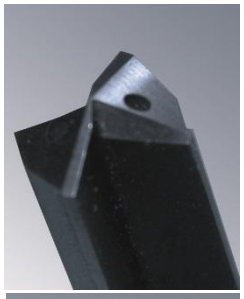
NC18

5 AXIS DRILL GRINDING CENTER Ø 1 TO 8 mm*











*or 2 to 14.5 with option A60.02.000



DETAILED DOCUMENTATION

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1. AVYAC MACHINES COMPANY

Avyac Machines factory in Veauche, France





AVYAC REPRESENTATIVES WORLDWIDE

Germany

haller werkzeugschleiftechnik
Steigäcker 11
78582 Balgheim
Tel +49 7424/501190
www.haller-wst.de

Canada - United-States

Williams and White Equipment Canada
6307 Laurel St, Burnaby, BC V5B 3B3
Canada
Phone: 778.873.1942

Williams and White USA LLC
5565 Glenridge Connector NE STE 850
Atlanta, GA 30342
USA
Phone: 678.673.7411

2. PRESENTATION NC18 GRINDING CENTER

2.1. INTRODUCTION

COMPACT DRILLS GRINDING CENTER NC18 5 AXIS

2 available versions:

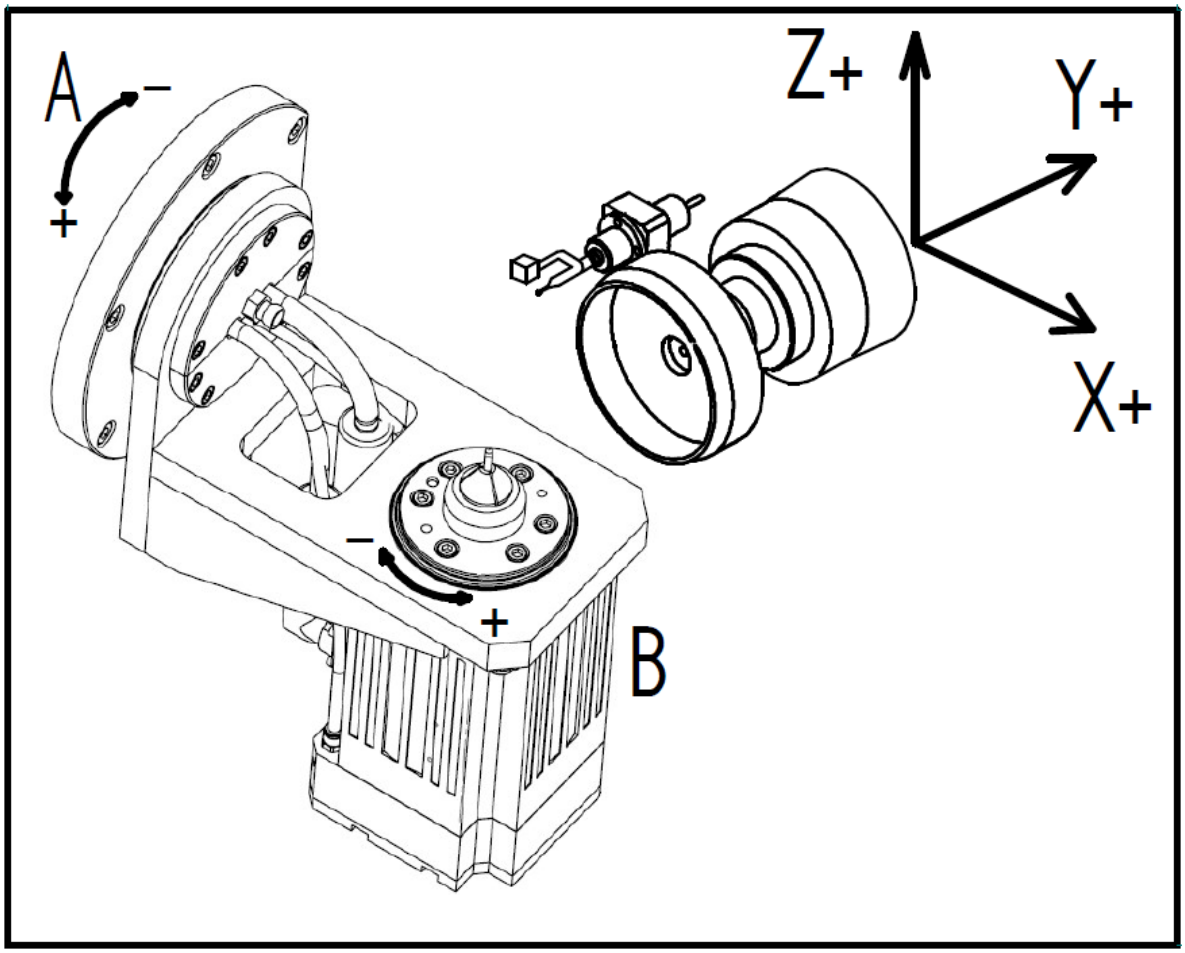
Standard: with SIEMENS SINUMERIK ONE numerical control (Ref.: 860.00.001)
Or
In option: with B&R PPC2100 numerical control (Ref.: 860.00.011)

Tools Diameter:	Ø1 to 8 mm with W12 collets	(option A60.02.001)
	Ø2 to 14.5 mm with W20 collets	(option A60.02.000)
	Ø3 to 14 mm with jaws chuck	(option 860.05.018)

Minimum length of tools sharpened: 20mm

Maximum length of tools sharpened: 350mm

2.2. AXIS KINEMATIC



X AXIS: Stroke 150 mm –longitudinal slide
Y AXIS: Stroke 125 mm –transversal slide

X and Y slides are equipped with crossed roller design. They are driven by precision ball screws (diameter 16 mm and step 5 mm) and controlled by synchronous motors.

A AXIS: Stroke 180° - specific rotary axis (supports the dividing tool holder)
Inclination of the dividing tool holder allowing the evolution of clearance angles.
Controlled by synchronous motor with brake.

B AXIS: Stroke 360° - Dividing tool holder
Conical Spindle, controlled by synchronous motor with brake. Automatic pneumatic locking of the drill into W12 collets (or W20 – option A60.02.000). Gravity-operated drill bit loading with no tools other than collets.

Z AXIS: Stroke 110 mm – Vertical slide.
Z axis is equipped with crossed roller and is driven by precision ball screw (diameter 16 mm and step 5 mm) and controlled by synchronous motor with brake.

All the axis are controlled with synchronous motors with absolute coder (For B&R and Siemens version).

2.3. NUMERICAL CONTROL

B&R version, POWER PANEL PPC2100, with colour touch screen 10'4 (640 x 480 pixels). Bus POWERLINK.



Sample of screen – B&R version

SIEMENS SINUMERIK ONE version with operator front panel touch screen 12" TFT (1280x800 pixels). Ethernet Bus and connection SIEMENS "DRIVE-CLIQ"



Sample of screen – SIEMENS Version

2.4. ELECTROSPINDLE

Compact, precise, pressurized and water tight motor grinding wheel spindle, with a speed of 3000 to 9000 rpm. Allows the use of borazon or diamond grinding wheel diameter 100 mm. The grinding wheel is assembled directly on the end of the motor shaft without any intermediate parts, ensuring perfect concentricity.
Three head motor. 2.2 kW, 230/400 Volts
Lubricated for life.

