ROMI®

EZPATHS

CNC LATHE

INSTALLATION, MAINTENANCE
PARTS MANUAL
& ELETRICAL DIAGRAMS

R74213B

Sales and service by

Bridgeport

Bridgeport Machines, Inc
500 Lindley Street
Bridgeport, Conn. 06606
Call 1-800-243-4292 (In CT.1-800-972-4093)

ROMI®

EZPATHS

BRIDGEPORT DX-32R CONTROL

CNC LATHE

Way Lube ONG-68

00254557

HEAD stock ONH-68

SERIAL NUMBER _____

CUSTOMER _____

ATTENTION

This Manual is intended to help you by providing specifics instructions for the correct installation and maintenance of the Machine.
Read carefully and apply these instructions.
Any doubts can be clarified by contacting our technical department.

R74213B

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INITIAL STEPS

FOUNDATION

Prepare the foundation according to the layout and plan illustrated in this Manual.
Instructions for anchoring and leveling process are included in the Manual furnished with each new machine and they should be strictly followed.

ANCHORING

For better results in the utilization of the lathe and to avoid vibrations during operation, it is essential that the foundation is made of reinforced concrete.
The foundation plan shows in detail the overall space required for the machine as well as locations and dimensions of leveling screws.

ELECTRICAL CONNECTIONS

Prepare the suitable electrical connections in accordance with instructions in this Manual. If electrical power is not sufficient for the machine, serious and unexpected malfunction problems may occur. It may result in dangerous operation and cause a reduction in the electrical components useful life. Therefore, it is very important to take all the necessary care and make sure that the machine is connected to a suitable power source and that it operates under the same conditions of the plant power.

TOOLING

Prepare all cutting tools and respective interchangeable inserts for machining workpieces. Any doubts can be clarified by contacting our technical department or the tool manufacturers directly.

FIXTURES

Prepare special jaws or devices in case the workpieces can not be held on the machine chuck. This Manual illustrates the chuck suitable for the machine as well as the drawing and specifications for the spindle nose in case any special fixture has to be adapted.

IMPORTANT

Read the manuals sent with the machine carefully before operating it.
Make sure you understand the information contained there. In case you have any doubts report it to the nearest distributor.

RECOMMENDED INSTALLATION CONDITIONS

The recommended steps to follow when installing the machine are provided in the following pages.

* Surrounding temperature : Minimum: 10ºC (50 °F)
  Maximum: 30ºC (86 °F)

* Maximum relative humidity: 75%, non condensing

IMPORTANT

* Do not install the machine in places exposed to sun rays, near heat sources or subject to high temperature variation.

* Do not install the machine in places subject to dust or corrosive and acid gases harmful to the machine.

* Do not install the machine in places subject to excessive vibration.
  In case the machine has to be installed near a vibration generating equip ment, isolation materials should surround the foundation or any other method should be used to protect the machine.

PNEUMÁTIC POWER UNIT

When yhe machine is equiped with the pneumátic operated tailstock quill, is necessary a pneumátic power unit:

Pressure: 85 PSI (6 Kgf/cm²)

Consumption: 13 GPM (50 l/min.)

T = 22 C°

ELECTRICAL INSTALLATION

If electrical power is not sufficient for the machine, serious and unexpected malfunction problems may occur, it may result in dangerous operation and cause a reduction in the electrical components useful life. Therefore, it is very important to take all the necessary care and make sure that the machine is connected to a suitable power source and that it operates under the same conditions of the plant power.

POWER INPUT

Prepare an individual branch circuit for each CNC machine. Conductors and branch circuit protection elements should be selected in accordance with the table 1 below.

TABLE 1 - Machine Electrical Data

TRANSFORMER T1 CONNECTIONS		
TERMINAL	VOLTAGE	AMPS
H1	200/210	57/55
H2	220/230	52/50
H3	240/250	48/46
H4	360/380	32/30
H5	420/440	27/26
H6	440/460	26/25
H7	460/480	25/24

CLIENT RAMIFICATION INPUT LINE:

MACHINE LATHE	POWER (KVA)	VOLTAGE (VAC)	CURRENT (A)	CB-1 AJUST	WIRES GAGES (AWG)
EZ_PATH I V2.0	14	230	35	36	9
		380	21	22.5	11 *
		420	19	20	11
		460	17	20	11

FOR 200/250 VAC USE A 32/40 AMP DISCONNECT (CB-1)
FOR 360/480 VAC USE A 20/25 AMP DISCONNECT (CB-1)

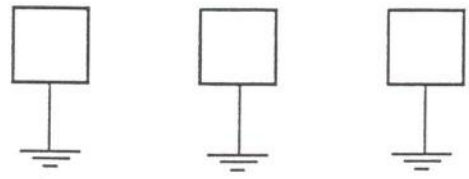
Cable size is determined in accordance with cable admissible current. Once it is defined the length of the branch circuit cable that will supply power to the machine, the power supply shall also be defined in accordance with power variations.

GROUNDING

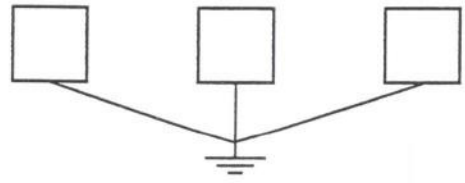
Prepare exclusive grounding for CNC machines with resistance lower than or equal to five (5) ohms, rated according to installed power. If there is more than one CNC machine, the same grounding can be used provided that independent grounding conductors are used for the connection.

Grounding should be as close as possible to the machine. In case it has to be far from the machine, avoid installing overhead, or close to the machine power input line or any other power input lines. To determine protection conductor minimum size, use table II.

Independent Grounding (correct)



Parallel Grounding (correct)



CAUTION ! :

Grounding in Series (**Never make this type !**)

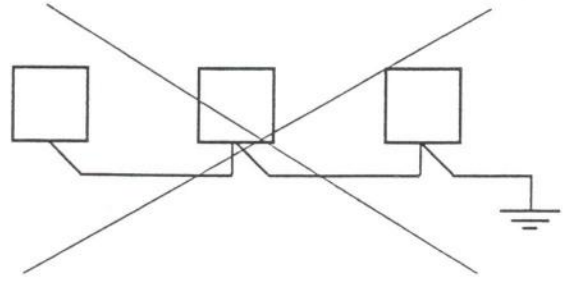


Table 2 - Protection conductors minimum section

Phase Conductors (AWG)	Grounding Conductor (AWG)
S > 6	S
2 < S < 6	6
S < 2	2·S

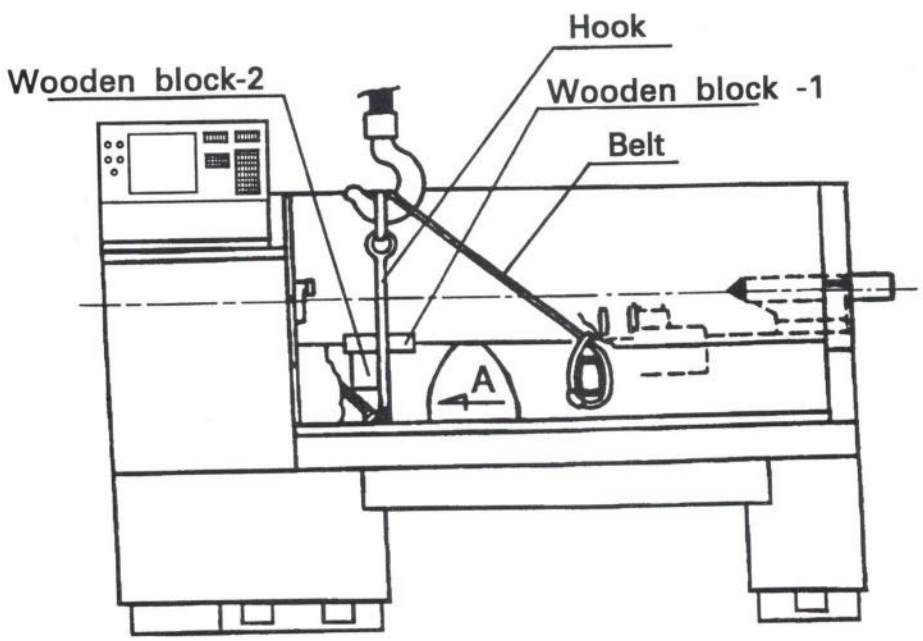
TRANSPORTATION

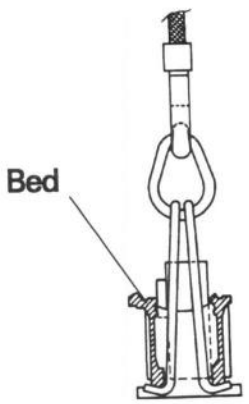
When transporting or lifting the machine take special care to avoid collision between its components and between the machine and other equipment. Any collision may cause damage to parts and components as well as misalignment of its precision components.
Instructions for safe lifting and transporting of the machine are described below and they should be strictly followed to avoid damage to the machine and injuring people.

TRANSPORTATION INSTRUCTIONS

Before moving and lifting the machine, the following instructions should be followed.

1 - Put clamp the saddle/cross carriage and tailstock at the bed right side.
2 - Disconnect and remove the coolant system unit.
3 - Close and lock front sliding splash guard, electrical panel door and control panel to avoid any movement during lifting and transportation.
4 - Put the wooden blocks as show the figure (1) for ensure the machine balance at the lifting operation and to avoid damages on the bed.
5 - Before make the machine transporting be right that the machine is balanced, lifting it carefully to avoid colisions.
After following the above instructions, lifting and transportation are as shown in fig.(1).





SECTION "A"

MACHINE WEIGHT:
4,410 Lb (2,000 Kgf)

Fig. 1 - Machine transportation

Fig. 2 - Hook Assembly

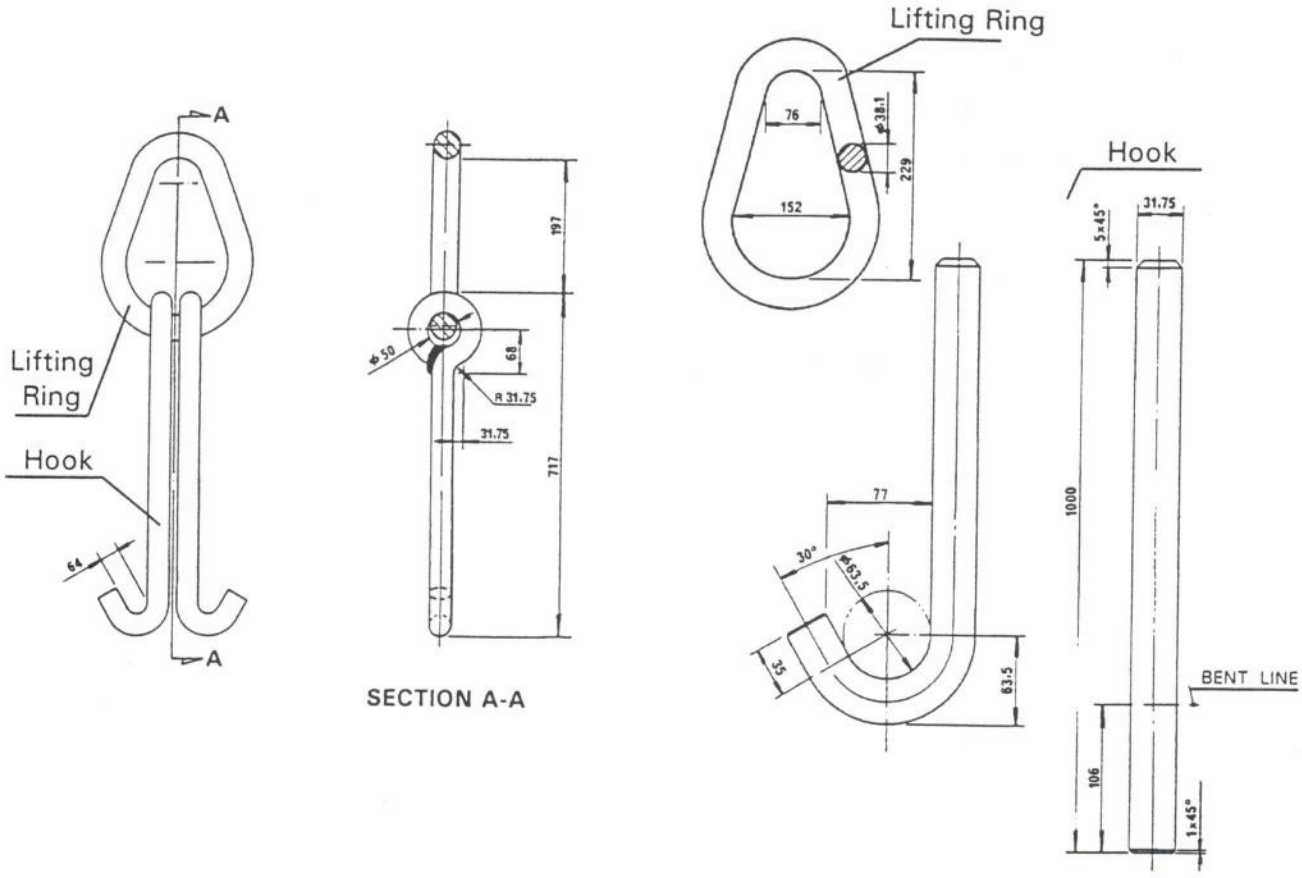
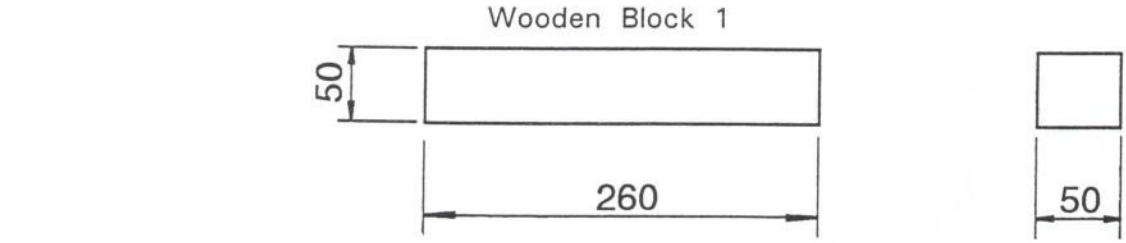
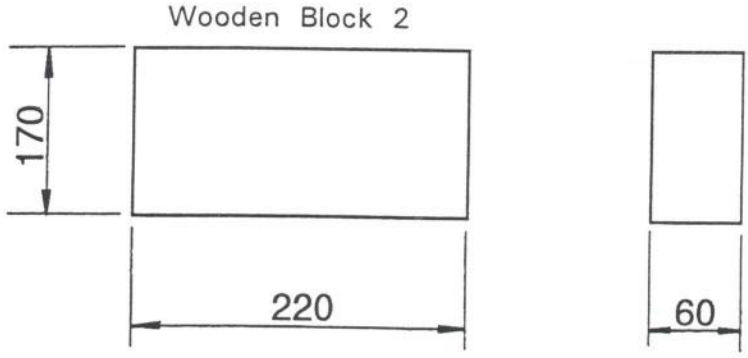


Fig. 2 - Wooden Blocks





(dimentions in mm)

CLEANING

When the machine is received and before operating it or moving any sliding component, remove protective grease, slush, dirt and grit from all protected surfaces using kerosene, then lubricate them thoroughly with lubricating oil ONG-68.

IMPORTANT

* Do not use cellulose base solvent as it may damage painted surfaces.

* Never move saddle or tailstock before their guideways are thoroughly cleaned and lubricated.

LUBRICATION

The EZPATH S lathe incorporates a central lubricating unit that automatically lubricates guideways, ballscrews and tailstock quill.
The recommended lubricating oil is ONG - 68 .

IMPORTANT

The machine is sent with filled up reservoirs of the automatic lubricating unit, therefore, there is no need to add oil for initial operation.
For more information see the Maintenance Manual.

ANCHORING

Choose a plane and leveled place to install the machine.
To avoid places near of vibrant equipaments, heat fountain, place exposed directly to the sun ray, or wet places.
Depending of floor quality, it is necessary to make a base with concrete and stones.
For the machine fixing and achoring, the costumer need to make the square cavities on the floor, as showed at the foundation plant, where will be fixed the fixing screws with hight quality concrete and expansive material type "sik-grouth" or similar.

OBSERVATIONS

. If the machine will be afected by vibration from another equipaments, provide using specifics devices against vibration.

. The installation place needs to be roomy considering machine maintenance

POSITIONING AND PRE-LEVELING

1. To positioning the machine over the fundation, making the leveling screws to coincide with the square cavities on the floor.

2. After the machine supported on the right position install the fixing screws (showed on the foundation plant).

3. Fill the square cavities of the fixing screws with concrete and wait 72 hour for drying after to make a final leveling.

4. Make the final leveling.

FLOOR SPACE REQUIRED AND FOUNDATION PLANT FOR MACHINE INSTALLATION.

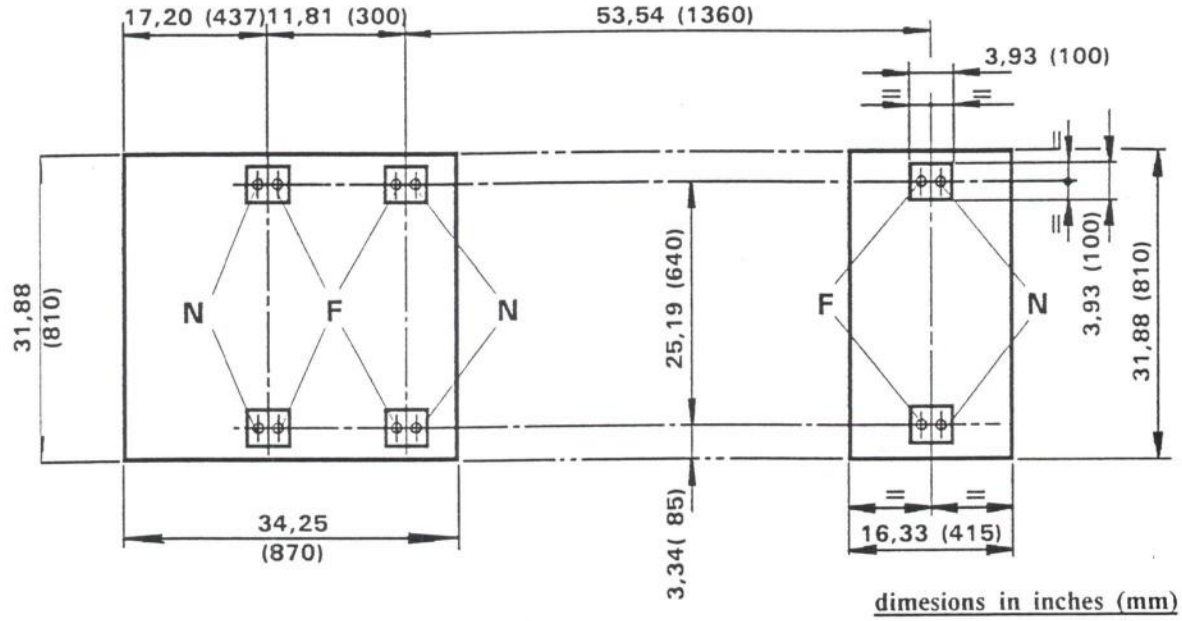
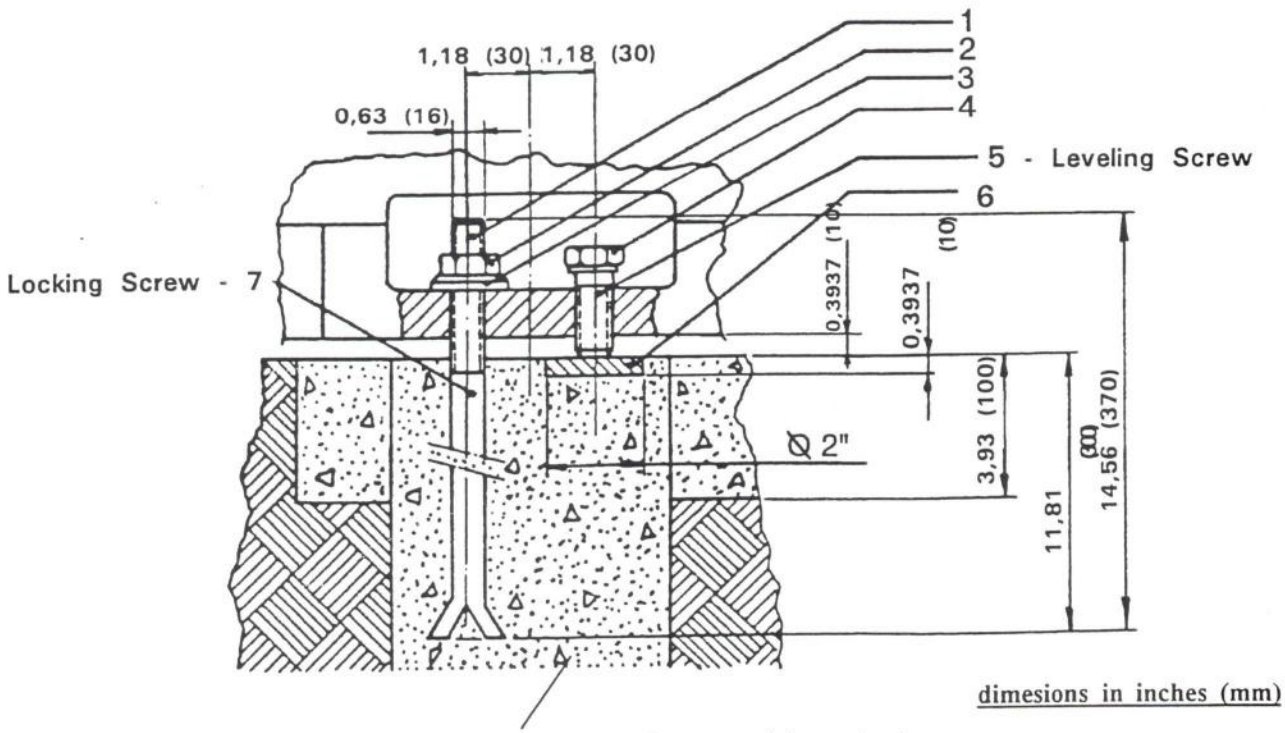


Fig. 4 - Foundation Plant



Fill with concrete after machine placing

Fig. 5 - Fixing and Leveling Screw

NOTA: The itens 1, 2, 3, 4 , 6 e 7 are not supplyed with machine

MACHINE LAYOUT

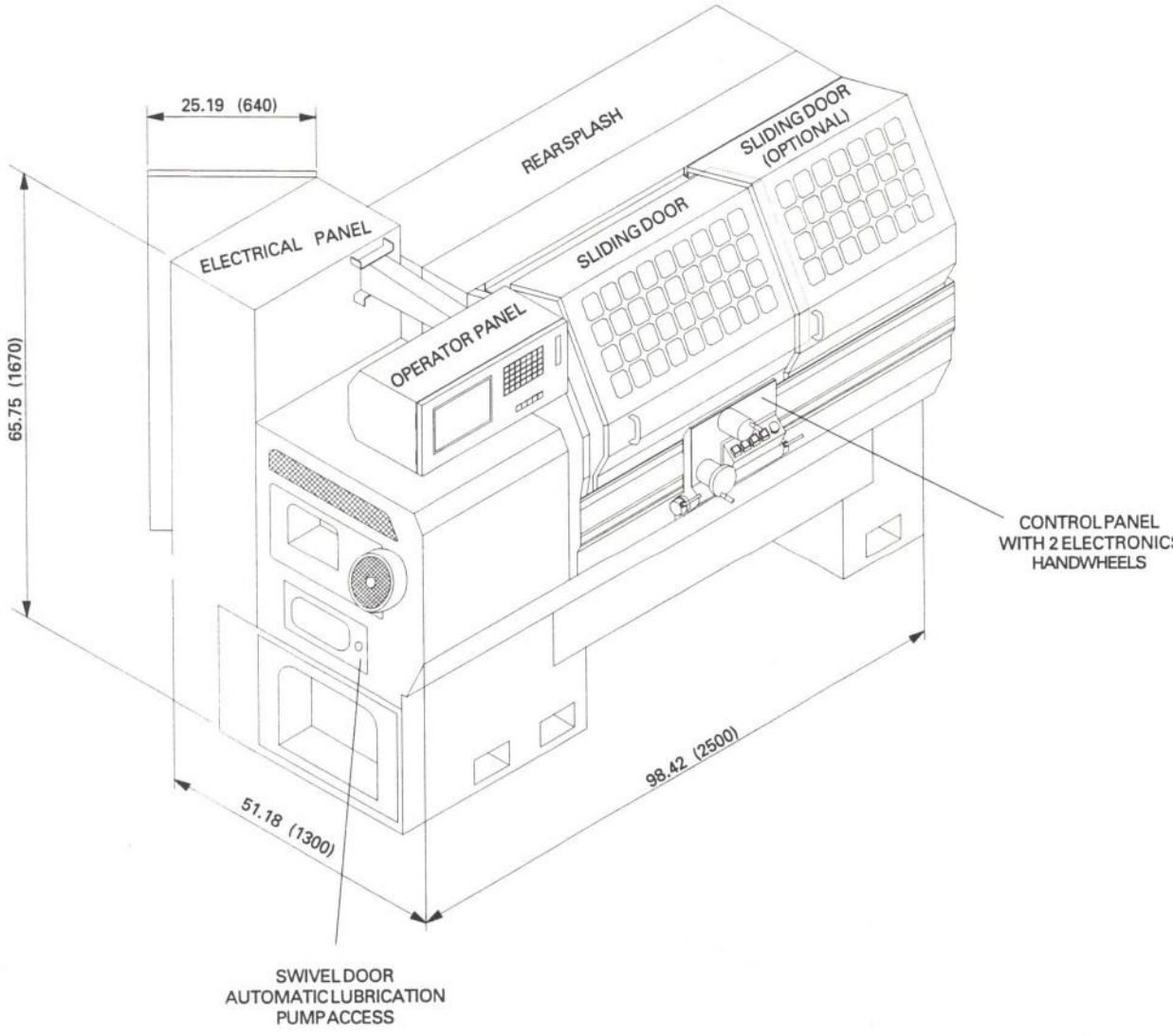


Fig. 6 - Machine Layout - dimensions in inches (mm)

LEVELING

The precision, rigidity and durability of the lathe depends on careful leveling.
Our final inspection tests can only be repeated when the lathe is correctly leveled. It is not nececessary that the bed guideways are longitudinally and transversally leveled, however, any level difference must be uniform along the bed in lathe directions mentioned above. Therefore, transversal leveling readings must be equal between themselves, and longitudinal readings must also be equal between themselves. For perfect leveling check, use two precision levels graduated to at least 0.02mm per meter (0.00025" per feet), assuring that the level difference is smaller than 0.04 mm(0.00050") for transversal and longitudinal levelling.
The leveling should be carried out according to the following procedure:

a) Loosen nuts (1);
b) Through levelling screw (2) obtain proper levelling, checking longitudinal level ling on positions (B), (C) and (D) and transversal levelling on positions (A) and (E).
c) Once nuts (1) are tightened, check again levelling and correct any errors.

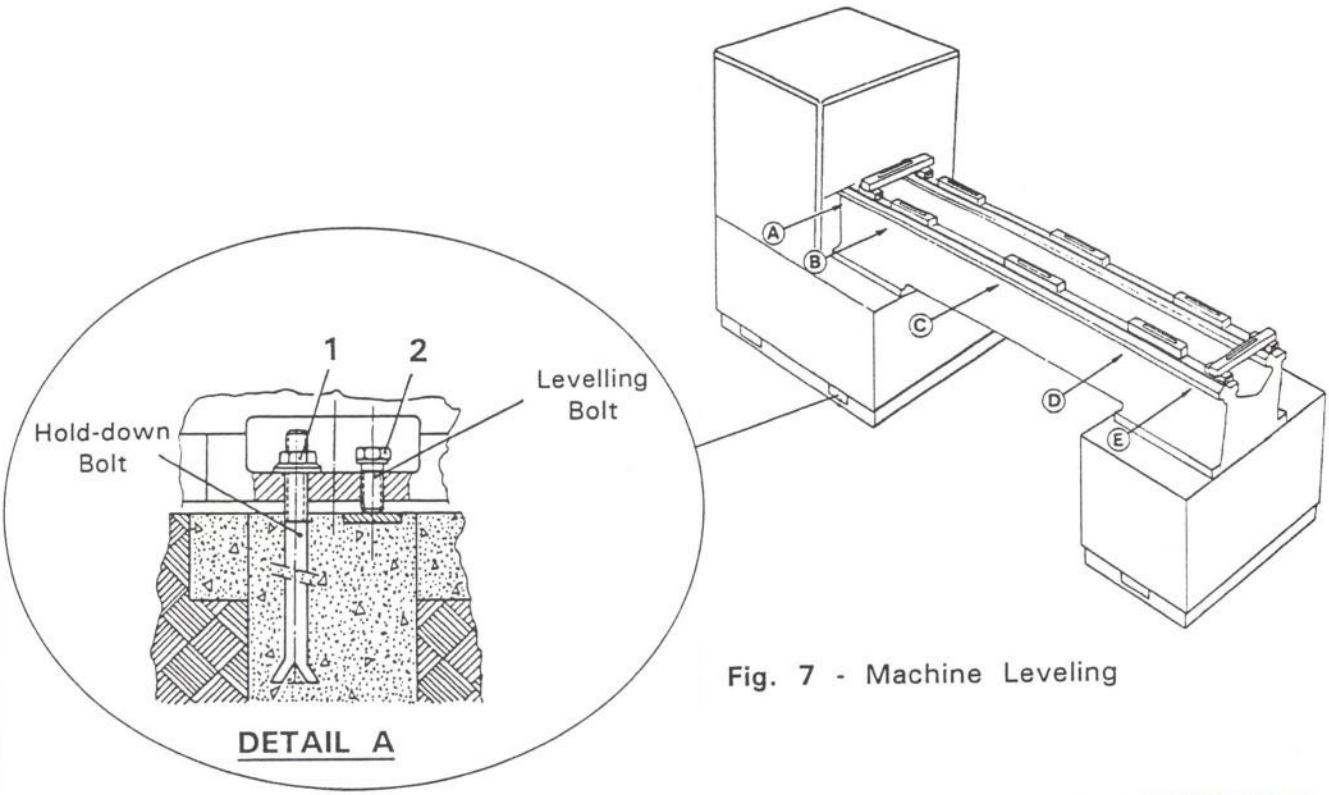


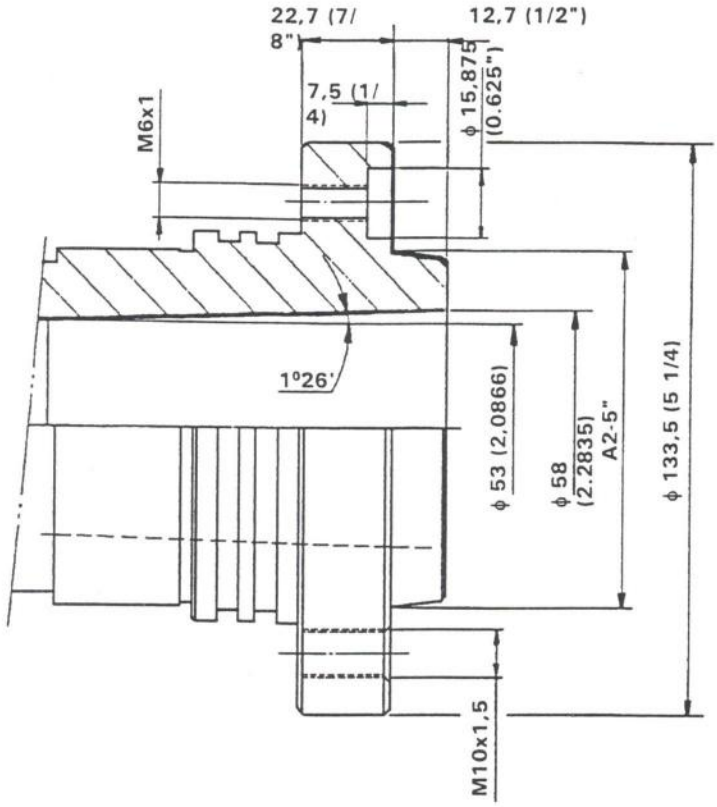
Fig. 7 - Machine Leveling

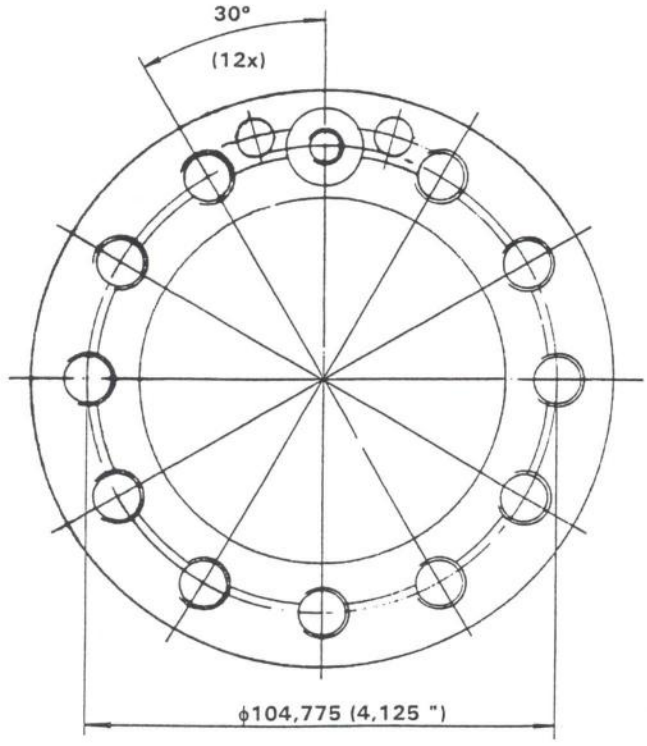
IMPORTANT

* After the first working week check leveling to verify the soundness of the foundation.
* Leveling needs to be checked every six months to maintain the machine in good working conditions.

SPINDLE NOSE

Fig. 8 - Spindle Nose - ASA A2-5"

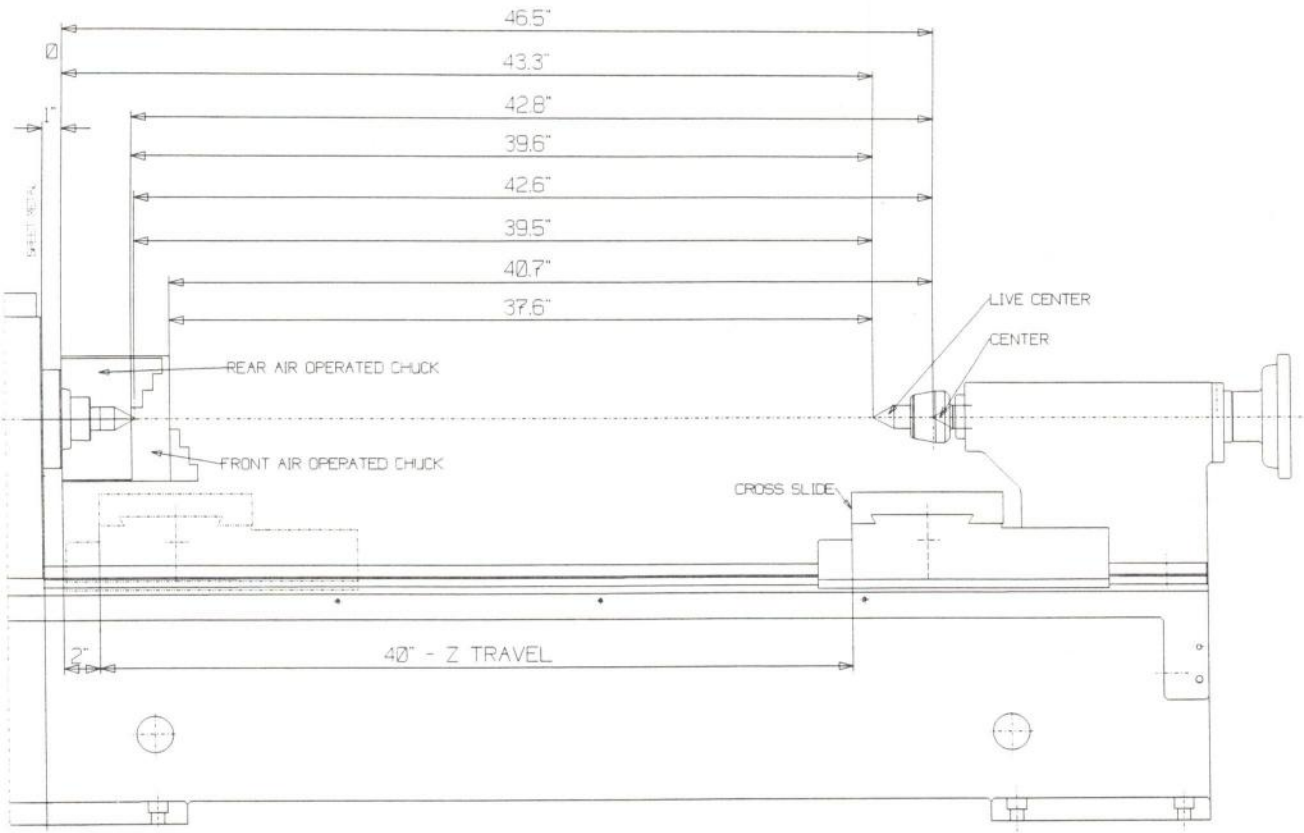


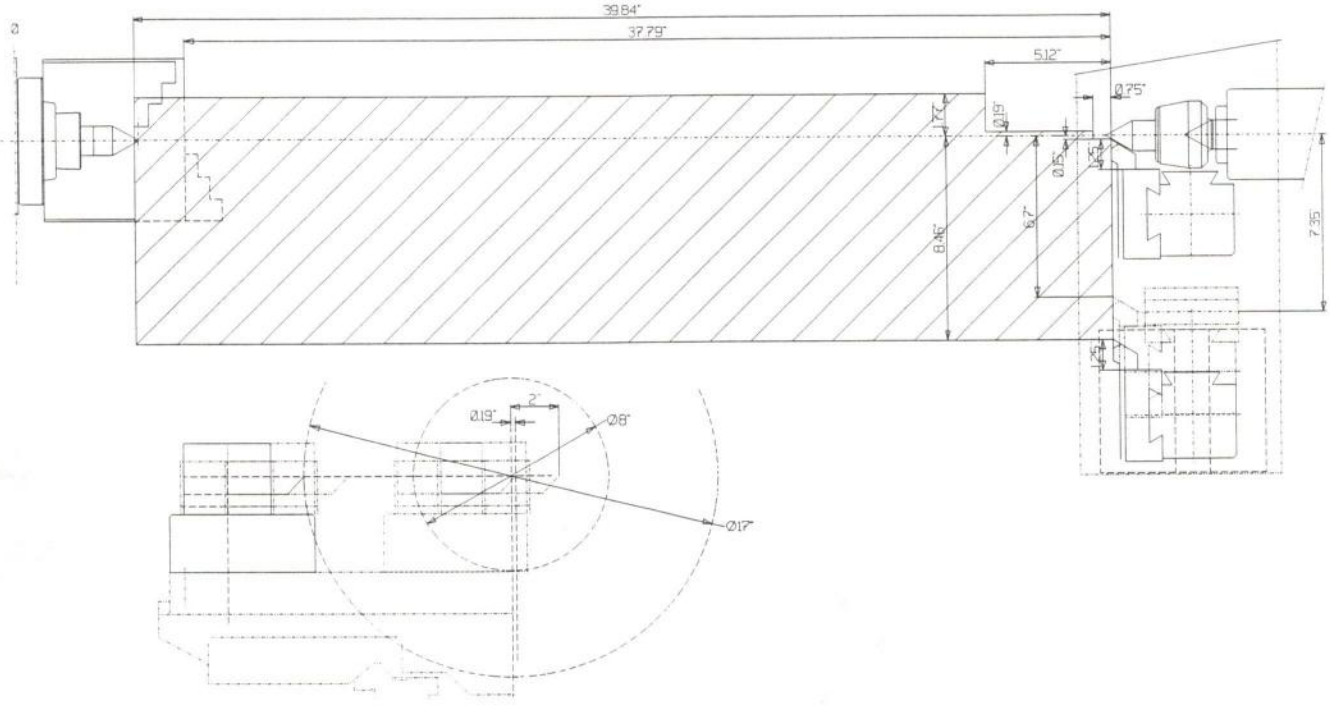


TECHNICAL SPECIFICATIONS

		mm	inch
CAPACITY			
Height of centers		215	8.46
Distance between centers		1000	40
Swing over bed		431	17
Swing over cross slide		203	8
Swing over carriage wings		400	15.75
BED			
Width		304	12
Height		332	13.1
HEADSTOCK			
Spindle nose		ASA	A2-5"
Hole diameter through spindle		53	2.08
Range of spindle speeds	rpm	25 to 4000	
RANGE I	rpm	25 to 1000	
RANGE II	rpm	100 to 4000	
FEEDS			
(Z AXIS)			
Longitudinal rapid traverse	in/min	394	
	mm/min	10000	
(X AXIS)			
Cross rapid traverse	in/min	295	
	mm/min	7500	
TAILSTOCK			
Maximum quill travel		120	4.7
Quill diameter		60	2.36
Quill taper hole	MT	4	
MOTOR			
Main motor	Hp	7.5	
DIMENSIONS AND WEIGHTS			
Floor space required (approx)		1300 X 2500	51.18 X 98.42
Approximate net weight	lbs	4,410 (2,000Kg)	

WORKING LAYOUT





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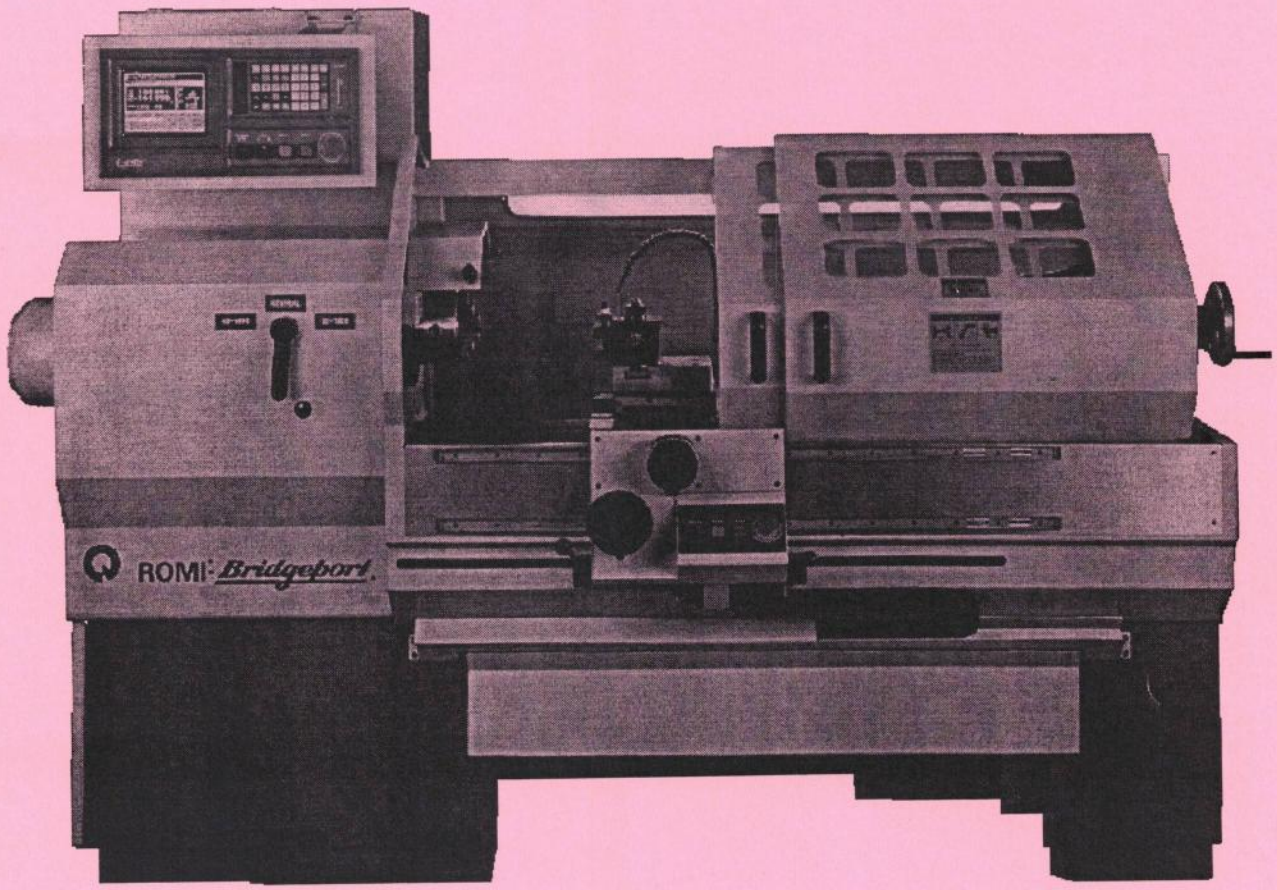


INTRODUCTION

The main purpose of this manual is to provide the user with machine instructions of operation and maintenance for its good utilization.
We strongly advice the machine operator to read this Manual in order to know the machine working conditions.

CNC LATHE
EZPATH S

MAIN CHARACTERISTICS

- DX-32R 2-Axis EZPATH Control with a 9 inch grayscale monitor, VGA display. Prompts and fill-in-the-blank format helps you enter machining data quickly using a simple keyboard.
- Precision and ground preloaded longitudinal and cross ballscrews.
- Feed rates up to 394 ipm (Z axis) rapid traverse and 295 ipm (X axis), with powerful AC BRUSHLESS servo motors and drives.
- Hardened and ground bed guideways and saddle logitudinal guideways Turcite covered.
- Hardened and ground saddle cross guideways and cross slide guideways Turcite covered.
- Continuously variable spindle speed through 2 gear ranges with manual change.
- Front sliding splash guard.
- Dual electronic handwheels for longitudinal and cross-slide travel.

STANDARD EQUIPMENTS

- DX32-R EZPATH 2 axis control.
- Control panel with 2 electronic handwheels and spindle motor acceleration / deceleration switch for manual operation.
- ASA A2-5" spindle nose with 2.09" (53mm) hole dia. through spindle.
- Headstock with continously variable speed through 2 gear ranges with manual change, from 25 to 4000 rpm.
- Automatic lubrication system for saddle/bed and cross slide/saddle guideways.
- Cross slide with T-slot base for tool holder.
- Tailstock with manually operated quill.
- Worklight.
- Complete coolant system.
- Chuck guard.
- Front sliding safety door.
- Rear splash guard.
- Chip pan.
- Complete electric installation for 230V ~ 460V, 60Hz.
- Set of leveling screws and nuts.
- Set of wrenches for machine operation.
- Set of parts and installation manuals.
- Set of electric diagrams.
- Standard colors: Munsell Blue 10B 3/4
  Munsell Gray 10Y 7/1

ACCESSORIES

- Air operated tailstock quill (pneumatics not included).
- Air operated tailstock quill (pneumatics included).
- CE safety regulation package, including a second safety door, interlocked electric switches for safety doors and chuck guard.
- Gang-tooling plate with 5 tool holders.
- Open sided rear tool post with fixed base.
- Steady rest (closed), with rollers 3 1/8" to 6" (80 to 152mm) dia. capacity.
- Steady rest (open), with bronze tips 5/16" to 3 1/8" (8 to 80mm) dia. capacity.
- T-slotted faceplate, 16" (400mm) dia. (375 rpm max.).

NOTE:
WE RESERVE THE RIGHT TO MAKE CHANGES ON THE MACHINE DESIGN, AS WELL AS IN ALL TECHNICAL SPECIFICATIONS WITHOUT PRIOR NOTICE

SAFETY PRECAUTIONS

The following safety precautions have been prepared to guide and properly instruct the machine operator and those in charge of maintenance.

The results of a maintenance inspection should be properly evaluated. The machine should be handed over to the operator only after it has been put in good operating condition. When the machine is operated, the same precautions should be taken both for its operation and its maintenance.

Read carefully and apply these safety recommendations and always refer to other chapters of this and other machine manuals in order to be fully acquainted with this information.

Operators, however, should not rely only on these safety devices. They should operate the machine after having thorough knowledge of special precautions that should be taken by READING CAREFULLY AND FOLLOWING THESE SAFETY RULES.

BASIC OPERATING PRACTICE

1. DANGER

1.1 Some parts in the electric and control panels, transformers, motors, junction boxes and other components use high voltage. If these points or terminals are touched they may cause serious electric shock and even **death.**

1.2 Never touch a manual control (buttons, keys, switches, levers, etc.) with wet hands, shoes or clothes. This may cause electric shock and even **death.**

2. WARNING

2.1 The location of the emergency button should be well known and remembered so that it can be use immediately with no need to look for it.

2.2 Before any maintenance work, turn the machine off by using the main disconnect.

2.3 Keep the work area clean to avoid dangerous falls.

2.4 Water and oil can make floors slippery and dangerous.
To avoid accidents, floors must be clean and dry.

2.5 Before using any manual control (buttons, keys, switches, levers, etc.) be sure it is the correct control. If in doubt, read the operating and maintenance manual.

