



Maintenance Manual For the Weldon Solutions CNC Grinder

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1) INTRODUCTION

This manual explains setting and leveling, lubrication, and maintenance for a Weldon grinder. In addition, the manual provides manufacturers' information on various components.

Weldon is always available to assist you and to offer advice. Feel free to contact Weldon's service department any weekday between 8:00 A.M. and 5:00 P.M. eastern time.

Telephone: (717) 846-4000.

Fax: (717) 846-3624.

If assistance is required after normal hours, contact the service department at (717) 578-8471.

2) SAFETY AND WARNINGS

Safety -

For a safe and successful grinding operation, it is important that this machine be operated by adequately trained personnel. There is no substitute for experienced know-how.

This machine operates automatically and has rotating and sliding parts. When performing maintenance on this equipment, power should be turned off and proper lockout procedures should be followed. Safety switches should **not** be bypassed. All guards must be in place and properly secured before operating this equipment.

Warnings -

CHEMICAL REACTIVITY

This machine contains components manufactured from aluminum, brass, bronze, and copper-based materials. When selecting a coolant other than that supplied with the machine, be certain the coolant will not attack or react with these materials

EFFECTS OF CHLORINE ON BOOTS AND WIPERS

Good service may be expected in coolant with up to 3% chlorine. Service life will drop off when the chlorine concentration is increased. Boots, wipers and covers must be inspected frequently when chlorine is used.

MACHINE WINDOWS

The machine windows are made from 1/4-inch polycarbonate sheet. A damaged window (with scratches, dents, etc.) should be replaced using a 1/4-inch thick (minimum) polycarbonate sheet.

Do not use general-purpose polycarbonate sheets, it does not have the impact resistance needed to protect the operator.

The preferred polycarbonate is [Lexan MR10](#) or [Monogal/Plazcarb](#) solid extruded polycarbonate sheet.

CAUTION: Do not use acrylic sheet or other material that lacks the strength of polycarbonate.

Machine windows should be cleaned using Windex™ or mild soap and water. Harsh chemicals or solvents can cause fogging and even loss of strength.

3) GRINDING WHEEL SAFETY

This subject is covered in detail in the ANSI B7.1 Safety Requirements for the Use, Care and Protection of Abrasive Wheels. This summary is to acquaint you with a general guide to safe practices. It is recommended that all personnel involved with grinding become familiar with B7.1 and the other pertinent booklets listed at the end of this section.

The Nature of Bonded Abrasive Wheels.

Bonded abrasive wheels vary greatly in strength depending on the following factors:

- 1) The grit size. Fine wheels are stronger than coarse ones.
- 2) The ratio of thickness to diameter. Naturally the thicker the wheel in proportion to its diameter the greater will be its resistance to failure from side stresses (this does not apply to stresses from centrifugal force).
- 3) The physical properties of the bond. In general, resinoid, rubber and shellac bonds resist failures due to centrifugal force and to side stresses better than do vitrified bonds.
- 4) The amount of bond. The greater the amount of bond in a wheel of given volume the stronger the wheel will be.
- 5) The shape of the wheel. Everything else being equal, the straight wheel is the strongest shape.

One fact that usually is overlooked is that the strength of a given wheel is definitely limited by the requirements of the job it has to do. For snagging castings, wheels with a relatively high percentage of resinoid bond are required. Such wheels are durable and will stand quite a lot of abuse (but they are by no means unbreakable). On the other hand, cylinder or cup wheels for surface grinding of hardened steel with broad contact must, of necessity, be soft and, therefore, more fragile. A hard, durable wheel on such a job would be useless. It would ruin the steel. Consideration of these two extremes should convince the reader of the absolute necessity of strictly following the rules on operating speeds.

It is recognized that the abrasive wheel is a relatively fragile tool, which is operated at a high speed as compared to most other cutting tools. Therefore, some extra precaution is necessary. There are laws in every state prescribing safety procedures, and, in general, they agree with ANSI B7.1 and OSHA.

Keep in mind the following General Safety rules:

- 1) Packages of wheels should be inspected for possible damage in shipment immediately on arrival and they should be carefully handled, rung and stored (complete instructions will be found in the booklet "Handling, Storage and inspection" and in the section 2 of ANSI B7. 1.
- 2) Guards or protection hoods must be used on all wheels except certain small sizes, cones (Types 16 and 1 7), plugs (Types 18 and 1 9) and mounted wheels. For details of construction see the ANSI B7.1 Safety Requirements and OSHA regulations.
- 3) Frequently, guards are omitted in the operation of straight and cup wheels on portable grinders. They are even more necessary on portable than on other grinders.

The omission of guards is not condoned by grinding wheel manufacturers, nor by insurance companies, nor by state or federal inspectors.

- 4) Do not overspeed the wheel. Permissible speed for wheels in SFPM (variously called "surface feet per minute," "surface speed" or "peripheral speed") are given in table 33 on page 111 in ANSI B7.1.
- 5) Be sure that the wheel fits the spindle properly. Obviously it should not have to be forced onto the spindle; the spindle might warm up and expand slightly, setting up stresses and possibly causing a rupture. Neither should the fit be sloppy. The clearance should be a few thousandths - .002" to .003" for small holes and up to .010" to .012" for large ones.
- 6) Be sure that the flanges comply with the specifications called for in ANSI B7.1 as to diameter (not less than 1/3 of diameter of the wheel), minimum dimensions at various points, proper relief, bearing area, kind of stock, etc. Above all, both flanges must be alike in diameter and bearing area. Mounting wheels between unlike flanges is one of the most common causes of wheel failure.
- 7) Cone and plug type wheels should be mounted as described in "Portable Grinding Wheels - Safe and Efficient Operation" and in ANSI B7.1.

GENERAL GUIDE TO SAFE PRACTICES

Grinding wheels improperly used are dangerous, but grinding is a safe operation if the few basic rules listed below are followed. These rules are based on material contained in the ANSI B7.1 Safety Requirements for the "Use, Care and Protection of Abrasive Wheels".

HANDLING

All grinding wheels are relatively fragile and must be handled with care. This applies to all types of bonds -vitrified, organic, or metal.

Do:

- 1) Inspect all wheels upon receipt.
- 2) Use pallets or trucks to transport.
- 3) Support firmly at all times.
- 4) Place wheels carefully in racks.

Do Not:

- 1) Leave wheels packed in absorbent material.
- 2) Roll wheels on floor.
- 3) Lean wheel against equipment.
- 4) Place tools or parts on top of wheels.

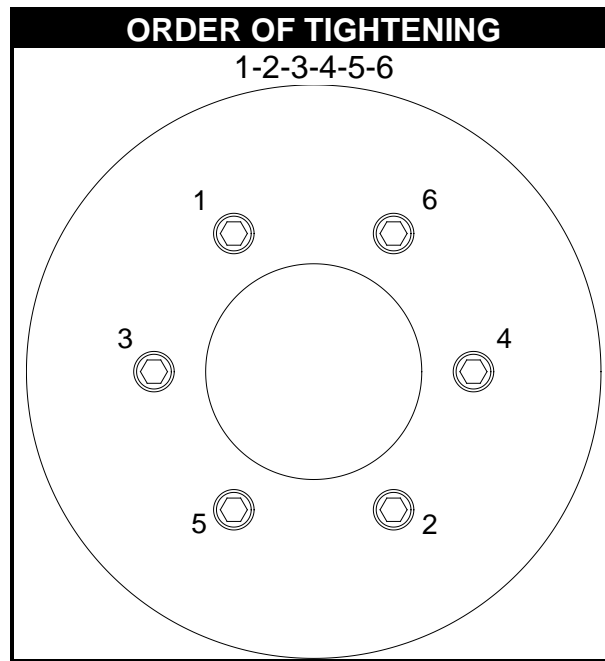
MOUNTING

Correct mounting procedures are essential to the efficient and safe operation of the wheel. It is important that personnel performing this function are fully competent.

