

# Mist Collection for Profitable Installation

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## MP 1200 Mist Collector



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# Benefits of Mist Collection

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Mist collectors improve workspaces by maintaining a safe, clean working environment for employees.

## Safety

Mist collection will significantly reduce employee exposure to cuttings fluids trapped in suspension in the shop's air, improving air quality and allowing businesses to comply with air quality regulations in the workplace. A HEPA post-filter option is also available if desired.

Having a mist collection system also provides the added benefit of capturing cutting fluids and preventing them from settling on walkways, railings, workstations, and equipment where they can increase the risk of fall related injuries.

## Maintenance

Mist collection systems gather coolant-saturated air from the machining center and through a series of filter media, form droplets that increase in size through each stage. In the pump mounted configuration, the coolant is drained back to the HPCS reservoir. In the stand alone and machine mount configurations, liquid will collect in the base of the MP1200 and needs to be drained. A ½" pushlock hose and appropriate barbed fitting are included in the installation kit. These components can be configured to drain directly back to the machine tool sump, or depending on the application, drained into a pan for disposal.

When adding a mist collector to your machine tool, you can expect an overall cleaner environment with less building maintenance, such as cleaning surfaces on which mist settles.

# Sizing your Mist Collector

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With over 10 years of experience building and working with mist collection, MP Systems has found 1200 CFM to be the industry standard MAX nominal rating for standalone mist collection equipment.

MP Systems offers one of the highest CFM rated standalone systems available before entering the realm of more expensive and complicated systems intended for clearing smoke and mist from shop airspace as a whole, rather than just the machine tool cabinet.

The MP1200 is equipped with a variable speed controller, allowing you to adjust the CFM for your machine tool.

# MP1200 Configuration Options

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## Pump Mounted

- Simple, plug and play pump interface when ordered with a high-pressure coolant system
- Inherent 2 speed control
- Field retrofittable on R series pumps from 2014-Current model year: Contact MP to request details or place an order.

**When there is no MP Systems high pressure coolant system OR non-R Series MP pumps we offer the following options:**

## Machine Mounted

The MP1200 can be mounted to the top of the machine with provided mounting brackets. However, there must be adequate space on the top of the machine to accommodate the MP1200. Also take into consideration:

- Ensure operation of cabinet door is not impeded by intended MP1200 mounting location
- Ensure access to MP1200 service door for service and filter changes

## Stand Alone Option

If access to the top of the machine is limited, or space requirements eliminate machine mounting options, MP offers a floor stand mount that can be placed in the vicinity of the machine and plumbed for mist collection. Contact MP to request details or place an order for the additional stand.

# MP1200 Configuration Options Cont'd

## Pump Mounted

### Standard Features:

- Mounts on top of R and VR Series pumps
- 1200 CFM (variable speed)
- 3 stage filtration
- Baffle to keep heavy particles out
- 95% efficiency
- 208/230V standard
- Basic installation kit included
- Water soluble coolant only



### Options:

- Post HEPA filter (99.97% efficiency)
- 480V special order

### Dimensions:

Floor: 24"L x 25"W x 40"H

## Machine Mounted

### Standard Features:

- Mountable to a flat surface above your machine tool
- 1200 CFM (variable speed)
- 3 stage filtration
- Baffle to keep heavy particles out
- 95% efficiency
- 208/230V standard
- Mounting brackets supplied at no additional charge
- Water soluble coolant only



### Options:

- Post HEPA filter (99.97% efficiency)
- 480V special order

### Dimensions:

Floor: 26"L x 26.25"W x 44"H

## Floor Stand

### Standard Features:

- Allows for mist collection when pump and machine mount options cannot be used
- 1200 CFM (variable speed)
- 3 stage filtration
- Baffle to keep heavy particles out
- 95% efficiency
- 208/230V standard
- Water soluble coolant only



### Options:

- Post HEPA filter (99.97% efficiency)
- 480V special order

### Dimensions:

Floor: 26.75"L x 26.75"W x 83.50"H

\*Floor stand supplied at an additional cost

# Included Kit Contents

PART DESCRIPTION	MP PART NUMBER	CONFIRGURATION	QUANTITY
MIST COLLECTION UNIT	AM MIST COLLECTOR	ALL CONFIGURATIONS	1
MP1200 PUMP MOUNT BRACKET	SM-1277 R05	PUMP MOUNT	1
MP1200 MACHINE MOUNT BRACKET SET	SM-1297	MACHINE & STAND MOUNT	1
MP1200 STAND BRACKET ASSEMBLY	SM-1296 R01	STAND MOUNT	1
6" ID X 6 5/8" OD RUBBER ADAPTER	M ¼ ADAPTER	ALL CONFIGURATIONS	2
SPIRAL DUCT BRIDGE CLAMP	N/A	ALL CONFIGURATIONS	2
6 5/8" ID FLEX DUCT HOSE	HH 6-5/8" POLYWIRE	ALL CONFIGURATIONS	12.5'
6" MACHINE TOOL PLENUM	HC 6" COLLAR	ALL CONFIGURATIONS <b>*STANDARD*</b>	1
8" MACHINE TOOL PLENUM	HC 8" COLLAR	ALL CONFIGURATIONS <b>*BY REQUEST*</b>	1
8" to 6" REDUCER	MC REDUCER 8X6	ALL CONFIGURATIONS <b>*BY REQUEST*</b>	1
1 ½" OVERFLOW	AH MC OVERFLOW	PUMP MOUNT <b>*FIELD RETROFIT*</b>	1
FIELD RETRO KIT	AK MC RETRO	PUMP MOUNT <b>*FIELD RETROFIT*</b>	1
FIELD RETRO KIT ELECTRICAL PARTS	AE MC RETRO REV 2	PUMP MOUNT <b>*FIELD RETROFIT*</b>	1
10A CIRCUIT BREAKER	ED CB 10A D	MACHINE & STAND MOUNT	1

