

# Air Water Cannon RM65-MK5

### Index

1.	Water Cannon - Warning - Hazard to Health	P.2
2.	RM65-MK5 Brochure	P.3-4
3.	RM65-MK5 Description	P.5-6
4.	Outline Drawing of Cannon (Exploded View / Spare Parts)	P.7-14
5.	Installation Instructions	P.15
6.	Maintenance Schedule	P.16
7.	Pneumatic Schematics	P.17-23



### 1. Water Cannon - Warning - Hazard to Health

Care needs to be taken operating a water cannon. Water from a cannon is capable of inflicting serious injury to a person in the path of the jet.

Primary injuries would be those from the direct hit to the body by the impact of the jet. These would include bruising of internal organs and damage to the eyes.

Secondary injuries can occur as a result of the acceleration of the body in collision with hard surfaces. These injuries would be largely skeletal, such as broken bone. Other injuries could be caused by debris, accelerated by the force of the water jet striking the person.

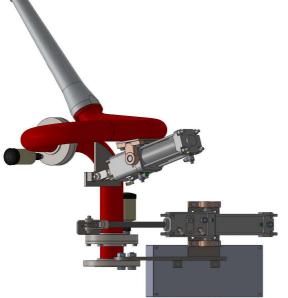
The following should be considered as a minimum level of care required when operating a water cannon:

- Know the direction that the cannon is aiming at. Aim the cannon in a safe direction before turning the water on.
- Keep all personal out of the front of the cannon. Dangerous flow velocities can cause serious injury for quite a distance in front of the cannon.
- The cannon contain moving parts. Keep hands, fingers, and objects away from pinch points when working close to the cannon.
- Do not attempt to modify the equipment in any way. Modifications of the equipment may result in damage and/or malfunction of the equipment which could cause injury to the operator or other. Also, the manufacturer s warranty will be void.
- Follow all the maintenance procedures in the documentation. Failure to do so, can result in damage and/or malfunction of the equipment which could cause injury to the operator or other.

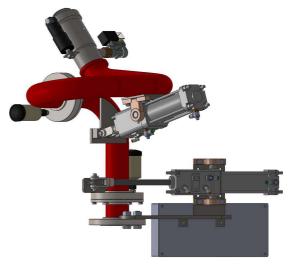


## 2. RM65-H-360-C Brochure

#### MM65-MK5 STANDARD NOZZLE



#### MM65-MK5 FOG/JET NOZZLE



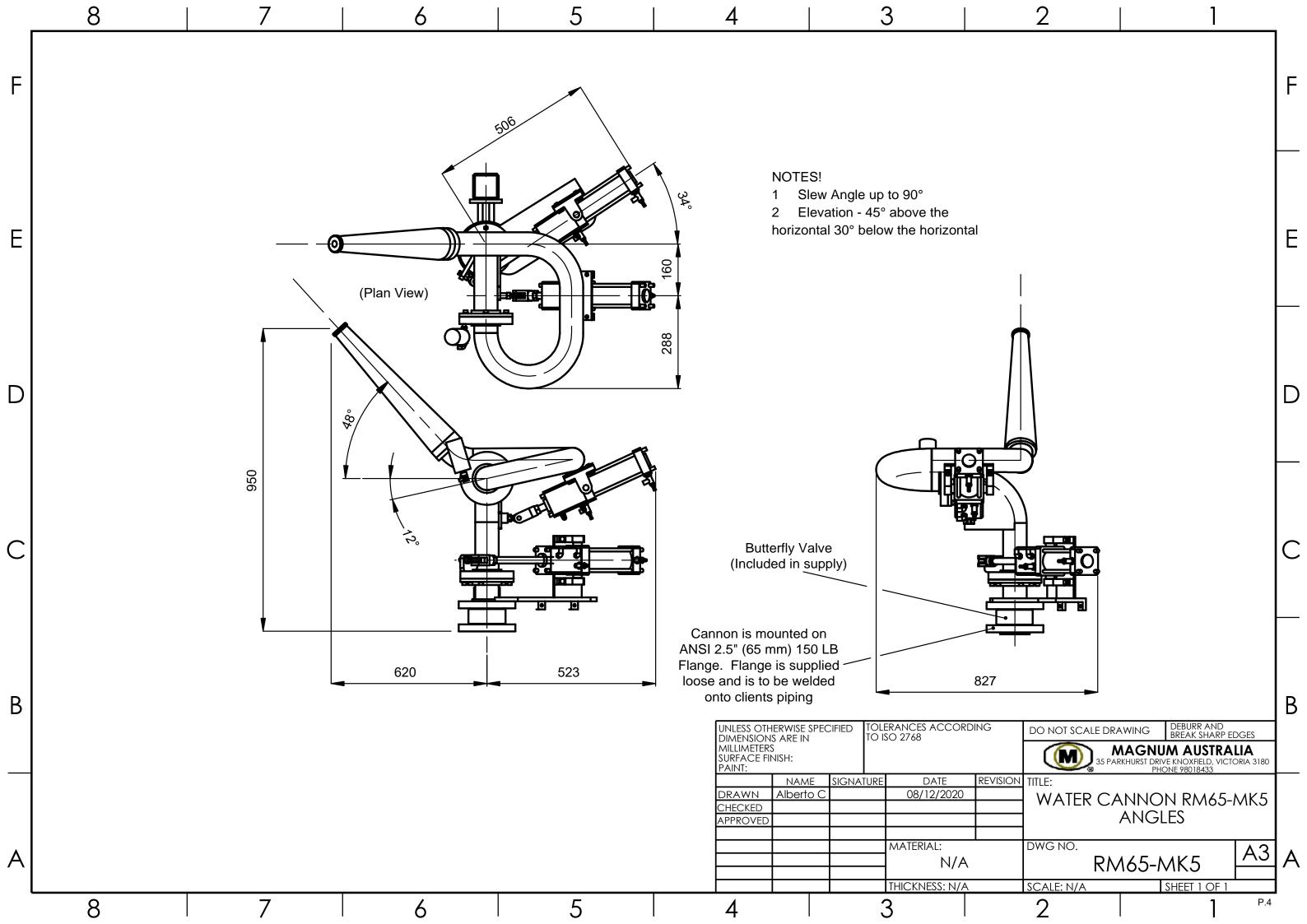
- Easy installation
- Pressure tested to 435 Psi (30 bar)
- 65mm (2 1/2") ANSI 150lb flanged inlet connection Pneumatic slew and elevation control
- Air cylinders drive offering up to 90° precision slew and 75° angle elevation
- Optional electric or pneumatic joystick cabin control as standard
- Optional radio frequency (R.F) wireless control available
- Full automation via sequencing or PLC technology (can retro fit as optional)
- Engineered balanced and compact design (see dimensions)
- Positive lock air cylinders fitted for improved accuracy and control
- · Designed for mobile or fixed mounted applications
- Patented "non-flog" Magnum Australia swivel bearings
- Automatic grease lubrication optional
- Accepts Magnum 316 s/s fog nozzle for adjustable fan spray
- Optional 3% foam induction nozzle available for fire applications
- Fog/jet nozzle available as option
- Director nozzle supplied as standard; 28mm (1 1/8") orifice and 60 m water throw at 7 bar
- All stainless steel fasteners and protective cabinet components