2.5. TOOL DETECTION

Probing precision: 5 microns
Sensor MARPOSS equipped with stylus (1 knife, 1 cubic 6 mm or 1 ball stylus Ø1 mm)
Used for:

- Detection of drill length
- Drill detection (to find the flute)
- Drill indexing (to find the lip position)
- Control the helix angle, the runout…

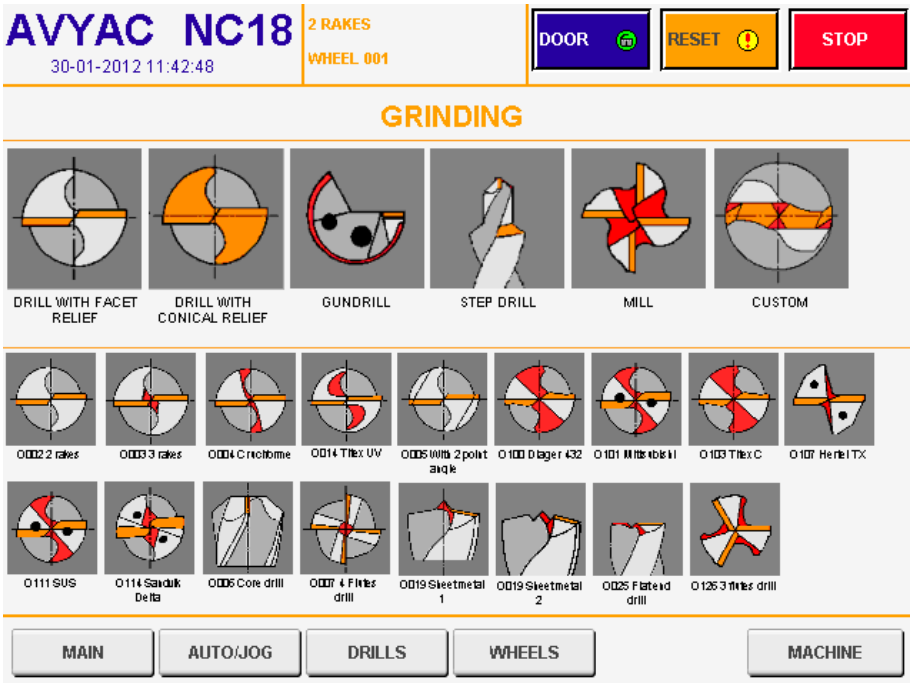
A compressed-air tube starts at the end of the cycle, during the loosening and of the unloading of the drill, to facilitate its ejection.

2.6. DRILL LOADING AND BRAKE DEVICE

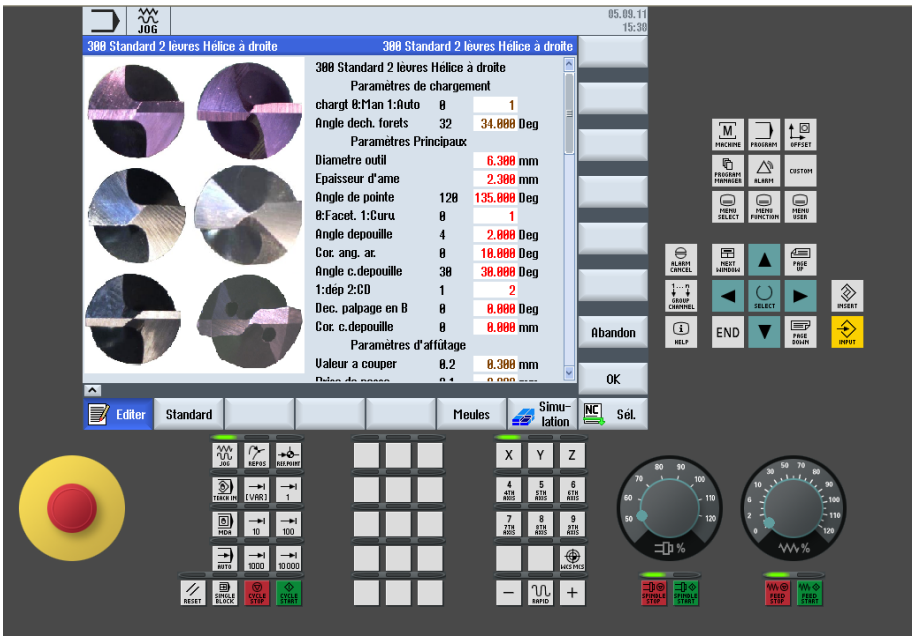
That it is manually or automatically with the option plate, the loading is done by gravity. The drill is guided in a tube (3 tubes diameters 9, 14 and 18 delivered with the machine), then slowed down by an intermediate plate (3 forms available) which is retracted automatically, to arrive finally on a plate of indexing (deadened by spring) which automatically positions the length of exit of the drill.

2.7. GRINDING SOFTWARE

Graphic interface specific for drill grinding. Very easy to use.
Each parameter goes with a small obvious drawing allowing introducing value without thinking about sign, unit and so on …
You can see the different grinding available in the grinding pack section.



Sample of screen – B&R version



Sample of screen – SIEMENS Version

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2.8. ELECTRICAL CABINET

In conformity with CE and ELECTROMAGNETIC COMPATIBILITY
Three-phase electrical equipment (3phases + ground + neutral) 400V- 50Hz - 8kVA - 10A.
Lighting 24V DC - 50 Hz by fluorescent tube, watertight IP65.
Ventilated

2.9. COOLANT DEVICE

Tank of decantation for the coolant liquid (capacity 80l) located in the frame.
Pump with flow of mini 60 L /min is driven thanks to digitally controlled system.
A pressure switch monitors the pressure of the lubrication fluid at the pump outlet.

2.10. COMPRESSED AIR

Allows:

- To tighten the drill,
- To stop the drill,
- To eject the drill.

Pressure of network required: 5 bars.
Including a digital air pressure sensor, controlled by NC.

2.11. SAFETY

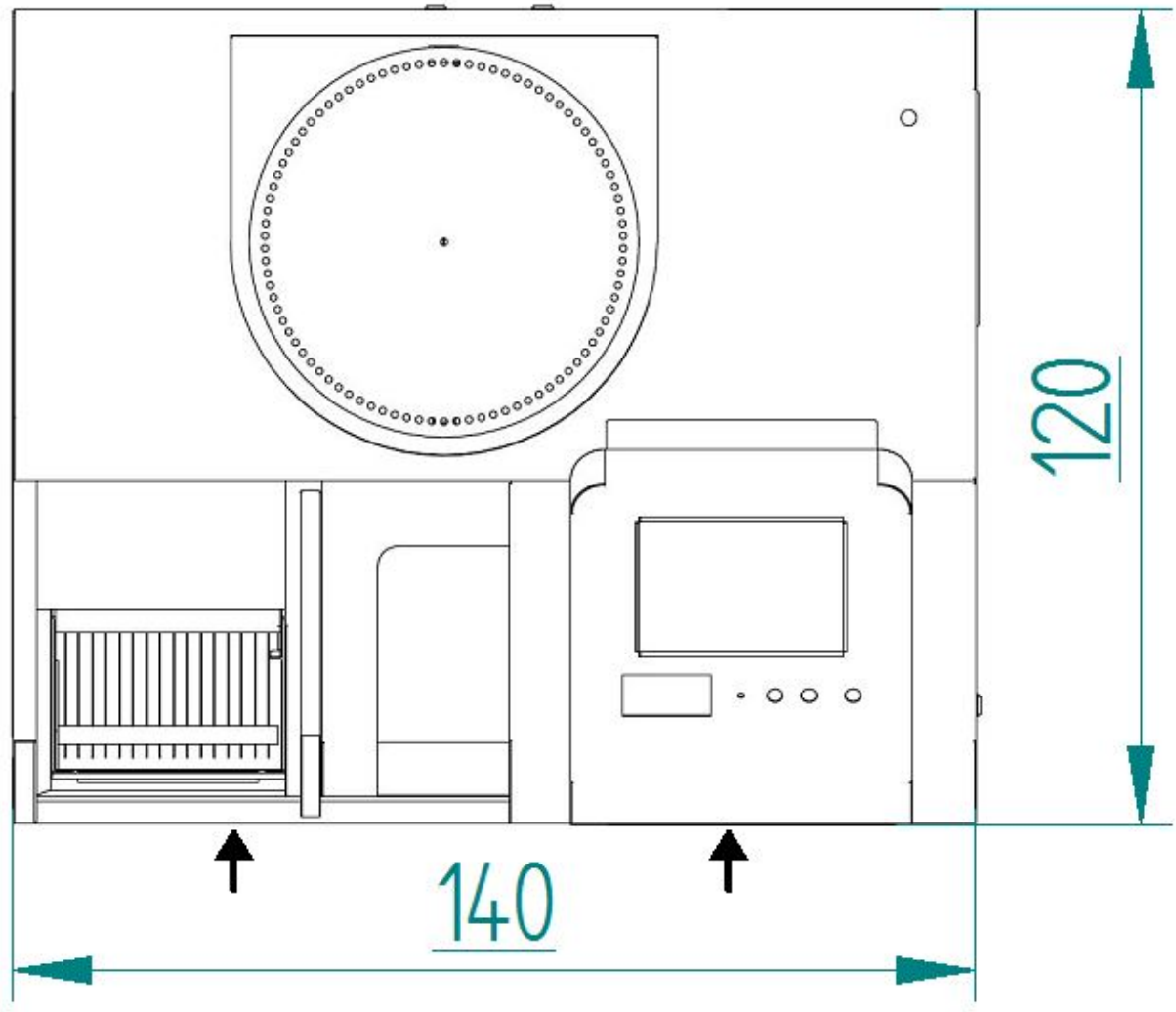
Electronically and mechanical safety-device.

