COOPER Tools

Operation & Service Manual
823106 **2/01**

Cleco®

116 & 136GL R.A. Series Extended Right Angle Grinders

XXX	G	L	X	X	-	XXX	A	-	X	X	X

Series:
116, 136

Grinder:

Throttle:
L Lever

Exhaust Terminations:
F Front
R Rear
S Side

Generation:
— Concept
B Second
C Third

RPM:
135 150 165

Model:
A Right Angle

Wheel Type:
D Type 27
W Type 1 Wheel
C Collet

Terminations:
3 3/16
4 1/4
5 5/16
6 3/8
6M 6mm
3T 3/8-24

Guard:
3 3 In.
4 4 in.

For additional product information visit our website at http://www.clecotools.com

NORTH AMERICA

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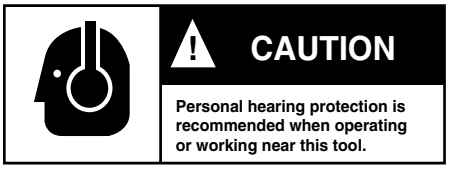
Safety Recommendations

For your safety and the safety of others, read and understand the safety recommendations before operating any grinder.

Always wear protective equipment and clothing.

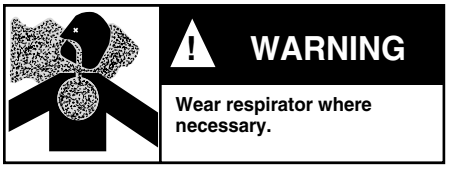
Caution: Faceshields do not provide unlimited protection against flying particles and are not to be considered as eye protection. ANSI Z87.1 states that separate eyewear shall be used. For additional information on eye protection, refer to Federal OSHA Regulations, 29 CFR, Section 1910.133, Eye and Face Protection, and ANSI Z87.1, Occupational and Educational Eye and Face Protection. This standard is available from the American National Standards Institute, Inc., 11 West 42nd Street, New York, NY 10036.



Hearing protection is recommended in high noise areas (above 85 dBA). Close proximity of additional tools, reflective surfaces, process noises, and resonant structures can substantially contribute to the sound level experienced by the operator. Proper hearing conservation measures, including annual audiograms and training in the use and fit of hearing protection devices may be necessary. For additional information on hearing protection, refer to Federal OSHA Regulations, 29 CFR, Section 1910.95, Occupational Noise Exposure, and American National Standards Institute, ANSI S12.6, Hearing Protectors.

- **Gloves and other protective clothing should be worn as required, unless they create a greater hazard.**

- **Do not wear loose fitting clothing, or clothing that may restrict movement, become entangled or in any way interfere with the safe operation of the grinder.**



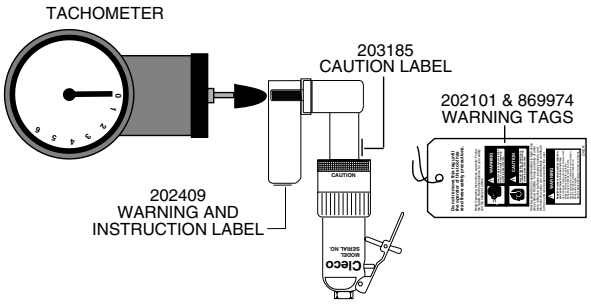
Grinding or other use of this tool may produce hazardous fumes and/or dust. To avoid adverse health effects utilize adequate ventilation and/or a respirator. Respirators should be selected, fitted, used and maintained in accordance with Occupational Safety and Health Administration and other applicable regulations. Read the material safety data sheet on any materials involved in the grinding process.

Cleco grinders are designed to operate on 90 psig (6.2 bar) max. air pressure. If the tool is properly sized and applied, higher air pressure is unnecessary. Excessive air pressure increases the loads and stresses on the tool parts and may result in breakage. Installation of a filter-regulator-lubricator in the air supply line is highly recommended.

Before the tool is connected to air supply, check throttle for proper operation, i.e., throttle moves freely and returns to closed position. Being careful not to endanger adjacent personnel, clear air hose of accumulated dust and moisture. Use protective barriers where necessary — hot sparks can burn. Barriers also help reduce noise levels. Before removing tool from service or changing accessories, make sure air line is shut off and drained of air. This will prevent tool from operating if throttle is accidently engaged. Do not use tool to drain residual air from air line, instead use of a self-relieving valve located near tool is highly recommended.

The speed rating and warning information on the tool should be maintained or replaced for legibility in the event of damage. Before installing an accessory or a grinding wheel, after all tool repairs, and whenever a grinder is issued for use, check the free speed of the tool with a tachometer to make sure actual free speed at 90 psig does not exceed rated free speed stamped on tool. Grinders in use on the job must be checked at least once every 20 hours of operation, or once a week, whichever is most frequent.

Guard (if wheel type grinder) must be securely attached to the grinder with the bolt, nut and lockwasher in place and torqued to 30-40 in. lbs.



