

***Three-phase  
Induction motors  
dSKgW series  
for driving of mining organ  
of combined cutter-loaders***




**Cantoni**<sup>®</sup>  
GROUP

## Application

dSKgw series motors are used for driving mining organ of combined-cutter-loaders in extremely tough conditions in underground headings with class "a", "b", "c" of methane explosion danger and class "A" and "B" of coal dust explosion danger.

## Technical Description

dSKgw series motors are three-phase induction motors with squirrel cage rotor in horizontal execution – mechanical design IM3301.

Executed as explosion-proof with flame-proof cover „d” - class  I M2 Exd I acc. to PN-EN60079-1.

They meet all requirements of electrical standards for group I electrical devices:

- PN-EN 60079-0: 2006(U) i PN-EN 60079-1: 2004+AC: 2006(U)

and standards for electric rotating machines and induction motors for mining devices:

- PN-EN 60034-1: 2001 i PN-G 38010: 1997

## Construction

Motors are totally enclosed – interior protection degree IP55 acc. to PN-EN 60034-5: 2004.

Main terminal box – single outlet – has 3 stator winding's terminals and auxiliary terminals of temperature sensors (bearings and windings).

Frame and endshields are water cooled (forced water flow) – cooling system ICW37 acc. to PN-EN 60034-6. Stator's winding made of copper wire with class H insulation materials. Squirrel cage rotor is wound with copper bars.

Motors are equipped with de-clutching device with safety shaft enabling mechanical disconnection of motor from driver machine and protecting motors from overload effects.

## Bearings

SKF roller bearings filled with LGHP2 (SKF) grease with permissible work temperature of 150°C are used.

Bearings' types are given in table shown below:

Type	DE side bearing	NDE side bearing
dSKgw 225	6216 2ZR C3	NU1020 M1
dSKgwb 250	NU220 EC MC3	6024 2Z/C3 HT51
dSKgwb 315	NU318 EC JC3	6024 C3
dSKgw 315	NU1022 M1	6024 2ZR C3
dSKgw 500	6226 C3	NU1026 M1

## Thermal Protection

Motors are equipped with bearings' and winding's thermal protection.

Winding's main thermal protection:

- Bi-metal thermal switches 145°C – 3 pcs. connected In-line (+ 3 pcs. spare)
- Thermo resistor Pt100 – 1 pc. (+ 1 pc.)

Bearings' protection:

- Bi-metal thermal switches 110°C – 1 pc./bearing (+ 1 pc. spare)
- Thermo resistor Pt100 – 1 pc./bearing (+ 1 pc. spare) <sup>\*)</sup>

<sup>\*)</sup> – used in motors from series dSKgw315 i dSKgw500

In low voltage motors (1000V;1140V) series dSKgw315 PTC thermistors are used as thermal protection:

- 145°C – 3 pcs. connected in line (+ 3 pcs. spare) – in stator's winding
- 110°C – 1 pc. (+ 1 pc. spare) – on each bearing