Do:

- 1) Visually inspect all wheels before mounting for possible damage.
- 2) Check machine speed against the established maximum safe operating speed marked on the wheel.
- 3) "Ring" wheel to determine if it is free from cracks.

- 4) Use one clean blotter on each side of wheel.
- 5) Check mounting flanges for equal and correct diameter (generally 1/3 diameter of wheel).
- 6) Tighten multi-screw flanges uniformly to the machine manufacturer's suggested torque.



Do Not:

- 1) Mount a cracked wheel or one that has been dropped or has become damaged.
- 2) Use wheels whose maximum r.p.m. is less than the r.p.m. of the machine spindle.
- 3) Force a wheel onto the machine or alter the size of the mounting hole - if the wheel doesn't fit the machine, get one that will.
- 4) Use flanges of unequal diameter or relief, nor those, which are not clean, flat and free of burrs.
- 5) Over-tighten flange retaining nuts.
- 6) Over-tighten wheel adapter lock screw/locknut.
 - a) Tightening is always in the opposite direction of wheel rotation

USE

Given the correct wheel, mounted in accordance with approved procedure, safe operation depends largely on the treatment to which the wheel is subject during use.

Do:

- 1) Ensure that guards and work rests are properly adjusted and secure before starting machine.
- 2) Always use a safety guard covering at least one-half the grinding wheel.
- 3) Allow a newly mounted wheel to run at operating speed with guard in place at least one minute before starting to dress or grind.
- 4) Always wear protective glasses or some type of eye protection when grinding.
- 5) Always dress or make grinding contact gently.
- 6) Re-dress the wheel when necessary.

- 7) Turn off the coolant before stopping the wheel to avoid creating an out of balance condition.

Do Not:

- 1) Ever exceed the maximum operating speed established for the wheel.
- 2) Start the machine until the guard is in place.
- 3) Stand directly in front of the wheel when the machine is started.
- 4) Jam the work into the wheel, nor use excessive pressure or infeed.
- 5) Force grinding so that the motor slows noticeably, or the work gets hot.
- 6) Grind on the side of the wheel (see ANSI B7.1 for exception).
- 7) Allow stationary wheels to rest in fluids.
- 8) Apply pressure to wheels to stop them.
- 9) Continuously use glazed wheels without dressing.
- 10) Use wheels for purposes other than those for which they are designed.

STORAGE

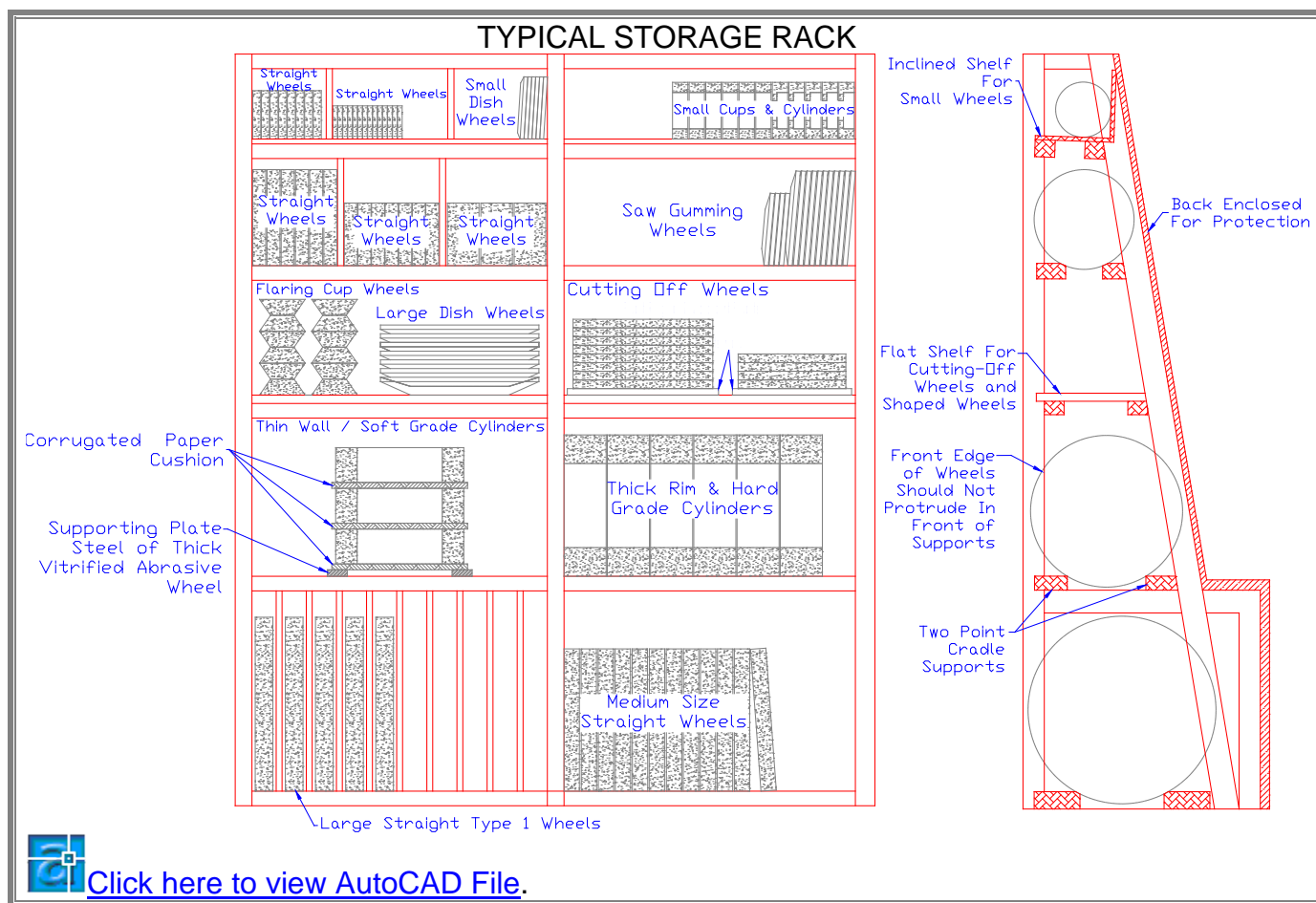
Suitable racks, cradles and drawers should be provided to store the various types of wheels used. The drawing below indicates a typical rack, storing a range of wheels.

Do:

- 1) Store wheels correctly supported.
- 2) Stack thin wheels flat.
- 3) Ensure storage in dry conditions.

Do Not:

- 1) Store in damp or humid conditions.
- 2) Subject wheels to dramatic change in temperature.
- 3) Subject wheels to temperatures at or approaching freezing.



For Further Information. The following booklets are available from Norton Company, Advertising Literature Section, 1 New Bond St., Worcester, MA 01606:

Form 254 - ANSI Safety Requirements for the Use, Care, and Protection of Abrasive Wheels.

Form 352 - Safety Recommendations for Grinding Wheel Operation

Form 353 - Mounting Technique for Wheel Sleeves on Cylindrical Grinding Machines

Form 462 - Cutting-Off Wheels

Form 474 - A Primer on Grinding Wheel Safety

Form 535 - Handling, Storage, & Inspection of Grinding Wheels

Form 931 - Special Speeds for Grinding Wheels

Form 1406 - Portable Grinding Machines, Safe and Efficient Operation

Form 1420 - Mounted Wheel Wall Chart

Form 1877 - Mounted Wheels - Safe Speeds

Form 2229 - High Speed - Heavy Duty Grinding Machines – Swing Frames and Floor Stand

Form 2677 - Safety Guide for Portable Grinding Wheel Users

Form 2678 - Safety Guide for Grinding Wheel Users

Form 2872 - Mounted Wheels (Maximum Operating Speeds)

4) MACHINE SHIPMENT

Refer to the drawings on the following pages for the correct way to ship these grinders.