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### 3. <u>RM65-MK5 Description</u>

Water cannon RM65-MK5 is controlled and driven by air. The cannon is supplied as a complete kit, including the following:

#### 1. Water cannon pipe work

The pipe work is constructed from a formed heavy wall carbon steel piping (316L is available as an option). The pipe work has been formed to provide a long wearing and fully serviceable unit.

The swivel bearings are fully welded to the piping. The bearings have been designed as a "bolt together" unit. The swivel bearings have provision for grease lubrication to maintain a constant seal within the swivel bearing. An auto-lubricator is fitted to feed grease constantly to the swivels. The auto-lubricator is a consumable and should be carried on the shelf of the customer.

#### 2. Pneumatic actuators attached to the cannon pipe work

The upper air cylinder is the elevation actuator. The lower air cylinder is the slew actuator. Both air cylinders have a brake assembly mounted on the front of the cylinder. The brake assembly is used to positively lock the air cylinder in the preset position when they are not being actuated. It should be noted that it is not possible to move the air cylinders without air supply.

#### 3. Pneumatic Controls

The pneumatic controls consist of a metal pneumatic control panel, a polycarbonate joystick control panel and an air filter / regulator / isolating unit.

The control valves are installed in an IP65 metal box. This pneumatic control box should be located close to the cannon. The pneumatic loom attached to the cannon will be connected to the control box by means of a pneumatic multi-connector. The air filter / regulator / isolating unit is connected to the pneumatic control panel by means of a 10 mm flexible tube. The pneumatic control panel is detailed on the enclosed circuit diagram.

The joystick polycarbonate enclosure should be installed in a position convenient for the operator and a position where the operator can watch the entire process. The pneumatic loom attached to the joystick box is connected to the control box by means of a pneumatic multi-connector. The joystick polycarbonate enclosure is detailed on the on the enclosed circuit diagram.

The multi-connectors are set up in such a way that it is not possible to connect up the system incorrectly.



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#### 4. Nozzles

The water cannon RM65-MK5 comes with a standard director nozzle 28mm (1 1/8") orifice. This is a fixed orifice design with no allowance for adjustment or foam. The throw from this nozzle can be adjusted by changing the orifice size.

Optional nozzles can be screwed into the main cannon for varying spray requirements. Any nozzle can be screwed to the cannon using the 2 1/2" BSP thread on the end of the cannon pipe. Magnum also has an optional Fog/Jet nozzle with a foam facility.