2.12. COLOR

Red RAL 3020, dark Grey RAL 7012 and light Grey RAL 7035

2.13. DIMENSIONS

Weight: 1000 kg (2200 lb)
Dimensions of NC18 alone (large, long, height): 1,4m x 1,2m x 1,5m (4.6ft x 3.9ft x 5ft)
Some space is necessary to access to the right and back doors.



2.14. MAINTENANCE

Very easy access for maintenance (board that can be dismantled)

3. THE GRINDING SOFTWARE

Diameters: From 1 to 8 mm or from 2 to 14.5

The machine comes with a sharpening program of your choice. Any additional requests are available as options. This list is not exhaustive (new developments are added regularly).
Please consult us for any other sharpening requirements.

3.1. Universal drills program (860.80.001)

Programs for drills with 2 or 3 lips, with facets or conical relief, with or without thinning

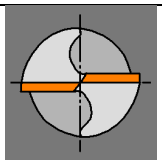
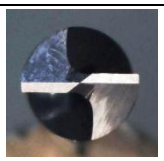
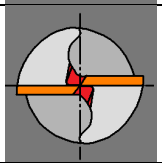
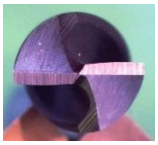
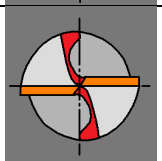
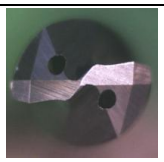
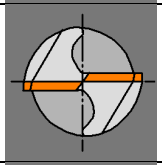
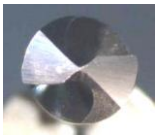
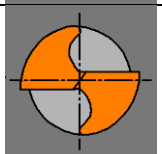
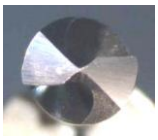
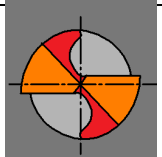
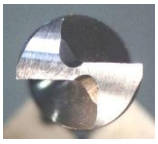
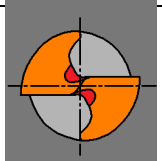
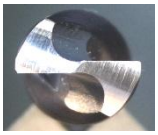
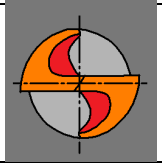
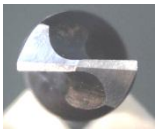
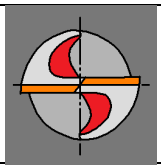
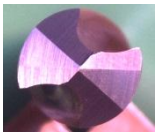
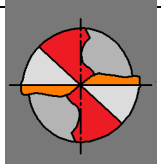
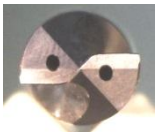
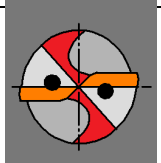
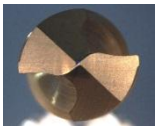
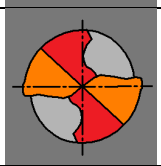
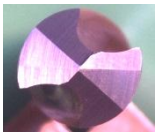
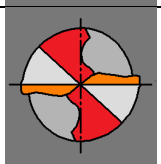
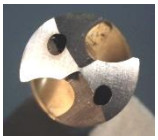
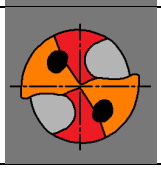
Photo	Drawing	Designation	Grinding AVYAC N°	Program+ Material required
		2 rakes	002	**PGM 300** + 1 short wheel holder + 1 wheel 12V9
		3 rakes	003	**PGM 300** + 1 short wheel holder + 1 wheel 12V9
		Cruciform	004	**PGM 300** + 1 short wheel holder + 1 wheel 12V9
		With 2 point angles (for instance First to 120° and second one to 90°)	005	**PGM 300** + 1 short wheel holder + 1 wheel 12V9
		Conic relief form A	010	**PGM 302** + 1 short wheel holder + 1 wheel 1A1
		Conic relief form C	011	**PGM 302** + 1 short wheel holder + 1 wheel 1A1
		Conic relief form B	012	**PGM 302** + 1 long wheel holder + 1 wheel 12V9 + 1 wheel 1A1
		Special Type 013	013	**PGM 302** + 1 long wheel holder + 1 wheel 12V9 + 1 wheel 1A1

Photo	Drawing	Designation	Grinding AVYAC N°	Program+ Material required
		Special Type 014	014	**PGM 300** + 1 short wheel holder + 1 wheel 12V9
		Special Type 100	100	**PGM 100** + 1 short wheel holder + 1 wheel 12V9
		Special Type 101	101	**PGM 300** + 1 short wheel holder + 1 wheel 12V9
		Special Type 102	102	**PGM 302** + 1 short wheel holder + 1 wheel 1A1
		Special Type 103	103	**PGM 100** + 1 short wheel holder + 1 wheel 1A1
		Special Type 110	110	**PGM 302** + 1 short wheel holder + 1 wheel 1A1

Non-exhaustive list
Other grinding: Please consult us

3.2. End mills grinding pack (860.80.003)

Special program for end mills, 2 to 5 lips, helix resharpening possible

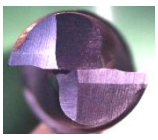
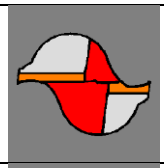
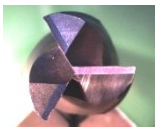
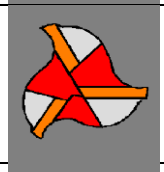
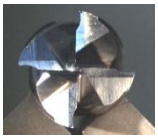
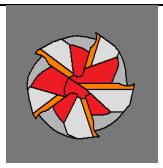
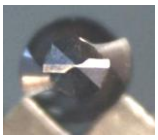
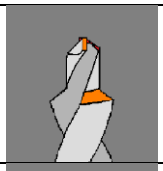
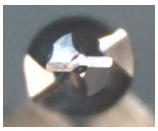
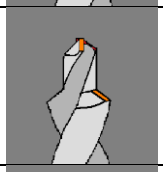
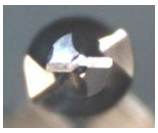
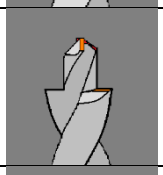
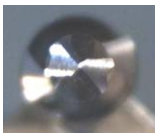
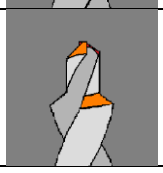
Photo	Drawing	Designation	Grinding AVYAC N°	Program+ Material required
		2 flutes end Mills, radius, chamfer	202	
		3 flutes end Mills, radius, chamfer	203	
		4 flutes end Mills, radius, chamfer	204	

Photo	Drawing	Designation	Grinding AVYAC N°	Program+ Material required
		5 flutes end Mills, radius, chamfer	205	

Non-exhaustive list
Other grinding: Please consult us

3.3. Step drills grinding pack (860.80.004)

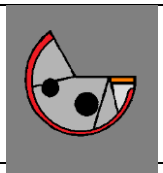
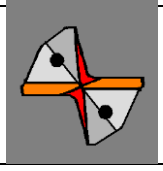
Programs for one step or more, can require forms wheels

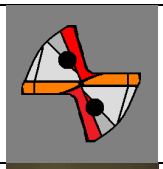
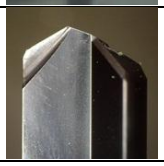
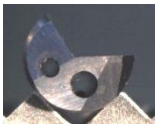
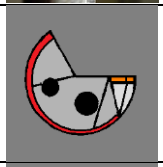
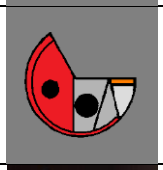
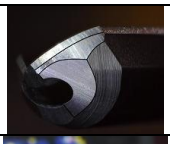
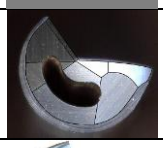
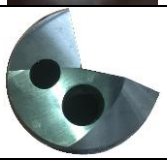
Photo	Drawing	Designation	Grinding AVYAC N°	Program+ Material required
		Step drill form A	032	
		Step drill form B	033	
		Step drill form B'	034	
		Step drill form C	035	

Non-exhaustive list
Other grinding: Please consult us

3.4. Gun drills grinding pack (860.80.005)

Programs for Gundrills with 1 or 2 lips, from 4 to 7 facets, with chamfer or radius.
Clamping with collets is necessary.

