



MACHINES AND EQUIPMENT UNDERGROUND CABLE LAYING

P17.1_EN



01 HYDRAULIC PULLERS



F265.P.20

max pull 20 kN



Hydraulic puller fit to pull one rope in laying underground transmission cables and optics fibre cables. One hydraulic circuit allows to continuously vary the speed in both directions by operating one control device.

FEATURES	

Capstans 2 x Ø 200 mm

Max rope diameter 8 mm

	ENGINE	
eeding	gasoline	
ower	18 hp / 13 kW	

Cooling air

Starting electric with battery 12 V

PULL PERFORMANCES

Max pull 20 kN Speed at max pull 18 m/min Max speed 65 m/min Pull at max speed 3,5 kN

REEL

extractable self-loading Type

Capacity of steel rope Ø 8 mm 800 m

DIMENSIONS AND WEIGHT (without rope)

2,10x1,50x1,20 m **Dimensions**

Weight 535 kg

CONFIGURATION

- One pair of multi-grooved steel capstans fit for stringing one steel rope.
- Dynamometer and preselector of max pull force.
- Mechanical metercounter.
- Safety negative hydraulic brake.
- Damped axle with tires and adjustable drawbar for towing at low speed in the job-site.
- Mechanical stabilisers on pull side and jack-arm with wheel on drawbar side.
- Attachments for anchoring and for lifting.
- Heat exchanger to cool the oil in the hydraulic circuit.
- Pulley for rope arranged for telescopic rod.
- Built-in reel-winder with automatic rope-winder and extractable reel Ø780 mm..

OPTIONAL DEVICES

003	Damped axle for towing on road, with mechanical brake
	(homologation excluded).
027	Metallic coverage with doors.
067	Telescopic rod to lay underground cables (art.F277).
069.2	Electronic device with USB port, to save the data of the pull.
028.3	Air cooled diesel engine with electric starting 19 HP/ 14 kW
	(it adds 50 kg to the machine weight).
069.5	Printer with accessories.



F215.P.30

max pull 30 kN



Hydraulic puller fit to pull one rope in laying underground transmission cables and optics fibre cables. One hydraulic circuit allows to continuously vary the speed in both directions by operating one control device.

FEATU	RES		ENGINE	PULL	PERFORMANCES
Capstans	2 x Ø 200 mm	Feeding	diesel	Max pull	30 kN
Max rope diameter	10 mm	Power	27,2 hp / 20 kW	Speed at max p	ull 16 m/min
Dimensions LxWxH	2,10x1,30x1,30 m	Cooling	water	Max speed	80 m/min
Weight (without rope)	1000 kg	Starting	12 V	Pull at max spe	ed 5 kN

REEL		
Туре	extractable	
Diameter	600 mm	
Capacity of steel rope:		
Ø8 mm	1000 m	
Ø 10 mm	650 m	

CONFIGURATION

- One pair of multi-grooved steel capstans fit for stringing one steel rope.
- Machine control panel equipped with built-in electronic instrument featuring a large graphic colour display and a USB port. Main functions include display of pull-force, speed and length of cable in real time, max pull force setting, display of working hours, data recording and storage on a pen-drive (data processing software provided).
- Safety negative hydraulic brake.
- Chassis with dumped axle, tires, overrun brake, manual brake and drawbar for towing in the job-site.
- Metallic coverage with doors.
- Mechanical stabilisers on pull side and jack-arm with wheel on drawbar side.
- Attachments for anchoring and for lifting.
- Heat exchanger to cool the oil in the hydraulic circuit.
- Pulley for rope arranged for telescopic rod.
- Built-in reel-winder with automatic rope-winder and extractable reel.

OPTIONAL DEVICES

006.4	Arrangement of the chassis for circulation on road
	(homologation excluded).
037	Remote control by cable, with 10 m of cable.
038	Radio-control (max distance 100 m).
051.3	Motorised rubber caterpillars.
038.C	Radio-control for caterpillars.
067	Telescopic rod to lay underground cables (art.F277).
069.5	Printer with accessories.



F275.P.50

max pull 50 kN



Hydraulic puller fit to pull one rope in laying underground transmission cables and optics fibre cables. One hydraulic circuit allows to continuously vary the speed in both directions by operating one control device.

FEATUR	RES
Capstans	2 x Ø 280 mm
Max rope diameter	14 mm
Dimensions LxWxH	3,10x1,70x1,75 n
Weight (without rope)	1900 kg

	ENGINE
Feeding	diesel
Power	35 hp / 26 kW
Cooling	water
Starting	12 V

PULL PERF	ORMANCES
Max pull	50 kN
Speed at max pull	13 m/min
Max speed	60 m/min
Pull at max speed	13 kN

REEL		
Туре	extractable	
Diameter	520 mm	
Capacity of steel rope:		
Ø 14 mm	750 m	
Ø 12 mm	1000 m	
Ø 10 mm	1200 m	

ALSO AVAILABLE F275.P.40		
Max pull	40 kN	
Speed at max pull	16 m/min	
Max speed	60 m/min	
Steel rope Ø 12 mm	1000 m	
Steel rope Ø 10 mm	1200 m	

CONFIGURATION

- One pair of multi-grooved steel capstans fit for stringing one steel rope.
- Machine control panel equipped with built-in electronic instrument featuring a large graphic colour display and a USB port. Main functions include display of pull-force, speed and length of cable in real time, max pull force setting, display of working hours, data recording and storage on a pen-drive (data processing software provided).
- Safety negative hydraulic brake.
- Chassis with dumped axle, tires, overrun brake, manual brake and drawbar for towing in the job-site.
- Metallic coverage with doors.
- Mechanical stabilisers on pull side and jack-arm with wheel on drawbar side.
- Attachments for anchoring and for lifting.
- Heat exchanger to cool the oil in the hydraulic circuit.
- Pulley for rope arranged for telescopic rod.
- Built-in reel-winder with automatic rope-winder and extractable reel.

OPTIONAL DEVICES

006.4	Arrangement of the chassis for circulation on road
	(homologation excluded).
037	Remote control by cable, with 10 m of cable.
038	Radio-control (max distance 100 m).
051.3	Motorised rubber caterpillars.
038.C	Radio-control for caterpillars.
067	Telescopic rod to lay underground cables (art.F277).
069.5	Printer with accessories.
082	Device for pull force setting, which allows to maintain the
	pre-set even at speed '0' (fit for pipe refurbishing).



F285.P.60

max pull 60 kN



Hydraulic puller fit to pull one rope in laying underground transmission cables and optics fibre cables. One hydraulic circuit allows to continuously vary the speed in both directions by operating one control device.

FEATURES		
Capstans	2 x Ø 300 mm	
Max rope diameter	10 mm	
Dimensions LxWxH	3,10x1,85x1,65 m	
Weight (without rope)	2000 kg	

	ENGINE
Feeding	diesel
Power	45,5 hp / 33,5 kW
Cooling	water
Starting	12 V

PULL PERFORMANCES		
Max pull	60 kN	
Speed at max pull	15 m/min	
Max speed	65 m/min	
Pull at max speed	18 kN	

REEL		
Туре	extractable	
Diameter	850 mm	
Capacity of steel rope:		
Ø 16 mm	850 m	
Ø 14 mm	1100 m	
Ø 12 mm	1500 m	

CONFIGURATION

- One pair of multi-grooved steel capstans fit for stringing one steel rope.
- Machine control panel equipped with built-in electronic instrument featuring a large graphic colour display and a USB port. Main functions include display of pull-force, speed and length of cable in real time, max pull force setting, display of working hours, data recording and storage on a pen-drive (data processing software provided).
- Safety negative hydraulic brake.
- Chassis with two damped axles (tandem), tires, overrun brake, manual brake and drawbar for towing in the job-site.
- Metallic coverage with doors.
- Mechanical stabilisers on pull side and jack-arm with wheel on drawbar side.
- Attachments for anchoring and for lifting.
- Heat exchanger to cool the oil in the hydraulic circuit.
- Pulley for rope arranged for telescopic rod.
- Built-in reel-winder with automatic rope-winder and extractable reel.

OPTIONAL DEVICES

006.4	Arrangement of the chassis for circulation on road
	(homologation excluded).
028.7	Device to start the diesel engine and the hydraulic circuit at
	low temperatures (up to -30°C).
037	Remote control by cable, with 10 m of cable.
038	Radio-control (max distance 100 m).
051.3	Motorised rubber caterpillars.
038.C	Radio-control for caterpillars.
067.1	Telescopic rod to lay underground operation (art.F276).
069.5	Printer with accessories.
082	Device for pull force setting, which allows to maintain the
	pre-set even at speed '0' (fit for pipe refurbishing).

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F285.P.100

max pull 100 kN



Hydraulic puller fit to pull one rope in laying underground transmission cables and optics fibre cables. One hydraulic circuit allows to continuously vary the speed in both directions by operating one control device.

FEATURES		
Capstans	2 x Ø 300 mm	
Max rope diameter	16 mm	
Dimensions LxWxH	3,10x1,85x1,65 n	
Weight (without rope)	2100 kg	

ENGINE		
Feeding	diesel	
Power	45,5 hp / 33,5 kW	
Cooling	water	
Starting	12 V	

PULL PERFORMANCES		
Max pull	100 kN	
Speed at max pull	11 m/min	
Max speed	55 m/min	
Pull at max speed	20 kN	

KEEL		
Туре	extractable	
Diameter	850 mm	
Capacity of steel rope:		
Ø 16 mm	850 m	
Ø 14 mm	1100 m	
Ø 12 mm	1500 m	

CONFIGURATION

- One pair of multi-grooved steel capstans fit for stringing one steel rope.
- Machine control panel equipped with built-in electronic instrument featuring a large graphic colour display and a USB port. Main functions include display of pull-force, speed and length of cable in real time, max pull force setting, display of working hours, data recording and storage on a pen-drive (data processing software provided).
- Safety negative hydraulic brake.
- Chassis with dumped axle, tires, overrun brake, manual brake and drawbar for towing in the job-site.
- Metallic coverage with doors.
- Mechanical stabilisers on pull side and jack-arm with wheel on drawbar side.
- Attachments for anchoring and for lifting.
- Heat exchanger to cool the oil in the hydraulic circuit.
- Pulley for rope arranged for telescopic rod.
- Built-in reel-winder with automatic rope-winder and extractable reel.

OPTIONAL DEVICES

	(homologation excluded).
037	Remote control by cable, with 10 m of cable.
038	Radio-control (max distance 100 m).
051.3	Motorised rubber caterpillars.
038.C	Radio-control for caterpillars.
067.1	Telescopic rod to lay underground operation (art.F276).
069.5	Printer with accessories.
082	Device for pull force setting, which allows to maintain the
	pre-set even at speed '0' (fit for pipe refurbishing).

Arrangement of the chassis for circulation on road



F280.P.150

max pull 150 kN



Hydraulic puller fit to pull one rope in laying underground transmission cables and optics fibre cables. One hydraulic circuit allows to continuously vary the speed in both directions by operating one control device.

FEATURES		
Capstans	2 x Ø 350 mm	
Max rope diameter	18 mm	
Dimensions LxWxH	3,50x1,95x1,70 n	
Weight (without rone)	3000 kg	

	ENGINE
Feeding	diesel
Power	68 hp / 50 kW
Cooling	water
Starting	12 V

PULL PERFORMANCES		
Max pull	150 kN	
Speed at max pull	10 m/min	
Max speed	30 m/min	
Pull at max speed	40 kN	

REEL		
Туре	extractable	
Diameter	950 mm	
Capacity of steel rope:		
Ø 18 mm	600 m	
Ø 16 mm	1000 m	

ALSO AVAILABLE F280.P.100		
Max pull	100 kN	
Speed at max pull	14 m/min	
Max speed	35 m/min	
Steel rope Ø 16 mm	1000 m	
Steel rope Ø 14 mm	1500 m	

CONFIGURATION

- One pair of multi-grooved steel capstans fit for stringing one steel rope.
- Machine control panel equipped with built-in electronic instrument featuring a large graphic colour display and a USB port. Main functions include display of pull-force, speed and length of cable in real time, max pull force setting, display of working hours, data recording and storage on a pen-drive (data processing software provided).
- Safety negative hydraulic brake.
- Chassis with two damped axles (tandem), tires, overrun brake, manual brake and drawbar for towing in the job-site.
- Metallic coverage with doors.
- Mechanical stabilisers on pull side and jack-arm with wheel on drawbar side.
- Attachments for anchoring and for lifting.
- Heat exchanger to cool the oil in the hydraulic circuit.
- Pulley for rope arranged for telescopic rod.
- Built-in reel-winder with automatic rope-winder and extractable reel.