While our basic installation kits include the necessary components to interface and plumb basic mist collector installs, we recommend hard piped install using standard 6" or 8" PVC pipe. A cleaner- more professional installation is achieved with hard piping with additional advantages being greater degree of freedom in installed location per application as well as mitigation of leaks, sags or other unsafe or unsightly disadvantages found with basic hose ducted installations. Some examples of various PVC plumbed applications are displayed in the following pages of this document.

# PVC Reference

## What schedule PVC components should I source?

Schedule 40 Pipe & Fittings are the most ideal due to their reduced wall thickness vs. schedule 80 pipe and fittings

- Common applications include low pressure systems for use in transfer of water, coolant, or in our case- air/coolant mix

## What tools do I need to work with PVC?



Working with PVC only requires basic tools. The following are recommended:

- PVC Saw or Reciprocating Saw
- Tape Measure
- Deburring tool or File
- Solvent and Primer

## What glue and solvents should I purchase?

Due to the size of the fittings to be used, the following products are recommended:

- PVC primer will be required, Oatey Purple Primer is recommended
- EP13 will set slow, allowing more time for setup and indexing of fittings

	Product	Description	Recommended Application	Features
	EP13 PVC Extra HD Gray Cement	Extra heavy-bodied, slow-setting, gray solvent cement for use on all classes and schedules of PVC pipe up to 30"	Potable water, pressure pipe, drain, waste and vent systems	Ideal for fabrication: Formulated for warm weather application
	PVC Heavy Duty Clear Cement	Heavy Duty Clear cement for use on all schedules and classes PVC pipe and fitting up to 12" diameter with interference fit, up to 18" for non-pressure	Potable water, pressure pipe, conduit and DWV	Thick formula fills gaps in large diameter pipe and loose fitting joints



## Tips for working with PVC:

- When measuring runs, compensate for socket depth of fittings (outer lip to internal 'shoulder')
- Ensure cuts are square, I.D.s are deburred and O.D. of male pipe are chamfered for ease of assembly
- Ensure glue and primer are within their shelf life period
- Apply primer to both I.D. of fitting and O.D. of pipe
  - Evenly apply generous amount of cement to primed areas while primer is **still wet**
- Mate fittings with a slow twisting motion to ensure even dispersion of cement
  - When orientation matters clock the fitting 90° from desired landing and twist accordingly
- Hold fittings in place for at least 30 seconds to set, refer to cut sheet to determine full cure time (generally around 2 hours)

## Where do I buy my PVC?

The 6" PVC recommended for this installation can be bought locally or online from a number of retailers. Unfortunately, the size requirement eliminates most of the big box stores such as Home Depot, Lowe's or Menard's, however they may be available upon special order.

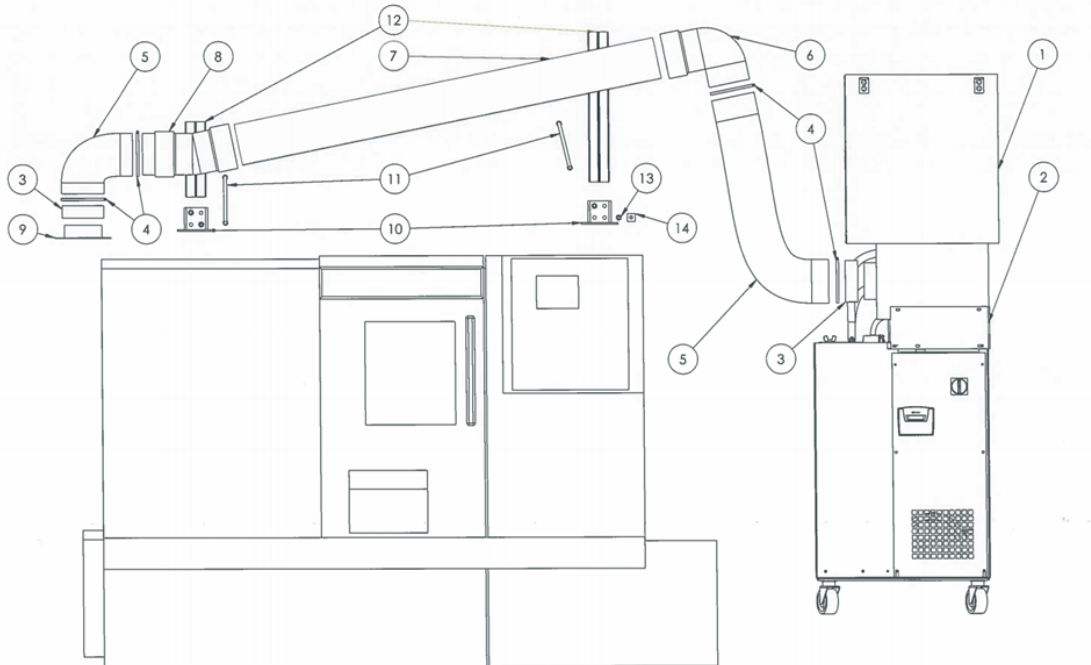
A quick search of your area will yield many options to source the required components, keywords include:

- 6" SCHED 40 PVC
  - 6" PVC FITTINGS
- Plumbing Supply house
  - Wastewater Management Supply

Manufacturers and distributors:

- |                  |                       |
|------------------|-----------------------|
| • Charlotte pipe | • Lasco               |
| • JM Eagle       | • Pacific Plastics    |
| • U.S. Plastic   | • Southern Pipe       |
| • Ferguson       | • Midwest Pipe Supply |

# Pump Mount Configuration

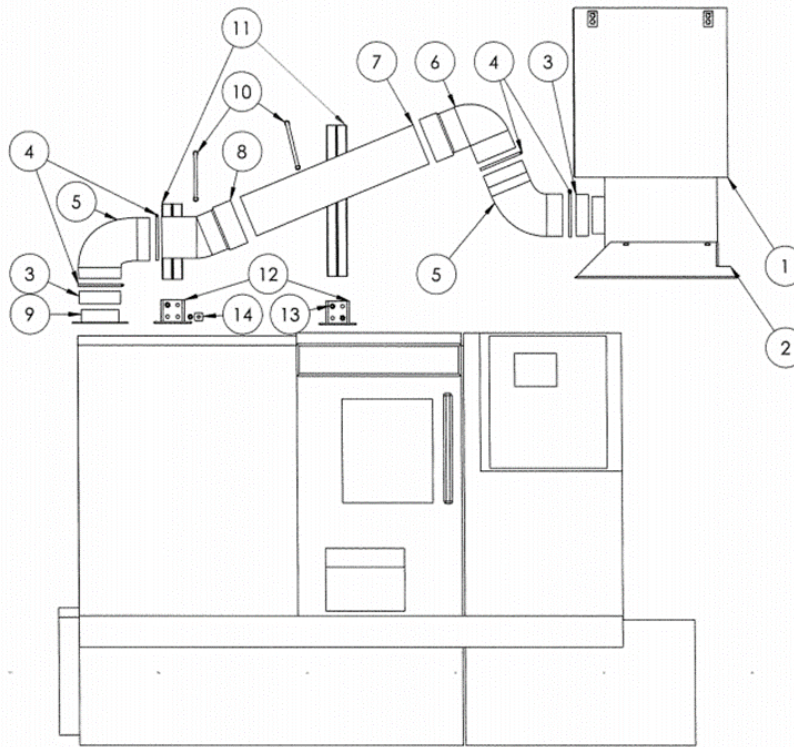


\*Included with purchase

\*\*Local source optional- MP Stock available

ITEM	PART DESCRIPTION	MP PART NUMBER	MCMaster PN	SUPPLY HOUSE
1*	MIST COLLECTION UNIT	AM MIST COLLECTOR	N/A	N
2*	MP1200 PUMP MOUNT BRACKET	SM-1277 R05	N/A	N
3*	6" ID X 6 5/8" OD RUBBER ADAPTER	M 1/4 ADAPTER	N/A	N
4*	SPIRAL DUCT BRIDGE CLAMP	N/A	45955K73	N
5*	6 5/8" ID FLEX DUCT HOSE	HH 6-5/8" POLYWIRE	N/A	N
6**	6" PVC STREET ELBOW 90°	N/A	N/A	Y
7**	6" NOMINAL PVC PIPE	N/A	N/A	Y
8**	6" PVC STREET ELBOW 11.25°	N/A	N/A	Y
9*	6" MACHINE TOOL PLENUM	HC 6" COLLAR	N/A	N
10**	DOUBLE STACK STRUT CHANNEL FLOOR MOUNT	N/A	33145T28	N
11**	6 3/4" ID X 1/2"- 13 U BOLT	N/A	3201T27	N
12**	DOUBLE STACK SLOTTED STRUT CHANNEL	N/A	3611T1	N
13**	1/2"-13 x 3/4" HEX BOLT	N/A	91286A317	N
14**	1/2"-13 SQUARE STRUT CHANNEL NUT	N/A	2233K17	N