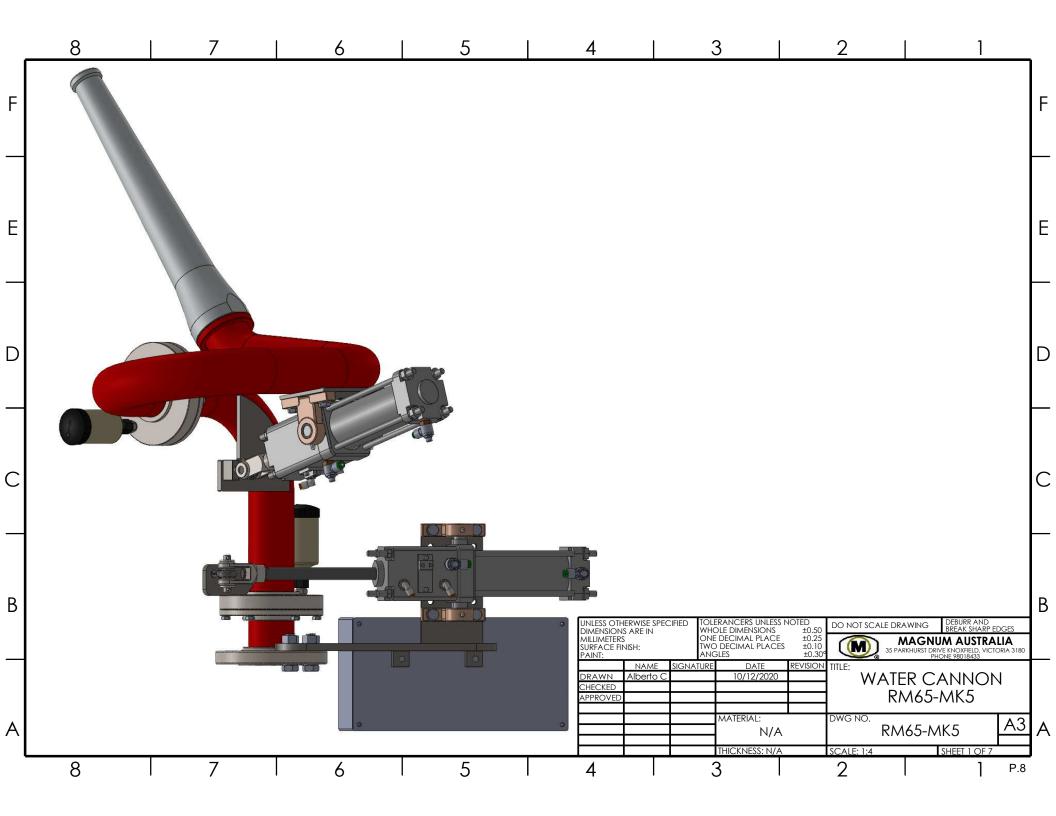
#### 5. Flanges and bolts

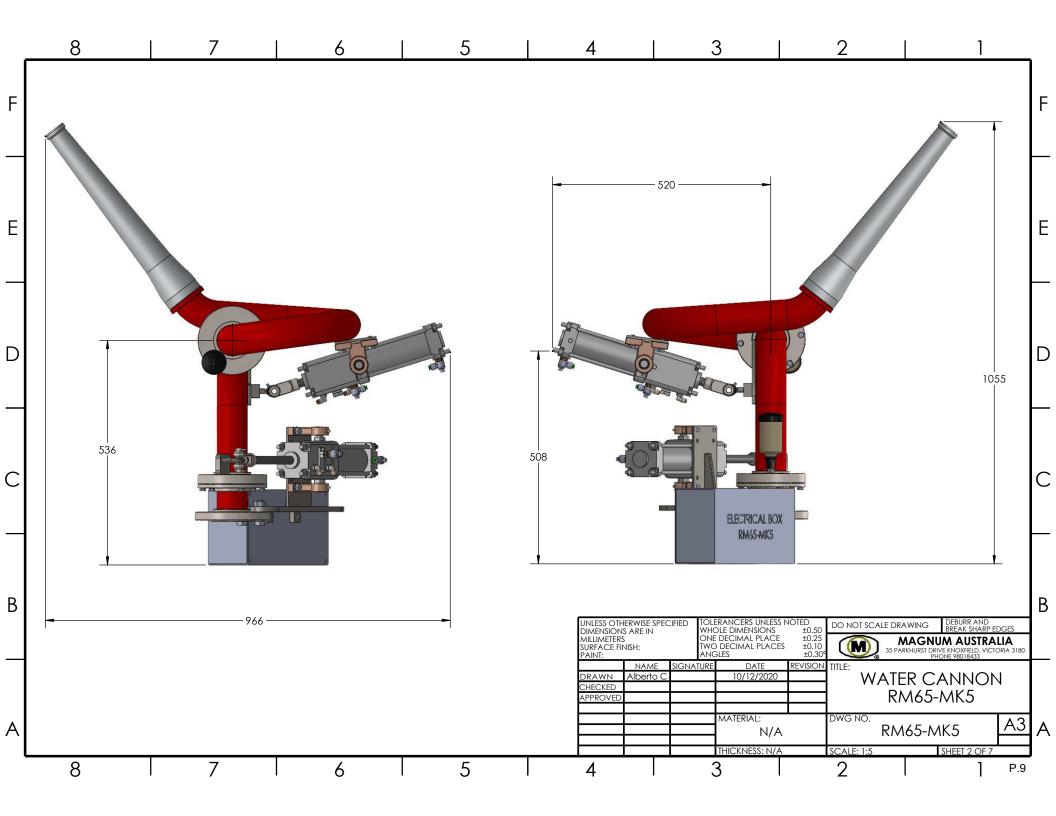
Connection is by means of a 65 mm ANSI 150lb flange. The flange is welded to the main pipe work of the cannon and is designed to allow easy mounting of the unit directly to the same mirrored flange welded to the supply piping. The loose flange and bolts are required to install the butterfly valve, are included in the kit supplied. Stabilisers and gussets may be required to ensure secure mounting and rigidity of the water monitor.