2.6 Never touch or use a manual control (buttons, keys, switches, levers, etc.) by chance or accidentally.

2.7 Work benches near the machine must be strong enough to prevent accidents. Make sure that parts or tools do not fall or slip from the bench.

2.8 If a job has to be performed by two or more people, coordinating signals should be given at each stage of operation. Unless a signal has been given and answered, the next phase should not be started.

3. CAUTION

3.1 In case of electric power failure, disconnect the MAIN DISCONNECT immediately.
3.2 Use only recommended or equivalent lubricating oils and greases only.
3.3 Fuse replacement should follow exactly the same specifications as the ones recommended in the electric diagram manual.
3.4 Avoid collision or shock with the CNC unit, electronic components and equipment, electric and control panels, etc. to prevent damage or faulty operation.
3.5 Avoid getting water, dirt and dust inside the electrical panel and control panel. Always use protection and/or covers.
3.6 Do not change parameters or electric-electronic adjustments, unless it is required or you are able to handle them. If such changes are inevitable make notes of the original values (before the change) so that you can return to the original adjustments if necessary.
3.7 Do not soil, scrape or remove warning, caution or information plates. If they are damaged, illegible or missing, order new ones from the supplier specify the reference number printed on the right bottom corner.
3.8 Read carefully all warning and caution plates of the machine. The position of these plates are described in this manual.

CARE AND WARNINGS BEFORE OPERATING THE MACHINE

IMPORTANT

Read carefully manuals sent with the machine before operating it. Make sure you understand the information contained in them. In case you have any doubt, report it to your supervisor or to the nearest distributor.

1. DANGER

1.1 Electric cables, cords or wires with damaged insolation may cause current leakage and electric shock. Before using them, check their condition.

2. WARNING

2.1 Make sure the manuals sent with the machine are well understood. Each function, operating and maintenance procedure must be clearly understood.
2.2 Wear safety shoes that are not damaged by oil, wear safety glasses with side protection, safety clothes and other safety protections.
2.3 Keep closed the machine sliding door, electrical panel door and others covers when the machine is on operating mode.
2.4 Always make sure you are using the correct manual control (button, key, switch, lever, etc.).

3. CAUTION

3.1 The cable from the factory power supplier source up to the machine connecting terminals must have sufficient cross sectional area to support the electric power used.

3.2 Before starting the machine for the first time or after long idle time (a few days), all sliding surfaces must be well lubricated. Start the piston of the automatic lubrication system by hands to send oil for all parts that need to be lubricated. Then, turn on the machine and move X and Z axis along their full travel under low travel speed. In this way the lubrication cycle will start operation.

3.3 Oil reservoirs must be filled up to indicated level. Check and add oil if needed.

3.4 Manual controls (buttons, keys, switches, levers, etc.) should be operated smoothly.

3.5 Check coolant level and add coolant oil if needed.

NOTE

When starting the machine, first turn on the factory power supply switch, then the machine main disconnected in this order and then the video switch if available, and wait for the screen image.

ROUTINE INSPECTION

1. WARNING

1.1 When checking belt tension, do not put fingers between the belt and pulley.

2. CAUTION

2.1 Check motors and sliding components for strange noises.

2.2 Check sliding components for proper lubrication.

2.3 Check covers, protections and safety devices for proper operation.

WARMING UP THE MACHINE

1. CAUTION

1.1 Warm up the machine, specifically the main spindle, by operating it for 10 to 20 minutes at half or 1/3 of maximum speed under automatic operation.
1.2 This automatic operation program should operate all machine components. At the same time check the correct operation of these components.
1.3 At high rpm be very carefull when warming up the main spindle.

NOTE

Sliding components may be damaged if not properly lubricated when the machine is used after a long idle period. Thermal expansion of machine components also jeopardize machining accuracy. To prevent damage, always warm up the machine.

SET UP FOR MACHINING

1. WARNING

1.1 Tooling should be in accordance with the machine specifications, size and type.
1.2 Worn out tools may cause damage. Replace worn out tools before damage occurs.
1.3 The work area should be well iluminated to facilitate safety inspection.
1.4 Tools and other items should be stored. To prevent accidents do not leave tools around the machine. Keep aisles clean. Tools should not be put on top of the headstock, covers or similar places.

2. CAUTION

2.1 To avoid interference, tool length should be within tolerances.
2.2 After assembling a tool, test it.
2.3 After machining chuck jaws, make sure they hold the workpiece with proper clamp ing force.

OPERATION

1. WARNING

1.1 Do not work with long loose hair that many entagle in the machine. Tie on top of the head or to the back.

1.2 Do not operate manual controls (buttons, keys, switches, levers, etc.) with gloves. This may cause defects and accidents.

1.3 Whenever a heavy workpiece, part or component must be moved, and whenever there is any risk, two or more people should work together.

1.4 Only trained and qualified workers should operate forklift trucks, cranes and similar equipment to avoid collision and damage.

1.5 Steel cables and/or ropes should be strong enough to support loads and should be in accordance with standards.

1.6 Hold workpieces and parts firmly and securely.

1.7 Do not touch chips or tool tip with unprotected hands.

1.8 Stop the machine before adjusting cooling system nozzle.

1.9 Never touch with hands or in any other way a rotating workpiece or main spindle.

1.10 Do not open neither the front cover nor the machine door during machining oper tion.

1.11 Do not operate the machine without the front safety cover.

1.12 Close the front cover before turning on the machine.

1.13 Use a brush to remove chips from the tool tip. Never with hands.

1.14 Stop the machine whenever mounting or removing a tool.

1.15 Wear a mask or face protection whenever machining a magnesium alloy workpiece.

2. CAUTION

2.1 During automatic operation, NEVER open the front sliding splash guard.

2.2 During heavy machining, avoid chip accumulation. Hot chips may cause a fire and damage way wipers.

TO INTERRUPT MACHINING OPERATION

1. WARNING

1.1. When leaving the machine temporarily after finishing an operation, press the emergency button to disconnect the control.
KEEP MAIN DISCONNECT ON.

1.2. To stop the machine during machining, select the EMERGENCY button.

AFTER FINISHING A JOB

1. CAUTION

1.1 Always clean the machine and equipment. Remove all chips and clean the covers.
1.2 Never used compressed air to clean the machine.
1.3 Never clean the machine or equipment before it stops completely.
1.4 Return all machine components to their proper places.
1.5 Check way wipers and replace damaged ones.
1.6 Check whether hydraulic, lubricating or coolant oils are contaminated and replace them whenever required.
1.7 Check coolant, hydraulic and lubricating oil levels and add oil if required.
1.8 Clean coolant tank filter.
1.9 At the end of a shift, before leaving the machine take this steps in the following under:

1 - actuate the emergency button, 2 - turn off the video, 3 - the machine main disconnect and (3) then the power supply switch.

PREPARATION FOR MAINTENANCE

1. CAUTION

1.1 Do not perform any maintenance work without getting instruction from your super visor. Talk to him and exchange ideas whenever there is a defect and DO NOT REACH A CONCLUSION BY YOURSELF.
1.2 Take the necessary steps in advance whenever the assistance of any other factory department or sector is required to perform maintenance.
1.3 Take the necessary steps to have ready for use replacement parts and materials such as rings, retainers, snap rings, bearings, oil, grease, etc.
1.4 Make notes and keep records of preventive and corrective maintenance.

IMPORTANT

Read carefully all manuals that are sent with the machine. Make sure you understand correctly all safety precautions contained in them and the principles, construction and precaution involved.

MAINTENANCE WORK

1. DANGER

1.1 Any maintenance work with the machine in operation is very dangerous. At first the main disconnect should be turned off during maintenance work.

1.2 Those not performing the maintenance work should not turn on the main disconnect that operates the machine. For this purpose use the warning: "Do Not Touch the Switch - Under Maintenance", or similar warning should be placed on the switches and on any other appropriate places. It is also recommended that before starting maintenance work, the machine main disconnect switch is disconnected and pad locked, and the key kept with the maintenance man.

2. WARNING

2.1 Electric maintenance should be performed by a qualified electrician. Contact the person in charge. DO NOT DECIDE BY YOURSELF.

2.2 Do not remove or change travel limit switches and interlocking mechanisms, including functional parts.

2.3 If work has to be performed in high places, use ladders that are inspected daily for greater safety.

2.4 Fuses, cables, etc., should be from the same specifications recommended in the machine manuals, and from reliable origin and quality.

AFTER MAINTENANCE AND UNTIL MACHINE IS OPERATED

1. WARNING

1.1 Arrange in good order all the machine components for maintenance as well as the work area. Wipe out water and oil from the components and provide a safe place to work.

1.2 For greater safety, all used parts and oil must be removed from the working area and kept far from the machine.

1.3 The people in charge of maintenance must make sure the machine operates under complete safety conditions.

1.4 Maintenance and inspection date should be recorded and kept for future reference.

CARE AND CLEANING

When the machine is performing long machining operation of bronze, brass, aluminum, cast iron or similar alloys, greater care should be taken with the protection covers, way wipers and coolant reservoir. The following should be done:

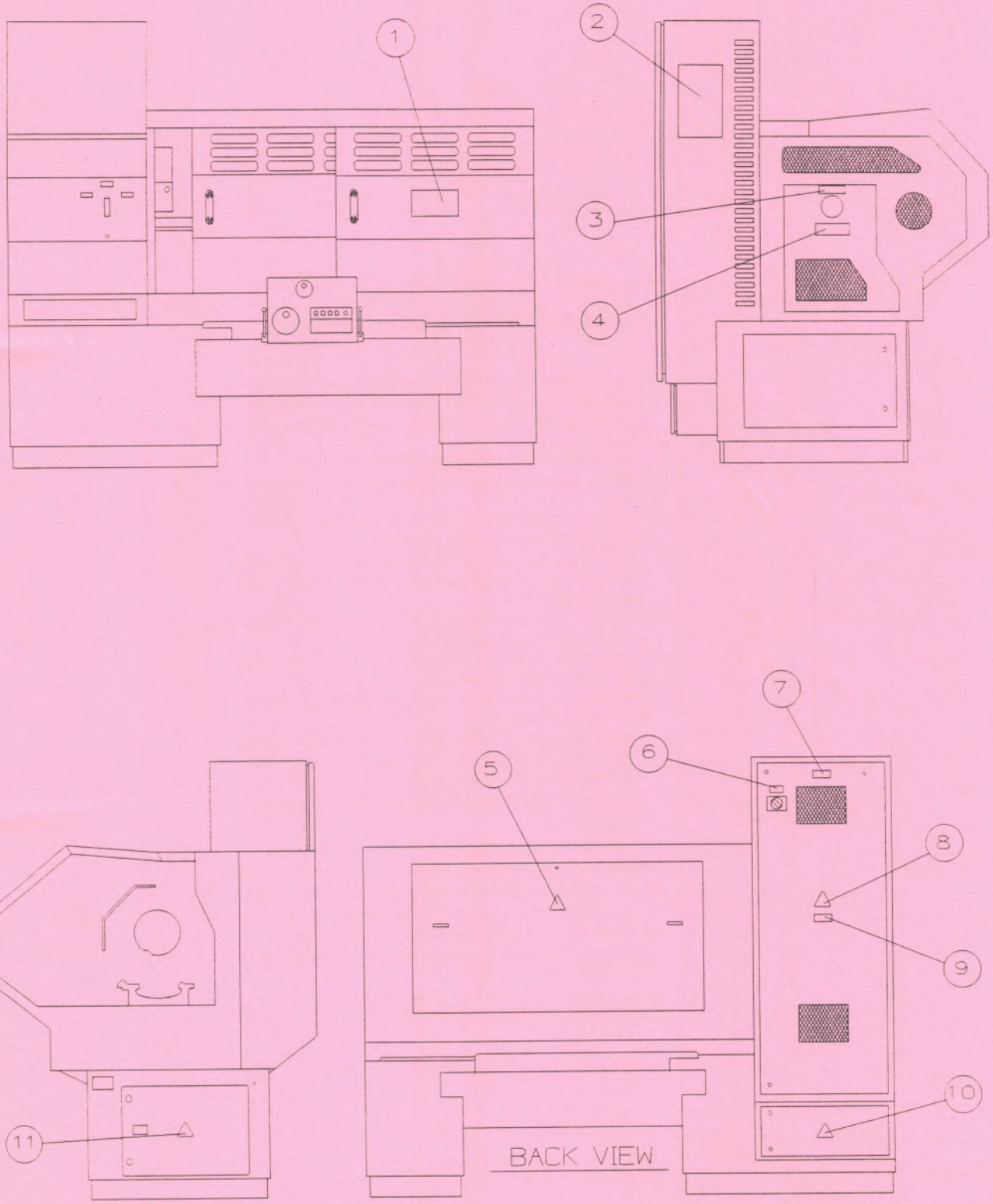
1. WAY WIPERS

At every 400 hours, check the way wipers is worn out and if required replace them.

2. COOLANT RESERVOIR

At every 4 hours clean filters and at every 400 hours clean complete reservoir.

WARNING LABELS ON THE MACHINE



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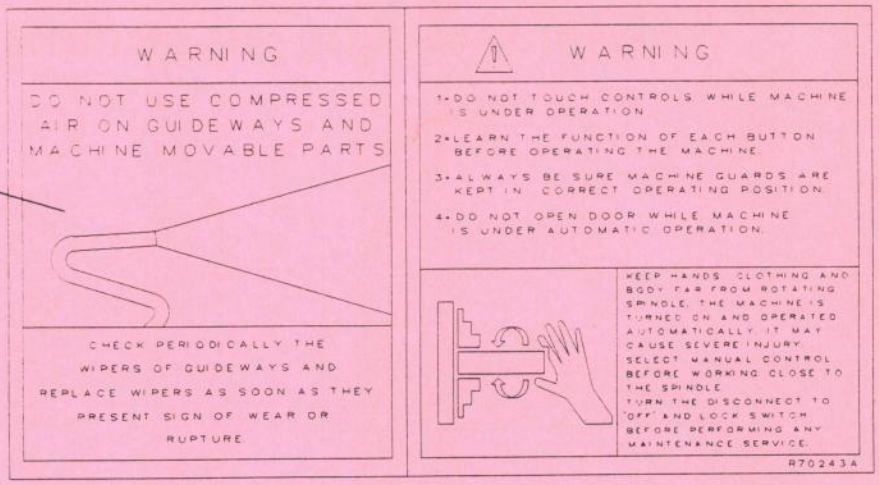


2

SAFETY INSTRUCTIONS

1- STUDY YOUR OPERATOR S AND MAINTENANCE MANUALS AND READ ALL WARNINGS ON THE MACHINE BEFORE TURNING ON THE MACHINE. NEGLECTING THESE INSTRUCTIONS AND WARNINGS MAY CAUSE SERIOUS DAMAGES.

2- THIS MACHINE STARTS AND MOVES AUTOMATICALLY.
NEVER PUT ANY PART OF YOUR BODY NEAR OR OVER MOVING PARTS.

3- ALWAYS LET MACHINE AND SPINDLE COME TO A COMPLETE STOP BEFORE TOUCHING PARTS. TOOLS OR SPINDLE.

4- DO NOT OPERATE MACHINE BEFORE MAKING SURE THAT ALL MACHINE GUARDS. INTERLOCKS AND OTHER SAFETY DEVICES ARE INSTALLED AND UNDER OPERATION.

5- BE CERTAIN THAT WORKPIECE AND TOOLS ARE SECURELY POSITIONED. AVOID EXCESSIVE FEEDRATE AND ROTATION.

6- REMOVE RINGS. JEWELRY. WATCH AND DO NOT WEAR LOOSE CLOTHING. KEEP HAIR FAR FROM MOVING PARTS.

7- ALWAYS WEAR SAFETY GLASSES. SAFETY SHOES AND EAR PLUGS WHEN OPERATING MACHINE.

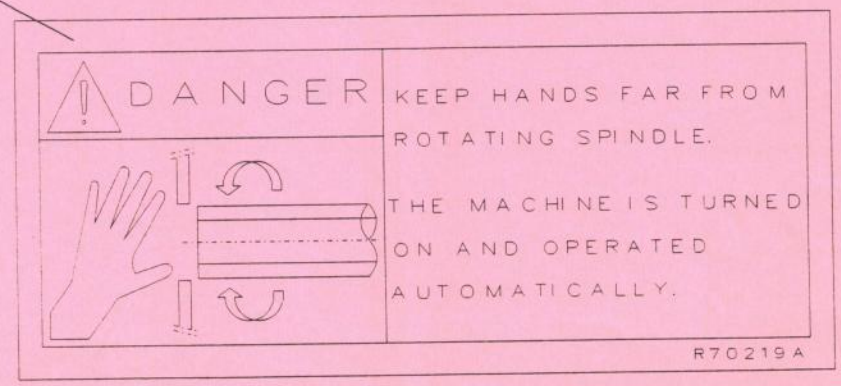
8- SERVICE OR INSTALLATION OF THIS MACHINE SHOULD BE PERFORMED BY QUALIFIED PERSONNEL ONLY AND ACCORDING TO THE PROCEDURES DESCRIBED IN THE MAINTENANCE MANUAL. TURN THE DISCONNECT OFF AND LOCK SWITCH BEFORE PERFORMING ANY MAINTENANCE WORK.

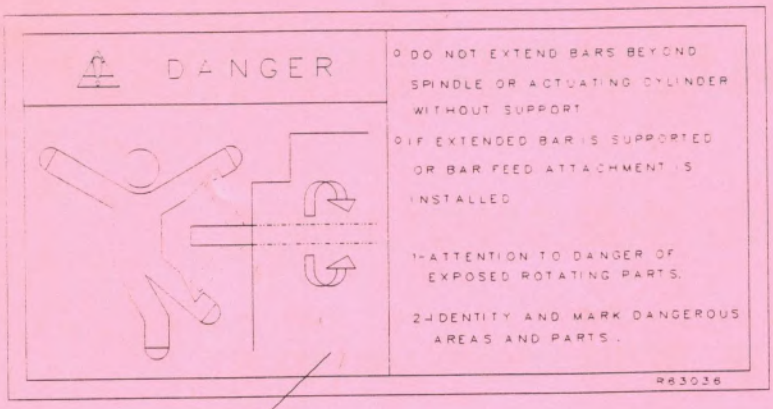
IT IS THE RESPONSIBILITY OF THE USER TO MAKE SURE THAT THIS MACHINE IS IN PERFECT OPERATIG CONDITIONS AND THAT ALL OPERATING AND MAINTENANCE PROCEDURES DESCRIBED IN THE MANUALS AS WELL AS ALL WARNINGS ON THE MACHINE ARE FOLLOWED. IF YOU HAVE ANY QUESTIONS ABOUT THE OPERATION OF THIS MACHINE. SEE YOUR SUPERVISOR OR CONTACT THE CLOSEST BRIDGEPORT MACHINES. INC OFFICE OR DIAL TO 203 3973651.

DO NOT REMOVE OR DESTROY THIS WARNING PLATE.

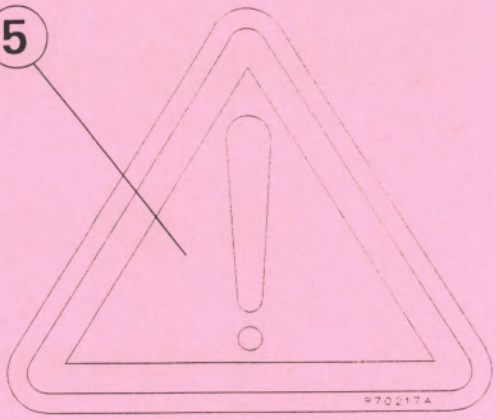
883026

3




DANGER
1- DO NOT EXTEND BARS BEYOND SPINDLE OR ACTUATING CYLINDER WITHOUT SUPPORT
2- IF EXTENDED BAR IS SUPPORTED OR BAR FEED ATTACHMENT IS INSTALLED
1- ATTENTION TO DANGER OF EXPOSED ROTATING PARTS.
2- IDENTITY AND MARK DANGEROUS AREAS AND PARTS.
R63036

4


R70217A

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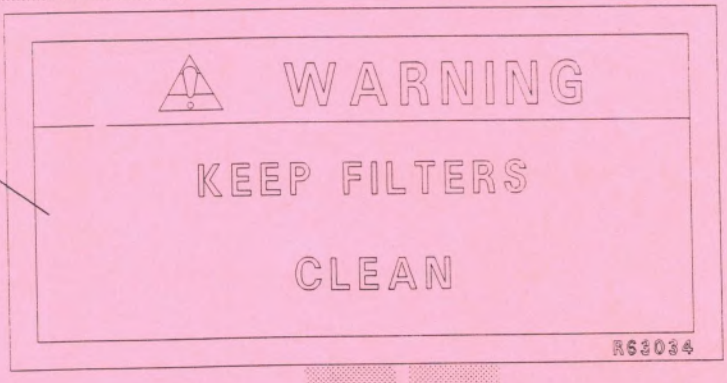
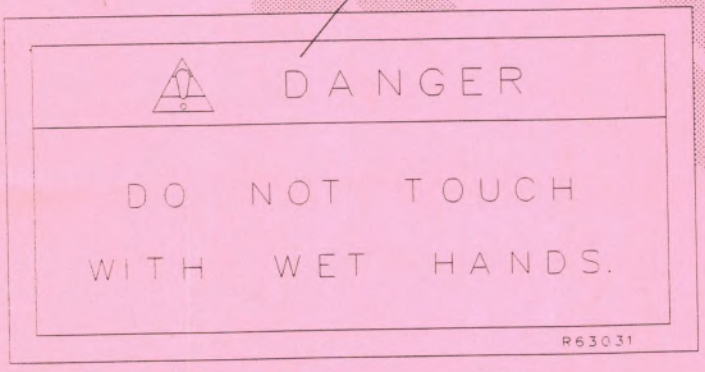
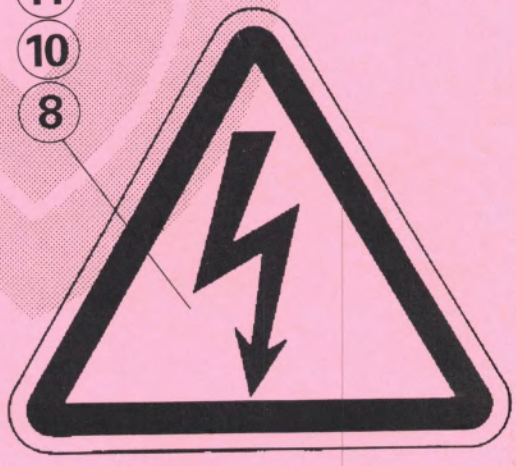

WARNING
KEEP FILTERS
CLEAN
R63034

6


DANGER
DO NOT TOUCH
WITH WET HANDS.
R63031

7



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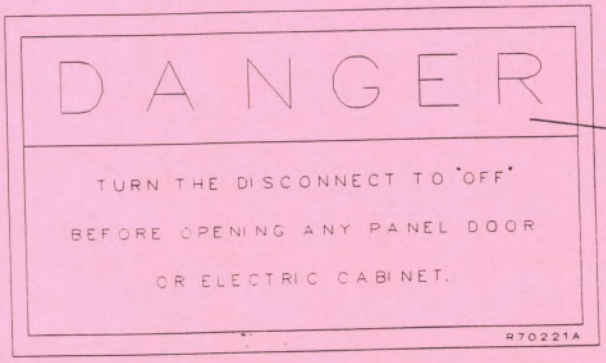

DANGER
TURN THE DISCONNECT TO "OFF"
BEFORE OPENING ANY PANEL DOOR
OR ELECTRIC CABINET.
R70221A

9

WARNING SPINDLE SPEED LIMITATION

DO NOT EXCEED THE SPEED LIMITS

CHUCK DIAMETER VS SPINDLE SPEED LIMITATION

CHUCK DIAMETER	MAX. SPINDLE SPEED (LOW RANGE)	MAX. SPINDLE SPEED (HIGH RANGE)
6"	1,000 rpm	4,000 rpm
8"	750 rpm	3,000 rpm
10"	500 rpm	2,000 rpm

MACHINE LAYOUT

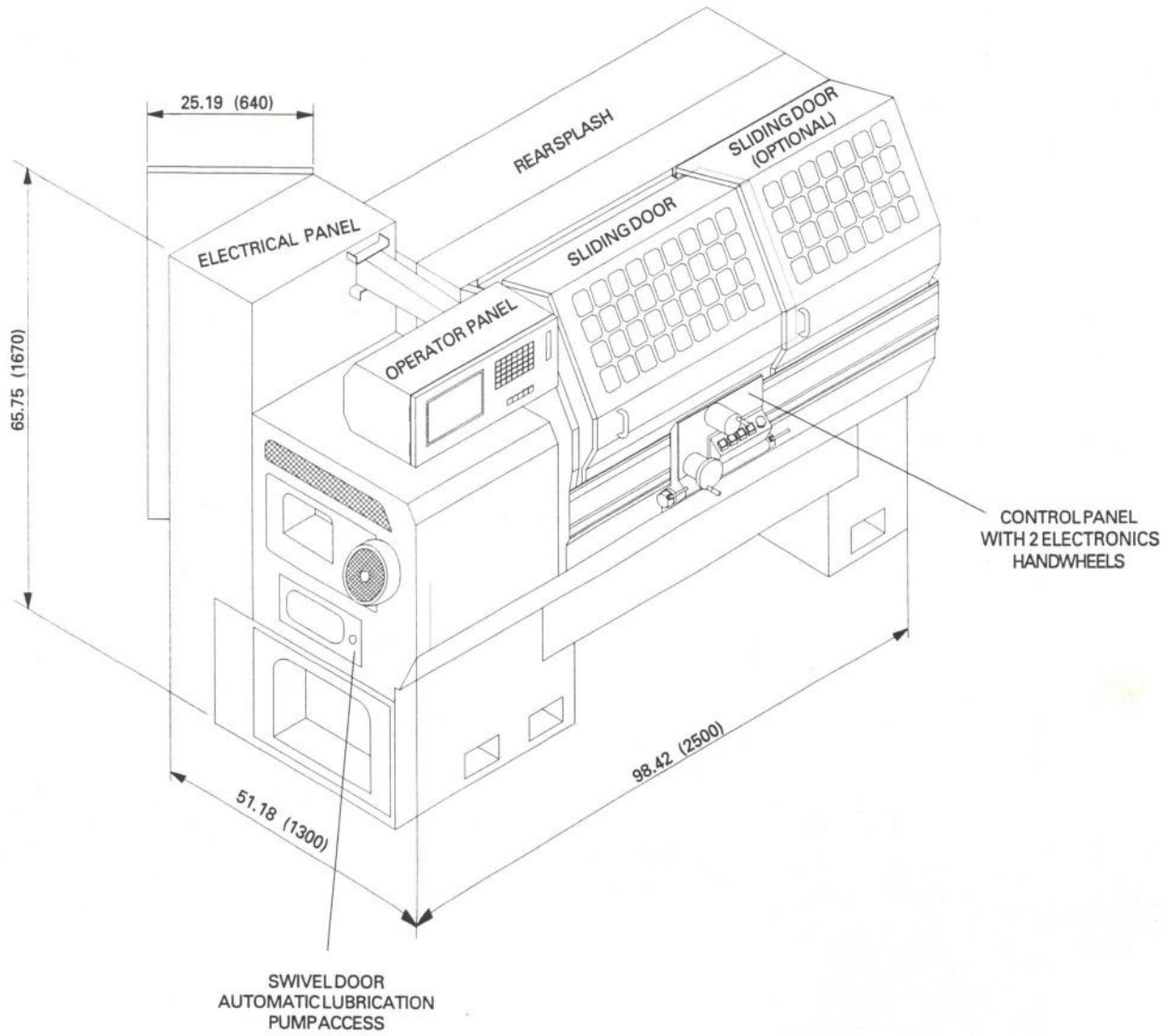


Fig. 1 - Machine Layout (dimentions in inches (mm))

LEVELING

The precision, rigidity and durability of the lathe depends on careful leveling.
Our final inspection tests can only be repeated when the lathe is correctly leveled.
It is not nececessary that the bed guideways are longitudinally and transversally leveled, however, any level difference must be uniform along the bed in lathe directions mentioned above. Therefore, transversal leveling readings must be equal between themselves, and longitudinal readings must also be equal between themselves.
For perfect leveling check, use two precision levels graduated to at least 0.02mm per meter (0.00025" per feet), assuring that the level difference is smaller than 0.04 mm(0.00050") for transversal and longitudinal levelling.
The leveling should be carried out according to the following procedure:

a) Loosen nuts (1);
b) Through levelling screw (2) obtain proper levelling, checking longitudinal level ling on positions (B), (C) and (D) and transversal levelling on positions (A) and (E).
c) Once nuts (1) are tightened, check again levelling and correct any errors.

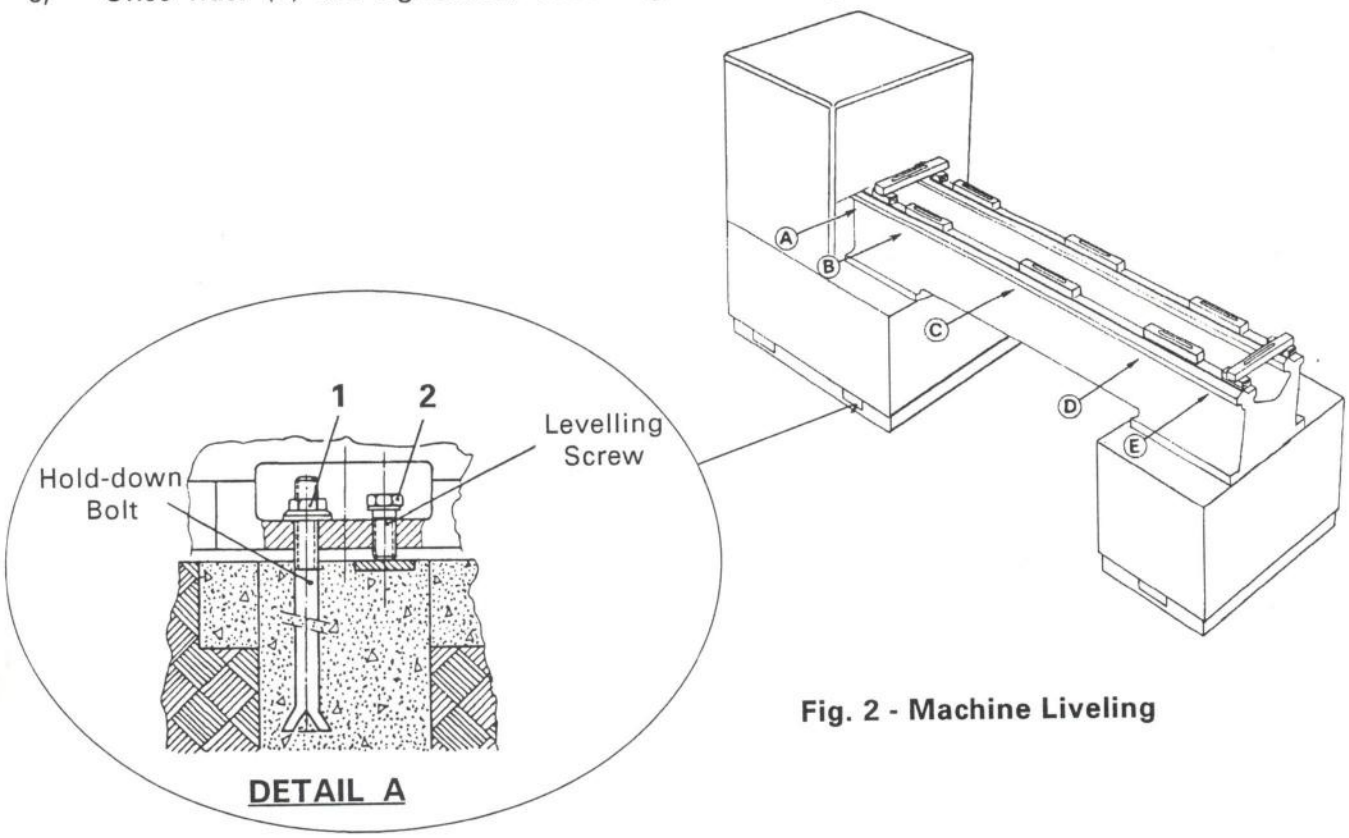


Fig. 2 - Machine Liveling

IMPORTANT

* After the first working week check leveling to verify the soundness of the foundation.
* Leveling needs to be checked every six months to maintain the machine in good working conditions.

CLEANING

Never use compressed air to clean the work place inside the machine.
Use coolant oil.
After a period of machine work, clean slush, dirt and grit from all polished surfaces, then lubricate them thoroughly with lubricating oil ONG - 68 type.

IMPORTANT:

* Do not use cellulose base solvent because it may damage painted surfaces.

* Never move the tailstock before its guideways are thoroughly cleaned and lubricated.

BED

The lathe structure is an assembly of great responsibility as far as rigidity and consequent precision of the machine. In the EZPATH S, the bed has been carefully studied in such a way as to obtain a simple and solid construction. The illustration below shows the most important parts of this assembly.

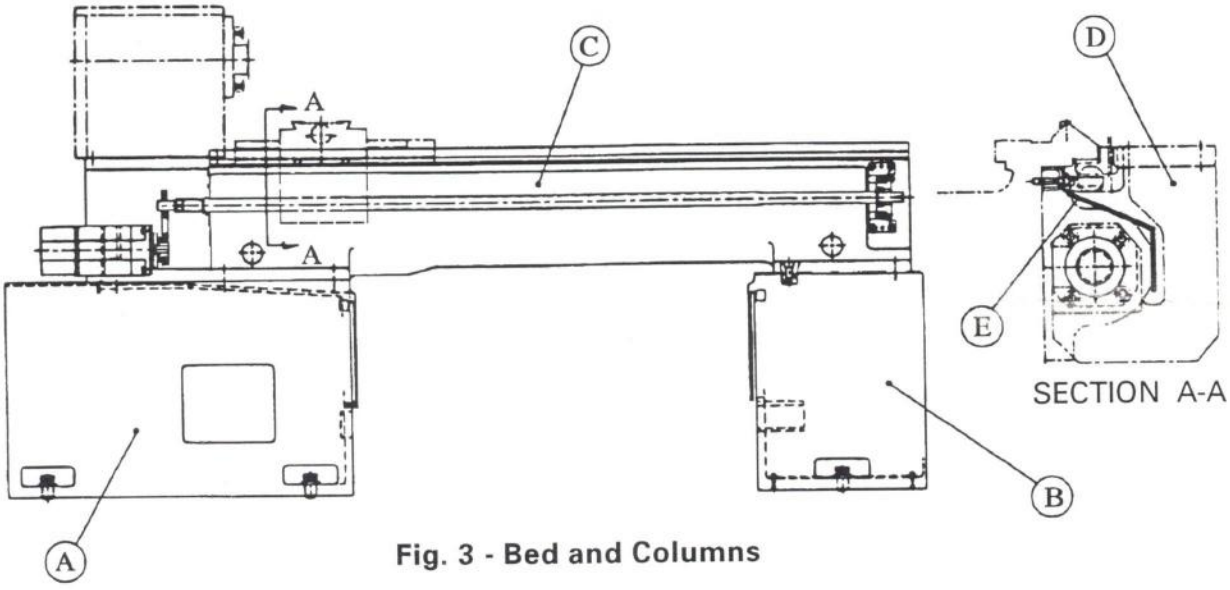


Fig. 3 - Bed and Columns

COLUMNS

The EZPATH S bed has a large column (A) and a small column (B) both of cast iron that support the bed (C). The large column (A) lodges in its interior the main motor.
The columns are rested on the ground by six (6) levelling bolts, being four (4) on the large column (A) and two (2) on the small column (B).

BED

The bed (C) is also of cast iron construction, very rigid to guarantee precise saddle movement. Guideways of the prism/plane type are hardened and ground. Ribbing has been developed with a view to harmonize desired high rigidity with good chip flow condition. Good chip flow, however, depends on the type of chips that are cut and this depends directly on the tooling used.

BALLSCREW PROTECTION

Support (D) that connects the Z axis ballscrew to the saddle has been designed to enable a fixed protection (E) for the ballscrew. This protection is simple and efficient besides permitting easy assembly and disassembly.

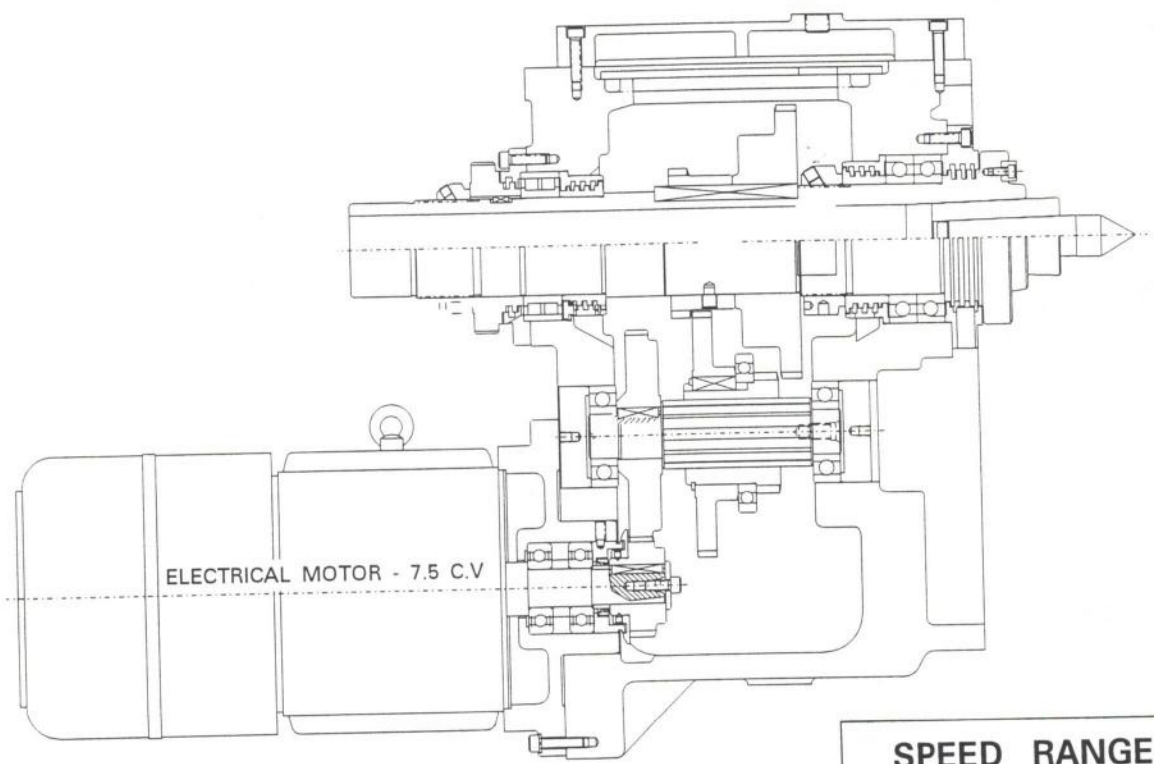
HEADSTOCK

The headstock is the most important part to permite the high precision of the machine works. For this reason, all its components are machined on high precision machines.
Headstock operation is accomplished through heat treated steel alloy gears with teeth flanks groud finished.
The main spindle is assembled with high precision bearings.
The electrical motor is directly coupled on headstock cast, and it is cooled by an electrical blower. This design does not use belts and pulleys.

SPEED RANGES

This lathe's headstock have 2 speed ranges that are handly selected by a lever.
There is a table below to indicate the minimum and maximum rotation allowed.
It should be pointed out that the spindle motor chart must be analyzed before run a machining program.

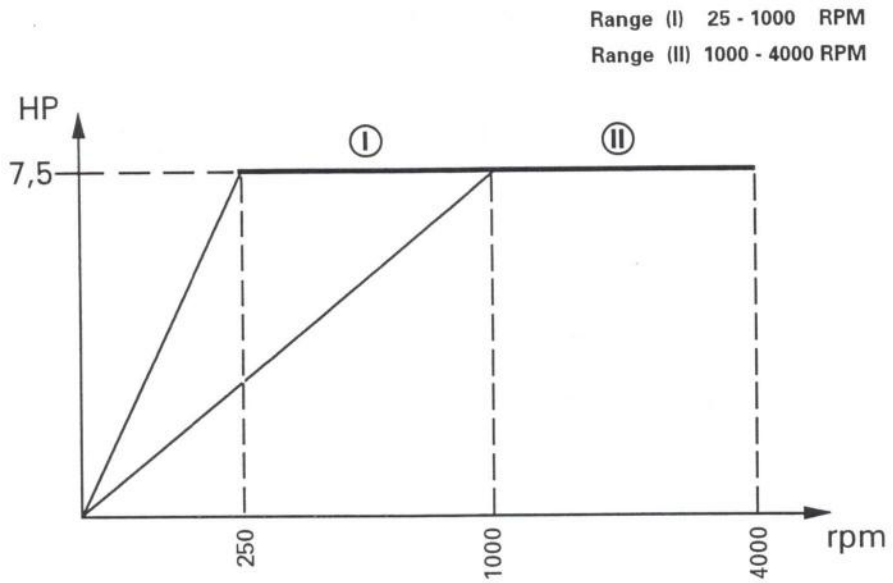
Fig. 4 - Headstock Assembly



SPEED RANGE 1
25 - 1000 RPM

SPEED RANGE 2
1000 - 4000 RPM

Fig. 5 - Spindle Motor HP x RPM



GEARING CHANGER SYSTEM

The gearing changer system is a handle system (mechanical).
There is a shaft commanded handly by a lever.
In the shaft extremity there is a fork that is coupled on a ball bearing making the 2 gears move on the spline shaft, consequently making the spindle ranges speed change.

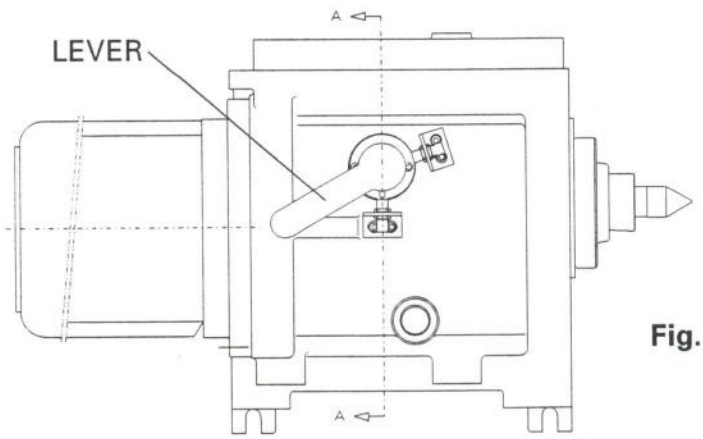


Fig. 6 - Headstock Lateral View

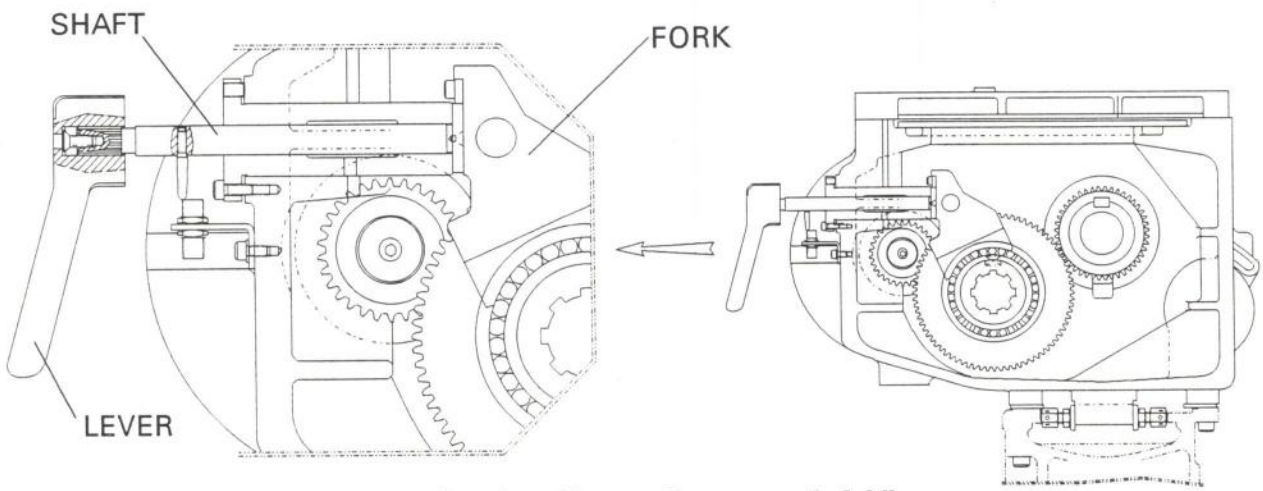


Fig. 7 - Gearing Chager System - A-A View

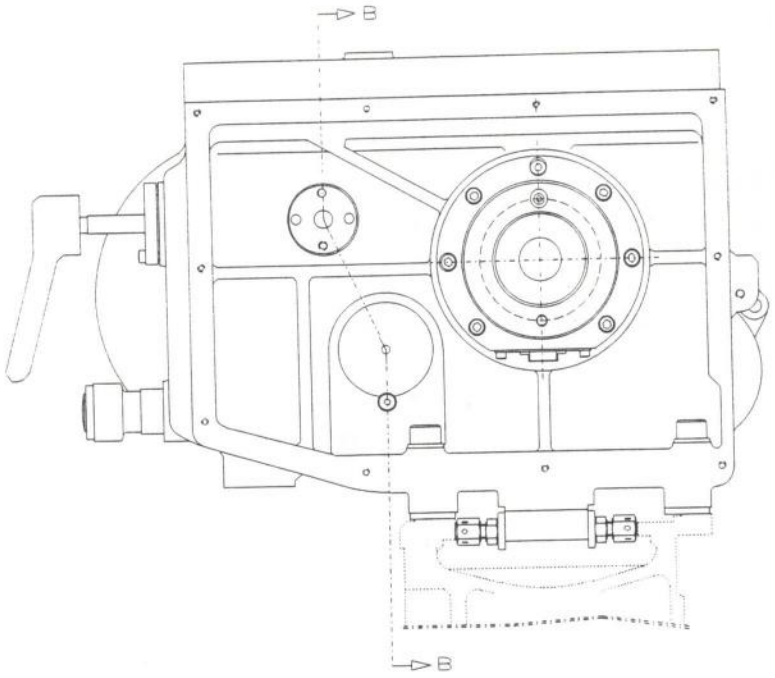


Fig. 8 - Headstock Frontal View

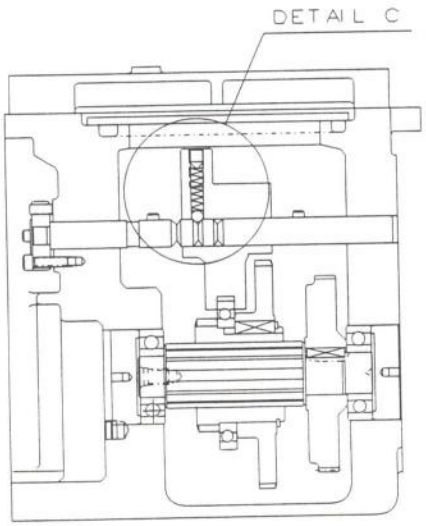


Fig. 9 - Gearing Chager System - B-B View

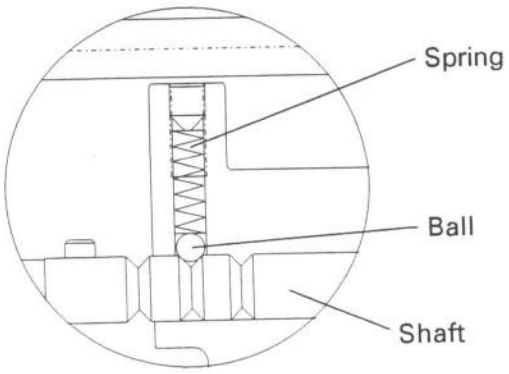
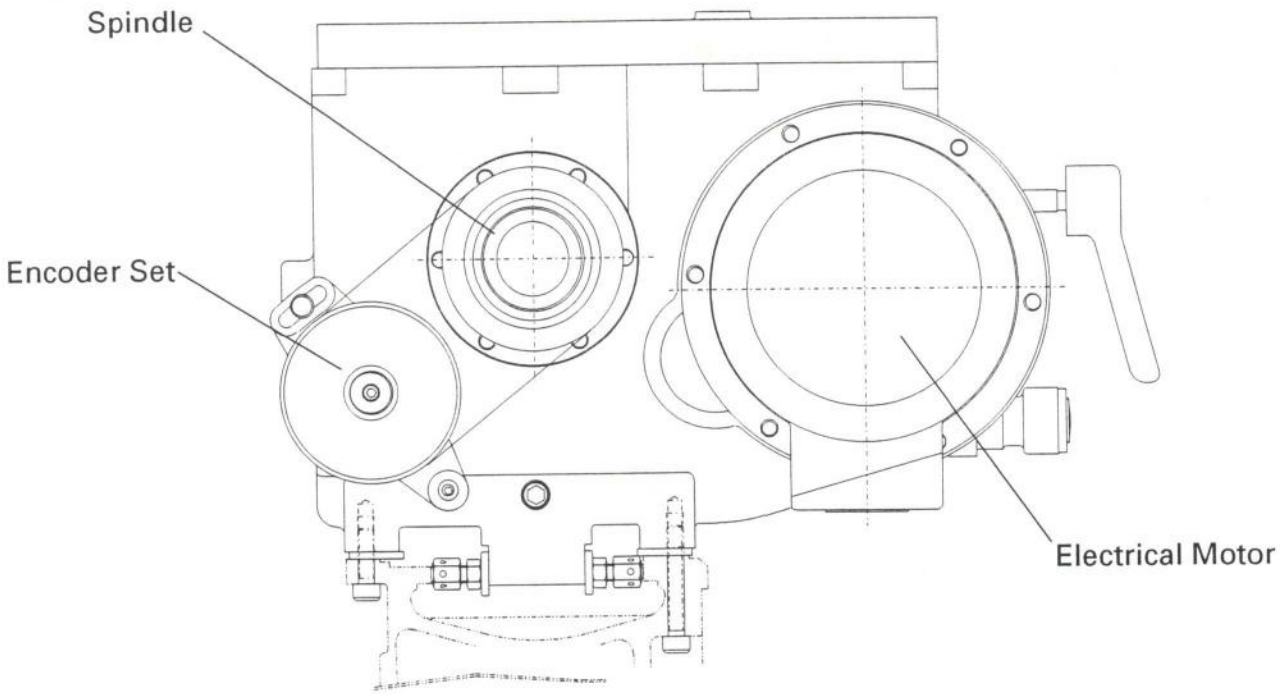


Fig. 10 - Detail C

POSITION ENCODER

The spindle is connected to the encoder of 1250 pulses/rotation through toothed belt at the ratio transmition of 1:1. The encoder's function is to inform the spindle angular position and rotation to the control, making possible a perfect spindle and feed synchronization during a threading operationg.

