

MUNICIPAL MACHINES CATALOGUE



MACHINES FOR SUMMER ROAD AND GREEN AREAS MAINTENANCE



WINTER ROAD MAINTENANCE MACHINERY





MACHINES FOR SUMMER ROAD AND GREEN AREAS MAINTENANCE

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SWEEPERS  **AGATA ZM-1250, 1400, 1600, 2000, 2000M**

AGATA sweepers are designed for cleaning hard-paved surfaces. They enable removal and collection of dirt or (without waste collection tank and with angled brush) only sweeping to the right or left side.

The sweepers can be optionally equipped with sprinkler system (reduced emission of powder and dust) and with a side disk brush (for sweeping along kerbs) They are used by road maintenance services for cleaning of the roadbed prior to application of asphalt layer on renovated road sections. They can be also used by municipal services, as well as in agriculture, forestry and water management establishments for cleaning roads and other paved surfaces. In winter, the sweeper can be used for snow clearing. Thanks to an adjustable drawbar the sweeper is designed for hitching to the tractor's category II or III front or rear three-point linkage. The machine consists of a frame to which a hydraulically driven roller brush is attached and a waste collection tank that is suspended on the frame by means of extension arms. The waste tank is emptied by tipping it over by means of a hydraulic cylinder.

Optional equipment:

- sprinkler system with 200 l water tank
- side brush
- front supporting wheel (to be installed on the front of the carrying vehicle)
- lighting
- slow-moving vehicle triangle bracket
- forklift, backhoe loader mountings (according to customer's demand)
- reinforced support wheel



AGATA ZM-1250 SWEEPER



AGATA ZM-1400 SWEEPER

Possibility of hitching the sweeper on backhoe loaders and other carrying vehicles (according to customer's demand)



AGATA ZM-2000 SWEEPER



AGATA ZM-2000M SWEEPER

The working width of only 1,25 m (smallest of the offered range) is a big advantage of this machine. This design allows for easy manoeuvring in narrow spaces, pathways and cramped alleys. Thanks to its construction ZM-1250 may be mounted on many carrier vehicles and is a product demanded by maintenance companies.



Brush and collection container.



Support wheels



Sprinkler system reduces dust and particulate emissions.

PRONAR "AGATA" SWEEPERS	ZM-1250	ZM-1400	ZM-1600	ZM-2000	ZM-2000M	
Efficiency	7500	8300	9500	11875	11875	[m ² /h]
Weight	195	245	249	320	405	[kg]
Waste tank capacity	155	175	200	250	250	[dm ³]
Working width	1250/1820*	1400/1950*	1600/2000*	2000/2400*	2000	[mm]
Working speed	6	6	6	6	6	[kph]
Recommended brush speed	100	100	100	100	100 - 200	[rpm]
Maximum brush speed	130	130	130	130	370	[rpm]
Length (rear-hitched version)	1750	1750	1750	1750	1716	[mm]
Length (front-hitched version)	1700	1700	1700	1820	2263	[mm]
Width	1710	1710	1910	2330	2244	[mm]
Height	820	820	820	820	1079	[mm]
Mounting method on tractor	3pt hitch cat. I or II narrow	3pt hitch cat. I or II narrow	3pt hitch cat. I or II narrow	3pt hitch cat. II or III	3pt hitch cat. I or II	
Power supply	12	12	12	12	12	[V]
Hydraulic supply	16-20 13-25	16-20 13-25	16 - 20 13-25	16 - 20 13-25	16-20* 13-25*	[MPa] [l/min]
Drive	hydraulic	hydraulic	hydraulic	hydraulic	PTO	

*working with side brush

Other mountings on demand



Pronar ZM-2300M sweeper is designed to clean city streets. Tiltable bottom of the waste tank allows a smooth passage over bumps and speed humps. The jack-screw stepless height adjustment mechanism allows for regulation of the sweeping roller which maximizes the lifespan of the bristles and maximizes the effects. Additional side disc brushes (left & right) allows sweeping curbs in any direction. The brush speed may be adjusted independently depending on the working conditions.

Turning actuator allows sweeping to the left or right (work with raised or without tank).



Sprinkler system reduces dust emission.



The tank is emptied by hydraulic cylinder with lock (for work with a raised container).



Suspended on a floating arm side disc brushes (600 mm diameter each) increase the working width of the machine and remove debris from hard to reach places.



Supporting whels provide stabilization of the machine during operation.



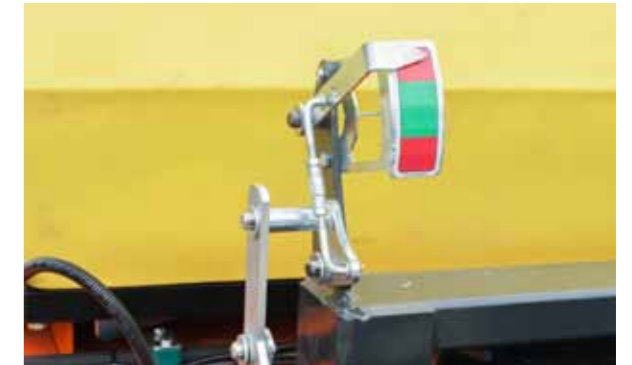
Tank with tilttable bottom allows for easy passage through e.g. speed bumps.



Universal mounting frame allows aggregation with a wide range of carriers - from tractors up to forklifts (pictured three-point linkage).



The roller brush consists of rings (numerous variants hardness).



Indicators of position and height allow you to set the machine in the optimum working position.



The jack-screw mechanism makes it easy to lower the brush as it wears-out.



Brush motor built inside the shaft - reduced sweeper width.

PRONAR SWEEPER

	ZM-2300M	
Efficiency	19020	[m ² /h]
Weight (no side brush, with tank)	735	[kg]
Waste tank capacity	470	[dm ³]
Working width	2300	[mm]
Working speed	6	[kph]
Recommended brush speed	150	[rpm]
Maximum brush speed	195	[rpm]
Length	2260	[mm]
Width	2525	[mm]
Height	1060	[mm]
Mounting method on tractor	3pt. hitch cat. II	
Power supply	12	[V]
Hydraulic supply	16	[MPa]

Pronar ZMC 2.0 trailed vacuum sweeper is adapted for work with tractors with at least 60 HP. It has been designed to perfectly clean roads, large warehouse surfaces, and areas paved with asphalt, concrete or cobblestones.

The sweeping unit consists of 2 hydraulic rotary disc brushes that sweep the debris into the machine's interior, where a vacuum suction system moves it to a 2.1 m³ container at the rear of the sweeper. The sprinkler system, consisting of a pump, water tank, and spraying nozzles, effectively prevents formation of dust during operation. Machine control is fully automated. An electrical control panel can be used to adjust all sweeper functions, including unloading of the machine. A hydraulically articulated drawbar enables precise following of the curb contour.



Special brush for removing plants from carriageway edges.



Sweeper control panel.



Hydraulically articulated drawbar.



Additional (optional) equipment:

- side attachment for collecting leaves
- additional water tank (200 l)
- chute
- pneumatic single-conduit brake system
- hydraulic brake system

Hydraulic hopper dumping system.

Adjustable side brush.

Spraying nozzles in front of rotary disc brushes

ZMC 2.0 sweeper attached to Pronar 5135 tractor.



PRONAR TRAILED SWEEPER

ZMC2.0

Efficiency	13800	[m ² /h]
Weight	2300	[kg]
PTO Power demand	61 (45)	[HP (kW)]
PTO Recommended speed	1000	[rpm]
Waste tank capacity	2,1	[m ³]
Working width regulation	2000 – 2300	[mm]
Working speed	6	[kph]
Supplying of hydraulics, sprinkler and fan	mechanical from PTO	
Water tank capacity	240 + 200*	[dm ³]
Hydraulic feed for drawbar turning	16	[MPa]
Dumping height	1660	[mm]
Width/length/height	2175/3510/2230	[mm]
Height with a raised tank	3770	[mm]
Permissible load on coupling (not less than)	650	[kg]
Transport speed max.	25	[kph]

*additional water tank

Pronar ZMC 3.0 sweeper with mechanical debris transport system.

Two rotary disc brushes clean the surface, a roller brush sweeps the debris onto a scraper conveyor belt, which conveys it to the waste container. The sweeper is great at cleaning roads, city streets, large squares, warehouse facilities, as well as car parkings and pedestrian areas. It performs ideally in road cleaning after the winter. The operator can hydraulically dump the load without any need to leave the tractor cabin by using the steering panel. The machine is also equipped with a sprinkler system, and water tank that can hold up to 1150 litres of water.

Optional equipment:

- vibrator system for easy emptying of the waste container
- work lighting of the brush operating area
- warning lighting with mandatory sign (C9 or C10) mounted on rear
- license plate bracket with lighting
- left brush hydraulic tilting
- additional warning light
- reflective outline width markers
- wheel chock set
- galvanised frame
- single-conduit pneumatic brake system
- hydraulic brake system
- upper transportation hitch drawbar
- supplying by PTO shaft



Scraper conveyor transporting waste to the hopper.



Control panel in the operator's cabin.



Hydraulic adjustment of rotary disc brush position.



Hydraulic hopper dumping system.



Additional side brush control module



Hydraulic brush for gutter cleaning



Drawbar for upper transport hitch

Multiplier powered by tractor PTO



1150 litre water tank and roller brush.



Hydraulic drawbar articulation



Tilting service hatch.



PRONAR TRAILED SWEEPER

	ZMC3.0	
Efficiency	54000	[m ² /h]
Weight	3150	[kg]
PTO Power demand	50/ 35	[HP (kW)]
PTO recommended speed	400	[rpm]
Waste tank capacity	3	[m ³]
Working width regulation	2400 – 2700	[mm]
Working speed	1 – 20	[kph]
Sprinkler system power supply	electric	
Water tank capacity	1150	[dm ³]
Hydraulic feed for drawbar turning	16	[MPa]
Dumping height	2200	[mm]
Width/length/height	2060/4730/2480	[mm]
Height with a raised tank	4420	[mm]
Permissible load on coupling (not less than)	1700	[kg]
Max. transport speed	40	[kph]



Control panel – all sweeper functions are controlled using a panel located in the tractor cab



Pressure washer – water pressure up to 160bar



Side brush – right or left side brush – increasing sweeping width, range 700 mm beyond the machine outline



Sprinkle system – the large capacity of water tank allows to fill up to 1120 liters of water at a time, every one enables long-term work in comfortable conditions

Optional equipment:

- Upper drawbar – replaces the Lower drawbar
- Vibrator – for easy emptying of the waste tank
- Working lights – work zones for disc brushes
- Left side brush hydraulic adjustment – tilt control from the cab
- Additional warning lamps – mounted on the top cover
- Wheel chocks – 2 wheel chocks with brackets
- PTO shaft
- Right side brush
- Increasing sweeping width, range 700 mm beyond the machine outline
- Chute extensions – reduces the height of unloading by 100mm
- Pressure washer – water pressure up to 150 bar
- Sprinkle pressure adjustment – sprinkle pressure setting from the operator panel
- Galvanized frame – in standard version painted
- Different colors – after agreeing with customer

Differences in construction of the sweeper comparing to ZMC3.0 sweeper

- Tiltable water tanks
- Roller brush made from segment discs
- Hydraulically retractable disc brushes for transport
- Hydraulics with two hydraulic pumps and oil cooler
- Control panel with colour display
- Sprinkler pressure adjustment from the operator panel
- 150 bar pressure washer with reel and lance
- Openable rear cover
- Rear overrun beam



Warning lights - mounted on top cover



Chute-extension of the chute- reduces the height of unloading by 100 mm



Roller brush made from segment discs



Drawbar - Lower drawbar – optional Upper drawbar



Hydraulic - Hydraulics with two hydraulic pumps and oil cooler

PRONAR TRAILED SWEEPER ZMC3.1	PARAMETERS/DESCRIPTION	COMMENTS
Efficiency	54000	[m³/h]
Weight	3300	[kg] without water in the sprinkler system
PTO Power demand	50 / 35	[HP (kW)] power on carrier PTO
PTO shaft type	PTO shaft type 1 WG ISO500; n=540 rpm	- Ø35 6 splines clockwise rotation looking at the front of the PTO shaft
Mounting	lowertransportationhitch	- -
Working width	2400-2700, max. 3100	[mm] 300mm - adjustment range, without/with sidebrush
Electric power supply	12	[V] from carrier battery
Electric supply of lighting	12	[V] from 7-pole socket
Working speed	1-20	[kph/h] depends on the amount of pollution
Waste tank capacity	3	[m³] -
Water tank capacity	1120	[dm³] -
Width	2100	[mm] without the bristles of disc brushes
Length	5140/4980-5100	[mm] lower drawbar/upper drawbar depending on drawbar position
Height / Height with a raised tank	2320/4420	[mm] without warning lights (beacon)
Roller brush	D=Ø750; L=1100	[mm] assembled from disc segments, material: wire, PPM, mix of wire segments and PPM
Disc brush	d=Ø760; D=Ø1100; H=260	[mm] material: wire, PPM, mix of wire segments and PPM

The ZM-28H sweeper is designed for cooperation with slow-moving vehicles in sweeping away pollution, leaves and snow. It can be attached to carriers with various suspension systems and various hydraulic installations with exhaustion from 60 to 140 l / min

In sweeping away pollution, leaves and snow



The work position indicator helps to set the optimum height of the carrier suspension



Self-adjusting wheels with infinitely variable height adjustment



Rubber apron and adjustable guard for directing material to be swept.

Available suspension systems with the possibility of rotation and sliding up and down, the possibility of designing the suspension to any carrier

Ergonomic parking stands



Engine built inside the work roller reduces the overall width of the sweeper

8 types of roller brush available (4 hardness levels of bristles of the brush and 2 types of rings flat or „honeycomb“)



PRONAR SWEEPER	ZM-28H	
Working width:		[mm]
- straight	2800	
- max turning angle	2600	
Max turning angle	±25	[°]
Brush diameter	650	[mm]
Max brush speed	200	[rpm]
Working pressure	21	[MPa]

Thanks to its large working width, the PRONAR ZM-S25 sweeper significantly increases the functionality of a truck, particularly in the case of vehicles involved in road construction.



Thanks to the implementation of a polypropylene or polypropylene and steel wire roller brush, the machine is perfectly suited for cleaning sand, snow, soil, or remnants after road milling from pavements. It is driven by hydraulic motors, and a hydraulic cylinder has been implemented for raising and lowering, which ensures failure-free machine operation. Working angle adjustment also improves the sweeper's functionality, and in the standard version, adjustment takes place mechanically by means of a blockade that makes it possible to set the machine at the following angles: 0°, 15° and 30°. Optionally, the working angle can be set within the range from 0° to 30° using a hydraulic cylinder, which improves the comfort and precision of work.