INSPECT GRINDING WHEEL OR ACCESSORY

Fragments from a grinding wheel, mounted wheel or carbide burr that breaks or comes apart while rotating can cause serious injury or even death. Inspect grinding wheel or accessory. Check the maximum safe RPM marked on wheel, accessory or package. Never use wheels or accessories rated at or below actual tool speed. **Cracked, dropped, faulty, or bent accessories are dangerous.** Suspect accessories should not be used and should be disposed of. Look for cracks, chips, water stains, or signs of abuse or improper storage. Causes of grinding wheel failures have been traced to such factors as:

- Dropping, bumping, or abuse (careless handling of the grinder)
- Improper mounting
- Imbalance
- Improper shipment or storage, or age
- Mismatched speed ratings
- Exposure to water, solvents, high humidity, freezing, and extreme temperatures

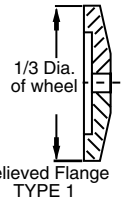
Safety Recommendations

Wheels or accessories known to have been subjected to any of the conditions above can burst violently and should be destroyed rather than risk their use by someone who may not notice that they are damaged.

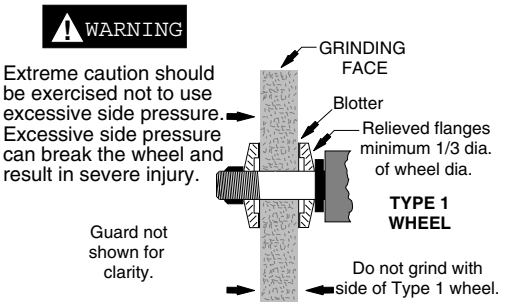
Do not operate 116/136 RA grinder without a wheel guard if used with Type 1 (straight) or Type 27 (depressed center) wheels. Guard must not be modified, and any guard damaged or bent must be replaced. Grinder must be used such that opening in guard is away from operator.

CHECK FLANGE

A Type 1 wheel grinder's flanges must be relieved, free of nicks that might cause stress concentrations on the wheel which can cause cracks. Blotters must be used and be as large in diameter as the flanges. Diameters of driving and outer flange must be equal and measure at least 1/3 dia. of the wheel. If flanges are less than 1/3 dia. of wheel, do not use grinder or select proper wheel. Spindle end nut must be tightened firmly against outer flange to insure necessary friction against blotters to drive wheel. **Caution:** Overtightening can cause wheel breakage. Type 1 breakage can also occur if:



- Outer flange is left off
- Outer flange is reversed
- A washer is used in place of either flange
- Outer and driving flange are different diameters
- Blotters are not used
- Wheel is side loaded (Grind on periphery only!)



Check spindle and driving flange on grinders used with Type 27 (depressed center) wheels. Spindles must not be bent and threads must be free of any damage that might keep a wheel from being centrally mounted or seated properly against the driving flange. The spindle end nut should be tightened to prevent wheel slippage and satisfactorly transfer the driving torque of the spindle to the wheel through the adapter assembly.

COLLET EQUIPPED TOOLS

The collet should be checked to assure it is in good operating condition and is secure to the tool. Accessories should be inserted to full depth of the collet. **Avoid excessive overhang and/or excessive down force that can result in vibration or a bent spindle.** Possible loss or ejection of accessory can result. Collet equipped 116/136 RA grinders are intended for use with small carbide burrs and mounted wheels only. Do not use these tools for Type 1 or Type 27 wheel grinding. If your application calls for a Type 1 or Type 27 wheel, consult your Cleco representative for a wheel grinder equipped with the proper wheel guard.

BEGINNING GRINDING OPERATION

Before using or after mounting a wheel or accessory, tool must be run for one minute in a protected enclosure to check the integrity of the wheel or accessory. During this time or any other time, no one should stand in front or in line of the wheel or accessory. When starting work with a cold wheel, apply it gradually to the workpiece until it becomes warm. **Do not continue to use a grinder if:**

- It is not equipped with proper wheel guard
- It starts to vibrate
- You sense changes in tool speed or an unusual increase in noise that would indicate tool is running at excessive speed
- You notice excessive end play in spindle
- You hear any unusual sound from grinder

RETURN THE TOOL TO THE TOOL CRIB FOR SERVICE IMMEDIATELY!

⚠ WARNING

Repetitive work motions and/or vibration may cause injury to hands and arms.
Use minimum hand grip force consistent with proper control and safe operation.
Keep body and hands warm and dry.
Avoid anything that inhibits blood circulation.
Avoid continuous vibration exposure.
Keep wrists straight.
Avoid repeated bending of wrists and hands.

Some individuals may be susceptible to disorders of the hands and arms when performing tasks consisting of highly repetitive motions and/or exposure to extended vibration. Cumulative trauma disorders such as carpal tunnel syndrome and tendonitis may be caused or aggravated by repetitious, forceful exertions of the hands and arms. Vibration may contribute to a condition called Raynaud's Syndrome. These disorders develop gradually over periods of weeks, months, and years. It is presently unknown to what extent exposure to vibrations or repetitive motions may contribute to the disorders. Hereditary factors, vasculatory or circulatory problems, exposure to cold and dampness, diet, smoking and work practices are thought to contribute to the conditions.