# Machine Mount Configuration

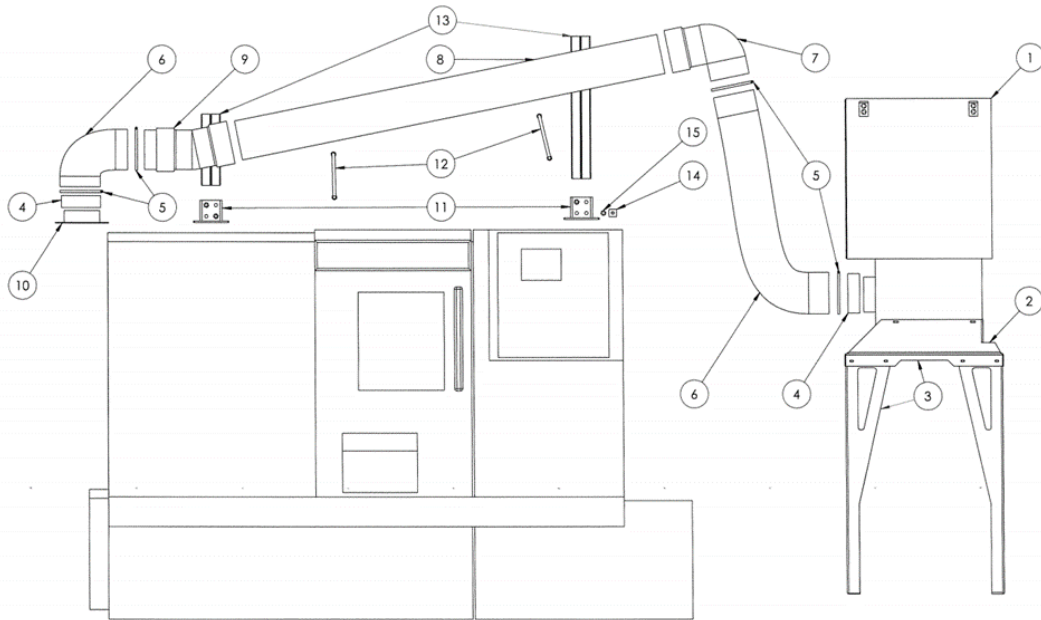


\*Included with purchase

\*\*Local source optional- MP Stock available

ITEM	PART DESCRIPTION	MP PART NUMBER	MCMaster PN	SUPPLY HOUSE
1*	MIST COLLECTION UNIT	AM MIST COLLECTOR	N/A	N
2*	MP1200 MACHINE MOUNT BRACKET SET	SM-1297	N/A	N
3*	6" ID X 6 5/8" OD RUBBER ADAPTER	M 1/4 ADAPTER	N/A	N
4*	SPIRAL DUCT BRIDGE CLAMP	N/A	45955K73	N
5*	6 5/8" ID FLEX DUCT HOSE	HH 6-5/8" POLYWIRE	N/A	N
6**	6" PVC STREET ELBOW 90°	N/A	N/A	Y
7**	6" NOMINAL PVC PIPE	N/A	N/A	Y
8**	6" PVC STREET ELBOW 11.25°	N/A	N/A	Y
9*	6" MACHINE TOOL PLENUM	HC 6" COLLAR	N/A	N
10**	6 3/4" ID X 1/2" - 13 U BOLT	N/A	3201T27	N
11**	DOUBLE STACK SLOTTED STRUT CHANNEL	N/A	3611T1	N
12**	DOUBLE STACK STRUT CHANNEL FLOOR MOUNT	N/A	33145T28	N
13**	1/2"-13 x 3/4" HEX BOLT	N/A	91286A317	N
14**	1/2"-13 SQUARE STRUT CHANNEL NUT	N/A	2233K17	N

# Stand Mount Configuration



\*Included with purchase

\*\*Local source optional- MP Stock available

ITEM	PART DESCRIPTION	MP PART NUMBER	MCMaster PN	SUPPLY HOUSE
1*	MIST COLLECTION UNIT	AM MIST COLLECOTR	N/A	N
2*	MP1200 MACHINE MOUNT BRACKET SET	SM-1297	N/A	N
3*	MP1200 STAND BRACKET ASSEMBLY	SM-1296 R01	N/A	N
4*	6" ID X 6 5/8" OD RUBBER ADAPTER	M 1/4 ADAPTER	N/A	N
5*	SPIRAL DUCT BRIDGE CLAMP	N/A	45955K73	N
6*	6 5/8" ID FLEX DUCT HOSE	HH 6-5/8" POLYWIRE	N/A	N
7**	6" PVC STREET ELBOW 90°	N/A	N/A	Y
8**	6" NOMINAL PVC PIPE	N/A	N/A	Y
9**	6" PVC STREET ELBOW 11.25°	N/A	N/A	Y
10*	6" MACHINE TOOL PLENUM	HC 6" COLLAR	N/A	N
11**	DOUBLE STACK STRUT CHANNEL FLOOR MOUNT	N/A	33145T28	N
12**	6 3/4" ID X 1/2"- 13 U BOLT	N/A	3201T27	N
13**	DOUBLE STACK SLOTTED STRUT CHANNEL	N/A	3611T1	N
14**	1/2"-13 SQUARE STRUT CHANNEL NUT	N/A	2233K17	N
15**	1/2"-13 x 3/4" HEX BOLT	N/A	91286A317	N