Leading of the brush over the surface is adjusted using support wheels, improving brush life. Thanks to mounting on a type A or type B DIN 76060 mounting plate, the machine is capable of cooperating with most trucks.



Hydraulic brush rotation



PRONAR SWEEPER	ZM-S25	
Working width (straight setting)	2710	[mm]
Working width (30° angle)	2540	[mm]
Height max.	1240	[mm]
Brush diameter	650	[mm]
Weight	420	[kg]
Supply	hydraulic	
Required oil pressure	16	[MPa]
Required oil flow	40	[l/min]
Controls	control panel (24V or 12V)	
Adjustment of turning angle	manual or hydraulic	



ZM-P sweeper represents an innovative solution developed by Pronar. The standard sweeper may be fitted with one of available drives - PTO or hydraulic
ZM-P sweeper is destined for hitching to tractor's rear three-point linkage, and optionally, the hydraulic version can be mounted on the front of a tractor. The ZM-P16 model may be equipped with a sand spreader and a special „comb” brush. This combination is perfectly suited for minimising the effects of winter in cities – snow is removed from the pavement, and the sand spreader minimises the risk of pedestrians slipping on the cleaned surface.

ZM-P16 SWEeper

with mechanical PTO drive and optional sand spreader.



Hydraulic drive Mechanical drive from PTO Mechanical drive and sprinkler system Hydraulic drive of sweeper and spreader



PTO drive Special brush for sweeping-out snow.

Equipment for ZM-P series sweepers:

- front or rear hitch mount versions
- waste or snow brush
- spray unit (for waste brush version only)
- turning angle ± 30° (beam with holes or hydraulics)
- control panel (brush on/off, and/or sand spreader on/off with dial spreading rate adjustment)
- self-aligning wheels

PRONAR SWEEPER	ZM-P16	
Working width (straight setting)	1600	[mm]
Working width (30° angle)	1440	[mm]
PTO speed	540	[rpm]
Mounting	3pt hitch cat. I or II	
Brush supply	mechanical by PTO or hydraulic	
Brush speed	150 – 350	[rpm]
Working speed	<40	[kph]

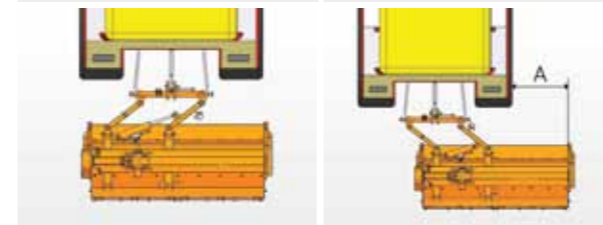


Pronar BK-series mulchers (rear-front flail mowers) fit perfectly with green areas, orchards and agriculture area maintenance tasks

High quality and great durability of these machines are ensured by use of wear-resistant materials in the production process.

The features of modernised flail mowers BK M - series:

- Possibility of aggregation on both rear and front for tractor enable the user to create efficient mowing sets (together e.g. with hydraulic arms of WWT-series)
- A big range of mowing widths
- Reinforced flail shaft for heavy duty tasks
- Solid mounting of belt pulleys - for long and trouble free operations
- Wide range of flail knives and hammers



Regulation of mower position (parameter A - see table)



Flail shaft with flail hammers. Intersecting gear and belt drive - overload protection of the mower

PRONAR FLAIL MOWERS	BK110M	BK140M	BK160M	BK180M	BK200M	BK250M	
Length in transport position	1140	1140	1420	1420	1420	1420	[mm]
Width in transport position	1370	1590	1810	2070	2280	2720	[mm]
Height in transport position	920	920	1020	1020	1020	1020	[mm]
Cutting width	1100	1400	1600	1800	2000	2500	[mm]
Horizontal shift of the mower (parameter A)	440	440	785	785	785	785	[mm]
Weight	350	390	525	560	600	660	[kg]
Minimal power demand	25 (18)	30 (22)	40 (29)	50 (37)	70 (51)	90 (66)	HP (kW)
PTO speed (std/optional)	1000/540	1000/540	1000/540	1000	1000	1000	[rpm]
Mounting on front 3pt hitch	cat. I	cat. I	cat. II	cat. II	cat. II	cat. II	
Mounting on rear hitch	cat. I i II	cat. I i II	cat. II i III	cat. II i III	cat. II i III	cat. II i III	
Flail shaft diameter	ø 133	ø 133	ø 152	ø 152	ø 160	ø 160	[mm]
Tracing shaft diameter	ø 133	ø 133	ø 152	ø 152	ø 160	ø 160	[mm]
Flail shaft rotation speed	2550	2550	2450	2450	2450	2450	[rpm]
Number of flail blades	10	12	14	16	18	22	[pcs]

Flails and knives available - see page 20

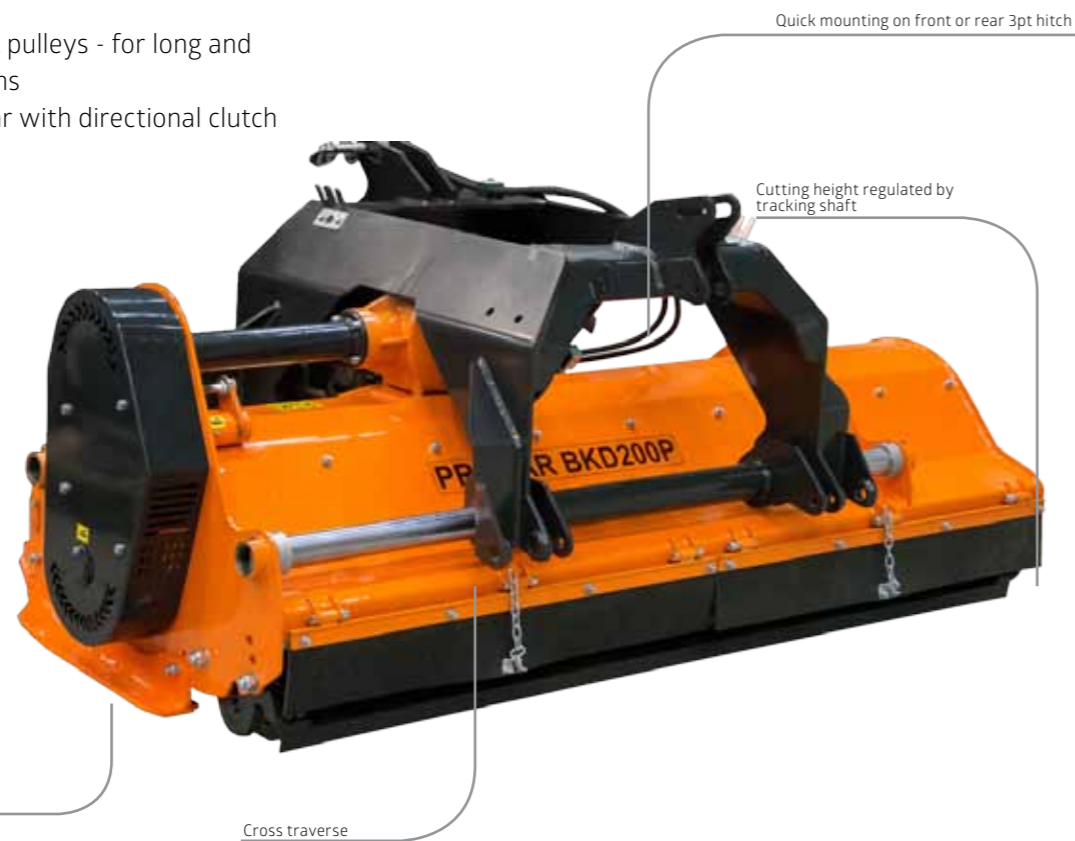
CROSS TRAVERSE FLAIL MOWERS BKD160P, BKD180P, BKD200P, BKD202P



BKD-series cross traverse flail mowers allow cutting on both sides of tractor. Two-sided frame and transmission gives possibility for mounting both on front and rear tractor 3pt. hitch without mower disassembly. Cross movement provided by tractor hydraulics.

BKD mowers features:

- mounting on front or rear of tractor
- reinforced flail shaft
- solid mounting of belt pulleys - for long and
- trouble-free operations
- intersecting angle gear with directional clutch



CROSS TRAVERSE FLAIL MOWER **BKD200P**

PRONAR LINEAR SIDE SHIFT FLAIL MOWERS	BKD160P	BKD180P	BKD200P	BKD202P	
Side traverse					
Length in transport position	1140	1140	1140	1140	[mm]
Width in transport position	1870	2090	2310	2310	[mm]
Height in transport position	1025	1025	1025	1025	[mm]
Cutting width	1600	1800	2000	2000	[mm]
Horizontal shift of the mower (parameter A)	440	440	440	440	[mm]
Position of the mower relative to the carrier	right	right	right		
Weight	635	690	730	730	[kg]
Minimal power demand	40 (29)	50 (37)	70 (51)	70 (51)	HP (kW)
PTO speed std/optional	1000	1000	1000	1000	[rpm]
Mounting on front 3pt hitch	cat. I i II	cat. I i II	cat. I i II	cat. I i II	
Flail shaft diameter	159	159	159	159	[mm]
Tracing shaft diameter	159	159	159	159	[mm]
Flail shaft rotation speed	2450	2450	2450	2450	[rpm]
Number of flail blades	14	16	18	18	[pcs]

Flails and knives available - see page 24

REAR-SIDE FLAIL MOWERS

BBK120M, 140M, 160M, 180M, 200M, BBK202M



Similarly to rear-front flail-mowers (BK series), the BBK series rear-side flail-mowers, are designed for maintaining urban greenery infrastructure, in orchards as well as on forested grounds.

They are suspended on a pantograph, which enables effective mowing of roadside ditches and use on uneven terrain. A large horizontal hydraulic traverse enables mowing with the entire working width of the mower beyond the tractor's outline. A replaceable jacket inside the mower, made of abrasion-resistant steel, protects the machine's housing against damage.

BBK200M FLAIL MOWER

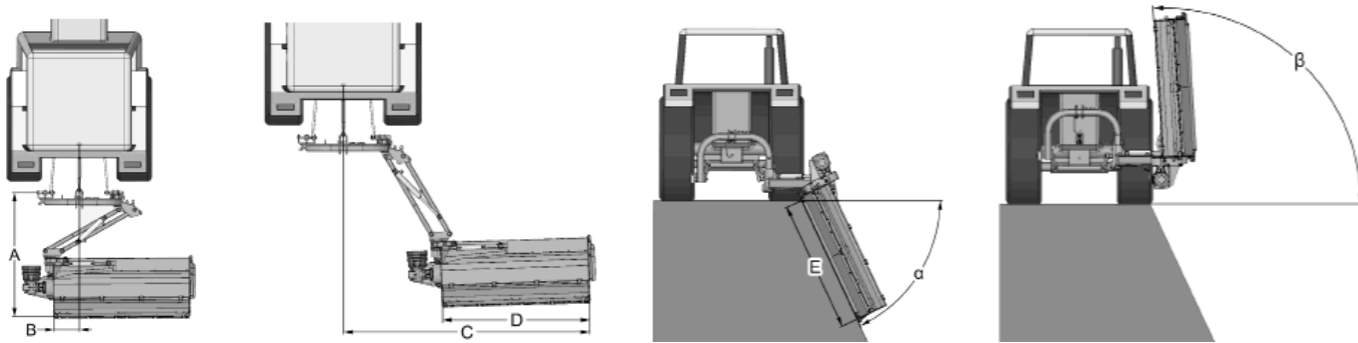




Mower works on right side of the tractor, vertical rest position

PRONAR FLAIL MOWERS	BBK120M	BBK140M	BBK160M	BBK180M	BBK200M	BBK202M	
Length in transport position	1900	1900	1900	1900	1900	1900	[mm]
Width in transport position	1770	1770	1660	1660	1660	1660	[mm]
Height in transport position	1750	1950	2160	2380	2600	2600	[mm]
Position of the mower relative to the carrier	right	right	right	right	right	left	
Cutting width	1200	1400	1600	1800	2000	2000	[mm]
Horizontal shift of the mower (hydraulic shift)	1820	1820	1820	1820	1820	1820	[mm]
Weight	750	770	740	795	840	870	[kg]
Minimum power demand	30 (22)	30 (22)	50 (37)	60 (44)	70 (51)	70 (51)	[HP (kW)]
Max. PTO speed	540	540	540	540	540	540	[rpm]
Mounting on tractor	3pt hitch cat. II and III	3pt hitch cat. II and III	3pt hitch cat. II and III	3pt hitch cat. II and III	3pt hitch cat. II and III	3pt hitch cat. II and III	
Flail shaft diameter	Ø133	Ø133	Ø160	Ø160	Ø160	Ø160	[mm]
Tracing shaft diameter	Ø133	Ø133	Ø160	Ø160	Ø160	Ø160	[mm]
Flail shaft rotation speed	2500	2500	2450	2450	2450	2450	[rpm]
Number of flail blades	10	12	14	16	18	18	[pcs]
Mower working range							
A	1890	1890	1890	1890	1890	1890	[mm]
B	390	390	390	390	390	390	[mm]
C	2620	2830	3040	3260	3480	3480	[mm]
D	1210	1410	1620	1840	2060	2060	[mm]
E	1200	1400	1610	1830	2050	2050	[mm]
Working angle – downwards α	65	65	65	65	65	65	[°]
Working angle – upwards β	94	94	94	94	94	94	[°]
Setting cutting height	20, 40, 60	20, 40, 60	20, 40, 60	20, 40, 60	20, 40, 60	20, 40, 60	[mm]

Flails and knives available - see page 24



Regulation of mower position (parameter A - see table)



FLAIL MOWER WITH CONTAINER BKR180C



BKR-series flail mowers are designed for care and maintenance of lawns in urban areas, grass fields and other green areas.