OPTIONAL DEVICES

006.4	Arrangement of the chassis for circulation on road
	(homologation excluded).
028.7	Device to start the diesel engine and the hydraulic circuit at
	low temperatures (up to -30°C).
037	Remote control by cable, with 10 m of cable.
038	Radio-control (max distance 100 m).
051.3	Motorised rubber caterpillars.
038.C	Radio-control for caterpillars.
067.1	Telescopic rod to lay underground operation (art.F276).
069.5	Printer with accessories.
082	Device for pull force setting, which allows to maintain the
	pre-set even at speed '0' (fit for pipe refurbishing).



F290.P.200

max pull 200 kN



Hydraulic puller fit to pull one rope in laying underground transmission cables and optics fibre cables. One hydraulic circuit allows to continuously vary the speed in both directions by operating one control device.

FEATURES		
Capstans	2 x Ø 380 mm	
Max rope diameter	22 mm	
Dimensions LxWxH	3,90x2,20x1,90 r	
Weight (without rope)	4200 kg	

	ENGINE
Feeding	diesel
Power	84 hp / 62 kW
Cooling	water
Starting	12 V

PULL PERFORMANCES		
Max pull	200 kN	
Speed at max pull	10 m/min	
Max speed	25 m/min	
Pull at max speed	80 kN	

KEE	_	
Туре	extractable	
Diameter	1100 mm	
Capacity of steel rope:		
Ø 22 mm	1000 m	
Ø 18 mm	1500 m	

CONFIGURATION

- One pair of multi-grooved steel capstans fit for stringing one steel rope.
- Machine control panel equipped with built-in electronic instrument featuring a large graphic colour display and a USB port. Main functions include display of pull-force, speed and length of cable in real time, max pull force setting, display of working hours, data recording and storage on a pen-drive (data processing software provided).
- Safety negative hydraulic brake.
- Chassis with two rigid axles (tandem), tires and drawbar for towing at low speed in job-site.
- Metallic coverage with doors.
- Mechanical stabilisers on pull side and jack-arm with wheel on drawbar side.
- Attachments for anchoring and for lifting.
- Heat exchanger to cool the oil in the hydraulic circuit.
- Pulley for rope arranged for telescopic rod.
- Built-in reel-winder with automatic rope-winder and extractable reel.

OPTIONAL DEVICES

006.3	Pneumatic braking system and ABS.
006.4	Arrangement of the chassis for circulation on road
	(homologation excluded).
028.7	Device to start the diesel engine and the hydraulic circuit a
	low temperatures (up to -30°C).
037	Remote control by cable, with 10 m of cable.
038	Radio-control (max distance 100 m).
051.3	Motorised rubber caterpillars.
038.0	Radio-control for caterpillars.
067.1	Telescopic rod to lay underground operation (art.F276).
069.5	Printer with accessories.
082	Device for pull force setting, which allows to maintain the
	pre-set even at speed '0' (fit for pipe refurbishing).
097.1	Device to get a max loadless speed of 45 m/min.



F260.P.600

max pull 600 kN



Hydraulic puller fit to pull one rope in laying underground transmission cables and pipe refurbishing works.

One hydraulic circuit allows to continuously vary the speed in both directions by operating one control device.

Capstans 2 x Ø 580 mm

Max rope diameter 38 mm

Dimensions LxWxH 5,60x2,50x2,60 m

Weight (without rope) 10500 kg

ENGINE

Feeding diesel

Power 131 hp / 96 kW

Cooling water Starting 12 V

PULL PERFORMANCES

Max pull 600 kN
Speed at max pull 4,5 m/min
Max speed 28 m/min
Pull at max speed 100 kN

REEL

Type extractable

Capacity of the standard reel: 1000 m of steel rope Ø 38 mm

Capacity of the standard reel: 1200 m of steel rope Ø 38 mm

ALSO AVAILABLE F260.P.400

Max pull 400 kN
Speed at max pull 4,5 m/min
Max speed 80 m/min

CONFIGURATION

- One pair of multi-grooved steel capstans fit for stringing one steel rope.
- Machine control panel equipped with built-in electronic instrument featuring a large graphic colour display and a USB port. Main functions include display of pull-force, speed and length of cable in real time, max pull force setting, display of working hours, data recording and storage on a pen-drive (data processing software provided).
- Safety negative hydraulic brake.
- Chassis with two rigid axles (tandem), tires and drawbar for towing at low speed in jobsite.
- Metallic coverage with doors.
- Hydraulic back stabilisers and manual front stabilisers.
- Attachments for anchoring and for lifting.
- Heat exchanger to cool the oil in the hydraulic circuit.
- Pulley for rope arranged for telescopic rod.
- Built-in reel-winder with automatic rope-winder and extractable reel.

OPTIONAL DEVICES

082

006.3	Pheumatic braking system and ABS.
006.4	Arrangement of the chassis for circulation on road

(homologation excluded).

028.7 Device to start the diesel engine and the hydraulic circuit at low temperatures (up to -30°C).

037 Remote control by cable, with 10 m of cable.

038 Radio-control (max distance 100 m).

051.3 Motorised rubber caterpillars.038.C Radio-control for caterpillars.

069.5 Printer with accessories.

Device for pull force setting, which allows to maintain the

pre-set even at speed '0' (fit for pipe refurbishing).



F420.100.C

max pull 100 kN



Cable recovery winch designed to remove old or redundant armored telephone cables of up to 80 mm in diameter, mainly for duct reclamation allowing installation of fibre optic cables, but also for recovering old cables for recycling. The winch is driven by a diesel hydraulic power-pack which is totally enclosed within a coverage thereby limiting noise emission. The machine is mounted on damped trailer and it is complete with stabilizing jacks.

FEATURES		ENGINE		PULL PERFORMANCES	
Capstans	350 x Ø 650 mm	Feeding	diesel	Max pull	100 kN
Max rope diameter	80 mm	Power	57 hp / 42 kW	Continuos pull:	
Dimensions LxWxH	4,00x2,20x1,80 m	Cooling	water	100 kN @ 12 m/m	in
Weight (without rope)	2600 kg	Starting	12 V	100 kN @ 12 m/m	in

CONFIGURATION

- Diesel engine, water cooled, electric starting with 12V battery.
- Large-groove steel capstan, with anti-slipping device.
- Control panel with instruments for controlling the hydraulic circuit and the diesel engine.
- Dynamometer for checking pulling values.
- Preselector of maximum wanted pull force to stop the puller in case of overpull.
- Hydrostatic circuit that allows to vary in continue way the speed of the capstan in both sense of rotation operating only one
- Hydraulic emergency negative brake auto-operating in central position of command lever or in case of hydraulic breakdown (not fit for lifting).
- Chassis with damped axle, tires, overrun brake, manual brake and drawbar for towing in the job-site.
- Metallic coverage with doors.
- Mechanical front and back stabilisers.
- Attachments for anchoring and for lifting.
- Heat exchanger to cool the oil in the hydraulic circuit.
- Back-tension rollers with hydraulic drive.

OPTIONAL DEVICES

- O05.2 Tandem axle with torsion bar suspensions, overrun braking system and lights (homologation excluded),
- 006.4 Arrangement of the chassis for circulation on road (homologation excluded).
- O11 Arrangement of an auxiliary hydraulic circuit, capacity 25 l/min, pressure 200 bar, with 3 outputs for feeding a hydraulic cutter, a water pump and a hydraulic cylinder for the boom.
- 037 Remote control by cable, with 10 m of cable.
- 038 Radio-control (max distance 100 m).
- O44 Mechanical metercounter for measuring the recovered cables length.
- 067 Telescopic rod to lay underground cables (art.F277).
- 068.3 Support with chain-hoist for lifting and lowering the boom.
- 069.5 Printer with accessories.
- 069.2 Electronic device with USB port, to save the pulling data.



F275.30.P

max pull 30 kN



Hydraulic puller fit to pull one rope in laying underground transmission cables. One hydraulic circuit allows to continuously vary the speed in both directions by operating one control device.

FEATUR	ES
Capstans	2 x Ø 250 mm
Grooves on the capstans	7 + 7
Max rope diameter	13 mm
Max joint diameter	40 mm
Dimensions LxWxH	1,95x1,45x1,35 m
Weight (without rope)	1200 kg

	ENGINE
Feeding	diesel
Power	35 hp / 25,7 kW
Cooling	water
Starting	12 V

PULL PERF	ORMANCES
Max pull	30 kN
Speed at max pull	20 m/min
Max speed	60 m/min
Pull at max speed	12 kN

CONFIGURATION

- One pair of multi-grooved steel capstans fit for stringing one steel rope.
- Machine control panel equipped with built-in electronic instrument featuring a large graphic colour display and a USB port. Main functions include display of pull-force, speed and length of cable in real time, max pull force setting, display of working hours, data recording and storage on a pen-drive (data processing software provided).
- Safety negative hydraulic brake.
- Chassis with rigid axle, manual brake and detachable drawbar for towing at low speed in job-site.
- Mechanical front and back stabilisers.
- Attachments for anchoring and for lifting.
- Heat exchanger to cool the oil in the hydraulic circuit.
- Pulley for rope arranged for telescopic rod.
- Reelwinder fit for a 1400-mm-dia reel, with automatic ropewinder.

OPTIONAL DEVICES

007	Chassis with damped axle, overrun brake and drawbar for
	towing on road (homologation excluded).
026	PVC cloth cover.
037	Remote control by cable, with 10 m of cable.
038	Radio-control (max distance 100 m).
051.3	Motorised rubber caterpillars.
038.C	Radio-control for caterpillars.
067	Telescopic rod to lay underground cables (art.F277).
069.5	Printer with accessories.
047	Hydraulic front stabilisers.



F280.40.P

max pull 40 kN



Hydraulic puller fit to pull one rope in laying underground transmission cables. One hydraulic circuit allows to continuously vary the speed in both directions by operating one control device.

FEATUR	ES
Capstans	2 x Ø 325 mm
Grooves on the capstans	7 + 7
Max rope diameter	16 mm
Max joint diameter	45 mm
Dimensions LxWxH	2,15x1,60x1,55 m
Weight (without rope)	1200 kg

	ENGINE
Feeding	diesel
Power	35,2 hp / 26 kW
Cooling	water
Starting	12 V

PULL PERF	ORMANCES
Max pull	40 kN
Speed at max pull	18 m/min
Max speed	60 m/min
Pull at max speed	12 kN

CONFIGURATION

- One pair of multi-grooved steel capstans fit for stringing one steel rope.
- Machine control panel equipped with built-in electronic instrument featuring a large graphic colour display and a USB port. Main functions include display of pull-force, speed and length of cable in real time, max pull force setting, display of working hours, data recording and storage on a pen-drive (data processing software provided).
- Safety negative hydraulic brake.
- Chassis with rigid axle, manual brake and detachable drawbar for towing at low speed in job-site.
- Hydraulic back stabilisers and manual front stabilisers.
- Attachments for anchoring and for lifting.
- Heat exchanger to cool the oil in the hydraulic circuit.
- Pulley for rope arranged for telescopic rod.
- Reelwinder fit for a 1400-mm-dia reel, with automatic ropewinder.

OPTIONAL DEVICES

007	Chassis with damped axle, overrun brake and drawbar for
	towing on road (homologation excluded).
026	PVC cloth cover.
037	Remote control by cable, with 10 m of cable.
038	Radio-control (max distance 100 m).
051.3	Motorised rubber caterpillars.
038.C	Radio-control for caterpillars.
067	Telescopic rod to lay underground cables (art.F277).
069.5	Printer with accessories.
047	Hydraulic front stabilisers.



F230.60.P

max pull 60 kN



Hydraulic puller fit to pull one rope in laying underground transmission cables. One hydraulic circuit allows to continuously vary the speed in both directions by operating one control device.

