

Recipient: All International Offices

Pages: 8

Newsletter No. 1/2018

1. 3. 2018

Dear DEPRAG-INDUSTRIAL Associate,
we take the opportunity to inform you about new and improved products that were either added to our product line or where we made improvements. Detailed technical information and pictures, as well as a catalog in PDF-format can be found on our website www.deprag.cz.

New:

- **DIQ Intelligent Tools**



Industry 4.0 – Smart factory – Air Grinders – DIQ

The developments of the 4th Industrial Revolution, **Industry 4.0 / Smart Factory**, now also applies to some of the **DEPRAG INDUSTRIAL air-grinders**. Those grinders are equipped with the revolutionary DIQ-technology that allows to continuously evaluate the current **operating conditions of the tool!** All data is acquired during the actual work flow; it **is continuously evaluated and stored on the web**. By utilizing a special IQRN Network - it operates in the frequency range of 868 MHz - the acquired data is made available via wireless output. The transfer takes place by a **Gateway** into the **LAN/Internet** and the data is stored in the **DEPRAG Cloud**.

Tools with DIQ Technology	
Model No.	Part No.
GAQ 812-190BX	6061275E
GAQ 815-190BX	6061275F
GAQ 818-190BX	6061275G
GAQ 818-250BX	6060970D
GAQ 823-190BX	6061275H
GAQ 823-250BX	6060971D

Optional Equipment	
Description	Part No.
Device GW-ETH-02A (72D)	6080094
Device GW-ETH-02A (72D) incl. protective cover IP54	6022835A
Device GW-ETH-02A (72D) IP54 (without GW)	6022802
Software BASIC (monthly license)	6078981
Software BASIC (annual license)	6078983
Software MASTER (monthly license)	6078982
Software MASTER (annual license)	6078984



Tools with DIQ Technology

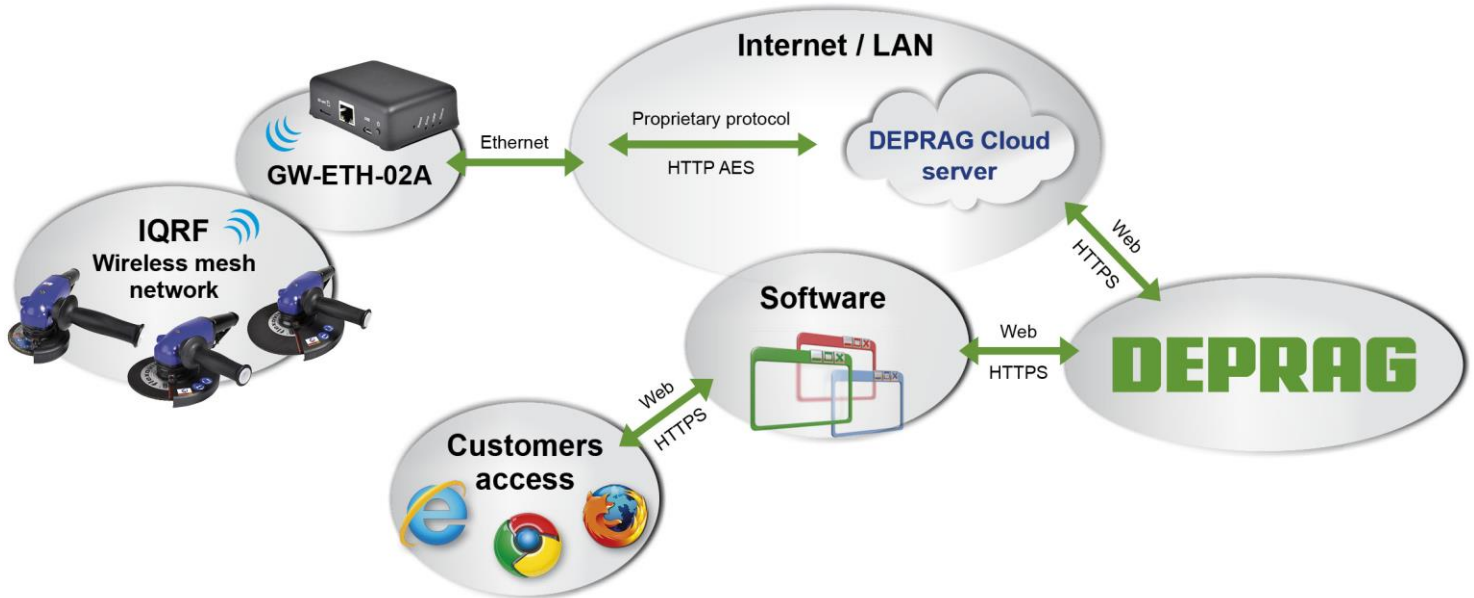


Device GW-ETH-02A (72D)