Hydraulic self-dumping system to the height of max. 2.1m

Powered by 540 rpm PTO allows for aggregation with tractors from 50 HP

Shutter allows for mowing without collecting the shredded material



Stepless mowing height adjustment



Container with 2 m³ volume for collecting shredded material



Easy maintenance access to the working chamber

PRONAR FLAIL MOWER WITH CONTAINER	BKR180C	
Length	2190	[mm]
Length with adapter (drawbar)	3315	[mm]
Height in transport position	1900	[mm]
Cutting width	1800	[mm]
Weight	1250	[kg]
Minimum power requirement	50 (37)	[HP (kW)]
PTO speed	540	[rpm/min]
Number of belt lanes	3	[pcs.]
Suspension	3pt. hitch cat. II	
Flail shaft diameter	220	[mm]
Tracing shaft diameter	159	[mm]
Shaft rotation speed	2650	[rpm/min]
Number of knife sets	100	[sets.]
Discharge height	2150	[mm]
Container capacity	2200	[dm³]

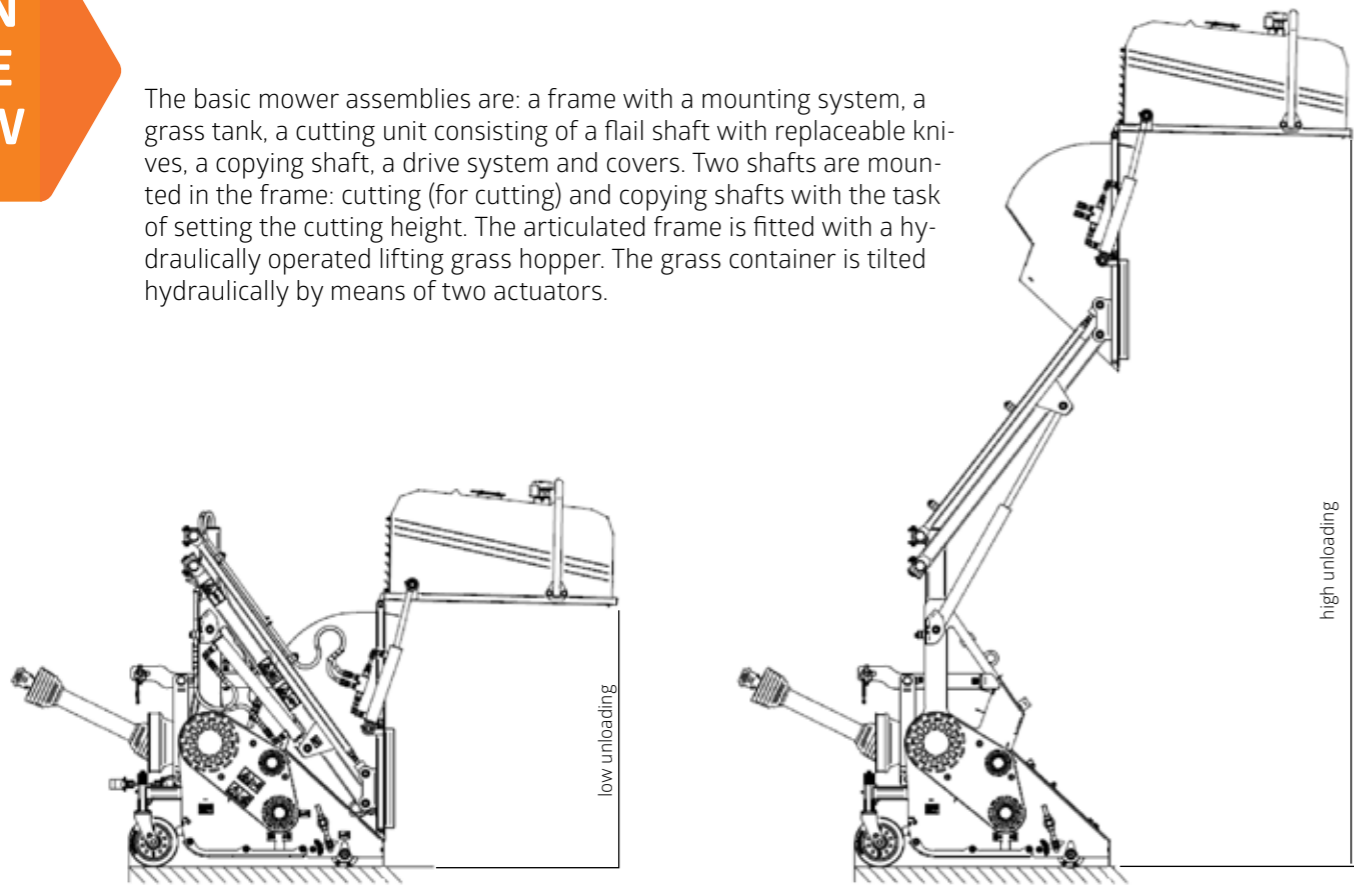
FLAIL MOWER WITH HOOPER
PRONAR BKR120H, BKR160H



Flail mowers BKR120H / BKR160H are designed for works connected with municipal maintenance, cities green areas, football fields and orchards. By amending cutting knives, the mowers could be adjusted to aerating works while simultaneous mowing.

The basic mower assemblies are: a frame with a mounting system, a grass tank, a cutting unit consisting of a flail shaft with replaceable knives, a copying shaft, a drive system and covers. Two shafts are mounted in the frame: cutting (for cutting) and copying shafts with the task of setting the cutting height. The articulated frame is fitted with a hydraulically operated lifting grass hopper. The grass container is tilted hydraulically by means of two actuators.

NEW



FLAIL MOWER WITH HOOPER	BKR120H	BKR160H	
Weight	400	530	[kg]
Length		1545	[mm]
Width	1440	1840	[mm]
Height		1375	[mm]
Cut width	1200	1600	[mm]
Handy grass container capacity	0,75	1	[m ³]
Emptying height		2000	[mm]
Angular with directional clutch		Angular with directional clutch	
V-belt	welded 3/Xpa1320	Welded 3/XPA1320	
Working shaft diameter		108	[mm]
Tracing shaft diameter		108	[mm]
Working shaft speed		3000	[rpm]
Number and type of cutting knives	40 knives fixing sockets	50 knives fixing sockets	[pcs.]
Hooper height adjustment	25-100 (Stepless, via adjustment of tracing shaft and support wheels)		[mm]
Work pressure		160	[dm ²]
Carrier requirements			
Min. Power requirement	25/19	30/22	[HP(kW)]
Suspension system	cat. I/II according to iso 730-1		[rpm]
PTO shaft	540 type 1 (1 3/8" - 6 lugs)		
Hydraulic driven	two sections of double sided work		
Socket size	1/2"		WG ISO 7241-1



High unloading



Low unloading



Support wheel



Cutting unit - cutting shaft with replaceable knives

FLAIL MOWERS



Pronar offers a wide variety of flail knives and hammer for all models of mulchers and mowing heads. This allows to choose a knife type adapted to the needs and may increase work effectiveness and efficiency.

Type	Model	Approx. weight	Name	Max. diameter of cut material (mm)	Application	Fits
A		0,4	Flail hammer (light)	40	grass, stalks, stems, thin bushes, thin branches, stubble, crop residues	GK100L, 120L, 140L
B		0,7	Flail hammer	60	grass, stalks, stems, thin bushes, thin branches, stubble, crop residues	GK110, GK140, BK, BKD and BBK series
C		1,5	Flail hammer (heavy)	100	grass, stalks, stems, thin bushes, thin branches, stubble, crop residues	GK110, GK140, BK, BKD and BBK series
D		0,2	Y knife (light)	30	grass, stalks, stems, thin shrubs	GK80L
E		0,4	Y knife	30	grass, stalks, stems, thin shrubs	GK100L, 120L, 140L
F		1	Y-knife (heavy)	60	grass, stalks, stems, bushes, branches	GK110, GK140, BK, BKD and BBK series
G		0,4	YI knife (light)	30	grass, stalks, stems, thin shrubs	GK80L
H		0,5	YI knife	40	grass, stalks, stems, thin shrubs, branches	GK100L, 120L, 140L
I		1,4	YI knife (heavy)	60	grass, stalks, stems, thin shrubs, branches	GK110, GK140, BK, BKD and BBK series
J		1,6	YY knife (heavy)	60	grass, stalks, stems, thin bushes, thin branches, stubble, crop residues	GK110, GK140, BK, BKD and BBK series
K		1,2	TI knife	60	grass, stalks, stems, thin bushes, thin branches, stubble, crop residues	GK110, GK140, BK, BKD and BBK series
L		1,5	M knife	60	grass, stalks, stems, thin bushes, thin branches, stubble, crop residues	GK110, GK140, BK, BKD and BBK series
M		0,1	Mallet	20	grass, stalks, stems, bushes, branches	GK80L, GK100L, 120L, 140L
N		0,1	Twist knife	20	grass, stalks, stems, thin shrubs	GK80L, GK100L, 120L, 140L
O		0,2	Curved mallet	20	grass, stalks, stems, thin shrubs	GK100L, 120L, 140L

CONNECTORS DIAGRAM



Pronar offers rear - and front - mounted hydraulic multifunctional arms for different vehicles. These heads increase the functionality of carriers through the use of different types of operating heads for different operations.

Model	GK80L	GK100L	GK120L	GK140L	GK110	GK140	GP200	GT150	GN200	GF100S	GO800	GM500
WWT420	S	S	S	S	X	X	0	S	X	0	0	0
WWT480	S	S	S	S	X	X	0	S	X	0	0	0
WWT600	0	0	0	0	S	S	S	X	S	S	S	S
WWT600P	0	0	0	0	S	X	S	X	S	S	S	S
WWT700T	0	0	0	0	S	X	S	X	S	S	S	S
WWT800T	0	0	0	0	S	X	S	X	S	S	S	S
WWP500	X	X	0	0	S	S	S	0	0	S	S	S
WWP500U	X	X	0	0	S	S	S	0	0	S	S	S
WWP500UH	X	X	0	0	S	S	S	0	0	S	S	S
WWP600	X	X	0	0	S	S	S	0	0	S	S	S

S - standard; X - not available; 0 - optional (available after changing connector type)



MOWING HEADS

GK80L, 100L, 120L, 140L, 142L, 110, 140



Cutting heads for WWP600 / WWP500 / GK 142L / WWP500UH multifunction arms are used for mowing grass, cutting bushes and shredding of cut tree branches.

Design of multifunction arm enables operation in hard to reach areas such as roadside ditches behind protective barriers, slopes, drainage ditches, roadsides. The cutting head leaves the cutting area with evenly ground material, which also forms a fertilising layer.



GK110

GK140

GK80L

PRONAR MOWING HEADS	GK80L	GK100L	GK120L	GK140L	GK142L	GK110	GK140	
Working width	800	1000	1200	1400	1400	1100	1400	[mm]
Working shaft diameter	76	76	89	89	89	133	133	[mm]
Copying shaft diameter	89	89	101.6	101.6	89	133	133	[mm]
Hydraulic engine power	38 (28)	38 (28)	38 (28)	38 (28)	38 (28)	48 (35)	48 (35)	[HP (kW)]
Connector size	60x60	60x60	60x60	60x60	60x60	80x80	80x80	[mm]
Weight	115	155	185	240	205	294	318	[kg]
Drive	direct hydraulic	direct hydraulic	direct hydraulic	direct hydraulic	direct hydraulic	direct hydraulic	direct hydraulic	
Number of knives	44	48	52	60	60	10	12	[pcs]
Oil flow	80	80	80	80	80	90	90	[l/min]
Oil pressure	21	21	21	21	21	25	25	[MPa]

Flails and knives available - see page 24

SPECIALIZED HEADS

GT 150, GN 200, GP200, GF100S



Pronar set of trimming heads has been designed to meet the tasks of green-area and orchard maintenance. Three types of tools available allow you to choose a head adequate to the task. We recommend the aggregation with multifunctional arms mounted on tractors with creeper systems.

TRIMMER	GT150	
Working width	1500	[mm]
No. of cutting knives	19	[pcs.]
Max. cutting diameter	20	[mm]
Min oil working pressure	12	[MPa]
Min. oil flow	60	[l/min]
Weight	85	[kg]
Connector	140x140 plate	[mm]

SCISSOR HEAD	GN200	
Working width	2000	[mm]
No. of cutting knives	14	[pcs.]
Max. cutting diameter	100	[mm]
Min oil working pressure	12	[MPa]
Min. oil flow	80	[l/min]
Weight	250	[kg]
Connector	140x140 plate	[mm]

HEDGE CUTTER	GP200	
Working width	2000	[mm]
Number of cutting discs	4	[pcs.]
Disc diameter	600	[mm]
Min oil working pressure	22	[MPa]
Min. oil flow	60	[l/min]
Weight	232	[kg]
Connector	80x80 beam	[mm]

VERGE MILLER	GF100S	
Milling shaft diameter	435	[mm]
Max. milling depth	65	[mm]
No. of milling knives	22	[pcs.]
No. of coils	5,5	
Nominal oil pressure	21	[MPa]
Nominal oil flow	80	[l/min]
Weight	235	[kg]

Branch trimmer PRONAR GT150

Light and precise head designed for trimming of thin branches during maintenance of i.e. hedges. Light weight allows for work with small tractors.

The thickness of the cut branches - max 2 cm.



Scissor head PRONAR GN 200

The scissor head perfectly copes with thick bushes and is intended for pruning of roadside trees and other forestry areas. Thickness of cut branches - up to 10cm.



PRONAR GP 200 branch cutting saw

The GP 200 is the perfect for cutting branches of roadside trees, line regulation of hedges and vineyards. The mechanism does not require gear lubrication allows you to work in harsh conditions.