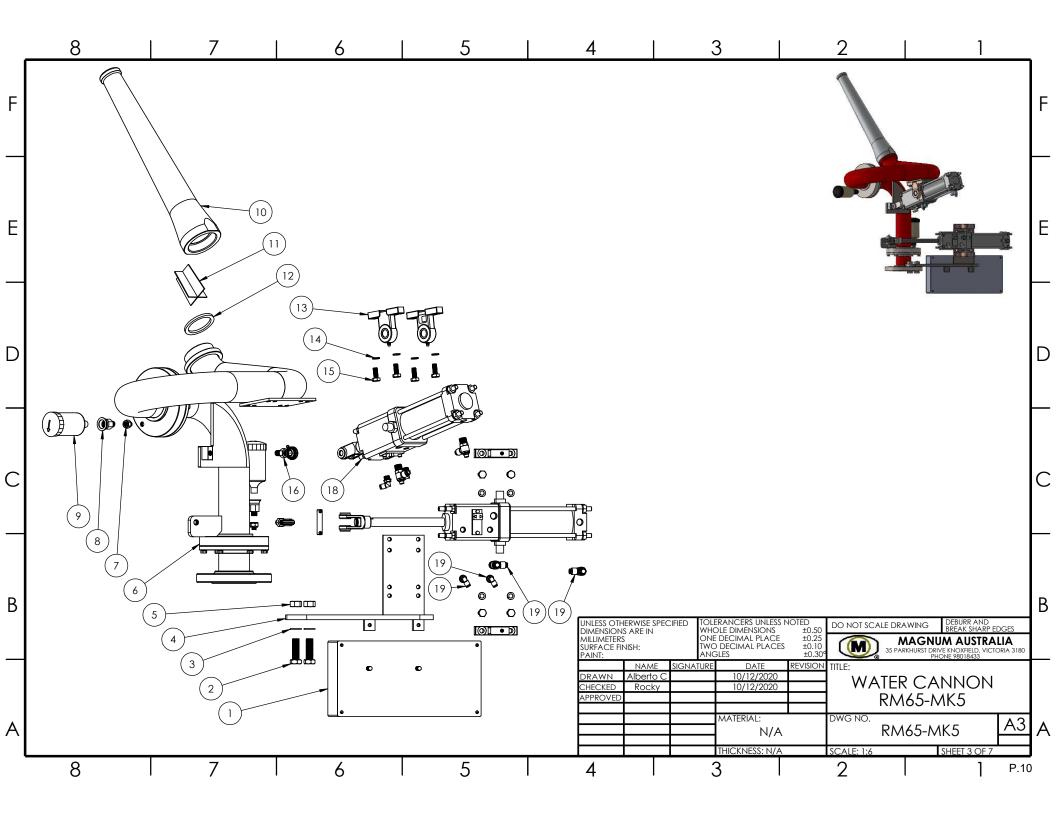


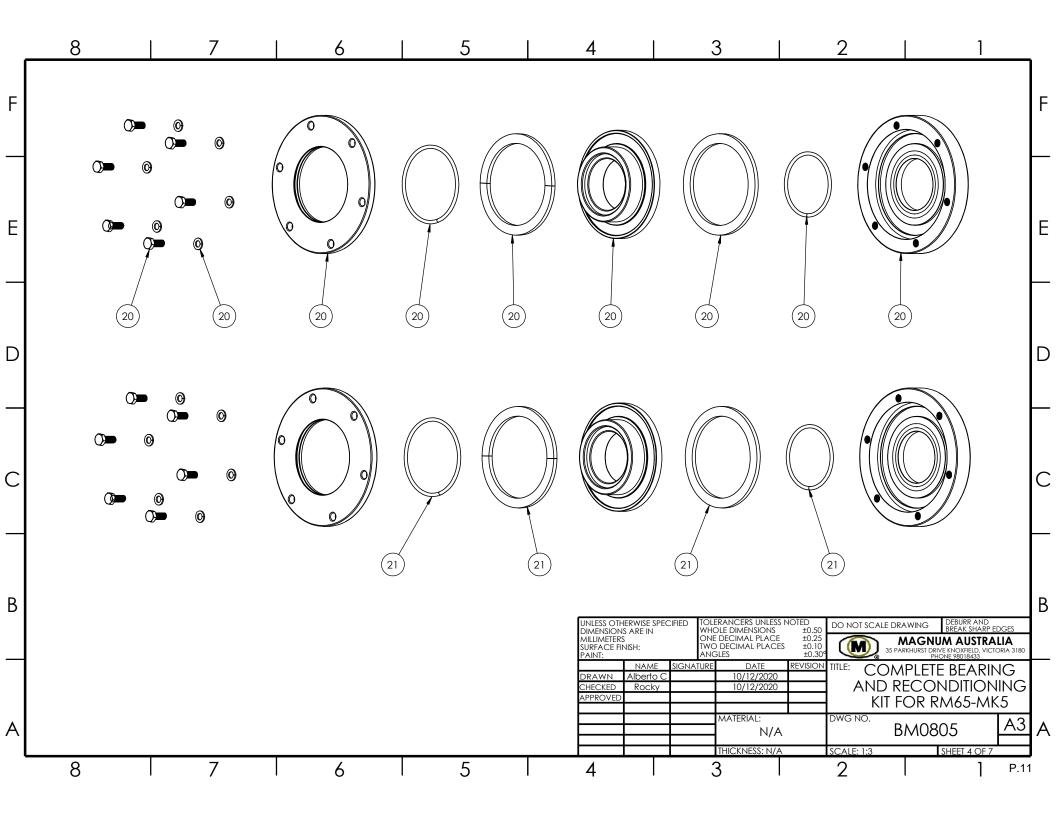


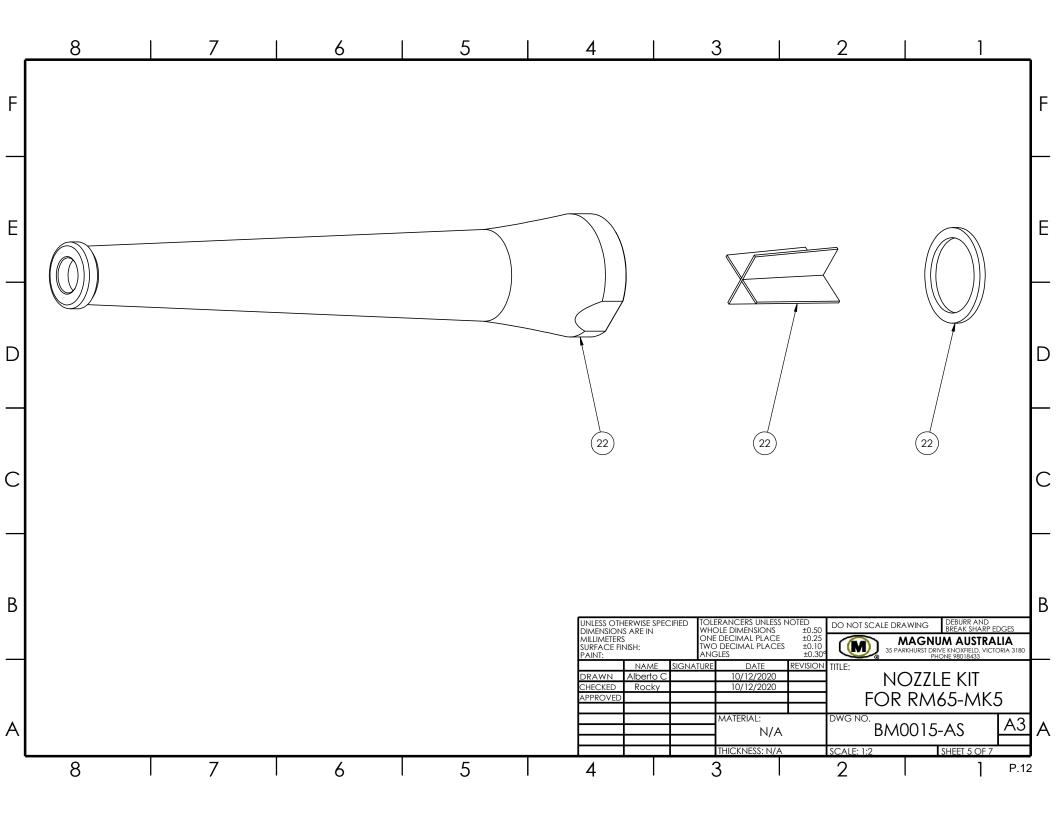
### 4. <u>Outline Drawing of Cannon & Exploded</u> <u>View / Spare Parts</u>