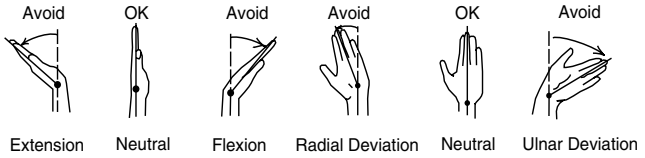
Any tool operator should be aware of the following warning signs and symptoms so that a problem can be addressed before it becomes a debilitating injury. Any user suffering prolonged symptoms of tingling, numbness, blanching of fingers, clumsiness or weakened grip, nocturnal pain in the hand, or any other disorder of the shoulders, arms, wrists, or fingers is advised to consult a physician. If it is determined that the symptoms are job related or aggravated by movements and postures dictated by the job design, it may be necessary for the employer to take steps to prevent further occurrences. These steps might include, but are not limited to, repositioning the workpiece or redesigning the workstation, reassigning workers to other jobs, rotating jobs, changing work pace, and/or changing the type of tool used so as to minimize stress on the operator. Some tasks may require more than one type of tool to obtain the optimum operator/tool/task relationship.

The proper selection of the correct type of grinder is an important ergo nomic consideration. Each application should be carefully considered and the tool chosen that will minimize the stresses on the operator that can lead to the onset of cumulative trauma disorders. Some tasks require more than one type of tool to obtain the optimum operator/tool/task relationship. Cleco has a complete selection of tools including vertical, straight, angle, and extended grinders that make possible the correct ergonomic match of the operator, tool, and task.

The following suggestions will help reduce or moderate the effects of repetitive work motions and/or extended vibration exposure:

Safety Recommendations

- Use a minimum hand grip force consistent with proper control and safe operation
- Keep body and hands warm and dry (cold weather is reported to be a major factor contributing to Raynaud's Syndrome)
- Avoid anything that inhibits blood circulation
  - —Smoking Tobacco (another contributing factor)
  - —Cold Temperatures
  - —Certain Drugs



- Tasks should be performed in such a manner that the wrists are maintained in a neutral position, which is not flexed, hyperextended, or turned side to side
- Stressful postures should be avoided — select a tool appropriate for the job and work location
- Avoid highly repetitive movements of hands and wrists, and continuous vibration exposure (after each period of operation, exercise to increase blood circulation)
- **Use quality accessories** (the primary source of vibration when using a grinder is an accessory that is out of balance, out of round, untrue, or possibly any combination of all three; avoid excessive overhang of accessory in collet)
- Use carbide burrs that are sharp, as dull burrs require more force and effort to remove material
- Keep tool well maintained and replace worn parts (a preventive maintanance program with scheduled inspections is highly recommended)

Work gloves with vibration reducing liners and wrist supports are available from some manufacturers of industrial work gloves. Tool wraps and grips are also available from a number of different manufacturers. These gloves, wraps, and wrist supports are designed to reduce and moderate the effects of extended vibration exposure and repetitive wrist trauma. Since they vary widely in design, material, thickness, vibration reduction, and wrist support qualities, it is recommended that the glove, tool wrap, or wrist support manufacturer be consulted for items designed for your specific application. **WARNING! Proper fit of gloves is important. Improperly fitted gloves may restrict blood flow to the fingers and can substantially reduce grip strength.**

USE QUALITY ABRASIVE WHEELS

The primary source of vibration when using a portable grinder is an abrasive wheel that is out of balance, out of round, untrue, or possibly any combination of all three.

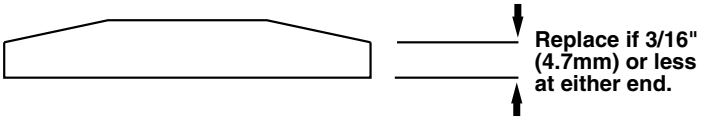
The use of quality abrasive wheels which are well balanced, round, and true is highly recommended as they have been found to significantly reduce vibration. Some abrasive wheels lose their balance, roundness, and trueness as they wear from use. Because of the abusive nature of the vibration caused by out of balance, out of round, and untrue condition of some abrasive wheels, it is felt that these wheels are more suseptible to failure. Excessive vibration may signal eminent wheel failure. Out of balance abrasive wheels are dangerous. Flat spotting of the abrasive wheel, caused by grinding the wheel to a stop after the power has been shut off can result in changes to the balance and shape of the wheel. Be sure the grinding wheel has stopped before setting the tool down. Set the tool in a tool rest or tool holder when not in use.

WIRE BRUSHES

If a grinder is used for wire brushing applications the same problems of balance, roundness, and truth as experienced with abrasive wheels prevail. Use quality wire brushes.

USE A PREVENTIVE MAINTENANCE PROGRAM

Tool abuse or poor maintenance procedures can amplify and contribute to the vibration produced by the abrasive wheel. A preventive maintenance program featuring scheduled periodic inspections and proper maintenance is the best way to assure safety in your portable grinding operations. A well managed program can, for example, detect such things as speed variations due to wear, flanges or spindles that have been damaged from abuse, or bad bearings damaged by foreign matter or lack of lubrication. Problems such as these can affect the wheel trueness when the grinder is running and contribute to the vibration. Rotor blades that are worn or chipped can lock up the motor and damage motor components. Rotor blades should be checked periodically and replaced if they measure less than 3/16" (4.7mm) at either end.



Proper repair procedures and the use of original Cleco service parts and bearings rather than substitutes will return the tool to factory specifications of precision and balance, and minimize vibration.