# Electrical References

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## Pump Mounted Configuration:

### Power and Signal Sourced from MP Pump:

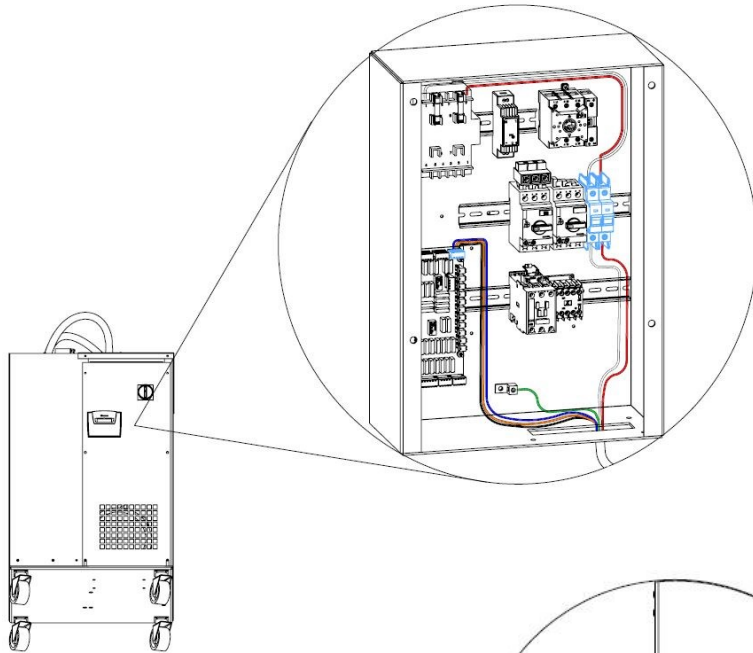
- Plug & Play Option- Inherent 2 speed function
  - The mist collector runs at a set speed when the HPC is on
  - When the HPC turns off, the mist collector runs at full speed to clear the machine tool cabinet
- Ability to alter operating behavior w/ PLC

## Machine Tool & Stand Configurations:

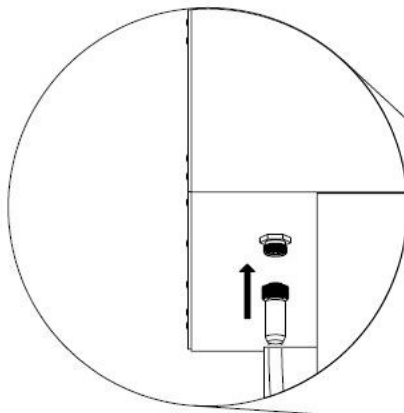
### Power and Signal Sourced from Machine Tool Cabinet:

- Interfacing options
  - Mist Collector on with coolant, runs at a single speed, mist collector turns off when coolant turns off
- Advanced wiring options
  - M code command
  - One M code commands set speed- use when HPC runs
  - One M code commands full speed- use when HPC drops, clear cabinet

