CONFIGURATION

Negative self-acting hydraulic brake

Hydraulic dynamometer

Hydraulic oil cooling system

Mechanical meter counter

Rigid axle for towing at max speed of 30 km/h with mechanical parking brake

Gearbox with 3 operating positions:

- neutral position (with free bull-wheels for conductor loading and unloading)
- low tension position (5 ÷ 20 kN)
- nominal tension position

Hydraulic power pack to control up to 2 separate drum stands with hydraulic motor, not independent control

Mechanical actuated front plough stabiliser

Grounding device on board

ADDITIONAL DEVICES

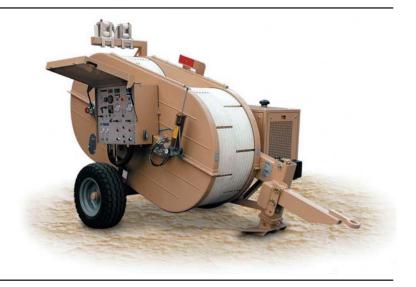
037 Preheating device for use up to -30° C



HYDRAULIC TENSIONER FRB 518

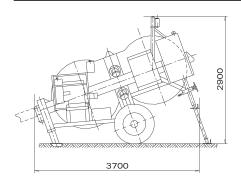
The machine is suitable to string one or two ropes or bundled conductors with two pairs of bull-wheels with completely independent controls. The bull-wheel grooves are made up of high resistance

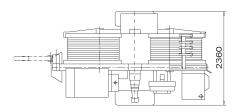
interchangeable nylon sectors. The machine is completely electronically controlled











TENSIONER PERFORMANCE

| Max tension | | 2 x 50 kN |
|-------------|----|------------|
| | or | 1 x 100 kN |
| Max speed | | 5 km/h |

PULL-BACK PERFORMANCE

| Max pull | | 2 x 50 kN |
|-----------|----|--------------|
| | or | 1 x 100 kN |
| Max speed | | 2 x 0.5 km/h |

Note: the basic machine performance is calculated at 20°C and at sea level

CHARACTERISTICS

| Bull-wheel diameter | 1500 mm |
|------------------------|---------|
| Max conductor diameter | 40 mm |
| Mass | 5200 kg |

ENGINE

| Diesel | 36 kW (48 hp) |
|-------------------|---------------|
| Cooling system | water |
| Electrical system | 12 V |

HYDRAULIC TRANSMISSION

2 hydraulic half-closed circuits that allow very sensitive tensioning control and negligible deviations of tension in case of speed change. The machine is provided with tension pre-setting system

CONFIGURATION

- 2 negative self-acting hydraulic brakes
- 2 hydraulic dynamometers

Hydraulic oil cooling system

- 2 digital meter counters
- 2 digital speed meters

Control instruments for hydraulic system and Diesel engine

Rigid axle for towing at max speed of 30 km/h with mechanical parking

Hydraulic power pack to control up to 2 separate drum stands with hydraulic motor

Electrical negative brakes opening system on connected machines

Hydraulically actuated front plough stabiliser

Grounding device on board

ADDITIONAL DEVICES

001 Lighting system for the trailer

002 Pneumatic brake system for the trailer

005 Hydraulic power take off to power a hydraulic press

037 Preheating device for use up to -30° C

071 2 hydraulically actuated pulling conductor clamps for drum change operation

080 Special nylon sectors kit

084 2 gearboxes with 3 operating positions:

- neutral position (with free bull-wheels for conductor loading and unloading)
- low tension position $(3 \div 12 \text{ kN})$
- nominal tension position

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Manufacturing facilities Via Provinciale, 26/28 23844 Sirone (LC) - Italy Tel: +39.031.858311 Fax: +39.031.853562