Device GW-ETH-02A (72D) IP54

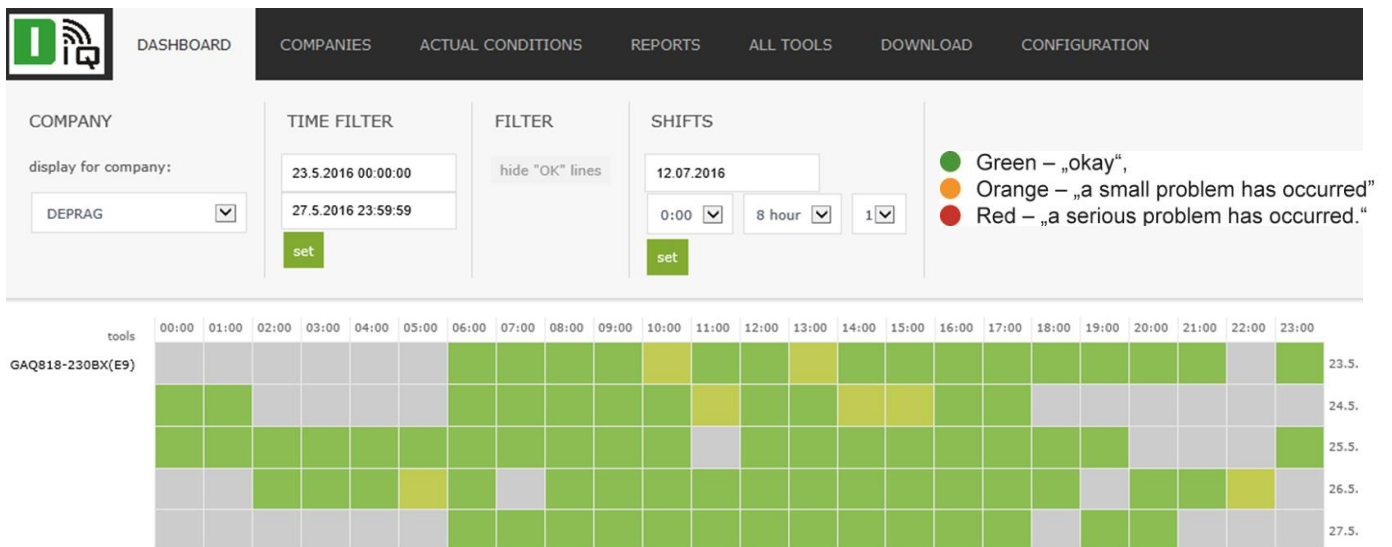
The principle of the data transfer, including communication:



Software

A very clear and easy-to-use App was created for the operator. This application allows the user to observe, assess and evaluate the measured results of any individual air tool that is online.

The “Dashboard” offers a quick access capability of the current status of all grinders. There, it is possible – by selecting the timing filter - to determine whether the tool is correctly functioning. The display shows easy recognizable status colors. The dashboard also allows easy access to view the error information of each grinder.



The App detects all DIQ tools, allows registration of employees and tracks each employee's tool use, as well as the different departments. Each tool can be traced back to the person that was using it. The usage details of each tool is recorded. The App includes easy access to all technical documentation for each registered tool, including operating instructions, safety instructions and much more.

company > workers

EDITING: add a new record

SEARCH: show filter, search

DISPLAY: Default, save view

EXPORT: XLS, PDF, CSV

display all	1								display
		Id	name	Surname	Telefon	subordinates	classification	respon	
	1	56	George	Archer		workers	departments	tools	
	2	58	Henry	Shane		workers	departments	tools	
	3	59	William	Stephens		workers	departments	tools	
	4	60	Jack	Upton		workers	departments	tools	
	5	61	Daniel	Wolfwood		workers	departments	tools	
	6	65	Jordan	Keane		workers	departments	tools	
	7	66	Luke	Forster		workers	departments	tools	
	8	67	Tom	Higgins		workers	departments	tools	

For each tool a separate registration card is generated. The following data is saved (example):