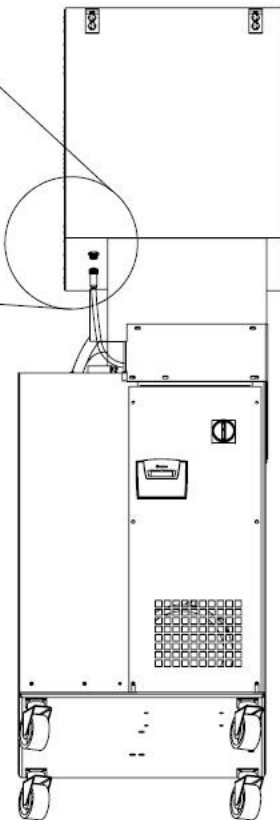
# Pump Mount Electrical



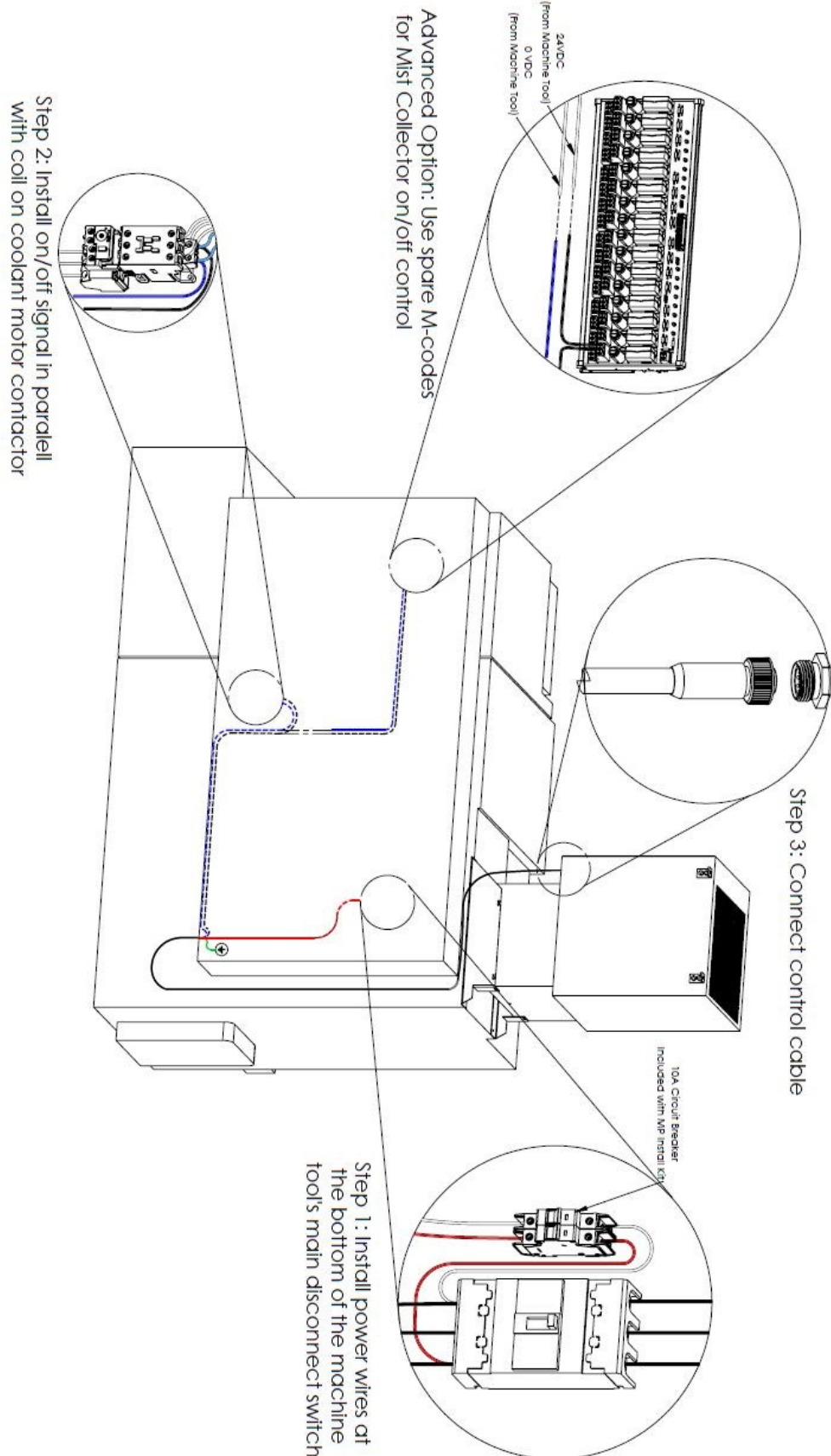
**R & VR Series Pump Models:** MP pre-wired components installed-already “mist collector ready”