Figure #1 - (pg. 11)
1632 Gold, 320S Midas, and 324S Midas

Figure #2 - (pg. 12)
120S Midas and 124S Midas

Figure #3 - (pg. 13)
320A Midas and 324A Midas

Figure #4 - (pg. 14)
120A Midas and 124A Midas

Figure #5 - (pg. 15)
Phoenix Grinder

Figure #6 - (pg. 16)
Altaira Grinder

Figure #7 - (pg. 17)
Solaris Grinder

Figure #8 - (pg. 18)
Midas Turret Grinder

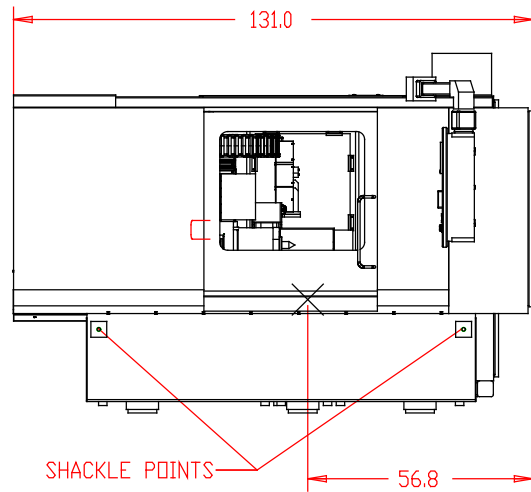
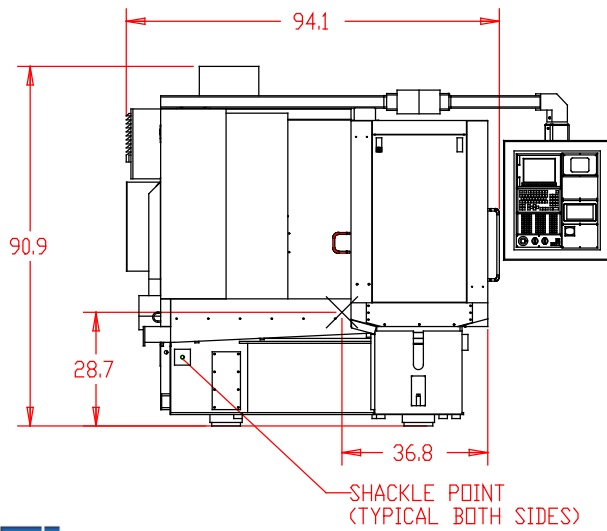
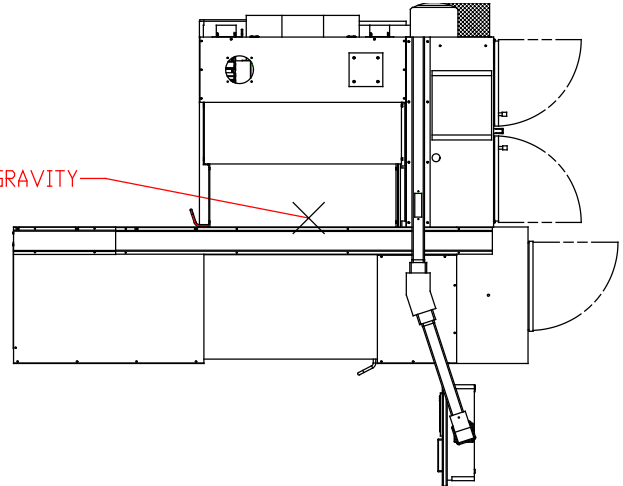
FIGURE #1

WELDON CNC GRINDER
320 STRAIGHT WHEEL CONFIGURATION

ESTIMATED SHIPPING WEIGHT - 16,000 LBS

SHACKLES: 1-8 X 1.53 10,000 LBS. HOIST RING
(DGI SUPPLY - AKM789-46212)

CENTER OF GRAVITY



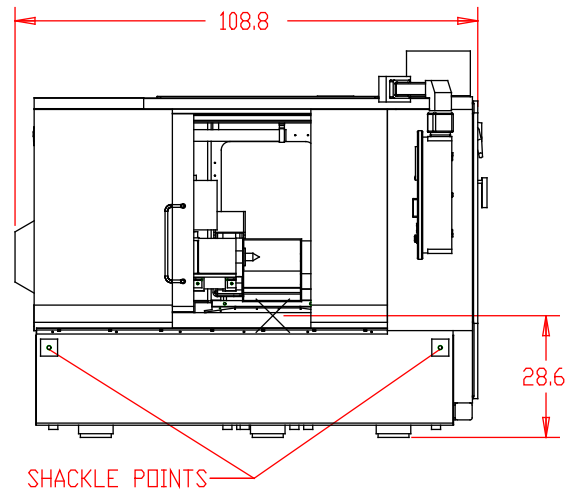
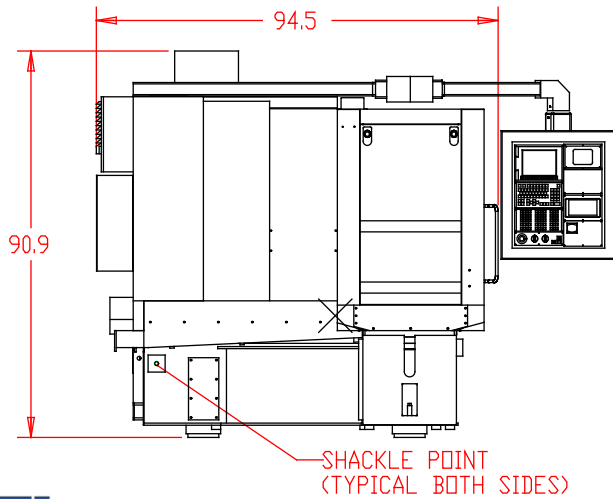
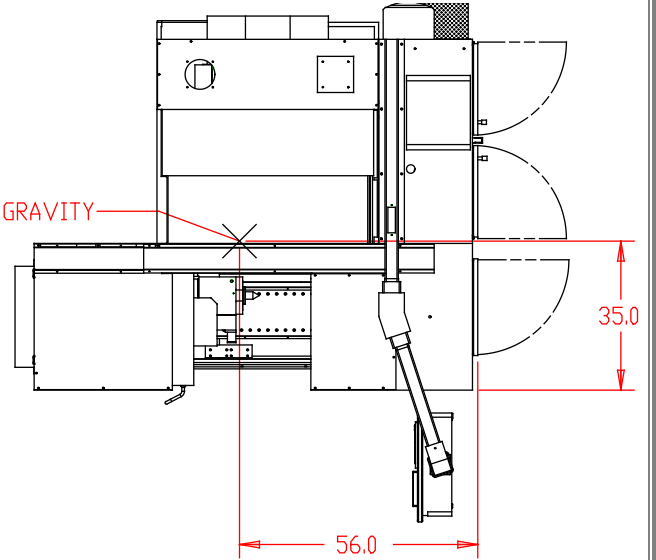
[Click here to view AutoCAD File.](#)

FIGURE #2

WELDON CNC GRINDER
120 STRAIGHT WHEEL CONFIGURATION
ESTIMATED SHIPPING WEIGHT - 16,000 LBS

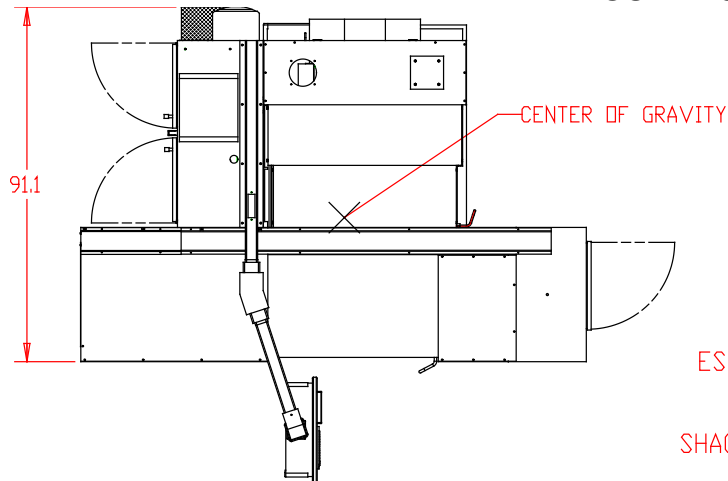
SHACKLES: 1-8 X 1.53 10,000 LBS. HOIST RING
(DGI SUPPLY - AKM789-46212)