- Technical parameters (e.g. power, speed, weight)
- Serial number
- Initial day of operation, date of last service
- Total runtime of the tool
- Overview of all tool users
- Complete overview of all services (date, repair costs)

ALL TOOLS

EDITING: add a new record, multi edit

SEARCH: show filter, search

DISPLAY: Default, save view, save view for all

EXPORT: XLS, PDF, CSV

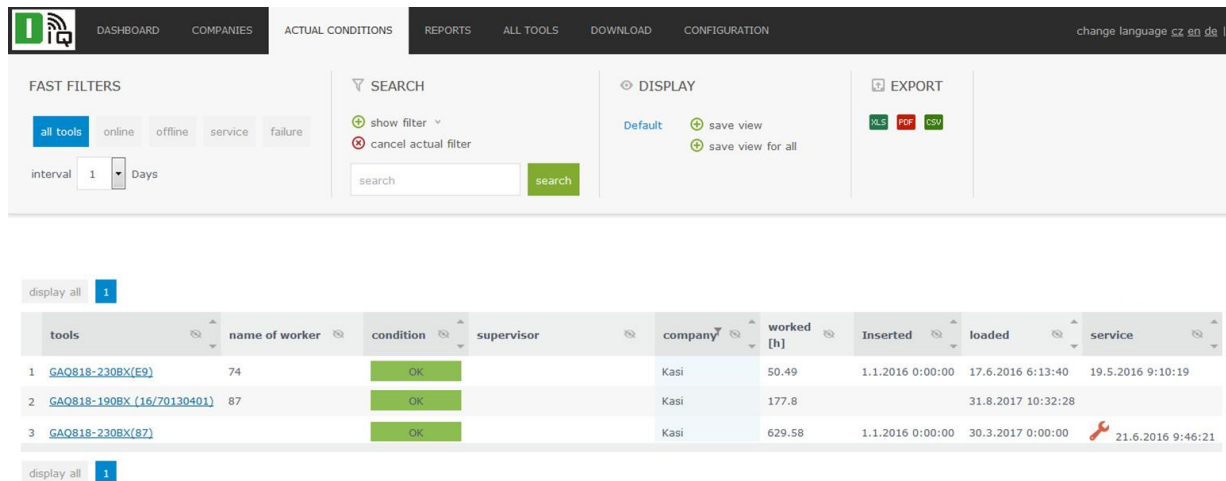
IMPORT: CSV

< previous **GAQ818-230BX(E5)** documents for tools | next >

WORKED		WORKERS - HISTORY		SERVICE COSTS - HISTORY		BASIC PARAMETERS		OTHER PARAMETERS	
parameter	value	worker	date	type of service	price (Σ 1 191 Kč)	parameter	value	parameter	value
hours worked, total	314.68 hour	73	31.12.2016	Greese	525 Kč	name	GAQ818-230BX(E5)	classification	
hours worked, load	314.68 hour	Display more		Gearbox seal check	666 Kč	type	GAQ 818-230BX	date of introduction into production	1.1.2016
total air consumption	35901.05 m³			Display more		serial number	16/70122250	last service date	6.6.2016
						weight	4.40 kg	last readout date	14.8.2032
						speed	8000.00 rpm	end of warranty	0.0.0000
						diameter of grinding wheel	180.00 mm	service - total costs	1 191 Kč
						air consumption	2.50 m³/min		
						power	2300.00 W		

The App is equipped with an information panel which displays the **current status of the tools**:

- Online status according to tool type
- Assigned user
- Current tool status - OK, malfunction or similar, including information on hours of operation



The Tab “Current Status“:

- Last display indication, including the most recent executed service.
- An alert will be displayed when maintenance is required.

Visualization of analyzed data. One can see:

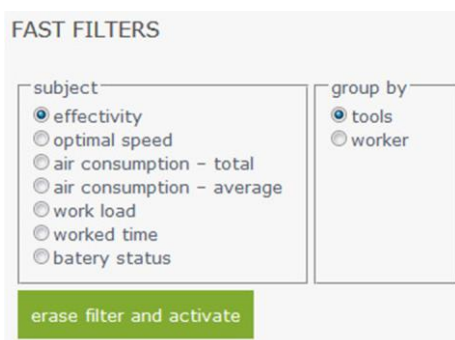
- Grinding speed
- Operational effectiveness
- Best operating-, as well as overall air consumption
- Total time of operation

Intelligent monitoring system of the running grinder. One can see:

- Optimal usage
- Low overload
- High overload
- Non-utilization of the tool

The App also follows the top temperature at the workspace and the battery level.