FEATURES		
Capstans	2 x Ø 400 mm	
Grooves on the capstans	8 + 8	
Max rope diameter	18 mm	
Max joint diameter	50 mm	
Dimensions LxWxH	3,20x1,95x2,00 m	
Weight (without rope)	2300 kg	

ENGINE		
Feeding	diesel	
Power	63 hp / 47 kW	
Cooling	water	
Starting	12 V	

PULL PERFO	RMANCES
Max pull	60 kN
Speed at max pull	20 m/min
Max speed	70 m/min
Pull at max speed	25 kN

CONFIGURATION

- One pair of multi-grooved steel capstans fit for stringing one steel rope.
- Machine control panel equipped with built-in electronic instrument featuring a large graphic colour display and a USB port. Main functions include display of pull-force, speed and length of cable in real time, max pull force setting, display of working hours, data recording and storage on a pen-drive (data processing software provided).
- Safety negative hydraulic brake.
- Chassis with rigid axle, manual brake and detachable drawbar for towing at low speed in job-site.
- Hydraulic back stabilisers and manual front stabilisers.
- Attachments for anchoring and for lifting.
- Heat exchanger to cool the oil in the hydraulic circuit.
- Pulley for rope arranged for telescopic rod.
- Reelwinder fit for a 1600-mm-dia reel, with automatic ropewinder.

OPTIONAL DEVICES

	towing on road (homologation excluded).
026	PVC cloth cover.
028.7	Device to start the diesel engine and the hydraulic circuit at
	low temperatures (up to -30°C).
037	Remote control by cable, with 10 m of cable.
038	Radio-control (max distance 100 m).
047	Hydraulic front stabilisers.
051.3	Motorised rubber caterpillars.
038.C	Radio-control for caterpillars.
069.5	Printer with accessories.
067.1	Telescopic rod for underground operations (art.F276).

Chassis with damped axle, overrun brake and drawbar for



F235.130.P

max pull 130 kN



Hydraulic puller fit to pull one rope in laying underground transmission cables. One hydraulic circuit allows to continuously vary the speed in both directions by operating one control device.

FEATUR	ES
Capstans	2 x Ø 450 mm
Grooves on the capstans	9 + 9
Max rope diameter	24 mm
Max joint diameter	60 mm
Dimensions LxWxH	3,70x2,15x2,10 m
Weight (without rope)	3800 kg

	ENGINE
Feeding	diesel
Power	95 hp / 70 kW
Cooling	water
Starting	12 V

PULL PERF	ORMANCES
Max pull	130 kN
Speed at max pull	18 m/min
Max speed	55 m/min
Pull at max speed	40 kN

ALSO AVAILABLE F235.100.

Max pull 100 kN
Speed at max pull 22 m/min
Max speed 55 m/min
Pull at max speed 45 kN

CONFIGURATION

- One pair of multi-grooved steel capstans fit for stringing one steel rope.
- Machine control panel equipped with built-in electronic instrument featuring a large graphic colour display and a USB port. Main functions include display of pull-force, speed and length of cable in real time, max pull force setting, display of working hours, data recording and storage on a pen-drive (data processing software provided).
- Safety negative hydraulic brake.
- Chassis with rigid axle, manual brake and detachable drawbar for towing at low speed in job-site.
- Hydraulic back stabilisers and manual front stabilisers.
- Attachments for anchoring and for lifting.
- Heat exchanger to cool the oil in the hydraulic circuit.
- Pulley for rope arranged for telescopic rod.
- Reelwinder fit for a 1600-mm-dia reel, with automatic ropewinder.

OPTIONAL DEVICES

800	Axle with leaf spring suspensions, drawbar, pneumatic braking system, tyres and lights for towing on the road at 60 km/h (homologation excluded).
026	PVC cloth cover.
028.7	Device to start the diesel engine and the hydraulic circuit at
	low temperatures (up to -30°C).
037	Remote control by cable, with 10 m of cable.
038	Radio-control (max distance 100 m).
047	Hydraulic front stabilisers.
051.3	Motorised rubber caterpillars.
038.C	Radio-control for caterpillars.
069.5	Printer with accessories.
084	Bigger reelwinder fit for a 1800-mm-dia reel.
067.1	Telescopic rod for underground operations (art.F276).
082	Device for pull force setting, which allows to maintain the
	pre-set force even at speed '0' (fit for pipe refurbishing).



F260.160.P

max pull 160 kN



Hydraulic puller fit to pull one rope in laying underground transmission cables. One hydraulic circuit allows to continuously vary the speed in both directions by operating one control device.

FEATUR	ES
Capstans	2 x Ø 600 mm
Grooves on the capstans	10 + 10
Max rope diameter	24 mm
Max joint diameter	60 mm
Dimensions LxWxH	3,95x2,40x2,20 m
Weight (without rope)	5000 kg

	ENGINE
Feeding	diesel
Power	115 hp / 85 kW
Cooling	water
Starting	12 V

PULL PERF	ORMANCES
Max pull	160 kN
Speed at max pull	18 m/min
Max speed	55 m/min
Pull at max speed	50 kN

CONFIGURATION

- One pair of multi-grooved high resistance steel capstans fit for stringing one steel rope.
- Machine control panel equipped with built-in electronic instrument featuring a large graphic colour display and a USB port. Main functions include display of pull-force, speed and length of cable in real time, max pull force setting, display of working hours, data recording and storage on a pen-drive (data processing software provided).
- Safety negative hydraulic brake.
- Chassis with rigid axle, manual brake and detachable drawbar for towing at low speed in job-site.
- Hydraulic back stabilisers and manual front stabilisers.
- Attachments for anchoring and for lifting.
- Heat exchanger to cool the oil in the hydraulic circuit.
- Pulley for rope arranged for telescopic rod.
- Reelwinder fit for a 1600-mm-dia reel, with automatic ropewinder.

OPTIONAL DEVICES

006	at max 30 km/h max.
000	
800	Axle with leaf spring suspensions, drawbar, pneumatic
	braking system, tyres and lights for towing on the road at
	60 km/h (homologation excluded).
026	PVC cloth cover.
028.7	Device to start the diesel engine and the hydraulic circuit at
	low temperatures (up to -30°C).
037	Remote control by cable, with 10 m of cable.
038	Radio-control (max distance 100 m).
047	Hydraulic front stabilisers.
051.3	Motorised rubber caterpillars.
038.C	Radio-control for caterpillars.
069.5	Printer with accessories.
084	Bigger reelwinder fit for a 1800-mm-dia reel.
067.1	Telescopic rod for underground operations (art.F276).
082	Device for pull force setting, which allows to maintain the
	pre-set force even at speed '0' (fit for pipe refurbishing).

Lights and pneumatic brake system for towing on the road



F260.250.P

max pull 250 kN



Hydraulic puller fit to pull one rope in laying underground transmission cables. One hydraulic circuit allows to continuously vary the speed in both directions by operating one control device.

FEATURES			
Capstans	2 x Ø 600 mm		
Grooves on the capstans	10 + 10		
Max rope diameter	24 mm		
Max joint diameter	60 mm		
Dimensions LxWxH	3,95x2,40x2,20 m		
Weight (without rope)	6500 kg		

ENGINE		
Feeding	diesel	
Power	133 hp / 95 kW	
Cooling	water	
Starting	24 V	

PULL PERFORMANCES		
Max pull	250 kN	
Speed at max pull	12 m/min	
Max speed	40 m/min	
Pull at max speed	70 kN	

ALSO AVAILABLE F260.200.P

Max pull 200 kN Speed at max pull 18 m/min Max speed 45 m/min Pull at max speed 80 kN

CONFIGURATION

- One pair of multi-grooved steel capstans fit for stringing one
- Machine control panel equipped with built-in electronic instrument featuring a large graphic colour display and a USB port. Main functions include display of pull-force, speed and length of cable in real time, max pull force setting, display of working hours, data recording and storage on a pen-drive (data processing software provided).
- Safety negative hydraulic brake.
- Chassis with rigid axle, manual brake and detachable drawbar for towing at low speed in job-site.
- Hydraulic back stabilisers and manual front stabilisers.
- Attachments for anchoring and for lifting.
- Heat exchanger to cool the oil in the hydraulic circuit.
- Pulley for rope arranged for telescopic rod.
- Reelwinder fit for a 1600-mm-dia reel, with automatic ropewinder.

OPTIONAL DEVICES

006	Lights and pneumatic brake system for towing on the road
0	at max 30 km/h max.
800	Axle with leaf spring suspensions, drawbar, pneumatic
	braking system, tyres and lights for towing on the road at
	60 km/h (homologation excluded).
026	PVC cloth cover.
028.7	Device to start the diesel engine and the hydraulic circuit at
	low temperatures (up to -30°C).
037	Remote control by cable, with 10 m of cable.
038	Radio-control (max distance 100 m).
047	Hydraulic front stabilisers.
051.3	Motorised rubber caterpillars.
038.C	Radio-control for caterpillars.
069.5	Printer with accessories.
084	Bigger reelwinder fit for a 1800-mm-dia reel.
067.1	Telescopic rod for underground operations (art.F276).
082	Device for pull force setting, which allows to maintain the
	pre-set force even at speed '0' (fit for pipe refurbishing).



F224

pushing force 0-8 kN



Cable-pusher machine powered by hydraulic unit. Fit for laying underground cables in long conducts and in harsh conditions. When working in combination with a puller, it reduces the stress on the cable. Longer distances can be covered by using more than one cable-pusher machines. This compact machine can be placed in small rooms and can be remote-controlled (up to 15 m) thanks to the separated power unit connected by hoses.

CABLE-PUSHER UNIT F224.08	

0-8 kN Pushing force Pushing speed 0-20 m/min Cable diameter (min - max) 40-135 mm Track length 800 mm Hoses length Dimensions LxWxH 1,30x0,35x0,80 m

Weight 200 kg

POWER UNIT F306.08.SP

Feeding	gasoline
Power	5,88 kW / 8 hp
Cooling	air
Starting	by rope
Max oil flow	20 l/min
Max pressure	150 bar

Dimensions LxWxH 0,75x0,50x0,60 m

Weight 65 kg

CABLE-PUSHER UNIT

- Cable-pusher unit made of electro-welded steel frame with fittings for anchoring and lifting.
- One pair of tracks ("V-placed") with upper rollers operated by hand, with
 - reaction spring to press the cable against the tracks for a more efficient push.
- Reversible hydraulic motor for operating the tracks. The motor is fitted with quick couplings to connect the power unit through flexible hoses.

POWER UNIT

- Hydraulic power unit, with gasoline engine and hydraulic circuit, that permits to adjust, by a control valve, the pushing force (0 to max), and the pushing speed. Complete with wheels and handles.
- Flexible hoses 5-m long to connect the cable-pusher unit to the power unit.

OPTIONAL DEVICES

090	Power unit equipped with monophase electric motor 220 V.
090.1	Power unit equipped with three-phase electric motor 380 V.
028.3	Power unit with air-cooled diesel engine.
418	Cable-pusher unit complete with wheels for easy moving.
078.1	Flexible hoses 10-m long.
RCI-1	Hydraulic device controlling the pressure of the upper
	rollers over the cable, controlled by the power unit.
CAV-1	Machine arrangement suitable for push cable diameters up
	to Ø150 mm.
POT-1	Thrust force / traction increased up to 12 kN, speed 0 – 17
	m/min.



DEG



Electronic instrument for monitoring the working values.
Fit for OMAC pullers, tensioners and puller-tensioners.
A must-have device installed on all OMAC machines as a standard.

FEATURES

- Large screen (4,3"), allowing for excellent visibility from any angle.
- Graphic, color display.
- Integrated into the main control panel.
- High Capacity memory: over 200 km of line.
- High Accuracy and Reliability thanks to the load cells and encoder system.
- Equipped with USB port.
- Ease of use.

FUNCTIONS

- Reads and displays the pull-force, the speed and the length of cable in real time.
- Max-pull force setting.
- Display of working hours.
- Data recording.
- Data storage on a pen-drive.
- Software provided allows for handling the data stored.

OPTIONAL 069.5

Portable printer c/w connection cable to be plugged to the machine. Fit for printing the recorded data directly in the job-site. Supplied in aluminium case.



REC.1



Compact remote control by cable. Fit for "puller" machines with 1 hydraulic circuit. Pull/release buttons and emergency stop button. 10 m of connection cable.

REC.2



Remote control by cable. Fit for "puller" machines with 1 hydraulic circuit.

The control is complete with:

- mini joystick for controlling the rotation of the capstans
- speed-adjustment control
- emergency stop button
- 10 m of the connection cable

OPTIONAL DEVICES

- O1 Dynamometer to read the pulling force, metercounter and speedometer.
- 02 Engine start/stop.
- 03 Engine accelerator.