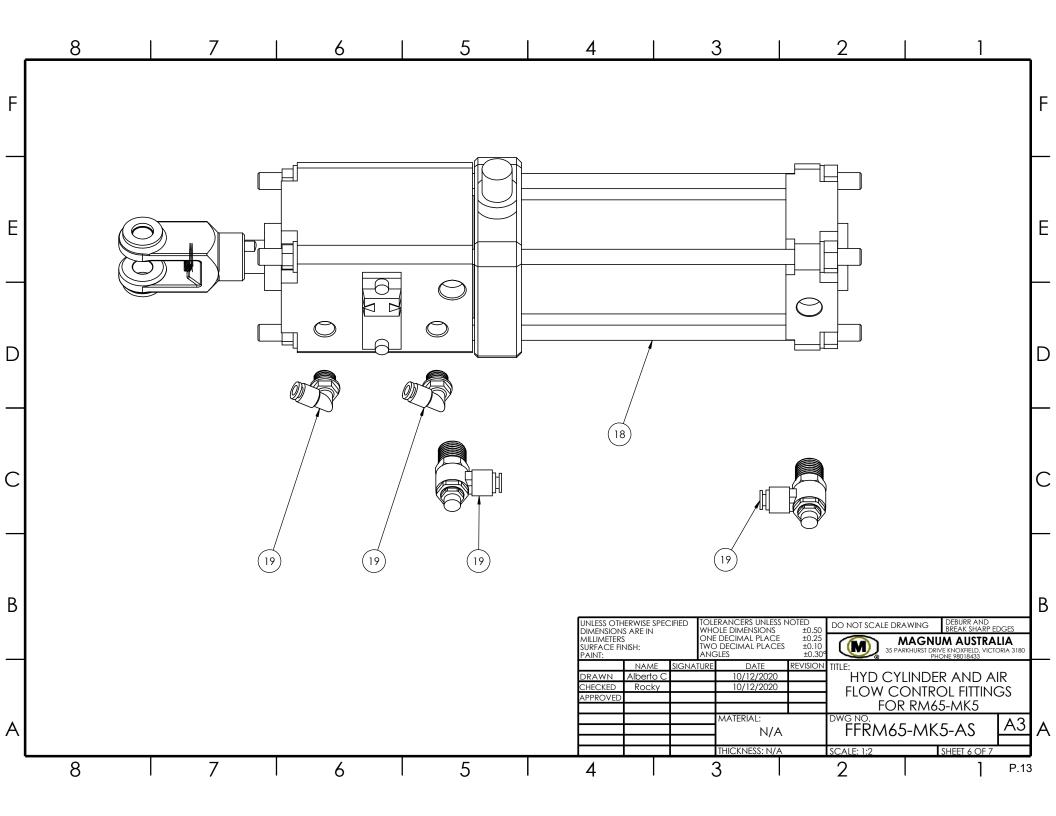












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	ITEM NO.	PART NU	IMBER		DESCRIPTION		QTY.								1
	1	1 RM65MK5-04B-AS STAINLESS STEEL AIR BOX COMPLETE FOR RM65-MK5													
Г	2					2									
F	3						2								F
	4	4 RM0024A CYLINDER MOUNTING PLATE													
	5	M16NUT-SS M16 NUT													
	6						1								
	7	P-25101	-8-1-4	REDUCER	UPPER PERMALUBLE SU	IPPORT FLANGE	2								
	8	A620P	FLEX	F	PERMALUBLE SUPPORT F	LANGE	2								
	9	BMO	07		GREASE CAPSULE		2								
	10	BMOC	015	2-1	/2 MAGNUM DIRECTOR	r nozzle	1								
E	11	BM-00	)15B		FLIGHT SET		1								Е
	12	BM-00	15C		NOZZLE GASKET		1								
	13	CA1-S	06-A		TRUNNION MOUN	T	4								
	14	M10-S1			M10 SPRING WASH		8								
	15	M10X2		1	M10X25X1.5 HEX HEAD S		8								
	16	RM002		'	ROD END KIT		2								
	17	RM0028-M			CLEVIS PIN KIT		2								
	18	CLA263-XF			AIR CYLINDER FOR RM6	5-MK5	2								
	19	FFRM65-N			INGS FOR HYDRAULIC		2								
D	20	BMOE			COMPLETE BEARING RM		2								D
	21	WB-R			NG RECONDITIONING K		2								
	22	BM001		22, 44	NOZZLE KIT RM65-M		$+\overline{1}$								
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В								UNLESS OTHE DIMENSIONS MILLIMETERS SURFACE BIN PAINT:	ARE IN	D TOLERANCERS UN WHOLE DIMENSIO ONE DECIMAL PL/ TWO DECIMAL PL/ ANGLES	ACE ±0.25		AWING DEBURR AN BREAK SHA MAGNUM AUST RKHURST DRIVE KNOXFIELD, PHONE P8018433	RP EDGES	В
A		8	I	7	6	5			NAME SIC Alberto C Rocky	GNATURE DATE 10/12/20 10/12/20 MATERIAL:	REVISION 20 20 1/A	TITLE: WATE R/	ER CANNO M65-MK5 165-MK5	ON A3	j



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### 5. Installation Instructions

- 1. Weld the flange supplied in the kit to the water cannon supply pipe.
- 2. Mount the cannon (monitor) and water on / off valve onto the flange using bolts and nuts supplied in the kit. Stabilisers and gussets may be required to ensure that the mounting is secure and rigid. The water on /off valve should be located between the flanges of the water cannon and the mounting flange welded to supply piping. Ensure the monitor is correctly mounted so it CANNOT direct water at the cabin of the vehicle.
- 3. Activate the Auto Lube grease capsule located on the Monitor Bearings to 12-month grease injection setting.
- 4. Screw the nozzle to the threaded end of the water cannon. Director Nozzle is standard supply. Foam induction Fog Nozzle (RFIN) is available as an option.
- 5. Mount the oystick Cabin Controller Box (electric) in a position that is ergonomic for operator to use.
- 6. Mount the hydraulic valve manifold in a desired position (external to vehicle cabin). Note: enerally mounted close to the water cannon monitor to allow for short length of hydraulic hoses between the manifold and the cannon.
- 7. Run the electrical cable 8 m supplied as standard (optional extension cable is available if required) from the cabin control box to the main control box. Cut the cable to the desired length and connect up the plugs.
- 8. Connect the cable from the Main Control Box to the hydraulic valves on the manifold. Cut the cable to the desired length allowing for neat installation of the wiring to the solenoids. Connect the electrical cables to the solenoid valves using the Hirschmann Plugs supplied and the electric schematic diagram. Ensure all plugs are properly sealed against moisture ingress.
- 9. Connect the power wire as per the electric schematic.
- 10. Ensure the hydraulic pressure reducing valve is fitted into the hydraulic system circuit (refer to the system hydraulic circuit).
- 11. Connect the hydraulic hoses from supply oil to hydraulic valve manifold using 3/8 hoses. See the hydraulic schematic.
- 12. Connect the hydraulic hoses from hydraulic valve manifold to the return on the tank. See the hydraulic schematic.
- 13. Connect the required hydraulic hoses as per the hydraulic schematic from the hydraulic manifold to the water cannon. 2 hoses are required for each function.
- 14. our Remote Control Water Cannon is now ready for operations.
- 15. Turn on the vehicle power and air to the unit.
- 16. Check that all air fittings are correctly fitted and there are no air leaks evident.
- 17. Check that all hydraulic hoses and fittings are correctly installed and no hydraulic leaks are evident.
- 18. Check all bolts are securely tightened and no water leaks are evident.
- 19. Now test the unit with the water pump operating and passing water through the nozzle.
- 20. Monitor slew and elevation speed can be adjusted to suit your desired operating speed. The speed adjusters (hydraulic needle valves) are located on the piston end of each hydraulic cylinder fitted to the water cannon. Screw them clockwise (in) to slow the unit, or anti-clockwise (out) to increase the speed of operation.
- 21. A comprehensive parts book has been supplied for your service assistance.