CENTER OF GRAVITY



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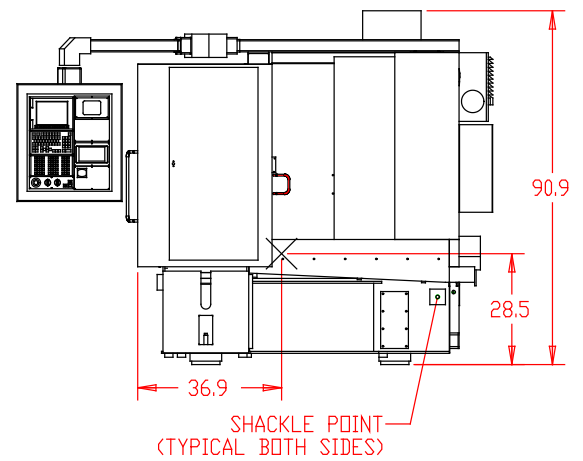
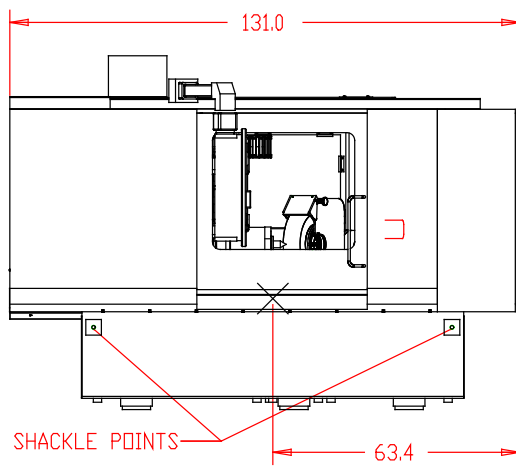
FIGURE #3



WELDON CNC GRINDER
320 ANGLED WHEEL CONFIGURATION

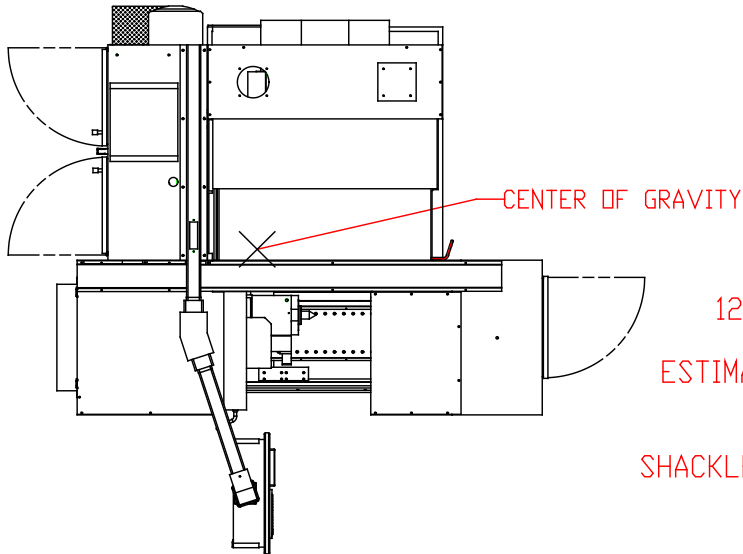
ESTIMATED SHIPPING WEIGHT - 16,000 LBS

SHACKLES: 1-8 X 1.53 10,000 LBS. HOIST RING
(DGI SUPPLY - AKM789-46212)



[Click here to view AutoCAD File.](#)

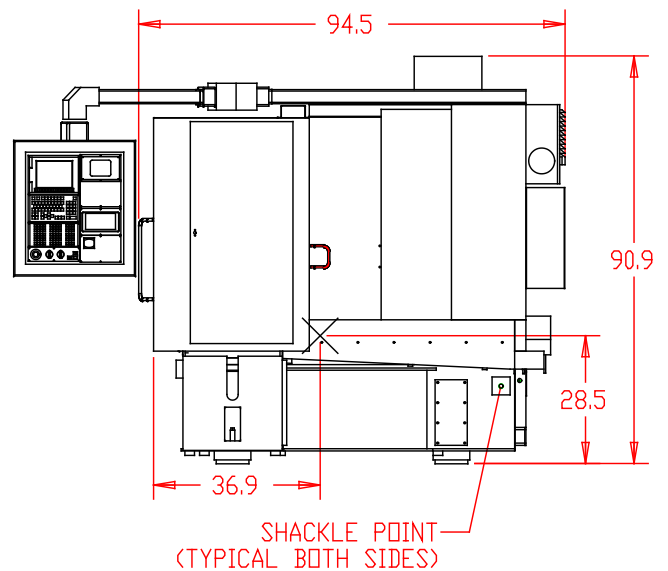
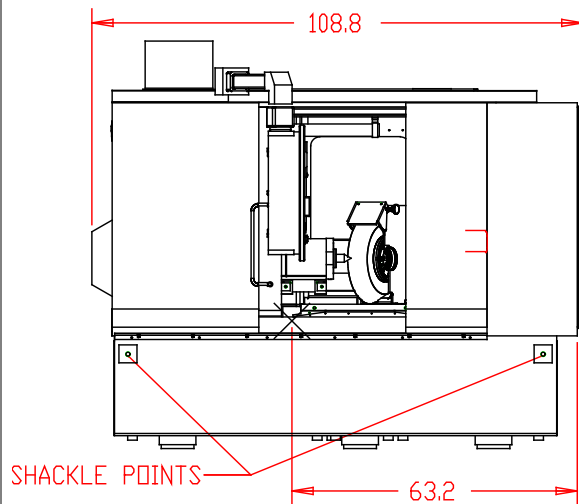
FIGURE #4



WELDON CNC GRINDER
120 ANGLED WHEEL CONFIGURATION

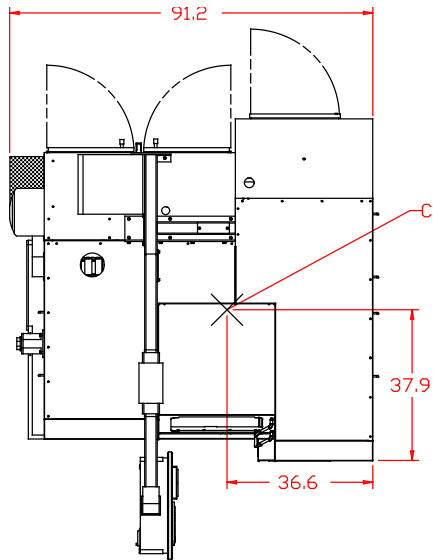
ESTIMATED SHIPPING WEIGHT - 16,000 LBS

SHACKLES: 1-8 X 1.53 10,000 LBS. HOIST RING
(DGI SUPPLY - AKM789-46212)



[Click here to view AutoCAD File.](#)

FIGURE #5

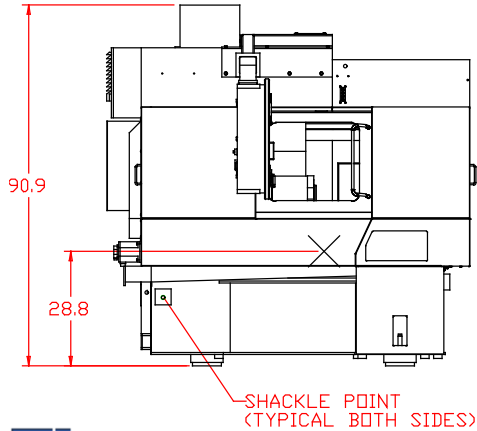


CENTER OF GRAVITY

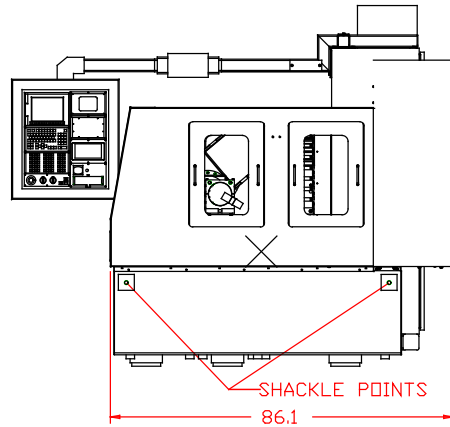
WELDON CNC GRINDER
PHOENIX MODEL

ESTIMATED SHIPPING WEIGHT - 13000 LBS.