		GUNDRILL 5/6 Facets standard	140	**PGM 146** + 1 short wheel holder + 1 wheel 12V9
		GUNDRILL 2 flutes standard	145	**PGM 300** + 1 short wheel holder + 1 wheel 12V9

		GUNDRILL 2 flutes	148	**PGM 300** + 1 short wheel holder + 1 wheel 12V9
		GUNDRILL with chips breaker	146	**PGM 146** + 1 long wheel holder +1 wheel 12V9 +1 wheel 1A1
		GUNDRILL 7 facets	150	**PGM 146** + 1 short wheel holder + 1 wheel 12V9
		Step GUNDRILL	151	**PGM 151** + 1 short wheel holder + 1 wheel 12V9
		GUNDRILL with radius	151	**PGM 151** + 1 short wheel holder + 1 wheel 12V9
		GUNDRILL Slash N8	141	**PGM 141** + 1 short wheel holder + 1 wheel 12V9

Non-exhaustive list
Other grinding: Please consult us

3.5. Specific grinding program (860.80.002)

Programs on demand: metal sheet, woodworking, concrete, ceramic, three lips, flat drills, engraving tools, punch pin, countersink, others.

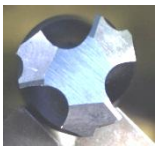
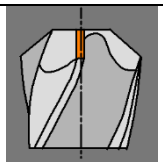
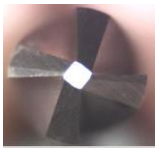
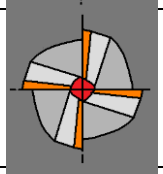
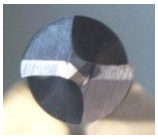
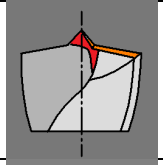
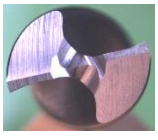
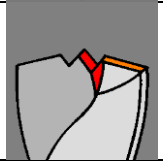
Photo	Drawing	Designation	Grinding AVYAC N°	Program+ Material required
		Core drills (3, 4 flutes)	006	
		4 flutes drill (Point angle 90°)	007	
		Standard grinding for sheet metal	019	
		Specific grinding for sheet metal	021	

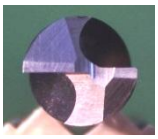
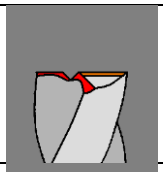
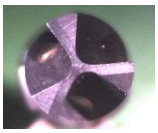
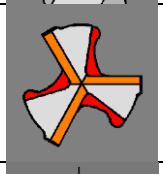
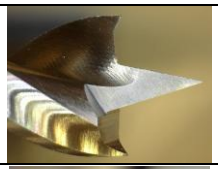
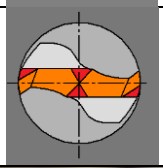
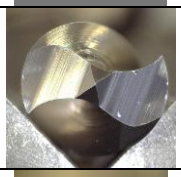
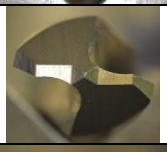
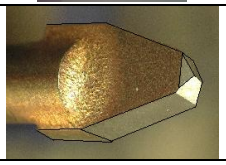
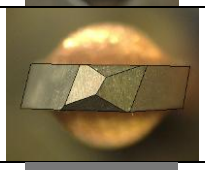
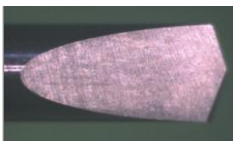
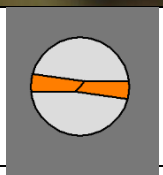
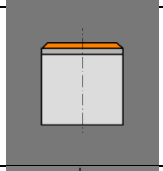
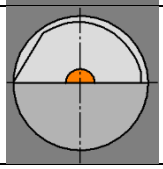
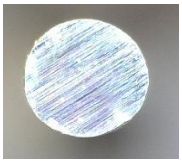
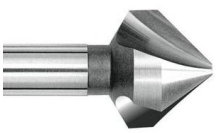
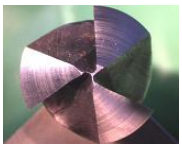
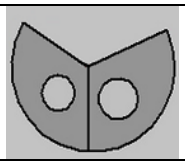
Photo	Drawing	Designation	Grinding AVYAC N°	Program+ Material required
		Flat end drill	025	
		3 flutes drill	126	**PGM 300** + 1 short wheel holder + 1 wheel 12V9
		Wood Working Drill Brad point	060	**PGM 60** + 1 short wheel holder + 1 wheel 12V9
		Dowel drill	060	**PGM 60** + 1 short wheel holder + 1 wheel 12V9
		Woodworking drill E form	065	**PGM 65** + 1 long wheel holder + 1 form wheel + 1 wheel 1A1
		Glass and ceramic drill		
		Type 61	061	
		Type 62	062	**PGM 062** + 1 short wheel holder + 1 wheel 12V9
		Engraving Tools	063	**PGM 063** + 1 short wheel holder + 1 wheel 12V9
		Pin Punch		
		Countersink drill	250	**PGM 250** + 1 short wheel holder + 1 wheel 12V9

Photo	Drawing	Designation	Grinding AVYAC N°	Program+ Material required
		V for Gundrills	155	**PGM 155** + 1 short wheel holder + 1 wheel 12V9

Non-exhaustive list
Other grinding: Please consult us

3.6. Customer drill grinding program (860.80.010)

Requires the provision of drawings and samples for a feasibility study.
The scope includes the creation of a specialized, tailored, and optimized program.
Following the study, we will advise whether the application requires a specific grinding-wheel mount and particular grinding wheels.

4. OPTIONS

4.1. Set B&R PPC2100 (ref. AVYAC 860.00.01X *)

(* X = 1 for France, 2 for Europe, 3 for other countries)

Instead of Siemens configuration, installation of the complete B&R set including the screen, the computer, drives and controls.





4.2. Various automatic loading systems with a circular platform

The standard 600 mm diameter circular tray allows for the automatic loading of tools, either individually or in batches. An automatic unloading system must also be added.

The machine can operate according to three different principles, regardless of the type of loading tray chosen:

- Continuous operation: By repeating a specific program for a single type of tool, the machine can sharpen tools all day without interruption, provided the tray is replenished. Once the tray is empty, the machine stops.

- Flexible programming: The machine executes a sequence of sharpening tasks based on a programming table defined by the operator. By incorporating a clamping system—such as a 6-jaw chuck—the machine can handle tools of varying diameters.

- Semi-flexible programming with probing: Instead of specifying a particular program, the operator simply indicates the desired type of sharpening. A probe then determines the diameter and helix angle of the tool currently held, automatically selecting the appropriate program. This is highly efficient for sharpening a batch of tools with different diameters, without requiring operator intervention or pauses in the process.

In most tray configurations, rotation is controlled by the CNC system and driven by a 6 Nm stepper motor. An inductive sensor, located in the rear cabinet, detects the positioning holes to ensure the tray is perfectly aligned.



Standard 90-hole Ø15 magazine (option 1)



300-hole Ø9 magazine (option 5)

Various loading platform configurations are available as options. Please note that the loader is not intended to be interchanged with another unit.

4.2.1. 90-hole magazine, Ø15, H76 (AVYAC ref.: 860.47.000 / option 1)

The standard circular tray can hold up to 90 individual tools or tool sets, with diameters ranging from 1 to 14.5 mm. Its 76 mm height ensures that most drill bits remain clearly visible once loaded. To accommodate longer tools and keep them upright, small extensions can be inserted into the 15 mm diameter holes, effectively increasing the tray's height as needed.

With an average cycle time of 3 minutes per tool, the system can achieve up to 4 hours and 30 minutes of automated operation without requiring any intervention from an operator.

4.2.2. 130-hole magazine Ø10 H76 (AVYAC ref.: 860.47.000 / option 2)

In this version, the 76 mm height of the tray remains the same as in the standard version. Reducing the diameter of the loading holes increases the automatic loading capacity from 90 to 130 tools. This version is particularly well-suited for W12 collet clamping systems (for diameters from 1 to 8 mm).