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HYDRAULIC TENSIONER FRB 616

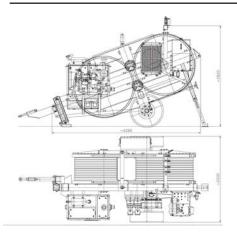
The machine is suitable to string one or two ropes or bundled conductors with two pairs of bull-wheels with completely independent controls. The bull-wheel grooves are

made up of high resistance interchangeable nylon sectors. The machine is completely electronically controlled









TENSIONER PERFORMANCE

| Max tension | | 2 x 70 kN |
|-------------|----|------------|
| | or | 1 x 140 kN |
| Max speed | | 5 km/h |

PULL-BACK PERFORMANCE

| Max pull | | 2 x 70 kN |
|-----------|----|--------------|
| | or | 1 x 140 kN |
| Max speed | | 2 x 0.7 km/h |

Note: the basic machine performance is calculated at 20°C and at sea level

CHARACTERISTICS

| Bull-wheel diameter | 1700 mm |
|------------------------|---------|
| Max conductor diameter | 46 mm |
| Mass | 7600 kg |
| | |

ENGINE D:---I

| Diesei | 48 KVV (64 NP) |
|-------------------|----------------|
| Cooling system | water |
| Electrical system | 24 V |

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HYDRAULIC TRANSMISSION

2 hydraulic half-closed circuits that allow very sensitive tensioning control and negligible deviations of tension in case of speed change. The machine is provided with tension pre-setting system

CONFIGURATION

- 2 negative self-acting hydraulic brakes
- 2 hydraulic dynamometers
- Hydraulic oil cooling system
- 2 digital meter counters
- 2 digital speed meters

Control instruments for hydraulic system and Diesel engine

Rigid axle for towing at max speed of 30 km/h with mechanical parking

Hydraulic power pack to control up to 2 separate drum stands with hydraulic motor

Electrical negative brakes opening system on connected machines

Hydraulically actuated front plough stabiliser

Grounding device on board

ADDITIONAL DEVICES

- 001 Lighting system for the trailer
- 002 Pneumatic brake system for the trailer
- 005 Hydraulic power take off to power a hydraulic press
- 037 Preheating device for use up to -30° C
- 2 hydraulically actuated pulling conductor clamps for drum change operation
- 2 gearboxes with 3 operating
 - positions:

 neutral position (with free bull-wheels for conductor loading and unloading)

 low tension position (5 ÷ 20 kN)

 - nominal tension position
- Connection of multiple machines and electronic speed synchronizing system

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HYDRAULIC TENSIONER FRS 615

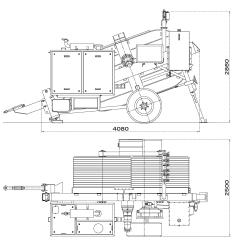
The machine is suitable to string one, two, three or four bundled conductors.

The bull-wheel grooves are made up of high resistance interchangeable nylon sectors. The machine is completely electronically controlled









TENSIONER PERFORMANCE

| Max tension | 140 kN |
|-------------|--------|
| Max speed | 5 km/h |

PULL-BACK PERFORMANCE

| Max pull | 140 kN |
|-----------|----------|
| Max speed | 1,8 km/h |

Note: the basic machine performance is calculated at 20°C and at sea level

CHARACTERISTICS

| Bull-wheel diameter | 1500 mm |
|------------------------|---------|
| Max conductor diameter | 40 mm |
| Mass | 6200 kg |

ENGINE

| Diesel | 48 kW (64 hp) |
|-------------------|---------------|
| Cooling system | water |
| Electrical system | 24 V |

HYDRAULIC TRANSMISSION

Hydraulic circuit that provides very sensitive tensioning control and negligible deviations of tension in case of speed change

CONFIGURATION

Negative self-acting hydraulic brake

Hydraulic dynamometer with set-point and automatic control of maximum pull

Hydraulic oil cooling system

Electronic meter counter

Control instruments for hydraulic system and Diesel engine

Rigid axle for towing at max speed of 30 km/h with mechanical parking brake

Hydraulic power pack to control up to 4 reel stands with hydraulic head, not independent control