Fig. 11 - Headstock Back View



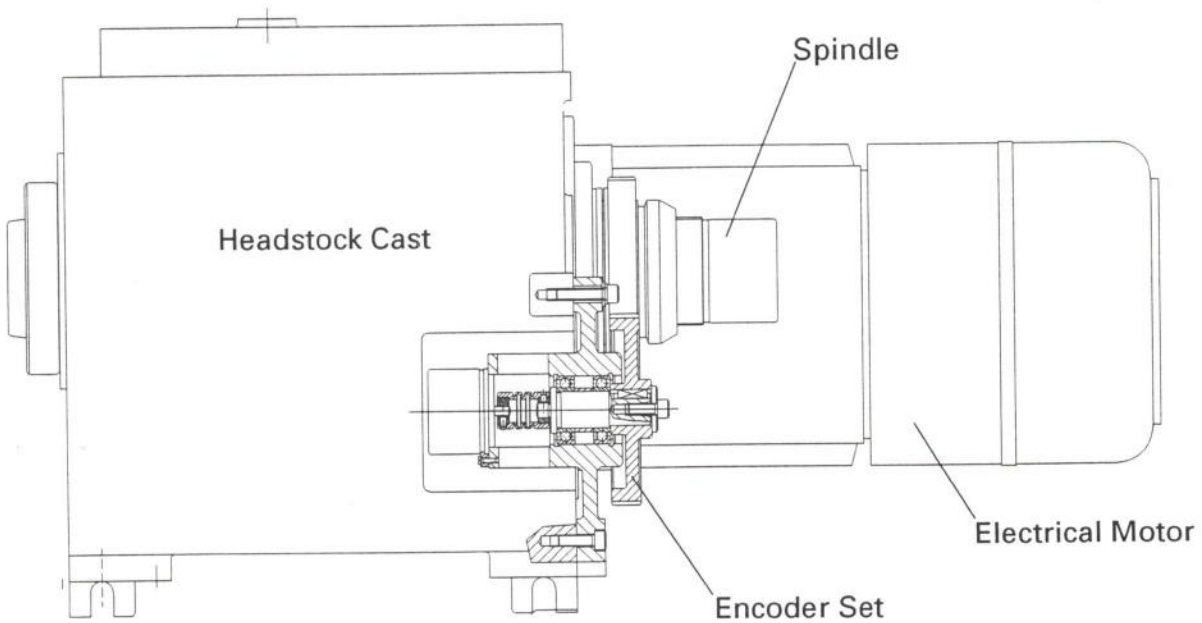


Fig. 12 - Headstock Lateral View

MAIN SPINDLE BEARINGS

The spindle is supported by high precision bearings. At the front there is a set of two angular contact bearings assembled in "back to back" configuration.
The back bearing is one two-row cylindrical roller bearing.
The precision of these bearings provides high precision to the machine headstock.

LUBRICATION

Except the spindle bearings, all headstock bearings and gears are lubricated by oil. The oil stays inside the headstock cast, and the gears roation makes the oil recirculation, lubricating all the gears and the bearings.
The oil level can be observed through the spyhole (see fig. 13) located at the machine panel.
For the headstock lubrication use ONH-68 oil type.
The spindle bearings are permanently lubricated with a special grease that is expected to last along with the bearings life.
These bearings are protected by labyrinths that prevent grease contamination by oil.

NOTE :

If for any reason the spindle needs to be disassembled, its bearings have to be cleaned and greased again with a special grease LDS 18 (KLÜBER).

OIL CHANGE

To change the headstock oil, remove the plug (1) on headstock cast back part to empty the oil.
After empty the oil, put the plug (1) again.
Remove the plug (2) located on the headstock upper lid.
Full with new oil type ONH-68 until the oil level to attain 3/4 of the spyhole (3).

NOTE:
Make the first oil change after 200 hours of work and then periodily after 1200 hours of work.
Use oil type ONH-68.

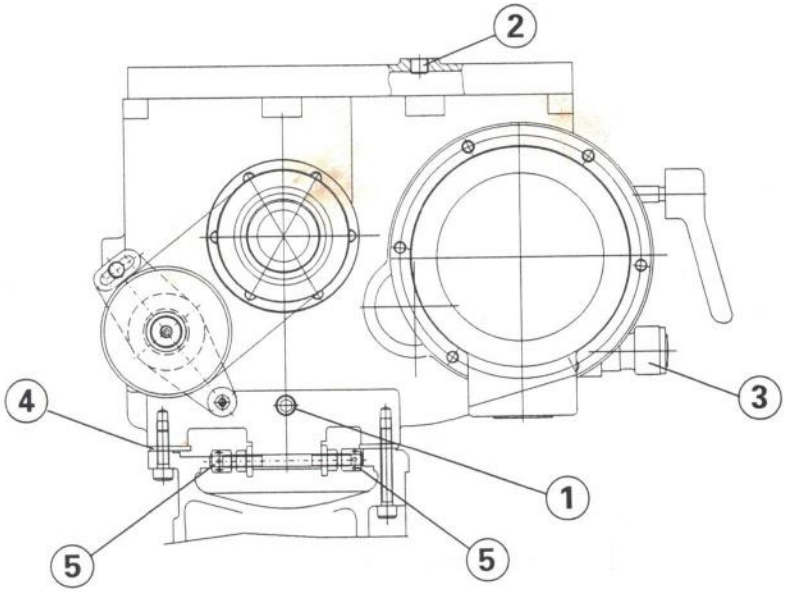


Fig 13 - Headstock Side View

ALIGNMENT

Under normal conditions, the headstock alignment should not be made.
However, if for any reason a desalignment occurs or the headstock needs to be replaced, maximum care should be taken with the alignment operation.
The alignment on the vertical plane is accomplished by adjusting the height of the four spacers (4) that support the headstock on the base.
On the horizontal plane, the headstock is aligned and clamped in the right position by two bolt alignment device (5) located on headstock cast under part.
The four bolts tighten against the bed lateral part.

NOTE:
The headstock alignment is an operation that directly influences the machine precision and should be made by a skilled professional. In case the costumer does not have the proper conditions, this service must be made by an authorized technical assistant.

SADDLE and CROSS SLIDE

The saddle movement on the bed and across slide movement over the saddle provides for the tools with the two required movements for turning operation.

SADDLE OPERATION (Z AXIS)

The carriage is displaced in the Z axis direction actuated by servomotor (1) coupled through pulleys (8 and 3) and toothed belt (2) on a ballscrew (6).
The ballscrew is supported by two bearings (5) so that on the servomotor (1) side there are two angular contact ball bearings (4) and on the opposite side one single ball bearing (7).
The bearings are lubricated with grease (ISOFLEX NBU 15 SPECIAL- Klüber).
This grease is long lasting and under normal conditions it should up to last 10.000 hours of operation.
The lubrication of ballscrews and guideways is made by an Automatic System.

Z - Axis

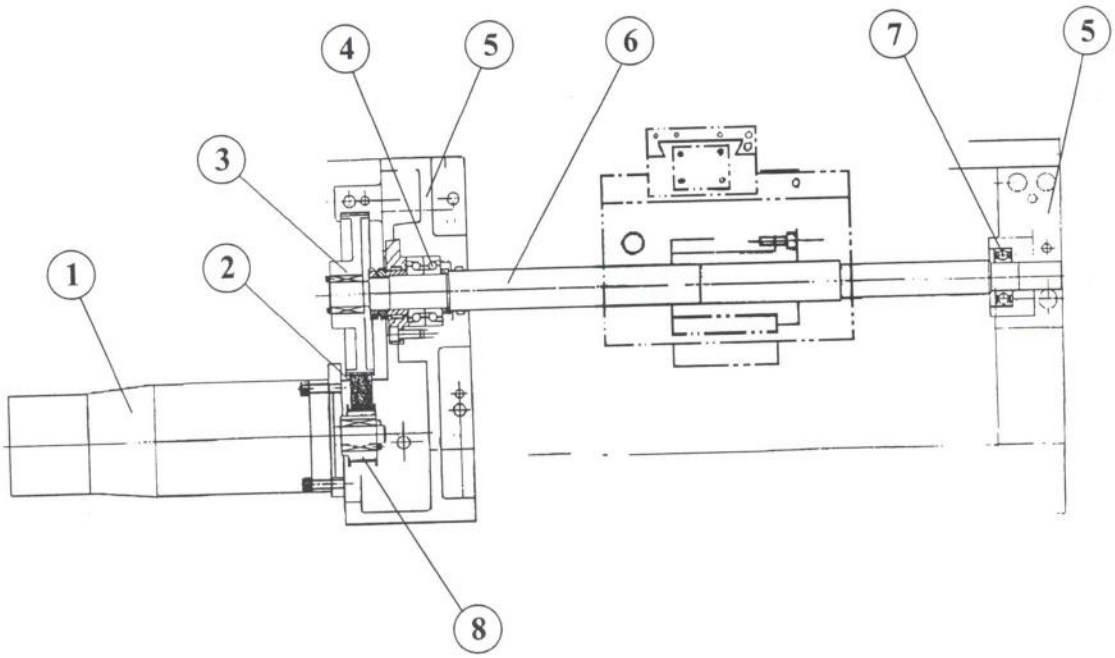


Fig 14 - Z Axis Ball Screw

CROSS SLIDE OPERATION - (X AXIS)

The cross carriage (tools turret) is displaced in the X axis direction actuated by a servomotor (2) coupled through pulleys (1) and (4) and a toothed belt (3) on a ballscrew (7). The ballscrew is supported by two bearings (6), so that the servomotor (2) side there are two angular contact ball bearing (5) and on the opposit side there is a deep grove ball bearing sealed type (8).

The bearings are lubricated with grease (ISOFLEX NBU 15 SPEZIAL- Klüber). This grease is long lasting and under normal conditions it should last up to 10,000 hours of operation.

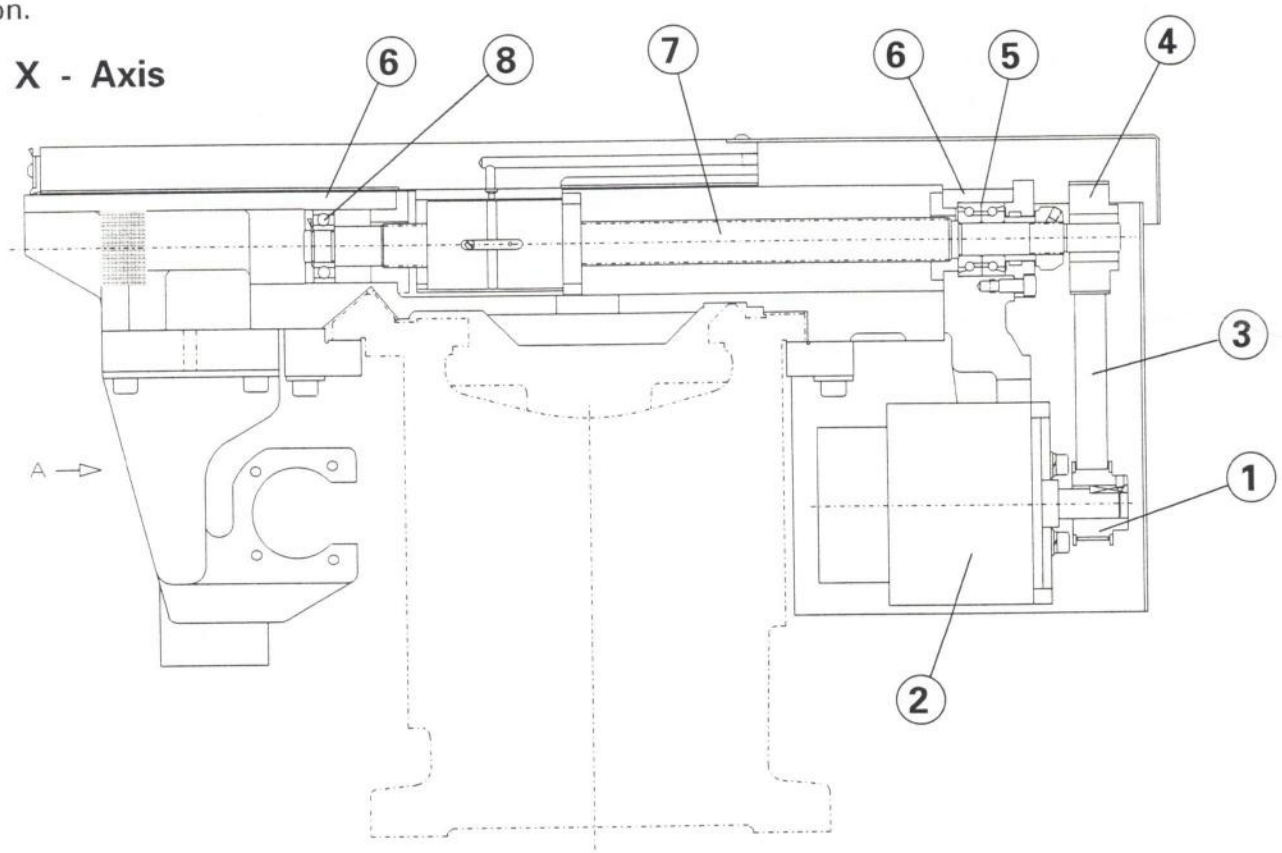


Fig 15 - X Axis - Cross Slide

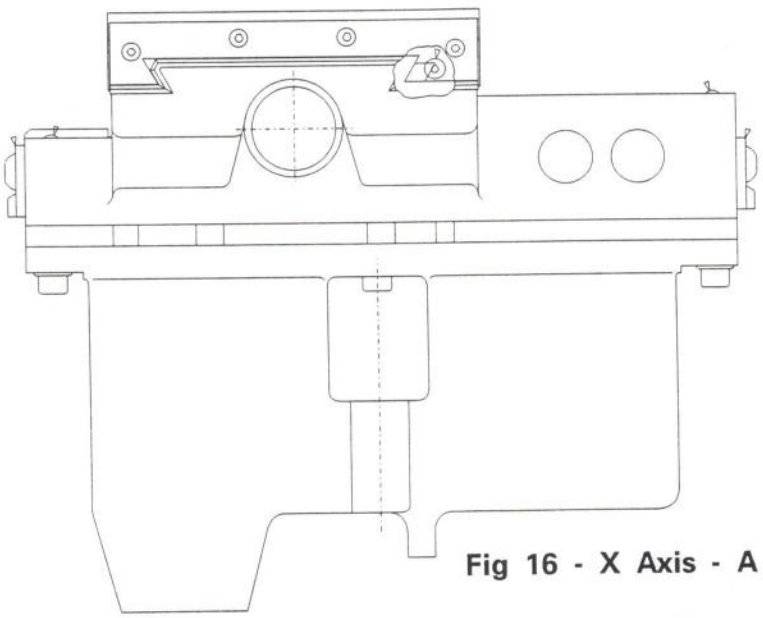


Fig 16 - X Axis - A View

GUIDEWAYS

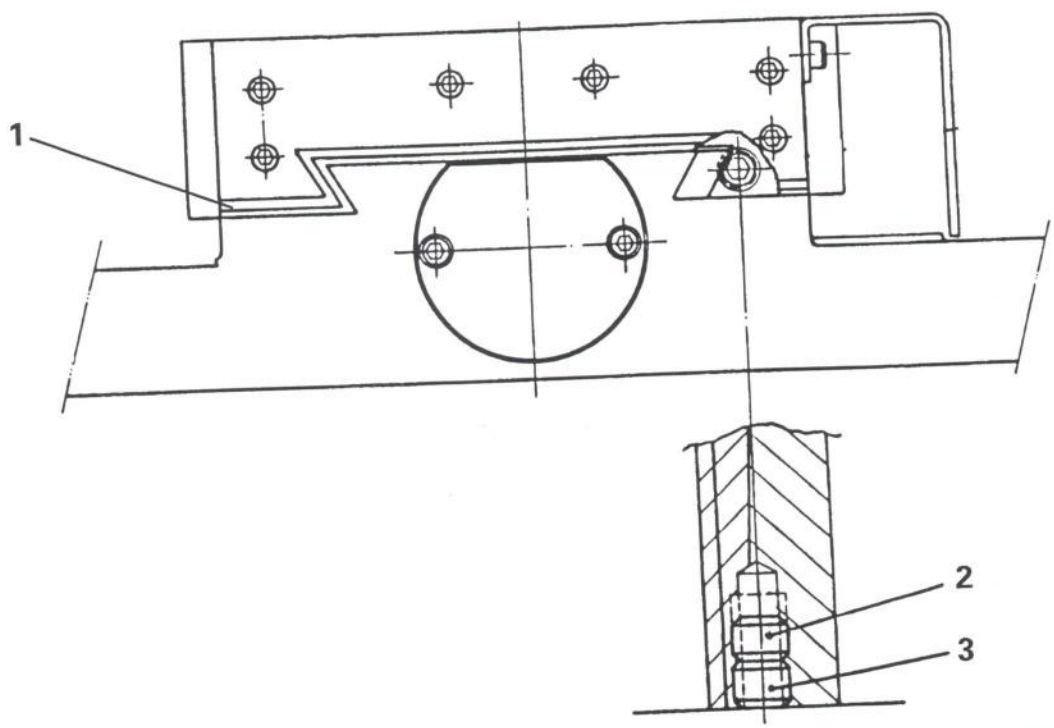
The saddle cast moves on bed actuated by ball screw (Z axis).
The bed is provided with hardened and ground guideways and the saddle is covered with turcite at its contact surfaces with the bed guideways.
The contact between turcite and iron reduces the friction coefficient in relation to iron to iron contact.
Therefore, besides requiring less travel effort, it eliminates stick-slip.
At the upper part of the saddle cast there is a hardened and ground dovetail type guideway. The cross slide slides on this guideway and its movement is made by a ballscrew fixed on the saddle cast (X axis).

TAPERED GIB ADJUSTMENTS

The backlash elimination between cross slide guideways and saddle is achieved through adjustment of a tapered gib.
The first step is loosing the ball screw nut fixed on the croos slide housing.
The Cross Slide becomes free. Then proceed as follows :

A) Remove the wiper cover (1).
B) Remove the screw (3).
C) Tighten the screw (2) until the backlash is eliminated.
D) Put the screw (3) again.
E) Fix the ball screw nut on croos slide housing again.

Fig. 17 - Cross Slide - Backlash Elimination



MOTORIZATION

The Main Motor of this lathe is an AC Electrical Motor with 7.5 HP.
The Electrical Motor Drive of the machine is directly coupled on the Headstock's cast, without any belt and any pulley. It is cooled by an independent electrical blower.
If the Main Motor need to be disassembled for maintenance, check the geometric adjustments of the flange (see fig.20 in the next page) before to assemble it again.

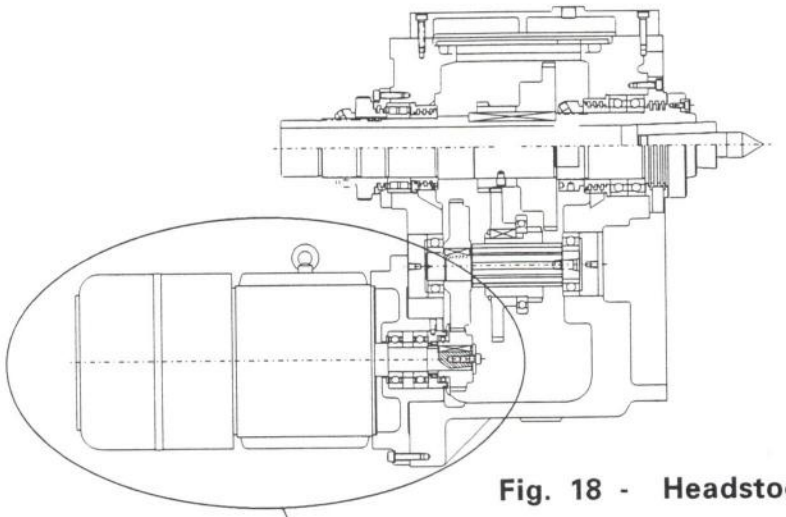


Fig. 18 - Headstock Assembled Group

Fig. 19 - Electrical Motor Detail

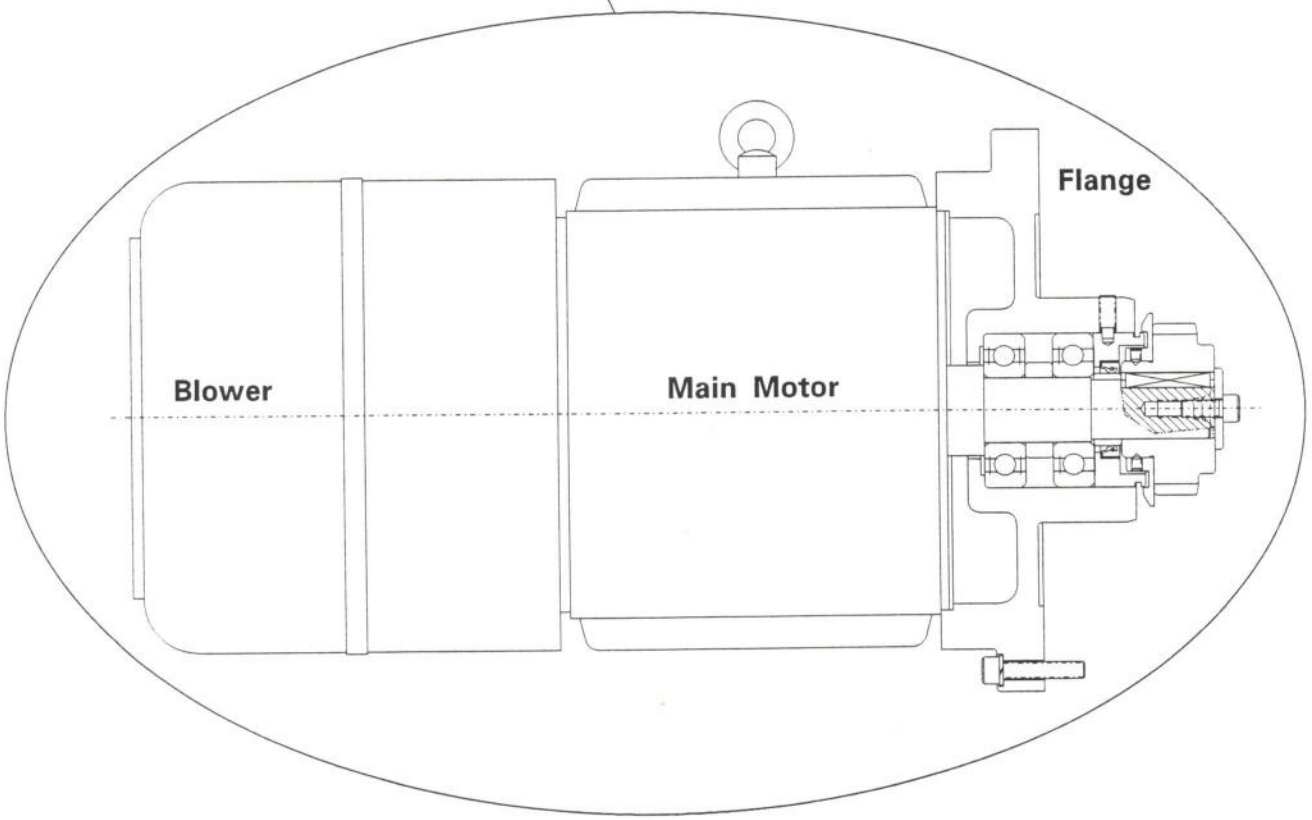
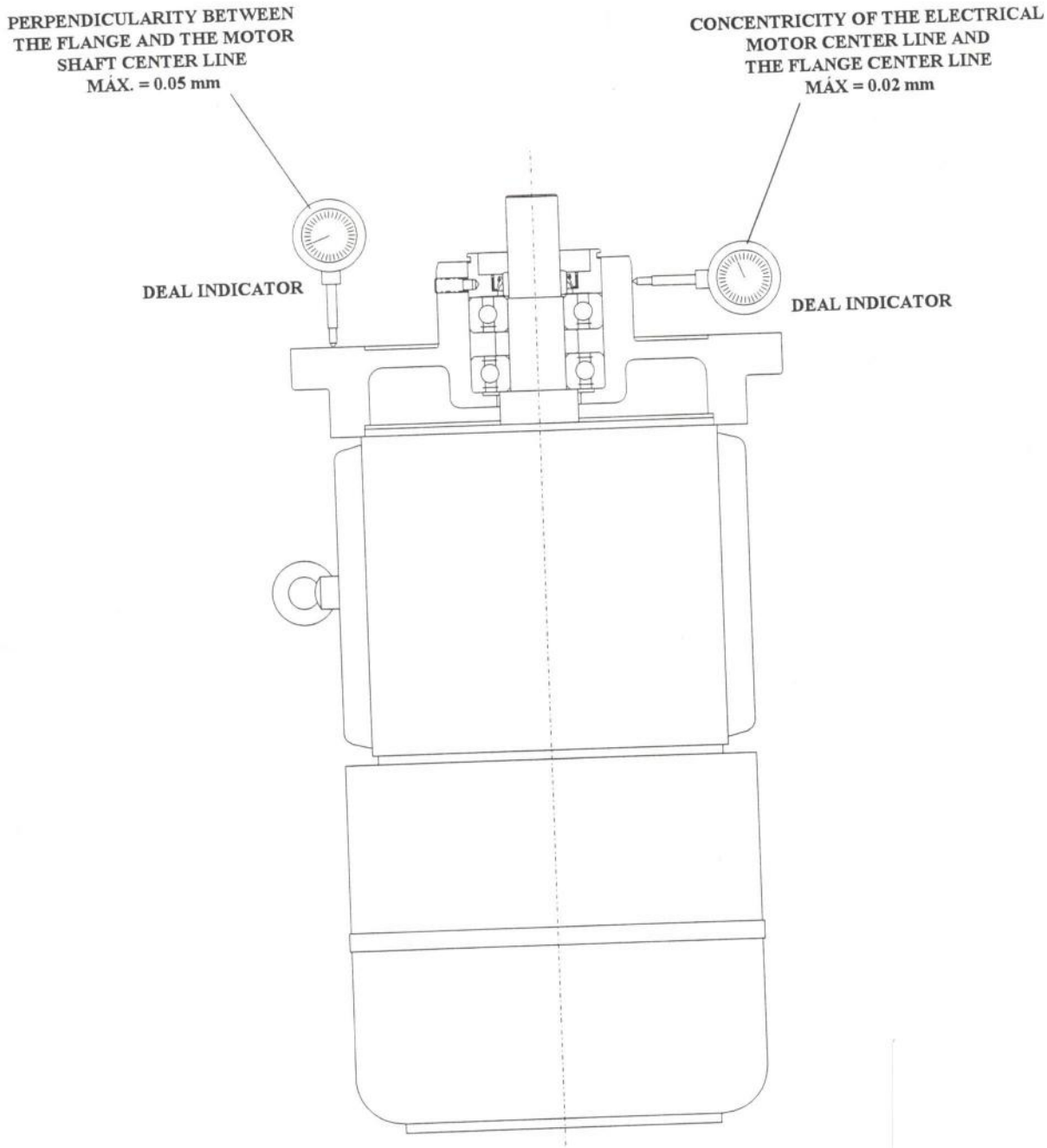


Fig. 20 - Geometryc Tolerances for the Electrical Motor Assembly



TAILSTOCK

The EZPATH S has as standard equipment a mechanical tailstock supplied with Dead Centres MT4.

The tailstock is handly moved along the bed guideways.

The more the quill is advanced the less will be the system rigidity. Therefore, the quill should be positioned with minimum quill advance.

It is important that this machine component is exploited by the user to obtain the best turning quality.

The tailstock clamping on the bed is done by tightening the screws.

The quill fixing is done by tightening the lever.

The quiill lubrication is made handly, and in normal work conditions, must be made every 8 hours.

For this lubrication use oil tipe ONG-68 throught the two oil nipples located beside the headstock body. There is another oil nipple (4) for axial bearings

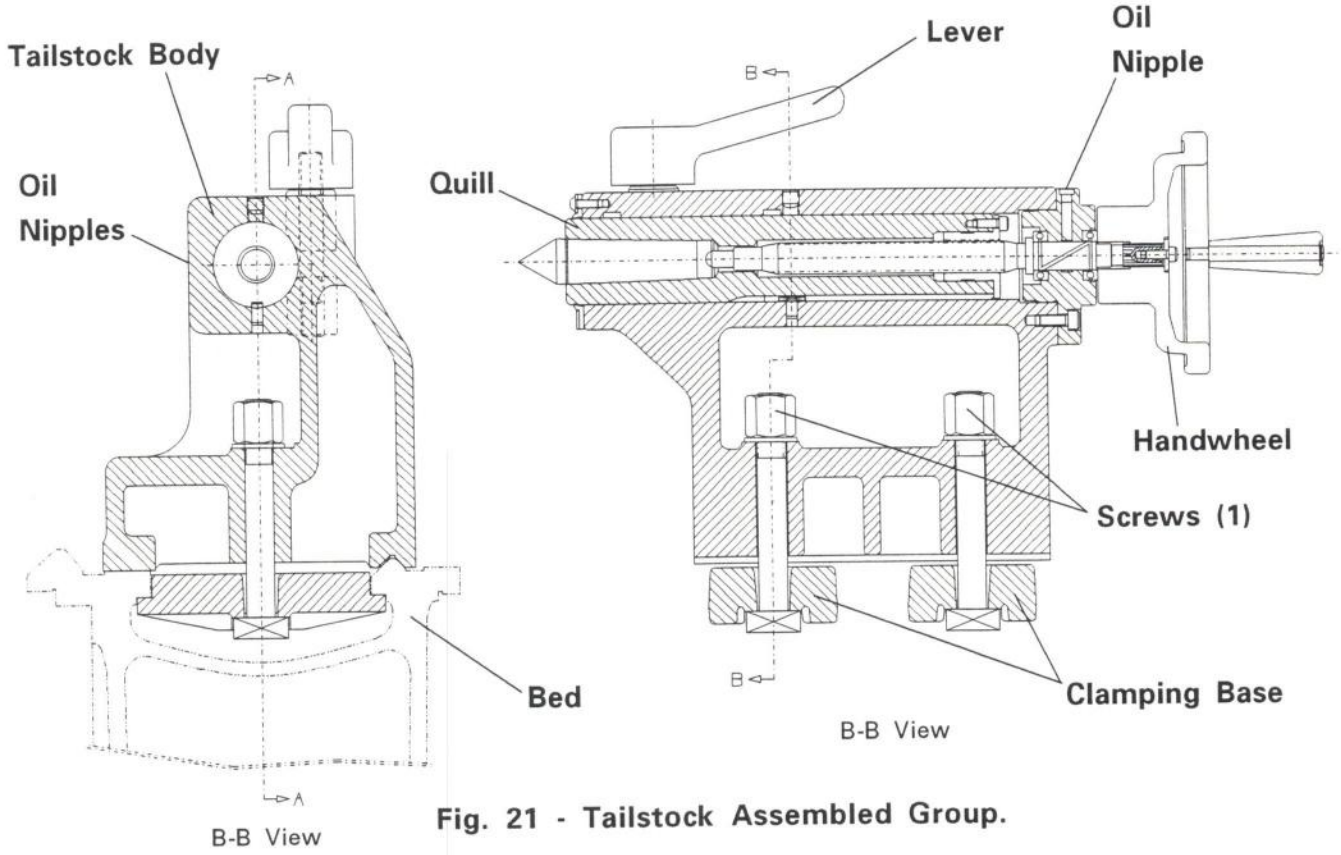


Fig. 21 - Tailstock Assembled Group.

ATTENTION:

* Make sure the tailstock is firmly clamped on the bed before actuating the quill travel.
* When the quill is advanced, that is, the workpiece is held between centers, the tailstock SHOULD NEVER be unclamped.
* The headstock is aligned in the factory, but Romi recommend that the alignement is verify before start run the machine after the installation.
* Verify the wiper cover frequently. If it isn't in good conditions, replace it.

AUTOMATIC LUBRICATION

The saddle, bed and cross slide guideways and ballscrews are lubricated by Automatic Lubrication System. The lubrication design use a system made by BIJUR Lubricating Corporation.
The system use an intermittent automatic pump actuated by a motor with regulated oil injection cycles, Flow Devices that proportions and dispenses oil to a frictional point and Distribution Components (Distributors and tubes).
Oil used: ONG - 68 type.

OPERATION

Lubricator is a motor-driven piston pump spring discharge type. Pump cycle time is controlled by an integral gear reduction in the motor. Lubricator can be actuated manually by raising and releasing the instant feed button.

DISCHARGE VOLUME PER CYCLE

Adjustable from 2.5cc's minimum to 5.0 cc's maximum. The lubricator is supplied at the maximum stroke setting.

DISCHARGE PRESSURE

60 psi maximum. Peak system pressure will decrease when:
(a) dischange volume decreases;
(b) number of Meter Units in system increases;
(c) oil viscosity decreases.

OIL VISCOSITY RANGE

150 to 8000 SSU at operating temperature.

RESERVOIR CAPACITY

1 liter.

LUBRICATOR INTER FILTER

40 micron particle separation.
It should be inspected periodically and cleaned or replaced, as required.

MOTOR

Continuous duty, single phase, synchronous induction timing motor 50/60Hz, dual wound for 115/230V AC. Power consumption 3watts.
For correct wiring, see instruction tag attached to lubricator.
Bijur reserves the right to change motor size, mounting dimensions and/or manufacturer.

PRECAUTIONS:

1 - Use clean oil ONG-68 type, putting it into the reservoir.
Make sure the oil level is not lower than indicated in the reservoir.

2 - Do not apply excessive torque when connecting the tubes to the pump output bore because the tube may be twisted and interfere with the oil discharge.

3 - If the machine remains idle for a long time or even for some hours, air may enter the tubing. Therefore, before turning on the machine that has been idle for some time pull leverseveral times to purge air from the system and fill the tubes with lubricating oil.

NOTE:

After pulling lever do not push it down because it will return to its original position through the spring system.

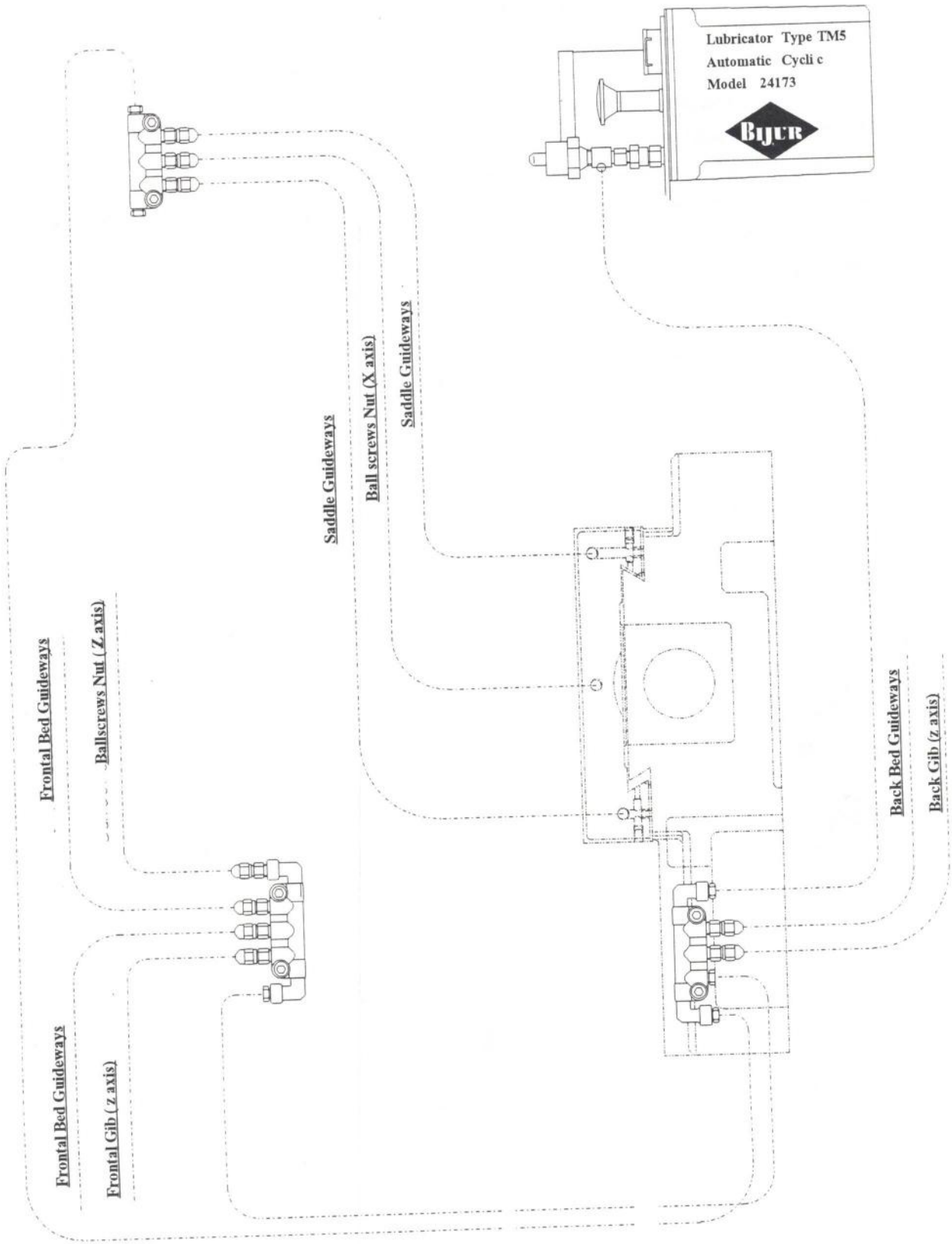
IMPORTANT:

You should not fill the oil reservoir when axis (shafts) are on.
Turn them off before oil filling.

4 - Clean suction filter once a year and replace it, if necessary.

5 - If lubrication is not suitable the causes may be:
- Low oil level.
- Contaminated oil.
- Restrictions in lines.
- Dirty suction filter.
- Damaged tubing at the pump.
- Inadequate oil viscosity.
- Air in the system.
- Pressure Indicator.

Fig. 22 - Lubrication Diagram



COMMAND BOX

The EZPATH S lathe is equiped with a sliding command box.
This box consist in a control panel that can slide on a guide at the machine frontal part, and can moved with the saddle and cross carriage or can moved separetly.
This panel aggregate :

A - Two electrical/mechanicals handwheels, one that commands electronically the Z axis movement (1) and another that commands the X axis movement (2).
B - A lever (3) that commands the spindle start/stop.
C - A lever (4) that makes the coupling of the command box and saddle/cross carriage for slide togheter.
D - Emergency button (5)
E - Hold Button (6)
F - Start Button (7)
G - Select Button - for operationing functions select (8).

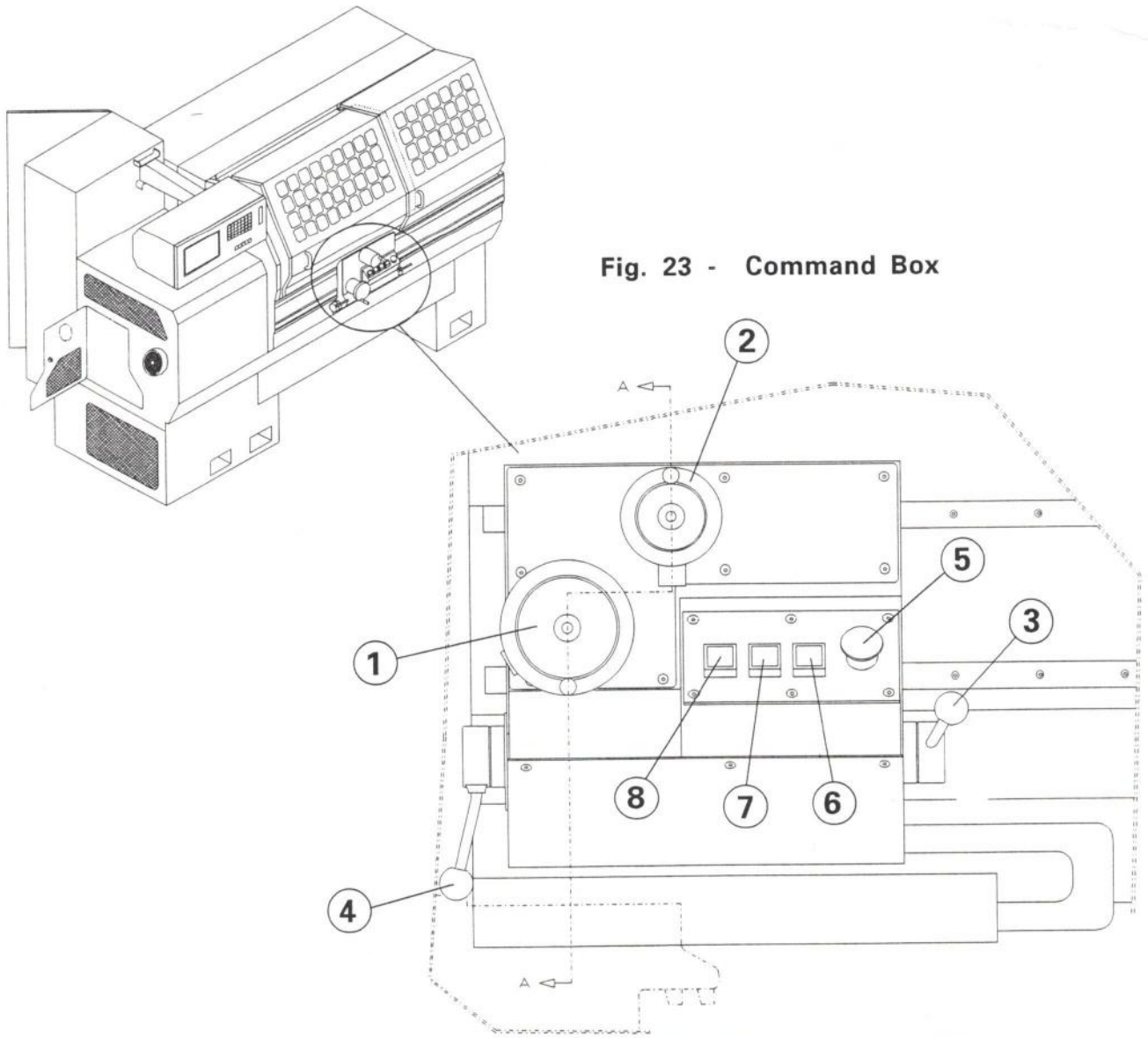
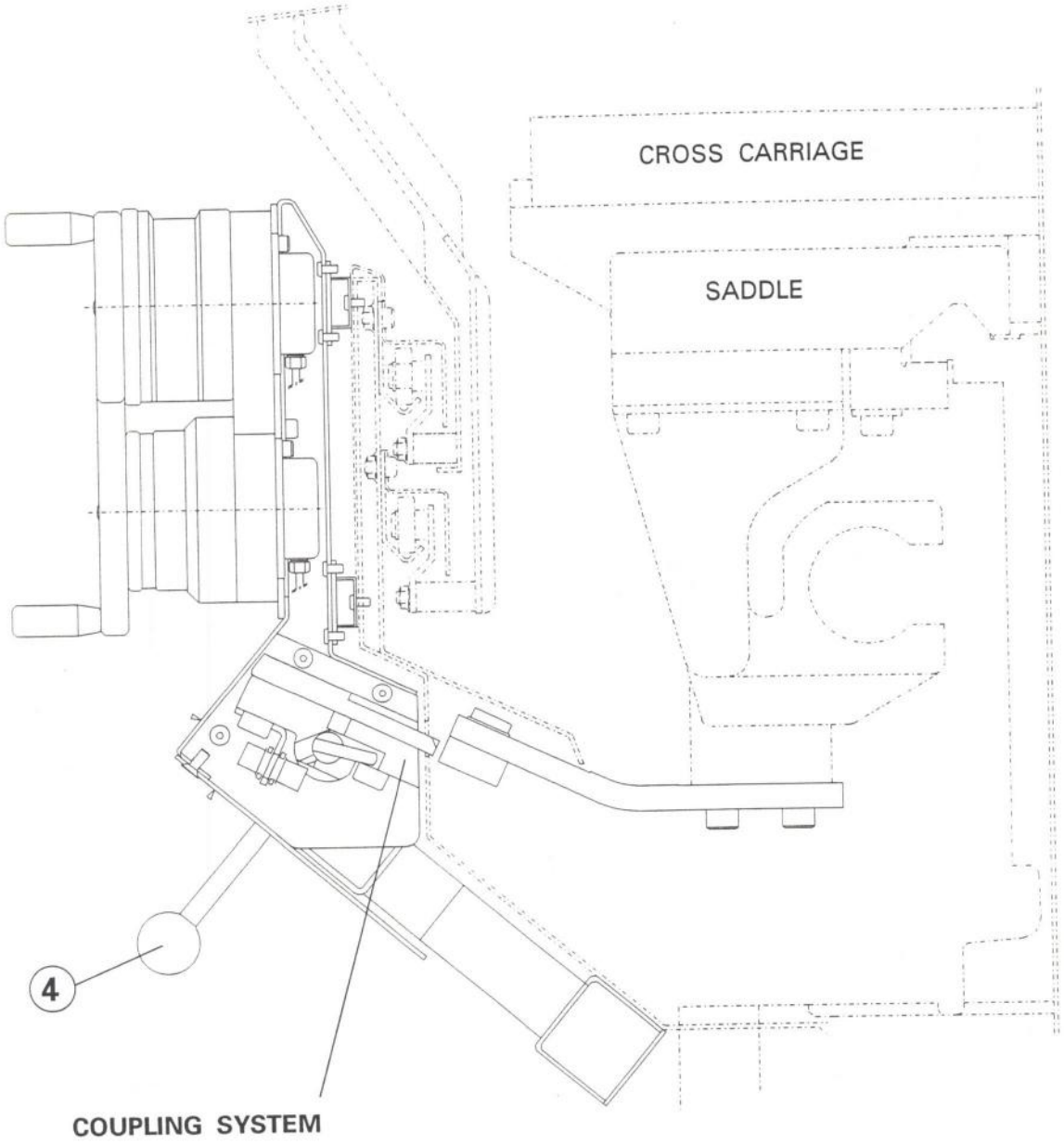


Fig. 23 - Command Box

Fig. 24 - Command Box - Lateral View



A-A View

COOLANT SYSTEM

The EZPATH S complete coolant system consists of a 95 liter (25.3 gal) capacity reservoir (1), electric motor pump (2) with 0.75 rated H.P. and complete piping system.

The coolant pump performance chart is provided on Fig. 18.