SHACKLES: 1-8 X 1.53 10,000 LBS. HOIST RING
(DGI SUPPLY - AKM789-46212)



SHACKLE POINT
(TYPICAL BOTH SIDES)



SHACKLE POINTS



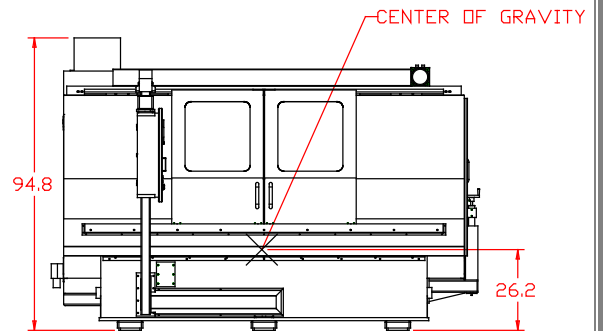
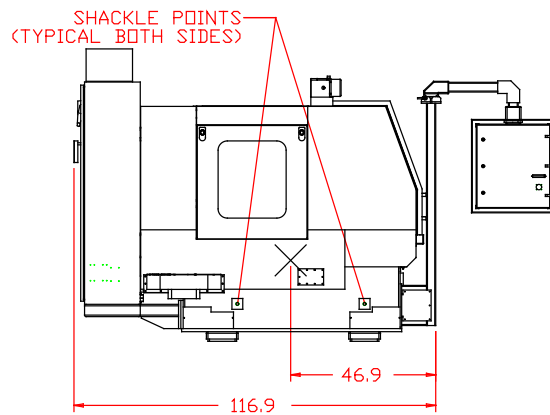
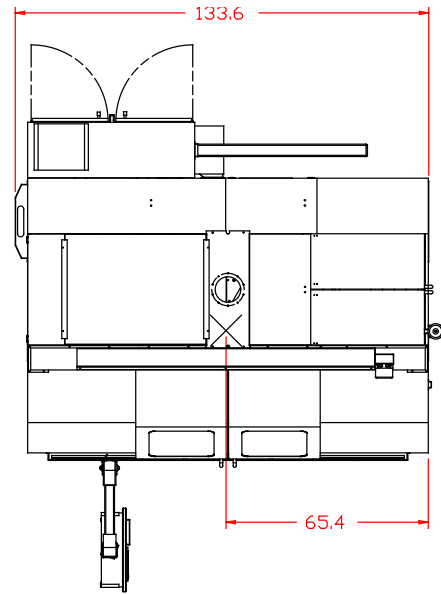
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FIGURE #6

WELDON CNC GRINDER
ALTAIRA MODEL

ESTIMATED SHIPPING WEIGHT - 23,000 LBS

SHACKLES: 1-8 X 1.53 10,000 LBS. HOIST RING
(DGI SUPPLY - AKM789-46212)



[Click here to view AutoCAD File.](#)

FIGURE #7

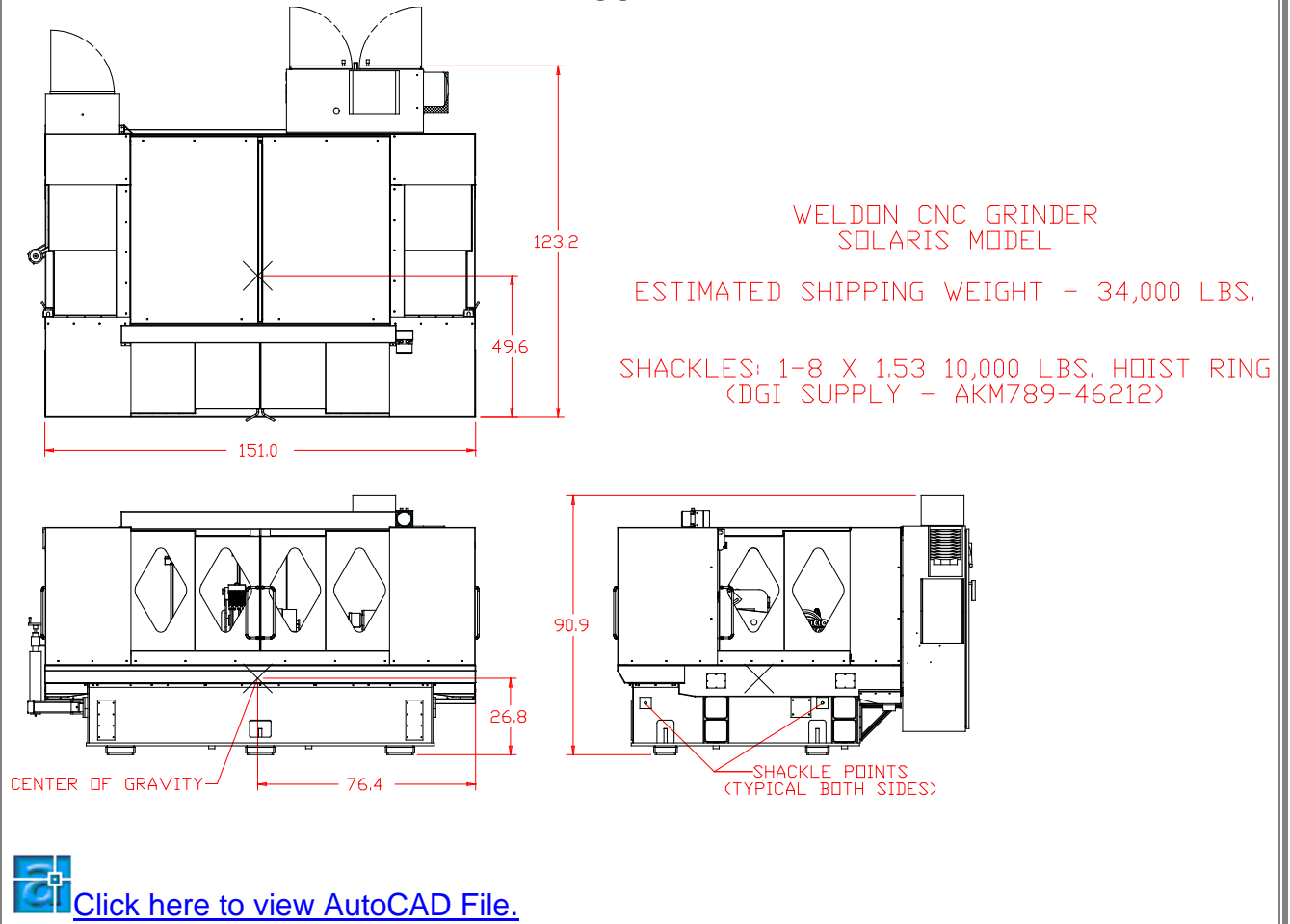
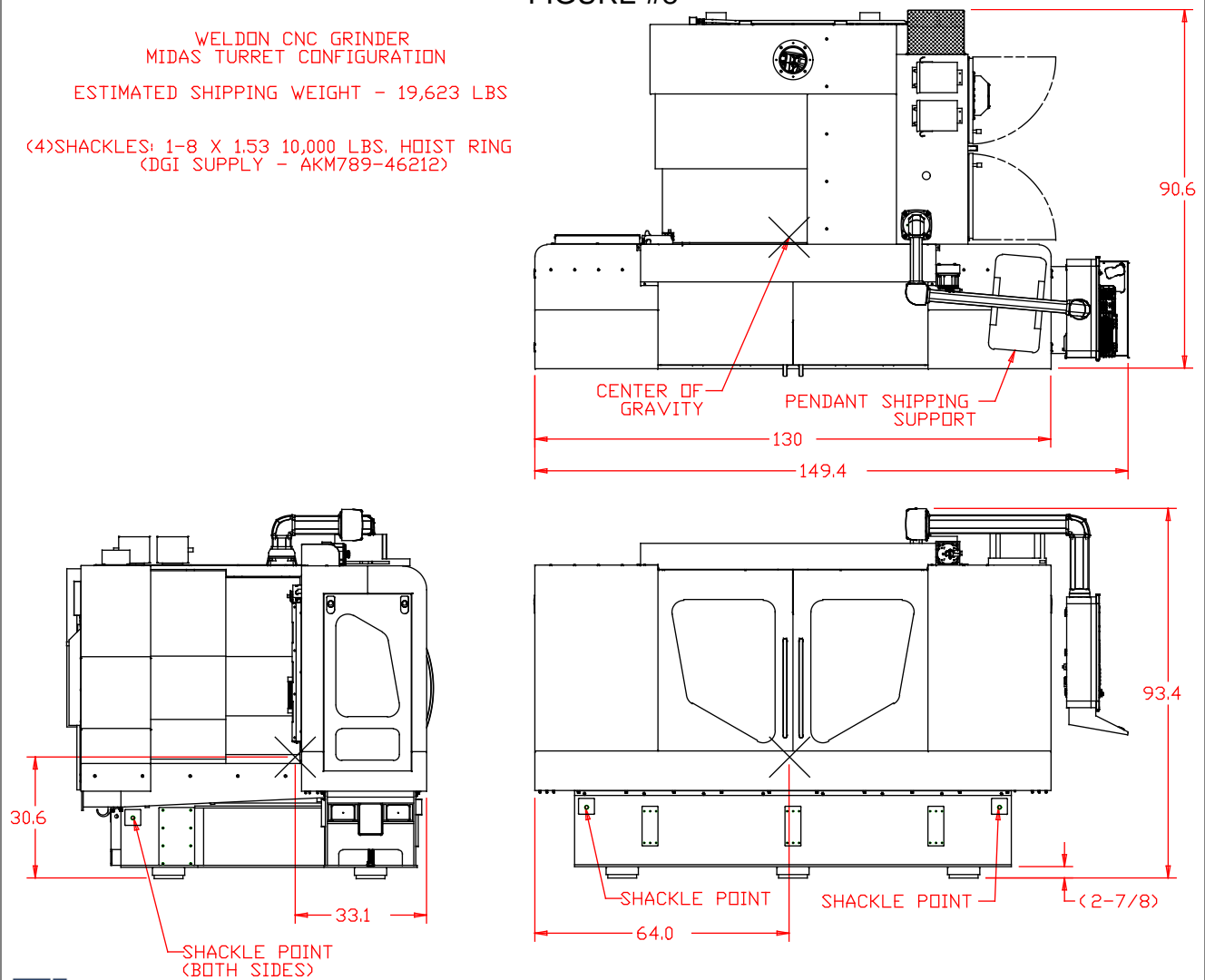