Electrical negative brakes opening system on connected machines

Hydraulically actuated front plough stabiliser

Grounding device on board

ADDITIONAL DEVICES

001 Lighting system for the trailer

002 Pneumatic brake system for the trailer

005 Hydraulic power take off to power a hydraulic press

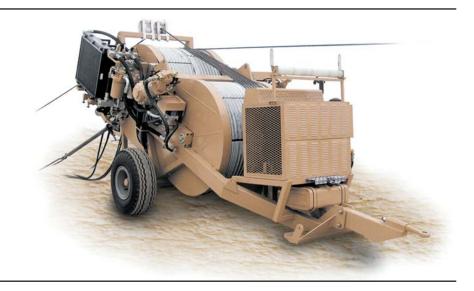
037 Preheating device for use up to -30° C



HYDRAULIC TENSIONER FRB 600

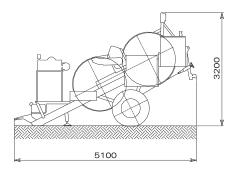
The machine is suitable to string one, two, three or four ropes or bundled conductors with two pairs of bull-wheels with completely independent controls.

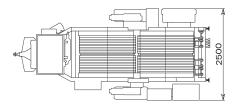
The bull-wheel grooves are made up of high resistance interchangeable nylon sectors. The machine is completely electronically controlled











TENSIONER PERFORMANCE

| Max tension | 2 x 75 kN |
|-------------|-----------|
| Max speed | 5 km/h |

PULL-BACK PERFORMANCE

| Max pull | 2 x 75 kN |
|-----------|-----------|
| Max speed | 0.6 km/h |

Note: the basic machine performance is calculated at 20°C and at sea level

CHARACTERISTICS

| Bull-wheel diameter | 1500 mm |
|------------------------|---------|
| Max conductor diameter | 38 mm |
| Mass | 7500 kg |

ENGINE

| Diesel | 48 kW (64 hp) |
|-------------------|---------------|
| Cooling system | water |
| Electrical system | 24 V |

HYDRAULIC TRANSMISSION

2 hydraulic half-closed circuits that allow very sensitive tensioning control and negligible deviations of tension in case of speed change. The machine is provided with tension pre-setting system

CONFIGURATION

2 negative self-acting hydraulic brakes

2 hydraulic dynamometers

Hydraulic oil cooling system

2 digital meter counters

2 digital speed-meters

Control instruments for hydraulic system and Diesel engine

Rigid axle for towing at max speed of 30 km/h with mechanical parking brake

Hydraulic power pack to control up to 4 separate drum stands with hydraulic motor with 2 independent controls

Hydraulically actuated front plough stabiliser

Grounding device on board

ADDITIONAL DEVICES

001 Lighting system for the trailer

002 Pneumatic brake system for the trailer

005 Hydraulic power take off to power a hydraulic press

037 Preheating device for use up to -30° C

071 4 hydraulically actuated pulling conductor clamps for drum change operation



HYDRAULIC TENSIONER FRT 607

This machine is suitable to string one, two, three ropes or bundled conductors with three pairs of bull-wheels with completely independent controls.

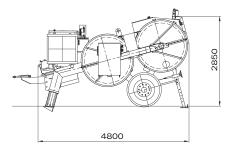
The bull-wheel grooves are made up of high resistance interchangeable nylon sectors.