With an average cycle time of 3 minutes per tool, this allows for up to 6 hours and 30 minutes of automated operation without the need for operator intervention.

4.2.3. 300-hole magazine, Ø9 H76 (AVYAC ref.: 860.47.000 / option 5)

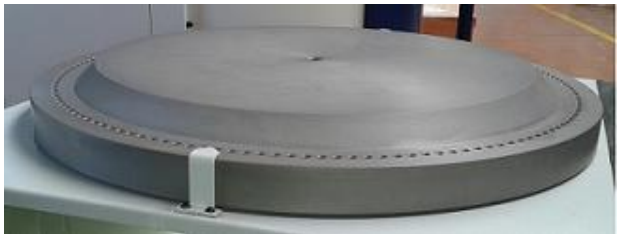
The loading capacity is increased by adding a row of holes parallel to the standard ones, allowing for up to 300 tools. This configuration requires an adaptation of the guide tubes. The stepper motor and inductive sensor are replaced by a motor equipped with an encoder, capable of performing the micro-stepping and positioning required to accurately align the tray with the loading axis.

With an average cycle time of 3 minutes per tool, this enables up to 15 hours of automated operation without operator intervention—sufficient for more than a full night of continuous running.

4.2.4. Custom-sized charger available upon request

The shape of the tray and the holes can be fully customized to suit the client’s requirements (tool diameter, length, inclusion of a driver, etc.).

The height of the tray is adjustable based on the length of the drill bits to be loaded.
The diameter of the holes can range from 2 to 15 mm, depending on the diameters of the drill bits.





4.3. Transformers (ref. AVYAC A60.13.001 / A60.13.002)

The machine must be connected with an electrical network TN type (neutral connected to earth). Else, (IT or TT), it is necessary to set up an isolation transformer up stream the main disconnecting switch. The guaranty will not be applicable if those orders are not followed
Transformer of insulation: 10 KVA 400V/400V, 50/60 HZ: **A60.13.001**

For connection to electrical network with 3 Phases 230V, 50HZ like in USA.
Transformer for USA: 10 KVA, 400V / 230V, 50/60 HZ: **A60.13.002**

A place is envisaged in the electrical equipment box for the transformer. This option thus does not generate additional obstruction.

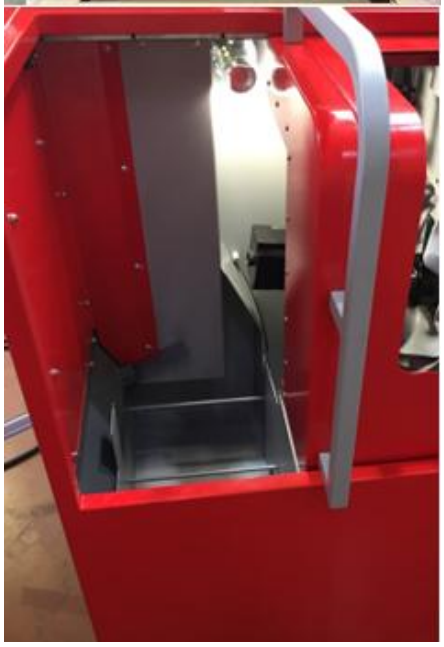
4.4. Different collectors for automatic drills unloading

4.4.1. Internal collector for standard drills (ref. AVYAC A60.03.010)

The internal drill-collection tray, equipped with a pneumatic cylinder, is the standard solution for automating the unloading of sharpened tools. By opening the door halfway, you can safely access the unloaded drills—all without needing to stop the machine. A perforated basket allows the tools to drain before they are retrieved.

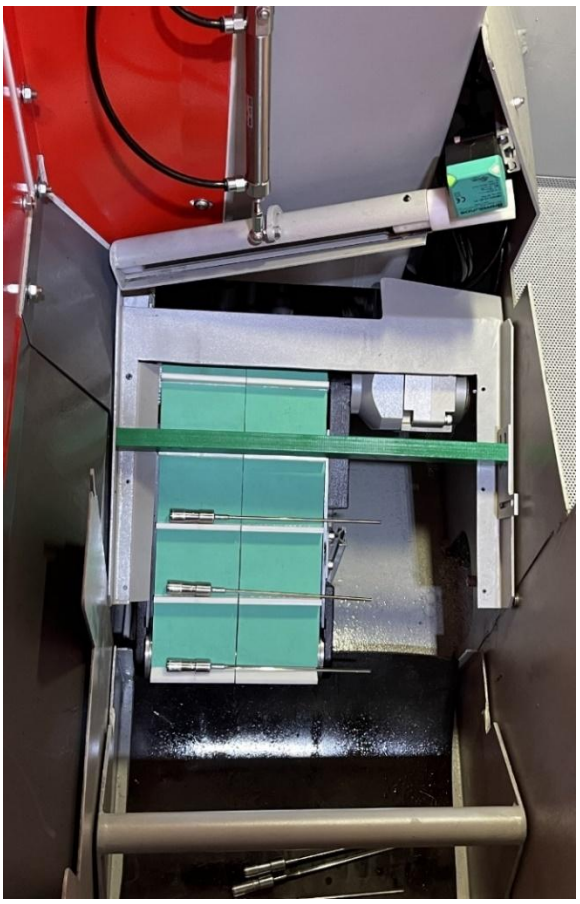




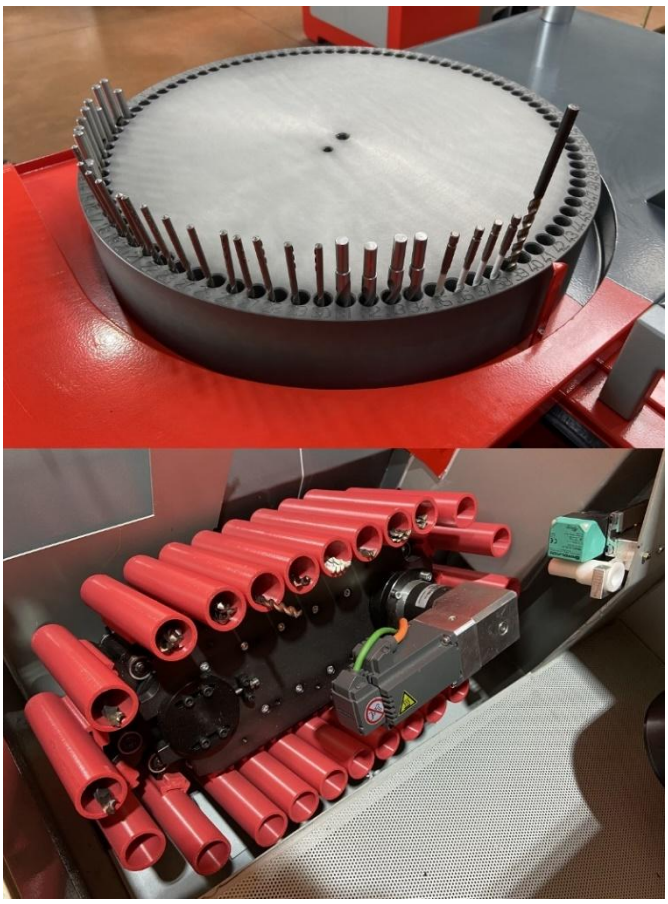


4.4.2. Unloading by conveyor belt (ref. AVYAC 860.51.000)

This option allows for the gentle unloading of more fragile carbide tools, up to 350 mm in length. A belt conveyor, powered by a pneumatic rotary motor, prevents impacts between tools by depositing them softly into an oil-filled tank. As with the standard version, the door can be opened halfway during a cycle to remove tools that have already been sharpened.



Conveyor belt



Numbered tray and unloading carousel

4.4.3. Unloading by carousel 24 positions (ref. AVYAC 860.49.000)

This option allows for differentiated sharpening of the tools placed in the magazine.
The operator fills out a table specifying the sharpening required for each position on the carousel, as well as the corresponding unloading basket number. Combining this option with the 6-jaw gripping system provides even greater flexibility in the sharpening process.

Unlike previous unloading options, it is not possible to unload the baskets while the machine is in operation. The door must be opened, and the current cycle must be stopped. Each of the 24 baskets is removable and can be taken out of the carousel individually.

A maximum tool length of 350 mm can be accommodated (upon request).

