

HAG09 POWERDRIVE ANGLE GRINDER UNDERWATER



Operating Manual

HYCON A/S

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1.0 INTRODUCTION

THIS OPERATING MANUAL CONTAINS IMPORTANT INFORMATION. PLEASE READ CAREFULLY AND STORE IN A SAFE PLACE.

This manual will provide the basis needed to operate your HYCON product and give the necessary information regarding maintenance on a daily basis to increase the longevity of your product.

We strongly recommend reading the section regarding safety around your HYCON product and your hydraulic power source. If an issue is encountered that is not covered in this manual, please contact your local HYCON dealer and have them support you. A complete spare part list is available at www.hycontools.com.

This manual was drafted in the English language (Original instructions) and may have been translated into other languages as applicable (translation of Original instructions).

When reading this operating manual, you will note various important symbols and warnings, which are explained below:

	WARNING This symbol indicates a potentially dangerous situation that can result in serious injury or death.
	CAUTION This can be a dangerous situation, and we advise you to be careful to avoid any personal injury.
	IMPORTANT Important information that can influence the performance.
	NOTES & TIPS Tips that help you with the installation and use.



This manual is product-specific and does not include other HYCON products, please see the specific product’s manual for specifications and additional information at www.hycontools.com. If you need repair or replacement parts, please contact your local HYCON dealer who can provide spare parts and support.

2.0 SAFETY

Regular safety inspections are crucial for ensuring both effective performance and safety. The following checklist covers necessary safety checks to perform before use, after use, and annually to prevent accidents and ensure proper tool functioning.

INSPECTION	BEFORE USE	AFTER USE	YEARLY
Check the disc for damage	X		
Check that the disc is mounted correctly	X		
Check the support handle is tightened	X		
Check the hoses for damage	X		
Inspect the tool visual for damage	X		
Does the trigger move smoothly	X		
Test the tool before use	X		
Are there any leaking at the connections	X		
Check the guard is mounted to protect the operator	X		
Is the tool cleaned and lubricated		X	
Refill the grease in the motor, grease nipple mounted on the motor			X
Check the hydraulic fluid and filter on the power source. HYCON recommends changing yearly or for every 600 hours			X
Check that the disc rpm is higher than 4400 rpm	X		

2.1 GENERAL SAFETY PRECAUTIONS

- Prepare all the tools needed for the job and the proper personal protective equipment (PPE) that is required.
- When working with hydraulic tools please follow the local regulations before start and comply with them regarding sound, vibrations and working hours.
- The operator is responsible for ensuring that the surroundings is aware of the work and has created a safety zone where non-authorized personal does not enter when the hydraulic tool is activated.
- When working with hydraulic tools there is a risk of flying debris that can lead to possible injury or death.
- The operator must be aware of the area and ensure proper footing during the work with the hydraulic tool and have a proper working stand.
- When using the tool, it is important that the operator has a firm grip on the tool and control.
- Always test the tool before starting the tool, to ensure that it is fully functional.
- Do an inspection of the disc before starting and evaluate the condition of it.
- Do not leave the tool connected to the power source and unattended.
- Do not leave the tool stuck – In a wall or a project and start it up while it is stuck.
- Do not drop the tool when it is connected to the power source and activated, wait until it is stopped and place it on a solid surface away from the working area.
- A fine jet of oil at pressure can penetrate the skin. It is therefore important never to use your fingers to check for oil leaks and never to hold your face close to suspected leaks –use a piece of cardboard instead. If oil has penetrated the skin, you should get medical treatment immediately.