Every available data stream of each tool can be displayed; it is also possible to compare several tools as a whole or with each other, both for individual operating hours and for each year-to-date month.



The operational effectiveness of the DIQ grinders is displayed below and compared with each of the actual grinders GAQ 818-230BX (date April 2016).

FAST FILTERS

subject

- effectivity
- optimal speed
- air consumption - total
- air consumption - average
- work load
- worked time
- battery status

group by

- tools
- worker

time span

- day
- week
- month
- year

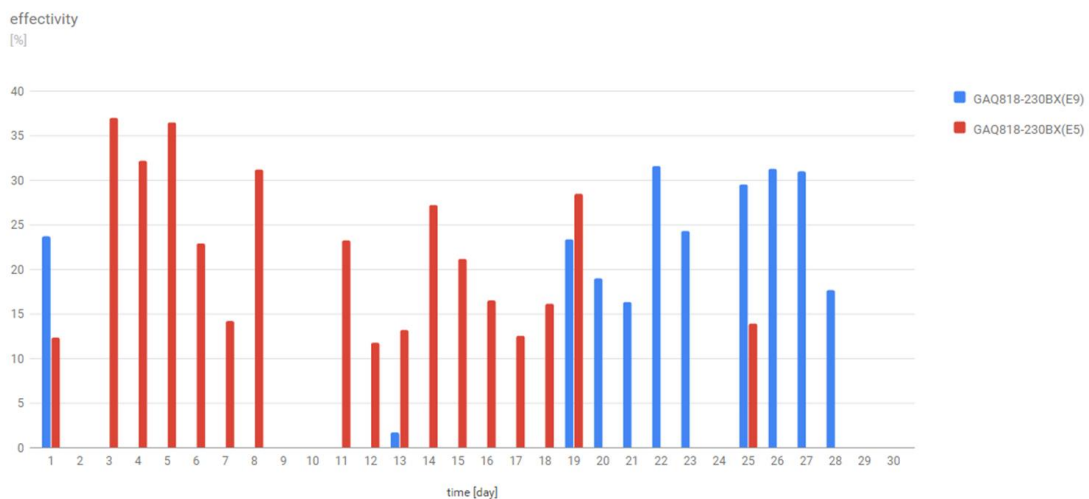
Current week 2017

choice of tool

- GAQ818-230BX(E9)
- GAQ818-230BX(E5)
- GAQ818-230BX(87)

cancel choose

erase filter and activate



Summary of the system features:

- Complete overview of the total tool process
- Access to complete operating data
- Complete control of the grinder and the operational process
- Recommendations to reach the tools' optimum parameter
- Recommendations in regard to the most-suitable tool for any given fabrication task
- Comparison of different tools and/or operators
- Constant tool supervision
- Optimization possibilities in regards to the speed and workload of any given tool
- Preventive maintenance capability by exact monitoring of the service intervals
- Operating-hours counter
- Measuring values for air-consumption - improved production scheduling
- Energy- and cost saving

Tools, equipped with DIQ Technology – technical Data and Parameter

Model No.		GAQ 812-190BX	GAQ 815-190BX	GAQ 818-190BX	GAQ 823-190BX
Part No.		6061275E	6061275F	6061275G	6061275H
Start		Safety lever			
Speed (no load)	min ⁻¹	11900	9850	8350	6650
Max. power output	kW (hp)	1,9 (2.50)			
Air consumption (loaded)	m ³ /min (cfm)	2,2 (77.7)			
Air consumption (no load)	m ³ /min (cfm)	1 (35.30)			
Hose ID required	mm (in)	JS 16 / 5/8"			
O.D. of grinding wheel	mm (in)	125 (4.92)	150 (5.91)	180 (7.09)	230 (9.06)
I.D. of grinding wheel	mm (in)	22,23			
Max. thickness of grinding wheel	mm (in)	6 (.24)	6 (.24)	8	8
Max. thickness of cutting-off wheel	mm (in)	1; 1,6; 2,0 (.04,.06, .08)	1; 1,6; 2,0 (.04,.06, .08)	2,5; 3,2 (.10,.13)	2,5; 3,2 (.10,.13)
Max. radial speed	m/s (ft/s)	80			
Max. cutting depth	mm (in)	30,5 (1.2)	43 (1.69)	58 (2.28)	83 (3.27)
Weight	Kg (lbs)	3,1 (6.83)	3,1 (6.83)	3,3 (7.28)	3,6 (127.12)
Air connection		thread 1/2" female			
Operating pressure	bar	max. 6,3			
Sound pressure level LpA according DIN EN ISO 15744	dB	90 (measurement uncertainty 3 dB)			
Sound pressure power LwA according DIN EN ISO 15744	dB	101 (measurement uncertainty 3 dB)			
Vibration according DIN EN ISO 15744	m/s ²	2,8 (measurement uncertainty 0,9 m/s ²)	2,3 (measurement uncertainty 0,8 m/s ²)	2,9 (measurement uncertainty 1 m/s ²)	3,7 (measurement uncertainty 2 m/s ²)