RER.1



Remote radio-control fit for single circuit machines. Max operative distance: up to 100 m. $\,$

The radio-control is complete with:

- mini joystick for controlling the rotation of the capstans
- speed-adjustment control
- emergency stop button
- back-up cable for connecting the control to the machine in case of emergency.

OPTIONAL DEVICES

- O1 Dynamometer to read the pulling force, metercounter and speedometer.
- 02 Engine start/stop.
- 03 Engine accelerator.



051.3



FEATURES

- The caterpillar system allows to travel over steeply sloping ground, to turn in tight space.
- The power transmission is granted by the hydraulic circuit of the puller.
- Self-acting negative parking brakes.
- Reversible movement.
- Radio-control.
- Hydraulic controlled share on the pull side, for anchoring the machine.
- Back stabilizers.
- Front and back hooks for towing the machine.

PERFORMANCES				
Moving speed	adjustable			
Max speed	2 km/h			
Max inclination	80%			
Minimum turning radius	4,50 m			
Ground loading	0,26 kg/cm3			

	Dimensioni LxWxH	Total weight
	(mm)	kg
F215.P.30	1,80 x 1,60 x 1,20	1350
F275.P.40 / F275.P.50	2,15 x 1,80 x 1,40	1800
F280.P.100 / F285.P.100	2,86 x 1,85 x 1,87	3600
F260.P.200	3,10 x 2,00 x 2,00	6000
F275.30.P	1,95 x 1,45 x 1,40	1500
F280.40.P	2,20 x 1,60 x 1,60	2300
F230.60.P	3,20 x 1,95 x 2,00	3000



F276



Telescopic rods for laying underground cables. Mounted on pullers properly arranged, they permit to pull the wire rope inside the manholes. Made with galvanised/painted steel, the rods are easily demountable to facilitate the transport.

Telescopic rod for pulling the wire rope inside the pits. Guide system with 360° swivelling pulley.

Telescopic rod for pulling the wire rope inside the pits. Guide system with 360° swivelling pulley.

F277



Telescopic rods for laying underground cables. Mounted on pullers properly arranged, they permit to pull the wire rope inside the manholes. Made with galvanised/painted steel, the rods are easily demountable to facilitate the transport.

Telescopic rod for pulling the wire rope inside the pits. Guide system with 360° swivelling pulley.

Telescopic rod for pulling the wire rope inside the pits. Guide system with 360° swivelling pulley. Equipped with demountable centerings fit for pipes diameter 80, 100, 120 and 150 mm.

F278



Telescopic rods for laying underground cables. Mounted on pullers properly arranged, they permit to pull the wire rope inside the manholes. Made with galvanised/painted steel, the rods are easily demountable to facilitate the transport.

Telescopic rod for pulling the wire rope inside the pits. Guide system with 360° swivelling pulley.

Telescopic rod for guiding the wire rope inside the pits. Guide system with 360° swivelling pulley. Equipped with rollers device for obtaining a reserve of cable, and demountable centerings fit for pipes diameter 80, 100, 120 and 150 mm.

OPTIONAL DEVICES

201 Supplementary reaction upper arm.

202 Reaction arm (90° respect to the pull line).

204 Interchangeable, demountable and openable centerings for pipes diam. 80, 100, 120 and 150 mm (standard for mod. F277 e F278).

Telescopic strut with pulley to space the puller from the manhole.

206 Hydraulic control of the rod extension (only for mod. F276 e F277).

	Max pull force	Pit depth (A min/max)	Distance from the pipe (B min/max)	Rod width (C)	Rod weight	Reserve of cable
	daN	mm	mm	mm	kg	m
F276.60	6000 / 10000	500 / 2000	1000 / 1500	120	150	-
F276.100	10000 / 15000	500 / 2000	1400 / 1800	150	200	-
F276.200	20000	1000 / 2000	1500 / 2000	200	350	-
F277.20	2000	0 / 1500	400 / 700	60	55	-
F277.40	3000 / 4000	0 / 1500	400 / 700	80	50	-
F278.20	2000	0 / 1500	1000 / 1400	60	55	2,5
F278.40	3000 / 4000	100 / 2000	1000 / 1500	80	100	3,0



HYDRAULIC SERVICE WINCHES



F202.P.08

max pull 8 kN



Hydraulic winch fit to pull one rope in service operations and laying underground cables. The winch can be disassembled into two parts. One closed hydraulic circuit allows to continuously vary the speed in both directions by operating one control device.

FEATURES OF DRUM

Bottom diameter 100 m

Dimensions LxWxH 0,88x0,43x0,66 m

Weight (without rope) 120 kg

DRUM CAPACITY

Rope Ø6 mm 200 m

ELECTRIC MOTOR

Feeding three-phase 200/380 V - 50 Hz Power 2,4 hp / 1,8 kW

Cooling air Protection IP55

PULL PERFORMANCES (middle layer) Max pull 8 kN

Speed at max pull 6 m/min
Max speed 30 m/min
Speed at max pull 2 kN

DIMENSIONS OF THE MODULES		
pulling module		
Dimensions LxWxH	0,54x0,43x0,66 m	
Weight	65 kg	
motor module		
Dimensions LxWxH	0,34x0,43x0,66 m	
Weight	55 kg	

CONFIGURATION

- Steel drum with idle device to rotate the drum freely.
- Automatic swinging rope winder, fit to stratify 6-mm diameter rope.
- Dynamometer for reading the pull force.
- Gear box.
- Removable wheels and drawbar for hand moving.
- Removable protective frame made of tubular steel.
- Fittings for anchoring the machine.
- Rope-driver roller fit for vertical and horizontal pull.

OPTIONAL DEVICES

027 Metallic coverage with doors.

028.3 Air cooled diesel engine with electric starting and battery 12 V.

090 Monophase electric motor 220 V.



F203.10

max pull 10 kN



Hydraulic winch fit to pull one rope in service operations such as setting-ups and adjustment of transmission lines and underground cables laying. The winch can be disassembled into three parts.

One closed hydraulic circuit allows to continuously vary the speed in both directions by operating one control device.

FEATURES		
Dimensions LxWxH	1,20x0,55x0,60 m	
Weight (without rope)	190 kg	

DRUM		
Internal diameter	150 mm	
External diameter	325 mm	
Width	420 mm	
Capacity of rope:		
Ø8 mm	300 m	
Ø 6 mm	500 m	

	ENGINE
Feeding	gasoline
Power	12 hp / 8,8 kW
Cooling	air
Protection	by rope

PULL PERFORMANCES	
Max pull	10 kN
Speed at max pull	17 m/min
Max speed	32 m/min

CONFIGURATION

- Steel drum.
- Automatic rope winder with idle device for manual operation.
- Safety hydraulic negative brake.
- Rigid axle with tires and drawbar fit for towing at low speed in the job-site.
- Fittings for anchoring the machine.
- Rope-driver rollers fit for vertical and horizontal pull.

OPTIONAL DEVICES

028.2	Diesel engine with rope starting.
034	Engine electric starting with battery 12 V.
053	Dynamometer for reading the pull force.
035	Preselector of max pull force to stop the engine in case of overpull.
045.5	Manual holdfast for locking the wire. It can be used with optional capstan (see opt. 058.1)
058.1	Large groove capstan to be mounted on the motorised hydraulic group (instead of the drum).



F206.10

max pull 10 kN



Hydraulic winch fit to pull one rope in service operations such as setting-ups and adjustment of transmission lines and underground cables laying. Direct pull on the drum. One closed hydraulic circuit allows to continuously vary the speed in both directions by operating one control device.

FEATURES		
Dimensions LxWxH	1,20x1,05x0,85 m	
Weight (without rope)	350 kg	

DRUM		
Internal diameter	200 mm	
External diameter	500 mm	
Width	500 mm	
Capacity of rope:		
Ø8 mm	800 m	
Ø 6 mm	500 m	

ENGINE	
Feeding	gasoline
Power	12 hp / 8,8 kW
Cooling	air
Protection	by rope

PULL PERFORMANCES		
Max pull	10 kN	
Speed at max pull	15 m/min	
Max speed	40 m/min	
Pull at max speed	4 kN	

ALSU AVAILA	BLE F2U0.13
Max pull	15 kN
Speed at max pull	13 m/min
Max speed	40 m/min
Pull at max speed	4,5 kN

CONFIGURATION

- Detachable drum.
- Automatic swinging rope-winder with idle position for manual operation.
- Dynamometer for reading the pull force.
- Freewheeling of the drum.
- Safety hydraulic negative brake.
- Rigid axle with tires and drawbar fit for towing at low speed in the job-site.
- Stabilisers and attachments for anchoring.
- Heat exchanger to cool the oil in the hydraulic circuit.
- Rope-driver rollers fit for vertical and horizontal pull.

OPTIONAL DEVICES

003

	for towing on the road at 60 km/h, with mechanical parking
	brake.
026	PVC cloth cover.
028.2	Diesel engine with rope starting.
034	Engine electric starting with battery 12 V.
035	Preselector of max pull force to stop the engine in case of
	overpull.
056.4	Service steel capstan beside the drum.
065	Automatic clamp for rope on side capstan.
090	Monophase electric motor 220 V.
090.1	Three-phase electric motor.

Axle with independent torsion bar suspensions and tires



F207.30

max pull 30 kN



Hydraulic winch fit to pull one rope in service operations such as setting-ups and adjustment of transmission lines and underground cables laying. Direct pull on the drum. One closed hydraulic circuit allows to continuously vary the speed in both directions by operating one control device.

FEATURES		
Dimensions LxWxH	1,70x1,50x1,35 m	
Weight (without rope)	950 kg	

D	RUM	
Internal diameter	270 mm	
External diameter	500 mm	
Width	500 mm	
Capacity of rope:		
Ø 10 mm	500 m	
Ø 12 mm	350 m	

	ENGINE
Feeding	diesel
Power	26 hp / 19 kW
Cooling	water
Electric system	12 V

PULL PERFORMANCES

Max pull 30 kN
Speed at max pull 15 m/min
Max speed 70 m/min
Pull at max speed 6 kN

CONFIGURATION

- Drum equipped with neutral device for unwinding the rope manually.
- Automatic swinging rope-winder with idle position for manual operation.
- Machine control panel with dynamometer and preselector of max pull force.
- Safety hydraulic negative brake.
- Rigid axle with tires and drawbar fit for towing at low speed in the job-site.
- Stabilisers and attachments for anchoring.
- Heat exchanger to cool the oil in the hydraulic circuit.
- Rope-driver rollers fit for vertical and horizontal pull.

OPTIONAL DEVICES

007	Damped axle, overrun brake and drawbar for towing on the
	road (homologation excluded).
026	PVC cloth cover.
027	Metallic coverage with doors.
037	Remote control by cable, with 10 m of cable.
038	Radio-control for remote control (max distance 100 m).
046.3	Rope-presser roller on the drum.
058	Service winch with large-groove capstan (Ø 160 or 200 mm)
	fed by the hydraulic circuit of the puller.
	Max pulling force 500 kg.
064	Device to control the load descent in case of diesel engine
	breakdown.
090.1	Three-phase electric motor.

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F210.50

max pull 50 kN



Hydraulic winch fit to pull one rope in service operations such as setting-ups and adjustment of transmission lines and underground cables laying. Direct pull on the drum. One closed hydraulic circuit allows to continuously vary the speed in both directions by operating one control device.

FEATUR	RES
Dimensions LxWxH	2,25x1,80x1,50 m
Weight (without rone)	1900 kg

DRUM		
Internal diameter	400 mm	
External diameter	700 mm	
Width	700 mm	
Capacity of rope:		
Ø 14 mm	500 m	
Ø 16 mm	400 m	

	ENGINE
Feeding	diesel
Power	47 hp / 35 kW
Cooling	water
Protection	12 V

PULL PERFO	RMANCES
Max pull	50 kN
Speed at max pull	21 m/min
Max speed	65 m/min
Pull at max speed	20 kN

CONFIGURATION

- Steel drum.
- Automatic swinging rope-winder with idle position for manual operation.
- Machine control panel with dynamometer and preselector of max pull force.
- Safety hydraulic negative brake.
- Rigid axle with tires and drawbar fit for towing at low speed in the job-site.
- Stabilisers and attachments for anchoring.
- Heat exchanger to cool the oil in the hydraulic circuit.
- Rope-driver rollers fit for vertical and horizontal pull.