VERGE MILLER PRONAR GF100S

Milling head for road maintenance works and leveling of road verges

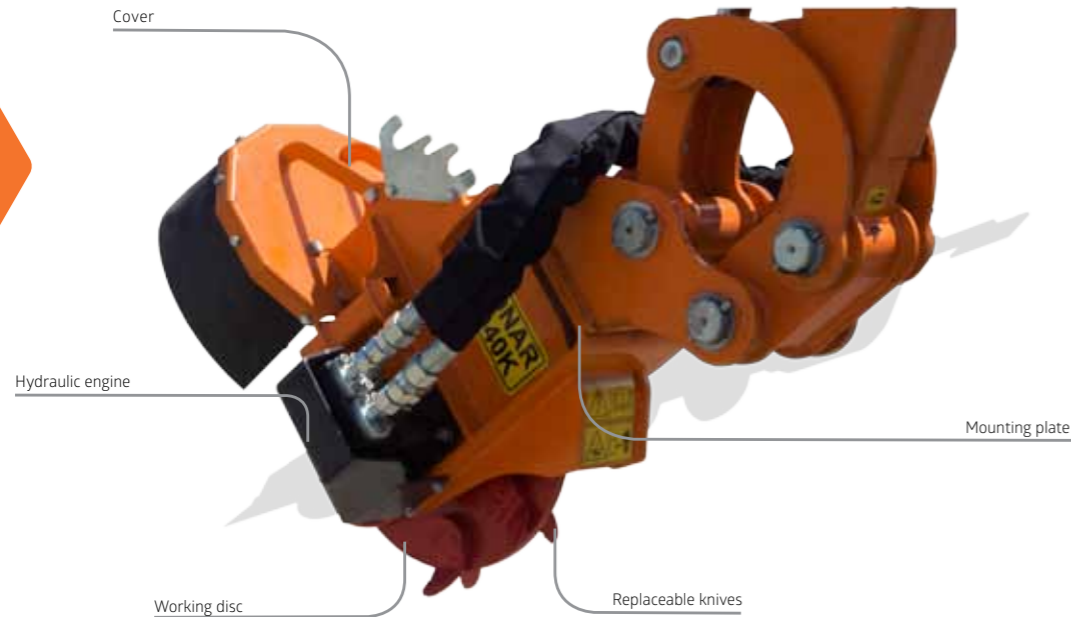


SPECIALIZED HEADS
PRONAR GF040K, GC060V, GC090V



NEW

Miling head **PRONAR GF040K**



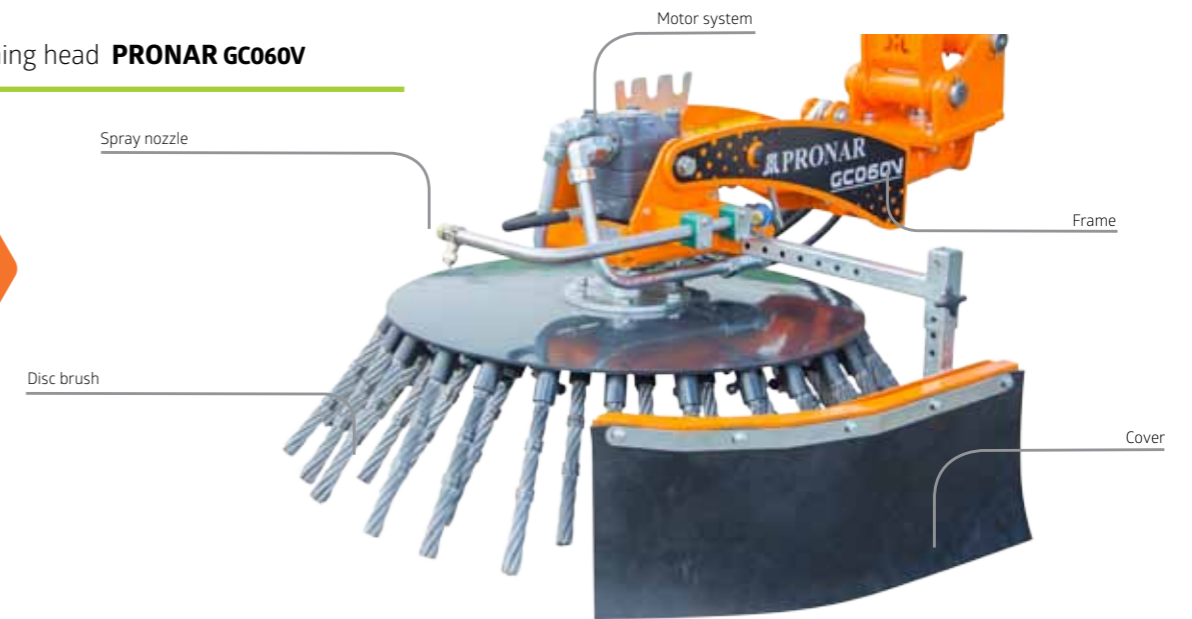
MILING HEAD	GF040K	
Lenght	740	[mm]
Width	520	[mm]
Height	560	[mm]
Cutting disc diameter (* including knives)	400/480*	[mm]
Working disc speed	2400	[rpm]
Hydraulic drive	Hydrauliczny	
Nominal oil pressure	210	[bar]
Nominal oil pump capacity	80	[l/min]
Mounting method	Square plate 140x140 - 6 bolts M14x50	
Number of cutting knives	16	[pcs.]
Weight	145	[kg]

The GF040K head, used as an optional equipent on the multifunction arm, is used to perform cleanup work to mill felled tree trunks. The main assemblies of the milling head are: frame, working blade, powerdrive and cover. On the frame a hydraulic motor has been mounted, on which the working blade with interchangeable knives is mounted. Left and right knives mounted on both sides of the blade allow for milling of trunks in both directions. The drive is transmitted from the arm to the working disc via a hydraulic motor.



Cleaning head **PRONAR GC060V**

NEW



The head is used as an equipment of multifunctional arms. It is used to sweep and weed out the road edges. The use of different brushes allows to adjust the head to the prevailing conditions. The main assemblies of the head are: frame, cleaning brush, drive system, cover and spray nozzle. On the frame a hydraulic motor is mounted on which the brush is mounted. Drive is transmitted from the arm through the hydraulic motor to the disc brush. The drive is transmitted from the arm through a hydraulic motor to the disc brush. In addition, on the frame there is a cover limiting the spread of material and a spray nozzle to prevent dusting.

CLEANING HEAD	GC060V	*GC090V	
Lenght	950	1000	[mm]
Width	670	950	[mm]
Height	730	730	[mm]
Number of brushes	1	1	[szt.]
Brush tilt range	0 - 25	0 - 25	[°]
Brush rotation speed	0 - 285	0 - 285	[rpm]
Brush speed adjustment	stepless	stepless	
Mounting method	Connection TYPE 80	Connection TYPE 80	
Drive	Drive	Drive	
Nominal oil pressure	210	210	[bar]
Nominal oil capacity	40	40	[l/min]
Maximal oil pump capacity	90	90	[l/min]
Weight	120	135	[kg]

Additional equipment (option) :

- Connection 60x60
- Spray nozzle
- Brush cover
- Hydraulic system with a valve for manual change of the brush rotation direction
- Brush 600 - ropes, *Brush 900- ropes
- Brush 600 - wire, *Brush 900 - wire





GO800 ditch desludging head allows restoration of trench patency by removing sludge, mud and snatching of bushes.

PRONAR **GO 800** ditch digger

DITCH DIGGER	GO800	
Working disc diameter	800	[mm]
Min oil working pressure	22	[MPa]
Min. oil flow	90	[l/min]
Hydraulic motor power	48 (35)	[HP(kW)]
Weight	220	[kg]
Adjustable discharge direction	+	
Require carrier with creeper system		



GM 500 sign washer designed to clean signs leading pillars and protective barriers. Together with PRONAR R1000 tank, they make a perfect sign cleaning set.

Pronar GM500 washing head PRONAR **GM 500**

CLEANING HEAD	GM500	
Brush diameter	400	[mm]
Brush length	500	[mm]
Nom. oil working pressure	10	[MPa]
Min. oil flow	80	[l/min]
Water pump efficiency	80	[l/min]
Easy disassembly of protective frame for the purpose of washing road signs		



Pronar R1000 water tank can be used to store clean water for supplying municipal devices (e.g. sign washing head), as an additional tank for machines with a sprinkler system (e.g. sweepers) or as a tank for watering plants in urban areas. Can be equipped with rear road lights and water pump with hoses.

PRONAR WATER TANK	R 1000	
Tank capacity	1000	[dm ³]
Water container	„MAUZER” type on independent pallet with frame	
Mounting on tractor	3pt hitch cat. II	
Width/height/length	1200/1270/1350	[mm]
Water pump efficiency	10	[l/min]
Pump power supply	12V from 7-pole electrical socket	
Interior diameter of water pump conduit	12	[mm]
Pump conduit coupling type	Rectus, series 26. DIN 7.2 mm	
Weight dry	120	[kg]



Multifunctional arms due to the possibility of using several types of working heads are universal tool carriers in plants and companies dealing with municipal services and road and roadside maintenance. Arm construction and large range allows to perform treatments in hard to reach places such as roadside ditches behind guard rails, slopes, drainage ditches.

Multifunction arm **WWP500**
Mowing head **GK140**



Multifunction arm **WWP500U**
Mowing head **GK110**



Multifunction arm **WWT480**
Branch trimmer **GT150**



Multifunction arm **WWT420**
Mowing head **GK80L**



Multifunction arm **WWT700T**
Scissor head **GN200**



Multifunction arm **WWT600**
Mowing head **GK140**



MULTIFUNCTION FRONT ARMS
WWP500, WWP600



PRONAR WWP500 / WWP600 universal multifunction arms are designed for operation with tractors equipped with a front PTO and front 3pt linkage.

Thanks to the possibility of installing several types of working heads, they are universal tool carriers at municipal companies, enterprises providing public services and maintaining roads and roadside areas. The arm design and its outreach range of 6 m or 7 m allow cutting in hard to reach areas such as roadside ditches behind protective barriers, slopes, drainage ditches, etc. Multifunction arm is controlled from the cab using the joystick. They can operate both on the right side and after the manual rearrangement on the left side of the tractor. The boom can be moved hydraulically along the rail to the left or right. Self-aligning heads mounted on a floating arm enable perfect ground surface tracking.

Standard equipment:

drive from front tractor PTO

- joystick control
- hydraulic horizontal movement
- parking rack
- mounting plate installed in the place of the arms of the front three-point linkage,
- appropriately to the tractor model and front three-point linkage size

Optional equipment:

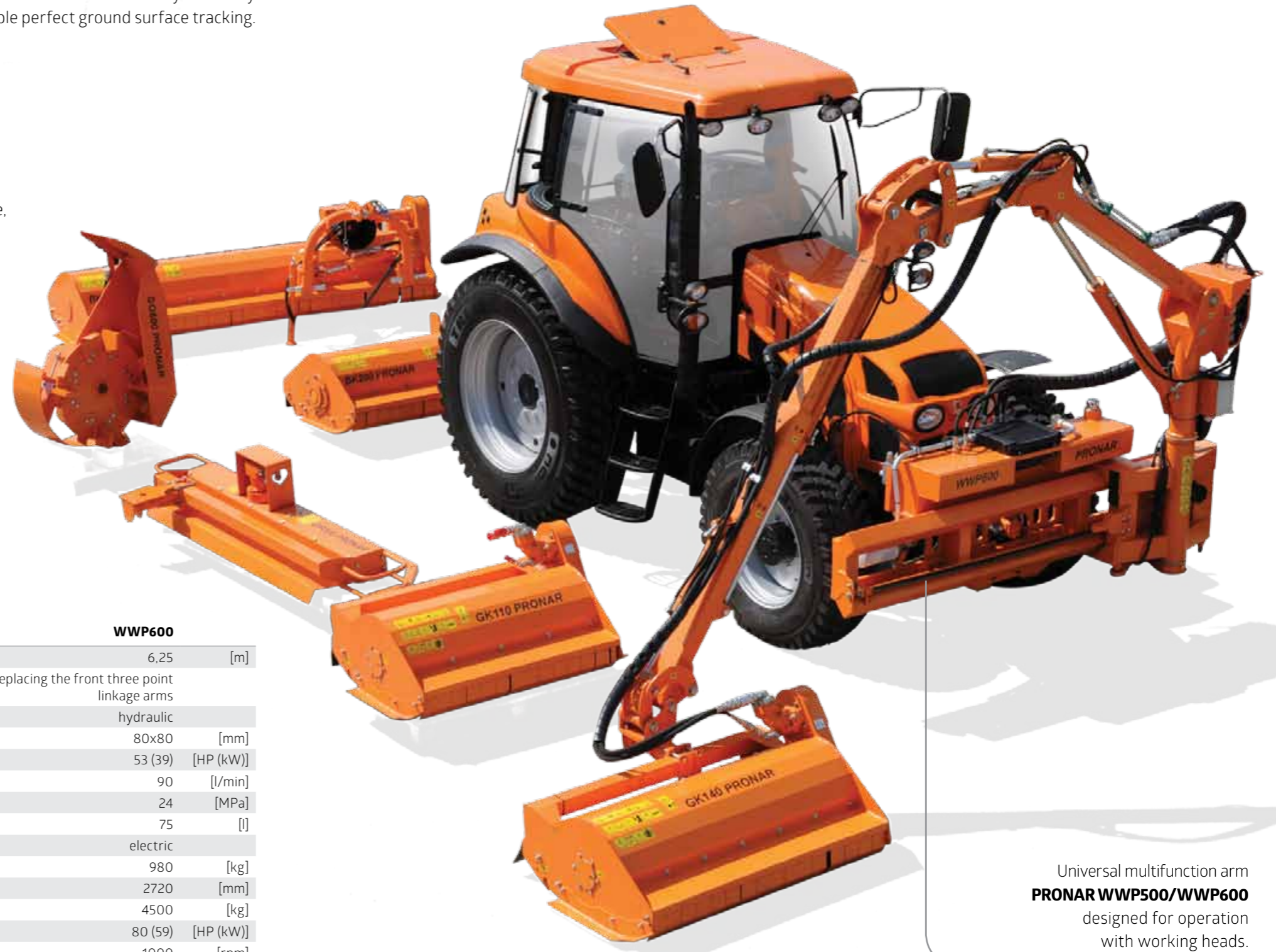
- rear ballast
- axle lock (appropriately to the given tractor model)



WWP600 multifunction arm — hydraulic movement of working arm over guide rail.



WWP600 multifunction arm with GP200 saw for branch cutting.



WWP600 boom with GK mowing head



WWP600 with G0800 ditch digger. Long reach fits perfectly for desludging.



PRONAR MULTIFUNCTION ARMS


WWP500

WWP600

Working range of multi-functional arm with GK110	5,55	6,25	[m]
Mounting on tractor	by replacing the front three point linkage arms	by replacing the front three point linkage arms	
Working head supply	hydraulic	hydraulic	
Connector size	80x80	80x80	[mm]
Hydraulic pump power	51 (37,5)	53 (39)	[HP (kW)]
Nominal oil flow rate (pump delivery)	90	90	[l/min]
Nominal oil pressure	24	24	[MPa]
Oil tank capacity	75	75	[l]
Controls	electric	electric	
Set weight (with cutting head)	890	980	[kg]
Transport width	2400	2720	[mm]
Min. tractor weight	4000	4500	[kg]
Min. tractor power	75 (55)	80 (59)	[HP (kW)]
PTO speed	1000	1000	[rpm]

Available working heads – see page 25

Universal multifunction arm
PRONAR WWP500/WWP600
 designed for operation
 with working heads.

REAR MULTIFUNCTION ARMS 

PRONAR WWT420 (WWT424C), WWT480 (WWT484C)

PRONAR WWT420/480 rear universal multifunction arms are an alternative to the front-mounted WWP series. They are designed for operation with tractors equipped with rear PTO and three-point linkage.