FIGURE #8

WELDON CNC GRINDER
MIDAS TURRET CONFIGURATION

ESTIMATED SHIPPING WEIGHT - 19,623 LBS

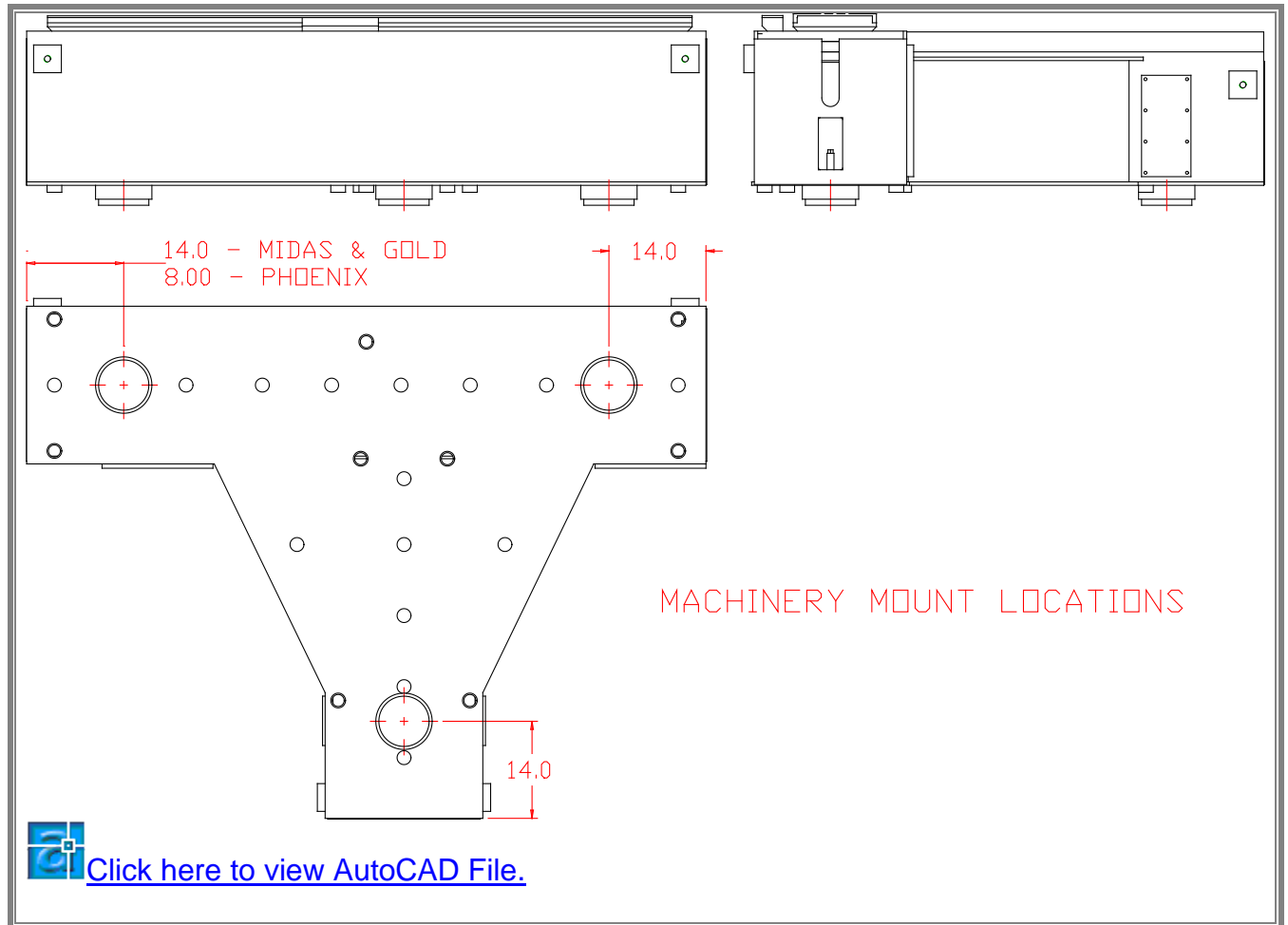
(4)SHACKLES: 1-8 X 1.53 10,000 LBS. HOIST RING
(DGI SUPPLY - AKM789-46212)



[Click here to view AutoCAD File.](#)

5) SETTING AND LEVELING MACHINE

Mounting pads have been provided with this equipment. The machine should be placed on these pads according to the layout below.