OPTIONAL DEVICES

007

	road (homologation excluded).
026	PVC cloth cover.
027	Metallic coverage with doors.
037	Remote control by cable, with 10 m of cable.
038	Radio-control for remote control (max distance 100 m).
046.3	Rope-presser roller on the drum.
058	Service winch with large-groove capstan (Ø 160 or 200 mm)
	fed by the hydraulic circuit of the puller.
	Max pulling force 500 kg.
064	Device to control the load descent in case of diesel engine
	breakdown.

Damped axle, overrun brake and drawbar for towing on the



F44.15



Mechanical winch fit to pull one rope while laying underground cables. The motion to the capstans is transmitted through a multiple-disk clutch and a gearbox, operated by means of 2 levers.

	ENGINE
Feeding	Gasoline
Power	10 hp / 7,3 kW
Cooling	air
Starting	by rope

PULL PERFORMANCE	S (capstan Ø160 mm)
with capstan Ø 160 m	nm
Forward	18 kN @ 14 m/min
Reverse	15 kN @ 15 m/min

CONFIGURATION

- Steel capstan dia. 160 mm at bottom groove.
- Gearbox with 1 forward and 1 reverse gears.
- Axle with detachable tires and drawbar fit for moving the machine by hand.
- Protection of capstans.
- The puller is easily decomposable in 4 light-weight groups.
- Rope-driver rollers.

OPTIONAL DEVICES

028.2	Diesel engine with rope starting.
034	Engine electric starting with battery 12 V.
053	Dynamometer for reading the pull force.
091	Electric motor 220/380 V, one or two speeds.
101.2	Capstan ø200 at bottom groove (max pull 12 kN)



03 REEL-STAND and TRAILERS



F155

max load 70 to 180 kN



Stands fit for steel or wooden reels, used for lifting a reel and braking it while stringing the conductor/cable. The reel stands, as an option, can be hydraulically driven by a hydraulic power unit. Reel-stands are supplied in pairs.

- No. 1 self-braking disk brake.
- Each stand can be raised or lowered independently by a hydraulic hand pump.
- Mechanical safe-stops mounted on the jack arm.
- Side supports with ball joints.
- Spindle complete with accessories.
- Conical bushes for wooden reels (diameter on demand).
- Welded and painted steel framework with attachments for anchoring.
- Metallic tool box for the accessories.

OPTIONAL DEVICES

- 423 Additional disk brake (2 brakes in total).
- 410.3 No. 1 or 2 disc brakes with hydraulic clamp controlled bymanual pump.
- 408 Hydraulic drive to control the reel rotation, either
 - recovering or releasing the conductor/cable (to be fed by hydraulic power unit).
- 078.1 Set of flexible hoses for feeding the drive unit (available lengths: 7, 10, 15 m).
- 401 Devices fit for steel reel and bushes to centre the reel hole (diameter on
- 419.1 Manual rope-winder, fit to stratify different diameters of rope (max reel width to be confirmed). Available for mod. F155.05 only.
- 419.2 Automatic rope-winder, fit to stratify different diameters of rope (suitable for standard steel reels). Available for mod. F155.070 only
- 419.3 Automatic rope-winder, fit to stratify different diameters of rope (max reel width to be confirmed). Available for mod. F155.070 only.

	Reel diameter min-max (*)	Reel max width	Spindle diameter	Dimensions of each reel-stand	Weight of the pair of reel-stands (²)
	m	m	mm	m (LxW)	kg
F155.070	1,00-2,80	1,50	45	2,10 x 0,50	350
F155.100	1,50-3,20	1,70	55	2,40 x 0,55	540
F155.120	2,00-3,50	2,40	65	2,60 x 0,60	850
F155.150	2,00-4,00	3,00	95	3,10 x 0,60	1100
F155.180	2,00-4,00	3,00	95	3,10 x 0,60	1250

(*) on demand we can supply stands fit for reels with bigger diameter - (2) weight of a pair of standard stands, with no optional devices.

	Max load	Braking torque	Braking torque E	Braking torque with brake opt. 410.3	Performances with drive opt. 408		
	of the pair of reel-stands	with standard brake	with 2 brakes opt. 423		Max braking torque	Max recovery torque	Max speed (³)
	daN	daN m	daN m	daN m	daN m	daN m	km/h
F155.070	7000	150	300	_	225	180	5
F155.100	10000	230	460	600	280	230	5
F155.120	12000	230	460	800	280	230	5
F155.150	15000	230	460	1000	312	250	5
F155.180	18000	280	560	1200	375	300	5

(3)powered by hydraulic circuit of a tensioner and puller-tensioner or power unit.



F155.A

max load 300/500 kN



Stands fit for steel or wooden reels, used for lifting a reel and braking it while stringing the conductor/cable. The reel stands, as an option, can be hydraulically driven by a hydraulic power unit. Reel-stands are supplied in pairs.

- Each stand can be raised or lowered independently by a hydraulic hand pump.
- Side supports with ball joints.
- Spindle complete with accessories.
- Conical bushes for wooden reels and cylindrical bushes for steel reels (diameter on
- Welded and painted steel framework with attachments for anchoring.
- Metallic tool box for the accessories.
- Ladder and footboard for the operator.
- Dials to close and drag steel and wooden reels, with detachable disk brake.
- Disk brake with manual regulation.

ALSO AVAILABLE F155.A.400 (40 TON MAX LOAD)

OPTIONAL	L DEVICES
402	Additional conical or cylindrical bushes for wooden or steel reels (diameter on
	demand).
408	Hydraulic drive to control the reel rotation, either recovering or releasing the
	conductor/cable (to be fed by hydraulic power unit).
408x2	Double hydraulic drive.
078.1	Set of flexible hoses for feeding the drive unit (available lengths: 7, 10, 15 m).
409	Steel containers for transporting and stocking the stands (2 containers).
410.3	One disc brake with hydraulic clamp controlled by manual pump.
419.2	Automatic rope-winder, fit to stratify the different diameters of rope on the
	reels of different width (note: it needs to be powered by hydraulic power unit).
423	Additional disk brake (2 brakes in total).
SP2	Base to raise up the stand, fit for reels with diameter up to 6 m.

	Reel diameter min-max	Reel width max	Dimensions of each reel-stand	Spindle diameter	Weight of the pair of reel-stands (²)
	m	m	m (LxW)	mm	kg
F155.A.300	3,00 – 4,60	2,80	2,80 x 0,70	100 - 140	1600
F155.A.500	3,50 – 4,80	3,60	3,10 x 0,90	120 - 160	2400

(1) to be specified when ordering - (2) weight of a pair of standard reel-stands, without optional devices.

	Max load	Braking torque	Braking torque	Performances with drive opt. 408 or 424				
	of the pair of	with standard	with 2 brakes	Max braking torque		rque Max recovering torque		May aread (3)
	reel-stands	brake	opt. 423	opt.408	w/opt.424	opt.408	w/opt.424	Max speed (3)
	daN	daN m	daN m	daN m	daN m	daN m	daN m	m/min
F155.A.300	7000	150	300	600	300	500	250	50
F155.A.500	10000	230	460	1600	500	1400	400	15

(3) powered by hydraulic power unit mod. F306.21.CC



F155.C

max load 300/900 kN



Tail-stock stands fit for steel reels, used for lifting a reel and braking it while stringing the conductor/cable. The reel stands, as an option, can be hydraulically driven by a hydraulic power unit. Reel-stands are supplied in pairs.

- Each stand can be raised or lowered independently by a hydraulic hand pump.
- Tail-stocks for sustaining the reel.
- Steel frame with detachable feet for reduced overall dimensions.
- Frame fit for being lifted by crane or fork.
- Pair of bushes for centring the reel hole (reel hole diameter to be specified).
- Disk brake with manual regulation (optional: two disk brakes opt.423).

OPTIONAL DEVICES

402	Additional cylindrical bushes for steel reels (diameter on demand).
408	Hydraulic drive to control the reel rotation, either recovering or releasing the
	conductor (to be fed by hydraulic power unit), weight 380kg.
408x2	2 Double hydraulic motorization.
078	Set of flexible hoses (10 m long) for feeding the drive unit by separate hydraulic
	power unit.
410.3	One or two disc brake with hydraulic control and manual pump.
423	Additional mechanical manual disk brake (2 brakes in total).
458	Reel lifting/lowering system controlled by separate hydraulic circuit.
	Complete with flexible hoses 10 m long with quick couplings.
464	Sliding tailstock controlled by hydraulic cylinder with hand pumps (the weight
	increase 650 kg).

	Max load of the pair of reel-stands	Reel diameter min-max (*)	Reel width max	Dimensions of each reel-stand	Tail-stocks diameter	Weight of the pair of reel-stands (²)
	daN	m	m	m (LxWxH)	mm	kg
F155.C.300	30.000	3,00 – 4,60	Infinite	3,00 x 1,50 x 2,70	120	3900
F155.C.500	50.000	3,00 – 5,00	Infinite	4,05 x 1,80 x 3,20	150	4500
F155.C.700	70.000	3,00 – 5,00	Infinite	4,05 x 1,80 x 3,20	150	4600
F155.C.900	90.000	3,60 – 5,20	Infinite	4,70 x 2,40 x 3,40	250	9500

(*)on demand we can supply stands fit for reels with bigger diameter - (2) weight of a pair of standard stands, with no optional devices.

	Dunkin	Pe	rformances wi	th drive opt. 408 (³)	
	Braking torque		Braking		Recovering	
	with 1 brake (standard) with 2 brakes (standard)		Max torque	Speed	Max torque	Speed
	daN m	daN m	daN m	m/min	daN m	m/min
F155.C.300	200	400	700	25	600	15
F155.C.500	200	400	1600	25	1400	15
F155.C.700	200	400	1600	25	1400	15
F155.C.900	350	700	3000	25	2500	12

(3)powered by hydraulic unit mod. F306.21.CC



F21.I



Stands fit for steel or wooden reels, used for lifting a reel while stringing the cable. Optionally, it is possible to fit a disk brake for braking the conductor. The stands are supplied in pairs.

- Each stand can be raised or lowered independently by a hydraulic hand pump.
- Mechanical safe-stops mounted on the jack arm.
- Lateral supports with ball bearings for reel-shaft.
- Max reel speed: 100 m/min.
- Welded and galvanised steel folding framework with attachments for anchoring.

OPTIONAL DEVICES

402.1 Spindle with cylindrical and conical bushes.

402.2 Safety device to prevent the spindle to fall out from the rollers.

405 Frame galvanisation.

	F21.I.30	F21.I.30.1	F21.I.50	F21.I.100
Max load	3000 daN	3000 daN	5000 daN	10000 daN
Braking torque with 1 brake opt. 410.1	100 daN m	100 daN m	100 daN	150 daN m
Reel diameter min/max	0,60 - 1,60 m	0,60 - 2,10 m	0,80 - 3,00 m	1,00 - 3,60 m
Max width of the reel	1,20 m	1,40 m	1,60 m	1,80 m
Spindle diameter x length	40x1500 mm	50x1700 mm	50-60x2000 mm	70-80x2200 mm
Dimensions of each stand A x B x C	1,05x0,75x1,00 m	1,05x0,75x1,25 m	1,40x0,90x1,70 m	1,60x1,00x2,00 m
Weight (1)	90 kg	120kg	180 kg	240 kg



C141



Reel-stand with hydraulic lifting system controlled by pedal. The stands are supplied in pairs.

	Max load	Reel diameter	Base	Shaft Ø	Weight
	kg	mm	mm	mm	kg
C141.18	1800	700-2000	42x30	60	24
C141.30	3000	800-2500	54x34	75	55
C141.50	5000	1000-3200	80x40	75	88
C141.100	10000	1350-3600	100x50	90	100

C141.A



Shaft made of galvanised steel tubular with ball bearings.

	Diameter	Length	Max load	Weight
	mm	mm	kg	kg
C141.A60.15	60	1500	1800	18,0
C141.A75.15	75	1500	3000/5000	14,6
C141.A75.18	75	1800	3000/5000	18,5
C141.A90.15	75	2050	3000/5000	19,6
C141.A90.18	90	1500	10000	18,5
C141.A90.20	90	1800	10000	22,2

C141.B



Galvanised steel collar.

	for spindle Ø	Weight
	mm	kg
C141.B60	60	1,2
C141.B75	75	1,5
C141.B90	90	1,7

C141.C



Centering cone.

	for spindle Ø	for reel hole Ø	Weight
	mm	mm	kg
C141.C60	60	65-11	3
C141.C75	75	85-130	7
C141.C90	90	110-150	8,5



C136



Drum loading beam set. Complete with: drum axle, cones, steel ropes, support and ring.