PROPER LUBRICATION

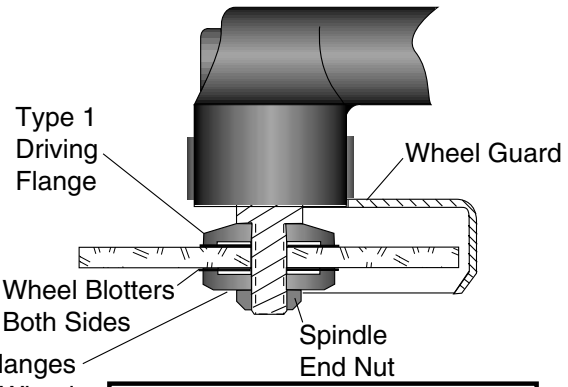
An automatic in-line filter-regulator-lubricator is recommended as it increases tool life and keeps the tool in sustained operation. The in-line lubricator should be regularly checked and filled with a good grade of 10W machine oil. Proper adjustment of in-line lubricator is performed by placing a sheet of paper next to exhaust ports and holding throttle open approximately 30 seconds. Lubricator is properly set when a light stain of oil collects on paper. Excessive amounts of oil should be avoided.

STORAGE

In the event it becomes necessary to store tool for an extended period of time (overnight, weekend, etc.), it should receive a generous amount of lubrication at that time and run for several seconds to distribute oil before disconnecting from air supply. This will reduce corrosion and displace water that may be trapped in tool.

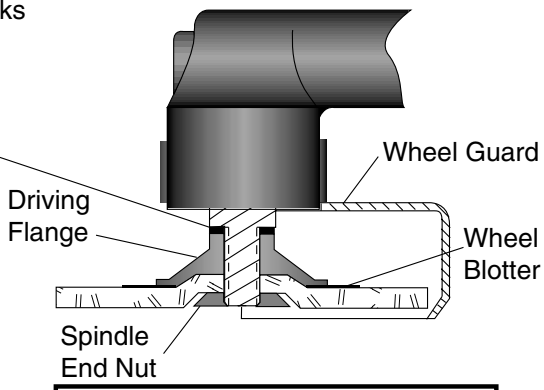
This information is a compilation of general safety practices obtained from various sources available at the date of production. However, our company does not represent that every acceptable safety practice is offered herein, or that abnormal or unusual circumstances may not warrant or require additional procedures. Your work may require additional specific safety procedures. Follow these procedures as required by your company. For more information, see the latest edition of ANSI B186.1, Safety Code for Portable Air Tools, and ANSI B7.1, Safety Requirements for the Use, Care, and Protection of Abrasive Wheels, available from the American National Standards Institute, Inc., 11 West 42nd Street, New York, NY 10036.

116 & 136GLB & GLC RIGHT ANGLE GRINDER AND SANDER EQUIPMENT

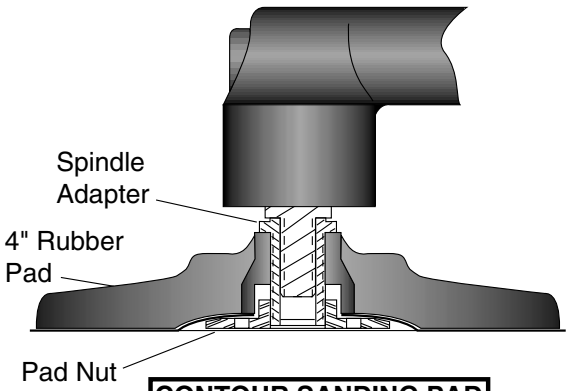


TYPE 1 WHEEL with 3/8" Hole

Spacer(s) 864159	
Wheel Thickness	No. Required
1/8"	2
3/16"	1
1/4"	None



TYPE 27 WHEEL with 3/8" Hole



CONTOUR SANDING PAD

TOOL APPLICATION	SPINDLE	DRIVING FLANGE	OUTER FLANGE	NUT	WRENCH	GUARD
4" Type 27 with 3/8" Hole	3/8-24	202225	not applicable	843422	849834 849022	202227
3" Type 27 with 3/8" Hole	3/8-24	202225	not applicable	843422	849837 849022	202226
3" Type 1 with 3/8" Hole	3/8-24	202223	865991	203409	849837 849022	202226
4" Type 1 with 3/8" Hole	3/8-24	202223	865991	203409	849837 849022	202227

TOOL APPLICATION	SPINDLE ADAPTER	PAD	PAD NUT	WRENCH
4" Sanding Pad	3/8"-24 to 5/8"-11 869495	889271	849259	849834

OPERATING INSTRUCTIONS

READ SAFETY RECOMMENDATIONS BEFORE CONNECTING TOOL.

OPERATION
The 116 and 136 RAB Series Right Angle Grinders are designed to operate on 90 psig (6.2 bar) maximum air pressure, using a 1/4" hose up to 8' in length for the 116 and a 5/16" hose for the 136. If additional length is required, the next larger hose size may be connected to the 8' whip hose.

LUBRICATION
An automatic in-line filter-lubricator is recommended as it increases tool life and keeps the tool in sustained operation. The in-line lubricator should be regularly checked and filled with a good grade of 10W machine oil. Proper adjustment of the in-line lubricator is performed by placing a sheet of paper next to the exhaust ports and holding the throttle open approximately 30 seconds. The lubricator is properly set when a light stain of oil collects on the paper. Excessive amounts of oil should be avoided. Application of the tool should govern how frequently it is greased. It is recommended that the right angle gears receive a generous amount of NLGI 2-EP grease through the grease fittings after 40 hours of operation.