Fig. 25 - EZPATH S - Back View - without metal sheet covers

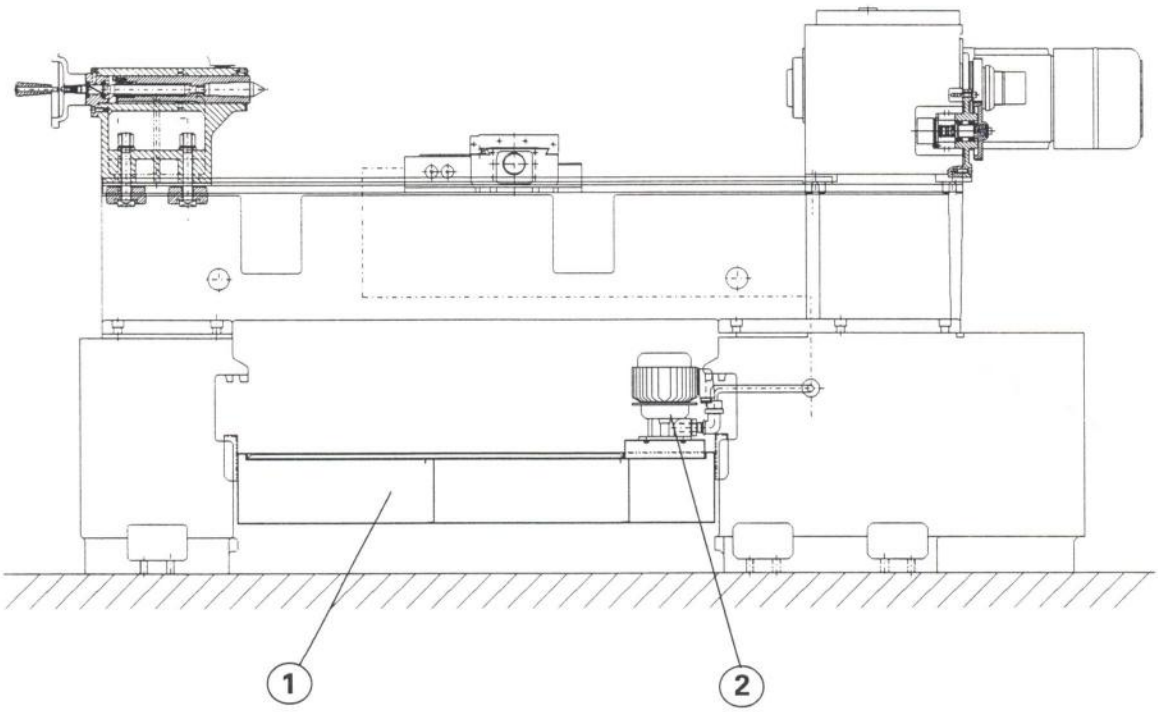
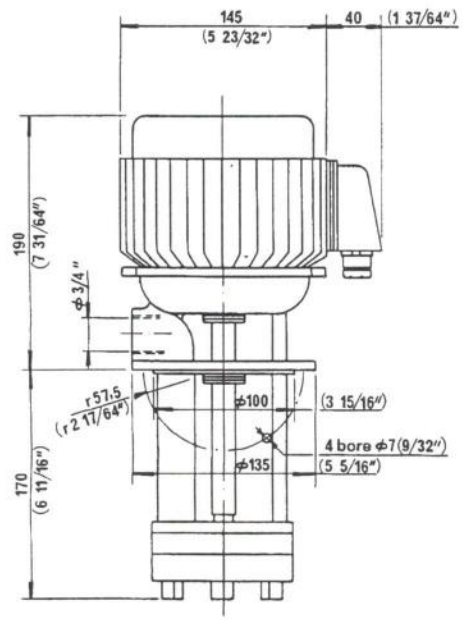
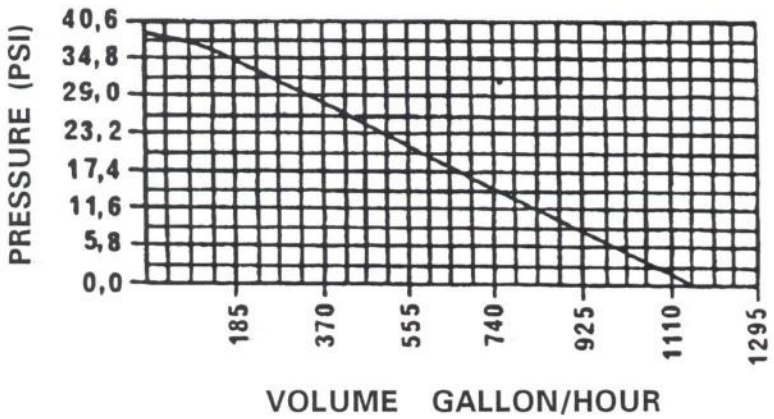


Fig. 26 - Coolant System - Pump Data





REMOVABLE CHIP BOX

The EZPATH S lathe has a removable chip box concepted with a very simple design, so that the operator can easily manipulate to remove chips and clean the machine.
This box is located over the coolant reservoir, and its exit is at the frontal part of the machine.

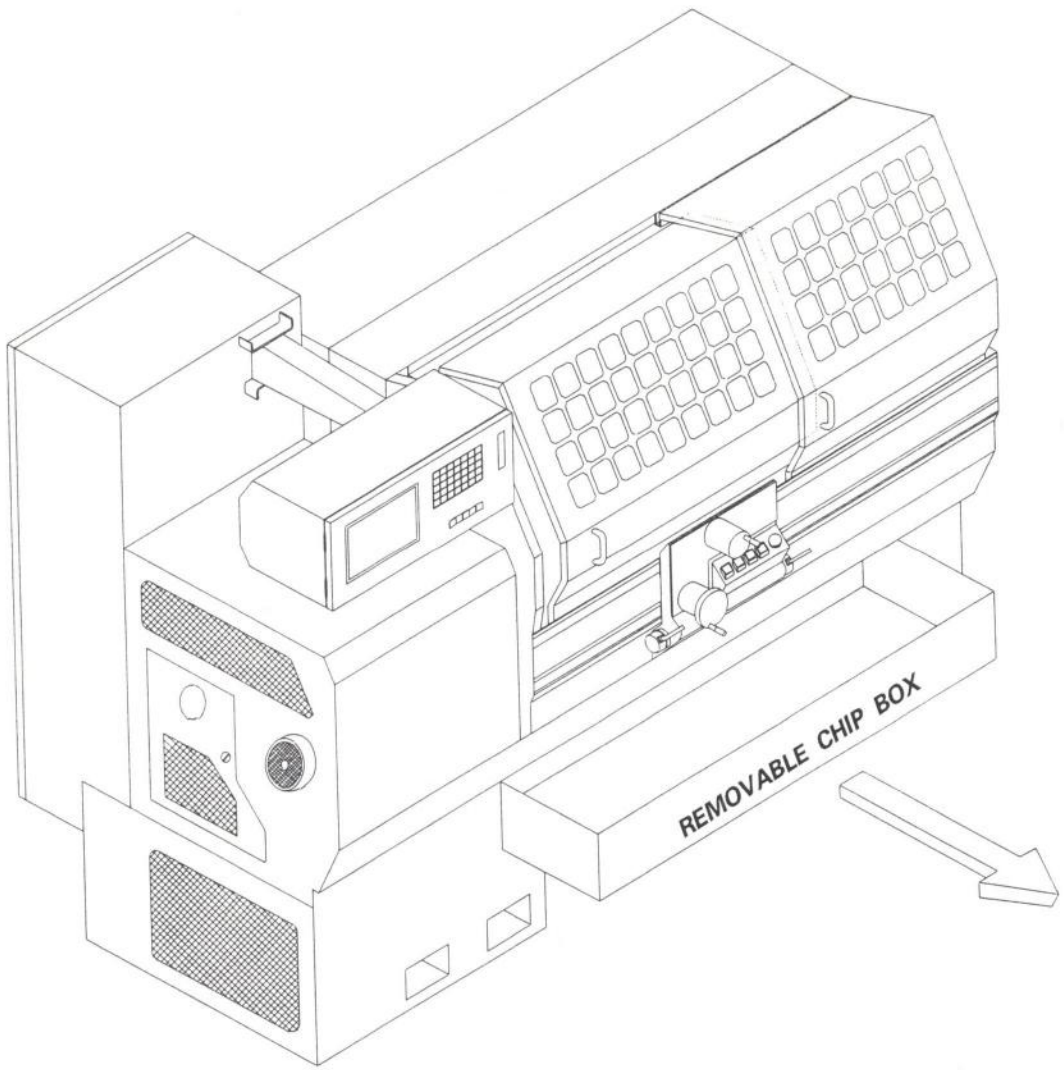


Fig. 27 - Machine View - Removable Chip Box Detail

TABLE OF EQUIVALENT LUBRICANTS

CODE / EQUIVALENT	ONH-68
CASTROL	MAGNA BTD 68
ESSO	FEBRIS K-68
SHELL OIL	TONNA TX 68
TEXACO	LUBRICANT 68
MOBIL OIL	VACTRA OIL N°2

The remaining equivalent lubricants are the result of information collected from suppliers. The absence of indication of an equivalent lubricant or of other suppliers does not mean that they may not supply adequate products, however, we leave to customer's discretion this type of selection and analysis.

The listed equivalent lubricants may be changed by their suppliers, if in doubt contact them.

This information has been specifically compiled by Industrias Romi S/A. We, therefore, reserve the right to list only the products that, in our opinion, seem to have wide enough distribution to justify our tests and administrative costs to offer this service.
No conclusions should be reached by the fact that one product is not listed.

Purchase products only from reliable sources. We do not guarantee and do not act as representative for the listed products. Make sure the lubricant supplier guarantees that its products suits the required specifications.

All lubricants should meet the general quality properties to assure its performance as a lubricant when used under normal conditons on machine tools.

ROMI®

EZPATH S

PARTS MANUAL

R74170A

Sales and service by

Bridgeport

Bridgeport Machines, Inc
500 Lindley Street
Bridgeport, Conn. 06606
Call 1-800-243-4292 (In CT. 1-800-972-4093)

PARTS ORDERING PROCEDURE

1. Always quote the machine Serial Number.

2. Refer to the appropriate assembly and quote individual Part Number taken from the illustration.

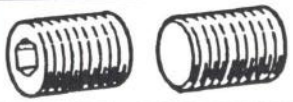
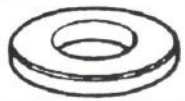
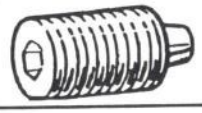
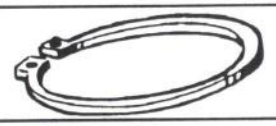
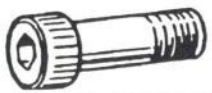
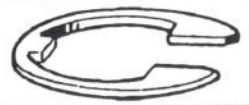
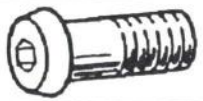
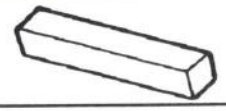
3. Lathes produced after the printing date of this literature may differ from those described here, because of improvements or modifications.

NOTE

Standard and Proprietary Parts (i. e. items which can be purchased from local engineering suppliers) may be identified by the letter code included in the part description.
The last chapter of this manual provides a description of such items.

ROMI

STANDARD AND PURCHASED PARTS

PART	CODE	DESCRIPTION	PART	CODE	DESCRIPTION
	FX	DIAMETER - THREAD - OVERALL LENGTH EXAMPLE: M6x1x10 FX		WN	BORE DIAMETER EXAMPLE: WN 10
	FXD	DIAMETER - THREAD - OVERALL LENGTH EXAMPLE: M8x1.25x10 FXD		CB	DIN Nº - DIAMETER - THICKNESS EXAMPLE: 472-30-1,2 CB
	FXC	DIAMETER - THREAD - OVERALL LENGTH EXAMPLE: M6x1x8 FXC		CE	DIN Nº - SHAFT DIAMETER - THICKNESS EXAMPLE: 471-20-1,2 CE
	FY	DIAMETER - THREAD - LENGTH UNDER HEAD EXAMPLE: M8x1.25x10 FY		CE2	DIN Nº - SHAFT DIAMETER - THICKNESS EXAMPLE: 6799-12-1 CE2
	FV	DIAMETER - THREAD - LENGTH UNDER HEAD EXAMPLE: M6x1x16 FV		CE3	SPECIAL - SHAFT DIAMETER - THICKNESS EXAMPLE: SPECIAL-32-1.12 CE3
	FS	DIAMETER - THREAD - LENGTH UNDER HEAD EXAMPLE: M6x1x10 FS		KR	LENGTH - WIDTH - THICKNESS EXAMPLE: 5x5x25 KR
	FJ	DIAMETER - THREAD - LENGTH UNDER HEAD EXAMPLE: M8x1.25x10 FJ		HTP	DIAMETER - OVERALL LENGTH EXAMPLE: 4x30 HTP
	FH	DIAMETER - THREAD - LENGTH UNDER HEAD EXAMPLE: M8x1.25x35 FH			SUPPLIER'S NAME AND CODE EXAMPLE: SKF 7203 B
	FN	THREAD DIAMETER EXAMPLE: U.N.C. 3/8" FN			
	SB	DIAMETER EXAMPLE: SB 7/32"			

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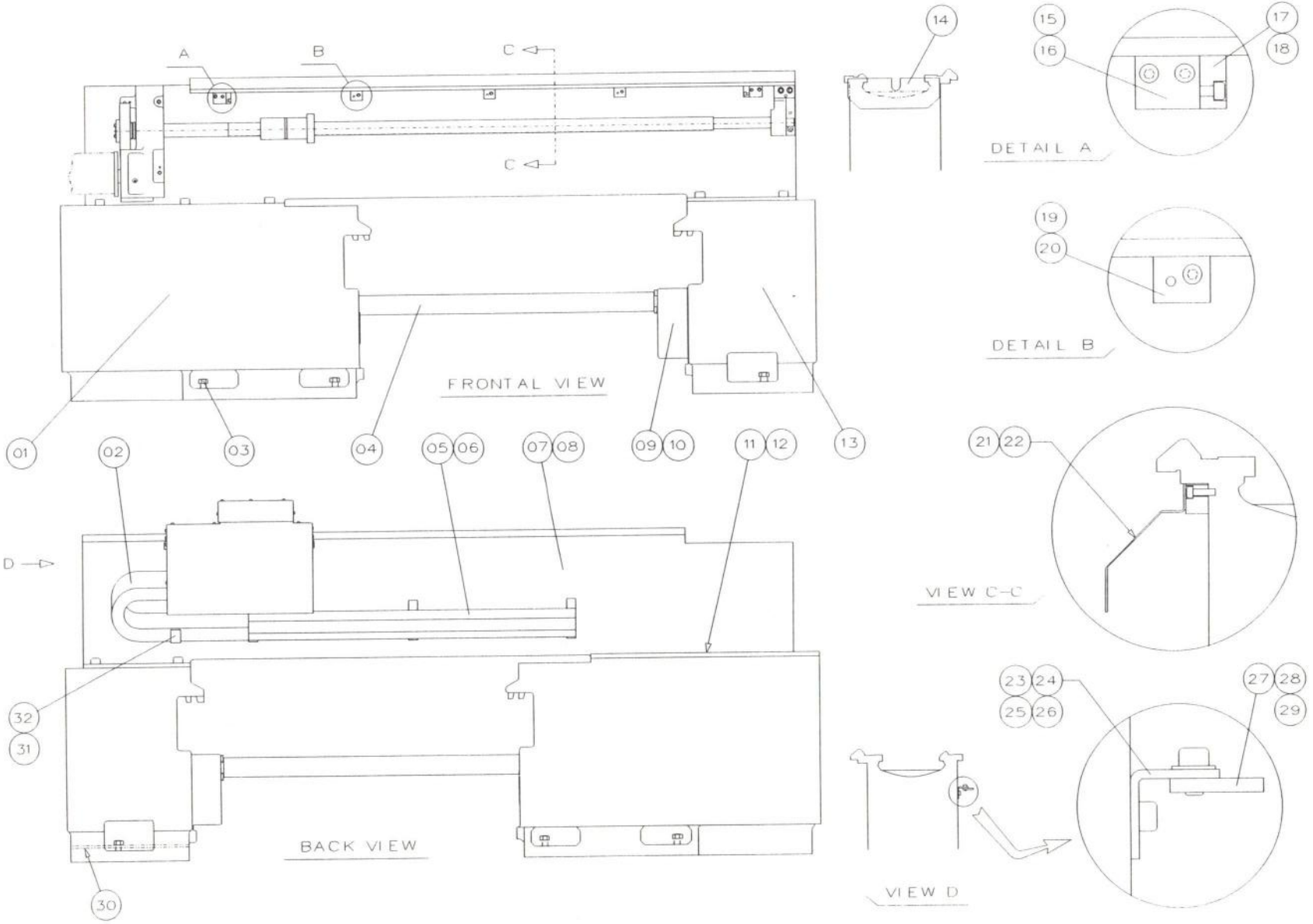
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Nº.	BRIDGEPORT Nº.	ROMI Nº.	DESCRIPTION	ESPECIFICATION / SUPPLIER	QTY
1		R61581	Columm Cast		1
2		R69566	Track		1
3		P19778	Bolt	M16 x 2 x 45 FH	6
4		R61571	Electrical Cables Conductor		1
5		R72502	Cables Conductor		1
6		R72500	Cover		1
7		R70476	Bed Cast		1
8		P24138	Bolt	M16 x 2 x 40 FY	10
9		R64124	Cable Box		1
10		P19810	Bolt	M6 x 1 x 12 FY	3
11		R72539	Electrical Panel Base		1
12		P32755	Bolt	M8 x 1,25 x 25 FS	4
13		R56087	Columm Cast		1
14		R47286	Cover		1
15		R39710	Block		2
16		P19815	Bolt	M6 x 1 x 25 FY	4
17		R73650	Stopper		2
18		P19810	Bolt	M6 x 1 x 12 FY	2
19		R39714	Spacer		3
20		P19815	Bolt	M6 x 1 x 25 FS	3
21		R72975	Ball Screw Cover		1
22		P34124	Bolt	M6 x 1 x 10 FY	3
23		R72378	Came Support		1
24		P19811	Bolt	M6 x 1 x 16 FY	2
25		P18779	Washer	WN 6	2

BED

Nº.	BRIDGEPORT Nº.	ROMI Nº.	DESCRIPTION	ESPECIFICATION / SUPPLIER	QTY
26		P18793	Elastic Washer	M6	2
27		R61250	Came		1
28		P19797	Bolt	M5 x 0,8 x 12 FY	2
29		P18792	Elastic Washer	M5	2
30		R56410	Transformer Base		1
31		P19810	Bolt	M6 x 1 x 12 FY	2
32		R72499	Support		1
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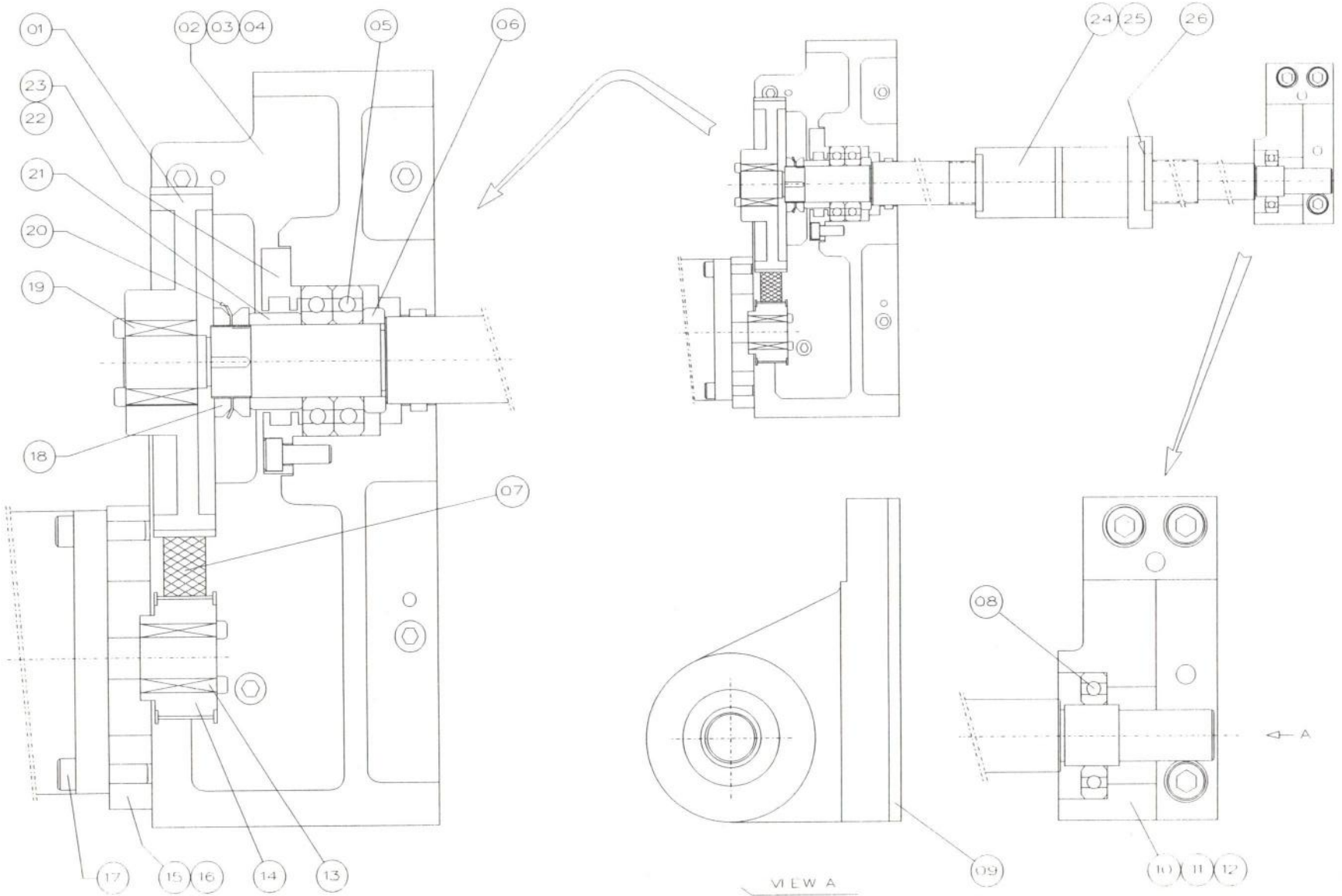
BED - " Z Axis " Assembly

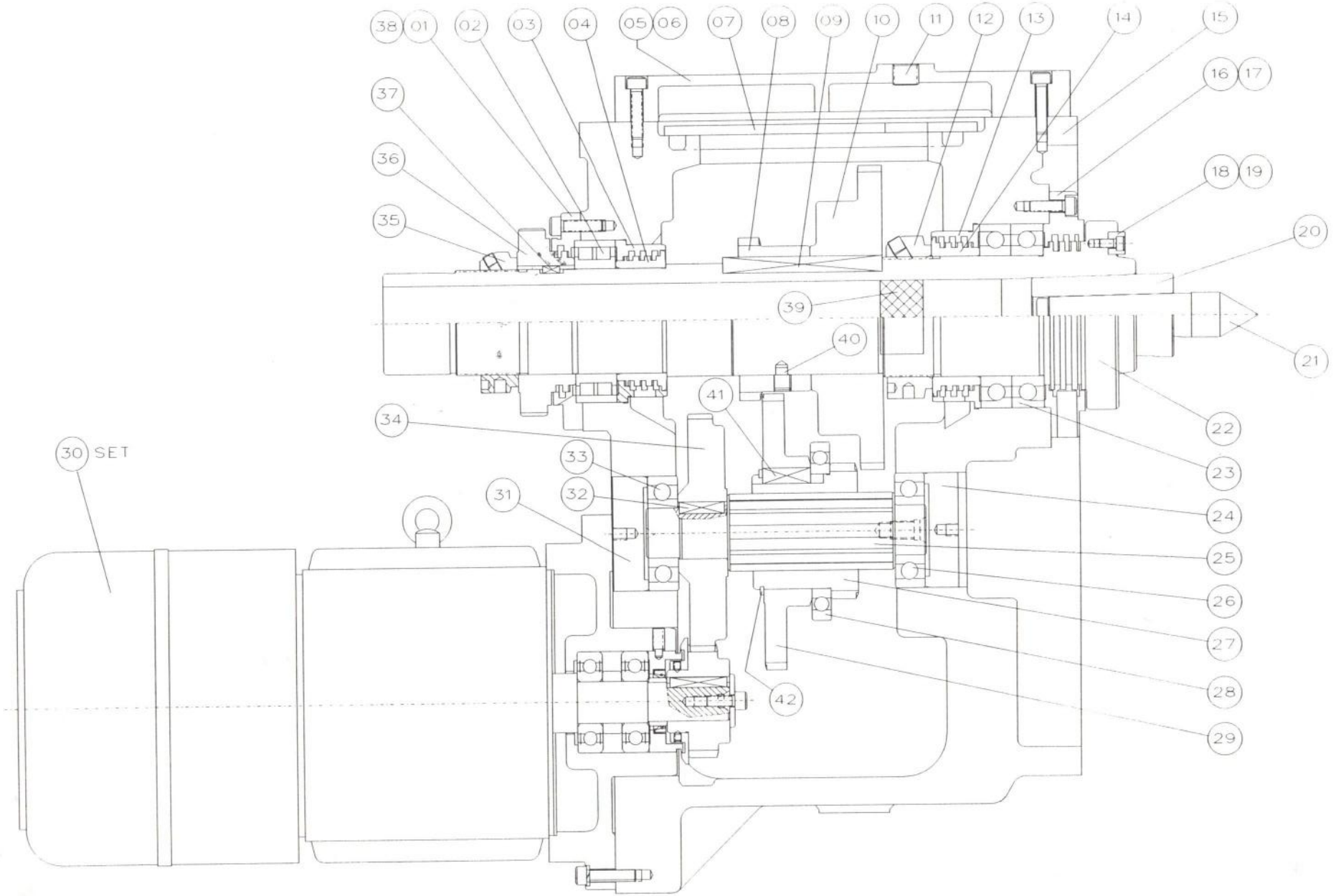


ROMI®

BED - " Z Axis " Assembly

Nº.	BRIDGEPORT Nº.	ROMI Nº.	DESCRIPTION	ESPECIFICATION / SUPPLIER	QTY
1		R40744	Toothed Pulley		1
2		R72919	Servomotor Support		1
3		P19832	Bolt	M8 x 1,25 x 35 FY	4
4		P91820	Taper Pin	Ø6 x 32 mm	2
5		R22765	Angular Contact Ball Bearing Set	NSK 30 TAC 62B DB C10 PN7A / SKF BSD - 3062C/DBA	1
6		R28361	Ring		1
7		R41526	Toothed Belt		1
8		P69094	Ball Bearing	SKF 6205 - 2RS / NSK 6205 DDU	1
9		R39562	Spacer		1
10		R39563	Back Bearing House		1
11		P19843	Bolt		3
12		P19950	Pin		2
13		R49494	Bush		1
14		R63918	Toothed Pulley		1
15		R72920	Servomotor Base		1
16		P19831	Bolt	M8 x 1,25 x 30 FY	4
17		P19815	Bolt	M6 x 1 x 25 FY	4
18		R34 540	Nut	M30 x 1,5 - SKF KM6	2
19		Q84154	Bush		1
20		P34539	Safety Washer	SKF	1
21		R28359	Spacer		1
22		P19828	Bolt	M8 x 1,25 x 20 FY	6
23		R28358	Flange		1
24		R44755	Ball Screw Set	Ø36 - LEAD = 12 mm	1
25		P19830	Bolt	M8 x 1,25 x 25 FY	4

HEADSTOCK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HEADSTOCK

Nº.	BRIDGEPORT Nº.	ROMI Nº.	DESCRIPTION	ESPECIFICATION / SUPPLIER	QTY
1		R69445	External back lid		1
2		R49674	Cylindrical roller bearing - double row	SKFNN3016TN / SPW33	1
3		R69453	Back labyrinth - ext. ring		1
4		R69454	Back labyrinth - inner. ring		1
5		R69470	Headstock lid		1
6		P19832	Bold	M8x1,25x35 FY	10
7		R69469	Accoustic lid		1
8		R69452	Gear Z = 44 M = 2,5		1
9		R62298	Key		1
10		R69451	Gear Z = 84 M = 2,5		1
11		P19206	Plug	1/2" NPTF	1
12		R69563	Nut M85x2mm	SKF KMTA17	1
13		R69449	Frontal labyrinth - ext ring		1
14		R69450	Frontal labyrinth - inner ring		1
15		R69446	Headstock cast		1
16		R69448	External labyrinth		1
17		P19830	Bolt	M8x1,25x25 FY	7
18		P28975	Drag key		1
19		P19810	Bolt	M6x1x12 FY	1
20		R48497	Spindle quill		1
21		P81394	Dear center CM4		1
22		R69447	Spindle ASA A2-5"		1
23		R48916	Set of angular contact ball bearings	NSK7017CTYDBC7P5	1
24		R66435	Lid Ø80 x 24		1
25		R66430	Splined shaft		1

HEADSTOCK

Nº.	BRIDGEPORT Nº.	ROMI Nº.	DESCRIPTION	ESPECIFICATION / SUPPLIER	QTY
26		P40018	Ball bearing 6307	NSK6307 - NACHI6307 - FAG6307 - SKF6307	1
27		R69457	Gear	Z = 36 M = 2,5	1
28		R69565	Ball bearing 16016	SKF 1606	1
29		R69458	Gear	Z = 76 M 2,5	1
30		R69461	Electrical Motor Set		1
31		R66435	Lid		1
32		R50516	Key		1
33		P40018	Ball bearing 6307	NSK6307 - NACHI6307 - FAG6307 - SKF6307	1
34		R69459	Gear	Z = 65 M = 2,5	1
35		R69562	Nut M75x2	SKF KMT15	1
36		R69456	Toothed pulley with labirinth		1
37		P18853	Key		1
38		P19831	Bolt	M8x1,25x30 FY	6
39		R27536	Rubber		1
40		P49202	Toock screw	M12x1,75x16 FXD	1
41		R66434	Key		1
42		P29660	Elastic Ring	471-80-2,5 CE	1
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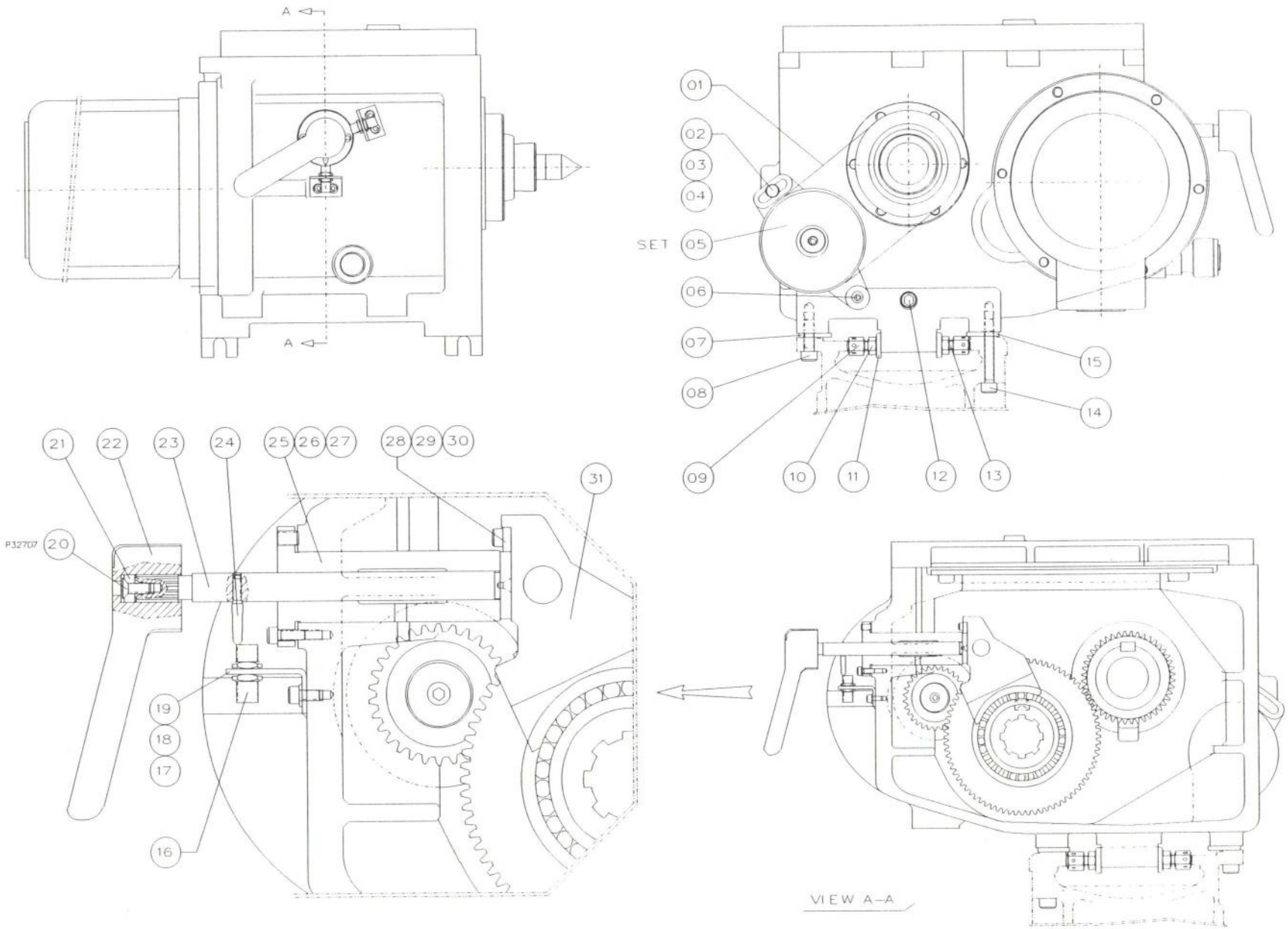
HEADSTOCK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HEADSTOCK

Nº.	BRIDGEPORT Nº.	ROMI Nº.	DESCRIPTION	ESPECIFICATION / SUPPLIER	QTY
1		R03999	Toothed belt	GATES 285 L 050	1
2		P19832	Bolt	M8x1,25x35 FY	1
3		P18780	Washer	WN8	1
4		P18794	Elastic washer	M8	1
5		R66467	Encoder set		1
6		P19830	Bolt	M8 x1,25x25 FY	1
7		R17593	Spacer plate		1
8		P19858	Bolt	M12x1,75x40 FY	1
9		R69473	Nut	M12x1,75 FN	4
10		P20121	Nut	M12x1,75x10 FN	4
11		P66992	Washer	12 WN	4
12		R41702	Plug with magnetic steam	1/2"	1
13		R69472	Screw steam		2
14		P19864	Bolt	M12x1,75x80 FY	1
15		R17593	Spacer plate		1
16		R12175	Proximity sensor		2
17		P18779	Washer	WN6	4
18		P19810	Bolt	M6x1x12 FY	4
19		R72615	Sensor support		2
20		P32707	Bolt	M6x1x16 FV	1
21		P67381	Nylon washer		1
22		P41899	Handling lever		1
23		R69466	Fork starting gear		1
24		P94221	Taper pin		1
25		R69467	Guide bush		1

HEADSTOCK

Nº.	BRIDGEPORT Nº.	ROMI Nº.	DESCRIPTION	ESPECIFICATION / SUPPLIER	QTY
26		P19815	Bolt	M6x1x25 FY	1
27		P19387	Bolt	M8x1,25x12 FX	2
28		R66439	Rack		1
29		P19809	Bolt	M6x1x10 FY	2
30		P24112	Elastic pin		1
31		R69462	Fork		1
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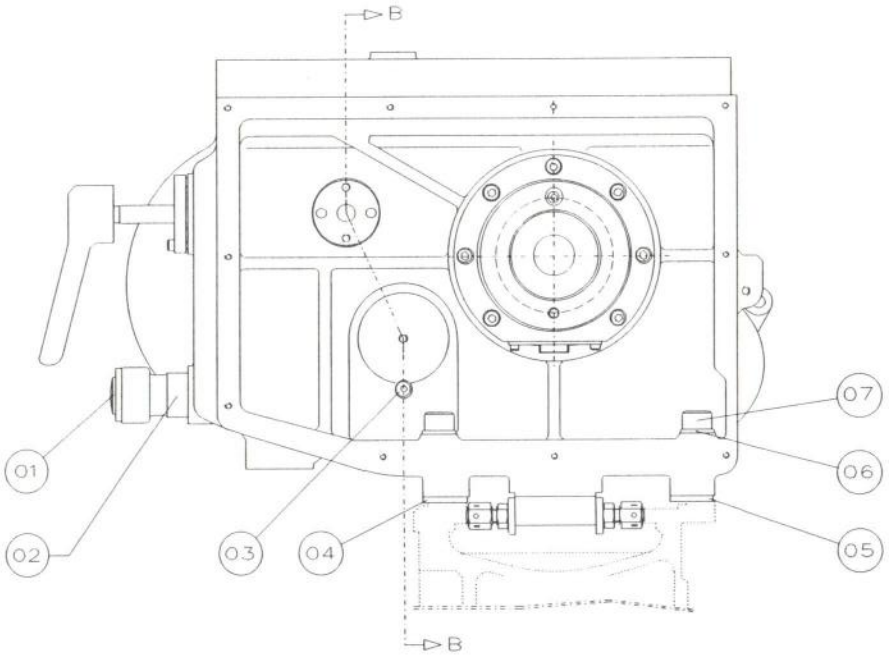
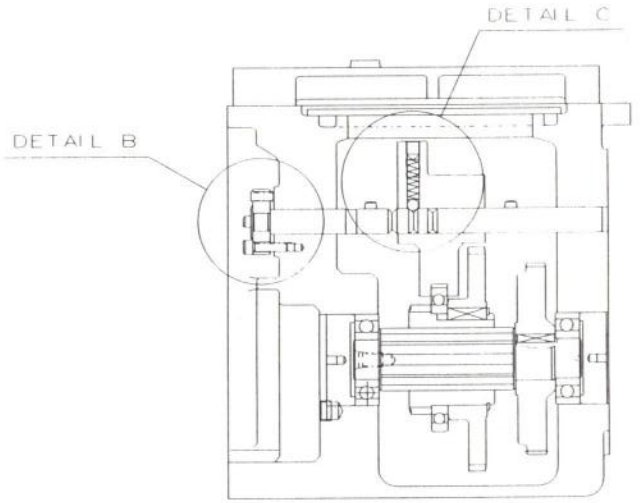
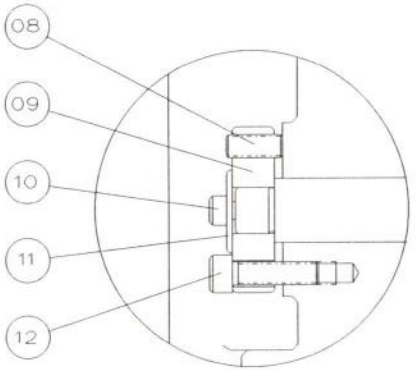
HEADSTOCK

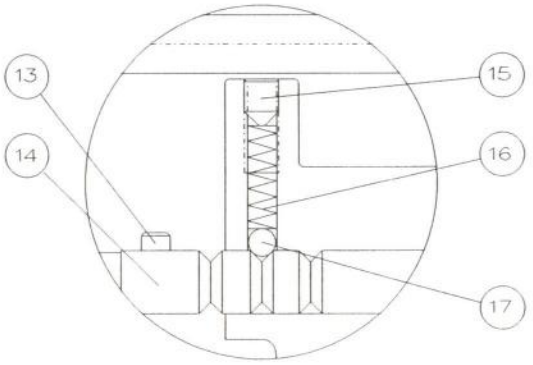




VIEW B-B



DETAIL B



DETAIL C

HEADSTOCK

Nº.	BRIDGEPORT Nº.	ROMI Nº.	DESCRIPTION	ESPECIFICATION / SUPPLIER	QTY
1		Q03094	Oil spyhole		1
2		R69471	Spyhole prolonger		1
3		Q17121	Special screw	M16x1,5	1
4		R17592	Spacer		1
5		R17592	Spacer		1
6		P18784	Washer	WN10	2
7		P19882	Bolt	M16x2x80 FY	2
8		P19389	Bolt	M8x1,25x20 FX	2
9		R66443	Tock ring		1
10		P19811	Bolt	M16x2x70 FY	1
11		P93301	Special washer		1
12		P19831	Bolt	M8X1,25x30 FY	2
13		P19809	Bolt	M6x1x10 FY	2
14		R69464	Localizing shaft		1
15		Q24367	Bolt	M12x1,75x16 FXC	1
16		P19483	Helicoidal spring		1
17		P32870	Steel ball		1
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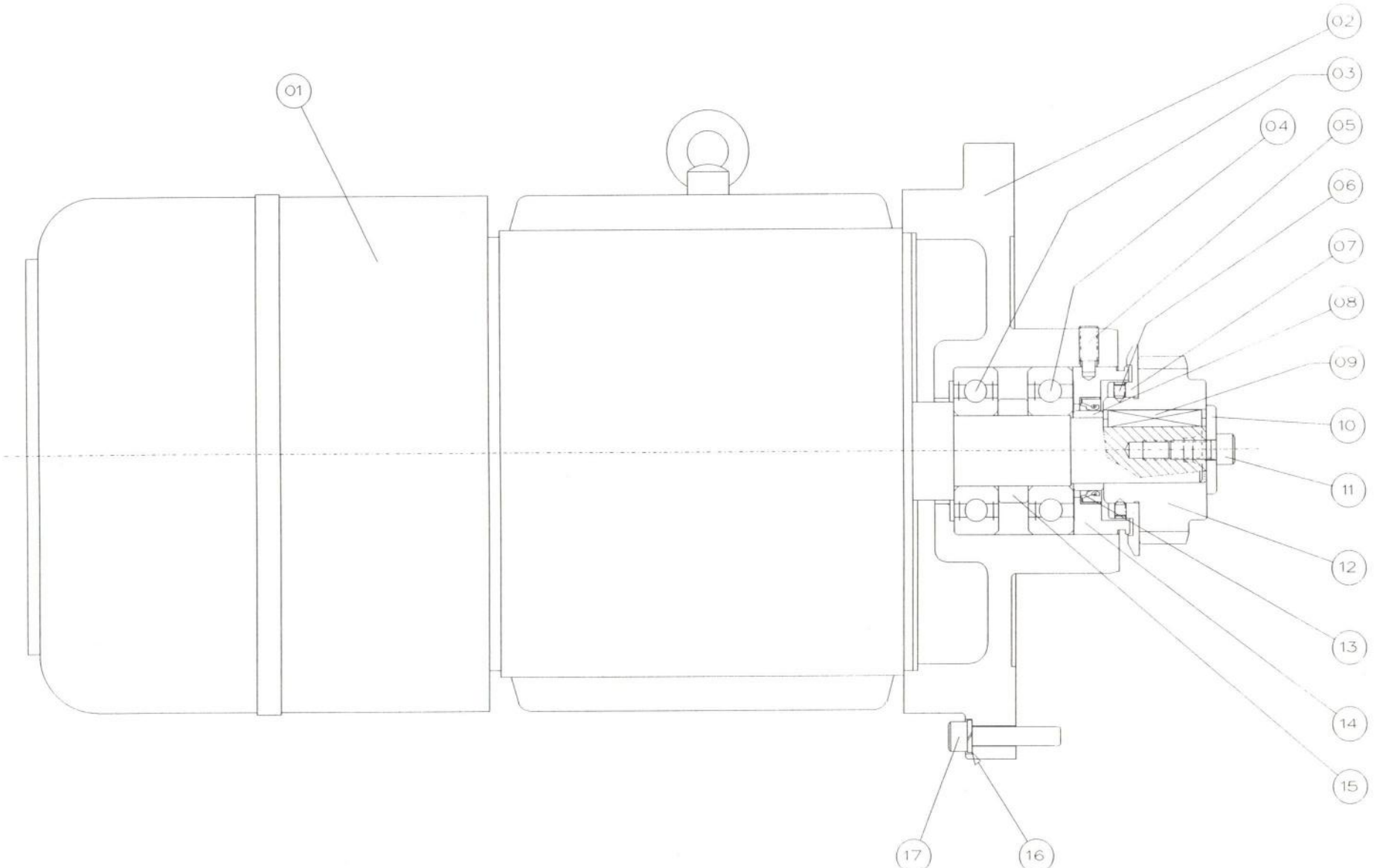
HEADSTOCK - Main Motor Assembly

R69461 – PART NUMBER ROMI



HEADSTOCK - Main Motor Assembly

Nº.	BRIDGEPORT Nº.	ROMI Nº.	DESCRIPTION	ESPECIFICATION / SUPPLIER	QTY
1		R69564	Electrical motor		1
2		R69523	Motor tid		1
3		A01923	Ball bearing	FAG 6306 ZZ / SKF 6306 ZZ / NSK6306ZZ	1
4		A01923	Ball bearing	FAG 6306 ZZ / SKF 6306 ZZ / NSK6306ZZ	1
5		P19437	Bolt	M8x1,25x20 FXD	1
6		P47810	Bolt	M5x0,8x6 FX	2
7		R71185	Deflector		1
8		R71188	Spacer ring		1
9		P18952	Key		1
10		P92975	Special washer		1
11		P19830	Bolt	M8x1,25x25 FY	1
12		R69460	Gear	Z = 30 M = 2,5	1
13		R68291	Viton Sealer		1
14		R71186	Sealer housing		1
15		R71187	Spacer ring		1
16		P18794	Elastic washer	M8	1
17		P19382	Bolt	M6x1x12 FX	1
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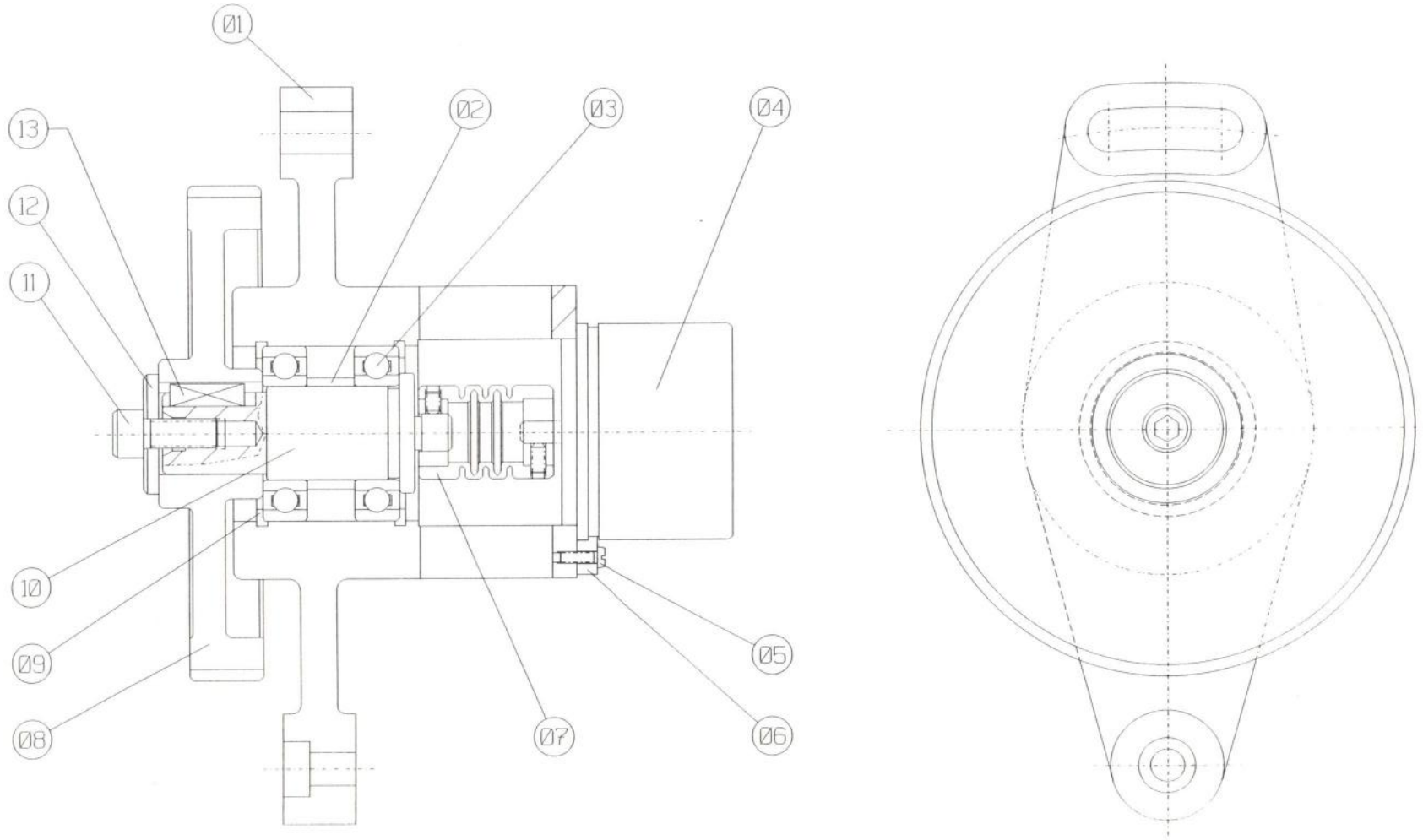
R66467 - PART NUMBER ROMI
ENCODER (Assembled Set)