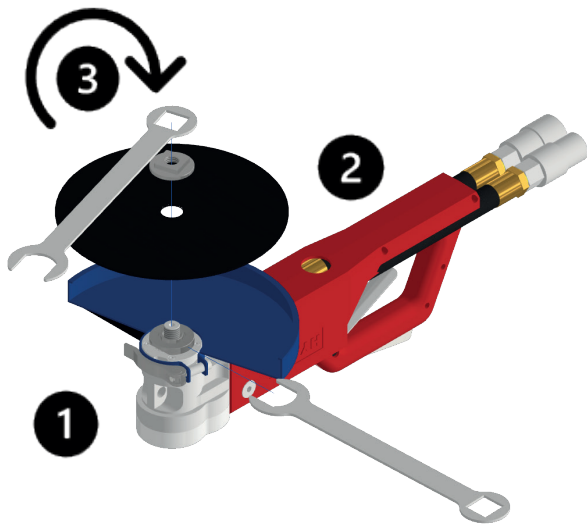
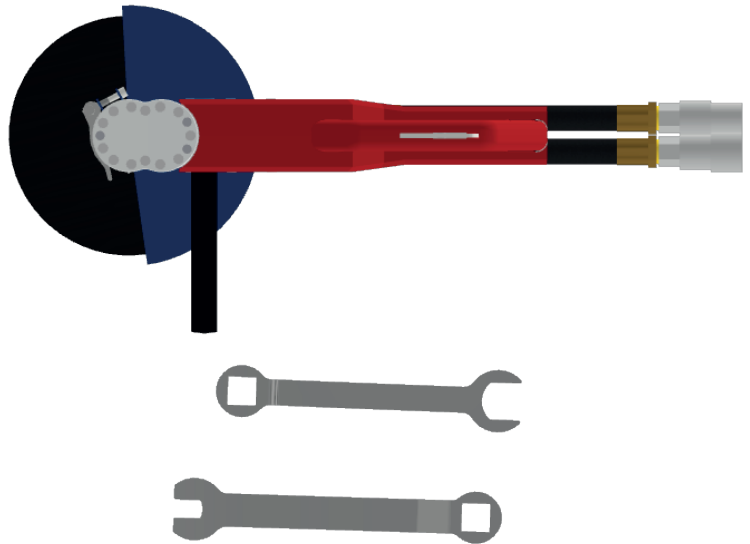
Working underwater with HYCON products is strict for professionals. We advise caution when working with hydraulic tools underwater. Be aware of the areas/country's laws, regulations, and standards for professional divers. It is not possible to wear specific personal protective equipment due to the diving equipment.

Read all the safety warnings before working with the tool. Follow the safety instructions to avoid damage to the operator and minimize the risk of accidents.

3.0 INSTALLATION

INCLUDED IN THE BOX:

- 1 x HAG09 Angle Grinder
- 2 x Spanner - 8233712 & 8233788
- 1 x Operation Manual



DISC INSTALLATION:

When installing a new grinding/cutting disc, please use the two included spanners.

1. Remove the clamping nut (right threads).
2. Place the required disc on the axle.
3. Tighten the clamping nut.

When the disc is mounted

Grab the disc and turn it counterclockwise to ensure the bolt is securely tightened.

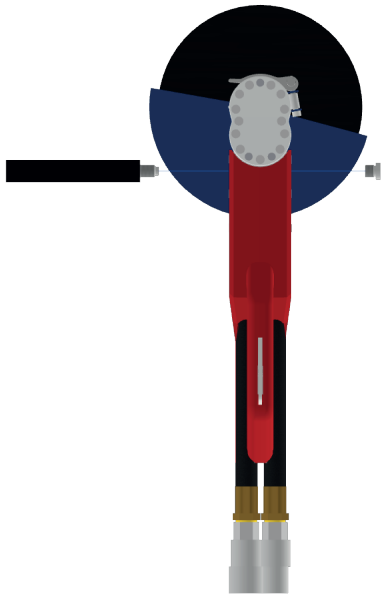


The spanner's square end, can also be used to remove the lid on the hydraulic tank on all HYCON's Power packs.



Do not over-tighten the bolt.

3.1 SUPPORT HANDLE INSTALLATION



The HAG09 is made with a support handle and a handle with a trigger. The system is for both right- and left-handed operation.

When the HAG09 is delivered, the support handle is pre-mounted on the left side, suitable for a right-handed working position.

HOW TO CHANGE HANDLE SIDE:

- Use a 6 mm Allen key to remove the bolt securing the handle.
- Move the handle to the opposite side.
- Tighten the bolt to 15 Nm using the Allen key.
- Secure the support handle by tightening it firmly by hand.