After setting, the machine should be leveled by adjusting the screws on the leveling pads. A precision level should be placed on the worktable surface for leveling.



[Click here to view VIBRO/DYNAMICS Installation and leveling instructions.](#)

The above listed file will be shown in its entirety at the end of this section for the hardcopy manual.

6) STARTUP AND SHUTDOWN PROCEDURE

Orderly machine shutdown procedure

- If machine is in operation, allow part cycle to finish.
- Press the “E-STOP” button on operator control station.
- Press the “POWER OFF” button on operator control station.
- Shut off main electrical cabinet disconnect.
- Apply company specific Lockout/Tagout methods.
- Close pneumatic safety lockout valve located in the lube cabinet.
- Apply company specific Lockout/Tagout methods.

Orderly machine startup procedure

- Remove lock from pneumatic safety lockout valve.
- Open pneumatic safety lockout valve.
- Remove lock from electrical disconnect.
- Turn on electrical disconnect.
- Press the “POWER ON” button on the operator control station.
- Wait for control to boot up.
- Pull the “E-STOP” button on the operator control station.
- Press the blue “SYSTEM RESET” button on the operator control station.

7) PREVENTATIVE MAINTENANCE CHART

WELDON GRINDER PREVENTATIVE MAINTENANCE								
	Frequency							Comments
	D A I L Y	W E E K L Y	M O N T H L Y	Q U A R T E R L Y	S I X M O N T H S	A N N U A L L Y	A R E Q U I R E D	
Machine Wash Down	X							See Section #2 & #8
Coolant Level	X							See Section #11
Telaflax Way Cover System	X							See Section #16
Grease Chuck (1 point)	X							See Section #14
Slide Lubrication System		X						See Section #10
Spindle Air/Oil Lubrication System		X						See Section #18
Coolant Concentration		X						See Section #11
Air Line Lubricator		X						See Section #13
Air Line Filters		X						See Section #9
Slide Way Covers		X						See Section #15
Slide Lubrication System Operation			X					See Section #10
Spindle Air/Oil Lubrication System Operation			X					See Section #18
Hydraulic Power Unit Operation			X					See Section #12
Hydraulic Oil Level			X					See Section #12
Coolant Pump and Solenoid			X					See Section #11
Slide Way Wipers			X					See Section #15
Air Conditioner Filter			X					See Section #19
Drive Belts - Workhead and Wheeldrive			X					Check for wear and proper tension
Fanuc Linear Motor			X					See Section #17
Hydraulic Lines				X				See Section #12
Check cables, wires, and conduits				X				See Section #20
Operator Control Panel Lights				X				See Section #20
Grease Footstock (1 point)				X				See Section #14
Wheeldrive Motor (2 points)				X				See Section #14
Grease Wheel Change Assist Device					X			See Section #14
Grease Robotic slide (4 points)					X			See Section #14
Change Memory Back-up Battery						X		See Section #20
Wheel Hub							X	Remove and clean taper on adapter and spindle
Fanuc Robot							X	Refer to Fanuc Robot Maintenance Manual

8) MACHINE WASH DOWN AND CLEANING RECOMMENDATIONS

We strongly recommend that when the operator is cleaning the grinder with a hose, he not direct the coolant into the ends of the spindles or motors. Coolant directed in this manner may penetrate the bearing seals and may result in bearing damage.

Machine Wash Down -

- 1) The bed of the machine should be monitored for contaminant buildup as often as necessary to prevent destruction or contamination of axis components. As soon as a buildup is observed, it should be flushed away with coolant. Use the supplied wash-down hose connected to the grinder coolant manifold.
- 2) After cleansing the machine with coolant, the axis should be run through a warm-up cycle. A warm-up cycle consists of running both axes several times full stroke. This helps to clear away contaminating debris and lubricates the ways and ballscrews through full travel. This should be performed prior to running production each shift of use.

Cleaning -

- 1) Machine windows should be cleaned using Windex™ or mild soap and water. Harsh chemicals or solvents can cause fogging and even loss of strength.

9) AIR LINE FILTERS

For additional information-

Refer to parts directory for schematic information on system functionality.

Component specific maintenance

- | | |
|--------------------------------|--------|
| 1) Visually inspect sight gage | Weekly |
|--------------------------------|--------|



Click here to view [Norgren F73G General-purpose filter.](#)



Click here to view [RTI coalescing filter.](#)



Click here to view [Norgren F73C coalescing filter.](#)

(Standard Equipment for grinders using Linear Glass Scales or Rotary Scales)



Click here to view [Norgren W74 Desiccant Air Dryer.](#)

(Standard Equipment for Midas Turret, A/S2 and A/S3 Series Grinders)

The above listed files will be shown in their entirety at the end of this section for the hardcopy manual.

10) SLIDE LUBRICATION SYSTEM

For additional information-

Refer to parts directory for schematic information on system functionality.



Click here to view "[Modular pumping packages - operation and service.](#)"

(Used on Phoenix, Altaira, Solaris and Midas Grinders)



Click here to view "[Graco G1 Lubrication Pump - operation and service.](#)"

(Used on Midas Turret, A/S2 and A/S3 Series Grinders)



Click here to view "[MSP modular divider valves.](#)"



Click here to view "[MJ series divider valves.](#)"



Click here to view "[Locating blockage in series-flo systems.](#)"



Click here to view "[How to remove air from a Trabon system.](#)"

The above listed files will be shown in their entirety at the end of this section for the hardcopy manual.

Component specific maintenance

- | | |
|-------------------------------|---------|
| 1) Check fluid level | Weekly |
| 2) Check for proper operation | Monthly |

Use a premium quality oil equivalent to those listed below.

It is essential that any oil substitute will have oil tackifiers and extreme pressure additives.

(Factory lubricant) Shell Tonna V68

Typical ISO VG 68 Oil Properties			
	Shell Tonna V68	Mobil SHC 626	Castrol Tribol 1066/68
Product Code	66518		
Specific Gravity, ASTM D 1298 @ 15.6°C/60°F	28.8 (note 1)	0.86 (note 2)	0.88
Viscosity, ASTM D 445			
cSt @ 40°C	68.3	66.0	68
cSt @ 100°C	8.94	10.3	8.97
Viscosity Index, ASTM D 2270	105	144	106
Pour Point, °C (°F), ASTM D 97, max.		-48(-54.4)	
Flash Point, °C (°F), ASTM D 92, min.	216(420)	231(448)	232(450)
Rust Protection, Sea Water, ASTM D 665	Pass	Pass	
Copper Strip Corrosion, ASTM D 130	1B	1B (note 3)	1A (note 4)
Frictional Test, CM Stick Slip D 2877	0.8		
4-Ball Weld Load, kg, ASTM D 2783			200

Notes-

- (1) Specific gravity measured to API (American Petroleum Institute) standards.
- (2) Specific gravity measured to ASTM D4052, 15°C/15°C
- (3) Corrosion test based on 24 hours at 121°C.
- (4) Corrosion test based on 3 hours at 100°C.

11) COOLANT SYSTEM

For additional information-

Refer to the supplied Coolant filtration system manual

Refer to parts directory for schematic information on system functionality.

Component specific maintenance

- | | |
|--------------------------------------|-------------|
| 1) Check level | Daily |
| 2) Check concentration | Weekly |
| 3) Check pump and solenoid operation | Monthly |
| 4) Drain, flush and refill | As Required |

12) HYDRAULIC POWER UNIT (OPTIONAL EQUIPMENT)

For additional information-

Refer to the supplied hydraulic power unit manual

Refer to parts directory for schematic information on system functionality.

Component specific maintenance

- | | |
|-----------------------------------|-----------------|
| 1) Check for proper operation. | Monthly |
| 2) Check lines for wear or leaks. | Quarterly |
| Replace or repair as required. | |
| See note below. | |
| 3) Check oil level. | Quarterly |
| 4) Replace filter. | Check Indicator |

Note- All Hose assembly component information can be found in the "Parts Directory". See drawing titled "Hose Assemblies".