HEADSTOCK - Ecoder Assembly

Nº.	BRIDGEPORT Nº.	ROMI Nº.	DESCRIPTION	ESPECIFICATION / SUPPLIER	QTY
1		R66468	Support		1
2		R03897	Spacer ring		1
3		P49515	Ball bearing	SKF 6005 - 2RS / NSK 6005 DDV	2
4		Q85246	Encoder 1250 pulses		1
5		P69676	Screw	M10x0,5x10	3
6		Q87865	Special washer		3
7		Q88064	Elastic coupling		1
8		R66469	Toolthed pulley		1
9		P18665	Elastic ring	472-47-1,75 CB	1
10		R66471	Shaft		1
11		P19828	Bolt	M8x1,25x20 FY	1
12		Q17133	Special washer		1
13		P18936	Key		
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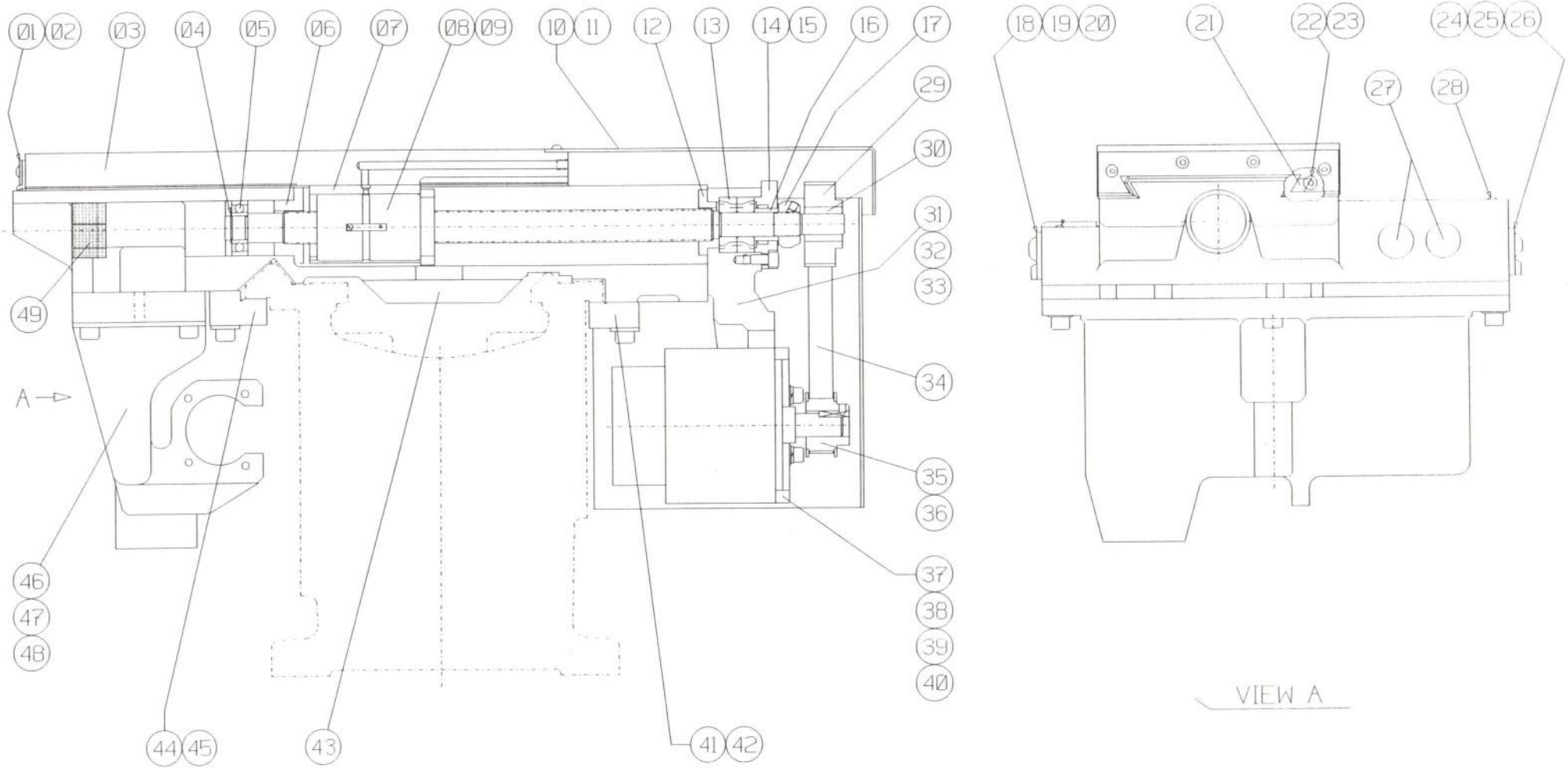
SADDLE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SADDLE

Nº.	BRIDGEPORT Nº.	ROMI Nº.	DESCRIPTION	ESPECIFICATION / SUPPLIER	QTY
1		R72893	Wiper cover		1
2		P73671	Bolt	M6x1x10 FS	4
3		R71385	Cross slide cast		1
4		P18696	Elastic ring	471-20-1,2 CE	1
5		P16327	Ball bearing		1
6		R39348	Frontalstop		1
7		R39341	Shaft bearing		1
8		R55550	Ball screw assembled		1
9		P19815	Bolt	M6x1x25 FY	4
10		R71428	Cover		1
11		P73671	Bolt	M6x1x10 FS	5
12		R39349	Backstop		1
13		R04504	Bearing	NSK 20TAC47BDBC10 PN7A	1
14		R09369	Flange		1
15		P19826	Bolt	M8x1,25x16 FY	3
16		R09370	Spacer		1
17		R21029	Nut M201	SKF KMT4	1
18		P64814	Frontal wiper		1
19		R64813	Back wiper		1
20		P73672	Bolt	M6x1x16 FS	4
21		R70433	Taper gib		1
22		Q17119	Screw	M12x1,5mm	1
23		Q17120	Screw	M12x1,5mm	1
24		P64812	Frontal wiper		1
25		R64815	Back wiper		1

SADDLE

Nº.	BRIDGEPORT Nº.	ROMI Nº.	DESCRIPTION	ESPECIFICATION / SUPPLIER	QTY
26		P73672	Bolt	M6x1x16 FS	4
27		P98076	Lid		2
28		P91833	Taper pin	Ø80x80mm	2
29		R40743	Toothed pulley		1
30		R49495	Bush		1
31		R71292	Servo motor x support		1
32		P19844	Bolt	M10x1,5x35 FY	4
33		P91842	Taper pin	Ø80x40mm	2
34		R50746	Toothed belt		1
35		R63918	Toothed pulley		1
36		P34258	Bolt	M5x0,8x10 FXC	1
37		R71293	Flange		1
38		P19826	Bolt	M8x1,25x16 FY	4
39		P18780	Washer	WN8	4
40		P18794	Elastic washer	M8	4
41		R71412	Back gib		1
42		P19845	Bolt	M10x1,5x40 FY	4
43		R71410	Saddle		1
44		R70278	Frontal gib		1
45		P19846	Bolt	M10x1,5x45 FY	4
46		R71296	Ball screw housing		1
47		P19846	Bolt	M10x1,5x45 FY	5
48		P18781	Washer	WN10	5
49		R27536	Rubber		1
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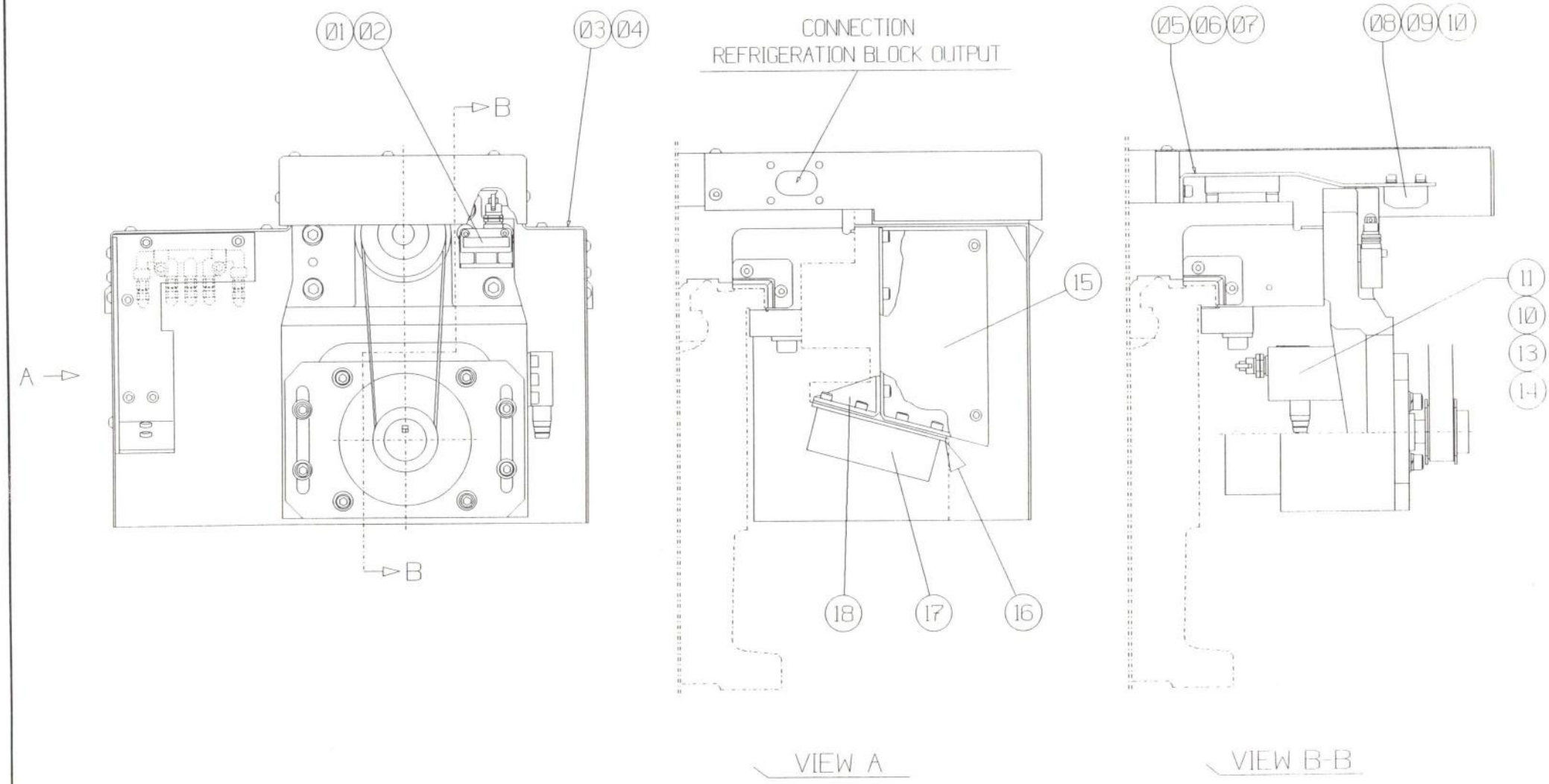
SADDLE - " X Axis Assembly "



SADDLE - " X Axis Assembly "

Nº.	BRIDGEPORT Nº.	ROMI Nº.	DESCRIPTION	ESPECIFICATION/SUPPLIER	QTY
1		R53509	Micro switch	HONEYWELL (SL1-DK-J) / NISSEI (SL1-DK-J)	1
2		R08945	Bolt	M4x0,7x25 FY	2
3		R70431	Servomotor cover		1
4		P73671	Bolt	M6x1x10 FS	9
5		R71387	Support		1
6		P19811	Bolt	M6x1x16 FY	2
7		P18793	Elastic Washer	M6	2
8		R70428	Came		1
9		P19797	Bolt	M5x0,8x12 FY	2
10		P18792	Elastic Washer	M5	2
11		R72990	Support		1
12		P19810	Bolt	M6x1x12 FY	3
13		R53509	Micro switch	HONEYWELL (SL1-DK-J) / NISSEI (SL1-DK-J)	1
14		R08945	Bolt		2
15		R72394	Support		1
16		R72396	Plate		1
17		R69566	Track		1
18		R72395	Track support		1
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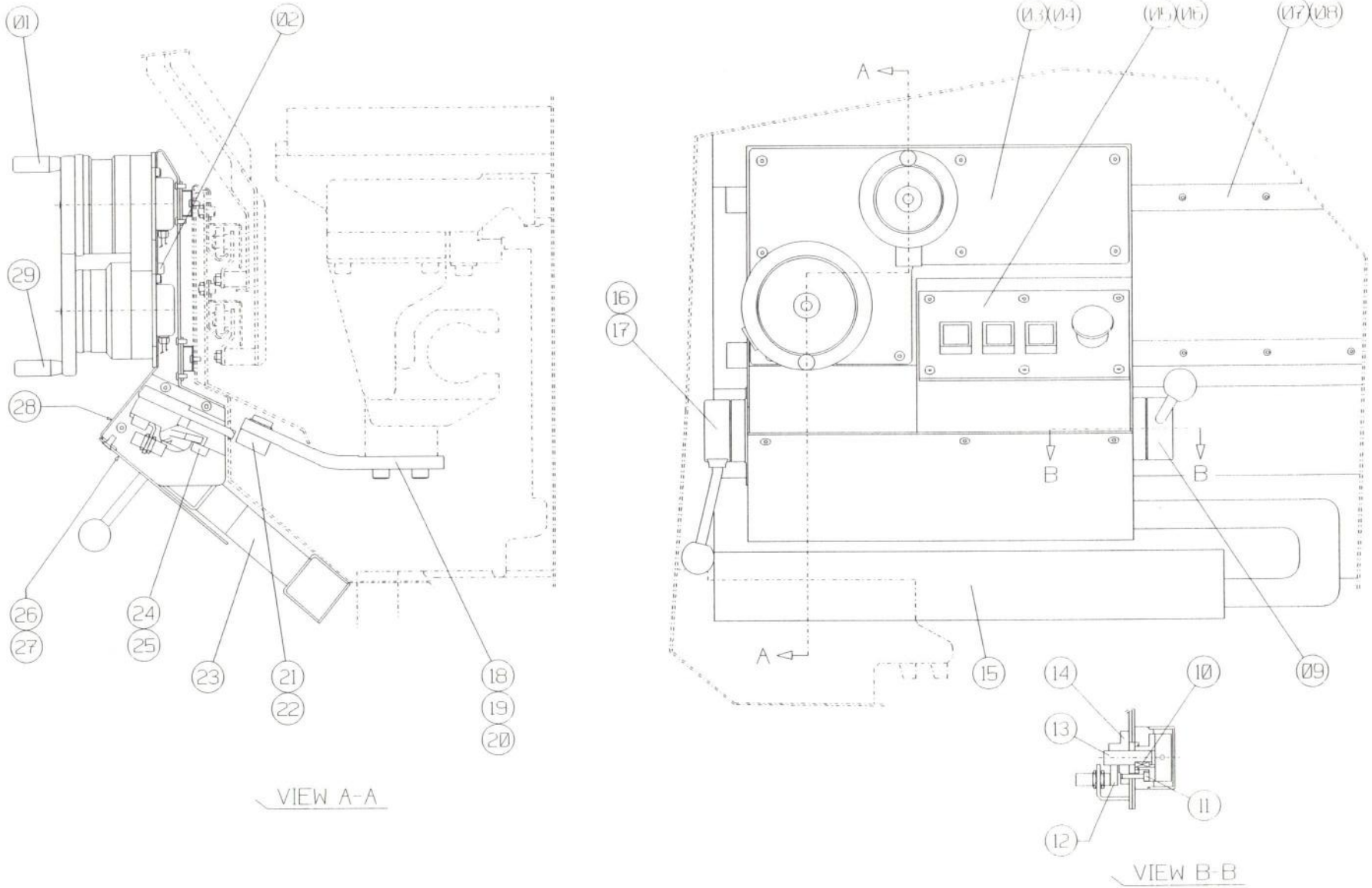
SADDLE - Command Box



SADDLE - Command Box

Nº.	BRIDGEPORT Nº.	ROMI Nº.	DESCRIPTION	ESPECIFICATION / SUPPLIER	QTY
1		R73016	Handwhell - X axis set		1
2		P19810	Bolt	M6x1X12 FY	8
3		R73109	Frontal lid		1
4		P32705	Bolt	M5x0,8x10 FV	8
5		R72216	Remote control		1
6		P32705	Bolt	M5x0,8x10 FV	6
7		R72280	Linear guideway	THK 2FBW2560 RUU+ 1440L-T	2
8		R58677	Bolt	M4x0,7x8 FS	28
9		R72046	Spindle command lever		1
10		P18926	Key	5x6x14 KR	1
11		P19800	Bolt	M5x0,8x20 FY	2
12		Q17141	Cilindrical pin	Ø6x32mm	1
13		R72320	Shaft		1
14		R72706	Command lever stop		1
15		R72982	Support		1
16		R73019	Automatic coupling		1
17		P32705	Bolt	M5x0,8x10 FV	3
18		R73110	Drag plate		1
19		P19831	Bolt	M8x1,25x30 FY	1
20		Q24709	Taper pin	Ø6x24mm	2
21		R72318	Drag pin		1
22		P18696	Elastic ring	471-20-1,2 CE	1
23		R72281	Electrical cable track		1
24		P19833	Bolt	M8x1,25x40 FY	4
25		P91821	Taper pin	Ø6x40mm	2

SADDLE - Command Box

Nº.	BRIDGEPORT Nº.	ROMI Nº.	DESCRIPTION	ESPECIFICATION / SUPPLIER	QTY
26		R72321	Cover plate		1
27		P32705	Bolt	M5x0,8x10 FV	3
28		R71539	Command box		1
29		R73012	Handwhell - Z axis set		1
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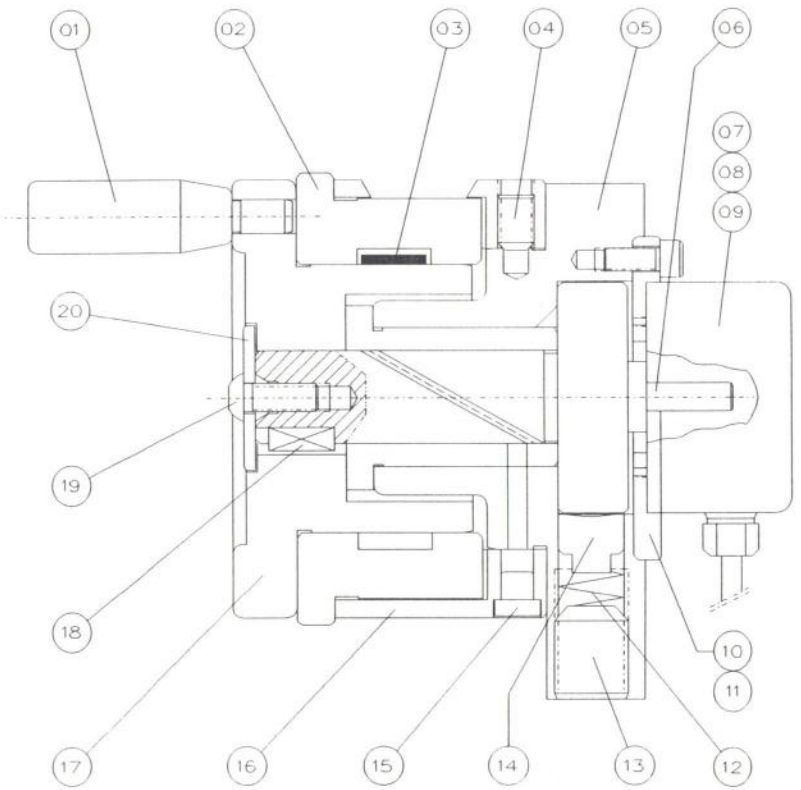
SADDLE - Handwhell X and Z axis

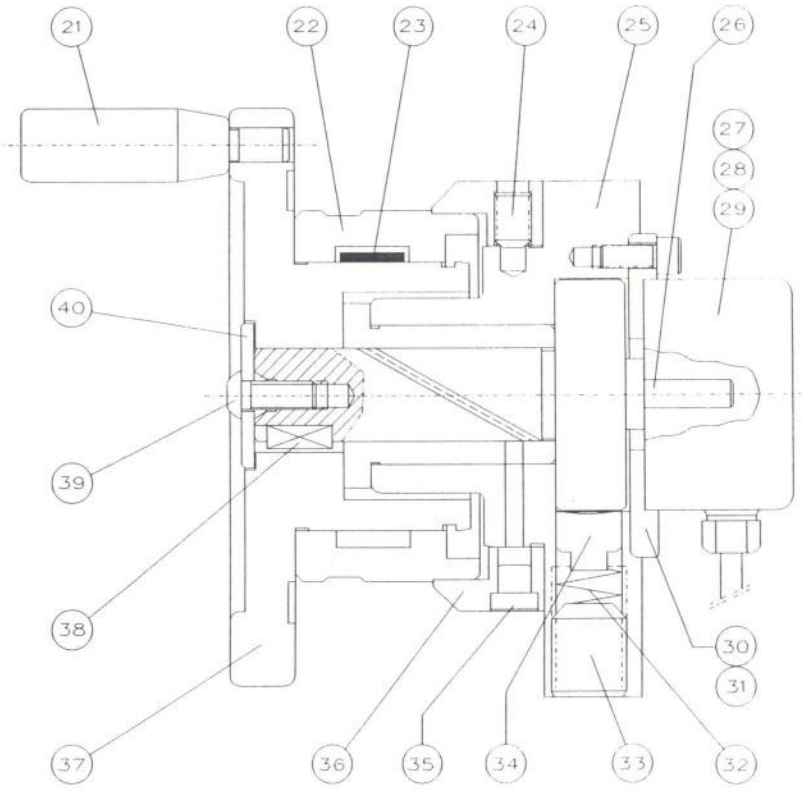
R73016 – PART NUMBER ROMI

HANDWHELL " X " AXIS



R73012 – PART NUMBER ROMI

HANDWHELL " Z " AXIS



SADDLE - Handwhell X and Z axis

Nº.	BRIDGEPORT Nº.	ROMI Nº.	DESCRIPTION	ESPECIFICATION/SUPPLIER	QTY
1		R71992	Lever		1
2		R47735	Deal		1
3		Q24429	Spring		1
4		P19387	Bolt	M8x1,25x12 FX	1
5		R71772	Bearing set		1
6		R73013	Shaft		1
7		R72579	Encoder		1
8		Q60545	Screw	M2x8mm	3
9		Q60398	Elastic washer		3
10		R73025	Fixing lid		1
11		P19797	Bolt	M5x0,8x12 FY	3
12		P19475	Helicoidal spring		1
13		P24120	Bolt	M16x2x20 FX	1
14		R43132	Pin		1
15		P34348	Oil nipple		1
16		R71775	Indicator		1
17		R73017	Whell		1
18		P18926	Key	5x6x12 KR	1
19		P73672	Bolt	M6x1x16 FS	1
20		R73015	Special washer		1
21		R71779	Lever		1
22		R71992	Deal		1
23		Q24429	Spring		1
24		P19387	Bolt	M8x1,25x12 FX	1
25		R71772	Bearing set		1

SADDLE - Handwhell X and Z axis

Nº.	BRIDGEPORT Nº.	ROMI Nº.	DESCRIPTION	ESPECIFICATION / SUPPLIER	QTY
26		R73013	Shaft		1
27		R72579	Encoder		1
28		Q60545	Screw	M2x8mm	3
29		Q60398	Elastic washer	M2	3
30		R73025	Fixing lid		1
31		P19797	Bolt	M5x0,8x12 FY	3
32		P19475	Helicoidal spring		1
33		P24120	Bolt	M16x2x20 FX	1
34		R43132	Pin		1
35		P34348	Oil nipple		1
36		R73018	Indicator		1
37		R73014	Whell		1
38		P18926	Key	5x6x14 KR	1
39		P73672	Bolt	M6x1x16 FS	1
40		R73015	Special washer		1
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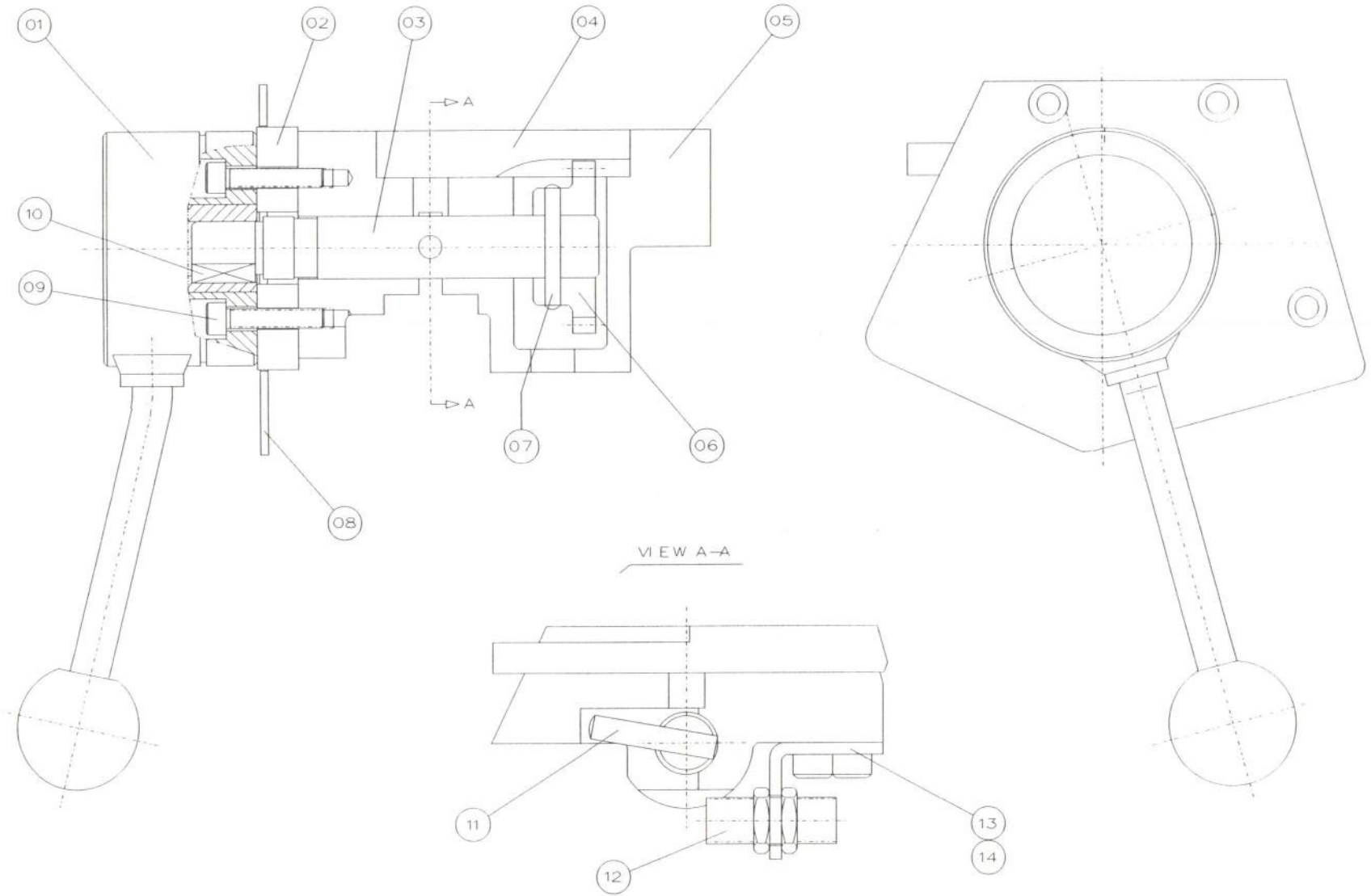
SADDLE - Automatic Coupling

R73019 – PART NUMBER ROMI



SADDLE - Automatic Coupling

Nº.	BRIDGEPORT Nº.	ROMI Nº.	DESCRIPTION	ESPECIFICATION / SUPPLIER	QTY
1		R72096	Lever		1
2		R73023	Spacer ring		1
3		R73020	Command shaft		1
4		R73021	Drag plate		1
5		R73022	Support		1
6		R73003	Gear	Z = 20 M=2,0	1
7		P19918	Taper pin	Ø4x32	1
8		R73024	Plate		1
9		P19802	Bolt		2
10		P18926	Key	5x6x14 KR	1
11		Q17141	Taper pin	Ø6x32	1
12		R12175	Sensor		1
13		R72004	Sensor support		1
14		P19809	Bolt	M6x1x10 FY	2
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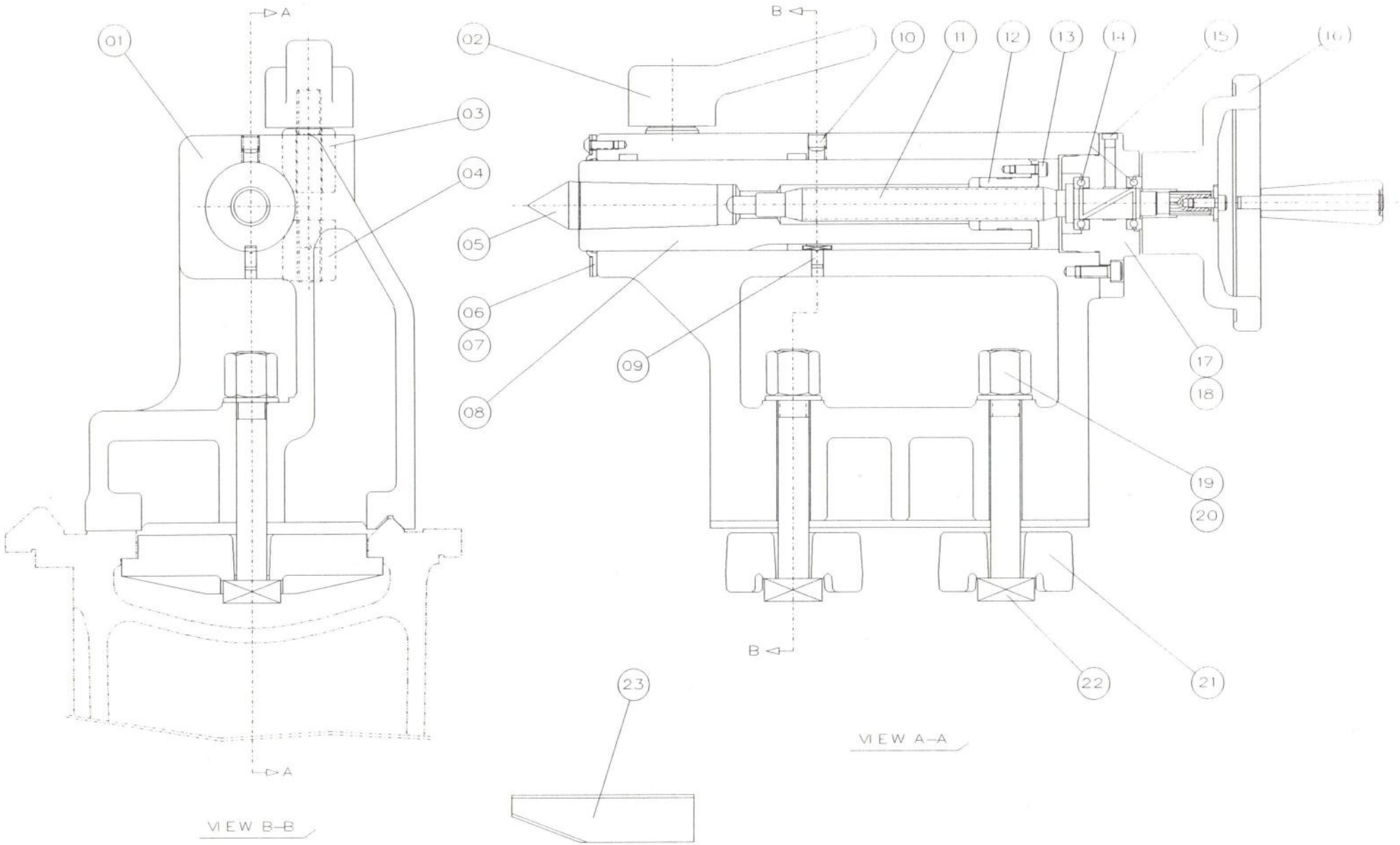
TAILSTOCK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TAILSTOCK

Nº.	BRIDGEPORT Nº.	ROMI Nº.	DESCRIPTION	ESPECIFICATION / SUPPLIER	QTY
1		R71398	Tailstock Cast		1
2		P92789	Lever		1
3		R71536	Lock Bush		1
4		R71534	Lock Lever Set		1
5		R33098	Dead Center	MT 4	1
6		R71540	Wiper		1
7		P73672	Bolt	M6 x 1 x 16 FS	3
8		R71530	Quill		1
9		P19138	Special Key		1
10		P19400	Bolt	M12 x 1,75 x 12 FX	1
11		R71532	Screw Shaft		1
12		R71531	Nut		1
13		P19811	Bolt	M16 x 1 x 16 FY	3
14		P01137	Thrust Ball Bearing	SKF 51104 / NSK 51104 / FAG 51104	2
15		P34348	Oil Nipple		3
16		Q24179	Wheel Set		1
17		R71533	Back Bearing Housing		1
18		P19828	Bolt	M8 x 1,25 x 20 FY	4
19		P26408	Nut	M20 x 30 mm	2
20		P18786	Washer		2
21		R71537	Lock Base		2
22		R71538	Screw		2
23		R63074	Wedge		1
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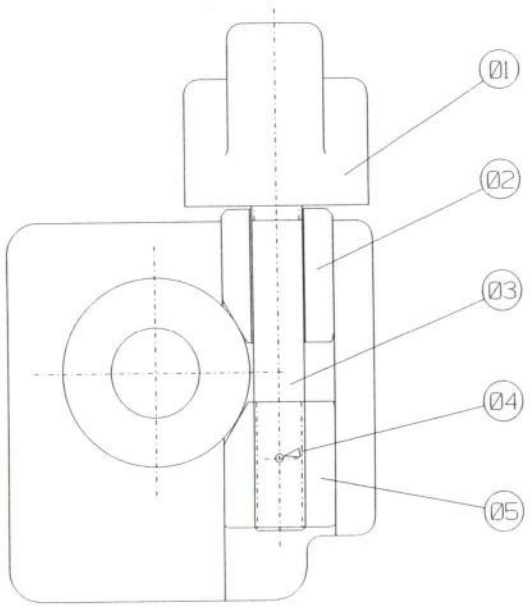
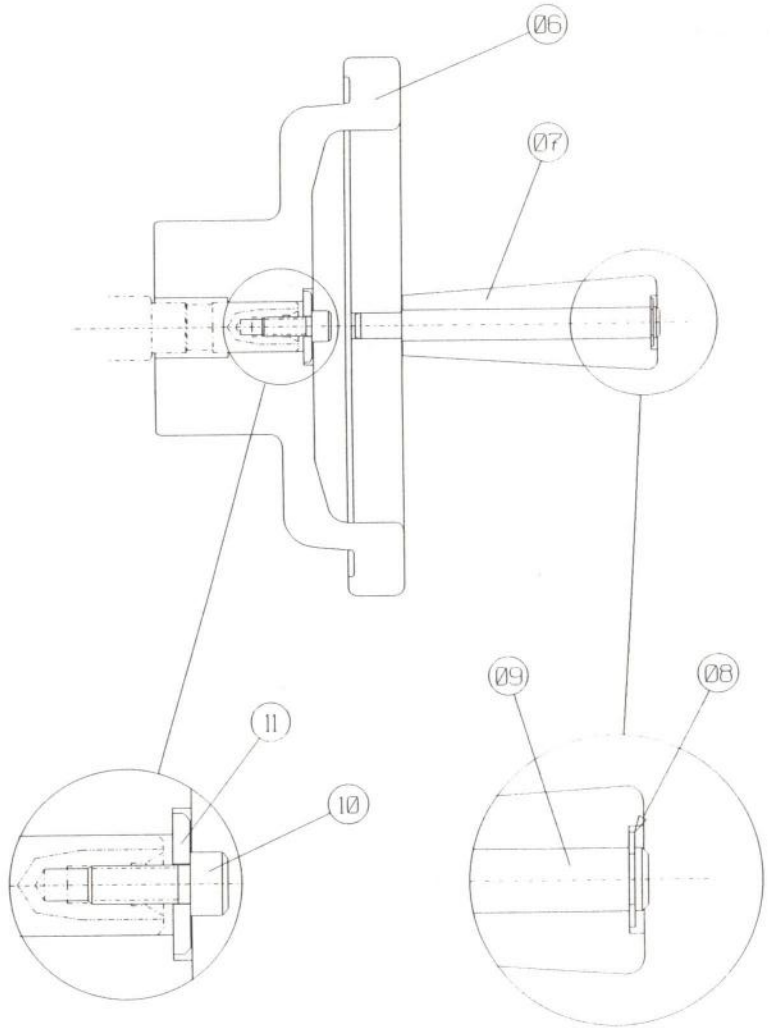
R71534 - PART NUMBER ROMI

LOCK LEVER



024179 - PART NUMBER ROMI

HAND WHEEL



TAILSTOCK

Nº.	BRIDGEPORT Nº.	ROMI Nº.	DESCRIPTION	ESPECIFICATION / SUPPLIER	QTY
1		P92789	Lever		1
2		R71536	Lock Bush		1
3		R71535	Lock Screw		1
4		P18806	Elastic Pin	Ø3 x 28 mm	1
5		R67434	Bush		1
6		Q24207	Wheel		1
7		Q17191	Handling		1
8		P17128	Elastic Ring	6788 - 8 - 1 CE2	1
9		Q17195	Handling Shaft		1
10		P19811	Bolt	M6 x 1 x 16 FY	1
11		Q09042	Special Washer		1
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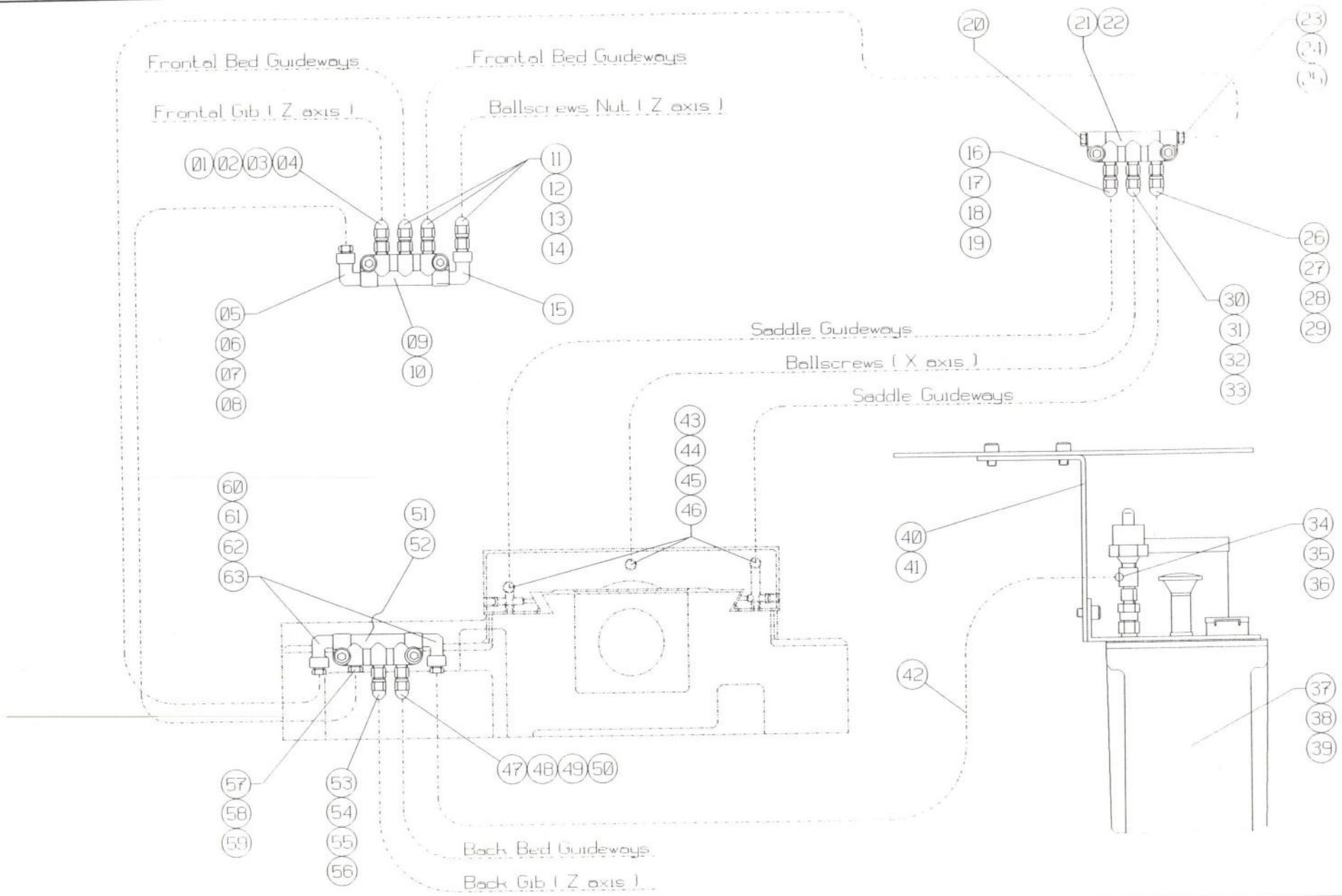
LUBRICATION SYSTEM



LUBRICATION SYSTEM

Nº.	BRIDGEPORT Nº.	ROMI Nº.	DESCRIPTION	ESPECIFICATION / SUPPLIER	QTY
1		R69050	Flow unit HJB-2	LUBE - 105008	1
2		R17461	Compression Nut	LUBE - 106251	1
3		R17457	Compression Sleeve	LUBE - 106254	1
4		R17472	Tube insert	LUBE - 106271	1
5		P72496	Elbow connector		1
6		R17456	Compression bush	LUBE - 106252	1
7		R17457	Compression sleeve	LUBE - 106254	7
8		R17472	Tube insert	LUBE - 106271	1
9		R69051	Junction (5 discharge orifice)	LUBE - 106402	2
10		P19815	Bolt	M6x1x25 FY	1
11		R17467	Flow unit HJB-1	LUBE - 105010	3
12		R17461	Compression nut	LUBE - 106251	3
13		R17457	Compression sleeve	LUBE - 106254	3
14		R17472	Tube insert	LUBE - 106271	3
15		P72496	Elbow connector		1
16		R17466	Flow unit HJB-0	LUBE - 105009	1
17		R17461	Compression nut	LUBE - 106251	1
18		R17457	Compression sleeve	LUBE - 106254	1
19		R17472	Tube insert	LUBE - 106271	1
20		R17458	Seal plug	LUBE - 106255	1
21		R69051	Junction (5 discharge orifice)	LUBE - 106402	1
22		P19813	Bolt	M6x1x20 FY	2
23		R17456	Compression bush	LUBE - 106252	1
24		R17457	Compression sleeve	LUBE - 106254	1
25		R17472	Tube insert	LUBE - 106271	1

LUBRICATION SYSTEM

Nº.	BRIDGEPORT Nº.	ROMI Nº.	DESCRIPTION	ESPECIFICATION / SUPPLIER	QTY
26		R17466	Flow unit HBJ-0	LUBE - 105009	1
27		R17461	Compression nut	LUBE - 106251	1
28		R17457	Compression sleeve	LUBE - 106254	1
29		R17472	Tube insert	LUBE - 106271	1
30		R17467	Flow unit HJB-1	LUBE - 105010	1
31		R17461	Compression nut	LUBE - 106251	1
32		R17457	Compression sleeve	LUBE - 106254	1
33		R17472	Tube insert	LUBE - 106271	1
34		R72367	Connector	5/16" UNF	1
35		R17457	Compression sleeve	LUBE - 106254	1
36		R17472	Tube insert	LUBE - 106271	1
37		R55738	Lubrification pump	BIJUR - 24173	1
38		P19809	Bolt	M6x1x10 FY	2
39		P18793	Washer	WN6	1
40		R72759	Support		1
41		P19809	Bolt	M6x1x10 FY	2
42		A09392	Nylon tube		3m
43		P72496	Elbow connector		3
44		R17456	Compression bush	LUBE - 106252	3
45		R17457	Compression sleeve	LUBE - 106254	3
46		R17472	Tube insert	LUBE - 106271	3
47		R17467	Flow unit HJB-1	LUBE - 105010	1
48		R17461	Compression nut	LUBE - 106251	1
49		R17457	Compression sleeve	LUBE - 106254	1
50		R17472	Tube insert	LUBE - 106271	1

Nº.	BRIDGEPORT Nº.	ROMI Nº.	DESCRIPTION	ESPECIFICATION / SUPPLIER	QTY
51		P19813	Bolt	M6x1x20 FY	1
52		R69051	Junction (5 discharge orifice)	LUBE - 106402	1
53		R69050	Flow unit HBJ-2	LUBE - 105008	1
54		R17461	Compression nut	LUBE - 106251	1
55		R17457	Compression sleeve	LUBE - 106254	1
56		R17472	Tube insert	LUBE - 106271	1
57		R17456	Compression bush	LUBE - 106252	1
58		R17457	Compression sleeve	LUBE - 106254	1
59		R17472	Tube insert	LUBE - 106271	1
60		P72496	Elblow connector		2
61		R17456	Compression bush	LUBE - 106252	2
62		R17457	Compression sleeve	LUBE - 106254	2
63		R17472	Tube insert	LUBE - 106271	2
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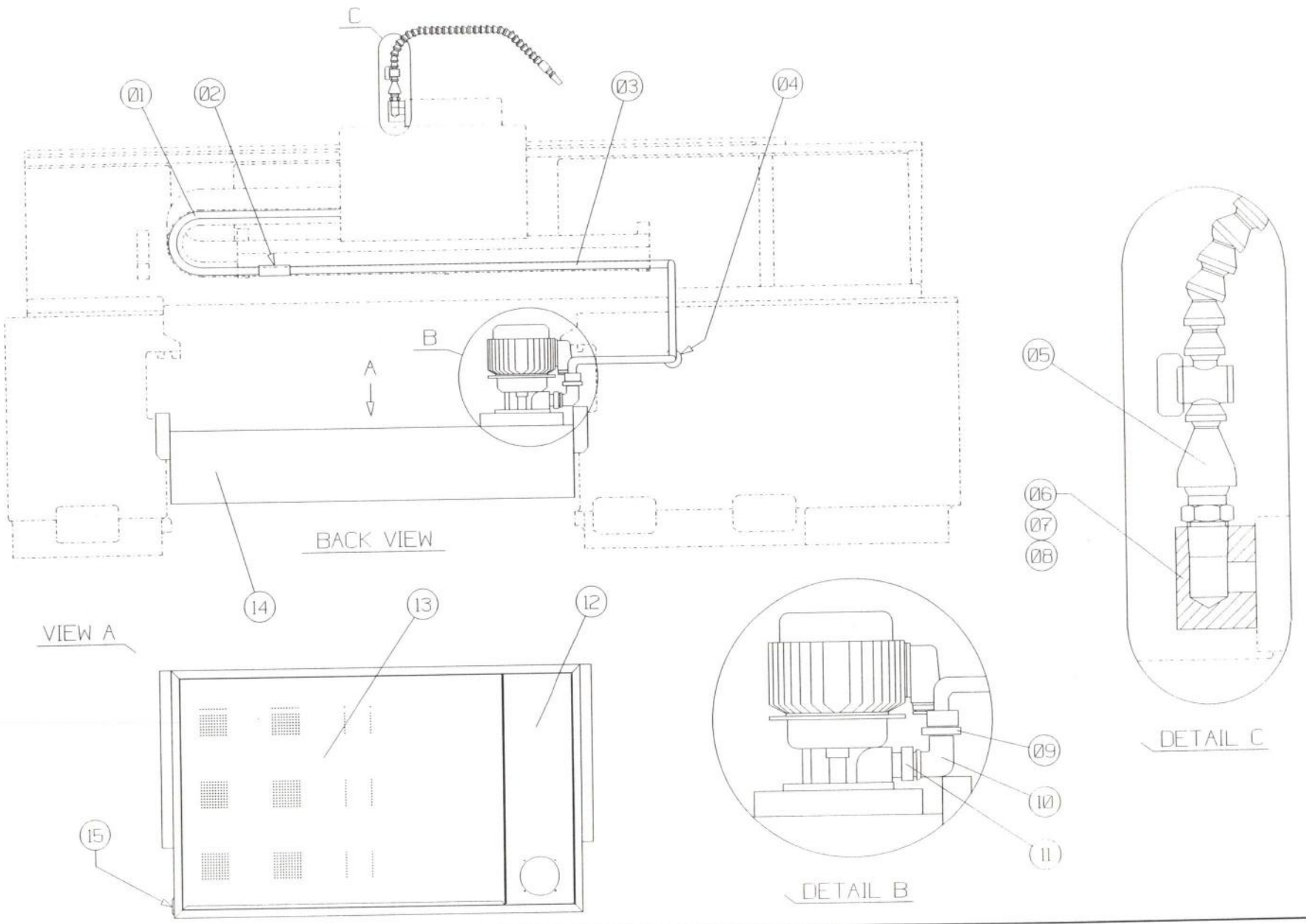
COOLANT SYSTEM