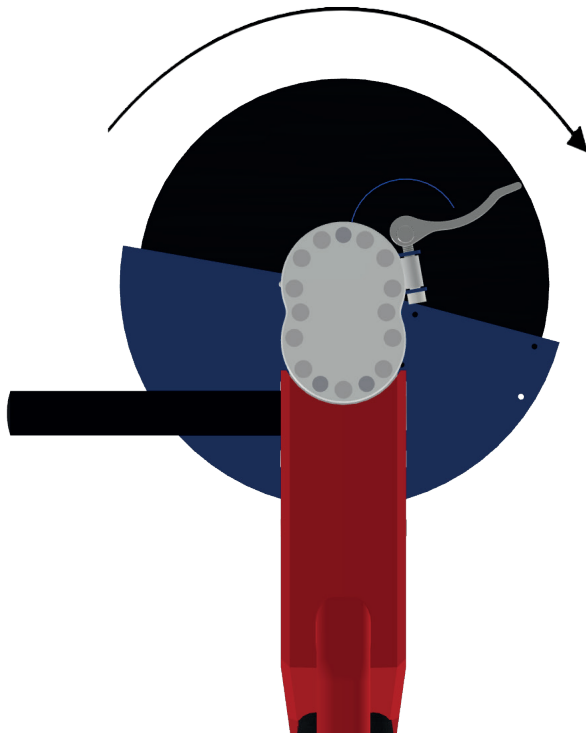
3.2 GUARD INSTALLATION

ADJUSTMENTS

The guard on the HAG09 is mounted with a quick-release handle meaning that the guard can be adjusted without any tools. When the quick-release is closed the guard is firmly mounted.

If this is not the case, open the handle and tighten the bolt, and close the handle again.

Mount the guard so that the operator always is protected from debris



Never work with a loose guard or without the guard.



Do not adjust the guard when/while working with the HAG09. Shut down the tool and disconnect from the power source before making adjustments.



Do not overtighten the bolt, it will deform the guard's bracket.

3.3 INSTALLATION OF POWER SOURCE

HOW TO CONNECT TO THE POWER SOURCE

All power sources are made with a male quick-release connection for “P” and a female quick-release connection for “T” Depending on the tool, the mounted tail-hoses are from 30 cm up to 2 m.

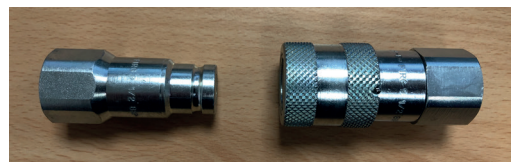
HYCON follows HTMA standard for hydraulic connection using flat face couplers for safe, clean and easy connection. Couplers are always mounted so the male coupler supply the flow, and the female receive. This mean on the HAG09 grinder that the pressure in hose is mounted with a female flat face coupler to assure correct rotation.

We recommend using HYCON standard 6 or 10m DN 1/2” twin hose (with your power source for optimal performance).



COUPLINGS

When connecting to a HYCON product be sure that the couplings are clean and aware that all quick-release are made with a safety, to avoid an unexpected dismantle of the connections when working with high pressure. When connected turn the sleeve on the female coupler to assure they are locked. For disconnect turn the sleeve so the small notch match the steel ball and then pull back the sleeve.



The maximum length of the hoses depends on the power source and the flow. For more information, please [see page 17](#) with specifications and our recommendations above our standard.

4.0 GETTING STARTING

TEST:

Before the tool is connected to the power source.

1. Ensure the correct working flow for the tool.
2. Test the trigger moves smoothly and the trigger is locked when the safety trigger is not activated.
3. When the tool is connected to the power source and the flow is activated with the correct flow, activate the trigger system.
4. Be aware of the startup and stop. The tool will automatically stop when the trigger is released.

Do not drop the tool when it is activated or in the process of powering down.

BEFORE STARTING

Before starting the power source, please read the manual & instructions for the specific pack.

If using the HYCON Power Pack, be sure to read the specific manual. All HYCON manuals can be found at www.hycontools.com.

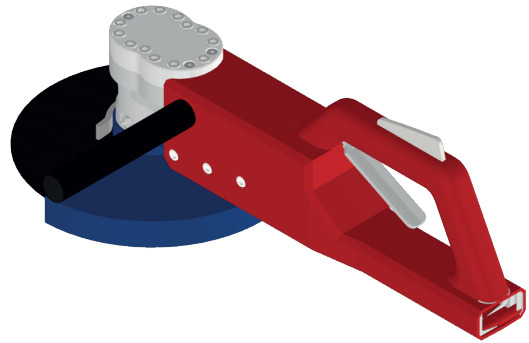


4.1 USING THE HAG09

WORKING POSITION:

1. Grab the support handle and the trigger handle firmly.
2. Secure a good footing.
3. Activate the tool by pressing the trigger and safety at simultaneously. The trigger cannot be activated if the safety is not pressed in.

Always start with free spinning before contact with the material that needs cutting, grinding or polishing.



Safety trigger on the top of the handle

KICKBACK

There is no soft startup on the HAG09 and this will result in horizontal counterclockwise kickback from the tool when it is activated. Keep a firm grip on the tool at all times.

The disc is rotating clockwise - [See page 8](#).

SHUT DOWN:

When the job is done and the HAG09 is not longer needed, ensure that the tool is cleaned and stored as recommended by HYCON.