4.5. Various clamping systems

4.5.1. W12 collets capacity 1 to 8 mm (ref. AVYAC A60.02.001)

Thanks to a chuck specially developed by Avyac, you can opt for a work-holder system using W12 pull-type collets, with a nominal clamping range of Ø1 to 8 mm. A set of 15 collets—covering the entire range in 0.50 mm increments—ensures that all diameters within this span are accommodated. This solution is essential for sharpening tools with a diameter of less than Ø2 mm.
The maximum length for drill bits is 350 mm.
The machine frame and enclosure remain the same, regardless of the work-holder system chosen; therefore, the machine's dimensions remain unchanged. All other options also remain available.





4.5.2. W20 collets capacity 2 to 14.5 mm (ref. AVYAC A60.02.000)

Instead of the 1–8 mm clamping capacity, you can optionally choose a capacity of 2–14.5 mm. The main difference involves replacing the taper and the collets (26 W20 collets instead of 15 W12 collets).
The maximum length for drill bits remains 350 mm.





4.5.3. Jaws chuck system capacity 3 to 14 mm (ref. AVYAC 8600.5018)

As an alternative to collet clamping, you can opt for a 6-jaw chuck with a clamping capacity of 3 to 14 mm. Offering greater flexibility than collets, these jaws allow you to run a series of tools with different diameters without interruption.

The maximum drill length remains 350 mm.
The gripping range of the jaws is 30 mm (or 45 mm upon request). The target precision is 0.02 mm at a 25 mm extension.

The 6-jaw chuck uses the same mounting base as W20 collets, making it possible to switch between the two systems (though some setup time is required).



4.6. Coolant Filtration from SIEBEC (ref. AVYAC A55.23.100)

A coolant filtration can be installed directly in the machine, with an easy access and maintenance. This 5µ or 20 µ filtration with cartridge is recommended to increase the quality of grinding and general machine maintenance, available for oil or emulsion coolant. The filtration device is controlled with the machine NC.



Siebec filtration device with cartridge



Filtermist oil mist extractor

4.7. Oil mist extractor FILTERMIST S200 (ref. AVYAC A60.24.000)

Oil mist is removed from the air by centrifugal impaction. Clean oil is returned to machine. The system is installed directly on the top of the machine, besides the loader plate.

A perforated drum with specially designed vanes rotates at high speed. Oil mist is drawn into the unit and impacts on its vanes at high velocity. Special drum pads assist the coalescing process and filter out stray solid particles.
Centrifugal force pushes oil to the unit's outer case where it drains back to the machine for re-use or collection and clean air is returned to the workshop through the top of the unit.

The extraction tube of diameter Ø100mm, aspirates the oil mist directly in the working area. It allows the opening of the main door quickly after the end of drill grinding. The filter automatically starts when the cycle begin. It stops one minute after the end of the cycle.

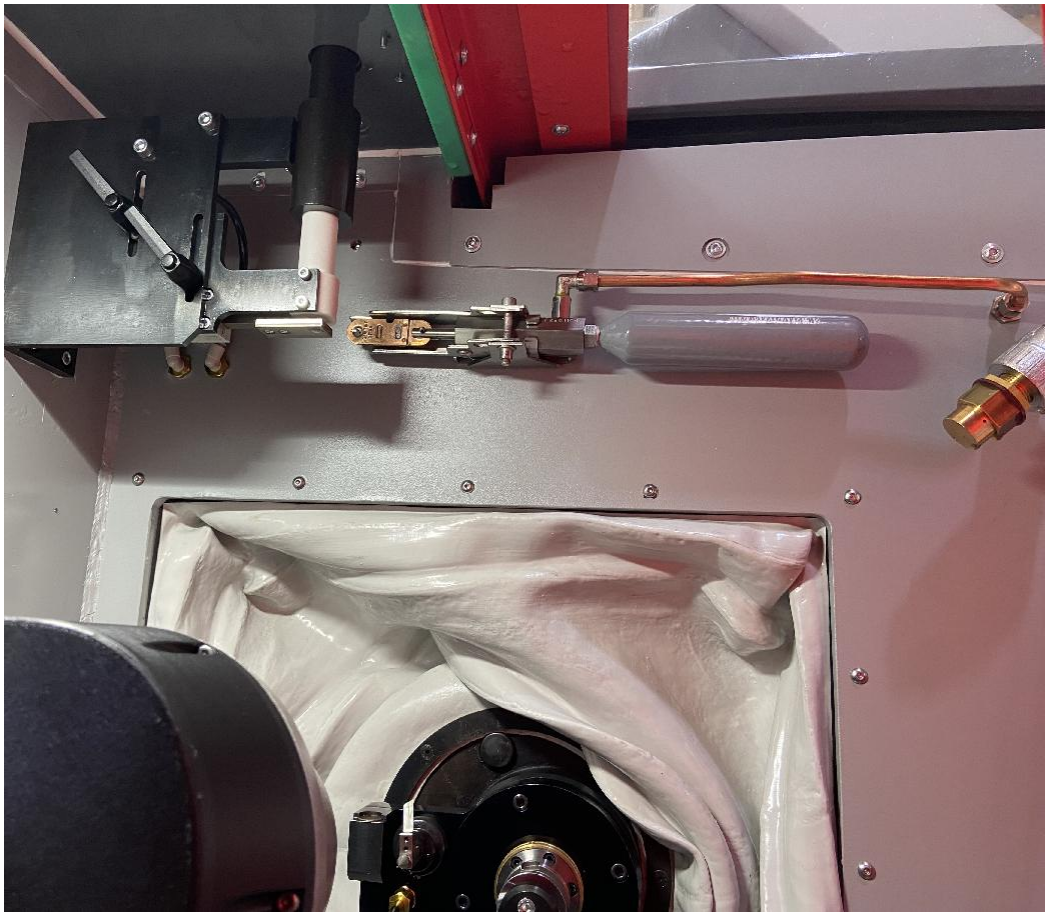
This option is highly recommended for machine working with oil coolant.

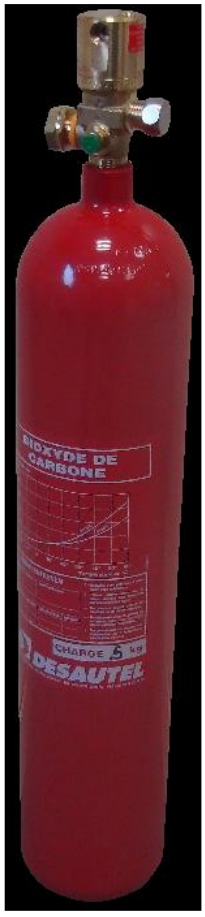
4.8. Fire Extinguisher System for machine with oil coolant (ref. AVYAC A60.14.000)

An automatic fire extinguisher system is essential for all machine grinding with oil coolant.

Desautel's USINEX system uses a thermo-pneumatic trigger located in the machine's working area. If an excessive temperature is reached, the trigger's fuse breaks and strikes an 80 g CO2 cartridge, sending a pneumatic trigger command to the system's gas cylinder. This device consists in an automatic detection, a manual command, a visual and acoustic signal. The CO2 bottle is set directly in the machine (2Kg bottle).

A yearly maintenance is recommended to control the pressure and check the bottle.







4.9. Connection to centralized filtration device (ref. AVYAC A55.23.300)

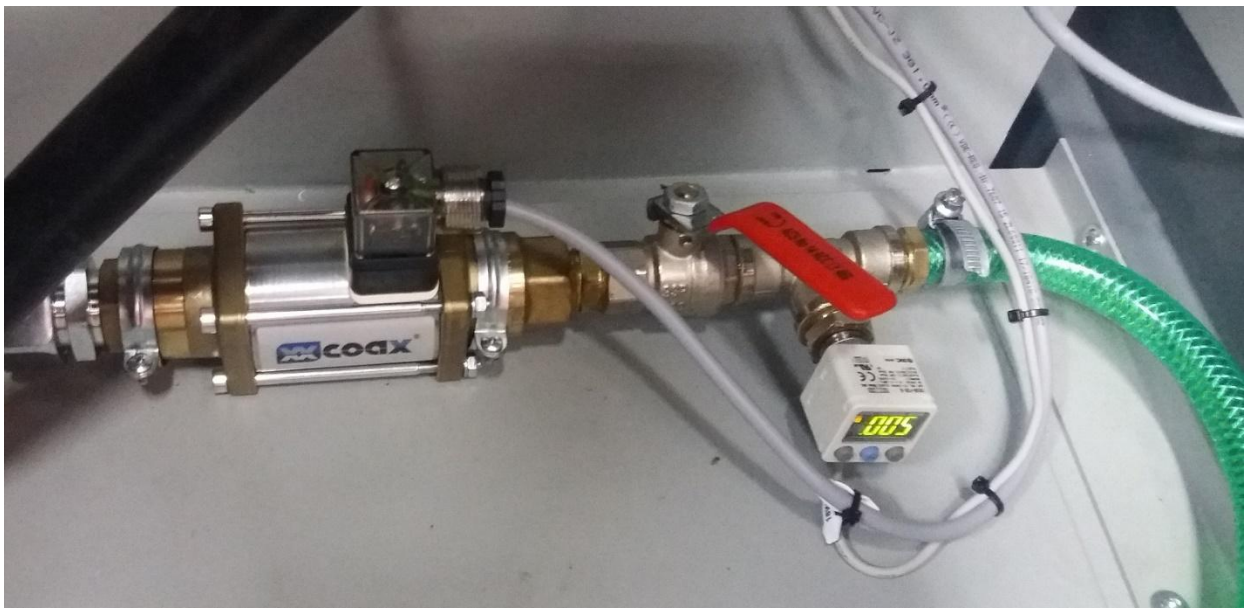
4.9.1. Lift pump to external centralized oil filtration