STORAGE
In the event that it becomes necessary to store the tool for an extended period of time (overnight, weekend, etc.), it should receive a generous amount of lubrication at that time and again when returned to service. The tool should be stored in a clean and dry environment.

SERVICE INSTRUCTIONS

DISASSEMBLY
To disassemble the tool, unscrew the right angle head (left hand threads). This will allow the removal of the motor unit from the backhead.

To remove the splined nut, 202236, use a 14mm six (6) point box wrench and a 3/16" hex wrench. Insert the hex wrench into the rotor shaft and unscrew the nut. Use a suitable driver to drive the front rotor shaft out of the front rotor bearing. After removing the cylinder and rotor blades, the rear rotor shaft may be driven out of the rear rotor bearing.

To disassemble the right angle head, unscrew the spindle bearing cap. This will permit the removal of the spindle assembly.

Use a 14mm six (6) point deep socket to remove the spline adapter, No.202625. If the pinion is not engaging the driven gear because of wear, remove the bearing, 202197, from the spindle and put the driven gear back on the spindle. Insert the spindle and driven gear back into the housing. With a brass hammer drive the spindle needle bearing, No. 202198, out of the housing until it allows the pinion gear to engage the driven gear. Screw a 3/8-24 nut on the spindle and hold with a box end wrench. Put a spacer over the spindle needle bearing and clamp the housing in a vise. Now proceed to loosen the spline adapter with a 14mm six (6) point deep socket.

The pinion bearing retainer, No. 863564, may be removed by utilizing a 5/8" hex nut and a 5/8" deep socket. Drop the hex nut over the pinion shaft and engage the hex in the bearing retainer and unscrew the retainer using the deep socket. Unscrew the plug, No. 842366, and using a suitable driver, drive the pinion, No. 202624, and related bearings out of the angle head.

REASSEMBLY
The tool is reassembled in the reverse order of disassembly. Wash all parts in a solvent and inspect for damage or wear. Rotor blades should be replaced at every repair cycle or if they measure less than 3/16" (4.7mm) at either end. Replace bearings that are rough or have excessive end play.

IMPORTANT: When replacing pinion gear 202624 or driven gear 202201, both gears should be replaced for best results.

When reassembling the spindle, No. 202194, bearing, No. 202197, driven gear, No. 202201 and spindle lock nut, No. 202199, use Locktite #271 on the spindle lock nut No. 202199. Also use #271 Locktite on the Spindle Bearing Cap No. 202196.

Slip pinion needle bearing, No. 869864, (unstamped end first) on the pinion, No. 202624, and press (press on the bearing's stamped end) the bearing in to a depth of 7/8" from the face of the bearing bore. Install pinion ball bearing, No. 202333, (shield to the rear) and bearing retainer, No. 863564, in the head and tighten retainer securely using the 5/8" hex nut and 5/8" deep socket. Using a suitable driver through the hole in the top of the head, drive the pinion back to make sure it is seated properly in the head.

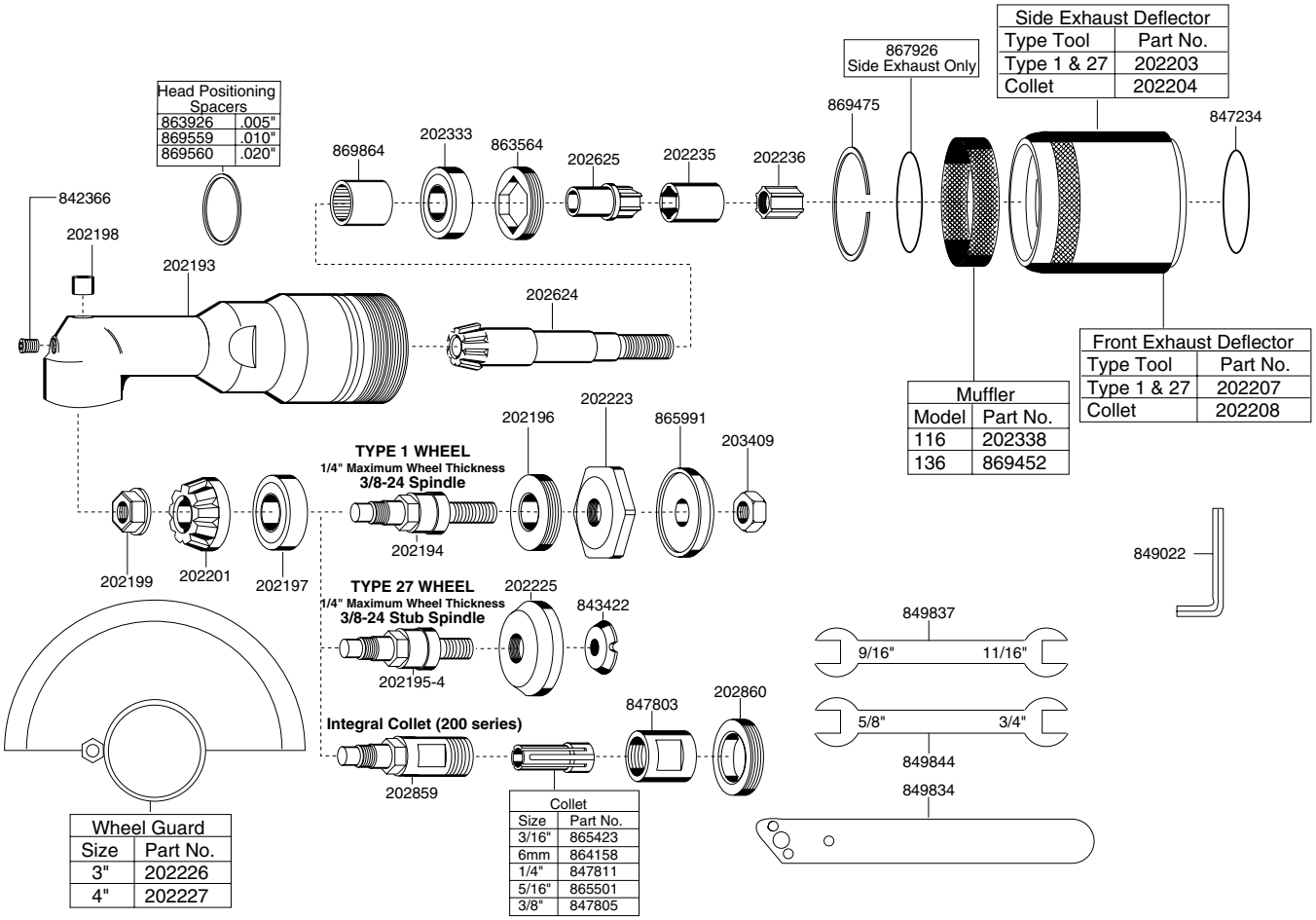
Important: When installing front rotor bearing. No. 202332, the shielded side should be assembled toward the rear of the tool.