## Technical paramters

TYPE	Rated Power	Rated Speed	Rated Torque	Power Factor	Efficiency	Nominal Current	Starting Current	Starting Torque	Breakdown Torque	Moment of Inertia	Weight
	$P_N$	$n_N$	$M_N$	$\cos\varphi$	$\eta$	$I_N$	$I_R/I_N$	$M_R/M_N$	$M_{MAX}/M_N$	$J_M$	m
	kW	rpm	Nm	-	%	A	-	-	-	kgm <sup>2</sup>	kg
1000V/1140V 50Hz											
dSKgw 225 L4	180	1476	1164	0,86	93,7	129/113	6,5	1,8	2,3	1,7	730
dSKgw 225 L4	200	1475	1294	0,86	93,7	143/126	5,8	1,6	2,1	1,7	730
dSKgwb 250 L4	200	1470	1299	0,80	93,5	155/135	6,4	2,5	2,6	2,7	920
dSKgwb 250 L4-2	250	1475	1619	0,84	94,8	182/159	6,3	2,0	2,2	2,1	930
dSKgw 250H4	230	1481	1483	0,80	93,9	177/155	6,0	2,5	2,8	3,0	1700
dSKgwb 315 M4	200	1472	1297	0,87	95,0	140/123	6,5	2,3	2,1	2,9	1210
dSKgw 315 M4	250	1482	1611	0,86	95,5	176/154	5,9	1,6	2,3	2,9	1210
dSKgw 315 L4	300	1484	1931	0,86	96,0	210/184	6,5	1,8	2,5	3,5	1300
dSKgw 315 L4	315	1485	2025	0,85	95,7	223/196	7,1	2,1	2,5	3,5	1300
dSKgw 315 L4-2	350	1482	2255	0,86	95,5	246/216	6,3	1,8	2,2	3,5	1300
dSKgw 315 H4	350	1482	2255	0,86	95,5	246/216	6,3	1,8	2,2	3,5	1400
3300V/50Hz											
dSKgw 315 L4V	300	1482	1933	0,86	95,0	65,0	6,8	2,0	2,4	3,0	1300
dSKgw 315 H4V	350	1481	2257	0,87	94,7	74,4	6,6	2,0	2,5	4,2	1350
dSKgw 500 Y4	500	1485	3215	0,86	96,0	106	7,4	2,0	2,7	10,0	2250

Parameters in table are for S1 continuous duty and for intermediate duty S4-60% (40c/h;  $J_{ext}/J_M=1$ )

### ENVIRONMENTAL AND OPERATIONAL CONDITIONS

Operations in areas endangered with explosion of methane gas or coal dust – machine of group I classM2.

Atmospheric Pressure	800÷1070 hPa
Ambient temperature	0÷40 °C
Relative humidity at 35°C	97÷100 %
Dust	≤1000 mg/m <sup>3</sup>
Corrosiveness class	C – acc. to PN-71/H-04651
Working voltage	$U_N \pm 5\%$
Allowable inclination of shaft	≤30°
Cooling water parameters (inlet):	
Max temperature	30 °C
• Max static pressure	3 MPa
• Min water flow	12 dm <sup>3</sup> /min (15 dm <sup>3</sup> /min for dSKgw500)