Thanks to compatibility with several types of working heads, they are universal tool carriers. The reach of the arm enables access to difficult areas, e.g. behind barriers.

In combination with the BK series mower the operator gets an excellent unit for mowing grasslands along roads. The multifunction arm is controlled from the operator's cabin using pull rods. The working arm can operate on the right side of the tractor.

PRONAR MULTIFUNCTION ARMS	WWT420 (WWT424C)	WWT480 (WWT484C)	
Position of the multifunction arm relative to the carrier	right	right	
Horizontal range (measured to centre of connection)	3,2	3,8	[m]
Horizontal range (measured with GK100L head)	4,2	4,8	[m]
Working head supply	hydraulic - own	hydraulic - own	
Connector size	60x60	60x60	[mm]
Nominal oil pressure	21,5	21,5	[MPa]
Max. power of hydraulic system	44 (32)	44 (32)	[HP (kW)]
Oil tank capacity	130	130	[l]
Head rotation angle	205	205	[°]
Transport length	0,8	0,8	[m]
Transport width	1,46	1,65	[m]
Transport height	1,73	1,96	[m]
Steering type	Mechanical - pulling rods	Mechanical - pulling rods	
Arm protection	mechanical protector	mechanical protector	
Weight	620	645	[kg]
Lighting bar	optional	optional	
Oil radiator	optional	optional	
Mounting on rear 3pt hitch	cat. I or II	cat. I or II	
Rear PTO	type 1	type 1	
PTO speed	540	540	[rpm]
Min. tractor weight	2000	2100	[kg]

Available working heads – see page 25



MULTIFUNCTION ARM
WWT480 with GK80L head

WWT-series multifunction arms are compatible with most tractors used for municipal tasks.

REAR MULTIFUNCTION ARMS 

PRONAR WWT604K, WWT608K

They are perfect for mowing or clearing roadside ditches and pruning branches anywhere where access to other equipment is difficult due to protective barriers or difficult terrain.

The control is electric on-off or proportional electric. What sets other Pronar hydraulic arms apart is their ability to move the head alongside the tractor and work at operator level.



MULTIFUNCTION ARM
PRONAR WWT608K with flail mower GK110 attached

NEW

PRONAR MULTIFUNCTION ARM	WWT604K/608K	
Arm position relative to the carrier	right	
Working range (with flail mower GK110 attached)	6	[m]
Transport position	Mounting on Rear 3 point hitch	
Rear PTO	540	[rpm]
Hydraulic head drive circuit	90 250	[l/min] [bar]
Hydraulic circuit of the arm drive	20 180	[l/min] [bar]
Oil tank capacity	180	[l]
Horizontal range (measured to centre of connection)	1,7	[m]
Hydraulic fuse - 90 degree rotation	90	[°]
Lighting beam	standard	
Oil cooler	standard	
Floating position of the head	standard	
Arm shock absorption	standard	
Rear 3 point hitch suspension lock	standard	



PRONAR WWT600, WWT620D, WWT600P, WWT700T, WWT800T

REAR MULTIFUNCTION ARMS



WWT600 and WWT700 complement Pronar offer for long reach multifunctional arms mounted on rear three-point linkage.

Thanks to a wide variety of working heads they are perfect for roadside and slope maintenance.

Feature:

- Long arm reach allows work in hard to reach areas
- Mounting on rear 3pt hitch is gentle for tractor axis
- Wide variety of working heads increase range of tractor usage
- Standard oil cooler prevents oil overheating and provides uninterrupted work
- Wear-resistant steel used in production process for high durability
- Hydraulic accumulators protection system

PRONAR MULTIFUNCTION ARMS	WWT600 (WWT604D*)	WWT620D (WWT624D*)	WWT600P (WWT604P*)	
Connector size	80x80	80x80	80x80	[mm]
Horizontal range (measured to centre of connection)	5,17	5,17	5,25	[m]
Horizontal range (measured with GK110 head)	6,12	6,12	6,13	[m]
Working head supply	Own hydraulic system	Own hydraulic system	Own hydraulic system	
Nominal oil pressure	21,5	21,5	21,5	[MPa]
Max. power of hydraulic system	54(39,5)	54(39,5)	2x 54(39,5)	[HP (kW)]
Nominal Oli flow	80	80	80	[l/min]
Oil tank capacity	180	180	180	[l]
Head rotation angle	205	205	205	[°]
Transport length	1,35	1,35	2,54	[m]
Transport width	1,63	1,63	1,63	[m]
Transport height	3,56	3,56	3,46	[m]
Position of the multifunction arm relative to the carrier	right	left	right	
Steering type	Mechanical - pulling rods	Mechanical - pulling rods	Mechanical - pulling rods	
Arm protection	hydraulic protector	hydraulic protector	hydraulic protector	
Weight	970	970	1100	[kg]
Lighting bar	Standard	Standard	Standard	
Oil radiator	Standard	Standard	Standard	
Mounting on rear 3pt hitch	cat. II	cat. II	cat. II	
Rear PTO	type 1	typ 1	type 1	
PTO speed	540	540	540	[rpm]
Min. tractor weight	4500	4500	5000	[kg]

* electric on-off control
Compatible cutting heads -please see page 25

MULTIFUNCTION ARM
WWT600 with GK140



WWT600 – arms for working with heavy heads for most difficult conditions

MULTIFUNCTION ARM
WWT600 with GN200



WWT600P – parallel system for head angle keep when adjusting arm

MULTIFUNCTION ARM
WWT600 with GP200



WWT700T, WWT800T – Long arm reach is provided thanks to hydraulic telescopic sliding

MULTIFUNCTION ARM

PRONAR WWT700T with GK140



WWT700T, WWT800T- The large range is achieved due to the arm that extends by a telescopic actuator.



PRONAR MULTIFUNCTION ARMS	WWT700T (WWT704T*)	WWT800T (WWT804T*)	
Connector size	80x80	80x80	[mm]
Horizontal range (measured to centre of connection)	6,27	7,42	[m]
Horizontal range (measured with GK110 head)	7,16	7,42	[m]
Working head supply	Own hydraulic system	Own hydraulic system	
Nominal oil pressure	21,5	21,5	[MPa]
Max. power of hydraulic system	2x 54(39,5)	2x 54(39,5)	[HP (kW)]
Nominal Oli flow	80	80	[l/min]
Oil tank capacity	180	240	[l]
Head rotation angle	205	215	[°]
Transport length	1,35	2,24	[m]
Transport width	1,63	1,38	[m]
Transport height	3,58	3,65	[m]
Position of the multifunction arm relative to the carrier	right	right	
Steering type	Mechanical - pulling rods	electric on-off control	
Arm protection	hydraulic protector	hydraulic protector	
Weight	1120	1500	[kg]
Lighting bar	Standard	Standard	
Oil radiator	Standard	Standard	
Mounting on rear 3pt hitch	cat. II	Cat. II or III	
Rear PTO	type 1	type 1	
PTO speed	540	540	[rpm]
Min. tractor weight	5500	6000	[kg]

*electric on-off control
Compatible cutting heads -please see page 25

MULTIFUNCTION ARM FOR TRUCKS
WWP500U, WWP500UH



The PRONAR WWP500U and WWP500UH multifunction arms are designed for operation with MB Unimog carrying vehicles or other similar vehicles with similar specification. The power arm is mounted on a mounting plate compliant with the DIN standard at the front of the vehicle.

Arms are controlled from the operator's cabin by joystick and can be used with a wide range of heads manufactured by Pronar. The multifunction arm can be operated on the right side or, after the manual reconfiguration, on the left side of the carrying vehicle. The multifunction arm and hydraulically.

Working head can be supplied from arms own hydraulic powered by PTO (UH version) or directly from carrier hydraulics (U - version)



Standard equipment:

- hydraulic drive (from carrier) or PTO 1000 rpm
- joystick control
- horizontal hydraulic traverse
- mounting on type A or B DIN 76060 mounting plate
- parking rack

Optional equipment:

- axle lock (appropriately to the given Unimog model)
- rear ballast
- type A or B mounting plate (faceplate) installed on the front of the vehicle

WWP500U multifunction arm with GK10 mowing head on Unimog U500



Mowing of a hard-to-reach roadside using a WWP500U multifunction arm and GK 110 head.



PRONAR MULTIFUNCTION ARMS

	WWP500U	WWP500UH	
Transport width	2400	2400	[mm]
Transport height	2020	2020	[mm]
Connection size	80x80	80x80	[mm]
Horizontal range (measured to centre of connection)	4750	4750	[mm]
Horizontal range (measured with GK110 head)	5500	5500	[mm]
Vertical range	5250	5250	[mm]
Vertical range (measured with GK110 head)	6100	6100	[mm]
Turning angle (may be used on left or right side)	180	180	[°]
Angle range	0 - 180	0 - 180	[°]
Weight	760	1080	[kg]
Control own - Joystick mounted in tractors cabin	electric, 12 or 24	24	[V]



Mowing of a hard-to-reach roadside using a WWP500UH multifunction arm and GK 110 head.



Carrier vehicle hydraulics and tool drive information

WWP500U

ARM MOVEMENT HANDLING		
One circuit of single- or double- action hydraulics with work position lock		
- Min. oil flow	20	[l/min]
- Min. pressure	20	[MPa]
- No. of connectors	2 (supply, return)	
TOOL DRIVE		
Power hydraulics with continuous operation		
- Min. oilflow	90	[l/min]
- Nominal pressure	25	[MPa]
No. of connectors	3 (supply, return, leakage drain)	

Information about PTO carrier PTO requirement and tool power supply

WWP500UH

Direction of shaft rotation (when looking at the front of the shaft)	left	
PTO speed	1000	[rpm]
Nominal oil flow	90	[l/min]
Nominal pressure	21,5	[MPa]

Available working heads - see page 25



The road grader is a machine for grading and repairing gravel roads as well as for other preparatory work in the vicinity of traffic routes and public areas.

The materials used in the manufacturing process guarantee high strength and durability. Thanks to 5 hydraulic cylinders, the machine can be optimally adapted to different tasks – mouldboard can be adjusted in 3 planes. It can be used to repair gravel and forest roads, to create land for construction of new traffic routes, and to prepare grounds for investment. Thanks to the implementation of a system of hydraulic cylinders, it is ideally suited for grading soil.

Optional equipment:

- rippers
- hydraulic control of support wheels

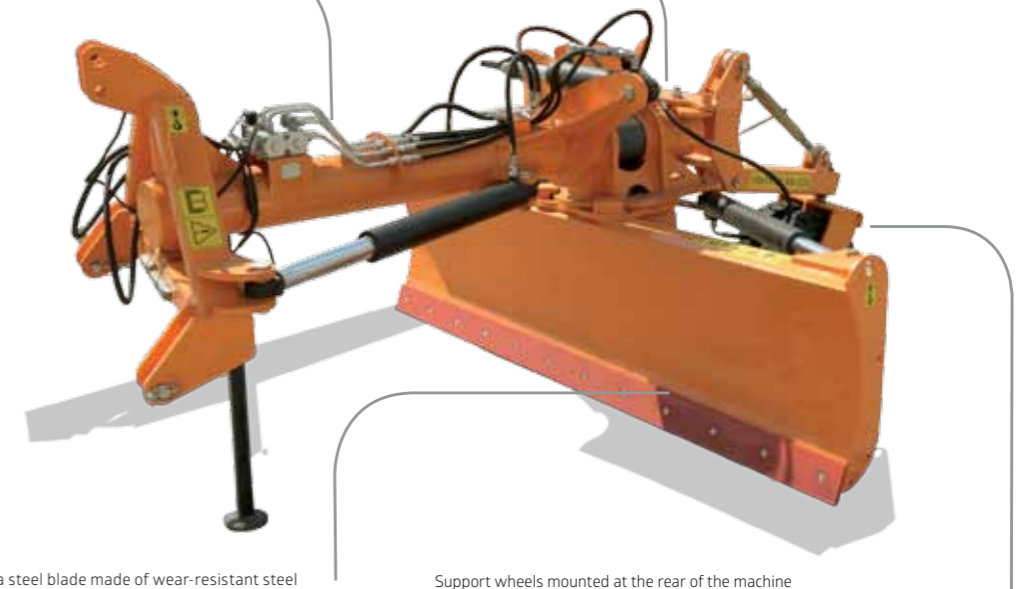


ROAD GRADER **RD-Z24**



Controlled by hydraulic installation

Body turn



The mouldboard is equipped with a steel blade made of wear-resistant steel

Support wheels mounted at the rear of the machine



The turnbuckle is used to set the working depth



PRONAR ROAD GRADER

RD-Z24

Working width		[mm]
- straight	2400	
- at max. turn angle	2078	
Max. frame turn angle	30	[±°]
Vertical blade rotation angle	30	[±°]
Horizontal blade turning angle	45	[±°]
Weight	930	[kg]
Mounting on tractor	3pt hitch cat. II	
Power demand	100-180 (74-132)	[HP (kW)]
Working speed max.	10	[kph]

NEW

The MR15 shredder is a light shredder (750 kg), but also a powerful one. Machine should be used for all trees and shrubs remains that have undergone maintenance treatments, including in the field of roads or orchards.

The construction of the MR-15 chipper is based on a single-axle vehicle with a maximum weight not exceeding 750 kg. This allows for registration and road approval on the basis of approval in the O1 trailer category (with a maximum laden mass not exceeding 750 kg). Thanks to the ball hitch lock installed in the machine, the MR-15 can be towed e.g. by a passenger car (this enables transport at a maximum speed of 100 km / h).



The branches are picked up automatically by means of hydraulically driven feed rollers.



Rollers conveying the material to the set of shredding knives.



Loading ramp and safety bar.



Main beam headlights - provide good visibility to other road users.



HAND-FED WOODCHIPPER

MR 15

Total weight	750	[kg]
Dimensions (length, width, height) unfolded ramp	3760/1290/2350 (*1680 without chute)	[mm]
Dimensions (length, width, height) folded ramp	3350/1290/2350 (*1680 without chute)	[mm]
Suspension system	Sprung axle 750 kg, an overrun brake + hand brake	
Engine	B&S Vanguard EFI 37 HP 993cc V - Twin petrol	
Fuel tank capacity	35	[l]
Oil tank capacity	18	[l]
Flywheel	Ø580x25	[mm]
Sided cutting knives	2x 213 mm (two-sided)	
Material feeding system	2 rollers Ø125 mm (hydraulic drive)	
Material feeding system control	Water and shockproof mechanical buttons	
Inlet opening (hopper)	150x191	[mm]
	-6x8	[in]
Ball hitch	Ø50	[mm]



Folding chimney



PRONAR T314, T315, T316

Slurry tanks **PRONAR T314/T315/T316** are an exceptionally durable constructions, high resistance to corrosion and multifunctionality are just some of the advantages of our slurry trucks. Customers can choose between three available tank capacity 4000 l 5000 l 6000 l, made of steel with improved strength properties. The construction of the lower frame ensures that the container does not transfer load as is the case with cars self-supporting.