# 6. <u>Maintenance Schedule</u>

#### **Initial Service**

- 1. The upper and lower bearings have been filled with Multi-Purpose EP Type rease in the factory at the time of assembly. 4 pumps of grease from a grease gun should be sufficient if a new bearing has been installed.
- 2. Set the automatic lubrication canister supplied with the cannon to 12 months. This activates the lubricator.
- 3. Lubricate the rod ends (mounting for cylinders) using Multi-Purpose EP Type rease. 1 pump of grease from a grease gun should be sufficient.
- 4. Check the operation of the water cannon; slew and elevation.

#### **Daily Service**

- 1. Drain the air reservoir on the truck.
- 2. Drain the filter on the spray valve/cannon filter regulator.

#### **Quarterly Service**

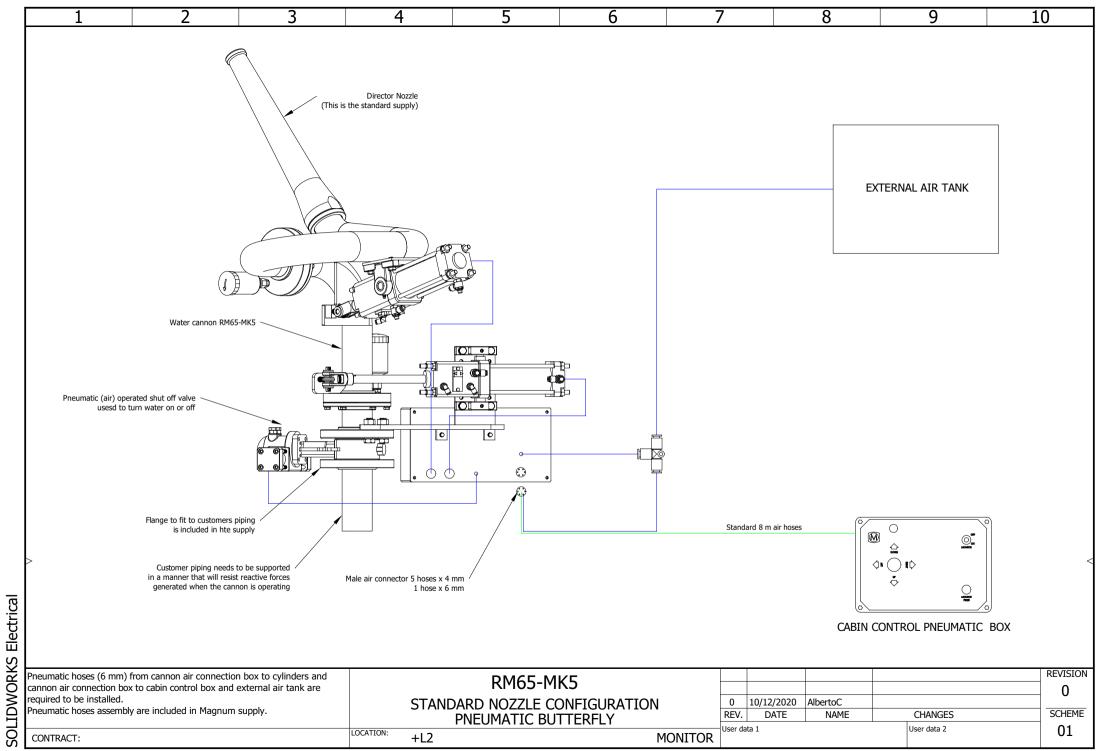
- 1. Check the condition of the swivel bearings by holding the pipe firmly and shaking it vigorously. There should be no play in the swivel bearing. Replace the seals and wear rings in the swivel bearings if there is any play.
- 2. Check the waster cannon for leaks. If there is a leak, it will occur at the swivel bearings. Replace the seals and wear rings in the swivel bearings if there is a leak on the water cannon.
- 3. Lubricate the rod ends (mounting for cylinders) using Multi-Purpose EP Type rease. 1 pump of grease from a grease gun should be sufficient.
- 4. Check the automatic lubrication canister. The canister has been initially set up for 12 months. If the ambient temperature is above 40 degrees centigrade, the life of the canister may be reduced. Replace the canister if there is no sign of grease in it. Set the automatic lubrication canister to 12 months. This activates the lubricator.
- 5. Check and change if necessary the filter in the spray valve/cannon filter regulator.
- 6. Check the operation of the water cannon; slew and elevation.