Simply mount the mist collector during install and plug in the factory harness

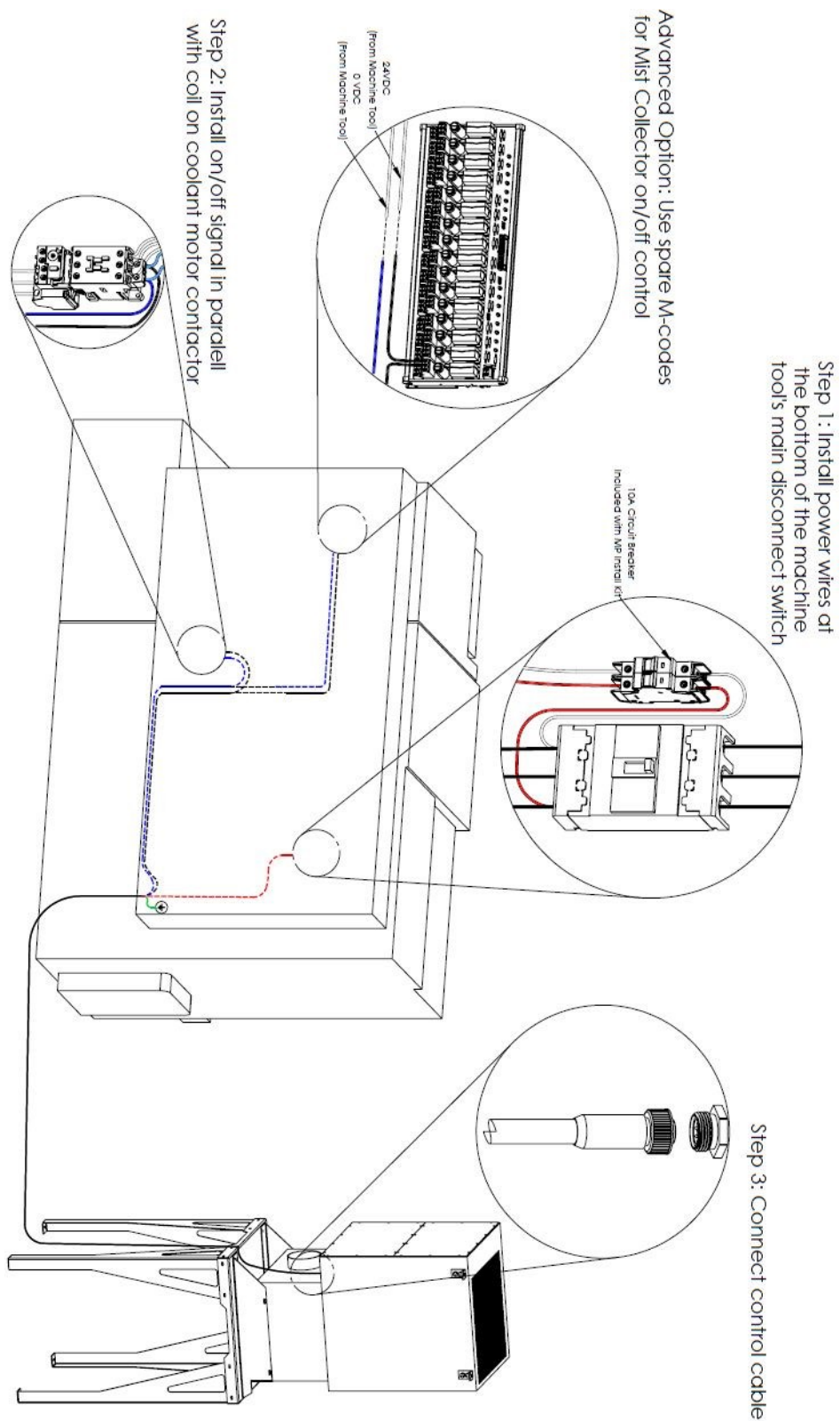


# Machine Mount Electrical

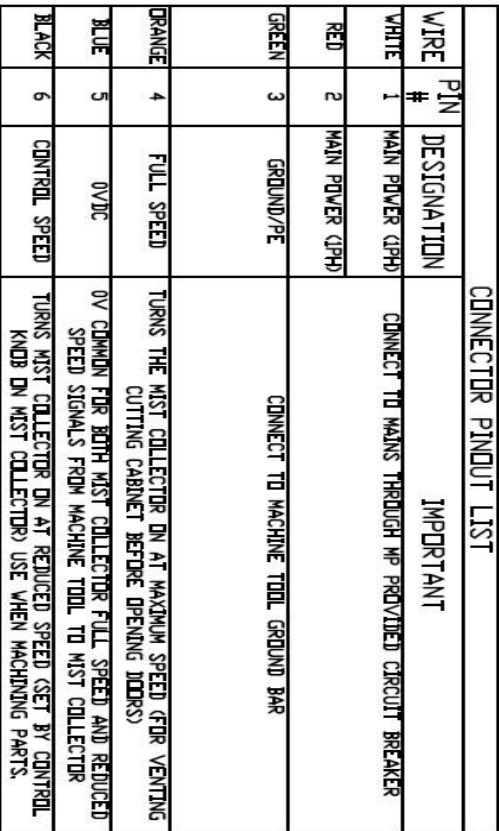




# Floor Stand Electrical

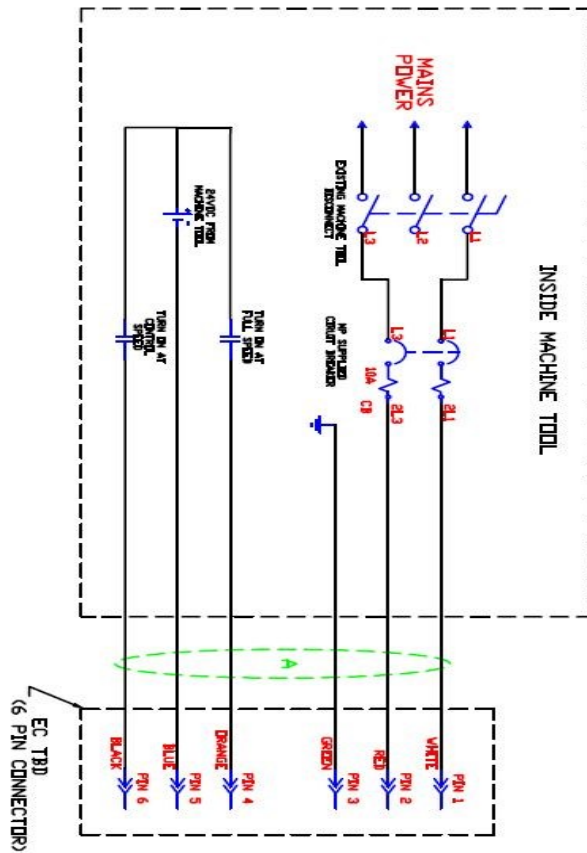






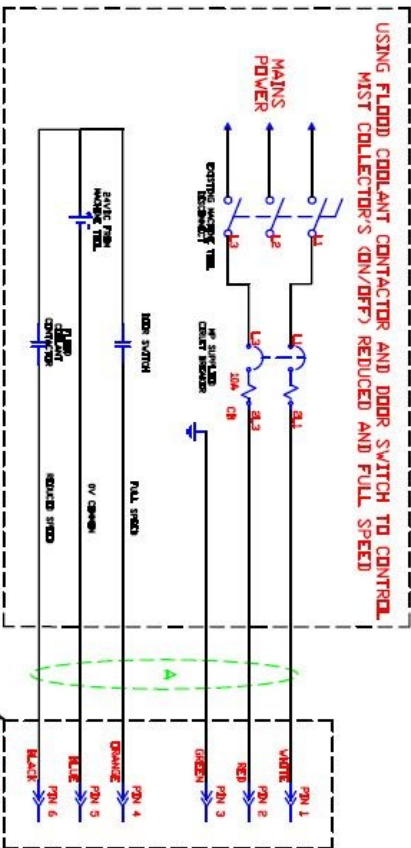
### CHANGES IN POTASSIUM INTAKE DURING

# Machine Tool Power Control



CONNECTOR PINOUT LIST			
WIRE	PIN #	DESIGNATION	IMPORTANT
WHITE	1	MAIN POWER (1PH)	CONNECT TO MAINS THROUGH MP PROVIDED CIRCUIT BREAKER
RED	2	MAIN POWER (1PH)	
GREEN	3	GROUND/PE	CONNECT TO MACHINE TOOL GROUND BAR
ORANGE	4	FULL SPEED	Turns the mist collector on at maximum speed (for venting cutting cabinet before opening doors)
BLUE	5	OV/DC	OV common for both mist collector full speed and reduced speed signals from machine tool to mist collector