Install the front rotor bearing in the front bearing plate and measure the distance from the face of the bearing plate to the inner race of the bearing with the bearing race loaded rearward. Select or fit by sanding a rotor collar .001" (.025mm) to .002" (.050mm) longer than this measurement. Install the rotor blades, cylinder, rear bearing plate and rear bearing on the rotor. After final assembly of the motor unit, the cylinder should be held securely but not tightly between the two (2) plates. The rotor should not rub either plate. When installing the splined nut, No. 202236, on the rotor, the undercut end should be toward the bearing.

When installing a motor into a rear exhaust backhead, the steel ball located in the front plate must line up with the groove in the backhead. Tighten all joints securely during reassembly. Head positioning spacers are used to position the right angle head in relationship to the throttle lever. Each .005" added or subtracted will change the location of the head approximately 30 degrees. Place a few drops of 10W machine oil in the air inlet to ensure positive lubrication of all motor parts as soon as air is applied.

CAUTION: After the grinder is reassembled, be sure to check the free speed (R.P.M.) for proper speed with a dependable tachometer before returning the grinder to service.

116 & 136 EXTENDED RIGHT ANGLE HEAD



PART NO.	NAME OF PART	QTY.	PART NO.	NAME OF PART	QTY.
202193	Angle Head	1	203409	Spindle End Nut - Type 1	1
202194	3/8-24 Spindle	1	842366	Plug	1
202195	3/8-24 Stub Spindle	1	843422*	Spindle End Nut - Type 27	1
202196	Spindle Bearing Cap	1	847234*	"O"-Ring 1-1/8" x 1-1/4"	1
202197	Spindle Ball Bearing	1	847803	Collet Lock Nut	1
202198	Spindle Needle Bearing	1	847805	3/8" Collet (Opt.)	1
202199	Spindle Lock Nut	1	847811	1/4" Collet (Std.)	1
202201	Driven Gear	1	849022*	Spindle Hex Wrench	1
202203*	Side Exhaust Deflector	1	849834*	Spanner Wrench	1
202204*	Side Exhaust Deflector	1	849837*	9/16" x 11/16" Wrench	2
202207*	Front Exhaust Deflector	1	849844*	5/8" x 3/4" Wrench	1
202208*	Front Exhaust Deflector	1	863564*	Bearing Retainer	1
202223*	Type 1 Driving Flange	1	863926*	.005" Spacer	**
202225*	Type 27 Driving Flange	1	864158	6mm Collet (Opt.)	1
202226*	3" Wheel Guard	1	864159*	Driving flange Spacer (if required)	**
202227*	4" Wheel Guard	1	865423	3/16" Collet (Opt.)	1
202235*	Spline Coupling	1	865501	5/16" Collet (Opt.)	1
202236*	Splined Nut	1	865991*	Type 1 Outer Flange	1
202333	Pinion Ball Bearing	1	867926*	"O"-Ring 1-3/16" x 1-5/16"	1
202338*	Muffler	1	869452*	Muffler	1
202624	Pinion	1	869475*	Retainer Ring	1
202625	Spline Adapter	1	869559*	.010" Spacer	**
202859	Collet Spindle	1	869560*	.020" Spacer	**
202860	Spindle Bearing Cap	1	869864	Pinion Needle Bearing	1

* Denotes parts not included in subassemblies.