Use a premium quality (anti-wear) hydraulic oil

(Factory preferred lubricant) Mobil DTE 25

(Equivalent) CITGO AW 46

Characteristics of Mobil DTE 25	
Product Number	60263-1
98 CMCS Code (Drum)	98041E
Specific Gravity	0.876
Pour Point, °C (°F), max	-18 (0)
Flash Point, °C (°F), min	200 (392)
Viscosity	
cSt at 40°C	46
cSt at 100°C	6.7
SUS at 100°F	238
SUS at 210°F	49
ISO Viscosity Grade	46
Viscosity Index	95
Rust Protection, ASTM D 665, A & B	Pass
Color, ASTM D1500, max	4.0
FZG Gear Test Stages Passed DIN 51534	12

13) AIR LINE LUBRICATOR (OPTIONAL EQUIPMENT)

For additional information-

Refer to parts directory for schematic information on system functionality.

Component specific maintenance

1) Check fluid level

Weekly

(Factory preferred lubricant)

Mobil Velocite No. 6

Characteristics of Mobil Velocite* Oil No. 6	
Product Number	60066-8
Gravity, API	36.1
Pour, °C (°F), max	0 (32)
Flash, °C (°F), min	154 (309)
Viscosity	
cSt at 40°C	9.6
cSt at 100°C	2.6
SUS at 100°F	62
SUS at 210°F	37
ISO VG	10
Viscosity Index	95
Color, ASTM D 1500	1.0
Rust Protection, ASTM D 665	Pass

14) GREASE LUBRICATION

Grease Packed Bearings

Sealed bearings do not require maintenance lubrication.

In the event the bearings are removed or replaced, use KluberPlex Isoflex NCA 15.

General Greasing

Chuck Lubrication (1 point)	Daily
Grease Footstock (1 point)	3 Months
Grease Wheeldrive Motor (2 points)	3 Months
Grease Robotic slide (4 points) (OPTIONAL EQUIPMENT)	Six Months
Loader – Front Top Automatic Door (4 points) (OPTIONAL)	Six Months

(Factory preferred lubricant) Mobil XHP 222 Special

Characteristics of Mobil XHP 222 Special	
NLGI Grade	2
Thickener Type	Li-complex
Color	Grey-Black
Penetration, Worked, 25° C, ASTM D 217	280
Dropping Point, °C, ASTM D 2265	280
Viscosity of Oil	
cSt at 40°	220
4-Ball Wear Test, ASTM D 2266, Scar, mm	0.5
4-Ball Weld Load, ASTM D 2509, Kg	315
Timken OK Load, ASTM D 2509, lb	45
Bomb Oxidation, ASTM D 942, Pressure drop at 100 hrs, kPa	35
Corrosion Prevention, ASTM D 1743	Pass
Rust Protection, IP 220, Distilled Water	0-0
Water Spray Resistance, ASTM D4049	15%

15) WAY COVERS & WAY WIPERS

Way covers -

Component specific maintenance

- | | |
|--|--------|
| 1) Check for wear, holes and tears
Replace as required. | Weekly |
|--|--------|

Way wipers -

Component specific maintenance

- | | |
|---|---------|
| 1) Check for proper wiping action
Replace as required. | Monthly |
|---|---------|

EFFECTS OF CHLORINE ON COVERS AND WIPERS

Good service may be expected in coolant with up to 3% chlorine. Service life will drop off when the chlorine concentration is increased. Boots, wipers and covers must be inspected frequently when chlorine is used.

16) TELAFLEX SYSTEM (OPTIONAL EQUIPMENT)

STEEL TELESCOPING WAY COVER SYSTEM

For additional information –

Refer to the supplied Telaflex maintenance and assembly manual



Click here to view "[Preventative Maintenance and Assembly of Telaflex Covers](#)"

The above listed file will be shown in its entirety at the end of this section for the hardcopy manual.

Component specific maintenance

- | | |
|---|---|
| 1) Inspect for dents or external damage. | Daily |
| 2) Remove chips and debris with coolant wash. (Do not use an air hose!) | Daily |
| 3) Remove and clean individual cover sections inside and out. | Quarterly (or every 2000 operation hours) |
| Replace wipers as needed. | |

17) LINEAR MOTOR (OPTIONAL EQUIPMENT)

For additional information –

Refer to the supplied Fanuc Linear Motor LiS Series Manual – Maintenance Section



Click here to view "[Fanuc Linear Motor LiS Series Manual](#)"

Component specific maintenance

- | | |
|---|---------|
| 1) Inspect the external view of the coil slider | Monthly |
| 2) Inspect the external view of the magnet plate | Monthly |
| 3) Remove the covers and clean out any coolant, oil, swarf, or debris | Monthly |
| 4) Remove any magnetic dust from the magnet plate | Monthly |
| 5) Remove any oil from the magnet plate | Monthly |

Failure to remove contaminants will result in damage to the linear motor! This will affect performance and may require the replacement of components.

Note: For the first three months continue on a monthly maintenance schedule. After three months, if there is consistently no contaminant build up, or very little contaminant build up, you can move to a quarterly maintenance schedule.

18) SPINDLE AIR/OIL LUBRICATION SYSTEM (OPTIONAL EQUIPMENT)

For additional information-

Refer to the supplied operating manual

Refer to parts directory for schematic information on system functionality.



Click here to view "[Lube Corporation AMO-II-150S Instruction Manual](#)"
(Used on Phoenix, Altaira, Solaris and Midas Grinders)



Click here to view "[Lube Corporation Mixing Valve Instruction Manual](#)"
(Used on Phoenix, Altaira, Solaris and Midas Grinders)



Click here to view "[Bijur - Surefire-II Instruction Manual](#)"
(Used on Midas Turret, A/S2 and A/S3 Series Grinders)



Click here to view "[Bijur - Air-Oil Injector Block](#)"
(Used on Midas Turret, A/S2 and A/S3 Series Grinders)

Component specific maintenance

- | | |
|-------------------------------|---------|
| 1) Check fluid level | Weekly |
| 2) Check for proper operation | Monthly |

Use a premium quality (anti-wear) hydraulic oil
(Factory preferred lubricant) Mobil DTE 24

Characteristics of Mobil DTE 24	
Product Number	60262-3
98 CMCS Code (Drum)	98020E
Specific Gravity	0.871
Pour Point, °C (°F), max	-18 (0)
Flash Point, °C (°F), min	200 (392)
Viscosity	
cSt at 40°C	32
cSt at 100°C	5.3
SUS at 100°F	165
SUS at 210°F	44
ISO Viscosity Grade	32
Viscosity Index	95
Rust Protection, ASTM D 665, A & B	Pass
Color, ASTM D1500, max	3.5
FZG Gear Test Stages Passed DIN 51534	12

19) AIR CONDITIONER

For additional information, refer to the supplied air conditioner manual



Click here to view "[Hoffman nVent Air Conditioner Instruction Manual](#)"
(Used on Phoenix, Altaira, Solaris and Midas Grinders)



Click here to view "[ACT - HSC Heat Sink Cooler Instruction Manual](#)"
(Used on Midas Turret, A/S2 and A/S3 Series Grinders)



Click here to view "[ACT - HSC Heat Pipe Cooler Instruction Manual](#)"
(Used on Midas Turret Grinder S/N 1057 only)

Component specific maintenance

- | | |
|--|---------|
| 1) Remove, clean and/or replace filter | Monthly |
|--|---------|

20) ELECTRICAL SYSTEM

Component specific maintenance

- 1) Check cables, wires and conduits inside the machine for wear Quarterly
- 2) Check if operator control panel lights are working Quarterly

Tip- while in Manual Mode, Push and hold **CLEAR** and **SYSTEM RESET** buttons together and all lights will illuminate.

- 3) Change batteries on memory backup: Annually
(NOTE: Control must be powered up.)