COOLANT SYSTEM

Nº.	BRIDGEPORT Nº.	ROMI Nº.	DESCRIPTION	ESPECIFICATION / SUPPLIER	QTY
1		R37643	Hose	M6 x 1,5 x 500 GATES - 4M1T -10FDLX - 10FDLX - 550	1
2		R73762	Union		1
3		R37638	Hose	M6 x 1,5 x 3200 GATES - 4M1T -10 FDLX - 10FDLX - 3200	1
4		R73765	Bush		1
5		R71315	Articulated Hose		1
6		R72683	Block		1
7		P19809	Bolt	M6 x 1 x 10 FY	4
8		R49598	Elbow	10 x 1/4" NPT	1
9		R73763	Union	10 x 1/2" BSP	1
10		P37015	Elbow	1/2" BSP	1
11		P51842	Bush	3/4" x 1/2" BSP	1
12		R73248	Pump Support		1
13		R73249	Chip Filter		1
14		R73247	Tanq		1
15		P76660	Plug	3/4" NPTF	1
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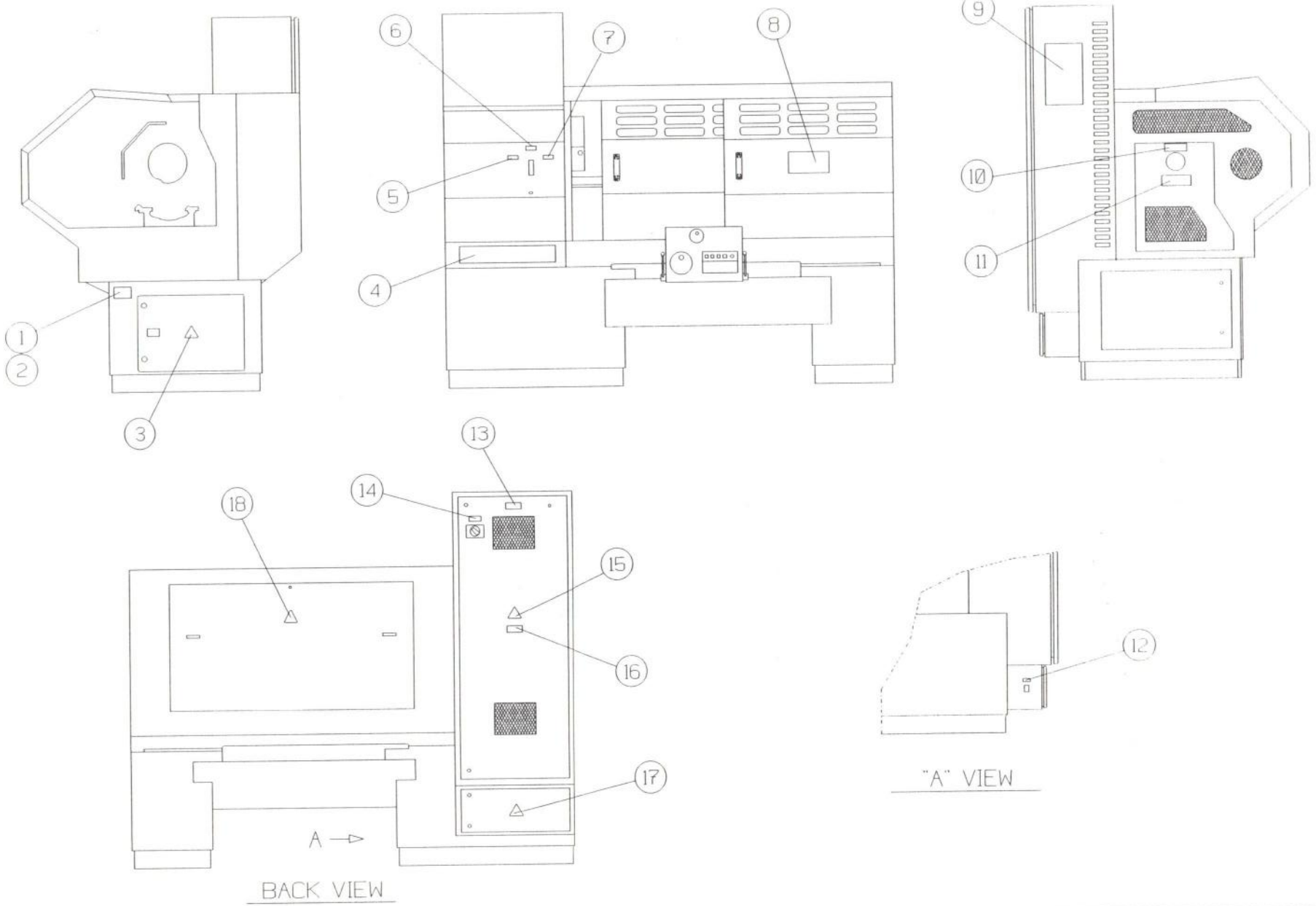
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BACK VIEW
"A" VIEW

Nº.	BRIDGEPORT Nº.	ROMI Nº.	DESCRIPTION	ESPECIFICATION / SUPPLIER	QTY
1		Q08393	Rivet		4
2		R52158	Serial Number Label		1
3		R63052	Warning Label		1
4		R73600	Romi-Bridgeport		1
5		R73579	Rotation Range Label		1
6		R73576	Neutral Position Label		1
7		R73577	Rotation Range Label		1
8		R70243	Safety Instructions Label		1
9		R69516	Safety Instructions Label		1
10		R70219	Safety Instructions Label		1
11		R63036	Safety Instructions Label		1
12		R63038	Coolant System Label		1
13		R63034	Filter Maintenance Label		1
14		R63031	Safety Instructions Label		1
15		R63052	Warning Label		1
16		R70221	Safety Instrucions Label		1
17		R63052	Warning Label		1
18		R70217	Warning Label		1
19					
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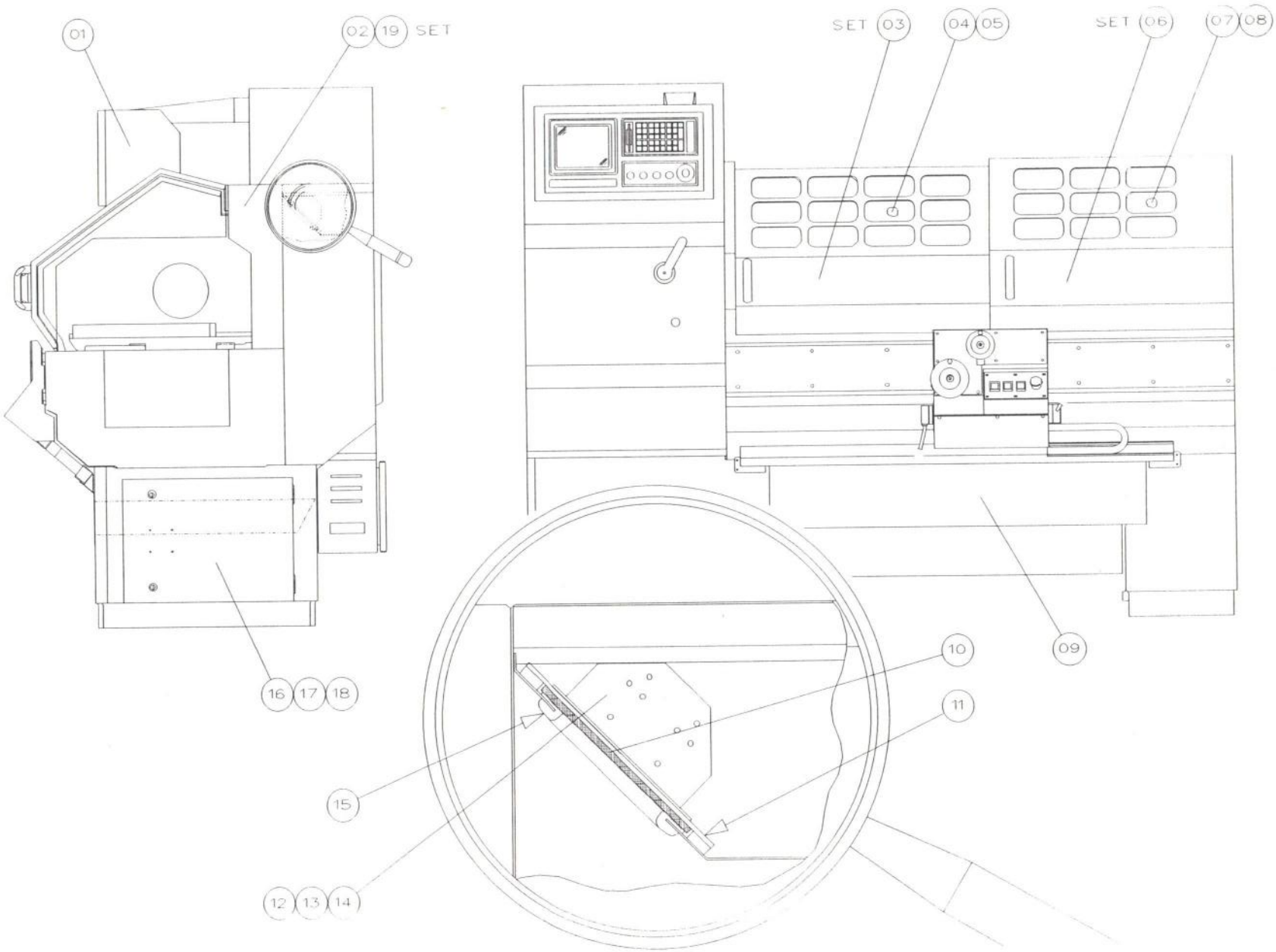
COVERS



COVERS

Nº.	BRIDGEPORT Nº.	ROMI Nº.	DESCRIPTION	ESPECIFICATION / SUPPLIER	QTY
1		R72959	Command Panel Box		1
2		R72967	Frontal Cover		1
3		R72970	Left Door Set		1
4		R20517	Glass Door		1
5		R73083	Glass Support		1
6		R72969	Right Door Set		1
7		R72218	Glass Door		1
8		R73144	Glass Support		1
9		R72981	Chip Box		1
10		R20518	Light Glass		1
11		R72508	Glass Support		1
12		R73002	Light Box		1
13		R72989	Fluorescent Light	32W - BASE G-13 - 2700 LUMENS	2
14		R72988	Reactor	2 x 32 W - 220V - 46 KHZ	1
15		A03777	Rubber Glass		2.6 m
16		R56487	Lid		1
17		R56489	Support		1
18		R72509	Lock Support		1
19		R72987	Door Locking System		1
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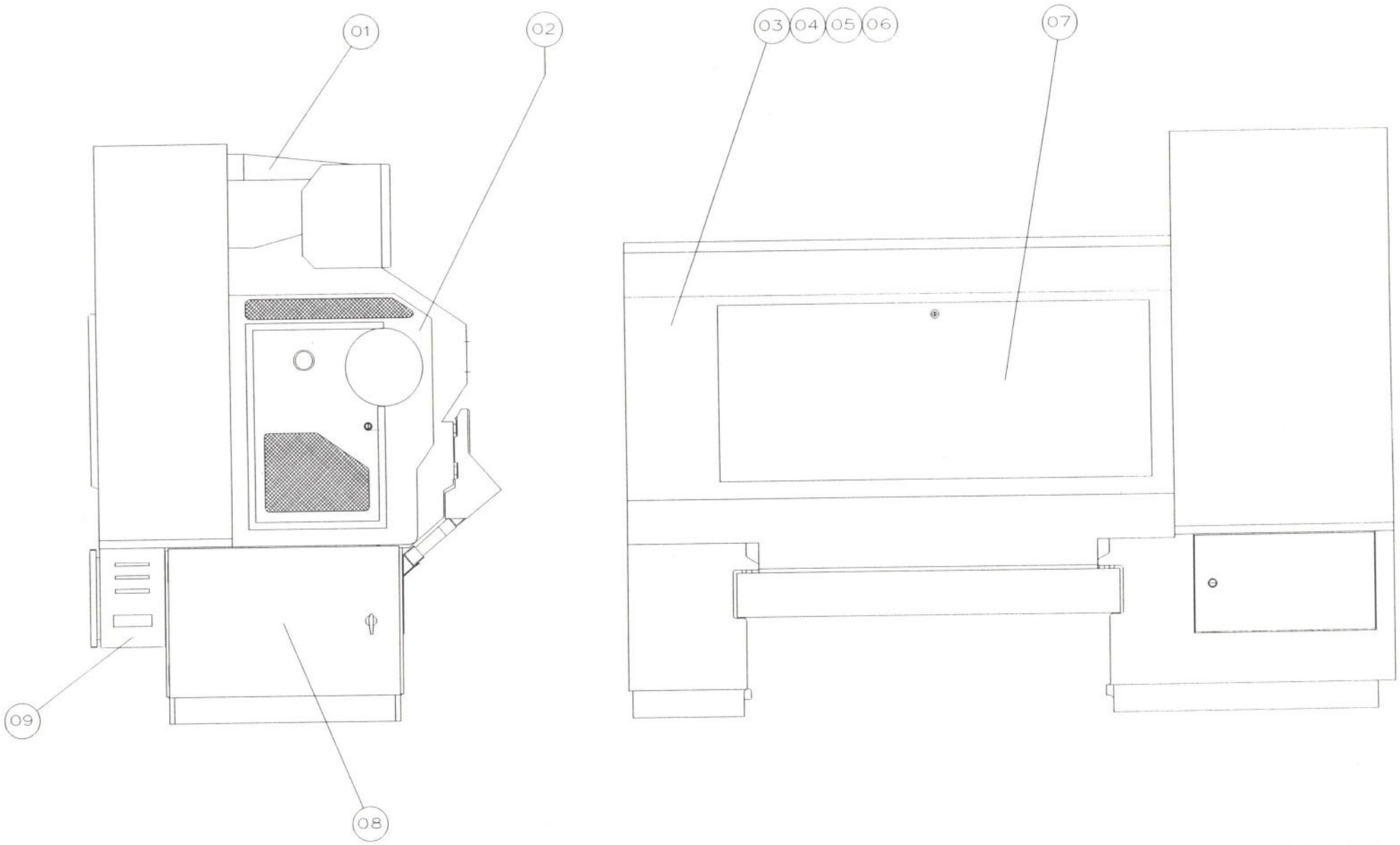
COVERS



COVERS

Nº.	BRIDGEPORT Nº.	ROMI Nº.	DESCRIPTION	ESPECIFICATION / SUPPLIER	QTY
1		R72998	Command panel arm		1
2		R72992	Headstock cover		1
3		R72976	Back cover		1
4		R73064	Upper lid		1
5		R73671	Bolt	M6x1x10 FS	8
6		P18779	Washer	WN6	8
7		R72974	Back lid		1
8		R72985	Lid		1
9		R73038	Panel		1
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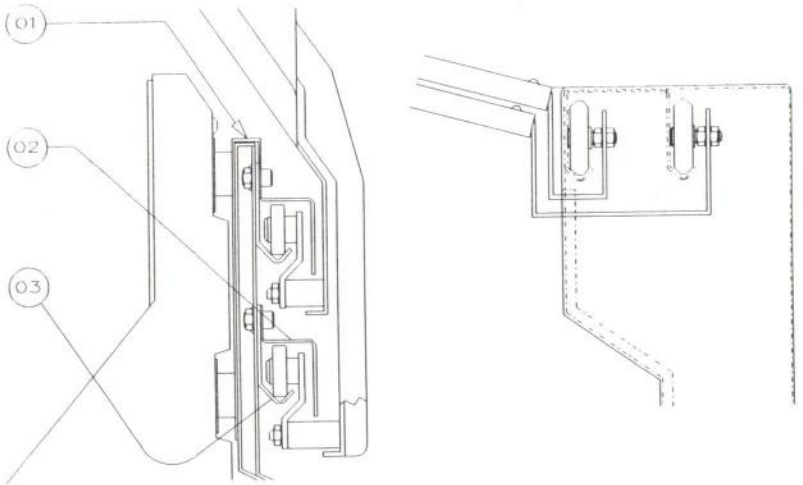
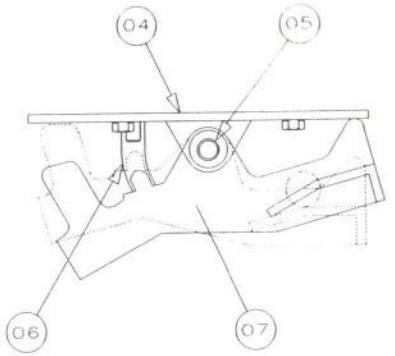
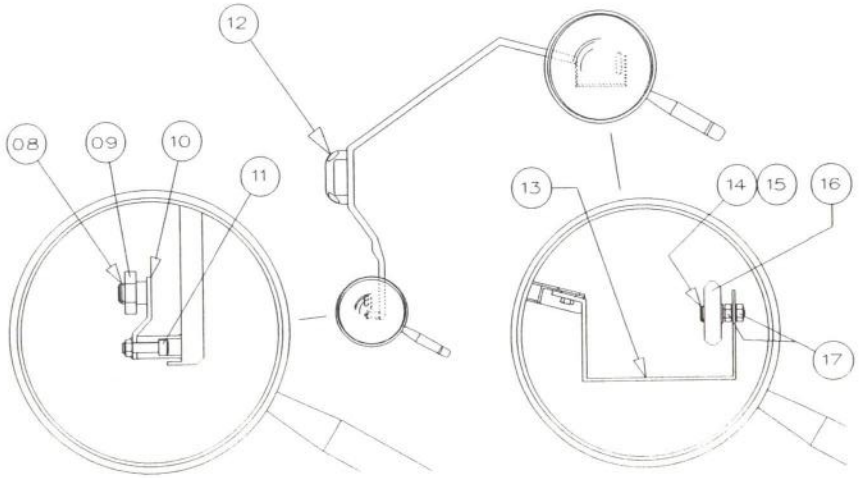
COVER – DETAILS



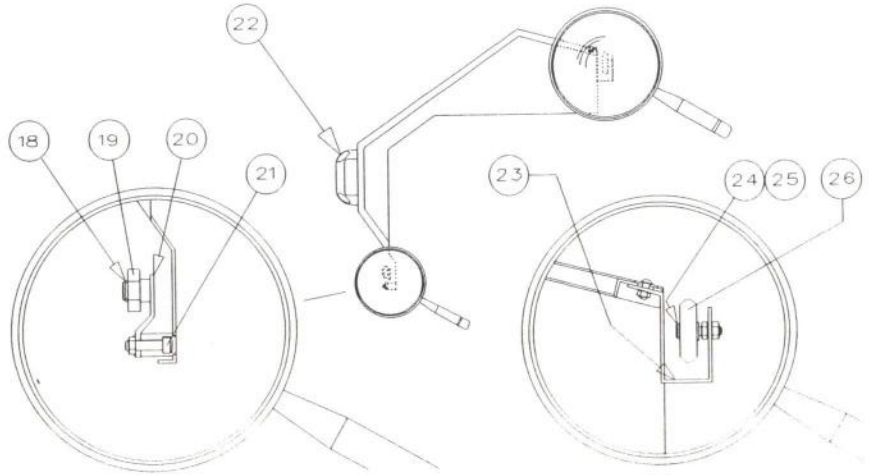
R72987 – PART NUMBER ROMI
DOOR LOCKING SYSTEM (Assembled Set)



R72970 – PART NUMBER ROMI
LEFT DOOR (Assembled Set)



R72969 – PART NUMBER ROMI
RIGHT DOOR (Assembled Set)



COVERS

Nº.	BRIDGEPORT Nº.	ROMI Nº.	DESCRIPTION	ESPECIFICATION / SUPPLIER	QTY
1		R72973	Frontal protector		1
2		R72972	Guide protector		2
3		R72971	Door guide		2
4		R73135	Private support		1
5		P16834	Elastic ring	471-12-1 CE	1
6		P19474	Helicoidal spring		1
7		R73136	Articulator		1
8		P16834	Elastic ring	471-12-1 CE	2
9		P15700	Ball bearing	SKF 6001 / NSK 6001	2
10		R73682	Under wheels support		1
11		P19815	Bolt	M6x1x8 FY	3
12		R25427	Handling		1
13		R73081	Wheels support		1
14		R28538	Shaft		2
15		P17800	Elastic ring	471-10-1 CE	2
16		Q04351	Wheels		2
17		P20119	Nut	M8 FN	4
18		P16834	Elastic ring	471-12-1 CE	2
19		P15700	Ball bearing	SKF 6001 / NSK 6001	2
20		R73143	Under wheels support		1
21		P19815	Bolt	M6x1x8 FY	3
22		R25427	Handling		1
23		R73142	Wheels support		1
24		R52471	Shaft		2
25		P17800	Elastic ring	471-10-1 CE	2

COVERS

Nº.	BRIDGEPORT Nº.	ROMI Nº.	DESCRIPTION	ESPECIFICATION / SUPPLIER	QTY
26		Q04351	Wheels		2
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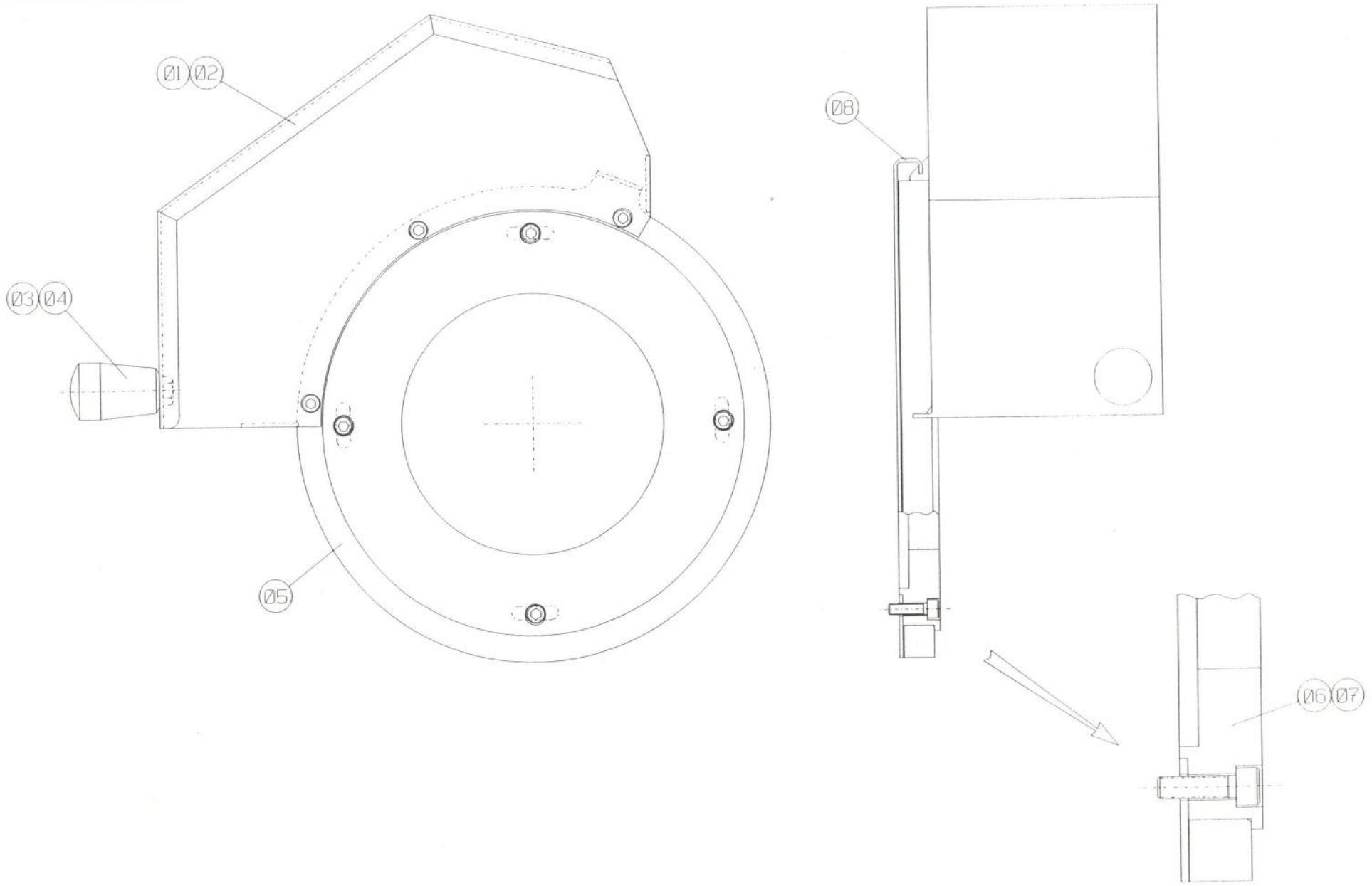
CHUCK PROTECTION



ROMI®

CHUCK PROTECTION

Nº.	BRIDGEPORT Nº.	ROMI Nº.	DESCRIPTION	ESPECIFICATION / SUPPLIER	QTY
1		R73003	Chuck Protection		1
2		P73671	Bolt	M6x1x10 FS	3
3		P30958	Handling		1
4		P78088	Screw		1
5		R73235	Ring		1
6		R73005	Ring		1
7		R19813	Bolt	M6x1x20 FY	4
8		R73004	Stopper ring		1
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ELECTRIC DIAGRAMS EZ_PATHS

REL	MODIFICATION	MODIF.	APROV.	DATE
B	REVISION B	FERRAZ	GERALDO	04-22-97

DESCRIPTION	ELECTRIC DIAGRAMS EZ_PATHS			
ROMI	DESIGNED	FERRAZ	11-22-96	PROJECTION / SIZE A3
	DRAWER	FERRAZ	11-22-96	
	CONTROLLED	SILVIO	11-22-96	
REFERENCE	SHEET 0A / 1+	SCALE 1:1	APLICATION EZ_PATHS	N° R72166 B

INDEX TABLE:

SUBJECT	SHEET	P / N ROMI	CFG
SAFETY PRECAUTIONS	1A	R72167 A	X
CONTROL AC AND DC POWER	2A	R72168 B	X
SPINDLE DRIVE I/O AND POWER	3A	R72169 A	X
X AND Z AXIS DRIVES	4A	R72171 B	X
CNC	5A	R72172 A	X
CONTROL PANEL	6A	R72173 A	X
REMOTE CONTROL PANEL	7A	R72174 B	X
EMERGENCY STOP	8A	R72175 B	X
WORK LIGHT	9A	R72176 A	X
GENERAL CONNECTIONS	10A	R72179 A	X
LUBE PUMP	11A	R72178 B	X
FLOOD COOLANT	13A	R72180 A	OPT
PNEUMATIC CHUCK	14A	R72181 A	OPT
TAILSTOCK	20A	R72183 A	OPT
BAR FEEDER	40A	R72184 A	X
INPUT MAP	41A	R72185 A	X
OUTPUT MAP	42A	R72188 A	X
ELECTRICAL PANEL LAYOUT	43A	R72186 A	X
OPERATOR PANEL LAYOUT	44A	R72187 A	X
REMOTE CONTROL P.LAYOUT	45A	R72189 A	X
MACHINE LAYOUT	46A	R72190 B	X
FUNCTION / DESCRIPTION OF PARTS	47A	R72191 B	X
PARAMETERS	50A	R72192 A	X
RELEASE NOTES			

CONFIGURATION: X = STANDARD OPT = OPTIONAL

REL	MODIFICATION	MODIF.	APROV.	DATE
B	REVISION B	FERRAZ	GERALDO	04-22-97

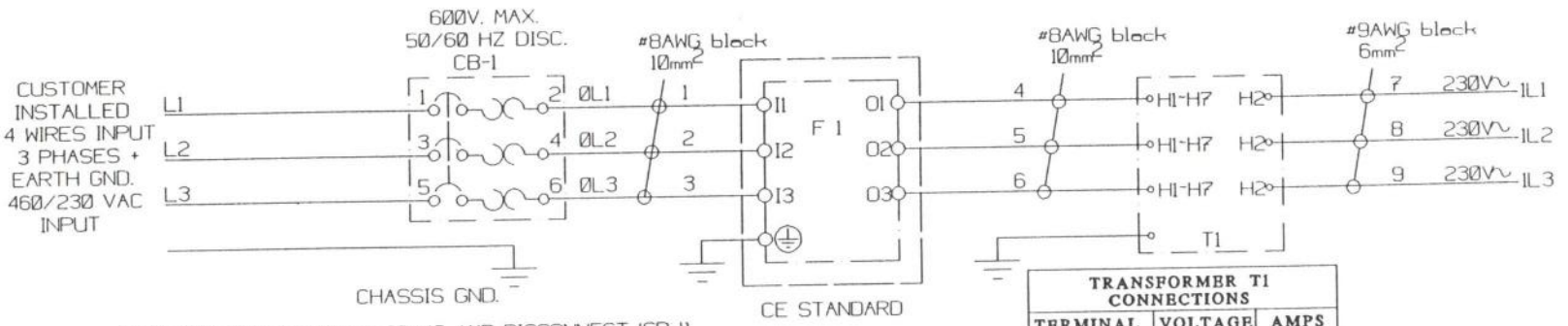
DESCRIPTION: ELECTRIC DIAGRAMS EZ_PATHS

ROMI

DESIGNED	FERRAZ	11-22-96
DRAWER	FERRAZ	11-22-96
CONTROLLED	SILVIO	11-22-96

PROJECTION | SIZE: A3

REFERENCE | SHEET: 0A / 2- | SCALE: 1:1 | APLICATION: EZ_PATHS | N° R72166 B



FOR 200/250 VAC USE A 32/40 AMP DISCONNECT (CB-1)
FOR 360/480 VAC USE A 20/25 AMP DISCONNECT (CB-1)

TRANSFORMER T1 CONNECTIONS		
TERMINAL	VOLTAGE	AMPS
H1	200/210	57/55
H2	220/230	52/50
H3	240/250	48/46
H4	360/380	32/30
H5	420/440	27/26
H6	440/460	26/25
H7	460/480	25/24

NOTE: THIS TRANFORMER IN AN AUTOTRANSFORMER AND ANY INPUT CAN BE AN OUTPUT AS LONG AS THE RATED CURRENT IS NOT EXCEED.

CLIENT RAMIFICATION INPUT LINE:

MACHINE LATHE	POWER (KVA)	VOLTAGE (VAC)	CURRENT (A)	CB-1 AJUST	WIRES GAGES (AWG)	
BZ_PATH I V2.0	14	230	35	36	9	
		380	21	22.5	11	*
		420	19	20	11	
		460	17	20	11	

* THOSE WIRES GAGE ARE SPECIFIED FOR 100FT (30m) BEETWEN THE MACHINE AND POWER SUPPLY.

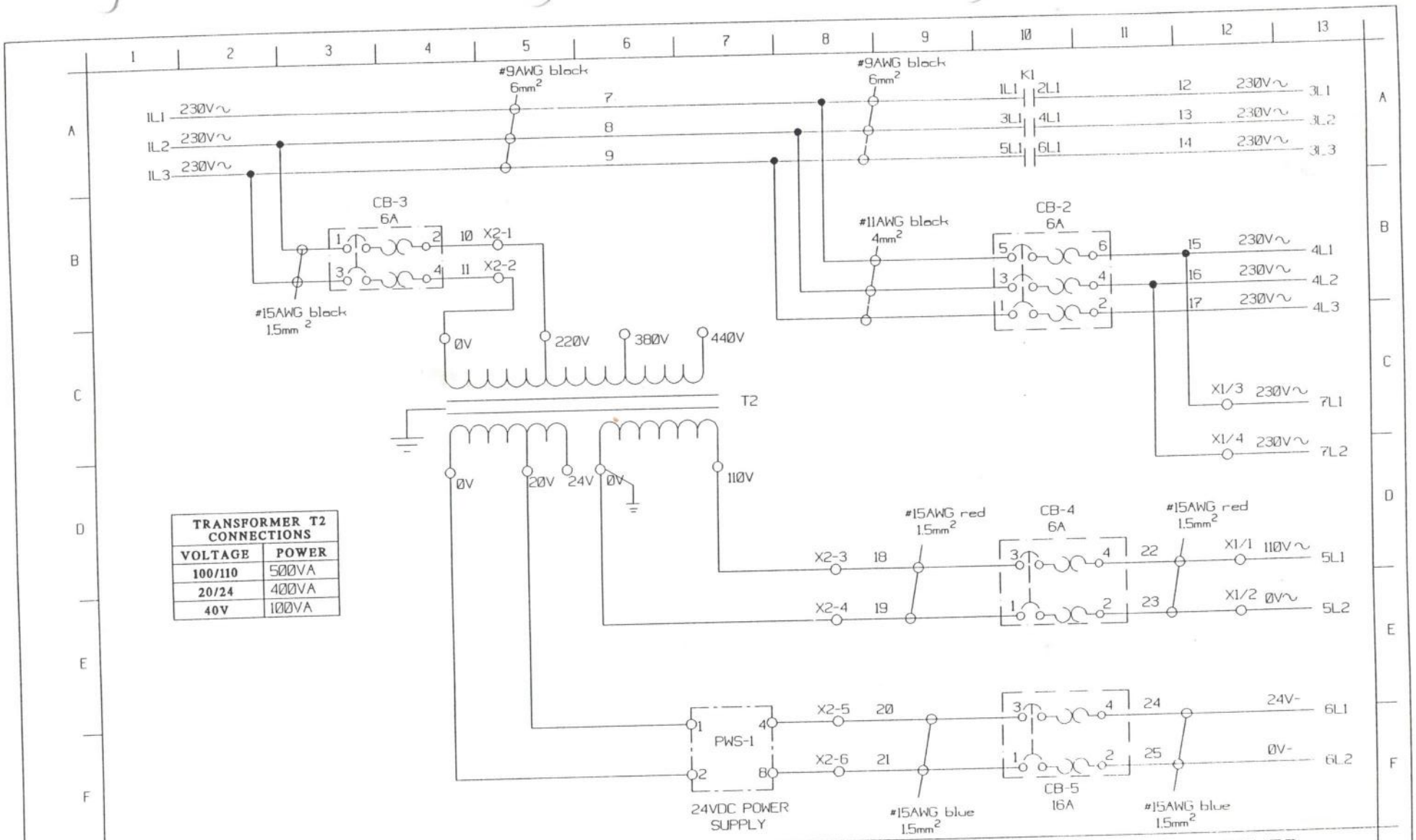
NOTE 1: ALL WIRES USED FOR GND CONNECTIONS MUST BE OF THE SAME GAGE OF THE POWER WIRES USED TO CONNECT ANY DEVICE.

NOTE 2: ALL WIRE GAGES ARE AS MARKED. FOR THOSE NOT MARKED USE 0.5mm².

NOTE 3: ALL ENCODERS CABLE AND ANALOG ARE DEDICATED CABLES AND SHIELDED.

REL	MODIFICATION	MODIF.	APROV.	DATE

DESCRIPTION	CONTROL AC AND DC POWER				
ROMI	DESIGNED	FERRAZ	11-22-96	PROJECTION	SIZE
	DRAWER	FERRAZ	11-22-96		A3
	CONTROLLED	SILVIO	11-22-96		
REFERENCE	SHEET 1A / 1*	SCALE 1:1	APLICATION EZ_PATHS	N° R72167 A	



TRANSFORMER T2 CONNECTIONS	
VOLTAGE	POWER
100/110	500VA
20/24	400VA
40V	100VA

REL	MODIFICATION	MODIF.	APROV.	DATE

REL	MODIFICATION	MODIF.	APROV.	DATE

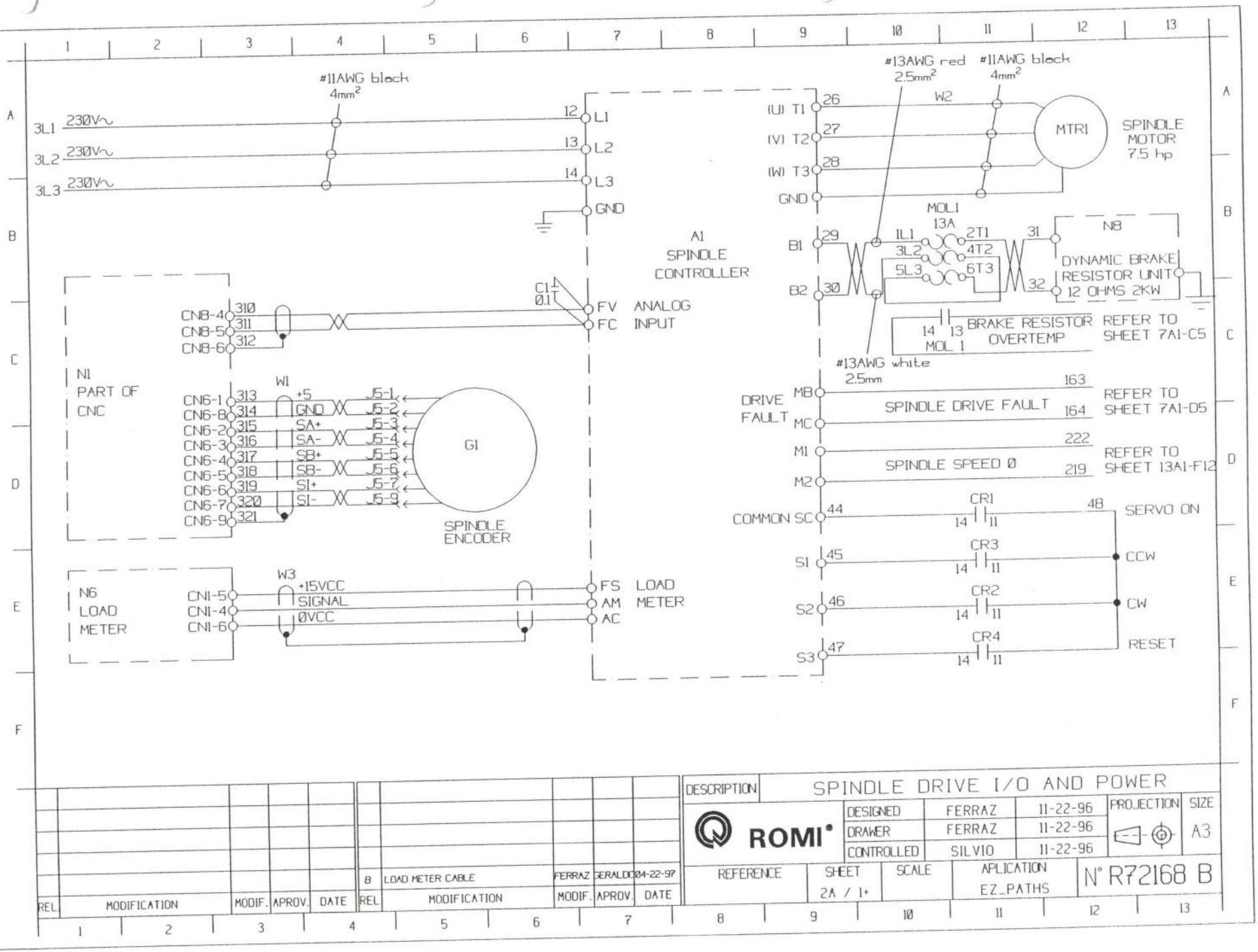
DESCRIPTION: CONTROL AC AND DC POWER

ROMI

DESIGNED	FERRAZ	11-22-96
DRAWER	FERRAZ	11-22-96
CONTROLLED	SILVIO	11-22-96

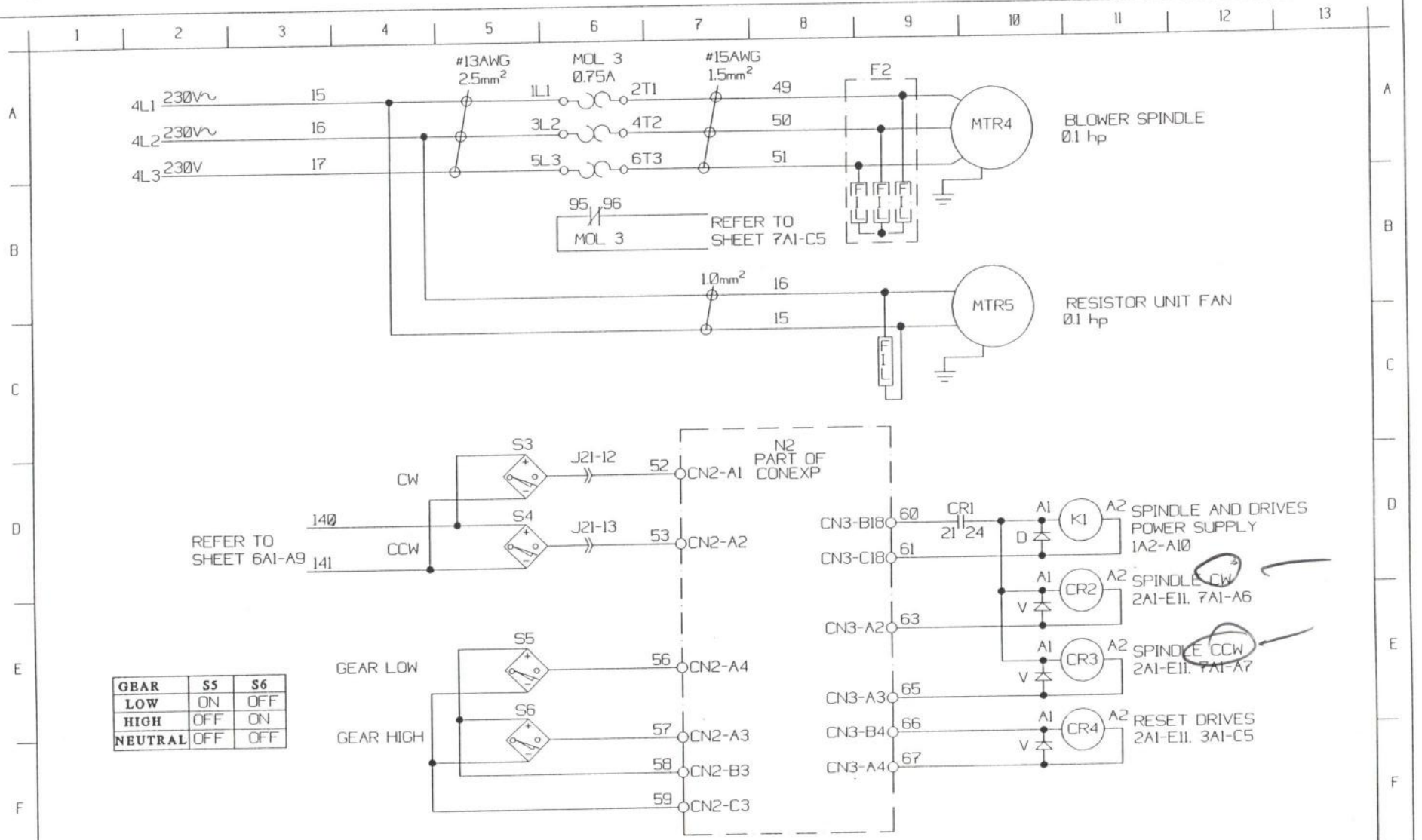
PROJECTION | SIZE: A3

REFERENCE	SHEET	SCALE	APLICATION	Nº
	1A / 2-	1:1	EZ_PATHS	R72167 A



REL	MODIFICATION	MODIF.	APROV.	DATE
B	LOAD METER CABLE	FERRAZ	GERALDO	04-22-97

DESCRIPTION	SPINDLE DRIVE I/O AND POWER				
ROMI®	DESIGNED	FERRAZ	11-22-96	PROJECTION	SIZE
	DRAWER	FERRAZ	11-22-96		A3
	CONTROLLED	SILVIO	11-22-96		
REFERENCE	SHEET 2A / 1+	SCALE	APLICATION EZ_PATHS	N° R72168 B	



GEAR	S5	S6
LOW	ON	OFF
HIGH	OFF	ON
NEUTRAL	OFF	OFF

REL.	MODIFICATION	MODIF.	APROV.	DATE
B	LOAD METER CABLE	FERRAZ	GERALDO	04-22-97

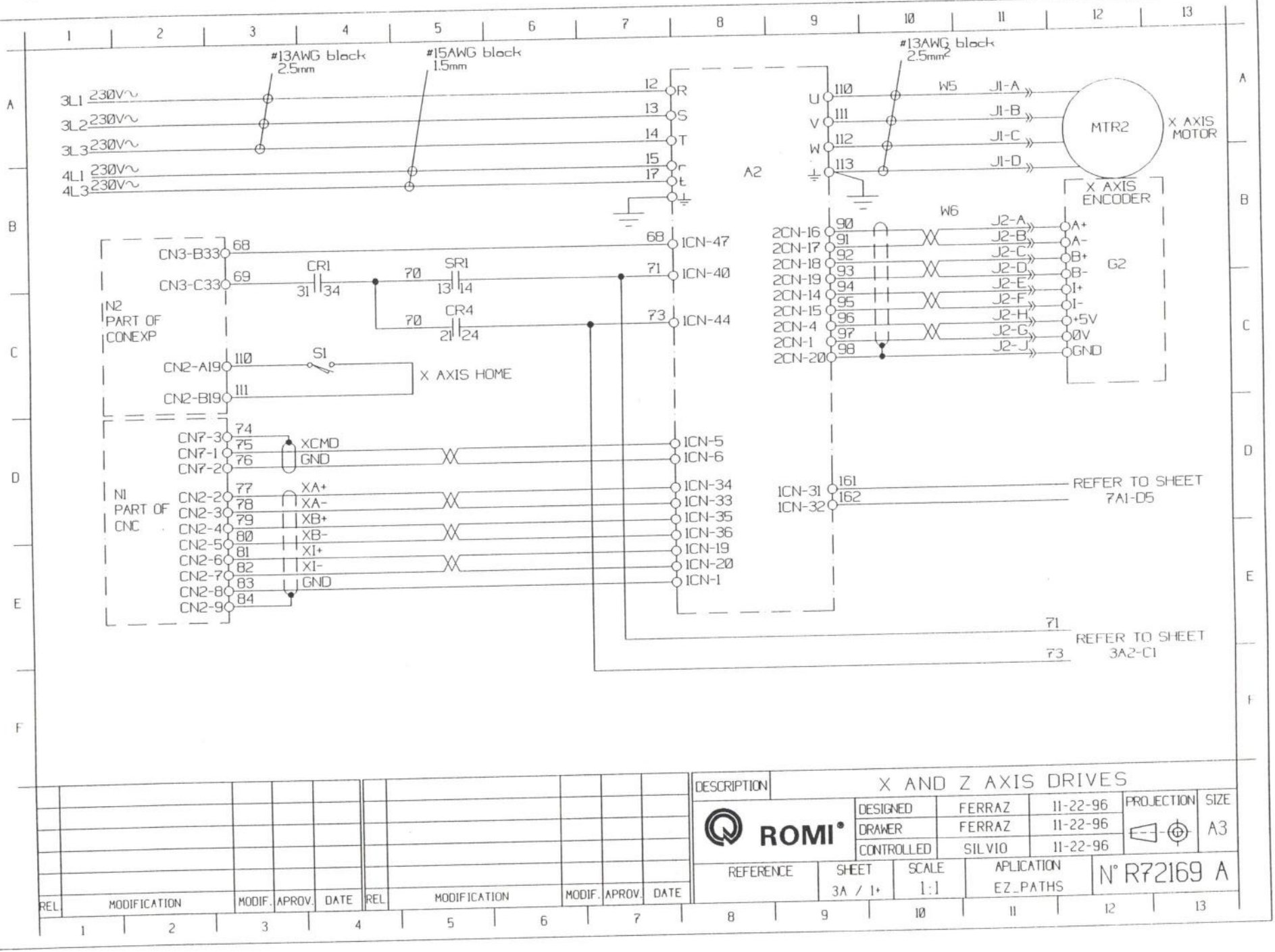
DESCRIPTION: SPINDLE DRIVE I/O AND POWER

ROMI®

DESIGNED	FERRAZ	11-22-96
DRAWER	FERRAZ	11-22-96
CONTROLLED	SILVIO	11-22-96

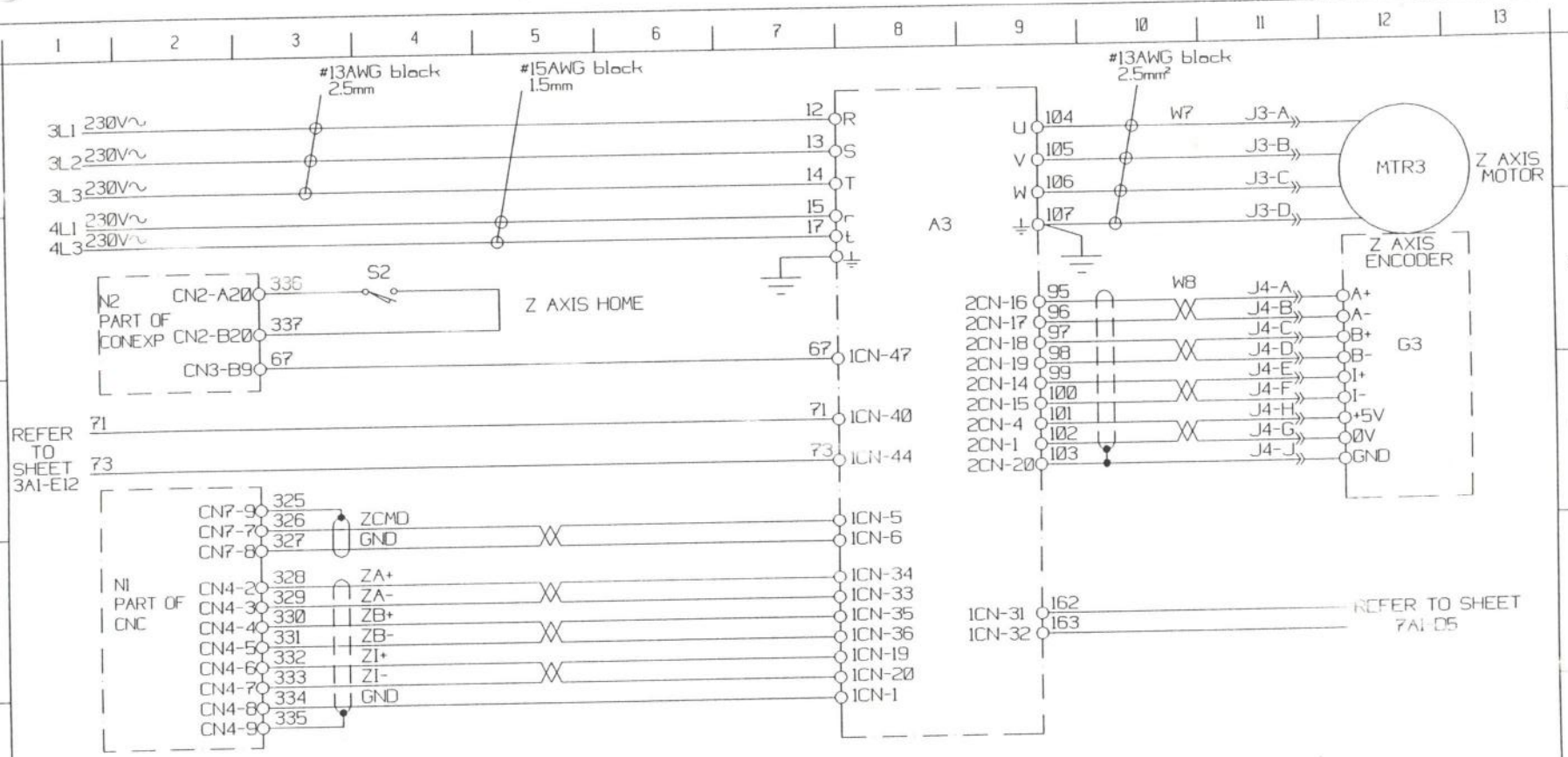
PROJECTION | SIZE: A3

REFERENCE	SHEET	SCALE	APLICATION	N°
	2A / 2-	1:1	EZ_PATHS	R72168 B



REL	MODIFICATION	MODIF.	APROV.	DATE

DESCRIPTION	X AND Z AXIS DRIVES			
ROMI®	DESIGNED	FERRAZ	11-22-96	PROJECTION / SIZE
	DRAWER	FERRAZ	11-22-96	A3
	CONTROLLED	SILVIO	11-22-96	
REFERENCE	SHEET 3A / 1+	SCALE 1:1	APLICATION EZ_PATHS	N° R72169 A