The 6000 ltr. container has an inner partition 'breakwater', the aim of which is to prevent a substance from waving. Vehicles have a double protection system which secures the pump from flooding. A special overpressure valve helps to avoid too high pressure.

SLURRY TANKS T314, T315, T316



Single-axle frame with tank



Standard:

- wagon construction is a single-axle frame with attached tank
- the tank is made of high-durability steel and has special welded-in ring frames to stiffen the construction
- the machine is equipped with 6 meters long suction hose (4", diameter 110 mm) with suction basket attached on the back
- braking system – single or double wire pneumatic installation
- parking brake- manual crank brake
- type of drawbar support- simple telescopic
- Lighting system 12V. Spiral connecting cable of lighting system

Options:

- articulated telescopic shaft
- wide-angle joint-telescopic shaft
- spare wheel

PRONAR SLURRY TANKS	T314	T315	T316	
Allowable total weight	5800	7200	8650	[kg]
Load capacity	4400	5500	6600	[kg]
Empty weight	1400	1700	2050	[kg]
Tank capacity	4000	5000	6000	[l]
Tank length	2840	3460	4120	[mm]
Tank diameter	1400	1400	1400	[mm]
Tank plate thickness	5	5	5	[mm]
Dimensions (length, width, height)	5350/2050/2380	5965/2300/2430	6708/2400/2610	[mm]
Tank mounting	on the suspension frame	on the suspension frame	on the suspension frame	
Filling system/discharge system	Pneumatic	Pneumatic	Pneumatic	
underpressure/overpressure	underpressure/overpressure	underpressure/overpressure	underpressure/overpressure	
Wheel track	1650	1770	1860	[mm]
Suspension	one axle, rigid	one axle, rigid	one axle, rigid	
Hitch-ring load	1000	1300	1400	[kg]
Tyres	400/60-15,5	500/50x17	500/60-22,5	
Maximum speed	40	40	40	[kph]
Minimum tractor power requirement	45/33	54,38/40	65,26/48	[HP/kW]
PTO range	540	540	540	[rpm]
Maximum compressor efficiency	4350	6150	6150	[L/min]
Maximim filling time	4	4	5	



T316





Pronar KP-7 and KP-10 containers, in open and closed versions, are designed for the collection and disposal of municipal waste. They are perfectly suited for residential estates and public facilities.

The containers are compatible with vehicles equipped with a hook lift allowing automatic loading and unloading, which is also convenient thanks to rollers located at the rear of the container. Openings and flaps in closed containers are designed to prevent ingress of rain water and its accumulation inside the container.

Standard:

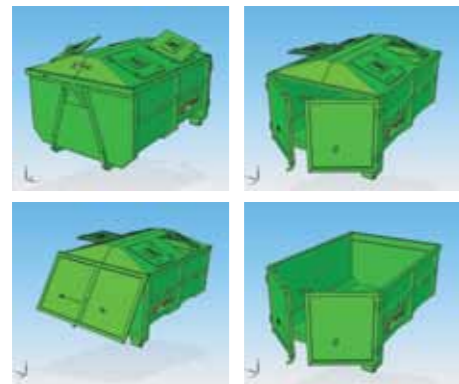
- painting with chemohardening, two-component paints
- lacquer coat finish on interior and exterior
- drawbar couplings for gantry trucks

Options:

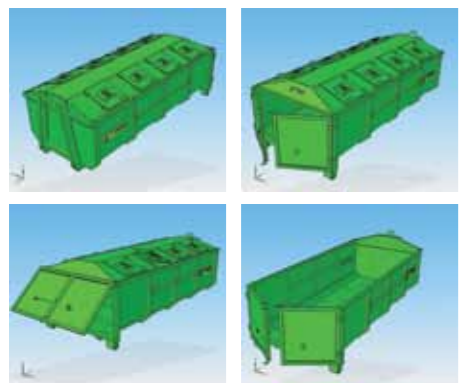
- drawbar couplings for gantry trucks
- double rear doors central locked



PRONAR **KP-7** container



PRONAR **KP-10** container



Properties:

- made with modern rotomoulding technology
- smooth surface for easy cleaning
- extremely resistant to high and low temperature
- very strong and rigid construction
- resistant to chemicals
- UV stabilised colour fastness
- recyclable
- product compliant with standard EN-840

CONTAINER HOUSEHOLD 240L

Interior dimensions:		
Length	730	[mm]
Width	580	[mm]
Height	1080	[mm]
Capacity	240	[l]

PRONAR **240L HOUSEHOLD CONTAINER**



PRONAR CONTAINERS	KP-7	KP-10	
Interior dimensions			
Length	3500	4500	[mm]
Width	1800	1800	[mm]
Height	1100	1000	[mm]
Hook height	1200	1450	[mm]
Materials used			
Floor sheet	3	3	[mm]
Side sheet	2	2	[mm]
Cover sheet	2	2	[mm]
Flap sheet	2	2	[mm]



WINTER ROAD MAINTENANCE MACHINERY

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SNOW PLOUGH
PU-1400



Features and standard equipment:

- two extreme working positions
- rubber or metal blade
- clearance lights

Additional options:

- slides
- can be mounted on various types of carrying vehicles such as: loaders, front loaders, carrying vehicles equipped with an A-frame, agricultural tractors

PRONAR SNOW PLOUGH	PU-1400	
Working width		[mm]
- straight	1400	
- at max. turn angle	1260	
Max. frame turn angle	25	[±°]
Working height	600	[mm]
Weight	175	[kg]
Power demand	up to 30 (22)	[HP (kW)]
Working speed max.	10	[kph]

SNOW PLOUGH
PU-2200E



Features and standard equipment:

- two extreme working positions
- rubber or metal blade
- clearance lights
- mechanical turning
- without linkage system

Additional options:

- slides
- can be mounted on various types of carrying vehicles without the need to use a front three-point linkage
- hydraulic steering system
- support wheels
- lifting actuator



PRONAR SNOW PLOUGH	PU-2200E	
Working width		[mm]
- straight	2190	
- at max. turn angle	1930	
Max. frame turn angle	30	[±°]
Working height	835	[mm]
Weight	360	[kg]
Power demand	up to 60 (44)	[HP (kW)]
Working speed max.	10	[kph]

SNOW PLOUGHS
PU-2600, 3300



Features and standard equipment:

- rubber or metal blade
- anti-collision protection: mouldboard deflection to the front (independently ½ + ½) if an obstacle is run into
- transverse ground tracking linkage
- slides made of wear-resistant steel

Additional options:

- adjustable support wheels
- fenders protecting against curbs
- flanges increasing working width (standard in PU-3300)
- tarpaulin anti-dust screen
- overload protection
- can be mounted on various types of carrying vehicles such as: trucks and multi-functional vehicles, backhoe loaders, loaders, front loaders
- long screens

PRONAR SNOW PLOUGHS	PU-2600	PU-3300	
Working width			[mm]
- straight	2900	3300	
- at max. turn angle	2500	2900	
Max. frame turn angle	30	30	[±°]
Working height	1040	1040	[mm]
Weight	660	680	[kg]
Power demand	80-150 (59-110)	80-150 (59-110)	[HP (kW)]
Working speed max.	10	10	[kph]

Segmented mouldboard with spring safeguard.



Slides made of abrasion-resistant steel. Rubber blade



SNOW PLOUGHS
PUV-1400, 1600



Features and standard equipment:

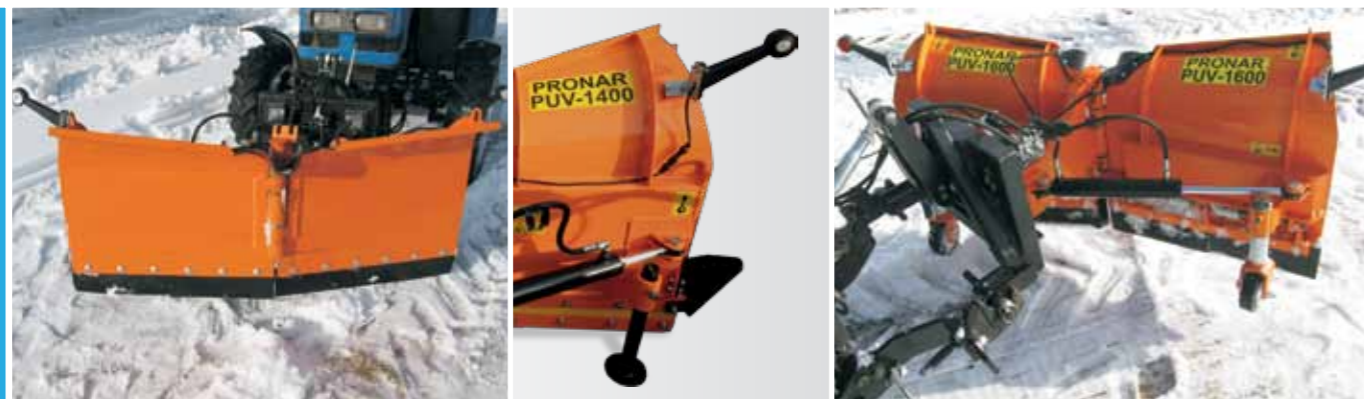
- four extreme working positions
- rubber or metal blade
- tiltable cutting edge
- clearance lights

Additional options:

- slides
- adjustable support wheels
- hydraulic shock absorption
- can be mounted on various types of carrying vehicles such as: loaders, front loaders, carrying vehicles equipped with an A-frame, agricultural tractors
- ground tracking linkage system

PRONAR SNOW PLOUGHS

	PUV-1400	PUV-1600	
Working width			[mm]
- straight	1320	1415	
- at max. turn angle	1280	1390	
Max. frame turn angle	30	30	[±°]
Working height	860	675	[mm]
Weight	200	155	[kg]
Power demand	up to 30 (22)	up to 30 (22)	[HP (kW)]
Working speed max.	10	10	[kph]



SNOW PLOUGHS
KACPER PU-1700, 2100



Features and standard equipment:

- four extreme working positions
- rubber or metal blade
- tiltable cutting edge
- clearance lights

Additional options:

- slides
- adjustable support wheels
- hydraulic shock absorption
- can be mounted on various types of carrying vehicles such as: trucks and multi-functional vehicles, backhoe loaders, loaders, front loaders
- ground tracking linkage system



PRONAR SNOW PLOUGHS

	Kacper PU-1700	Kacper PU-2100	
Working width			[mm]
- straight	1930	2210	
- at max. turn angle	1680	1920	
Max. frame turn angle	30	30	[±°]
Working height	900	900	[mm]
Weight	280	300	[kg]
Power demand	25-55 (15-40)	25-55 (15-40)	[HP (kW)]
Working speed max.	10	10	[kph]

SNOW PLOUGHS
PUV-2600, 2800, 3000, 3300



Features and standard equipment:

- 4 extreme working positions
- cutting edge with shock absorption
- HARDOX metal blade
- ground tracking linkage system
- skids made of abrasion-resistant steel
- clearance lights

Additional options:

- support wheels with stepless adjustment
- hydraulic shock absorption
- mounting on any carrying vehicle, according to the customer's order
- rubber blades



PRONAR SNOW PLOUGHS	PUV-2600	PUV-2800	PUV-3000	PUV-3300	
Working width - straight	2360	2550	2710	2970	[mm]
Working width - at max. turn angle	2320	2490	2660	2930	
Max. frame turn angle	27	27	27	27	[°]
Working height	835	835	935	935	[mm]
Weight	600	650	800	850	[kg]
Power demand	80-150 (59-110)	80-150 (59-110)	100-200 (74-147)	100-200 (74-147)	[HP (kW)]
Working speed max.	10	10	10	10	[kph]

Rubber blades



Hydraulic shock absorption



Rubber collecting strips



SNOW PLOUGHS
PUV-1350M, 1500M, 1800M, 2000M



SNOW PLOUGHS **PRONAR PUV-2000M**

Features and standard equipment:

- 4 extreme working positions
- cutting edge with shock absorption
- HARDOX metal blade
- ground tracking linkage system
- skids made of abrasion-resistant steel
- clearance lights

Additional options:

- support wheels with stepless adjustment
- hydraulic shock absorption
- mounting on any carrying vehicle, according to the customer's order
- rubber blades

PRONAR SNOW PLOUGHS	PUV-1350M	PUV-1500M	PUV-1800M	PUV-2000M	
Working width - straight	1210	1345	1600	1775	[mm]
Working width - at max. turn angle	1170	1305	1560	1730	
Max. frame turn angle	30	30	30	30	[°]
Working height	625	635	660	670	[mm]
Weight	145	154	185	200	[kg]
Power demand	30 (22)	30 (22)	50 (37)	50 (37)	[HP (kW)]
Working speed max.	10	10	10	10	[kph]

The possibility of designing the suspension on any carrier



Split working blades



Hydraulic shock absorption



PUV-2600M, 2800M, 3000M, 3300M

SNOW PLOUGHS



Features and standard equipment:

- 4 extreme working positions
- cutting edge with shock absorption
- HARDOX metal blade
- ground tracking linkage system
- skids made of abrasion-resistant steel
- clearance lights

Additional options:

- support wheels with stepless adjustment
- hydraulic shock absorption
- mounting on any carrying vehicle, according to the customer's order
- rubber blades straight
- hardox or perforated blades straight or 30°



PRONAR SNOW PLOUGHS	PUV-2600M	PUV-2800M	PUV-3000M	PUV-3300M	
Working width					[mm]
- straight	2335	2500	2655	2845	
- at max. turn angle	2075	2240	2395	2570	
Max. frame turn angle	33	33	33	35	[°]
Working height	855	865	880	1015	[mm]
Weight	680	700	730	860	[kg]
Power demand	80-150 (59-110)	80-150 (59-110)	80-150 (59-110)	100-200 (74-147)	[HP(kW)]
Working speed max.	10	10	10	10	[kph]

Clearance lights.