Model No.		GAQ 818-250BX	GAQ 823-250BX
Part No.		6060970D	6060971D
Start		With guard for use of cutting disks	
Speed (no load)	min ⁻¹	6640	8500
Max. power output	kW (hp)	2,5 (3.35)	
Air consumption (loaded)	m ³ /min (cfm)	2,6 (91.81)	2,9 (102.40)
Air consumption (no load)	m ³ /min (cfm)	1,3 (45.90)	1,5 (52.97)
Hose ID required	mm (in)	JS 16 / 5/8"	
O.D. of grinding wheel	mm (in)	180 (7.09)	230 (9.06)
I.D. of grinding wheel	mm (in)	22,23 (.87)	
Max. thickness of grinding wheel	mm (in)	8 (.32)	
Max. thickness of cutting-off wheel	mm (in)	2,5; 3,2 (.10,.13)	
Max. radial speed	m/s (ft/s)	80(262.5)	
Max. cutting depth	mm (in)	54 (2.13)	79 (3.11)
Weight	Kg (lbs)	4,4 (9.7)	4,7 (1.36)
Air connection		thread 1/2" female	
Operating pressure	bar	max. 6,3	
Sound pressure level LpA according DIN EN ISO 15744	dB	91,5 (measurement uncertainty 3 dB)	87 (measurement uncertainty 3 dB)
Sound pressure power LwA according DIN EN ISO 15744	dB	102,5 (measurement uncertainty 3 dB)	98 (measurement uncertainty 3 dB)
Vibration according DIN EN ISO 15744	m/s ²	1,6 (measurement uncertainty 1,4 m/s ²)	4,2 (measurement uncertainty 1,4 m/s ²)

Note.: The design series of the grinders GAQ originates from the Grinder series GA 1,9 kW and 2,5 kW.



Version Software License

We offer two different access options for the DIQ application. **The standard version “Basic“** has a limited capability of display and operating data. A **broader version “Master“** allows the complete access into all functions. Please reference to the listing below in regards to application possibilities and the different ways of access.

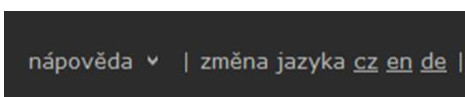


	License	Content of Software Package
■ BASIC	monthly / annual	Access to basic data for air tools and operating hours
■ MASTER	monthly / annual	Full access incl. graphical analysis of all parameter pertaining to the operational efficiency

Access Areas	SW 1 „Basic“	SW 2 „Master“
Acquire all company owned DIQ-tools	X	X
Develop Company Structure	X	X
Assign tools to company structure (tools are assigned to their fabrication area)	X	X
Operating Hours of the DIQ-tool	X	X
Combined cost for repairs	X	X
Tool chart	X	X
Access to online documentation	X	X
Tracking of periodic maintenance intervals	X	X
Current status (On-line, Off-line, Errors, Maintenance)	X	X
Dashboard	X	X
Grinding Efficiency		X
Optimum grinding speed		X
Grinder workload (4 step - evaluation)		X
Air-consumption - average		X
Air-consumption - total		X
Actual working hours (timer)		X
Compare individual tools		X
Compare the different fabrication areas		X
Battery status		X

Software Languages:

The software is available in three languages, simple to select, even while running the program:
Czech / English / German



CLOUD Storage:

For the data transfer from the grinder into the CLOUD storage, it is necessary to establish an IQRF network connection.

All data from the grinder is transmitted wireless into the gateway, which is converted into the LAN network with access to the Internet. When a data transfer from the grinder is required, then the data is automatically transferred into the CLOUD storage.

Device GW-ETH-02A (72D)

This device is intended to allow the data transfer from the grinder into the Cloud.



Protective Cover GW-ETH-02A (72D) IP54

This protective cover allows a better protection of the gateway in an industrial environment.