BLACK	6	CONTROL SPEED	Turns mist collector on at reduced speed (set by control knob on mist collector) use when machining parts. Control knob can also be used to turn mist collector on/off

# Advanced Wiring Options



CONNECTOR PINOUT LIST		
WIRE	PIN	DESIGNATION
WHITE	1	MAIN POWER (PH)
RED	2	MAIN POWER (PH)
GREEN	3	GROUND/PE
ORANGE	4	FULL SPEED
BLUE	5	0VDC
BLACK	6	CONTROL SPEED

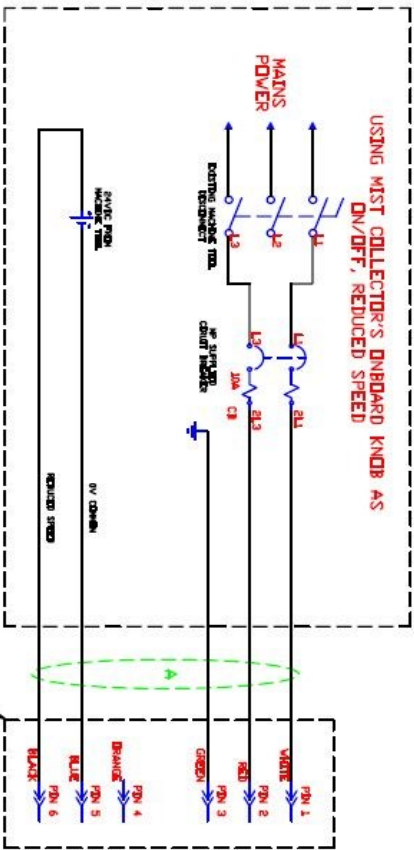
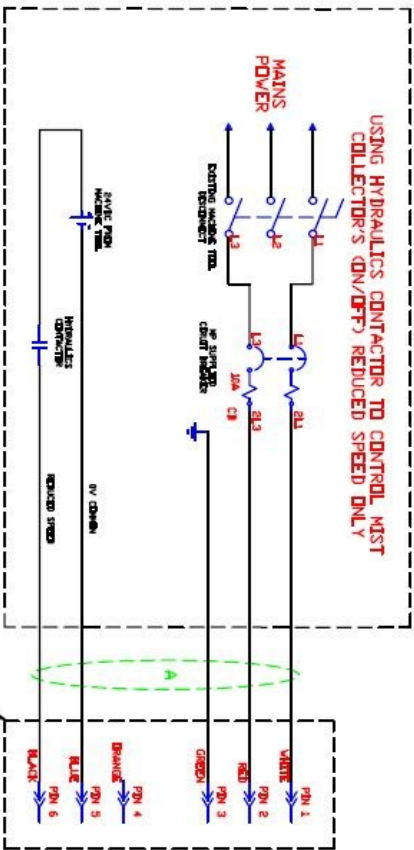
CONNECT TO MAINS THROUGH MP PROVIDED CIRCUIT BREAKER

CONNECT TO MACHINE TOOL GROUND BAR

URNS THE MIST COLLECTOR ON AT MAXIMUM SPEED (FOR VENTING CUTTING CABINET BEFORE OPENING DOORS)

0V COMMON FOR BOTH MIST COLLECTOR FULL SPEED AND REDUCED SPEED SIGNALS FROM MACHINE TOOL TO MIST COLLECTOR

URNS MIST COLLECTOR ON AT REDUCED SPEED (SET BY CONTROL KNOB ON MIST COLLECTOR) USE WHEN MACHINING PARTS. CONTROL KNOB CAN ALSO BE USED TO TURN MIST COLLECTOR ON/OFF



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