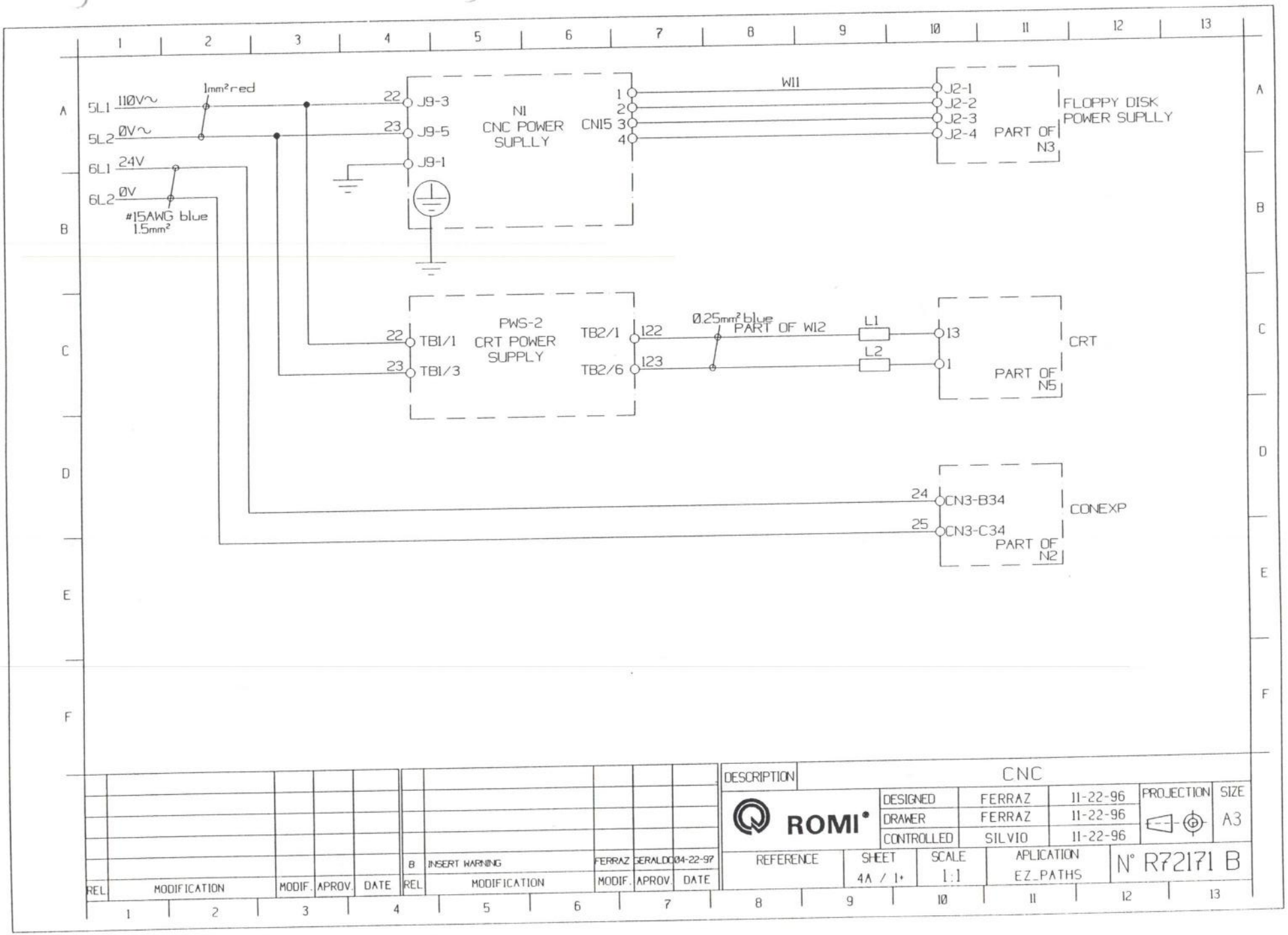
REL	MODIFICATION	MODIF.	APROV.	DATE	REL	MODIFICATION	MODIF.	APROV.	DATE

DESCRIPTION: X AND Z AXIS DRIVES

ROMI®

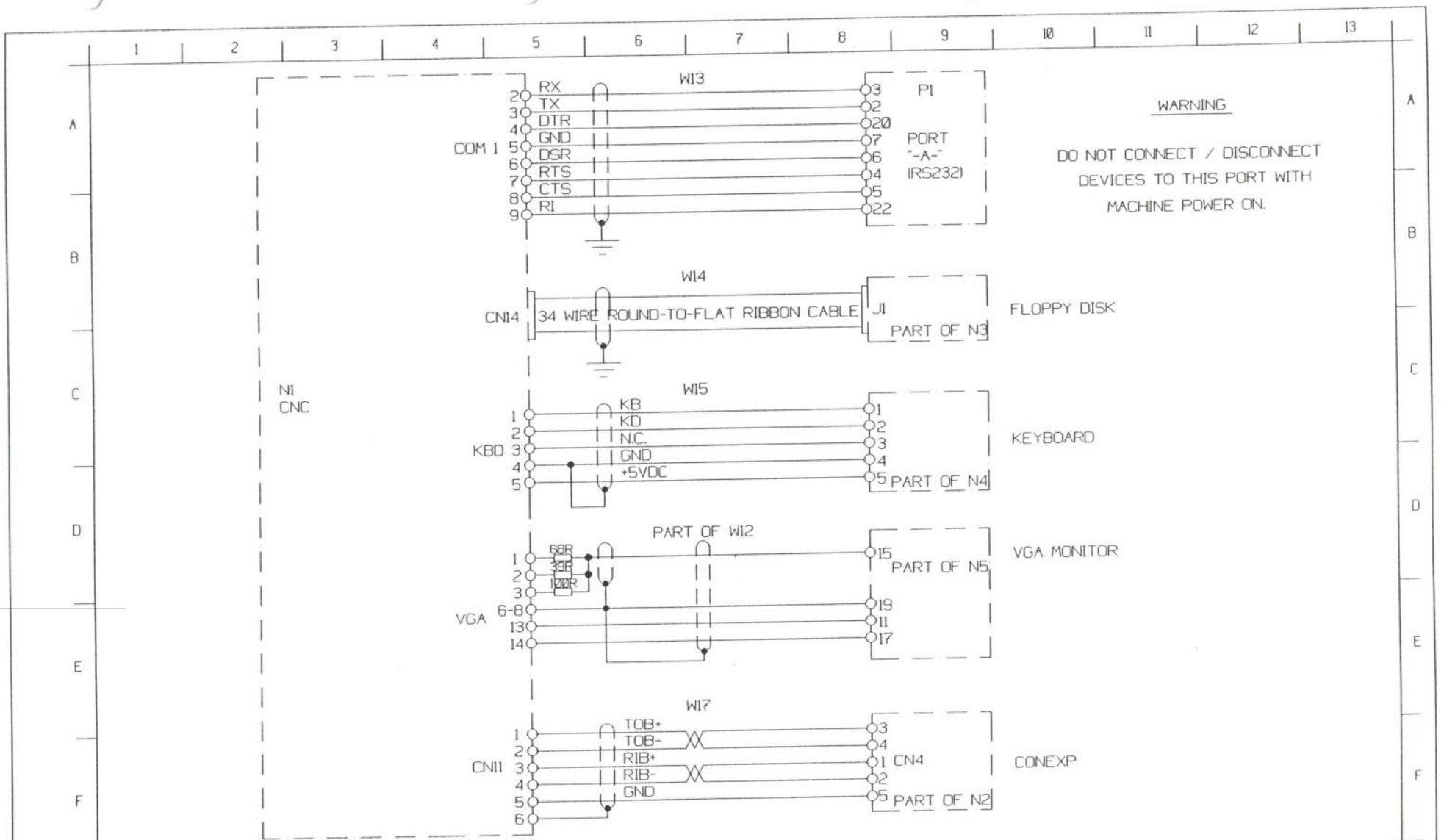
DESIGNED	FERRAZ	11-22-96	PROJECTION
DRAWER	FERRAZ	11-22-96	SIZE A3
CONTROLLED	SILVIO	11-22-96	

REFERENCE	SHEET	SCALE	APLICATION	N° R72169 A
	3A / 2-	1:1	EZ_PATHS	



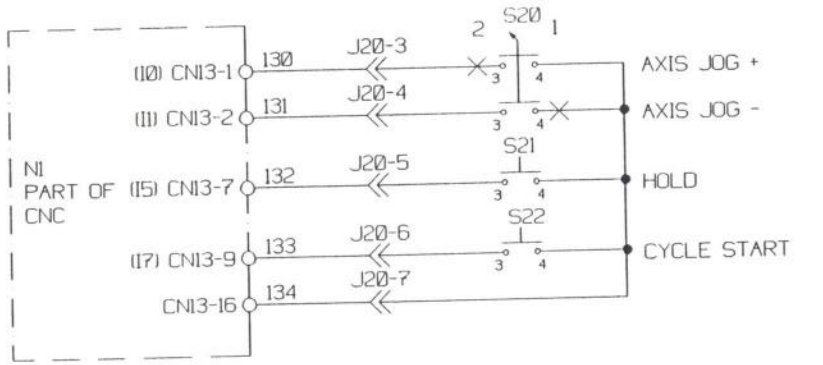
REL.	MODIFICATION	MODIF.	APROV.	DATE
B	INSERT WARNING	FERRAZ	GERALDO	04-22-97

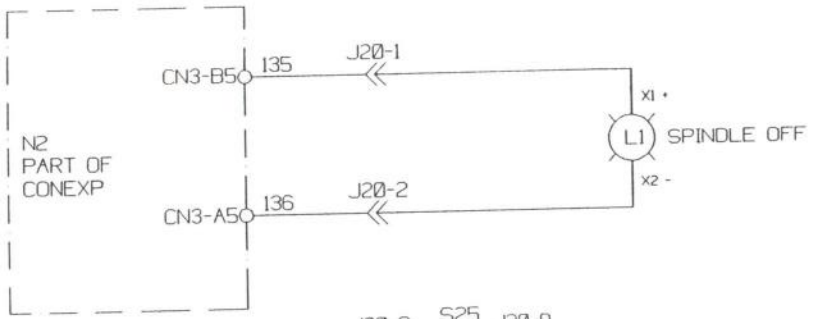
DESCRIPTION	CNC			
ROMI	DESIGNED	FERRAZ	11-22-96	PROJECTION
	DRAWER	FERRAZ	11-22-96	SIZE A3
	CONTROLLED	SILVIO	11-22-96	
REFERENCE	SHEET 4A / 1+	SCALE 1:1	APLICATION EZ_PATHS	N° R72171 B

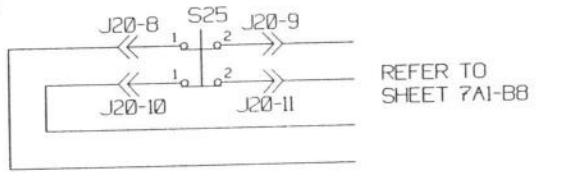


REL	MODIFICATION	MODIF.	APROV.	DATE
B	INSERT WARNING	FERRAZ	GERALDO	04-22-97

DESCRIPTION	CNC			
ROMI	DESIGNED	FERRAZ	11-22-96	PROJECTION
	DRAWER	FERRAZ	11-22-96	SIZE A3
	CONTROLLED	SILVIO	11-22-96	
REFERENCE	SHEET 4A / 2-	SCALE 1:1	APLICATION EZ_PATHS	N° R72171 B



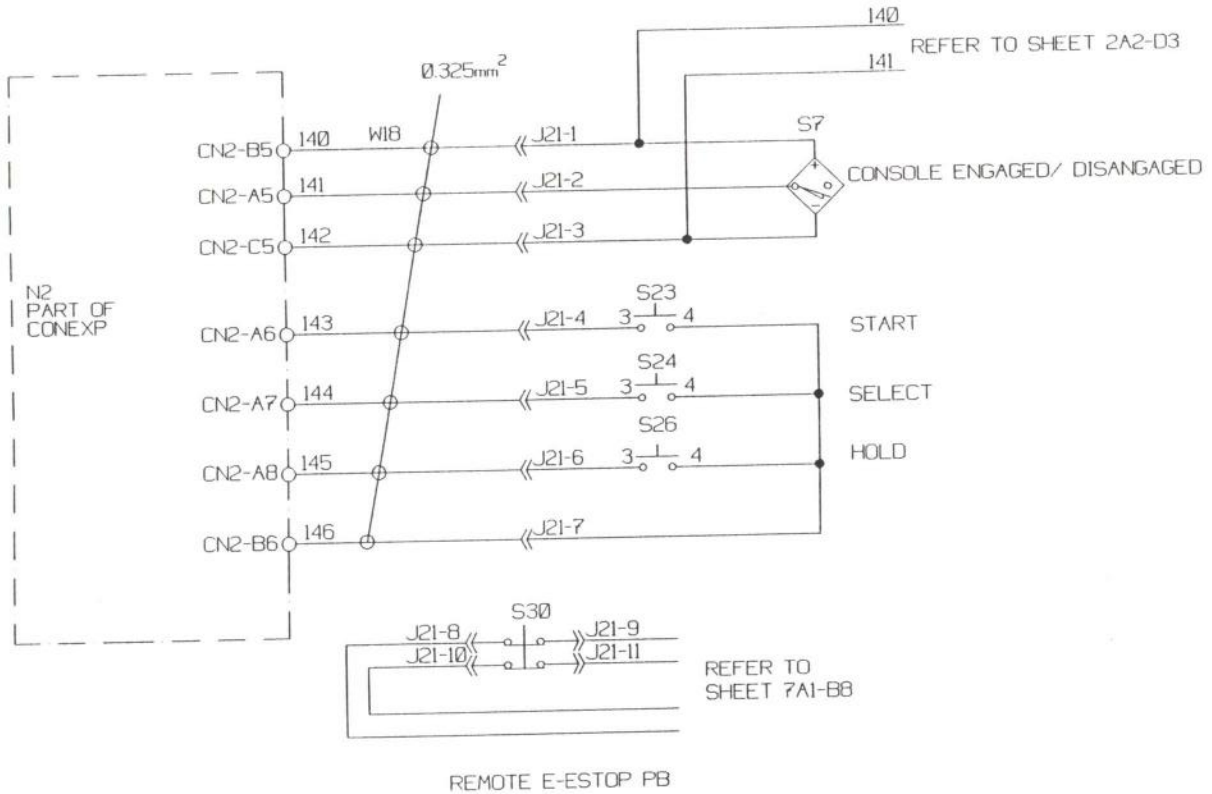




E-ESTOP PB

REL	MODIFICATION	MODIF.	APROV.	DATE

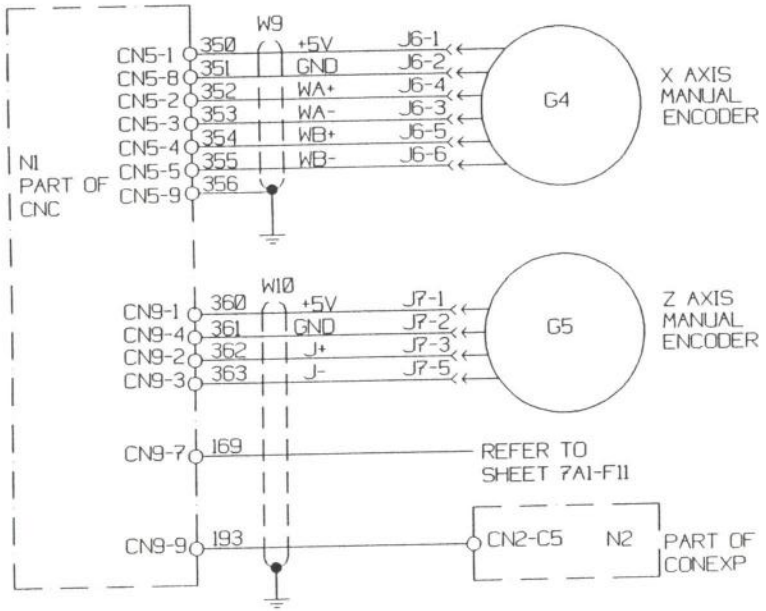
DESCRIPTION	CONTROL PANEL				
ROMI®	DESIGNED	FERRAZ	11-22-96	PROJECTION	SIZE
	DRAWER	FERRAZ	11-22-96		A3
	CONTROLLED	SILVIO	11-22-96		
REFERENCE	SHEET 5A / 1-	SCALE 1:1	APLICATION EZ_PATHS	N° R72172 A	



REL	MODIFICATION	MODIF.	APROV.	DATE

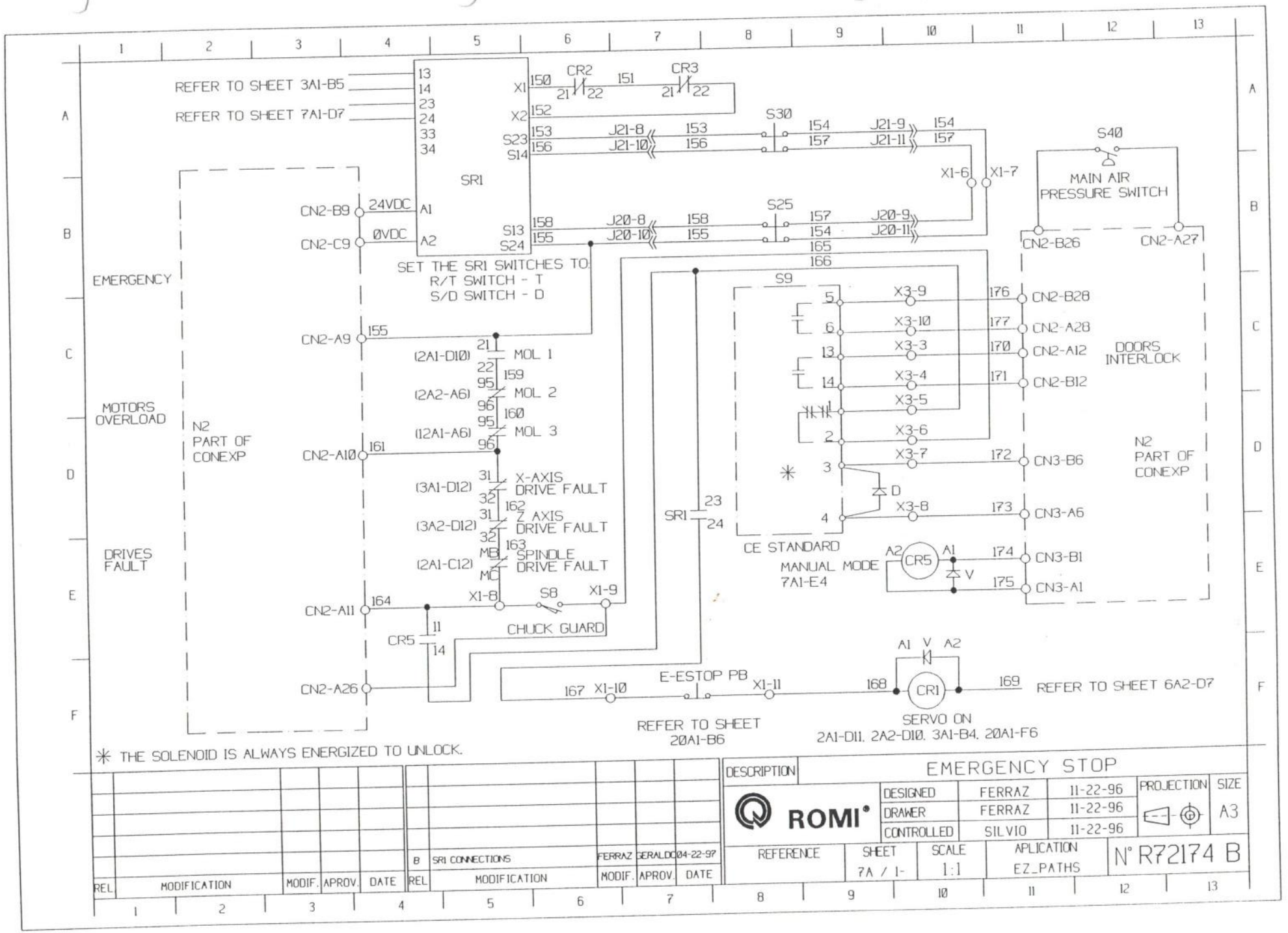
REL	MODIFICATION	MODIF.	APROV.	DATE

DESCRIPTION	REMOTE CONTROL PANEL				
ROMI®	DESIGNED	FERRAZ	11-22-96	PROJECTION	SIZE
	DRAWER	FERRAZ	11-22-96		A3
	CONTROLLED	SILVIO	11-22-96		
REFERENCE	SHEET 6A / 1+	SCALE 1:1	APLICATION EZ_PATHS	N° R72173 A	



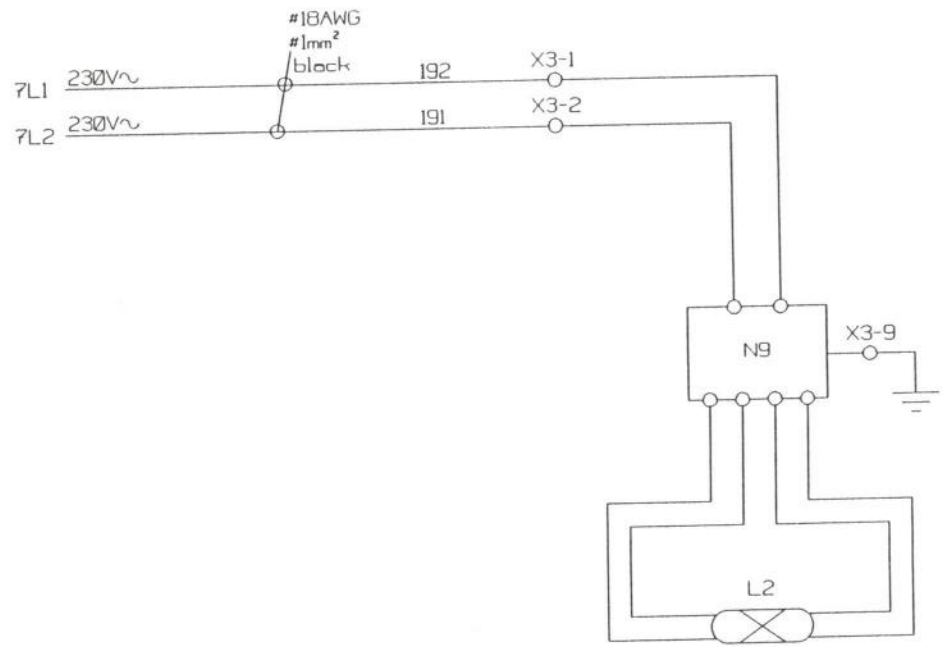
REL	MODIFICATION	MODIF.	APROV.	DATE

DESCRIPTION	REMOTE CONTROL PANEL			
ROMI®	DESIGNED	FERRAZ	11-22-96	PROJECTION
	DRAWER	FERRAZ	11-22-96	SIZE A3
	CONTROLLED	SILVIO	11-22-96	
REFERENCE	SHEET 6A / 2-	SCALE 1:1	APLICATION EZ_PATHS	N° R72173 A



REL	MODIFICATION	MODIF.	APROV.	DATE
B	SR1 CONNECTIONS	FERRAZ	GERALDO	04-22-97

DESCRIPTION	EMERGENCY STOP				
ROMI®	DESIGNED	FERRAZ	11-22-96	PROJECTION	SIZE
	DRAWER	FERRAZ	11-22-96		A3
	CONTROLLED	SILVIO	11-22-96		
REFERENCE	SHEET 7A / 1-	SCALE 1:1	APLICATION EZ_PATHS	N° R72174 B	



WORK LIGHT

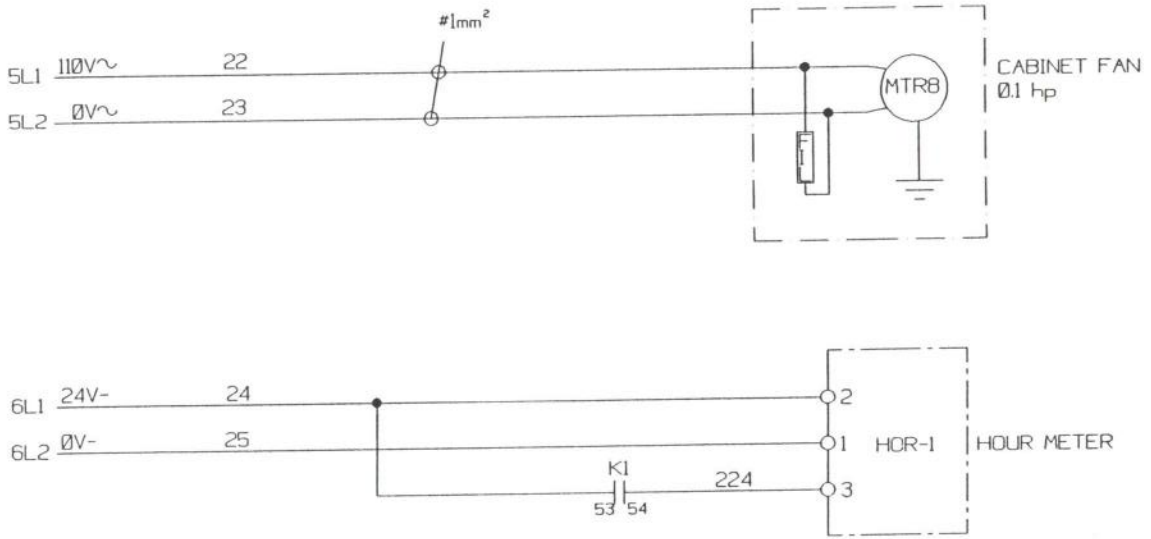
REL	MODIFICATION	MODIF.	APROV.	DATE
B	CABLES DETAIL	FERRAZ	GERALDO	04-22-97

DESCRIPTION: WORK LIGHT

ROMI

DESIGNED	FERRAZ	11-22-96	PROJECTION
DRAWER	FERRAZ	11-22-96	SIZE: A3
CONTROLLED	SILVIO	11-22-96	

REFERENCE	SHEET	SCALE	APLICATION	N°
	8A / 1-	1:1	EZ_PATHS	R72175 B



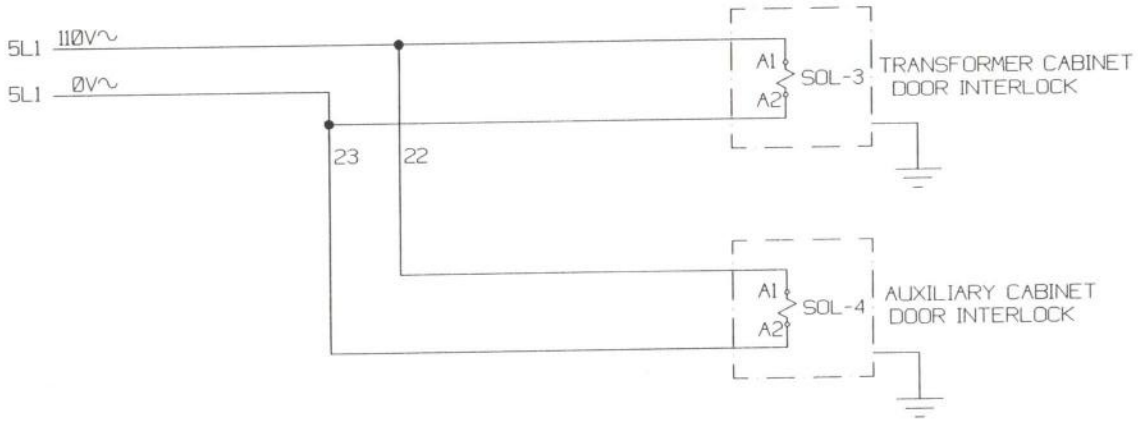
REL	MODIFICATION	MODIF.	APROV.	DATE	REL	MODIFICATION	MODIF.	APROV.	DATE

DESCRIPTION: GENERAL CONNECTIONS

ROMI®

DESIGNED	FERRAZ	11-22-96	PROJECTION
DRAWER	FERRAZ	11-22-96	SIZE A3
CONTROLLED	SILVIO	11-22-96	

REFERENCE	SHEET	SCALE	APLICATION	N° R72176 A
	9A / 1+	1:1	EZ_PATHS	



REL.	MODIFICATION	MODIF.	APROV.	DATE

REL.	MODIFICATION	MODIF.	APROV.	DATE

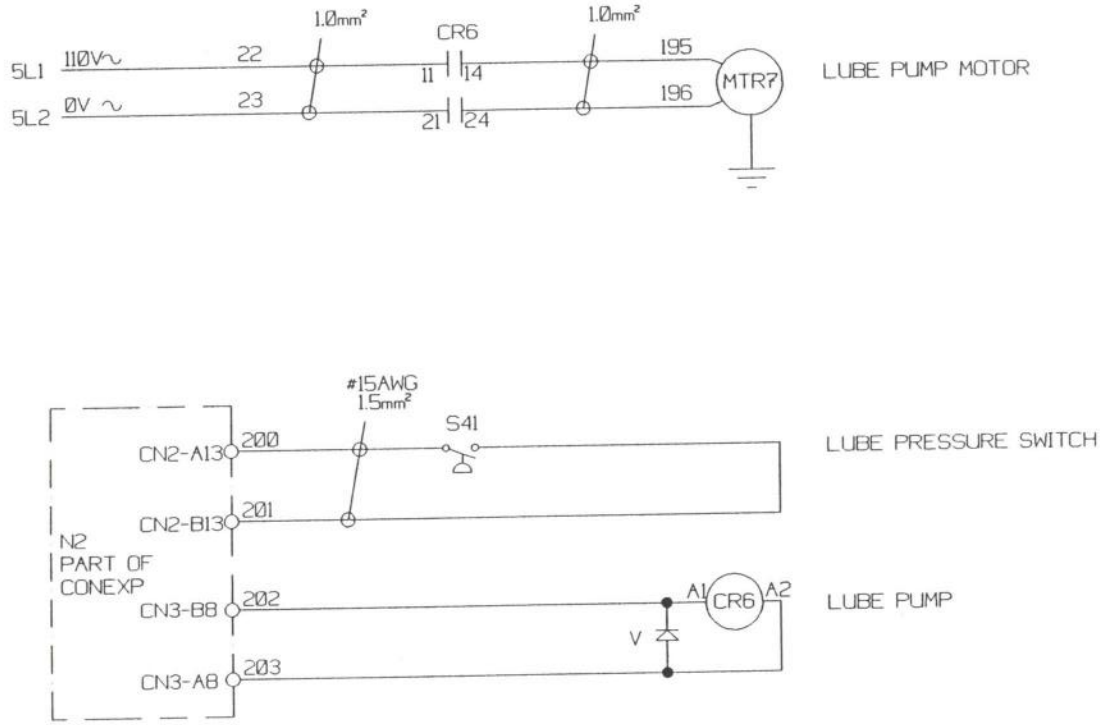
DESCRIPTION: GENERAL CONNECTIONS

ROMI®

DESIGNED	FERRAZ	11-22-96
DRAWER	FERRAZ	11-22-96
CONTROLLED	SILVIO	11-22-96

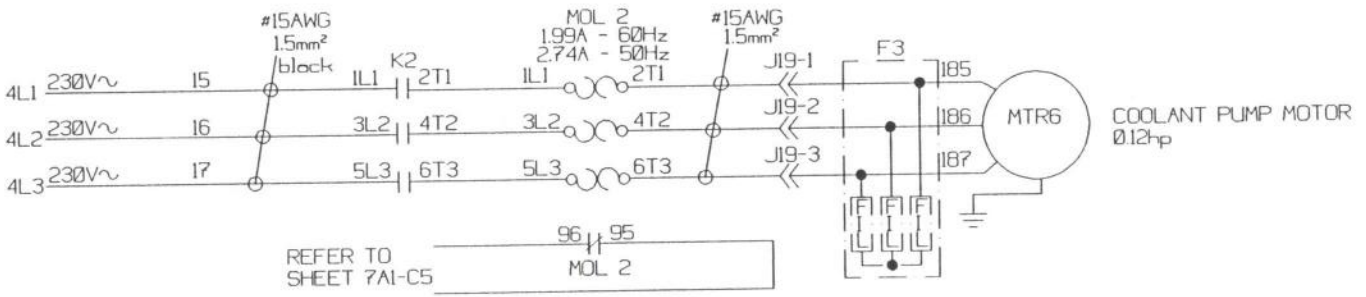
PROJECTION | SIZE: A3

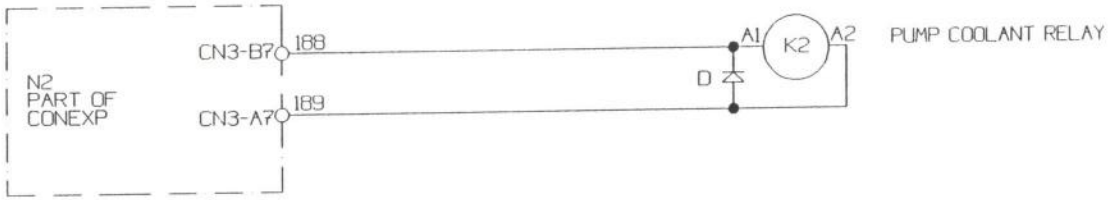
REFERENCE	SHEET	SCALE	APLICATION	N°
	9A / 2-	1:1	EZ_PATHS	R72176 A



REL	MODIFICATION	MODIF.	APROV.	DATE

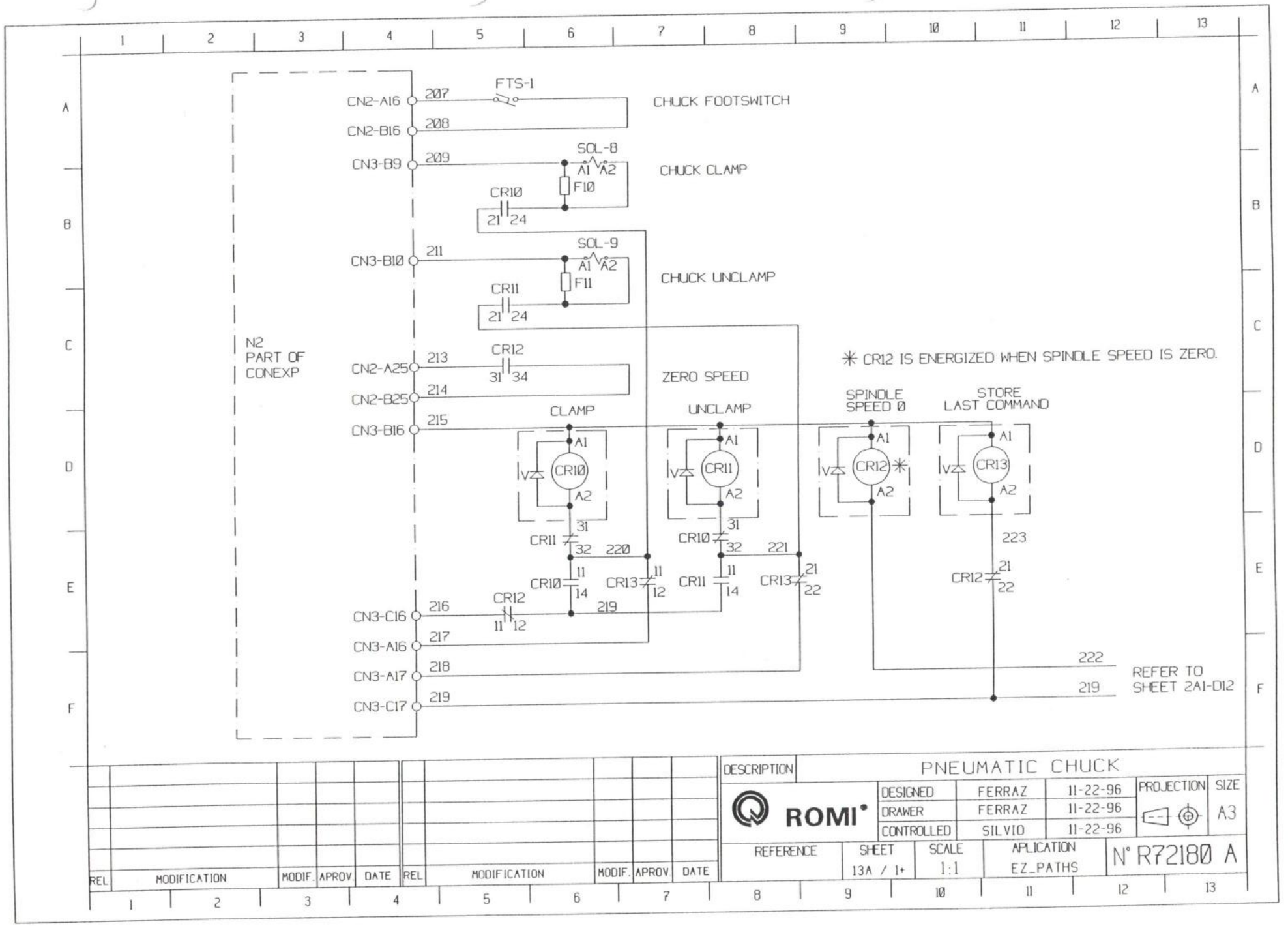
DESCRIPTION	LUBE PUMP			
ROMI®	DESIGNED	FERRAZ	11-22-96	PROJECTION
	DRAWER	FERRAZ	11-22-96	SIZE A3
	CONTROLLED	SILVIO	11-22-96	
REFERENCE	SHEET 10A / 1-	SCALE 1:1	APLICATION EZ_PATHS	N° R72179 A





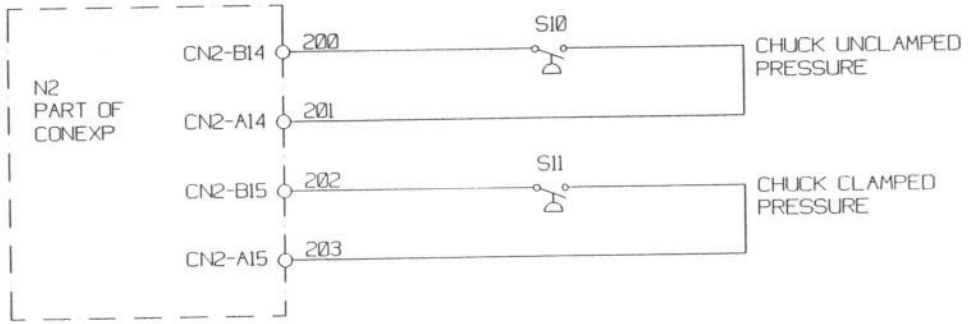
REL	MODIFICATION	MODIF.	APROV.	DATE
B	CABLES DETAIL	FERRAZ	GERALDO	04-22-97

DESCRIPTION	FLOOD COOLANT		
ROMI®	DESIGNED	FERRAZ	11-22-96
	DRAWER	FERRAZ	11-22-96
	CONTROLLED	SILVIO	11-22-96
PROJECTION	SIZE		
	A3		
REFERENCE	SHEET 11A / 1-	SCALE 1:1	APLICATION EZ_PATHS
N° R72178 B			



REL	MODIFICATION	MODIF.	APROV.	DATE

DESCRIPTION	PNEUMATIC CHUCK			
ROMI	DESIGNED	FERRAZ	11-22-96	PROJECTION / SIZE A3
	DRAWER	FERRAZ	11-22-96	
	CONTROLLED	SILVIO	11-22-96	
REFERENCE	SHEET 13A / 1+	SCALE 1:1	APLICATION EZ_PATHS	N° R72180 A



REL	MODIFICATION	MODIF.	APROV.	DATE

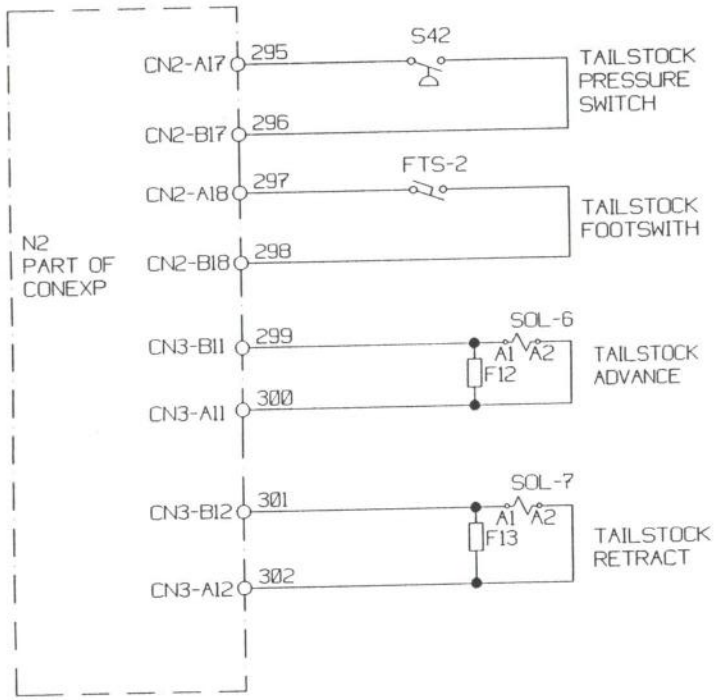
REL	MODIFICATION	MODIF.	APROV.	DATE

DESCRIPTION: PNEUMATIC CHUCK

ROMI®

DESIGNED	FERRAZ	11-22-96	PROJECTION
DRAWER	FERRAZ	11-22-96	SIZE A3
CONTROLLED	SILVIO	11-22-96	

REFERENCE	SHEET	SCALE	APLICATION	N°
	13A / 2-	1:1	EZ_PATHS	R72180 A



REL	MODIFICATION	MODIF.	APROV.	DATE

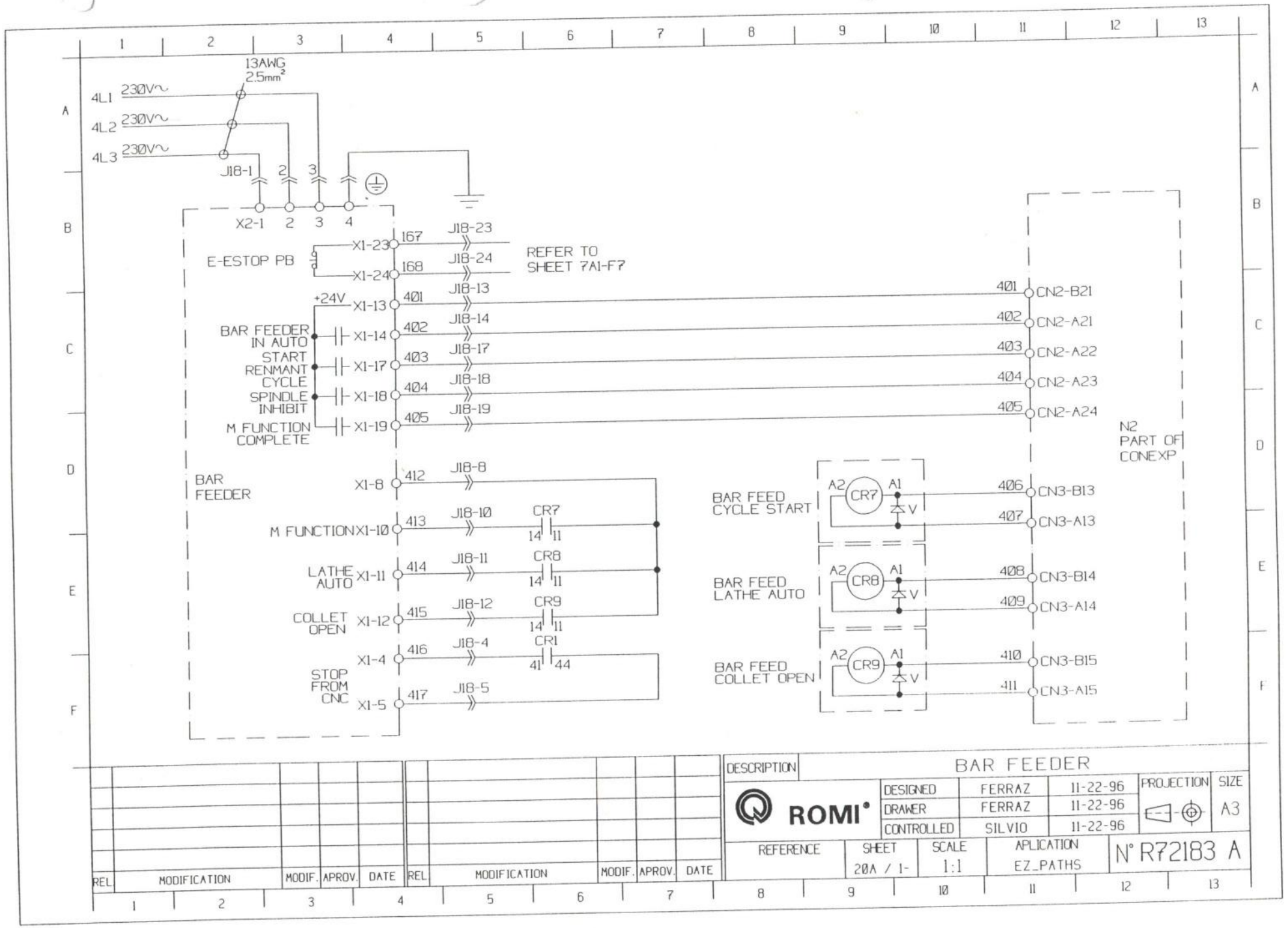
REL	MODIFICATION	MODIF.	APROV.	DATE

DESCRIPTION: TAILSTOCK

ROMI®

DESIGNED	FERRAZ	11-22-96	PROJECTION
DRAWER	FERRAZ	11-22-96	SIZE A3
CONTROLLED	SILVIO	11-22-96	

REFERENCE	SHEET	SCALE	APLICATION	N°
	14A / 1-	1:1	EZ_PATHS	R72181 A



REL	MODIFICATION	MODIF.	APROV.	DATE

DESCRIPTION	BAR FEEDER			
ROMI®	DESIGNED	FERRAZ	11-22-96	PROJECTION
	DRAWER	FERRAZ	11-22-96	SIZE A3
	CONTROLLED	SILVIO	11-22-96	
REFERENCE	SHEET 20A / 1-	SCALE 1:1	APLICATION EZ_PATHS	N° R72183 A

N2 CN2	ADDRESS INPUT	FUNCTION
A1	INPUT-1	SPINDLE CW SELECTION
A2	INPUT-2	SPINDLE CCW SELECTION
A3	INPUT-3	GEAR LOW
A4	INPUT-4	GEAR HIGH
A5	INPUT-5	CONSOLE ENG./DISAN.
A6	INPUT-6	START REMOTE CONTROL
A7	INPUT-7	SELECT REMOTE CONTROL
A8	INPUT-8	HOLD REMOTE CONTROL
A9	INPUT-9	EMERGENCY STOP
A10	INPUT-10	MOTORS OVERLOAD
A11	INPUT-11	DRIVES FAULT
A12	INPUT-12	DOORS INTERLOCK
A13	INPUT-13	LUBE PRESSURE SWITCH
A14	INPUT-14	CHUCK UNCLAMPED
A15	INPUT-15	CHUCK CLAMPED
A16	INPUT-16	CHUCK FOOTSWITCH
A17	INPUT-17	TAILSTOCK PRESSURE SWITCH
A18	INPUT-18	TAILSTOCK FOOTSWITCH
A19	INPUT-19	X AXIS HOME
A20	INPUT-20	Z AXIS HOME
A21	INPUT-21	BAR FEEDER IN AUTO
A22	INPUT-22	START RENMANT CYCLE
A23	INPUT-23	SPINDLE INHIBIT
A24	INPUT-24	M FUNCTION COMPLETE
A25	INPUT-25	ZERO SPEED
A26	INPUT-26	CHUCK GUARD
A27	INPUT-27	AIR LINE PRESSURE SWITCH
A28	INPUT-28	SAFETY SWITCH STATUS
A29	INPUT-29	
A30	INPUT-30	
A31	INPUT-31	
A32	INPUT-32	
A33	INPUT-33	
A34	INPUT-34	
A35	INPUT-35	
A36	INPUT-36	
A37	INPUT-37	
A38	INPUT-38	
A39	INPUT-39	
A40	INPUT-40	