Blade safeguard springs



Spring safeguard (extendable blades)



PUV-3600HD, PUV-4000HD

SNOW PLOUGHS



SNOW PLOUGH PRONAR PUV-4000HD



Features and standard equipment:

- 4 extreme working positions
- cutting edge with shock absorption
- HARDOX metal blade
- ground tracking linkage system
- skids made of abrasion-resistant steel
- clearance lights

Additional options:

- support wheels with stepless adjustment
- hydraulic shock absorption
- mounting on any carrying vehicle, according to the customer's order
- rubber blades straight
- hardox or perforated blades straight or 30°

PRONAR SNOW PLOUGHS	PUV-3600HD	PUV-4000HD	
Working width			[mm]
- straight	3115	3420	
- at max. turn angle	2955	3140	
Max. frame turn angle	35	30	[°]
Working height	1164	1206	[mm]
Weight	1025	1270	[kg]
Power demand	110-220 (81-162)	120-250 (88-183)	[HP(kW)]
Working speed max.	10	10	[kph]

Blades with 30 degrees (perpendicular available)



Rubber supporting wheels



Blade spring protection





Features and standard equipment:

- 2 extreme working positions
- rubber or metal blade
- capability of operating on front or rear three-point linkage of tractor
- capability of grading unpaved roads

PRONAR PU-T20 **UNIVERSAL SCRAPER BLADE**

PRONAR UNIVERSAL SCRAPER – BLADE

	PU-T20	
Working width - straight	2000	[mm]
- at max. turn angle	1530	
Max. frame turn angle	40	[°]
Working blade height	654	[mm]
Weight	400	[kg]
Power demand	max. 150 (110)	[HP (kW)]
Working speed max.	10	[kph]



SCRAPER **PRONAR PUU-3700**

Features and standard equipment:

- adjustment of working width by setting angle of two side mouldboards and the central mouldboard
- rubber blades
- electro-hydraulic control

Additional options:

- support wheels
- perforated mouldboard extensions for silage
- top extensions for snow
- adjustment of transverse plough position by means of hydraulic cylinders within the range of ±12°
- clearance lights
- anti-dust screen for snow
- metal blades

PRONAR SCRAPER

PUU-3700

Working width - straight	3690	[mm]
- at max. turn angle	2140	
Max. frame turn angle	30	[°]
Turning angle of side wing to the front/back	+90°/-60°	[°]
Working blade height	975	[mm]
Weight	1275	[kg]
Power demand	up to 300 (221)	[HP (kW)]
Working speed max.	20	[kph]
Requirements concerning carrying vehicle hydraulics	2	[pcs]





Features and standard equipment:

- defrosting material container cover
- hydraulic drive
- mixer
- stainless steel spreading disk
- manual chute adjusting

Additional options:

- PTO drive
- PTO shaft
- pins for full 3pt cat. II -1
- hydraulic chute adjusting
- hydraulic chute shut-off

PRONAR SAND SPREADERS	PS-250	PS-250M	
Load capacity	300	600	[kg]
Tank capacity	250	500	[l]
Power demand	15 (11)	15 (11)	[HP (kW)]
Spreading width	adjustable 1 – 6	adjustable 1 – 6	[m]
Mounting on tractor	3pt hitch cat. I or II narrow	3pt hitch cat. I or II narrow	

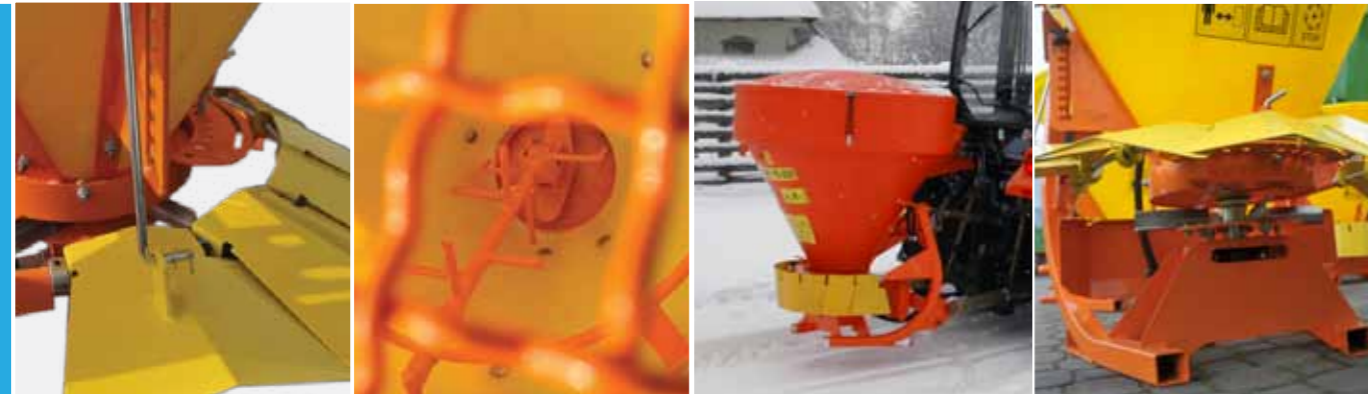
Optional hydraulic chute shutting

Adjustment of spreading width.

Sieve and mixer in funnel.

Sand container can be 250 or 500 litres of capacity

Stainless steel spreading disc.



The PW120 spreader has the option of aggregation on the rear or front of the carrier. It fits to small tractors, loaders, front loaders etc. and it is used to spreading flat surfaces with sand, salt or mixture thereof.

Available drives:

- PTO 540 rpm
- Electric with steering panel
- Electric with steering panel hydraulic with manual flow regulator (20-70l/min, 17,5 Mpa)

Features and equipment:

- suspension on the front or rear of the carrier using a bolted suspension system (possibility of designing suspension to any carrier)
- Scraper (50x5, 50x3, 25x3) bolted
- Rearlighting

PRONAR SAND SPREADER

PW120

Weight	170	[kg]
Tank capacity	385	[l]
Load capacity	580	[kg]
Spreading width	1,2	[m]
Mounting on tractor	3pt. hitch cat I or II narrow	

Manual regulation of spreading density by roller shutter pressure



Manually - folding tarpaulin with position lock secures material against atmospheric agents

A safety grille protects the spreading system against stone damage and lumpy material and prevents injury to the operator

The agitator makes feeding easier





Features and standard equipment:

- canvas cover
- control panel for setting spreading parameters as a standard equipment of sand spreader
- stainless steel spreading system

Additional options:

- mixer
- vibrator



Control panel.



Additional mixer facilitates aggregate breaking



PRONAR SELF-LOADING SPREADER

HZS10

Carrying capacity	1700	[kg]
Tank capacity	1	[m³]
Spreading width	adjustable 2 - 6	[m]
Power supply	Hydraulic	
Nom. tractor hydraulic output	40	[l/min]
Spreading speed	5 - 40	[kph]
Mounting (optional)	3pt hitch cat. II	
Demanded 3pt hitch capacity	2500	
Weight	555	[kg]

Stainless steel spreading disc.



Sieve and mixer



Pronar HZW self-loading spreaders are equipped with roller dispensing system with a constant spreading width. They are suitable for spreading aggregate on sidewalks and parking lots, because they are safe to use and do not shoot stones. The suspension allows the machines to be mounted on Euro frames (frontloaders), and after the use of an adapter - on tractor 3pt linkage.

Canvas cover with frame protects the material from snow and rain.



Backlight set lets you move around public roads.



The possibility of aggregation on Euro frontloader system or tractor 3pt hitch (adapter).



Aperture adjustment to set the spreading dosage.

Working roller with slats dispense the material on the road.



Mixer for easy material slip onto the roller.



Safety grill for homogeneous spreading material.



PRONAR SELF-LOADING SPREADERS

HZW150

HZW200

Carrying capacity	1300	1600	[kg]
Tank capacity	0,8	1	[m³]
Spreading width	1,5	2	[m]
Power supply	PTO or hydraulic	PTO or hydraulic	
Nom. tractor hydraulic output	30	30	[l/min]
PTO nom. Speed	540	540	[rpm]
Spreading speed	5 - 40	5 - 40	[kph]
Mounting (optional)	Euro (3 pt. hitch)	Euro (3 pt. hitch)	
Required 3pt capacity	2000	3000	[kg]
Weight	360	500	[kg]

Constant spreading width





Pronar KCT07 spreader is a solution for low-power tractors. It allows work with the simplest tractors without hydraulic system. The spreader is towable, so that it does not overload the compact carriers. Its size allows you to work on the sidewalks.



PRONAR TRAILED SAND SPREADER

KCT07

Load capacity	1120	[kg]
Tank capacity	0,7	[m ³]
Spreading width	1,5 - 4	[m]
Min. power requirement	20 (14,7)	[HP (kW)]
Max. working speed	15	[kph/h]
Recommended PTO speed (mechanical version)	300	[rpm]
Max. hydraulic pressure (hydraulic version)	20	[MPa]
Nominal hydraulic pressure (hydraulic version)	5	[MPa]
Nominal oil flow (hydraulic version)	16-50	[l/min]
Weight	345	[kg]

The spreader's wheel drives the conveyor belt while riding. The given spreading amount will be the same, regardless of the moving speed. The spreader is not working while stationary.



MAY be aggregated to 1.5-tonne tractors.

Covers for setting spreading width and limit scattering.

PTO drive for tractors without hydraulic system.



Features and standard equipment:

- canvas cover protecting cargo
- two stainless steel spreading units
- conveyor belt
- hydraulic drive
- charging sieve as a standard equipment

Features and optional equipment:

- spare wheel
- side service platform (in T131 and T132 sand spreaders)



PRONAR TRAILED SAND SPREADERS

	T130	T131	T132	
Carrying capacity	2520	3800	5500	[kg]
Loadbox capacity	2	3	4	[m ³]
Spreading width	1800 - 2800	1800 - 2800	1800 - 2800	[mm]
Minimum tractor power demand	48 (35)	60 (44)	70 (51)	[HP (kW)]
Minimum hydraulic system output	32	32	32	[l/min]

Adjustable spreading width.

2 stainless steel spreader units.

Side service platform (T131 & T132).





Features and standard equipment:

- blade and slides made of „Hardox” abrasion-resistant steel
- hydraulically rotated discharge chute
- mechanical drive powered by front PTO
- mounted on three-point linkage

Features and optional equipment:

- mounting system on rear three-point linkage and on construction machinery
- hydraulic drive for OW 2.1 and OW 2.4
- high-discharge chute

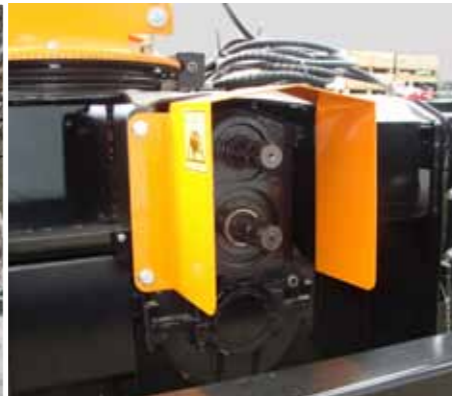
PRONAR SNOW BLOWERS	OW 1.5	OW 2.1	OW 2.4	
Weight	320	650 (737)	740 (830)	[kg]
Working width	1500	2100	2330	[mm]
Working height	580	780	780	[mm]
Number of augers	1	1	2	
Required tractor PTO speed (left or right)	540 or 1000	540 or 1000	540 or 1000	[rpm]
Discharge distance	5 - 20	5 - 30	5 - 30	[m]
PTO power demand	25-60 (18-44)	50-95 (37-70)	70-150 (51-110)	[HP (kW)]
Working pressure*	-	25	25	[MPa]
Demanded oil output*	-	100 - 140	135 - 195	[l/min]

for blower with hydraulic supply*

High-discharge chute.



Transmission with two PTO outputs (540/1000 rpm).



Hydraulic discharge chute rotation and adjustment of throwing distance.

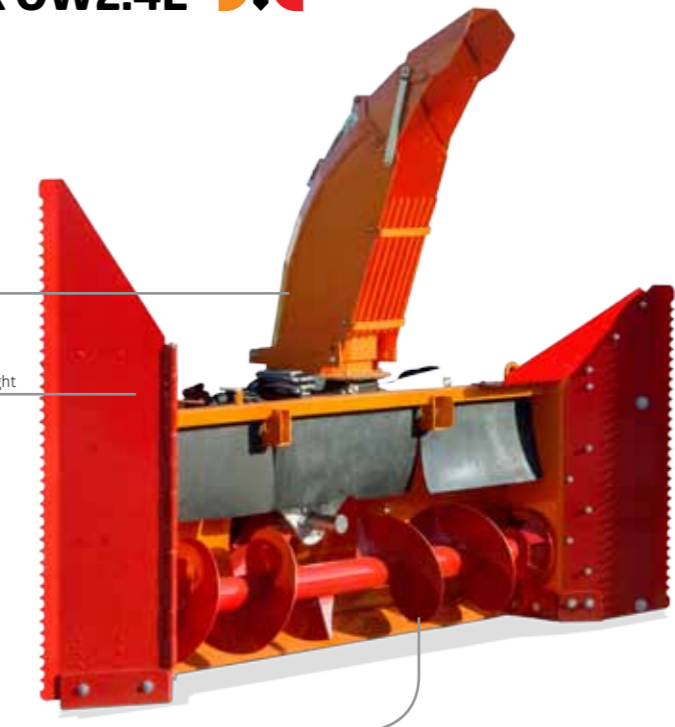


SNOW BLOWER PRONAR OW2.4L

Rotable chute made of wear-resistant steel allows amending blow direction. Blowing distance up to 30m

Rigid side extension - left and right

Snow and ice cutting auger transports the material to the inside of machine.



Technical details of standard version:

- blade and skids are made of „Hardox” wear-resistant steel
- Chute hydraulically adjusted
- front and rear PTO mechanical drive
- Front and rear 3pt. hitch suspension

Technical details of optional equipment:

- suspension system designed to work with construction machinery and rear 3pt hitch
- hydraulic drive
- rigid side extensions left and right
- clearance lights

SNOW BLOWERS	OW2.4L	
Weight	850	[kg]
Working width (without extensions)	2400	mm
Gullet width	2200	mm
Working height	920	mm
Blowing distance	5 - 30	[m]
Number of augers	1	
Required PTO speed (direction: clockwise)	540	[rpm]
Mounting on Category II and III three-point standard hitch		
PTO power demand	60-150 / (45-110)	[HP (kW)]
Working speed	2	km/h

Snow blower OW2.4L at work



Hydraulic control of the widening



Slides and support wheels to maintain the distance between the surface and the blades (to limit the thickness of the swept layer)





OFW 2.6 is designed for the toughest winter jobs. The heavy duty construction allows for crushing snow and ice and throwing the material away from the de-snowed paths and roads. Aggregation for carriers with a communal plate DIN or tractor three-point linkage gives wide possibilities of application, not only in municipal companies. Use of high quality materials ensures long-term operations.