1. Stop the tool and turn off the power source.
2. Disconnect the hoses.
3. Clean the tool, according to recommendations, [see page 12](#).



The HAG09 must be operated with both hands.

Hold on to the grinder until the rotation has come to a full stop.

5.0 CLEANING AND MAINTENANCE

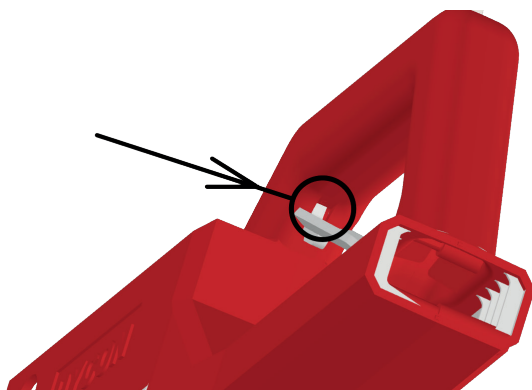
RECOMMENDATIONS

To increase the longevity of your HYCON product, the recommendation is to maintain and clean the product according to these specifications.

CLEANING:

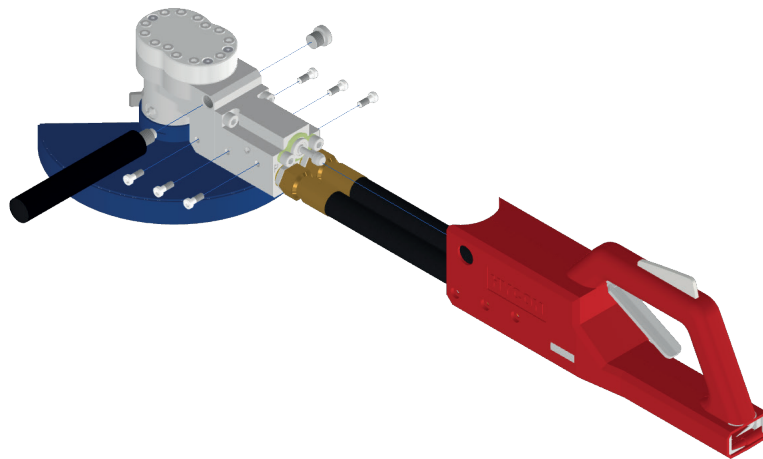
The HAG09 is made to be used underwater. Therefore we recommend additional cleaning to avoid the tool being aggressively corroded due to the constant water/saltwater contamination. From HYCON, we have taken as many precautions as possible with stainless steel and aluminum parts that can withstand the corrosive environment when working underwater.

1. Disconnect the tool from the power source when the job is finished.
2. Rinse the tool with freshwater immediately after.
For all tools with a plastic cover, there are holes made for easy cleaning of the internal parts and avoid water being trapped inside.
The HAG09 can be hung with the hoses down and dry.
3. Ensure that all water is out of the tool.
4. Spray all parts with an environmentally friendly water dispersal spray.
Specifically, the trigger system, which is mounted in the plastic cover, needs to be lubricated.
If the cover is not removed, it is possible to lubricate the trigger system.
See the black marking on the picture below.
5. Alternatively, the HAG09 can be dipped in an oil bath.
If this is used, ensure that it does not react to the plastic cover.
Please remove the disc from the tool before starting.
6. Check the hoses and couplings for damage and oxidation.
7. When the HAG09 is not in use, store it in a dry location.



ACCESS

The HAG09 is designed with a practical cover, that is easily removed. By removing the 3 bolts and support handle (Bolt opposite) on each side, the plastic cover can be slid back and removed from the aluminum body. Now, the HAG09's internal body is easily accessible and can be cleaned more thoroughly.



*6 pcs. 6 mm bolts for cover retighten 5 nm, M14 - 15 nm.
The handle is tightened by hand.*



It is not necessary to remove the tail-hoses or disassemble the cover/trigger system when sliding the cover back.

6.0 TROUBLESHOOTING

ISSUE	REASON	SOLUTION
Nothing happens when the trigger is activated.	Oil flow is closed on the power source	Open the oil flow.
	P & T is switched.	Reverse P & T. <i>Female coupling is P on the tool.</i>
	Check if the trigger is bend or damage	Order a new from your HYCON distributor
	Full pressure	Check for blockages
	No pressure	Check the power pack
The disc is not rotating with the axle.	The clamp nut is not tightened.	Tighten the nut and check the disc for damage.
Bad performance	Low oil level.	Check sight glass for oil level.
	Internal leak.	Contact your HYCON dealer.
	Return pressure is too high.	Check power source and hoses.
	Check flow	Change flow output



If an issue occurs and it is not mentioned here, please contact your local dealer for further support.