REL.	MODIFICATION	MODIF.	APROV.	DATE

REL.	MODIFICATION	MODIF.	APROV.	DATE

DESCRIPTION: INPUTS MAP

ROMI®

DESIGNED	FERRAZ	11-22-96	PROJECTION
DRAWER	FERRAZ	11-22-96	SIZE A3
CONTROLLED	SILVIO	11-22-96	

REFERENCE	SHEET	SCALE	APLICATION	N° R72184 A
	40A / 1-	1:1	EZ_PATHS	

N2 CN3	ADDRESS OUTPUT	FUNCTION
A1	OUTPUT-1	MANUAL MODE
A2	OUTPUT-2	SPINDLE CW
A3	OUTPUT-3	SPINDLE CCW
A4	OUTPUT-4	RESET DRIVES
A5	OUTPUT-5	LAMP. SPINDLE OFF
A6	OUTPUT-6	DOOR GUARD
A7	OUTPUT-7	COOLANT RELAY PUMP
A8	OUTPUT-8	LUBE PUMP RELAY
A9	OUTPUT-9	
A10	OUTPUT-10	
A11	OUTPUT-11	TAILSTOCK ADVANCE
A12	OUTPUT-12	TAILSTOCK RETRACT
A13	OUTPUT-13	BAR FEED CYCLE START
A14	OUTPUT-14	BAR FEED LATHE AUTO
A15	OUTPUT-15	BAR FEED COLLET OPEN
A16	OUTPUT-16	CHUCK CLAMP
A17	OUTPUT-17	CHUCK UNCLAMP
A18	OUTPUT-18	
A19	OUTPUT-19	
A20	OUTPUT-20	
A21	OUTPUT-21	
A22	OUTPUT-22	
A23	OUTPUT-23	
A24	OUTPUT-24	
A25	OUTPUT-25	
A26	OUTPUT-26	
A27	OUTPUT-27	
A28	OUTPUT-28	
A29	OUTPUT-29	
A30	OUTPUT-30	

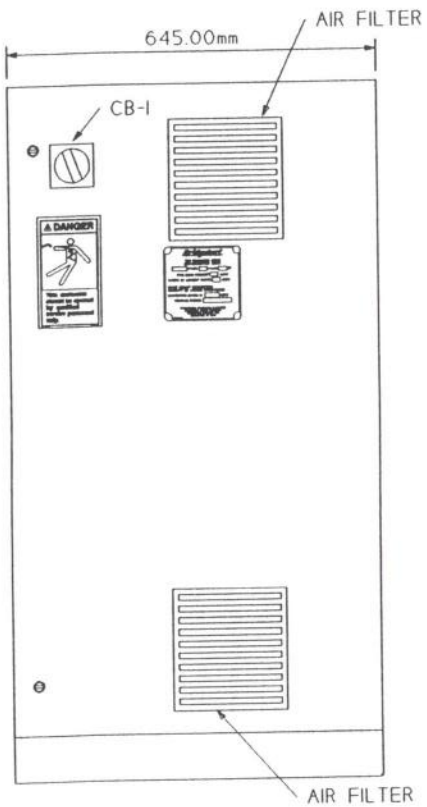
REL.	MODIFICATION	MODIF.	APROV.	DATE	REL.	MODIFICATION	MODIF.	APROV.	DATE

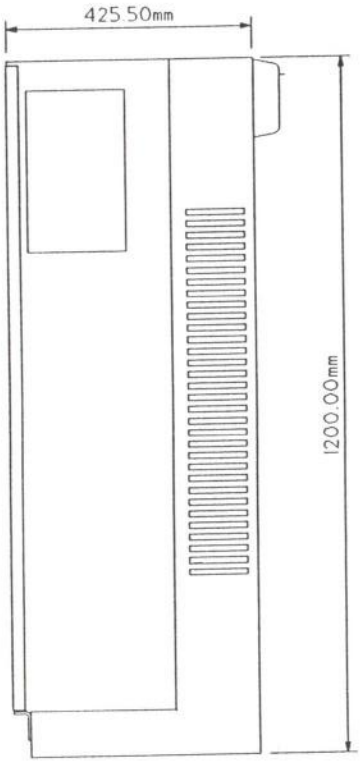
DESCRIPTION: OUTPUTS MAP

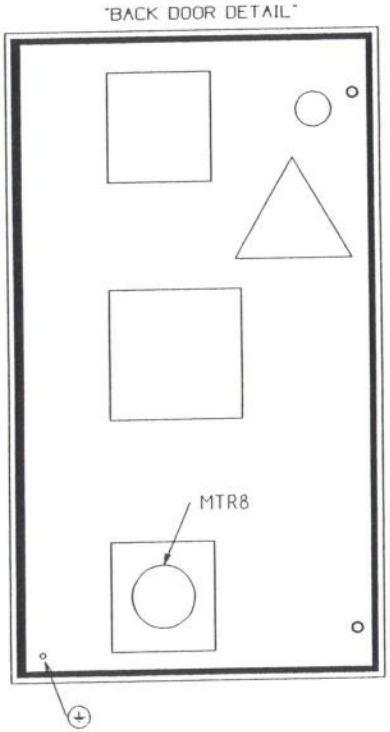
ROMI®

DESIGNED	FERRAZ	11-22-96	PROJECTION
DRAWER	FERRAZ	11-22-96	SIZE A3
CONTROLLED	SILVIO	11-22-96	

REFERENCE	SHEET	SCALE	APLICATION	N° R72185 A
	41A / 1-	1:1	EZ_PATHS	







REL	MODIFICATION	MODIF.	APROV	DATE

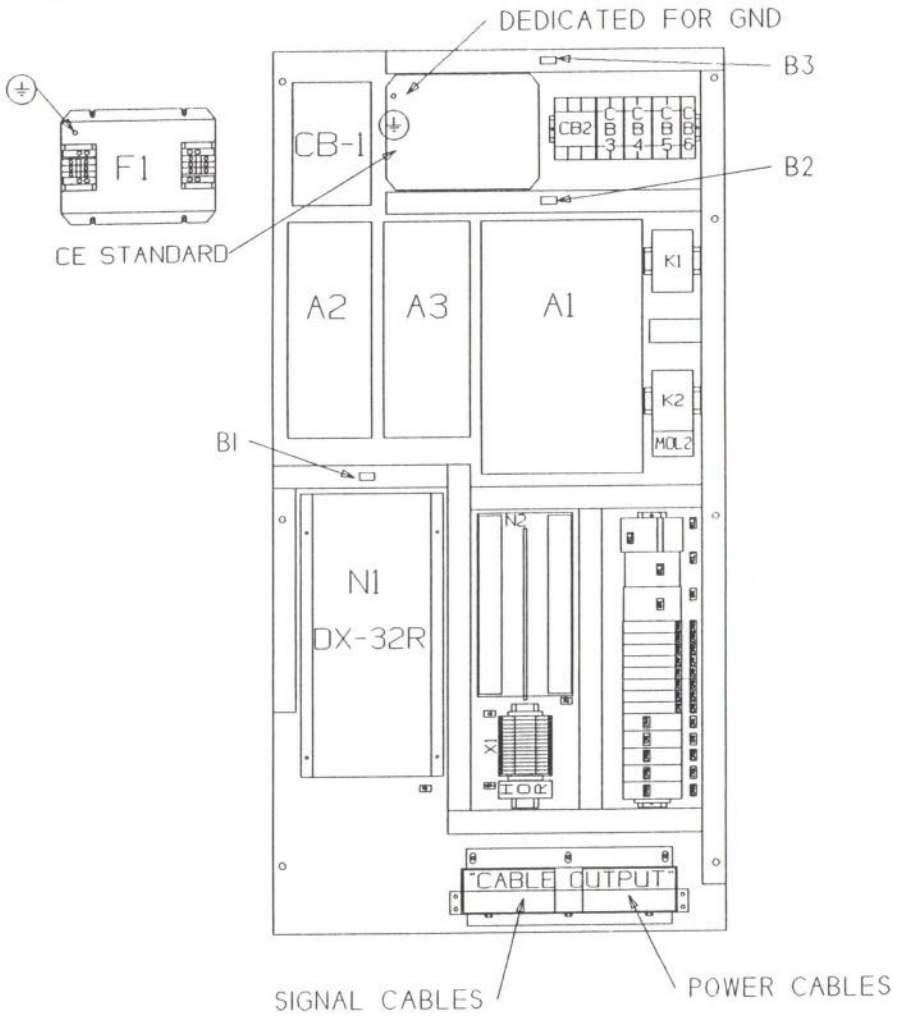
REL	MODIFICATION	MODIF.	APROV	DATE

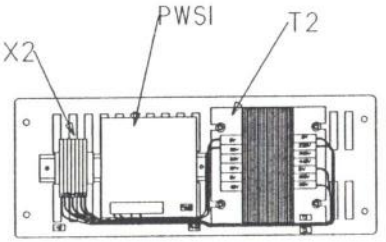
DESCRIPTION: ELECTRICAL PANEL LAYOUT

ROMI®

			PROJECTION	SIZE
DESIGNED	FERRAZ	11-22-96		
DRAWER	FERRAZ	11-22-96		A3
CONTROLLED	SILVIO	11-22-96		

REFERENCE	SHEET	SCALE	APLICATION	N°
	42A / 1+	1:8	EZ_PATHS	R72188 A





"AUXILIAR PANEL DETAIL"

REL	MODIFICATION	MODIF.	APROV.	DATE

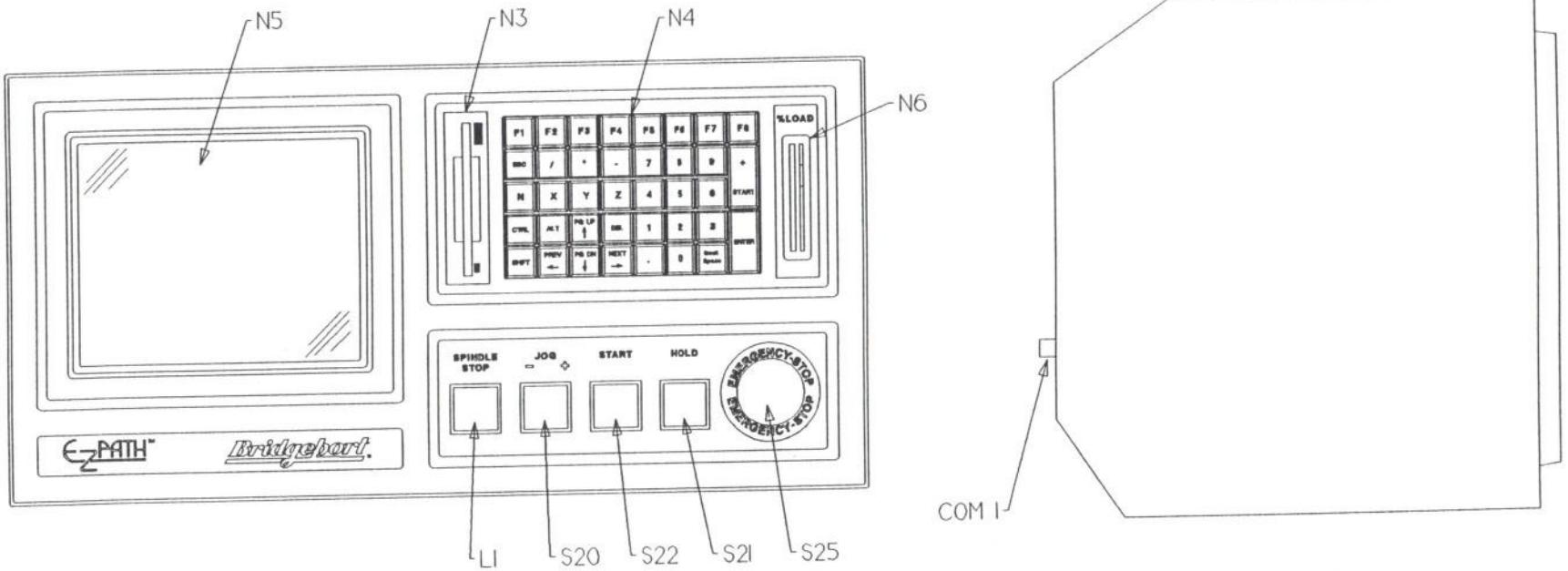
REL	MODIFICATION	MODIF.	APROV.	DATE

DESCRIPTION: ELECTRICAL PANEL LAYOUT

ROMI®

			PROJECTION	SIZE
DESIGNED	FERRAZ	11-22-96		
DRAWER	FERRAZ	11-22-96		A3
CONTROLLED	SILVIO	11-22-96		

REFERENCE	SHEET	SCALE	APLICATION	N°
	42A / 2-	1:6	EZ_PATHS	R72188 A



REL	MODIFICATION	MODIF.	APROV.	DATE

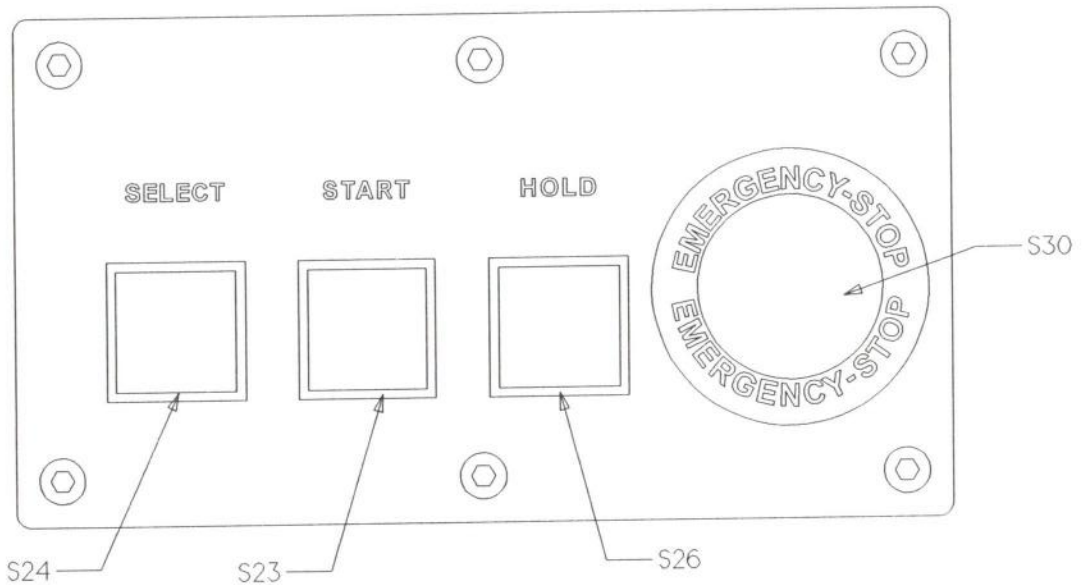
REL	MODIFICATION	MODIF.	APROV.	DATE

DESCRIPTION: OPERATOR PANEL LAYOUT

ROMI®

			PROJECTION	SIZE
DESIGNED	FERRAZ	11-22-96		
DRAWER	FERRAZ	11-22-96		A3
CONTROLLED	SILVIO	11-22-96		

REFERENCE	SHEET	SCALE	APLICATION	N°
	43A / 1-	1:3	EZ_PATHS	R72186 A



REL	MODIFICATION	MODIF.	APROV.	DATE

REL	MODIFICATION	MODIF.	APROV.	DATE

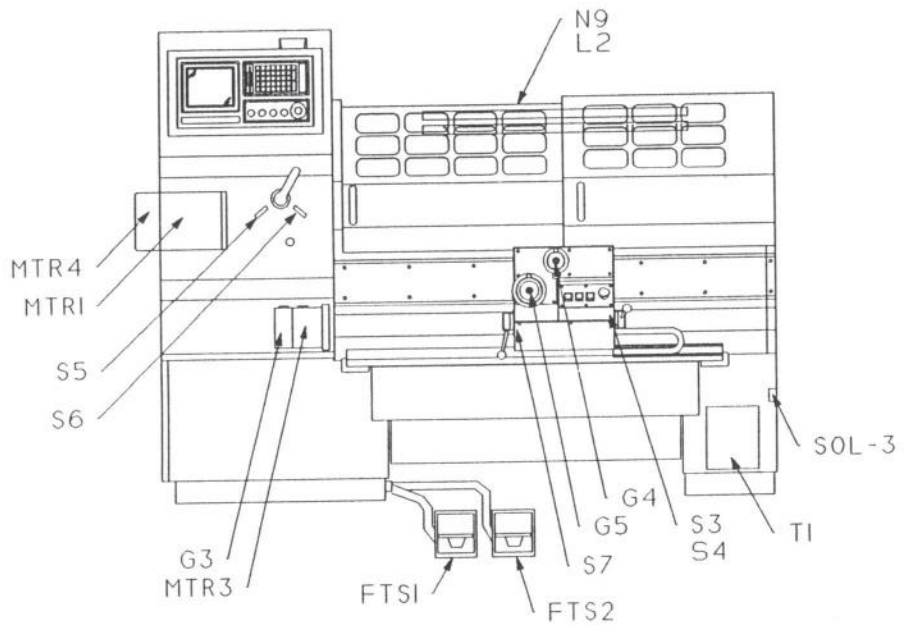
DESCRIPTION: REMOTE CONTROL P.LAYOUT

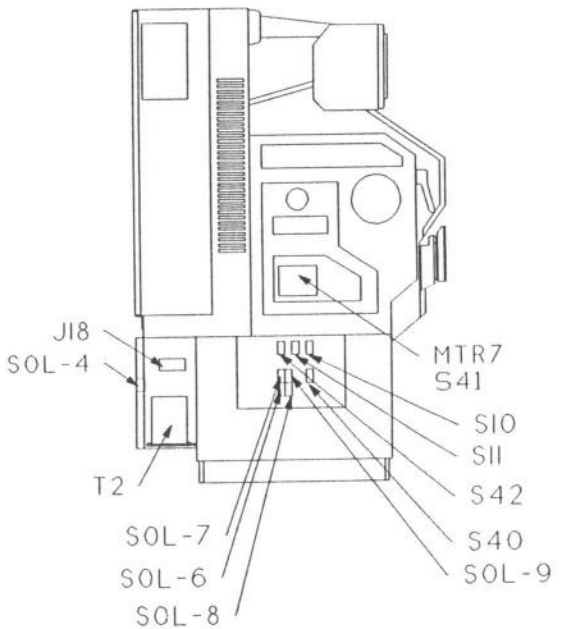
ROMI®

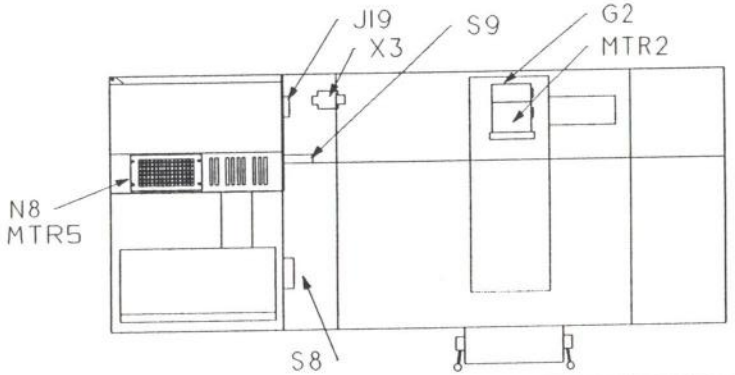
DESIGNED	FERRAZ	11-22-96
DRAWER	FERRAZ	11-22-96
CONTROLLED	SILVIO	11-22-96

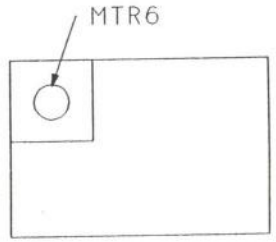
PROJECTION | SIZE: A3

REFERENCE	SHEET	SCALE	APLICATION	N°
	44A / 1-	1:1	EZ_PATHS	R72187 A









"COOLANT UNIT"

REL	MODIFICATION	MODIF.	APROV.	DATE	REL	MODIFICATION	MODIF.	APROV.	DATE

DESCRIPTION	MACHINE LAYOUT				
ROMI®	DESIGNED	FERRAZ	11-22-96	PROJECTION	SIZE
	DRAWER	FERRAZ	11-22-96		A3
	CONTROLLED	SILVIO	11-22-96		
REFERENCE	SHEET 45A / 1-	SCALE 1:17	APLICATION EZ_PATHS	N° R72189 A	

SIMB	FUNCTION	SUPPLIER CODE	SUPPLIER	P / N ITEM	LOCATION
A 1	SPINDLE DRIVE	CIMR-P5U25P5-75CV	YASKAWA	R67446	EL.CABINET
A 2	X AXIS DRIVE	SGDB-05ADG	YASKAWA	R69710	EL.CABINET
A 3	Z AXIS DRIVE	SGDB-05ADG	YASKAWA	R69710	EL.CABINET
B1 - B3	TEMPERATURE LABEL INDICATOR	R36825	ROMI	R36825	EL.CABINET
C1	CAPACITOR 10uF 10% 63V MUL	097742	ROMI	097742	EL.CABINET
CB 1	MAIN CIRCUIT BREAKER 40A	29003 + 29033 - 32-40A - 2B0-200	K.MOELLER	R69719	EL.CABINET
	MAIN CIRCUIT BREAKER 25A	29033 + 20043 - 20-25A	K.MOELLER	R70796	EL.CABINET
	BREAKER HANDLE	29338	K.MOELLER	R66357	EL.GABINET
CB 2	INPUT GENERAL MOTORS CIRCUIT BREAKER - 6A	23428	K.MOELLER	015389	EL.CABINET
CB 3	INPUT TRANSFORMER CIRCUIT BREAKER - 6A	24335	K.MOELLER	R18116	EL.CABINET
CB 4	COMMAND 110V CIRCUIT BREAKER - 6A	24335	K.MOELLER	R18116	EL.CABINET
CB 5	COMMAND 24V CIRCUIT BREAKER - 16A	24337	K.MOELLER	R38115	EL.CABINET
CR 1	RELAY COMMAND ON	51410	MURRELEKTRONIK	R71789	EL.CABINET
CR 2	RELAY SPINDLE CW	61353 + 61340 + 51353	MURRELEKTRONIK	R70883	EL.CABINET
CR 3	RELAY SPINDLE CCW	61353 + 61340 + 51353	MURRELEKTRONIK	R70883	EL.CABINET
CR 4	RELAY RESET DRIVES	51410	MURRELEKTRONIK	R71789	EL.CABINET
CR 5	RELAY MANUAL MODE	61352 + 61340 + 51353	MURRELEKTRONIK	R70884	EL.CABINET
CR 6	RELAY FOR LUBE PUMP MOTOR	61353 + 61340 + 51353	MURRELEKTRONIK	R70883	EL.CABINET
CR 7	RELAY BAR FEED CYCLE START	61352 + 61340 + 51353	MURRELEKTRONIK	R70884	EL.CABINET
CR 8	RELAY BAR FEED LATHE AUTO	61352 + 61340 + 51353	MURRELEKTRONIK	R70884	EL.CABINET
CR 9	RELAY BAR FEED COLLET OPEN	61352 + 61340 + 51353	MURRELEKTRONIK	R70884	EL.CABINET
CR 10	RELAY CHUCK CLAMP	51410	MURRELEKTRONIK	R71789	EL.CABINET
CR 11	RELAY CHUCK UNCLAMP	51410	MURRELEKTRONIK	R71789	EL.CABINET
CR 12	RELAY SPINDLE SPEED ZERO	51410	MURRELEKTRONIK	R71789	EL.CABINET
CR 13	RELAY STORE LAST COMMAND	61353 + 61340 + 51353	MURRELEKTRONIK	R70883	EL.CABINET
D	DIODS SPARK KILLER	SK 1/04	SEMIKRON	R72146	EL.CABINET
F 1	INPUT LINE FILTER	01627	POWER CONVERSION	R68804	EL.CABINET
F2-F9	MOTOR SPARK KILLER (CONNECT AT MOTOR TERMINAL)	23050	MURRELEKTRONIK	R70891	MACHINE
F10-F20	SOLENOID SPARK KILLER	3129720	MURRELEKTRONIK	R70890	MACHINE
FTS-1	CHUCK FOOTSWITCH	G999/BR03	KRAUSS NAIMER	R72164	MACHINE
FTS-2	TAILSTOCK FOOTSWITCH	G999/BR03	KRAUSS NAIMER	R72164	MACHINE

REL.	MODIFICATION	MODIF.	APROV.	DATE
B	ADDED N8	FERRAZ	GERALDO	04-22-97

DESCRIPTION: FUNCTION/DESCRIPTION PARTS

ROMI®

DESIGNED	FERRAZ	11-22-96	PROJECTION
DRAWER	FERRAZ	11-22-96	SIZE A3
CONTROLLED	SILVIO	11-22-96	

REFERENCE	SHEET	SCALE	APLICATION	N° R72190 B
	46A / 1+	1:1	EZ_PATHS	

SIMB	FUNCTION	SUPPLIER CODE	SUPPLIER	P / N ITEM	LOCATION
G 1	SPINDLE ENCODER	490.156.G2 1250 PPR	HEINDENHEIN	085248	MACHINE
G 2	X AXIS ENCODER	3000 PPR (ATTACHED TO MTR2)			MACHINE
G 3	Z AXIS ENCODER	3000 PPR (ATTACHED TO MTR3)			MACHINE
G 4	X AXIS MANUAL ENCODER	ERO 1421.6040-01000 RV KF	HEINDENHEIN	R69168	MACHINE
G 5	Z AXIS MANUAL ENCODER	ERO 1421.6040-01000 RV KF	HEINDENHEIN	R69168	MACHINE
H 1	HOUR METER	R68403	ROMI	R68403	EL.CABINET
INT 1	CABINET DOOR INTERLOCK	A-EK115NDH	HOFFMAN	R68857	EL.CABINET
INT 2	MACHINE DOOR INTERLOCK - HEAT PARTS	A-EK115NDH	HOFFMAN	R68857	MACHINE
INT 3	MACHINE DOOR INTERLOCK - TRANSFORMER	A-EK115NDH	HOFFMAN	R68857	MACHINE
J 1	CONNECTOR FOR POWER X AXIS MOTOR	ATTACHED TO MOTOR	ROMI		MACHINE
		MS3106B18-10S + MS3057-10A	ROMI	R37991	MACHINE
J 2	CONNECTOR FOR X AXIS MOTOR ENCODER	MS3106F20-29S	ROMI	R31023	MACHINE
J 3	CONNECTOR FOR POWER Z AXIS MOTOR	ATTACHED TO MOTOR	ROMI		MACHINE
		MS3108B18-10S + MS3057-10A	ROMI	R37992	MACHINE
J 4	CONNECTOR FOR Z AXIS ENCODER	MS3108R20-29S + MS85049/41-12A	ROMI	R33913	MACHINE
J 5	CONNECTOR FOR SPINDLE ENCODER	206-708-1 (SOCKET HOUSING)	AMP	063541	MACHINE
		881462-2 (SOCKET)	AMP	063561	MACHINE
		206705-1 (PINS HOUSING)	AMP	063542	MACHINE
		881461-2 (PINS)	AMP	063560	MACHINE
		206966-1 (CABLE CLAMP)	AMP	063543	MACHINE
J 6	CONNECTOR FOR X AXIS ENCODER HANDWHEEL	206-708-1 (SOCKET HOUSING)	AMP	063541	MACHINE
		881462-2 (SOCKET)	AMP	063561	MACHINE
		206705-1 (PINS HOUSING)	AMP	063542	MACHINE
		881461-2 (PINS)	AMP	063560	MACHINE
		206966-1 (CABLE CLAMP)	AMP	063543	MACHINE
J 7	CONNECTOR FOR Z AXIS ENCODER HANDWHEEL	206-708-1 (SOCKET HOUSING)	AMP	063541	MACHINE
		881462-2 (SOCKET)	AMP	063561	MACHINE
		206705-1 (PINS HOUSING)	AMP	063542	MACHINE
		881461-2 (PINS)	AMP	063560	MACHINE
		206966-1 (CABLE CLAMP)	AMP	063543	MACHINE
J15	CONNECTOR FOR RS 232C SYSTEM	205-207-1 (SOCKET HOUSING)	AMP	065699	OP.PANEL
		1-66504-0 (PINS)	AMP	065700	OP.PANEL

REL.	MODIFICATION	MODIF.	APROV.	DATE
B	ADDED N9	FERRAZ	GERALDO	04-22-97

DESCRIPTION: FUNCTION/DESCRIPTION PARTS

ROMI®

DESIGNED	FERRAZ	11-22-96	PROJECTION
DRAWER	FERRAZ	11-22-96	SIZE A3
CONTROLLED	SILVIO	11-22-96	

REFERENCE	SHEET	SCALE	APLICATION	N° R72190 B
	46A / 2+	1:1	EZ_PATHS	

SIMB	FUNCTION	SUPPLIER CODE	SUPPLIER	P / N ITEM	LOCATION
J18	CONNECTOR FOR BAR FEEDER	PBP24B	KAP	R67789	MACHINE
		PBP24L	KAP	R67986	MACHINE
		PBH24M	KAP	P51607	MACHINE
		PBH24F	KAP	P51606	MACHINE
J19	CONNECTOR FOR PUMP COOLANT	PBP06B	KAP	R67788	MACHINE
		PBH06F	KAP	012375	MACHINE
		PB06L	KAP	012372	MACHINE
		PBH06M	KAP	012374	MACHINE
J20	CONNECTOR OPERATOR'S PANEL	206043-1 (SOCKET HOUSING)	AMP	R52351	OP.PANEL
		1-66504-0 (SOCKET)	AMP	065700	OP.PANEL
		206044-1 (PINS HOUSING)	AMP	R52355	OP.PANEL
		206070-1 (CABLE CLAMP)	AMP	R52354	OP.PANEL
		1-66506-0 (PINS)	AMP	P88647	OP.PANEL
J21	CONNECTOR OPERATOR'S REMOTE CONTROL	206043-1 (SOCKET HOUSING)	AMP	R52351	OPER.REMOTE
		1-66504-0 (SOCKET)	AMP	065700	OPER.REMOTE
		206044-1 (PINS HOUSING)	AMP	R52355	OPER.REMOTE
		206070-1 (CABLE CLAMP)	AMP	R52354	OPER.REMOTE
		1-66506-0 (PINS)	AMP	P88647	OPER.REMOTE
K 1	CONTACTOR ENABLE SPINDLE DRIVE	LP1-D2501-BD	SCHNEIDER	R59686	EL.CABINET
	AUXILIAR	LA1-D11	SCHNEIDER	P71004	EL.CABINET
K 2	CONTACTOR FOR FLOOD COOLANT MOTOR	LP1-D1201-BD	SCHNEIDER	R38124	EL.CABINET
L 2	LAMP FOR MACHINE	TLDRS 32/84	PHILIPS	R72989	MACHINE
MTR 1	SPINDLE MOTOR	DC4333 - 3 PHASES MOTOR 7.5CV	EBERLE	R69564	MACHINE
MTR 2	X AXIS MOTOR	SGMG-05A2AB	YASKAWA	R69706	MACHINE
MTR 3	Z AXIS MOTOR	SGMG-05A2AB	YASKAWA	R69706	MACHINE
MTR 4	BLOWER OF SPINDLE MOTOR	ATTACHED TO MOTOR			MACHINE
MTR 5	DYNAMIC BRAKE RESISTOR FAN	ATTACHED TO RESISTOR			MACHINE
MTR 6	FLOOD MOTOR	SEE MECHANICAL PARTS LIST			MACHINE
MTR 7	LUBE PUMP MOTOR	SEE MECHANICAL PARTS LIST			MACHINE
MTR 8	ELECTRIC CABINET FAN MOTOR	R28531	ROMI	R28531	EL.CABINET

REL	MODIFICATION	MODIF.	APROV.	DATE
B	ADDED N8	FERRAZ	GERALDO	04-22-97

DESCRIPTION: FUNCTION/DESCRIPTION PARTS

ROMI

DESIGNED	FERRAZ	11-22-96	PROJECTION
DRAWER	FERRAZ	11-22-96	SIZE A3
CONTROLLED	SILVIO	11-22-96	

REFERENCE	SHEET	SCALE	APLICATION	N°
	46A / 3+	1:1	EZ_PATHS	R72190 B

SIMB	FUNCTION	SUPPLIER CODE	SUPPLIER	P / N ITEM	LOCATION
MOL 1	PROTECTOR BREAKER DISCHARGE RESISTOR	GV2-M12 (REG 13A)	SCHENEIDER	R67735	EL. CABINET
MOL 2	THERMAL RELAY FOR FLOOD MOTOR	LR1-D09307 (REG. 1.99A - 60Hz)	SCHENEIDER	P73171	EL. CABINET
		LR1-D09308 (REG. 2.74A - 50Hz)	SCHENEIDER	P73233	EL. CABINET
MOL 3	THERMAL RELAY FOR SPINDLE MOTOR BLOWER	LR1-D09305 (REG. 0.75A)	SCHENEIDER	R59770	EL. CABINET
	THERMAL RELAY SUPPORT	LA7-D0964-A65	SCHENEIDER	R23161	EL. CABINET
N 1	CNC DX32R (STANDARD)	PC WITH FLASH MEMORY	ROMI	R72071	EL. CABINET
	CNC DX32R (OPTIONAL)	PC WITH HARD DISK	ROMI	R72072	EL. CABINET
N 2	CONEXP	R71977	ROMI	R71977	EL. CABINET
	GPAUFR	R72213	ROMI	R72213	EL. CABINET
N 3	FLOPPY DISK DRIVE MODULE	FLOPPY DISK DRIVE 3 1/2"	BMI	R69315	EL. CABINET
N 4	KEYBOARD MODULE	KEYBOARD 38 KEYS	BMI	R70736	OP. PANEL
N 5	CRT MODULE	CRT 9" VGA	BMI	R70753	OP. PANEL
N 6	LOAD METER	R72069	ROMI	R72069	OP. PANEL
N 8	DISCHERGE UNIT	RESISTOR 12R / 2000W	ROMI	R67530	MACHINE
N 9	REACTOR	4F-B 232	PHILIPS	R72988	MACHINE
S 1	LIMIT SWITCH X AXIS REFERENCE	SEE MECHANICAL PARTS LIST			MACHINE
S 2	LIMIT SWITCH Z AXIS REFERENCE	SEE MECHANICAL PARTS LIST			MACHINE
S 3	PROXIMITY SWITCH OF SPINDLE CW	B21-AG 7.632E	KRAUS-NAIMER	003677	OP. PANEL
S 4	PROXIMITY SWITCH OF SPINDLE CCW	B21-AG 7.632E	KRAUS-NAIMER	003677	OP. PANEL
S 5	PROXIMITY SWITCH GEAR LOW	SEE MECHANICAL PARTS LIST			MACHINE
S 6	PROXIMITY SWITCH GEAR HIGH	SEE MECHANICAL PARTS LIST			MACHINE
S 7	CONSOLE ENGAGED / DESENGAGED PROXIMITY SWITCH	SEE MECHANICAL PARTS LIST			MACHINE
S 8	CHUCK GUARD	SEE MECHANICAL PARTS LIST			MACHINE
S 9	DOOR GUARD AND INTERLOCK	SEE MECHANICAL PARTS LIST			MACHINE
S 10	PRESSURE SENSOR FOR CHUCK UNCLAMPED	SEE MECHANICAL PARTS LIST			MACHINE
S 11	PRESSURE SENSOR FOR CHUCK CLAMPED	SEE MECHANICAL PARTS LIST			MACHINE
S 20	JOG BUTTOM OF OPERATOR'S PANEL	P9SSMD5N + P9B10FN + P9B01FN	GE	R70755	
S 21	HOLD BUTTOM OF OPERATOR'S PANEL	P9SPNRG + P9B10FN	GE	R70757	OP. PANEL
S 22	START BUTTOM OF OPRATOR'S PANEL	P9SPNVG + P9B10FN	GE	R70758	OP. PANEL
S 23	START BUTTOM OF OPERATOR'S REMOTE CONTROL	P9SPNVG + P9B10FN	GE	R70758	OPER. REMOTE
S 24	SELECT BUTTON OFF OPERATOR'S REMOTE	P9SPNNG + P9B10FN	GE	R70950	
S 25	EMERGENCY STOP BUTTOM OF OPERATOR'S PANEL	P9MER4RN + P9B01FN + P9B01FN	GE	R70389	OP. PANEL
S 26	HOLD BUTTOM OF OPERATOR'S REMOTE CONTROL	P9SPNRG + P9B10FN	GE	R70757	OPER. REMOTE

REL.	MODIFICATION	MODIF.	APROV.	DATE
B	ADDED N8	FERRAZ	GERALDO	04-22-97

DESCRIPTION: FUNCTION/DESCRIPTION PARTS

ROMI®

DESIGNED	FERRAZ	11-22-96	PROJECTION
DRAWER	FERRAZ	11-22-96	SIZE: A3
CONTROLLED	SILVIO	11-22-96	

REFERENCE	SHEET	SCALE	APLICATION	N° R72190 B
	46A / 4+	1:1	EZ_PATHS	

SIMB	FUNCTION	SUPPLIER CODE	SUPPLIER	P / N ITEM	LOCATION
S 30	EMERGENCY STOP BUTTOM OF OPERATOR'S REMOTE	P9MER4RN + P9B01FN + P9B01FN	GE	R70389	OPER REMOTE
S 40	MAIN AIR PRESSURE SWITCH	SEE MECHANICAL PARTS LIST			MACHINE
S 41	LUBE PRESSURE SWITCH	SEE MECHANICAL PARTS LIST			MACHINE
S 42	TAILSTOCK PRESSURE SWITCH	SEE MECHANICAL PARTS LIST			MACHINE
S 43	MAIN AIR PRESSURE SWITCH	SEE MECHANICAL PARTS LIST			MACHINE
SOL-1	SOLENOID UNCLAMP PNEUMATIC CHUCK	SEE MECHANICAL PARTS LIST			MACHINE
SOL-2	SOLENOID CLAMP PNEUMATIC CHUCK	SEE MECHANICAL PARTS LIST			MACHINE
SOL-3	TRANSFORMER PANEL INTERLOCK	SEE MECHANICAL PARTS LIST			MACHINE
SOL-4	AUXILIAR PANEL INTERLOCK	SEE MECHANICAL PARTS LIST			MACHINE
SOL-6	TAILSTOCK ADVANCED	SEE MECHANICAL PARTS LIST			MACHINE
SOL-7	TAILSTOCK RETRACT	SEE MECHANICAL PARTS LIST			MACHINE
SOL-8	CHUCK UNCLAMPED	SEE MECHANICAL PARTS LIST			MACHINE
SOL-9	CHUCK CLAMPED	SEE MECHANICAL PARTS LIST			MACHINE
SP1	POWER SUPPLY - 24V. 10A	89501	MURRELEKTRONIK	R70888	EL GABINETE
SP2	CRT POWER SUPPLY	SNP-9547	SKYNET	R69429	OP PANEL
SR 1	SAFETY RELAY 24V	23017 (MSR6RS/T)	GUARD MASTER	R70803	EL CABINETE
	CONNECTIONS MODULE	67083	MURRELEKTRONIK	R70953	EL CABINETE
T 1	INPUT TRANSFORMER ADAPTER OF VOLTAGE	AUTO TRANSFORMER 15KVA - 60Hz	WALTEC	R58020	MACHINE
		AUTO TRANSFORMER 15KVA - 50Hz	WALTEC	R59034	MACHINE
T 2	TRANSFORMER FOR COMMAND LINE	1 PHASE TRANSFORMER 1.0KVA	WALTEC	R63184	MACHINE
V	RELAY SPARK KILLER	ATTACHED TO RELAY			EL CABINET
W 1	SPINDLE ENCODER CABLE	R72126	ROMI	R72126	EL CABINET
W 2	SPINDLE MOTOR CABLE	R72125	ROMI	R72125	EL CABINET
W 3	LOAD METER CABLE	R72291	ROMI	R72291	EL CABINET

REL	MODIFICATION	MODIF.	APROV.	DATE
B	ADDED N8	FERRAZ	GERALDO	04-22-97

DESCRIPTION: FUNCTION/DESCRIPTION PARTS

ROMI®

DESIGNED	FERRAZ	11-22-96	PROJECTION
DRAWER	FERRAZ	11-22-96	SIZE A3
CONTROLLED	SILVIO	11-22-96	

REFERENCE	SHEET	SCALE	APLICATION	N° R72190 B
	46A / 5+	1:1	EZ_PATHS	

SIMB	FUNCTION	SUPPLIER CODE	SUPPLIER	P / N ITEM	LOCATION
W 5	X AXIS MOTOR CABLE	R72132	ROMI	R72132	EL.CABINET
W 6	X AXIS MOTOR ENCODER SIGNAL CABLE TO DRIVE	R72131	ROMI	R72131	EL.CABINET
W 7	Z AXIS MOTOR CABLE	R72133	ROMI	R72133	EL.CABINET
W 8	Z AXIS MOTOR ENCODER SIGNAL CABLE TO DRIVE	R72134	ROMI	R72134	EL.CABINET
W 9	X AXIS MANUAL ENCODER CABLE	R72135	ROMI	R72135	EL.CABINET
W 10	Z AXIS MANUAL ENCODER CABLE	R72136	ROMI	R72136	EL.CABINET
W 11	FLOPPY DISK POWER SUPPLY CABLE	R72137	ROMI	R72137	EL.CABINET
W 12	CRT POWER SUPPLY CABLE	R72145	ROMI	R72145	EL.CABINET
W 13	RS 232 CABLE	R72139	ROMI	R72139	EL.CABINET
W 14	FLOPPY DISK SIGNAL CABLE	R72140	ROMI	R72140	EL.CABINET
W 15	KEYBOARD CABLE	R73174	ROMI	R73174	EL.CABINET
W 16	VGA MONITOR CABLE	R73175	ROMI	R73175	EL.CABINET
W 17	CONEXP SIGNAL CABLE	R72142	ROMI	R72142	EL.CABINET
W 18	REMOTE CONTROL CABLE	R72128	ROMI	R72128	EL.CABINET
					EL.CABINET
X 1	ELECTRICAL CABINET CONNECTORS				MACHINE
X 2	AUXILIARY CABINET CONNECTORS				MACHINE
X 3	AUXILIARY CONNECTORS				

REL.	MODIFICATION	MODIF.	APROV.	DATE
B	ADDED N8	FERRAZ	GERALDO	04-22-97

DESCRIPTION: FUNCTION/DESCRIPTION PARTS

ROMI

DESIGNED	FERRAZ	11-22-96	PROJECTION
DRAWER	FERRAZ	11-22-96	SIZE A3
CONTROLLED	SILVIO	11-22-96	

REFERENCE	SHEET	SCALE	APLICATION	N° R72190 B
	46A / 6-	1:1	EZ_PATHS	

SPINDLE DRIVE P5

PARAMETER	VALUE
	EZ-S
n001	1
n002	3
n003	220.0
n004	0
n005	0
n006	0
n007	1
n008	1
n009	1
n010	F
n011	220.0
n012	188.0
n013	220.0
n014	70.0
n015	1.0
n016	5.0
n017	0.1
n018	0.1
n019	04.0
n020	04.0
n021	04.0

PARAMETER	VALUE
	EZ-S
n022	05.0
n023	1
n024	0
n025	166.6
n026	0.0
n027	0.0
n028	0.0
n029	6.0
n030	100
n031	0
n032	27.0
n033	3
n034	3
n035	0
n036	4
n037	11
n038	9
n039	10
n040	0
n041	1
n042	0

PARAMETER	VALUE
	EZ-S
n043	1
n044	0
n045	0
n046	100
n047	0
n048	1
n049	0.75
n050	6
n051	0
n052	150
n053	0.7
n054	100
n055	2.0
n056	0
n057	1
n058	0.0
n059	0.0
n060	1.0
n061	1
n062	0
n063	0

REL.	MODIFICATION	MODIF.	APROV.	DATE
B	ACCORDING TRYOUT	FERRAZ	GERALDO	04-22-97

DESCRIPTION: PARAMETERS

ROMI

DESIGNED	FERRAZ	10-09-96
DRAWER	FERRAZ	10-09-96
CONTROLLED	GERALDO	10-09-96

PROJECTION | SIZE: A3

REFERENCE	SHEET	SCALE	APLICATION	N°
	47A / 1+	1:1	EZ_PATHS	R72191 B

SPINDLE DRIVE P5

PARAMETER	VALUE EZ-S
n064	100
n065	05
n066	0.0
n067	00
n068	0.300
n069	172
n070	0
n071	170
n072	160
n073	00
n074	0
n075	160
n076	01
n077	00
n078	00
n079	0
n080	10 00
n081	10 24
n082	0
n083	02
n084	0

PARAMETER	VALUE EZ-S
n085	1.00
n086	10
n087	10.0
n088	000
n089	0
n090	100
n091	00
n092	0
n093	0
n094	10
n095	0
n096	94.75
n097	50
n098	12
n099	1
n100	0
n101	05
n102	0.2
n103	1
n104	1
n105	0

PARAMETER	VALUE EZ-S
n106	0
n107	2
n108	1

REL	MODIFICATION	MODIF.	APROV.	DATE
B	ACCORDING TRYOUT	FERRAZ	GERALDO	04-22-97

DESCRIPTION: PARAMETERS

ROMI

DESIGNED	FERRAZ	10-09-96	PROJECTION
DRAWER	FERRAZ	10-09-96	SIZE A3
CONTROLLED	GERALDO	10-09-96	

REFERENCE	SHEET	SCALE	APLICATION	N° R72191 B
	47A / 2+	1:1	EZ_PATHS	

PART NUMBER ROMI	
SOFTWARE	R7429B
X AND Z AXIS DRIVE PARAMETERS	R7465Z

REL	MODIFICATION	MODIF.	APROV.	DATE
B	ACCORDING TRYOUT	FERRAZ	GERALDO	04-22-97

DESCRIPTION: PARAMETERS

ROMI

DESIGNED	FERRAZ	10-09-96
DRAWER	FERRAZ	10-09-96
CONTROLLED	GERALDO	10-09-96

PROJECTION | SIZE: A3

REFERENCE | SHEET: 47A / 3- | SCALE: 1:1 | APLICATION: EZ_PATHS | N° R72191 B

RELEASE NUMBER	SUBJECT	DESCRIPTION
B	ELECTRIC DIAGRAMS EZ_PATHS	1 - REVIWED THE SPINDLE DRIVE I/O AND POWER. 2 - REVIWED CNC. 3 - REVIWED EMERGENCY STOP 4 - REVIWED WORK LIGHT. 5 - REVIWED FLOOD COOLANT. 6 - REVIWED FUNCTION / DESCRIPTION PARTS 7 - REVIWED SPINDLE DRIVES PARAMETERS.
	SPINDLE DRIVE I/O AND POWER	1 - REVIWED LOAD METER'S CONNECTIONS. LAST CONNECTION: NEW CONNECTION: 1 -> FS 5 -> FS 2 -> AM 4 -> AM 3 -> AC 6 -> AC
	CNC	1 - INCLUDED WARNING NOTE. 2 - REVIWED PORT -A- CONNECTIONS. LAST CONNECTION: NEW CONNECTION: 2 -> 2 6 -> 6 2 -> 3 6 -> 6 3 -> 3 7 -> 7 3 -> 2 7 -> 4 4 -> 4 8 -> 8 4 -> 20 8 -> 5 5 -> 5 9 -> 9 5 -> 7 9 -> 22 3 - REVIWED FLOPPY DISK POWER SUPPLY CONNECTIONS. LAST CONNECTION: NEW CONNECTION: 1 -> 3 3 -> 1 1 -> 1 3 -> 3 2 -> 4 4 -> 2 2 -> 2 4 -> 4
	EMERGENCY STOP	1 - REVIWED SR1 CONNECTIONS. EXCLUDED CONNECTIONS MODULE TERMINALS
	WORK LIGHT	1 - ADDED CABLE DETAILS
	FLOOD COOLANT	1 - ADDED CABLE DETAILS.
	FUNCTION / DESCRIPTION PARTS	1 - ADDED REACTOR FUNCTION / DESCRIPTION (N9).
	PARAMETERS	1 - REVIWED SPINDLE PARAMETERS ACCORDING TRYOUT PARAMETER LAST NEW PARAMETER LAST NEW PARAMETER LAST NEW n020 — 5.0 — 4.0 n036 — 2 — 4 n064 — 50 — 100 n025 — 0.0 — 166.6 n037 — 4 — 11 n032 — 20.0 — 27.0 n048 — 0 — 1 n033 — 4 — 3 n049 — 1 — 0.75 2 - ADDED SOFTWARE AND AXIS DRIVE PARAMETERS PART NUMBER

REL	MODIFICATION	MODIF.	APROV.	DATE
B	REVISION B	FERRAZ	GERALDO	04-22-97

DESCRIPTION: RELEASE NOTES

ROMI®

DESIGNED	FERRAZ	10-09-96
DRAWER	FERRAZ	10-09-96
CONTROLLED	GERALDO	10-09-96

PROJECTION | SIZE: A3

REFERENCE | SHEET: 50A / 1- | SCALE: 1:1 | APLICATION: EZ_PATHS | N° R72192 B