** Number of spacers required is variable.

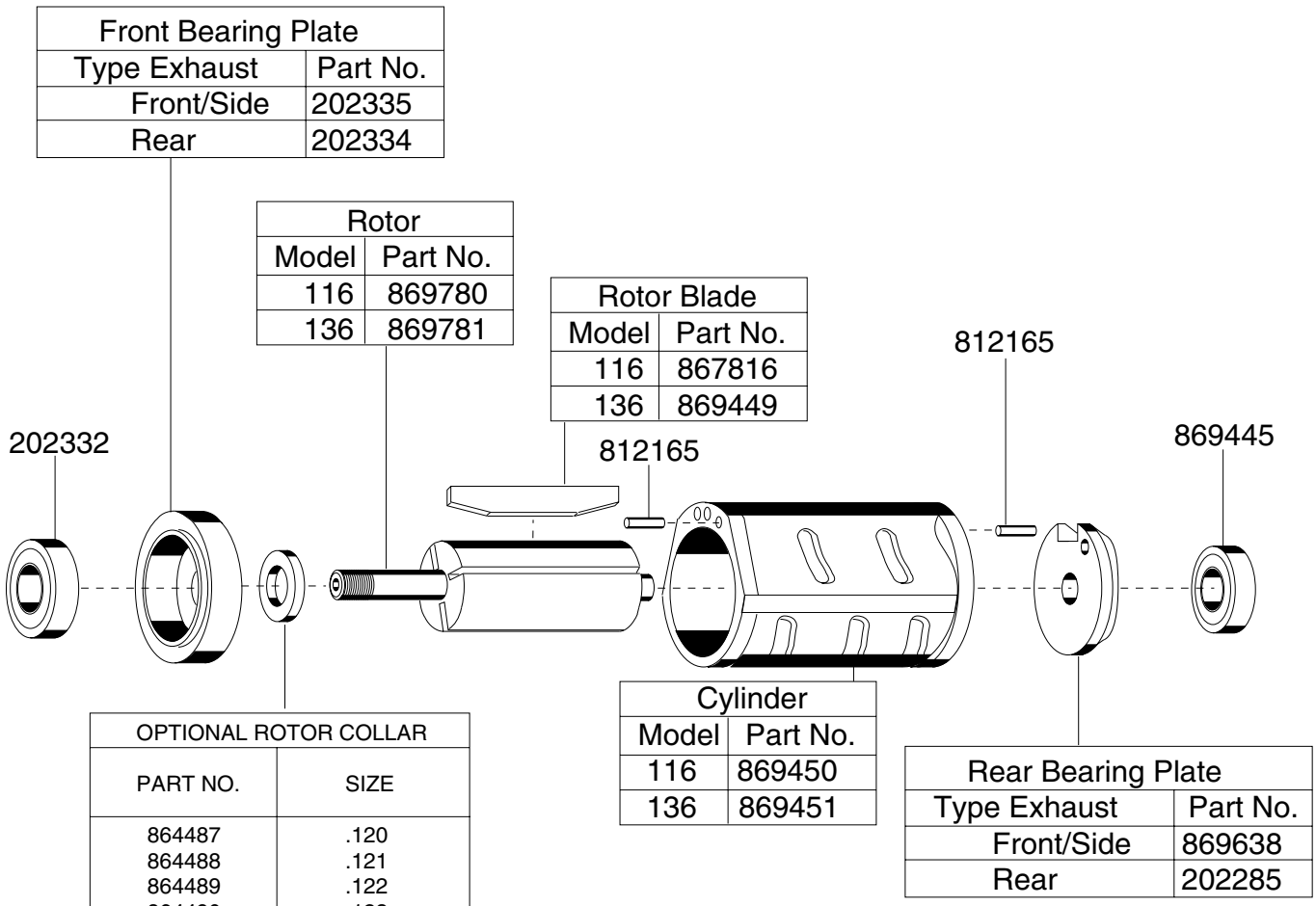
The complete angle head can be purchased as a subassembly using the following part numbers.