7.0 WARRANTY

TIME FRAME

HYCON provides 12 months of warranty on your new product from date of purchase.

WHAT IS COVERED

Faults caused by production errors, or product failure due to material error. HYCON will cover the cost for spare parts and repair time only.

FAULT THAT IS NOT COVERED BY WARRANTY:

- Improper use of the machine.
- Improper installation or assembly.
- Modifications of the product.
- Modifications or installations of third part products.
- Misused of third party products.
- Lack of maintenance, repair, or service.
- Wear and tear damage due to use.
- Corrosion that is caused by lack maintenance from underwater use.

NOT COVERED BY WARRENTY

When working underwater with a HYCON product there is an increased possibility for corrosion - **This is not covered by warranty.**

We recommend that the tool is proper maintained according to the cleaning and maintenance chapter to increase longevity of the tool.

HOW TO MAKE A CLAIM

Please contact your local HYCON distributor.

8.0 TECHNICAL DATA

Item no.	3030230
Weight without hoses, disc and guard [kg / lbs]	3.6 / 7.9
Weight without hoses and disc [kg / lbs]	4.2 / 9.2
Weight with hoses without disc [kg / lbs]	6.4 / 14.1
Blade dimensions Ø [mm / inch]	230 / 9
Cutting depth [mm / inch]	75 / 2.95
Oil flow [LPM / GPM]	20 - 46 / 5 - 12
Working pressure [bar / psi]	120 / 1740
Max pressure [bar / psi]	172 / 2500
Rotation speed max [rpm]	4400
Blade peripheral speed [m/s / yard per second]	53 / 58
Max working depth [m / ft]	50 / 164
Maximum return pressure [bar / psi]	40 / 580
Rotation speed	20 lpm / 5 gpm - 1800 rpm 30 lpm / 8 gpm - 2700 rpm 40 lpm / 10 gpm - 3800 rpm 46 lpm / 12 gpm - 4400 rpm
Maximum disc peripheral speed (20 - 46 L)	22 - 53 m/s
Arbor size	7/8"
Spindle	5/8"-11 Threaded
Tail-hose 3/8" with 1/2" Q.R coupling BSP [m / ft]	2 / 6
Vibration level (ISO 28927-1)	2.6 m/s ²
Vibration level K value	0.86 m/s ²
Sound power level LWA (db)	96.1
Sound pressure level LpA (dB) - 1 m	85.1

8.1 HYDRAULIC HOSES

OIL FLOW		HOSE LENGTH		SIZE	
LPM	GPM	METER	FEET	MM	INCH
20	5	13	42	10	3/8"
20	5	20	65	13	1/2"
20	5	30	100	16	5/8"
30	8	10	35	10	3/8"
30	8	18	60	13	1/2"
30	8	25	82	16	5/8"
40	10	15	49	13	1/2"
40	10	30	98	16	5/8"
40	10	90	300	19	3/4"
46	12	15	49	16	5/8"
46	12	30	98	19	3/4"
46	12	60	197	25,4	1"

We always recommend the shortest possibly hose length and largest acceptable diameter to reduce pressure drop in pressure and return hoses. All pressure drop added up in hoses is pressure not available for the actual work by the tool

PRESSURE

When working with the hydraulic tools the return pressure is crucial for the tools to function properly.

HYCON tools with our purpose-built power drive motor is designed to work continuously with a return pressure up to 40 bar. We still recommend keeping as low as possible for best performance with the tool.



For every 10 meter underwater, the pressure increases 1 bar in the return pressure.

9.0 EC-Declaration of Conformity

**HYCON A/S**

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DK-9530 Støvring
Denmark

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www.hycontools.com

We hereby declare that the HAG09 Angle Grinder from serial number 23051 is manufactured in conformity with the following standards:

DS/EN ISO 11148-7

DS/EN ISO 15744

DS/EN ISO 28927-1

EC Directives 2006/42/EC

Notified Body 2914

Sweco Danmark A/S
Europaplads 16
8000 Aarhus C

Measured sound power level	85.1 dB
Guaranteed sound power level	96.1 dB
Vibration level at 40 lpm	2.6 m/s ²

A handwritten signature in blue ink, appearing to read "Martin Møller".

Martin Møller
General Manager
28-11-2024
Støvring