	Max load	Reel hole Ø	Max reel diameter	Max reel width	Weight
	kg	mm	mm	mm	kg
C136.45	4500	60 - 140	2600	1500	105
C136.70	7000	90 - 170	3000	1500	150

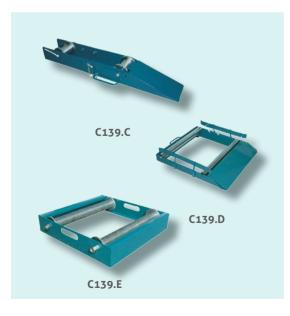
C138



Hook for lifting the cable drums. Axial type.

	Max load	Reel hole Ø	Weight
	kg	mm	kg
C138.20	2000	60 - 140	8,5
C138.50	5000	90 - 170	12

C139



Frame for unwinding the cable drums:

C139.C with aluminium rollers. Supplied in pairs.

C139.D with galvanised steel rollers. Light type.

C139.E with galvanised steel rollers. Universal type.

C139.F and C139.G with galvanized steel rollers. Universal type.

	Max load	Reel Ø	Max reel width	Weight
	kg	mm	mm	kg
C139.C	1000	600 - 1200	-	18
C139.D	200	530 - 700	500	15
C139.E	1000	450 - 1000	500	17
C139.F	2500	1000 - 2000	-	30
C139.G	4000	1500 - 2500	-	38





Trailer fit to transport and unwind reels of cable weighting up to 4000 kg.

TRAILER CHARACTERISTICS

Dimensions LxWxH 6,40x3,30x2,60 m

Total weight with drum 5000 kg

Drum max diameter 2800 mm

Drum max width 1500 mm

Performances with optional drive (opt.408.4 or 447)

Pulling force 0 - 9 kN
Pulling speed 0 - 60 m/min

CONFIGURATION

- Framework made of 3 steel sections.
- Spindle rotating on ball joints, with arm for close and drag the reel, and collars for wooden reel.
- Safe mechanical locking in working position.
- Mechanical locking of the spindle rotation for safe transport.
- Single rigid axle and rigid towing assembly.
- Towing speed 40 Km/h.
- Front support.
- No brakes and No lights.

OPTIONAL DEVICES

- 006.1 12V light system.
- 006.6 Hand parking brake for trailer.
- 425 Mechanical back supports.
- 438 Hydraulic reel lift with hand pump.
- 007-A Dumped single axle, towing speed 60 km/h. Complete with ABS system.
- 007-B Dumped single axle, towing speed 80 km/h.Complete with ABS system and pneumatic suspensions.
- 029.2 Electric start of the diesel/gasoline engine, with battery.
- 401 Devices fit for using steel reels with the reel-elevator.
- 408.4 Hydraulic drive with quick connections for controlling the reel rotation both recovering and releasing cables, complete with power unit and gasoline engine.
- 408.5 Hydraulic drive with quick connections for controlling the reel rotation both recovering and releasing cables, complete with power unit and diesel engine.
- 410.1 Band brake on the spindle, for braking the unwinding of the cable.





Trailer fit to transport and unwind reels of cable weighting up to 8000 kg.

TRAILER CHARACTERISTICS

Dimensions LxWxH 7,30x3,50x2,70 m

Total weight with drum 10000 kg

Drum max diameter 3000 mm

Drum max width 1600 mm

Performances with optional drive (opt.408.4 or 447)

Pulling force 0 - 9 kN
Pulling speed 0 - 60 m/min

CONFIGURATION

- Framework made of 3 steel sections.
- Spindle rotating on ball joints, with arm for close and drag the reel and collars for wooden reels.
- Safe mechanical locking in working position.
- Mechanical locking of the spindle rotation for safe transport.
- Single rigid axle and rigid towing assembly.
- Towing speed 40 Km/h.
- Front support.
- No brakes and no lights.

OPTIONAL DEVICES

- 006.1 12V light system.
- 006.6 Hand parking brake for trailer.
- 425 Mechanical back supports.
- 438 Hydraulic reel lift with hand pump.
- 005.1 Damped tandem axle, towing speed 60 km/h.
 Complete with ABS system.
- 005.2 Damped tandem axle, towing speed 80 km/h.

 Complete with ABS system and Pneumatic suspensions.
- 029.2 Electric start of the diesel/gasoline engine, with battery.
- 401 Devices fit for using steel reels with the reel-elevator.
- 408.4 Hydraulic drive with quick connections for controlling the reel rotation both recovering and releasing cables, complete with power unit and gasoline engine.
- 408.5 Hydraulic drive with quick connections for controlling the reel rotation both recovering and releasing cables, complete with power unit and diesel engine.
- 410.1 Band brake on the spindle, for braking the unwinding of the cable.





Trailer fit to transport and unwind reels of cable weighting up to $10000 \ \mathrm{kg}$.

TRAILER CHARACTERISTICS

Dimensions LxWxH 7,30x3,50x2,70 m

Total weight with drum 12000 kg
Drum max diameter 3000 mm
Drum max width 1600 mm

Performances with optional drive (opt.408.4 or 447)

Pulling force 0 - 9 kN
Pulling speed 0 - 60 m/min

CONFIGURATION

- Framework made of 3 steel sections.
- Spindle rotating on ball joints, with arm for close and drag the reel, and collars for wooden reel.
- Safe mechanical locking in working position.
- Mechanical locking of the spindle rotation for safe transport.
- Single rigid axle and rigid towing assembly.
- Towing speed 40 Km/h.
- Front support.
- No brakes and No lights.

OPTIONAL DEVICES

- 006.1 12V light system.
- 006.6 Hand parking brake for trailer.
- 425 Mechanical back supports.
- 438 Hydraulic reel lift with hand pump.
- 005.1 Damped tandem axle, towing speed 60 km/h.
 Complete with ABS system.
- 005.2 Damped tandem axle, towing speed 80 km/h.
- Complete with ABS system and Pneumatic suspensions.

 O29.2 Electric start of the diesel/gasoline engine, with battery.
- 401 Devices fit for using steel reels with the reel-elevator.
- 408.4 Hydraulic drive with quick connections for controlling the reel rotation both recovering and releasing cables, complete with power unit and gasoline engine.
- 408.5 Hydraulic drive with quick connections for controlling the reel rotation both recovering and releasing cables, complete with power unit and diesel engine.
- 410.1 Band brake on the spindle, for braking the unwinding of the cable.





Trailer fit to transport and unwind reels of cable weighting up to 50000 kg.

REEL CHARACTERISTICS

Drum max diameter 5000 mm

Drum max width 2700 mm

Drum max weight 50000 kg

Total weight of the trailer with reel 59000 kg

Performances with optional drive (opt.408)

Max braking torque 750 daN
Max recovering torque 500 daN

TRAILER CHARACTERISTICS

Dimensions LxWxH 8,80x4,20x3,00 m
Weight 9000 kg

CONFIGURATION

- Framework made of welded steel sections.
- Hydraulic cylinders operated by hand pump for lifting the reel (opt.447, drum lifting from hydraulic power pack)
- Spindle rotating on ball bearings, with arm for close and drag the reel
- Safe mechanical locking in working position.
- Mechanical locking of the reel rotation for safe transport.
- No. 6 semi-axle shafts, tires and drawbar for towing at low speed in the workplace max 15 km/h
- Mechanical stabiliser on towing side.
- Manual parking brake of the truck.
- Disc brake with manual regulation of the braking to keep under control the unwinding, complete with dragger for reels (max braking 150 daNm).

OPTIONAL DEVICES

- 006 Lights and braking system of the trailer.
- OO8 Suspensions on semi-axles, and pneumatic braking system, tyres and lights for towing on the road at 20km/h (homologation excluded).
- 401 Devices fit for using steel reels with the reel-elevator (reel hole diameter to be specified).
- 447 Diesel engine with control pump of the hydraulic circuit for lifting the reel.
- 408.4 Hydraulic drive with quick connections for controlling the reel rotation both recovering and releasing cables, complete with power unit and gasoline engine.
- 459 Device that allows to tighten the trailer to a width "B" on the trailer min 2.5 m.
- Trailer adjustments fit for transporting drums with max width 3500 mm.
- 461 Trail-stocks system for supporting the drum (instead of the shaft system).
- 462 Swivel and adjustable towing bar to facilitate the trailer handing in limited spaces.
- 463 Steerable towing assembly complete with axle, wheels and towing arm on fifth wheel.



04 HYDRAULIC POWER UNITS



F306.09.CA



Hydraulic power unit with one hydraulic circuit (open type) fit to feed various equipment.

ENGINE				
Feeding	gasoline			
Power	9 hp / 6,6 kW			
Revolutions per minute	2800 rpm			
Cooling system	air			
Starting	by rope			
Dimensions LxWxH	70x50x60 m			
Weight	68 kg			

PERFORMANCES

Working pressure 150 bar
Capacity 20 L/min
Noise level 80 dbA

CONFIGURATION

- Control lever.
- Manometer to control the pressure.
- Quick couplings to connect hydraulic hoses.
- Hydraulic oil tank.
- Wheels with tow handle.
- Protective frame.

OPTIONAL DEVICES

028	Air cooled diesel engine.
034	Engine electric starting with battery.
078	Set of flexible hoses (10m long) with quick couplings
080	Oil cooling system (needed for operating in hot
	environments).
090	Monophase electric motor 220 V, 3kW.
090.1	Three-phase electric motor 380 V, 3 kW.



F306.18.CC



Hydraulic power unit with one hydraulic circuit (closed type) fit to feed reel-stands drive.

IE .
gasoline
18 hp / 13,2 kW
air
12 V
1,20x0,90x0,95 m
475 kg

PERFORMANCES Fit for motorizations of reel-stands with capacity 120-500 kN Pump delivery (variable) 0-28 cm³ Working pressure 210 bar

ALSO AVAILABLE F306.21.CC				
feeding	diesel			
power	21 hp / 15,4 kW			
electric system	12 V			
cooling system	air			
fit for motorizations of				
reel-stands with capacity	300-500 kN			
pump delivery (variable)	0-40 cm ³			
working pressure	210 bar			

CONFIGURATION

- Control panel with joystick for puller use, dynamometer and preselector of max pull force, valve to adjust the tension force and control for unlocking the negative brake.
- Group of quick couplings to connect the hydraulic hoses.
- Rigid axle, tires, hand brake and drawbar for towing at low speed in workplace.
- Metallic coverage with side doors.
- Oil cooling system.

OPTIONAL DEVICES

- O11 Auxiliary hydraulic circuit for additional equipment (like hydraulic cylinders).

 Air cooled discal appine
- O28 Air-cooled diesel engine.
- 028.1 Water-cooled diesel engine.
- 078.3 Set of flexible hoses (10 m long) with quick-joints to feed additional equipment (with opt. 011).



05 REELS and ROPES



21.12



Anti-twisting galvanised steel rope specifically designed for stringing operations. Made up of 12 braided strands. High resistant to break, antitwisting, flexible, safe and easy to handle. The linear contact between the braided strands grants a low stress on the rope. Supplied wound up on steel or wooden reels.





	Nominal diameter	Breaking load	Weight	Standard Lengths (*)
	mm	kN	kg	m
21.12.08	8	44	0,22	1000
21.12.10	10	72	0,35	1000
21.12.13	13	105	0,55	1000
21.12.16	16	163	0,80	1000
21.12.18	18	235	1,07	1000
21.12.20	20	268	1,24	1000
21.12.22	22	330	1,56	900
21.12.24	24	380	1,80	800
21.12.28	28	480	2,80	600

^(*) other lengths on request

HIGH RESISTANCE

	Nominal diameter	Breaking load	Weight	Standard Lengths (*)
	mm	kN	kg	m
21.18.22	22	402	1,86	900
21.18.24	24	490	2,34	800
21.18.30	30	720	3,25	500

OPTIONAL DEVICES

146.2 Spliced eyes at both ends146.3 Clamped eyes at both ends



22...1



Pilot rope made of an external polyester mesh stocking and a hi-tenacity nylon core. Double torsion. Highly resistant to wear and UV rays. white colour. Supplied wound up on wooden reels or in coils.

OPTIONAL DEVICES

- Clamped eyes with metallic collars at the ends (note: the clamped eyes have breaking load 30-35% lower than the rope).
- Sewn eyes (note: available up to Ø18 mm. The breaking load of the clamped eyes is the same as the breaking load of the rope).