Installed instead of the standard coolant pump, this pump lift the coolant with dirt from the machine working area to the customer external filtration.
The pump and connectors sizing have to be decided with the customer.
A level sensor is necessary to control and manage the different oil level in the machine tank, to avoid overflows or vacuum pumping.



4.9.2. *Solenoid valve for coolant*

The solenoid valve from COAX takes place in the clean coolant circuit between the filtration and the machine working area. A pressure sensor is set directly after the valve to check the presence of liquid during grinding operations.



4.10. Gravity drainage to centralized filtration and return via solenoid valve (Ref. AVYAC A55.23.350)

4.10.1. Oil evacuation by gravity system

A chute guides the used oil by gravity to a large opening in the machine's central bulkhead. The customer can attach an adaptation to suit his installation.



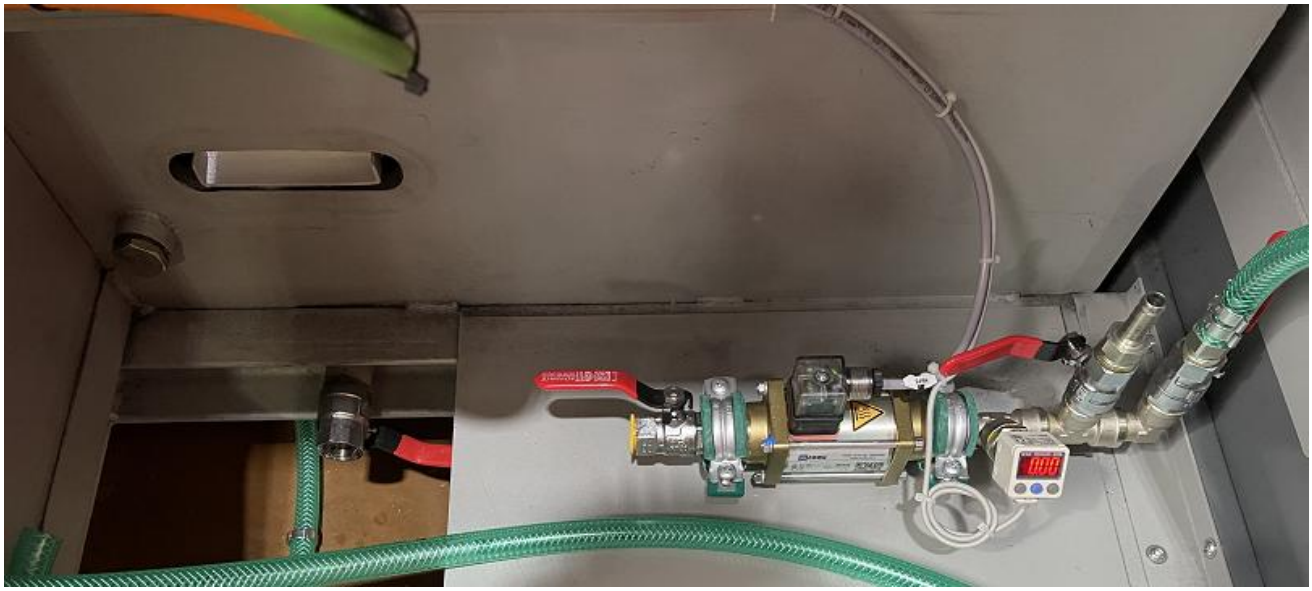
Oil guide slide



Adaptation to evacuation, customer design

4.10.2. Cutting fluid return via solenoid valve

A COAX solenoid valve is installed in the clean oil return circuit from the central filtration system to the machine. The pressure switch installed directly after the solenoid valve checks for the presence of liquid during the grinding phases.

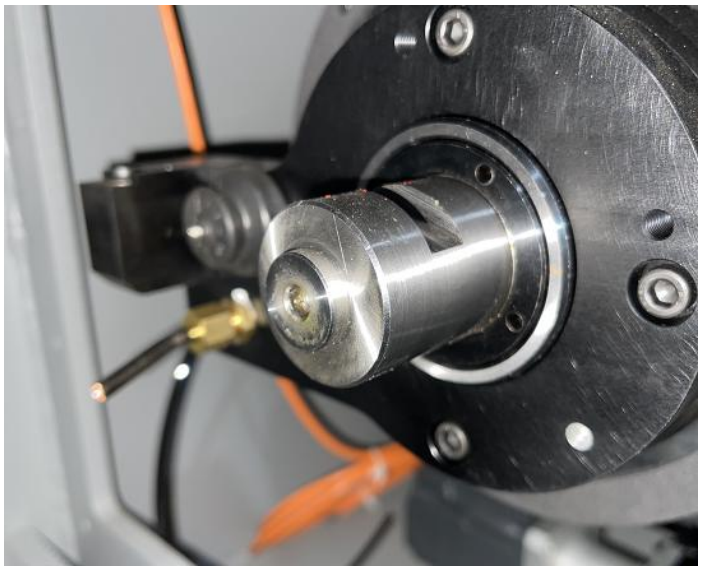


4.11. Option HSK40 spindle (ref. AVYAC A60.13.010)

In its standard configuration, the machine is supplied with an electro-spindle specially machined to allow the grinding wheel to be mounted directly onto its shaft (for wheels with a 20mm bore). The grinding wheel must be measured outside of the machine.

The HSK40 option replaces the standard electro-spindle with one designed for HSK40 tool holders. This allows the grinding wheel to be prepared—including dressing, balancing, and measuring—away from the machine.
In particular, it enables the use of two grinding wheels, thanks to an extended wheel-mounting nose.

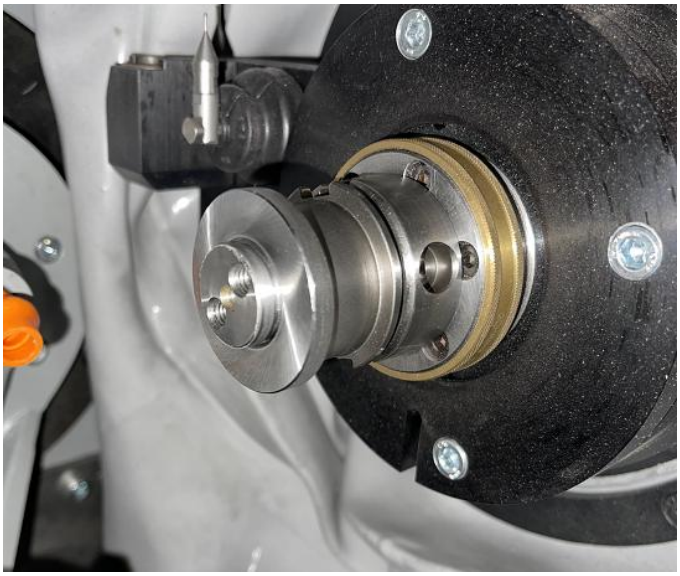
It is not possible to convert from a standard electro-spindle to an HSK40 electro-spindle; the choice must be made at the time the machine is ordered.