3/8-24 Spindle - Part No. 201145

3/8-24 Stub Spindle - Part No. 201144

Integral collet - Part No. 201240

116 & 136 EXTENDED RIGHT ANGLE MOTOR



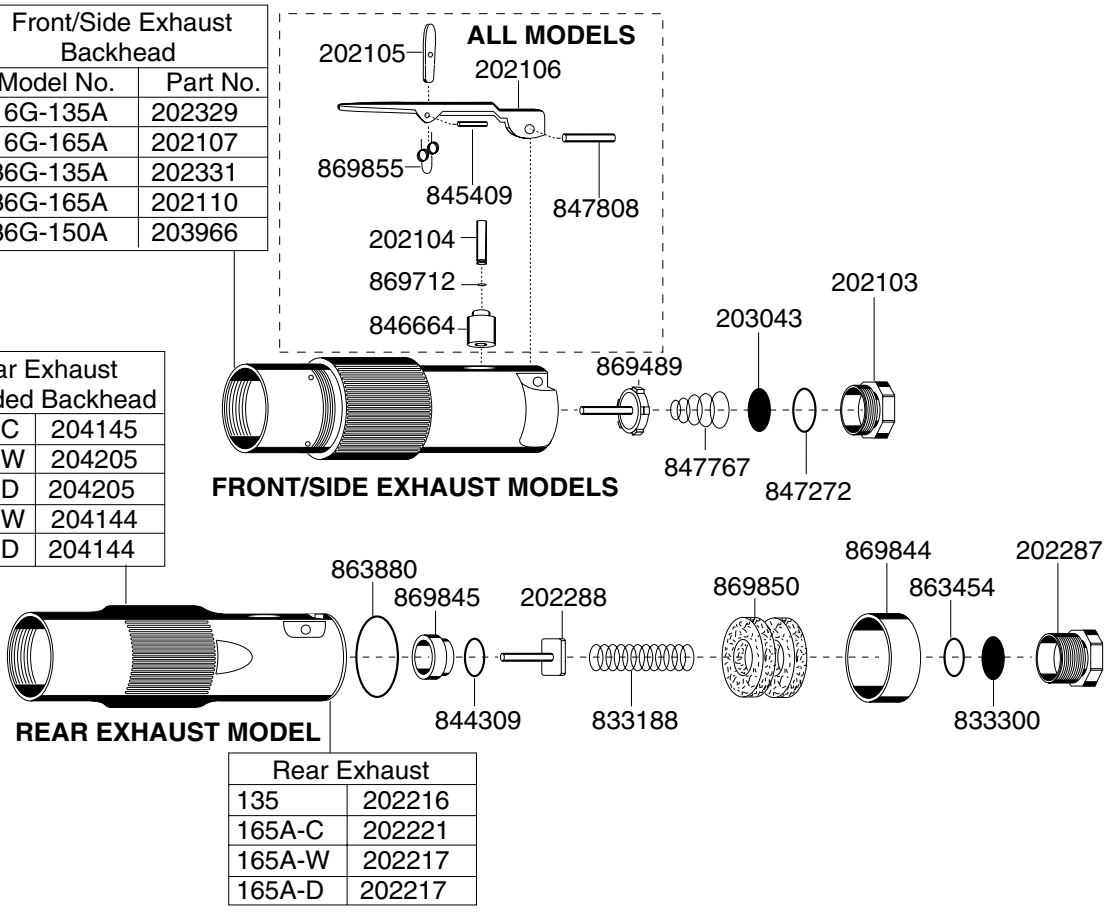
Part No.	Name of Part	Qty.	Part No.	Name of Part	Qty.
202285	Rear Bearing Plate	1	867816	Rotor Blade	4
202332	Front Rotor Bearing	1	869445	Rear Rotor Bearing	1
202334	Front Bearing Plate	1	869449	Rotor Blade	4
202335	Front Bearing Plate	1	869450	Cylinder (includes one (1) pin)	1
812165	Cylinder Pin	2	869451	Cylinder (includes one (1) pin) Rear	1
847525	Rotor Collar .124"	*	869638	Bearing Plate	1
864489	Rotor Collar .122"	*	869780	Rotor	1
864493	Rotor Collar .126"	*	869781	Rotor	1
865417	Rotor Collar .128"	*			

* Only one rotor collar required.

116 & 136 EXTENDED RIGHT ANGLE HANDLES

Front/Side Exhaust Backhead	
Model No.	Part No.
116G-135A	202329
116G-165A	202107
136G-135A	202331
136G-165A	202110
136G-150A	203966

Rear Exhaust Extended Backhead	
165A-C	204145
135A-W	204205
135A-D	204205
165A-W	204144
165A-D	204144



Rear Exhaust	
135	202216
165A-C	202221
165A-W	202217
165A-D	202217

Part No.	Name of Part	Qty.	Part No.	Name of Part	Qty.
202103	Inlet Bushing	1	833300	Inlet Screen	1
202104	Throttle Valve Pin (incl. 869712)	1	844309	"O"-Ring 7/16" X 5/8"	1
202105	Toggle	1	845409	Toggle Pin	1
202106	Lock-off Lever	1	846664	Throttle Pin Bushing	1
202107	Backhead (incl. 846664)	1	847272	"O"-Ring 5/8" X 3/4"	1
202110	Backhead (incl. 846664)	1	847767	Throttle Valve Spring	1
202216	Backhead (incl. 846664)	1	847808	Throttle Lever Pin	1
202221	Backhead (incl. 846664)	1	863454	"O"-Ring 9/16" X 11/16"	1
202287	Inlet Bushing (833300)	1	863880	"O"-Ring 1-1/4" X 1-3/8"	1
202288	Throttle Valve	1	869489	Throttle Valve	1
202329	Backhead (incl. 846664)	1	869712	"O"-Ring 5/64" X 13/64"	1
202331	Backhead (incl. 846664)	1	869844	Exhaust Deflector	1
203043	Inlet Screen	1	869845	Throttle Valve Seat	1
203966	Backhead (incl. 846664)	1	869850	Muffler Felt	2
833188	Throttle Valve Spring	1	869855	Toggle Spring	1

COMPLETE HANDLE SUBASSEMBLIES			
MODELNO.	**PART NO.**	**MODEL NO.**	**PART NO.**
116GLB-135A	201017	136GLB-135A	201018
116GLB-165A	861991	136GLRB-135A	861138
136GLFB-150A	201571	136GLRC-165A-C	861131
		136GLB-165A	861995
		136GLRB-165A-W	861135
		136GLRB-165A-D	861135
		136GLRE165A-W	201651
		136GLRE-165A-D	201651
		136GLRE-135A-W	201626
		136GLRE-135A-D	201626
		136GLRE-165A-C	201627

The lock-off lever can be purchased as a subassembly using part no. 861992.

NOTES

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COOPER Tools

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