#### **Annual Service**

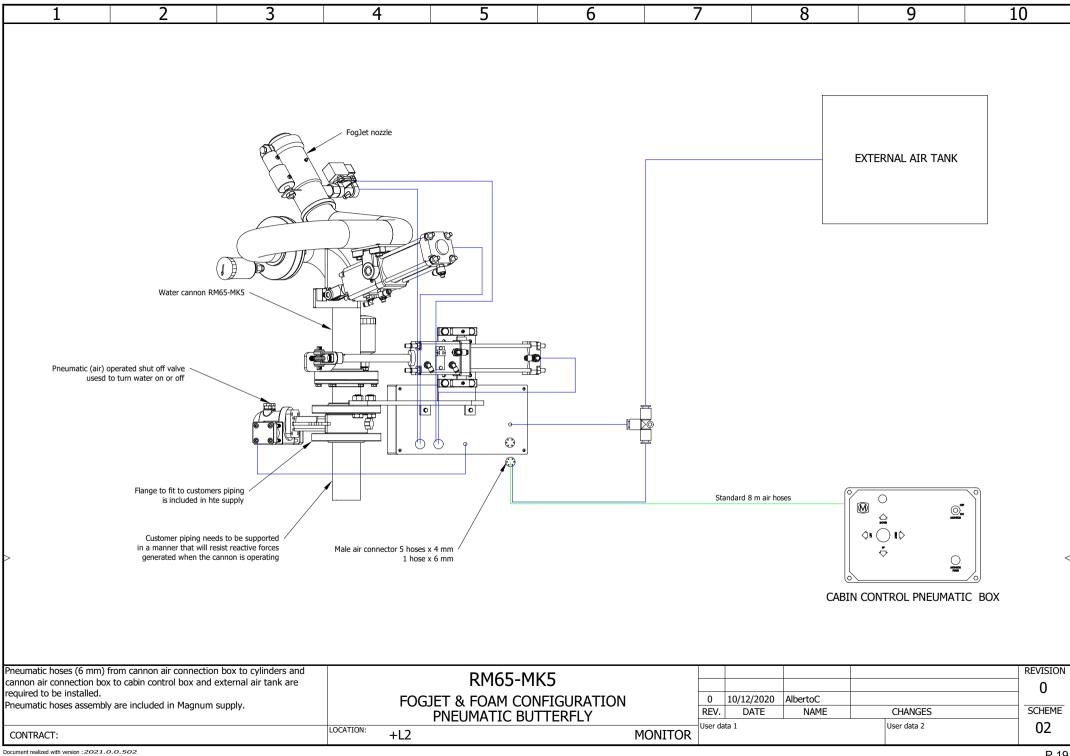
- 1. Strip and inspect the swivel bearing on the cannon. Replace the wear rings and the seals.
- 2. Install a new automatic lubrication canister as is indicated in quarterly service.