Rotary chute made of wear-resistant steel allows for change of dispersing material.

- possibility of adjusting working degree
- skids, plowshares, auger and dispensing chute made of Hardox
- working height of 1,2 m
- Discharge distance up to 30m
- PTO drive (1000rpm) left or right
- 3-pt hitch cat. II or III (tractor) or DIN type A (truck) mountings available
- auger and rotor overload protection



Skids or supporting wheels



Rotor made of wear-resistant steel.

Steel blades for breaking away snow from the ground. Working width 2,64m.

PRONAR SNOW-CUTTER-BLOWER

OFW2.6

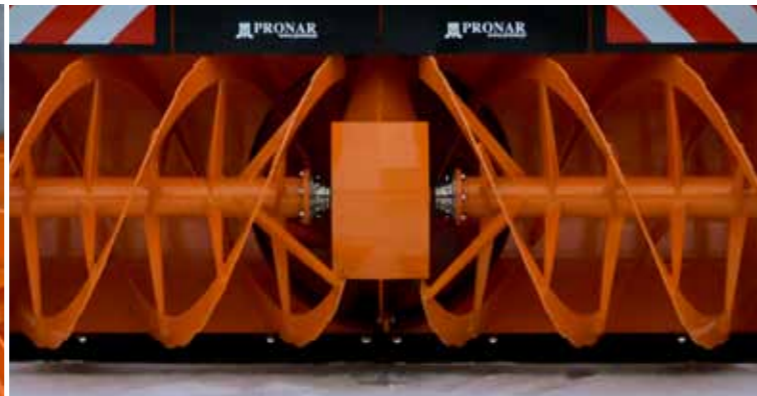
Weight	1700	[kg]
Clearing width	2640	[mm]
Working height	1245	[mm]
Required tractor PTO speed (left or right)	1000	[rpm]
PTO power demand	140 (103)	[HP (kW)]
Discharge distance	5 - 30	[m]
Auger diameter	950	[mm]
Rotor diameter	880	[mm]

Angle gearbox with overload protection



Rubber covers protect against dusting.

Snail-cutter for cutting frozen snow and ice. Working height of 1.245m.



TRUCK SNOW PLOUGHS
PU-S25H, PU-S32H, PU-S35H

Features and standard equipment:

- plastic mouldboard
- electro-hydraulic control with "floating" position,
- available power supply 12V and 24V
- road lighting and clearance lighting as a standard equipment
- fenders protecting against curbs included
- own hydraulic system
- press-down function

Additional options:

- mounting on carrying vehicles other than trucks
- blades shock absorption
- steel blades
- support wheels
- flags
- press-down function
- two actuators

PRONAR TRUCK SNOW PLOUGHS

	PU-S25H	PU-S32H	PU-S35H	
Working width with bumper				[mm]
- straight	2690	3370	3634	
- at max. turn angle	2550	3175	3415	
Max. frame turn angle	30	30	30	[±°]
Working height	930	1070	1070	[mm]
Electric supply	12 or 24	12 or 24	12 or 24	[V]
Carrier payload (vehicle truck)	6	8	8	[t]
Weight	430	635	670	[kg]
Mounting on DIN plate std 76060	type B	type A	type A	



SNOW PLOUGH
PRONAR PUD-S43



NEW

Diagonal snow plough equipped with mouldboard capable of turning 46degrees towards carrier. Automatic blade adjustment to road inclination (terrain copying) within $\pm 6.4^\circ$. The plough is available in different versions:
 - on the tractor - the plow suspension is rigidly attached to the subframe without a lift cylinder
 - for a truck - the suspension system is based on a „Finnish” plate mounted on four pendulums to the carrying frame, which is regulated by an actuator with a mouldboard floating function in the height range 0-400 mm (possibility of locking the float for plough aggregation)



Snow flaps (optional)



Support wheel



Hydraulic system



Mouldboard

Slide

Suspension arms



Bumper (optional: right side of mouldboard)



Blade



Clearance lamps

Bumper (option: left side of mouldboard)



SNOW PLOUGH	PUD-S43	
Working width (46° - 0°)	2940-4270	[mm]
Max. frame turn angle	0 - 46°	[°]
Tracing terrain angle	± 6.4	[°]
Terrain tracing height	400	[mm]
Power supply	12 lub 24	[V]
Weight	1400	[kg]
Working speed	maks. 70	km/h
Dimensions (width/length/height)	5130/2545/1930	[mm]
Mounting on the carrier	Mounting system according to „Finnish” standard	



Features and standard equipment:

- electrohydraulic control with “floating” position,
- available power supply: 12V and 24V
- road lights and clearance lights
- fenders protecting against curbs
- own hydraulic system
- press-down function
- easy mouldboard change

Additional options:

- mounting on carrying vehicles other than trucks
- blades shock absorption
- steel blades
- support wheels
- flags
- two actuators



TRUCK SNOW PLOUGH
PU-S25HL

Mouldboard made of plastic with memory shape. Rotomoulding technology used in production process makes it very strong.

PRONAR TRUCK SNOW PLOUGHS	PU-S25HL	PU-S27HL	PU-S30HL	PU-S34HL	
Working width with bumper - straight	2690	2945	3235	3630	[mm]
- at max. turn angle	2350	2570	2825	3160	
Max. frame turn angle	30	30	30	30	[±°]
Working height	930	1060	1060	1060	[mm]
Electric supply	12 or 24	12 or 24	12 or 24	12 or 24	[V]
Carrier payload (vehicle truck)	6	8	8	8	[t]
Weight	450	530	550	590	[kg]
Mounting on DIN plate std 76060	type A or B	type A or B	type A or B	type A or B	



Features and standard equipment:

- working width adjustment
- KÜPER metal-ceramic-rubber cutting edge
- clearance lights
- power supply from three or four pairs of quick couplers

Additional options:

- KÜPER slides
- adjustable support wheels
- own hydraulic system

PRONAR TELESCOPIC TRUCK SNOW PLOUGH

PUT-S58

Working width (folded/unfolded)		[mm]
- straight	3900 / 5855	
- at max. turn angle	3455 / 5150	
Max. mouldboard turn angle	30	[±°]
Working height	1090	[mm]
Electric supply	24	[V]
Carrier payload (vehicle truck)	8	[t]
Weight	1760	[kg]
Mounting on DIN plate std 76060	type A	

Optional regulated support wheel



Position marking lights



Mounting – DIN type A municipal plate



SEGMENTED SNOW PLOUGHS
PUS-S27, S32, S34, S36, S40



Features and standard equipment:

- rubber blades (rigid suspension)
- wheels
- parking supports (on four castor wheels)
- power supply from 2 pairs of quick coupler on the carrying vehicle (1 pair on carrying vehicle with floating position);
- In-cabin control panel;
- electrical power supply from battery
- linkage: DIN A; DIN B, SETRA
- clearance lights
- side fenders
- 2 mouldboard turning actuators
- 1 mouldboard raising actuator
- 1 pressing spring per segment

Additional options:

- hydraulic power supply - power-pack with floating and pressing functions; control panel in cabin:
- 24 V electrical power supply from battery
- power supply from 1 pair of quick couplers on carrying
- vehicle; control
- panel in cabin
- electrical power supply from battery
- dust screen
- perforated steel blades (rigid)
- KÜPER blades (mounting with shock absorption)
- KÜPER skids
- road lights
- warning signs + flags
- 2 pressing springs per segment

PRONAR SEGMENTED SNOW PLOUGHS	PUS-S27	PUS-S32	PUS-S34	PUS-S36	PUS-S40	
Working width						[mm]
- straight	3200	3700	3900	4100	4500	
- at max. turn angle	2350	2790	2960	3135	3490	
Max. mouldboard turn angle	30	30	30	30	30	[±°]
Working height	1040	1040	1040	1040	1040	[mm]
Electric supply	24	24	24	24	24	[V]
Weight	930	1030	1050	1100	1200	[kg]
Working speed max.	60	60	60	60	60	[kph]
Linkage	type A, type B Setra	type A, type B, Setra	type A, type B, Setra	type A, type B, Setra	type A, type B, Setra	

Koła podporowe regulowane w opcji

Oświetlenie obrysowe

Sposób mocowania - Płyta komunalna DIN76060 typ A



TILTABLE SNOW PLOUGH
PUL-S45



Special truck-mounted plough with a side wing. The 0.75 m wide wing may be hidden in the outline of the plough reducing its width and facilitating passage. Complementary with PUB-S33 plough.

Side wing



PRONAR TILTABLE SNOW PLOUGH	PUL-S45	
Working width with max. turn	3930	[mm]
Max. turning angle	30	[°]
Max. working speed	60	[kph]
Max. working height	1090	[mm]
Weight	1280	[kg]
Mounting on municipal plate:	DIN A, B, Setra	

SIDE TRUCK SNOW PLOUGH
PUB-S33



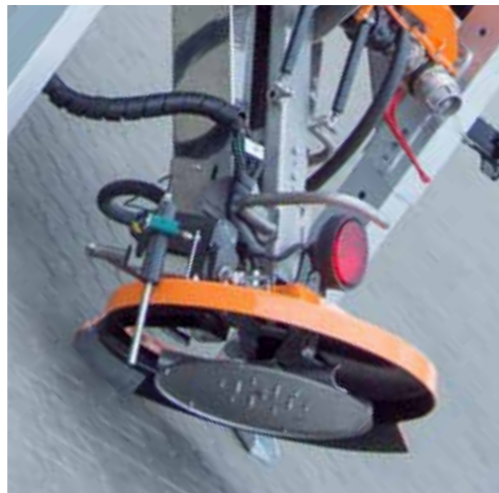
SIDE TRUCK SNOW PLOUGH **PUB-S33**

Special plough mounted on a plate connection between the axles of the vehicle. Increases the width of the vehicle by about 2,3 m. It may be complied by PUL-S45 snow plough. Suspension allows terrain - copying by +/- 5°.

Features:

- rubber or Kuper ploughshares
- own hydraulic system or ploughshares
- ± 5° terrain adjustment
- clearance lights
- parking trolley

PRONAR SIDE SNOW PLOUGH	PUB-S33	
Working width	2340	[mm]
Max. blade turn angle	0 - 45	[°]
Working speed max.	60	[kph]
Working height	1400	[mm]
Weight	850	[kg]
Mounting on dedicated linkage		



Hooper system with spreading disc

Features and standard equipment:

- spreader driven by:
 - independent combustion engine
 - truck hydraulics
- three capacities of loadbox: 7, 8 or 9m³
- control of spreading parameters by Bosch Rexroth electro-hydraulic package
- spreading intensity independent of speed
- canvas cover protecting cargo
- spreading sensor optical or touch
- brine system
- RORO system for

Additional options:

- adjustable supports for loading and unloading of the machine from the vehicle (PT40)
- automatic regulation of parameters depending on weather
- data kit for downloading distance, time and spreading/brining parameters; software, wiring and CAN-USB module
- stainless or galvanized frame and/or loadbox

Diesel engine with power 16,2kW - SPT70)



Tarpaulin frame-



Sieve - disperses the material during loading



Brine tanks



Hydraulic supply couplers HPT70

PRONAR TRUCK SAND SPREADERS

HPT70 / SPT70

Brine tank capacity	2700	[l]
Spreader capacity	7, 8 or 9	[m ³]
Salt spreading intensity	adjustable 5 - 40	[g/m ²]
Aggregate spreading intensity	adjustable 50 - 200	[g/m ²]
Working speed	10 - 70	[kph]

RORO (Roll-on / Roll-off) system for easier loading of PT70 spreader on the carrier bed



The material is transported by a belt conveyor to the charging system





TRUCK SAND SPREADER
SERIES PT 40



Hydraulic supply couplers HPT40.

Features and standard equipment:

- spreader driven by:
 - independent combustion engine – SPT40,
 - truck hydraulics – HPT40,
- adjustable capacity of de-icing material tank within the range of 4.5–6 m³
- control of spreading parameters by Bosch Rexroth electro-hydraulic package
- canvas cover protecting cargo
- spreading sensor optical or touch
- brine system

Additional options:

- adjustable supports for loading and unloading of the machine from the vehicle
- automatic regulation of parameters depending on weather
- data kit for downloading distance, time and spreading/brining parameters; software, wiring and CAN-USB module

Extensions increasing the size of the charging hopper (PT40)



PRONAR TRUCK SAND SPREADERS

HPT40 / SPT40

Brine tank capacity	1800	[l]
Spreader capacity	adjustable from 4.5 to 6	[m ³]
Salt spreading intensity	adjustable 5 – 40	[g/m ²]
Aggregate spreading intensity	adjustable 50 – 200	[g/m ²]
Working speed	10 – 70	[kph]

Brine tank.



Bosch-Rexroth control panel



Adjustable spreader unit height.



Features and standard equipment:

- spreader's drive powered by truck's hydraulics
- control of spreading parameters by Bosch Rexroth electrohydraulic package
- spreading intensity independent of speed
- tarpaulin cover protecting cargo
- spreading sensor
- brine system

Additional options:

- adjustable supports for loading and unloading of the machine from the vehicle
- automatic regulation of parameters depending on weather
- data kit for downloading distance, time and spreading/brining parameters; software, wiring and CAN-USB module

PRONAR TRUCK SAND SPREADER

HPT25

Brine tank capacity	900	[l]
Spreader capacity	2,5	[m ³]
Salt spreading intensity	adjustable 5 – 40	[g/m ²]
Aggregate spreading intensity	adjustable 50 – 200	[g/m ²]
Working speed	10 – 70	[kph]

Adjustable spreader unit height.



Easy-to-use control panel



HPT25 sand spreader.





Features and standard equipment:

- conveyor belt and spreading disk powered by electric motors
- canvas cover
- the spreader's standard equipment consists of control panel for setting parameters
- stainless steel spreading disk
- beacon light
- load box sieve
- parking supports

Additional options

- cargo supports
- power supply 24V
- semi-frame for hook loader (special order)

This machine is designed for cooperation with shipping vehicles and trucks with a carrying capacity of at least 2.8 tons.

PRONAR TRUCK SAND SPREADERS	EPT15	EPT21	
Weight	340	385	[kg]
Spreader capacity	1,5	2,1	[m³]
Electric supplying	12 or 24	24	[V]
Spreading width	adjustable 2 - 4	adjustable 2 - 4	[m]
Aggregate spreading intensity	adjustable 50 - 150	adjustable 50 - 150	[g/m²]
Working speed max.	40	40	[kph]

Stainless steel spreading disk.



Tilttable spreader unit.



Capability of aggregation with a hook loader.



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