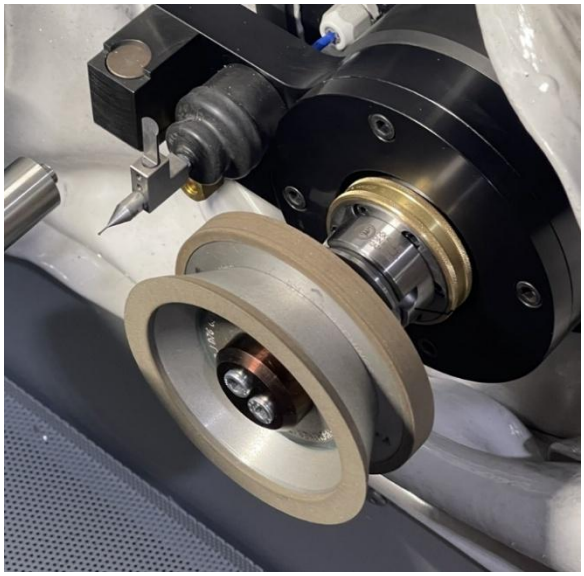
Standard Electro-spindle



Standard electro-spindle with single wheel



Option electro-spindle with HSK40



HSK40 mounting with 2 grinding wheels

4.12. Option internet remote access (ref. AVYAC A60.05.000)

Avyac choose the M2Me device from ETIC TELECOM to allow remote maintenance on automated machines. Easy to install and to use, Avyac or the trained personal can accede to the machine by using 3G RAS Router or directly the existing Internet access of the factory.



4.13. Guaranty extension

Guaranty extension for 2 years (1+1): **860.60.011** for France
Guaranty extension for 2 years (1+1): **860.60.012** for Europe
Guaranty extension for 2 years (1+1): **860.60.013** for other countries

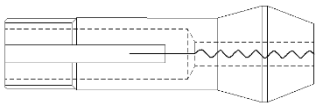
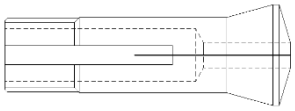
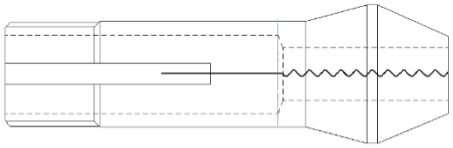
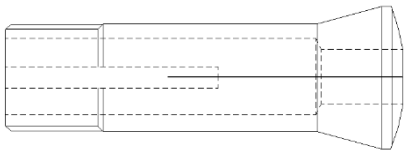
4.14. Retention tray + adaptation (ref. 86094003)

Floor protection tray, anti-drip. Dimensions adaptable on request.



5. ACCESSORIES

5.1. *Collets*

Collets	Reference	Drawing
Set of 15 collets W12 ∅ 1 to 8 - 0.5 by 0.5 (supplied with option A60.02.001) 4 jaws with Z form	**T836000/A2**	
Set of 8 collets W12 ∅ 1 to 8 - 1 by 1 3 jaws standard	**T852000/A1**	
Set of 26 collets W20 ∅ 2 to 14.5 - 0.5 by 0.5 (supplied with option A60.02.000) 4 jaws with Z form	**T834000/A2**	
Set of 13 collets W20 ∅ 2 to 14 - 1 by 1 3 jaws standard	**T850000/A1**	

The collets are also available to the unit. Specific diameters on request.

5.2. Grinding oil

Emulsion or plain oil for coolant, oil for air pressure system.
Avyac works with the manufacturer Oelheld and recommends the use of **Sintogrind TTK** or **TCX-630** grinding oils (approx. 100L required)

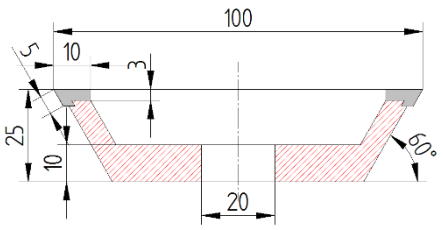
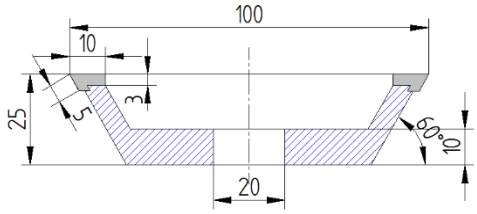
5 l cutting oil Emulsion	**5 l cutting oil Emulsion**	**5l MOBIL DTE Oil light**
T429.007	**T429.008**	**T429.013**
		
for HSS only	For HSS and Carbide	Air Pressure System

oelheld®
innovative fluid technology

5.3. Grinding wheels

AVYAC works with local suppliers who guarantee our customers the best quality and shortest delivery times for grinding wheels. The majority of the grinding programs are developed to work with a single wheel that performs all the operations.

We also have a wide range of shaped wheels, as well as wheels of different diameters depending on the application.

Ref AVYAC	*Form*	Characteristic	Grinding cycle
	AVYAC STANDARD WHEELS		
T822.034		**CBN** 12V9 D100 grain 76 C100 Binding resin	**HSS Universal**
T822.042		**DIAMOND** 12V9 D100 grain 76 C100 Binding resin	**Carbide Universal**

Non-exhaustive list.

5.4. HSK40 grinding wheel holder

With the HSK40 electro-spindle option (A60.13.010), one grinding wheel arbor is supplied with the machine. Additional arbors can be provided upon request.

-Short version for 1 grinding wheel (L= 4.5 mm)
Ref. T225.170

-Extended version for 2 grinding wheels (L= 14.5 mm)
Ref. T225.171

-Extra-extended version for special setups (L= 23 mm)
Ref. T225.174



6. SERVICES

6.1. Packaging

References:
Packaging France: **870.56.001**: Protection of the fragile parts, wooden floor and open box.
Packaging Europe: **870.56.002**: Protection of the fragile parts, wooden floor and open box.
Packaging International: **870.56.003**: Protection of the fragile parts, wooden floor and closed box with fumigation certificate, vacuum-packed protection for maritime transport.

6.2. Shipping

The shipping is included with standard supply. For France and Europe, it includes complete shipping until customer plant (without unloading). For other countries, standard incoterm for maritime transport is CIF (Cost, Insurance and Freight).

References:
Shipping to France: **870.57.001**
Shipping to Europe: **870.57.002**
Shipping to International: **870.57.003**

6.3. Warranty

Standard warranty: parts & labour during 1 year (or 5000 hours) excluding travel cost

6.4. Training

References:
Fitting and training in customer plant 2 days NC18 France: **860.70.001**
Fitting and training in customer plant 2 days NC18 Europe: **860.70.002**
Fitting and training in customer plant 3 days NC18 Export: **860.70.003**

7. STANDARD SUPPLY

AVYAC NC18 with numerical control B&R PPC2100 (Colour touch screen 10.4') and B&R motorisation (absolute coders): **860.00.012 (Europe) or 860.00.013 (Other countries)**

AVYAC NC18 with numerical control SIEMENS SINUMERIK ONE (Colour touch screen 12') and Siemens motorisation (absolute coders): **860.00.002 (Europe) or 860.00.003 (Other countries)**

Including:

Welded mechanic frame color Gray RAL 7035 (86001000)
Sheet thickness 3 mm Carterisation (86003000) including:

- 1 electronically and mechanically safety device (MECALECTRO) for main door
- 2 access doors for maintenance
- 1 board for electrical access
- 1 tank for emulsion (capacity app. 80 litters)

Cross table XYZ on which are mounted:

- 1 Electro-spindle with wheel holder (for wheel Ø100 boring Ø20) power 2.2 KW
- MARPOSS sensor device for drill detection, equipped with 2 stylus
- 1 stop for drill length indexing

Drill holder assembly (assembly 86005000) featuring an automatic pneumatic clamping system for collets or jaws, a mechanism for adjusting the relief angle (B-axis), and a mechanism for adjusting the point angle (A-axis).

400V, 50 Hz (60Hz compatible) electrical equipment, numerical control upon request, motors with absolute encoders, and 24V DC workspace lighting (86013000)

Set for coolant, lubrication and air including (86014000):

- Coolant device with pump (60l/min)
- Pneumatic set from SMC

Tool set for working (86020000) including:

- 1 CBN wheel (T822.034)
- 1 diamond wheel (T822.042)

Complete documentation paper or CD or USB stick (English) including:

- 1 drawing for electric, pneumatic coolant
- 1 user book
- 1 documentation for B&R or SIEMENS control

Guaranty: parts & labour during 1 year (or 5000 hours) excluding travel cost