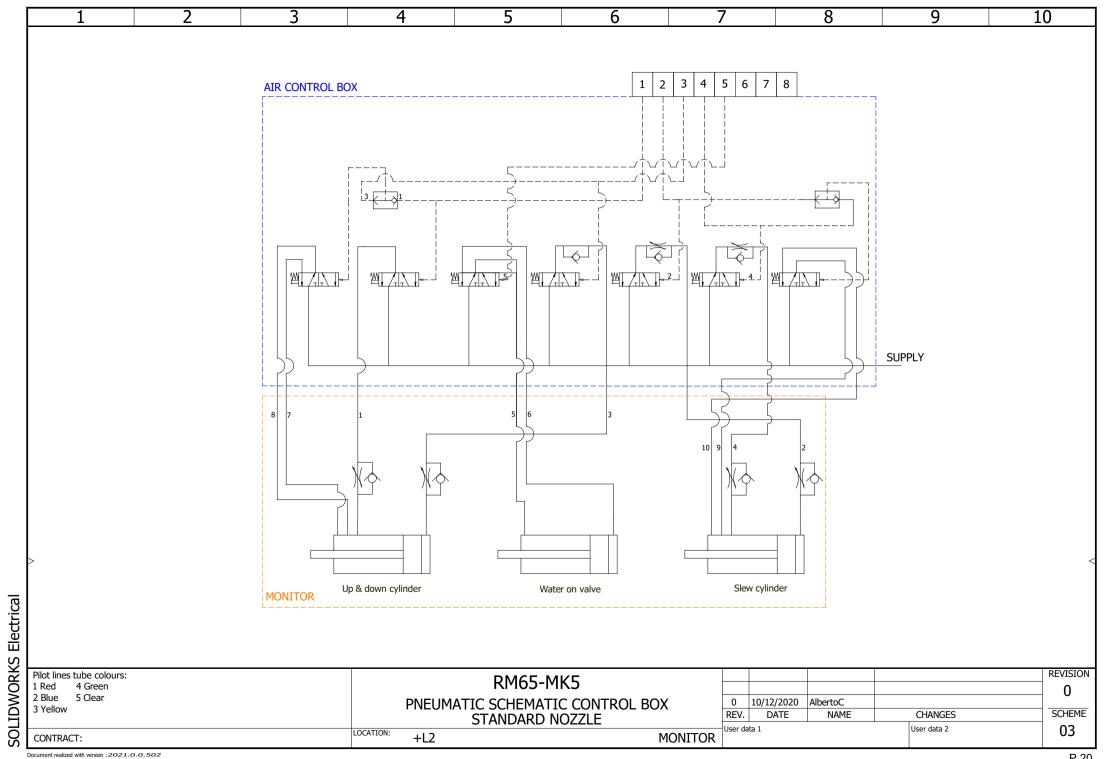


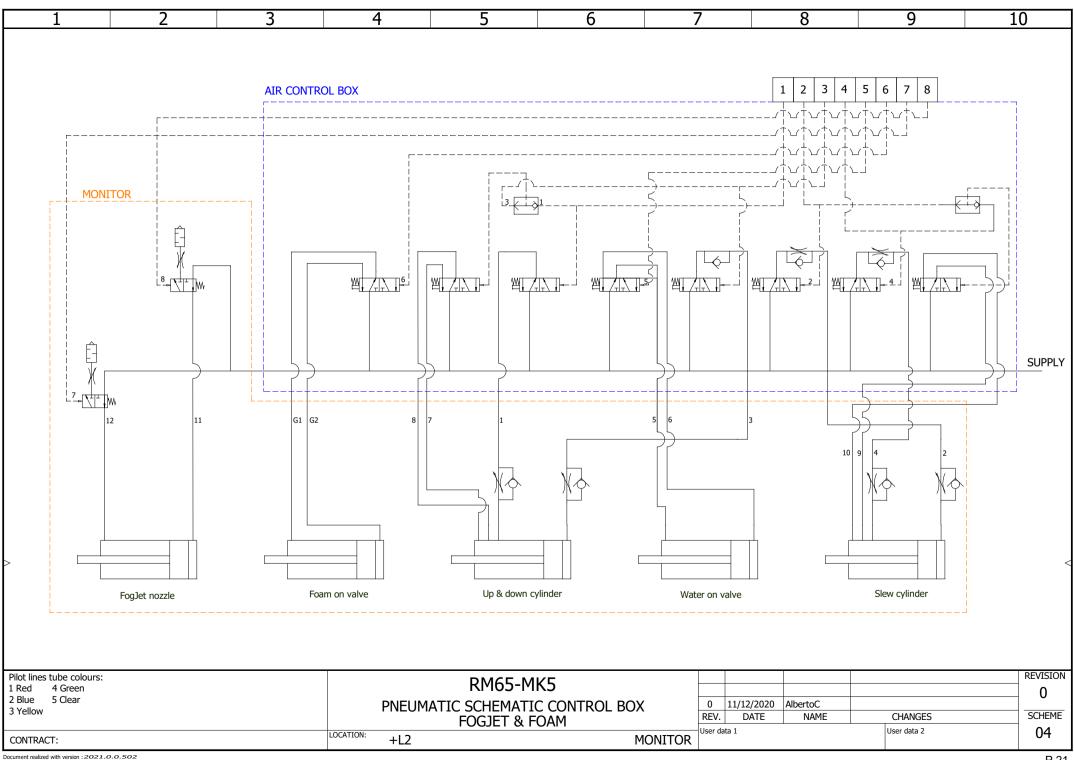
# 7. <u>Pneumatic Schematics</u>

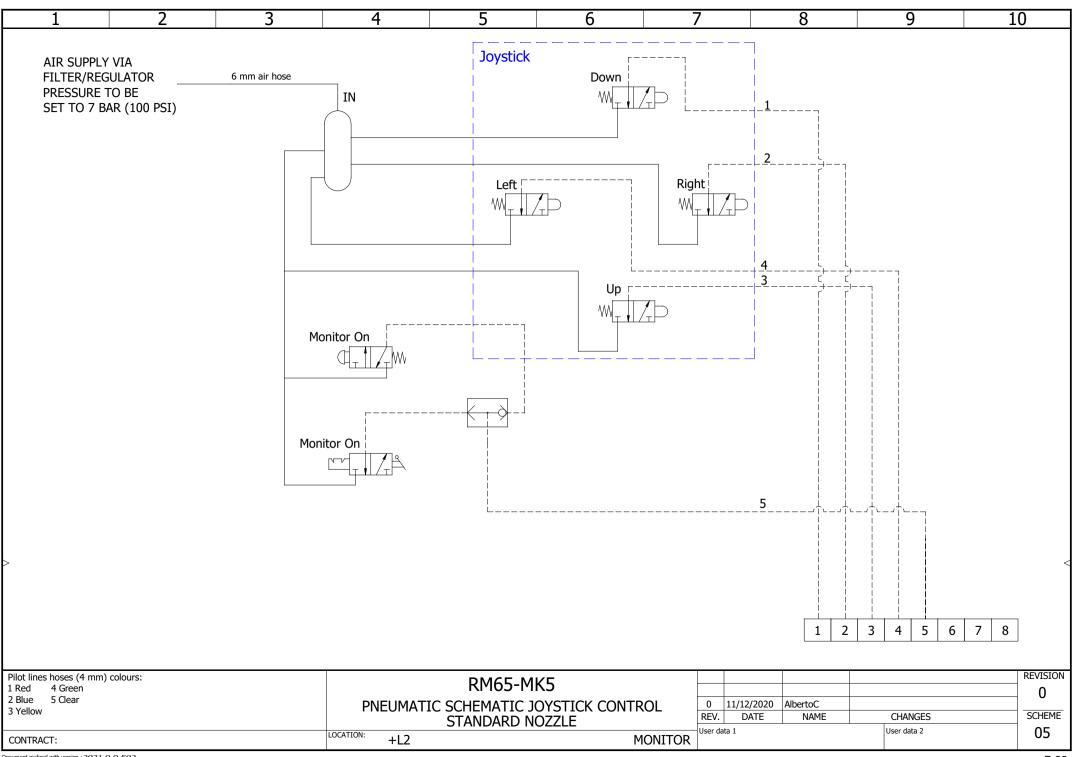


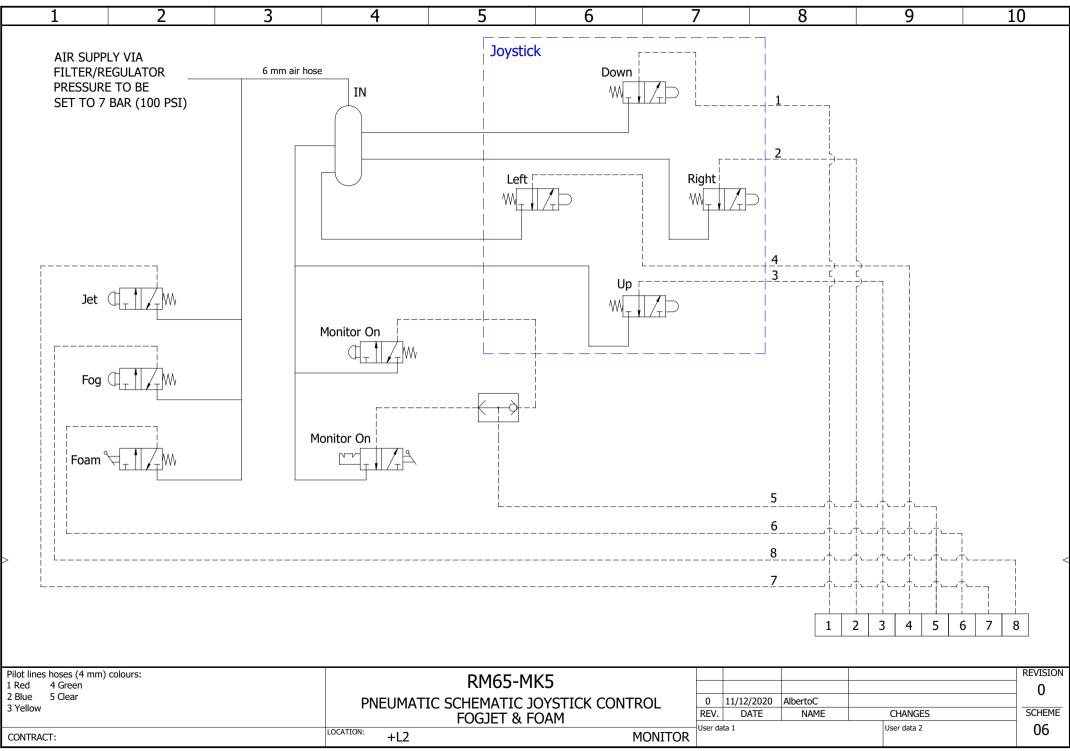
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