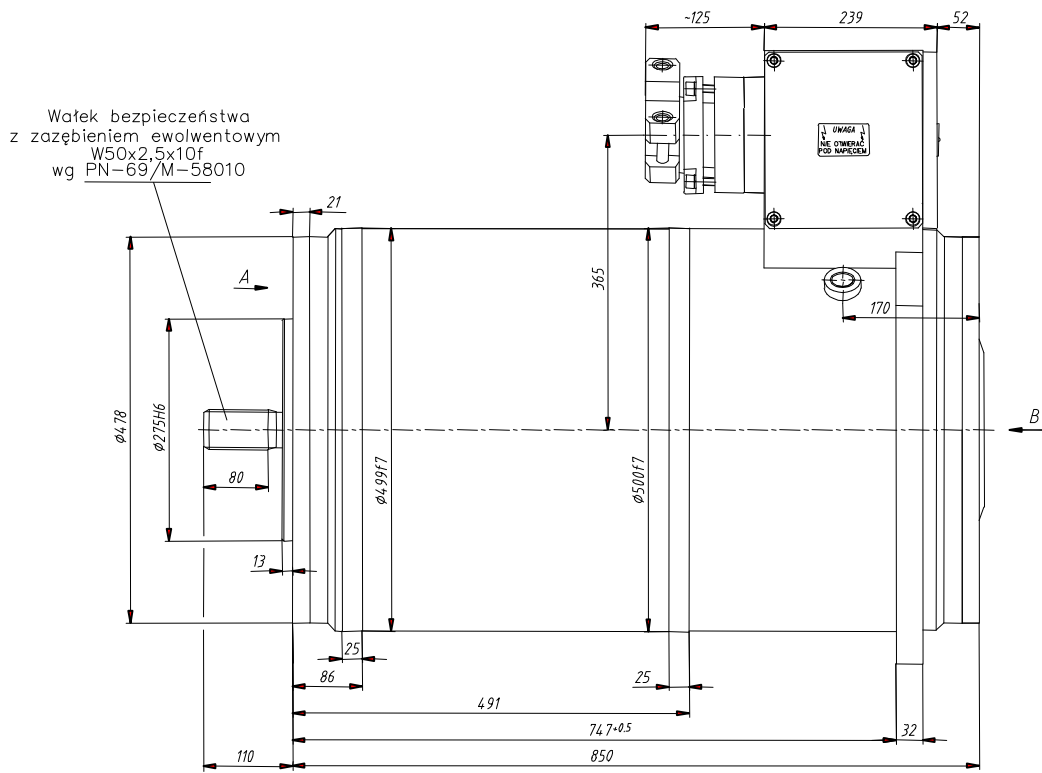
### MOTOR DELIVERY

Motors are delivered:

- with LGHP2 grease in bearing Chambers and de-clutching device (for at least 6 months of operation),
- with lifting eyes (2 pcs.),
- no water in cooling system,
- with safety shaft,
- cable inlet type WKp90 and WKp90 cap,
- instruction manual (DTR),
- declaration of conformity WE.