	Nominal diameter	Elongation u	nder tension	Breaking load	Weight	Standard Lengths (*)
	mm	at 10 % BL (1)	at 30 % BL (2)	kN	kg/m	m
22.06.1	6	4%	7,5%	750	0,027	500 1000 1500 2000 3000
22.08.1	8	4%	7,5%	1.200	0,045	500 1000 1500 2000 3000
22.10.1	10	4%	7,5%	2.000	0,073	500 1000 1500 2000 3000
22.12.1	12	4%	7,5%	3.500	0,115	500 1000 1500 2000 3000
22.14.1	14	4%	7,5%	4.300	0,142	500 1000 1500 2000
22.16.1	16	4%	7,5%	5.000	0,195	500 1000 1500 2000
22.18.1	18	4%	7,5%	5.800	0,240	500 1000 1500
22.20.1	20	4%	7,5%	6.500	0,295	500 1000 1500
22.22.1	22	4%	7,5%	8.300	0,350	500 900
22.24.1	24	4%	7,5%	9.500	0,410	500 800

(1) elongation rate at 10% of breaking load (2) elongation rate at 30% of breaking load

22...2



Pilot rope made of polypropylene and polyester hi-tenacity 12-fuses mesh. Light-weight, waterproof and UV resistant. Easy to splice without any special tool. Green colour. Supplied wound up on wooden reels or in coils.

OPTIONAL DEVICES

Hand-spliced ends.

	Nominal diameter	Elongation under tension	Breaking load	Weight	Standard Lengths (*)
	mm	at 50 % BL (1)	daN	kg/m	m
22.10.2	10	5%	1.500	0,040	1000
22.12.2	12	5%	2.300	0,060	1000
22.14.2	14	5%	2.800	0,075	1000
22.16.2	16	5%	3.300	0,088	1000
22.18.2	18	5%	4.500	0,120	1000
22.20.2	20	5%	5.500	0,150	1000
22.22.2	22	5%	6.200	0,165	800
22.24.2	24	5%	8.500	0,240	800



23...P



Rope with Dyneema-core and polyester covering. Supplied wound up on wooden reels or in coils.

OPTIONAL DEVICES

- Clamped eyes with metallic collars at the ends (note: the clamped eyes have breaking load 30-35% lower than the rope).
- Hand-spliced eyes.
- Head stocking-grip with eyes.
- Steel reel Ø 1100, 1400 or 1600 mm.

	Nominal diameter	Elongation under tension (*)	Breaking load	Weight	Standard Lengths (*)
	mm	%	daN	kg/m	m
23.06.P	6	3%	3.100	0,050	500 1000 1500 2000 3000
23.08.P	8	3%	5.480	0,064	500 1000 1500 2000 3000
23.10.P	10	3%	8.210	0,078	500 1000 1500 2000 3000
23.12.P	12	3%	11.860	0,120	500 1000 1500 2000
23.14.P	14	3%	16.430	0,139	500 1000 1500 2000
23.16.P	16	3%	20.990	0,200	500 1000

^(*) elongation rate at 8% of breaking load

23...D



High resistance dyneema rope. Light-weight and wear resistant. Supplied wound up on wooden reels or in coils.

OPTIONAL DEVICES

- Clamped eyes with metallic collars at the ends (note: the clamped eyes have breaking load 30-35% lower than the rope).
- Hand-spliced eyes.
- Head stocking-grip with eyes.
- Steel reel Ø 1100, 1400 or 1600 mm.

	Nominal diameter	Elongation under tension	Breaking load	Weight	Standard Lengths (*)
	mm	at 2 %	daN	kg/m	m
23.06.D	6	3%	4.000	0,02	500 1000 1500 2000 3000
23.08.D	8	3%	6.000	0,03	500 1000 1500 2000 3000
23.10.D	10	3%	9.000	0,05	500 1000 1500 2000 3000
23.12.D	12	3%	13.000	0,07	500 1000 1500 2000
23.14.D	14	3%	18.000	0,08	500 1000 1500 2000
23.16.D	16	3%	23.000	0,12	500 1000 1500 2000
23.18.D	18	3%	29.000	0,17	500 800 1000
23.20.D	20	3%	36.500	0,20	500 800 1000



C02...AC

Bright steel rope 216 wires + steel core. Construction 6 (14+7/7+7+1) WS+WR. Right and left crossed.

UNI 7297-74. Resistance of wires: 180 kg/mm².

OPTIONAL

Galvanization



C02...LR

Bright steel rope 133 wires. Construction 19x7. Lang lay or regular lay. Resistance of wires 200 kg/mm².



Nominal diameter	Wires diameter	Breaking load	Weight
mm	mm	kN	kg/m
6	0,38	27,2	0,15
8	0,50	47,3	0,28
10	0,62	75	0,43
11	0,68	89	0,52
12	0,75	108	0,62
14	0,77	131	0,82
16	0,88	168	1,07
18	0,99	220	1,35
20	1,10	270	1,68
22	1,22	320	2,03
24	1,33	380	2,40
26	1,44	450	2,83
28	1,55	504	3,30
30	1,66	600	3,80
32	1,77	670	4,33

Rope diam.	Wires diam.	Sect.	Breaki	ng load	Weight						
mm	mm	mm2	kN	kN (1)	kg/m						
	Lang lay										
6	0,38	16,5	26	26	0,15						
8	0,51	29,3	48,1	46,1	0,27						
10	0,64	45,7	72,1	72,1	0,41						
11	0,70	55,3	87,2	87,2	0,50						
12	0,76	65,8	104	104	0,60						
13	0,83	77,3	122	122	0,70						
14	0,89	89,6	141	141	0,81						
16	1,02	117	185	185	1,06						
18	1,15	148	234	234	1,34						
	F.	Regular lay	1								
20	1,27	183	288	281	1,66						
22	1,40	221	349	340	2,01						
24	1,53	263	415	405	2,39						
26	1,65	309	487	475	2,81						

C02...AR

Bright steel rope 216 wires "compacted strands", high resistance, with metal core.

Resistance of wires: 220 kg/mm²



C02...AT

Bright steel rop. Construction 35x7. Resistance of wires 220 kg/mm².

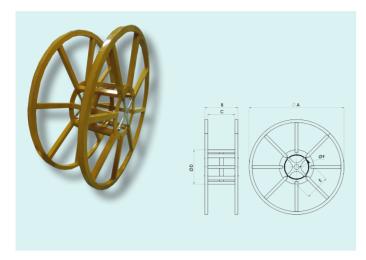


Nominal diameter	Wires diameter	Breaking load	Weight
mm	mm	kN	kg/m
10	0,59	90,2	0,45
11	0,66	111	0,55
12	0,72	132	0,67
13	0,78	153	0,78
14	0,84	176	0,90
16	0,96	240	1,18
18	1,08	294	1,48
20	1,20	367	1,85
22	1,32	443	2,25
24	1,41	525	2,50
26	1,53	613	3,04
28	1,64	704	3,64
30	1,76	809	4,20

Nominal diameter	Wires diameter	Breaking load	Weight
mm	mm	kN	kg/m
8	0,40	49,2	0,26
10	0,50	77	0,42
12	0,60	110,8	0,60
14	0,70	150,9	0,82
16	0,80	197,1	1,07
18	0,90	249,4	1,36
20	1,00	308	1,68
22	1,10	372,6	2,03
24	1,20	443,5	2,42
26	1,30	520,5	2,84
28	1,40	603,6	3,29
30	1,40	693	3,78



F162



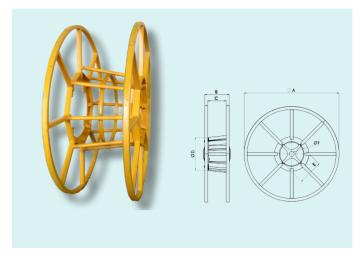
Welded and painted steel reel, complete with central dials and bolts.

OPTIONAL DEVICES

- Total galvanization.
- Additional pair of standard dials.
- Pair of dials equipped with ball bearings.
- Reinforced reel, made of square tubular (30% heavier than the standard version).

			Weight (without rope)				
	Α	В	C	D	Е	F	kg
F162.060	700	530	460	219		50	27
F162.110	1100	560	460	570	420	50	66
F162.140	1400	560	460	570	420	50	105
F162.160	1600	560	460	570	420	50	120
F162.190	1900	560	460	570	420	50	140
F162.200	2200	1560	1400	1010	420	100	950

F164



Welded and painted steel conical reel with openable side. Complete with central dials and bolts.

OPTIONAL DEVICES

- Total galvanization.
- Additional pair of standard dials.
- Pair of dials equipped with ball bearings.
- Drum core covered with steel sheet.

			Weight (without rope)				
	Α	В	C	D	Е	F	kg
F164.060	700	530	460	219		50	40
F164.110	1100	560	460	570	420	50	85
F164.140	1400	560	460	570	420	50	115
F164.160	1600	560	460	570	420	50	130
F164.190	1900	560	460	570	420	50	220
F164.205	2050	1310	1170	630	420	50	550
F164.220	2200	1310	1170	1010	420	100	1050

REEL CAPACITY (meters of rope)										
Rope diameter	F162.060	F162.110	F162.140	F162.160	F162.190	F162.220				
(mm)	F164.060	F164.110	F164.140	F164.160	F164.190	F164.220				
6	2000	6300	13000	17000	25000	-				
7	1500	4500	9000	12000	18000	-				
8	1200	3500	6000	5500	14000	-				
9	900	2800	5400	7500	11000	-				
10	800	2300	4400	6000	9000	33000				
11	500	1900	3600	5000	7500	31000				
12	450	1600	3000	4200	6000	22000				
13	400	1400	2600	3600	5400	19000				
14	300	1250	2200	3000	4600	16000				
16	250	1000	1700	2400	3500	13000				
18	-	800	1300	1900	2800	10000				
20	-	650	1100	1600	2200	8000				
22	-	500	900	1200	1900	6000				
24	-	-	750	1000	1500	5000				
26	-	-	650	900	1300	4500				
28	-	-	560	800	1100	4000				
30	-	-	490	700	1000	3500				
32	-	-	430	600	850	3000				

(*) elongation rate at 8% of breaking load



06 EQUIPMENT



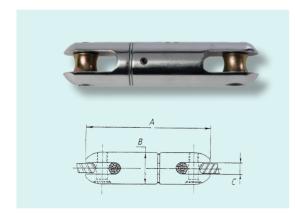
GF...00



Joint made of high tensile galvanised steel, fit to connect pilot rope lenghts and pulling rope. Designed to pass on the capstan grooves of pullers or puller/tensioners.

		Dime	nsions	mm		for rope	W.L	Weight
	Α	Н	В	Ø	R	Ø mm	kN	kg
GF.10.00	68	14	36	17	13	10/12	23	0,20
GF.13.00	76	17	37	21	15	13/14	37	0,30
GF.16.00	96	19	50	22	20	16	53	0,60
GF.18.00	110	25	56	24	22	18/20	73	0,90
GF.24.00	125	26,5	60	28	24	22/24	120	1,30
GF.26.00	168	30	72	38	30	26/28	250	3,00
GF.32.00	178	35	80	44	34	28/32	280	3,50

F250.R



Swivel joint for ropes and conductors. Designed to release the torsion efforts during the pulling operations. Made of galvanised steel, complete with an axial bearing for an easy rotation.

	Dim	ensions	mm	for rope	W.L	Weight
	Α	В	C	Ø mm	kN	kg
F250.R.06.1	60	18	9	7	4	0,7
F250.R.08.1	96	24	12	9	8	0,10
F250.R.12.1	137	32	13	14	25	0,36
F250.R.13.1	152	39	17	16	40	0,90
F250.R.16.1	177	45	20	18	63	1,50
F250.R.18.1	182	52	22	22	80	2,30
F250.R.24.1	228	60	25	26	130	3,10
F250.R.28.1	322	77	31	32	260	7,00
F250.R.32.1	337	80	36	38	280	10,50



CO8



Dead end stocking for pulling underground cables. Long stocking type art. C08.L also available.