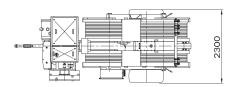
The machine is completely electronically controlled











TENSIONER PERFORMANCE

| Max tension | | | | | | 3 | X | 45 | kΝ |
|-------------|---|---|----|----|---|---|---|----|----|
| or | 1 | X | 90 | kΝ | + | 1 | X | 45 | kΝ |

Max speed 5 km/h

PULL-BACK PERFORMANCE

| Max pull | 3 x 45 kN |
|----------|---|
| or | $1 \times 90 \text{ kN} + 1 \times 45 \text{ kN}$ |

Max speed 3 x 1.3 km/h

Note: the basic machine performance is calculated at 20°C and at sea level

CHARACTERISTICS

| Bull-wheel diameter | 1500 mm |
|------------------------|---------|
| Max conductor diameter | 40 mm |
| Mass | 8700 kg |

ENGINE

| Diesel | 48 kW (64 hp) |
|-------------------|---------------|
| Cooling system | water |
| Electrical system | 24 V |

HYDRAULIC TRANSMISSION

3 half-closed hydraulic circuits that allow very sensitive tensioning control and negligible deviations of tension in case of speed change. The machine is provided with tension pre-setting system

CONFIGURATION

3 negative self-acting hydraulic brakes

3 hydraulic dynamometers

Hydraulic oil cooling system

3 digital meter counters

3 digital speed-meters

Control instruments for hydraulic system and Diesel engine

Rigid axle for towing at max speed of 30 km/h with mechanical parking brake

Hydraulic power pack to control up to 3 separate drum stands with hydraulic motor

Hydraulically actuated front plough stabiliser

Grounding device on board

ADDITIONAL DEVICES

001 Lighting system for the trailer

002 Pneumatic brake system for the trailer

005 Hydraulic power take off to power a hydraulic press

037 Preheating device for use up to -30° C

071 3 hydraulically actuated pulling conductor clamps for drum change operation



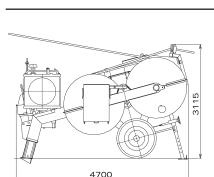
HYDRAULIC TENSIONER FRQ 800

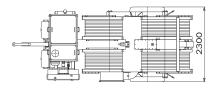
The machine is suitable to string one, two, three or four ropes or bundled conductors with four pairs of bull-wheels with completely independent controls. The bull-wheel grooves are made up of high resistance interchangeable nylon sectors. The machine makes it possible to recover the pulling rope when stringing a line with three bundled conductors by using a ring system.

The machine is completely electronically controlled











TENSIONER PERFORMANCE

| Max tension | | $4 \times 50 \text{ kN}$ |
|-------------|----|--------------------------|
| | or | 2 x 100 kN |
| Max speed | | 5 km/h |

PULL-BACK PERFORMANCE

| Max pull | | 4 x 50 kN |
|----------|----|------------|
| | or | 2 x 100 kN |

Max speed 4 x 0.9 km/h

Note: the basic machine performance is calculated at 20°C and at sea level

CHARACTERISTICS

| Bull-wheel diameter | 1500 mm |
|------------------------|----------|
| Max conductor diameter | 40 mm |
| Mass | 10500 kg |

ENGINE

| Diesel | 86 kW (115 hp) |
|-------------------|----------------|
| Cooling system | water |
| Electrical system | 24 V |

HYDRAULIC TRANSMISSION

4 half-closed hydraulic circuits that provide very sensitive tensioning control and negligible deviations of tension in case of speed change. The machine is provided with tension pre-setting system

CONFIGURATION

- 4 negative self-acting hydraulic brakes
- 4 hydraulic dynamometers
- Hydraulic oil cooling system
- 4 digital meter counters
- 4 digital speed-meters

Control instruments for hydraulic system and Diesel engine

Rigid axle for towing at max speed of 30 km/h with mechanical parking brake

Hydraulic power pack to control up to 4 separate drum stands with hydraulic motor

Hydraulically actuated front plough stabiliser

Grounding device on board

ADDITIONAL DEVICES

- 001 Lighting system for the trailer
- **002** Pneumatic brake system for the trailer
- **005** Hydraulic power take off to power a hydraulic press
- **037** Preheating device for use up to -30° C
- 071 4 hydraulically actuated pulling conductor clamps for drum change operation