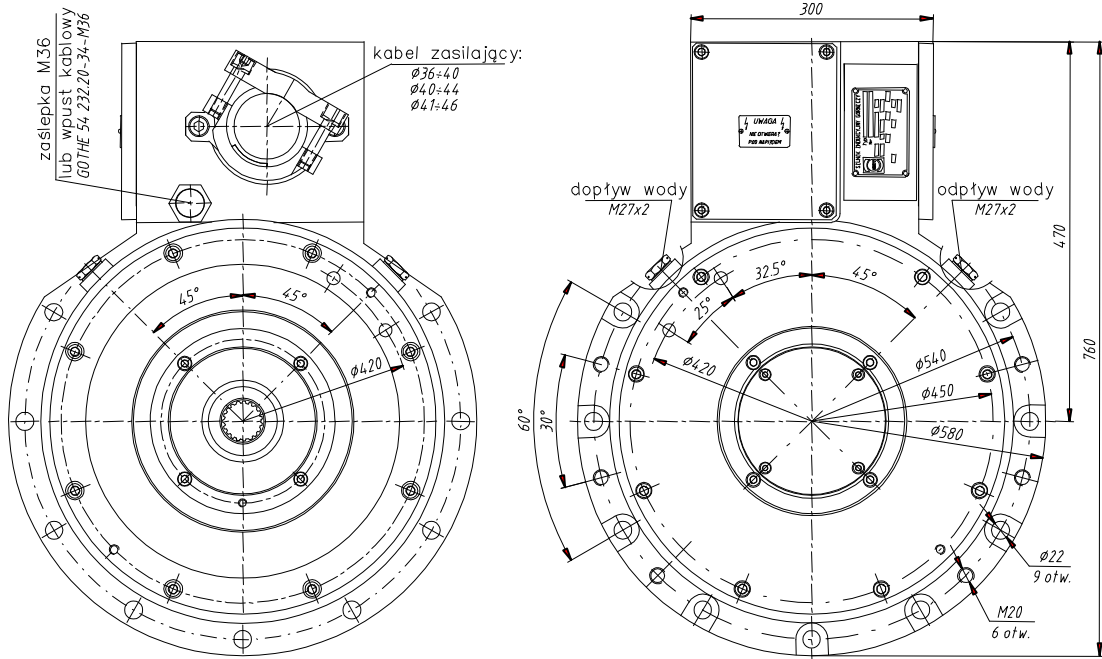


Dimensional drawing – motor type dSKgwb 250 L4, dSKgwb 250L4-2

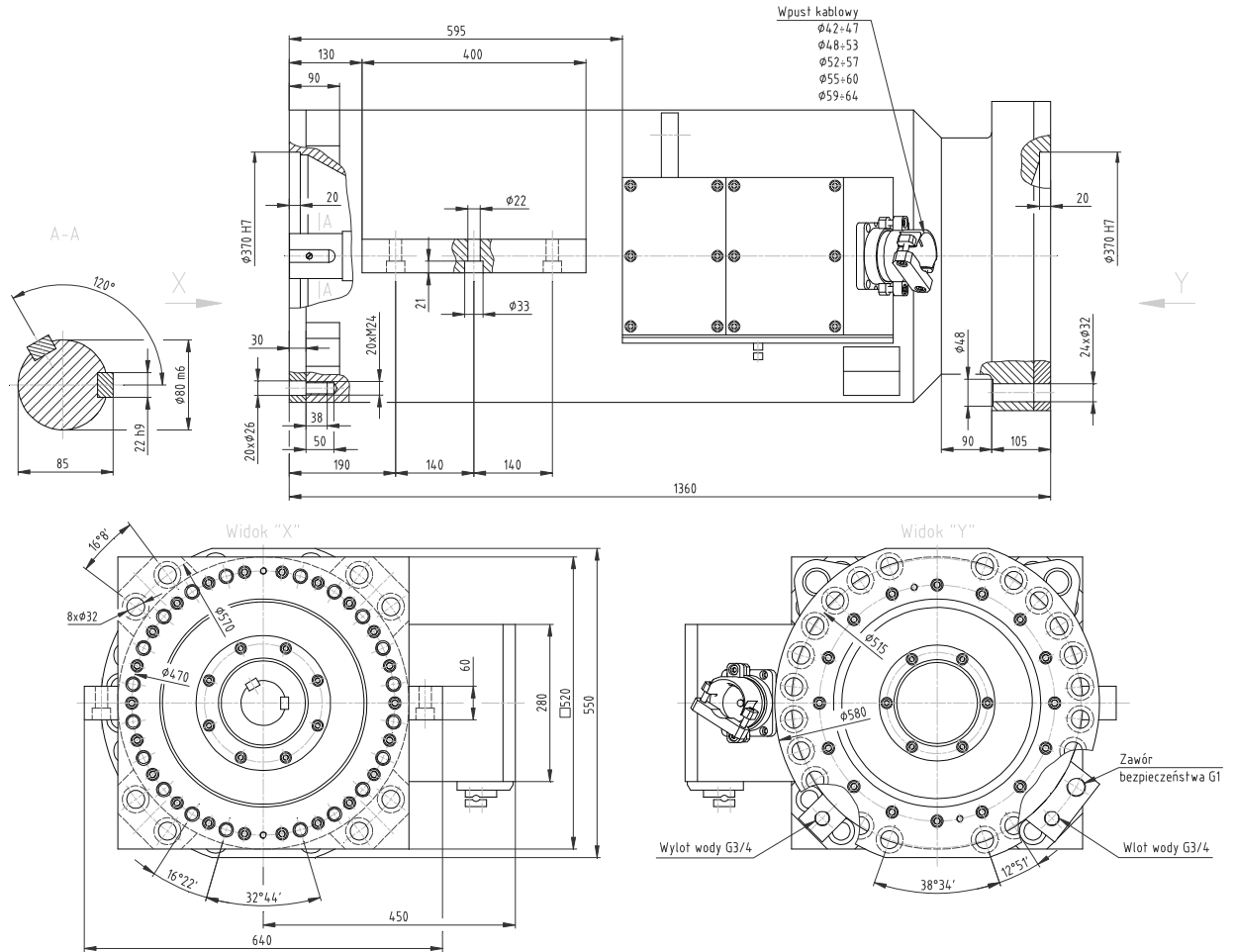


Widok A

Widok B



Dimensional drawing – motor type dSKgw 250H4









Dimensional drawing – motor type dSKgw 315H4, dSKgw 315H4V