	0 cable min - max	Length (1)	Stocking length (²)	Breaking load
	mm	mm	kN	kg
C08.01	10-15	600	900	2000
C08.02	15-20	600	900	2000
C08.03	20-25	600	1000	2500
C08.04	25-30	600	1200	3000
C08.05	30-40	700	1500	4500
C08.06	25-45	700	1500	5000
C08.07	40-50	800	1500	5000
C08.08	45-60	800	1600	5000
C08.09	60-80	800	1800	8000
C08.10	80-100	1000	2000	10000
C08.11	100-140	1200	2000	10000
C08.12	140-170	1200	2000	10000
C08.13	170-200	1200	2000	10000

(1) standard stocking (2) longer type stocking art. C08.L

C09



Joining stocking for pulling underground cables.

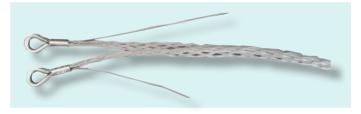
	Ø cable min - max	Length	Breaking load
	mm	mm	kg
C09.01	10-15	1200	2000
C09.02	15-20	1200	2000
C09.03	20-25	1200	2500
C09.04	25-30	1200	3000
C09.05	30-40	1400	5000
C09.06	25-45	1400	5000
C09.07	40-50	1600	5000
C09.08	45-60	1600	5000
C09.09	60-80	1600	8000
C09.10	80-100	2000	10000
C09.11	100-140	2400	10000
C09.12	140-170	2400	10000
C09.13	170-200	2400	10000

C10



Double eye stocking for pulling underground cables.

C11



Double eye stocking with open sleeve for pulling underground cables.

	Ø cable min - max	Length	Breaking load
	mm	mm	kg
C10.01	10-15	800	2000
C10.02	15-20	800	2000
C10.03	20-25	800	2500
C10.04	25-30	800	3000
C10.05	30-40	1000	4500
C10.06	25-45	1000	5000
C10.07	40-50	1000	5000
C10.08	45-60	1000	5000
C10.09	60-80	1000	8000
C10.10	80-100	1200	10000
C10.11	100-140	1400	10000
C10.12	140-170	1400	10000
C10.13	170-200	1400	10000

	Ø cable min - max	Length	Breaking load
	mm	mm	kg
C11.01	10-15	800	2000
C11.02	15-20	800	2000
C11.03	20-25	800	2500
C11.04	25-30	800	3000
C11.05	30-40	1000	4500
C11.06	25-45	1000	5000
C11.07	40-50	1000	5000
C11.08	45-60	1000	5000
C11.09	60-80	1000	8000
C11.10	80-100	1200	10000
C11.11	100-140	1400	10000
C11.12	140-170	1400	10000
C11.13	170-200	1400	10000



C108.A



Galvanised steel cable roller.

FEATURES					
Max load	180 kg				
Max cable	Ø 120 mm				
Roller	Ø 70/110 x 185 mm				
Dimensions	300 x 240 x 250 mm				
Weight	4,1 kg				
Max cable Roller Dimensions	180 kg Ø 120 mm Ø 70/110 x 185 mm 300 x 240 x 250 mm				

C108.C



Straight cable roller with 3 aluminium rollers.

	FEATURES
Max load	200 kg
Max cable	Ø 150 mm
Roller	Ø 50/60 x 100 mm
Dimensions	250 x 250 x 250 mm
Weight	4,9 kg

C108.F



Galvanised cable guiding run-off frame.

	FEATURES
Max load	300 kg
Roller	Ø 35 x 620 mm
Dimensions	1050 x 470 x 520 mm
Weight	14 kg

C108.A1



Heavy version with shielded bearings.

	FEATURES				
Max load	400 kg				
Max cable	Ø 200 mm				
Roller	Ø 80/130 x 280 mm				
Dimensions	300 x 300 x 260 mm				
Weight	7,1 kg				

C108.E



Galvanised horizontal cable roller.

	FEATURES
Max load	400 kg
Max cable	Ø 120 mm
Roller	Ø 75/110 x 800 mm
Dimensions	850 x 250 x 250 mm
Weight	13 kg

C108.F1



Heavy version with shielded bearings.

FEATURES			
Max load	1000 kg		
Roller	Ø 80 x 700 mm		
Dimensions	1200 x 600 x 450 mm		
Weight	28 kg		

C108.B



Aluminium cable roller with galvanised steel base.

	FEATURES			
Max load	200 kg			
Max cable	Ø 120 mm			
Roller	Ø 75/115 x 175 mm			
Dimensions	300 x 240 x 250 mm			
Weight	4,5 kg			

C108.E1



Heavy version shielded bearings.

FEATURES			
Max load	1000 kg		
Roller	Ø 80 x 950 mm		
Dimensions	1000 x 250 x 250 mm		
Weight	22 kg		



C109.A



C109.A Galvanised steel cable roller.
C109.A1 Heavy version with shielded bearings.

	max load	max cable	rollers	dimensions	weight
	kg	mm	mm	mm	kg
C109.A	300	Ø 120	Ø 83x200	370x330x420	17
C109.A1	1000	Ø 200	Ø 90x250	400x360x420	27

C109.B



C109.B Galvanised steel corner roller.
C109.B1 Version with aluminium rollers.
C109.B2 Heavy version with shielded bearings.

	max load	max cable	rollers	dimensions	weight
	kg	mm	mm	mm	kg
C109.B	300	Ø 120	Ø75/110x185	550x340x370	14
C109.B1	350	Ø 120	Ø70/130x170	550x340x370	17
C109.B2	1000	Ø 200	Ø80/130x280	600x400x420	31

C109.C



Chain of rollers for bends made of 12 horizontal rollers and 6 vertical rollers. Made of galvanised steel.

	max load	rollers	dimensions	weight
	kg	mm	mm	kg
C109.C	200	Ø 32x180	230x1300	28

C109.D



Galvanised chain rollers.

	max load	rollers	rollers	dimensions	weight
	kg	mm	n°	mm	kg
C109.D.3	100	Ø 32x185	3	420x230x120	4
C109.D.4	100	Ø 32x185	4	540x230x120	4,5
C109.D.5	100	Ø 32x185	5	670x230x120	5
C109.D.6	100	Ø 32x185	6	820x230x120	6

C109.E



C109.E Galvanised roller guide with swivel angled base. **C109.E1** Heavy version in painted steel.

	max load	rollers	dimensions	weight
	kg	mm	mm	kg
C109.E	120	Ø 75/110x130	350x250x210	5,8
C109.E1	200	Ø 135/205x80	315x250x230	18,2



C109.G



C109.G Galvanised triple guide roller for manholes. C109.G1 Version with aluminium rollers.

	rollers	dimensions	weight
	mm	mm	kg
C109.G	Ø75/110x180	500x220x400	13
C109.G1	Ø70/130x170	500x220x400	17

C109.I



Adjustable boom with aluminium cable roller.

	rollers	boom length	weight
	mm	mm	kg
C109.I.1	Ø110/210x110	300-500	12
C109.I.2	Ø110/210x110	500-800	15
C109.I.3	Ø110/210x110	600-1000	19
C109.I.4	Ø110/210x110	1000-1500	24
C109.I.5	Ø110/210x110	1500-1800	27
C109.I.6	Ø110/210x110	1800-2400	30

C109.M



C109.M Cable guiding device with 4 protection rollers.
C109.MA Adjustable boom for cable guiding device C109.M.
C109.MB Cable guiding device with 4 protection rollers Ø60mm (C109.M), complete with adjustable boom (C109.MA).

C109.H



Adjustable boom with aluminium cable roller.

	rollers	boom length	weight
	mm	mm	kg
C109.H.1	Ø110/210x110	300-500	9,5
C109.H.2	Ø110/210x110	500-800	10
C109.H.3	Ø110/210x110	600-1000	13
C109.H.4	Ø110/210x110	1000-1500	16
C109.H.5	Ø110/210x110	1500-1800	18
C109.H.6	Ø110/210x110	1800-2400	23

C109.L



Cable guiding device with 4 protection rollers

	passage between rollers	rollers	dimensions	weight
	mm	mm	mm	kg
C109.L	250	Ø 60	550x130x500	15

passage between rollers		rollers	dimensions	weight
	mm	mm	mm	kg
C109.M	250	Ø 60	550x130x500	15

	boom length	weight		boom length	weight
	mm	kg		mm	kg
C109.MA.1	500-800	7	C109.MB.1	500-800	10
C109.MA.2	600-1000	10	C109.MB.2	600-1000	13
C109.MA.3	1000-1700	12	C109.MB.3	1000-1700	15
C109.MA.4	1400-2400	14	C109.MB.4	1400-2400	17



C110.A



Galvanised steel cable and rope entrance device.

	bending radius	Ø socket	weight
	mm	mm	kg
C110.A.07	420	75	16,5
C110.A.09	420	90	17,0
C110.A.10	420	101	17,5
C110.A.12	420	114	18,0
C110.A.15	420	152	18,5
C110.A.17	420	168	19,0

C110.C



Galvanised spare socket for rope entrance devices C110.A and C110.B.

	Ø external	weight		Ø external	weight
	mm	kg		mm	kg
C110.C.07	75	1,0	C110.C.12	114	1,9
C110.C.09	90	1,5	C110.C.15	152	2,0
C110.C.10	101	1,7	C110.C.17	168	2,1

C110.P



 $\label{thm:continuous} \mbox{Galvanised cable entrance device with adjustable double protection.}$

C110.B



Galvanised steel cable and rope entrance device.

	bending radius	Ø socket	weight
	mm	mm	kg
C110.B.07	1000	75	22,0
C110.B.09	1000	90	22,5
C110.B.10	1000	101	23,0
C110.B.12	1000	114	23,7
C110.B.15	1000	152	24,5
C110.B.17	1000	168	25,0

C110.M



Galvanised cable protector with roller.

	Ø external	weight		Ø external	weight
	mm	kg		mm	kg
C110.M.05	51	4,0	C110.M.10	114	6,0
C110.M.06	61	4,2	C110.M.12	133	7,0
C110.M.07	75	4,5	C110.M.13	140	7,3
C110.M.09	89	5,0	C110.M.15	152	7,5

	Ø external	weight		Ø external	weight
	mm	kg		mm	kg
C110.P.05	51	2,5	C110.P.13	140	6,4
C110.P.07	75	3,5	C110.P.15	152	6,6
C110.P.09	89	4,2	C110.P.17	169	7,4
C110.P.10	114	5,0	C110.P.20	196	8,3
C110.P.12	133	6,2			



EOUIPMEN:

C46

fibreglass snakes for underground ducts



Fibreglass snake (with or without copper core) fit for setting up the pulling rope in the ducts, for cleaning the ducts, and for laying the cables. Wound up on a rotating galvanised steel reel. Complete with starting and ending junctions and guide tip with shackle.

C46.D4

Snake Ø 4 5 mm

Wound up on non-wheeled vertical reel (type VN) Ø330 mm. Available lengths: 20, 30, 40, 50, 60, 70 and 80 m.

C46.D9

Snake Ø 9 mm.

Wound up on wheeled vertical reel (type VC) \emptyset 800 mm. Available lengths: 50, 60, 70, 80 and 100 m.

C46.D6

Snake Ø 6 mm

Wound up on non-wheeled vertical reel (type VN) Ø 550 mm; on demand: on horizontal reel (type H).

Available lengths: 30, 40, 50, 60, 70 and 80 m.

Also available with copper core: art. C46.R6

C46.D11

Snake Ø 11 mm.

Wound up on wheeled vertical reel (type VC) \emptyset 800 or 1200 mm. Available lengths on reel \emptyset 800 mm: 100 and 120 m. Available lengths on reel \emptyset 1200 mm150, 200, 250 and 300 m. Also available with copper core art. C46.R11

Accessories

C46.A.11



Swivel joint with threaded holes M12 for snakes Ø9 and 11 mm.

C46.A.12



Guide tip with shackle and threaded hole. Hole M6 for snake Ø 6 mm. Hole M12 for snakes Ø 9 and 11 mm.

C46.A.14



Aluminium alloy roller guide. With threaded hole M6 for snake Ø 6 mm, or M12 for snakes Ø 9 and 11 mm.

C46.A.17



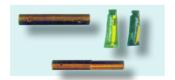
Catch hook device to link 2 snakes (pair), with threaded hole M12. Available for pipe Ø 80, 100 and 125 mm.

C46.A.18



Nylon brush for cleaning the ducts, from \emptyset 34 up to \emptyset 320 mm.

C46.A.19



Repair kit for snakes (connection joint and glue).

C46.A.20



Nylon mandrel for clearance of ducts from Ø 34 up to Ø 320 mm.





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watch the video