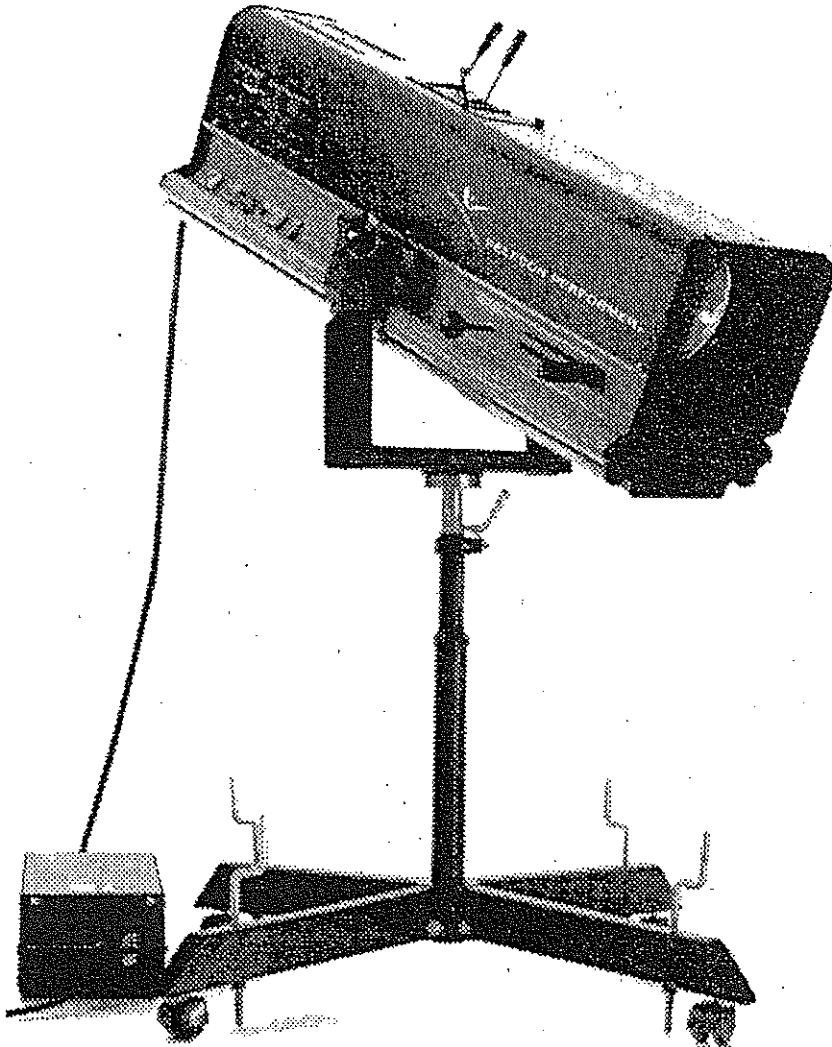




SELECON PERFORMER
1200W MSR FOLLOWSPOT



OPERATIONAL AND SERVICE
MANUAL

No:VI:0 Sept 92
Revised: V.I.I. Feb 93

PERFORMER 1200 USERS MANUAL

Version 1.0 September 1992

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SELECON PERFORMER 1200W MSR FOLLOWSPOT

OPERATIONAL AND SERVICE MANUAL

No: V.I.0. Sept 92

Revised:

IMPORTANT SAFETY ADVICE - *Please read before using the Followspot.*

1) The Performer has no user serviceable electrical parts - please refer to qualified service personnel or your Selecon dealer.

2) MSR/HMI lamps operate with a high internal pressure and radiate U.V. The lamps must not be operated for more than 200 hours over the specified average life of 800 hours due to the increased risk of shattering.

For the above reasons the lamp must always be operated inside the luminaire. Microswitch cutouts disconnect the supply to the lamp (N.B. Control Panel is still live) if the lamp tray or top cowling are opened.

3) Green earth continuity neon located on the Control Panel monitors the presence of earth. **DO NOT OPERATE THE FOLLOWSPOT IF THE NEON IS NOT LIT** - refer to qualified service personnel.

4) An over temperature sensor will shut down the Followspot if the inside temperature exceeds 100° C. It will reset, allowing the unit to be restarted when the temperature drops below 65° C.

1.0. UNPACKING AND ASSEMBLY

- 1.1. **STAND** - Remove the Stand from the carton. Fold the feet out and position upright on the castors.

Take the four screw jacks from the bag and screw one through each leg of the Stand. Screw base foot onto each screw jack.

- 1.2. **FOLLOWSPOT HEAD** - Remove head and yoke from carton, take out of the plastic bag.

Mount the yoke on the stand ensuring the nylon washer is in place between the yoke spigot platten and stand platten.

Check the stand is at its lowest setting. Loosen the tilt locking clamp discs on the right hand pivot plate of the Followspot.

With a person at either end of the Followspot lift it up and guide the pivot axles into the yoke slots. Ensure the tilt locking discs are positioned either side of the yoke upright with the dimple located in the yoke slot. Settle the Followspot securely into the yoke slot. Lock the Followspot off in horizontal position using the tilt locking handle.

Screw the Stand feet down, and check the unit is level.

Adjust height of Stand to suit the operator. Loosen the lower clamp of the Stand, raise to desired height and tighten the clamp.

Fit Colour Changer (an accessory) by sliding the unit into the front extruded channels. The mounting guides (4 of) are screw fixed to allow for right handed operation. To convert to left handed operation unscrew the four mounting guides and position on the other end of the Colour Changer.

A par size colour scroller can be fitted instead of the colour changer.

2.0. BALANCING

Loosen the 8mm set screws securing the luminaire pivot plates in the extruded channel - sufficient only to move the head. Free tilt locking clamp.

Standing behind, slide the Followspot forwards or backwards to achieve the required balance.

Check the pivot plates are opposite each other, at equal distances from the front or back, then retighten the 8mm set screws.

IMPORTANT NOTE : The pivot plates must be exactly opposite (i.e.. equidistant from front or rear) otherwise the followspot will not lock off easily. The resulting pressure will lead to binding and scarring of the paint and metalwork.

3.0. LAMPING UP

This is best done standing behind the Followspot. Unscrew the two thumb screws top and bottom which fasten the lamp tray together so it comes free evenly. Pull the captive tray out as far as it will come.

Unpack the 1200w single ended MSR/HMI lamp removing the plastic sheath. **N.B. TAKE CARE NOT TO TOUCH THE QUARTZ ENVELOPE**, if you do clean immediately using the toweltette packaged with the lamp. Holding the lamp by the ceramic base slide it through the housing aperture, align the base pins vertically with the socket and pull back firmly securing the lamp into the base.

CHECK THE LAMP IS FIRMLY SEATED INTO THE SOCKET.

Slide the lamp tray back into the Followspot. Locate the bottom thumb screw first and screw home securely. Fasten top thumb screw.

4.0. MAINS SUPPLY

The Performer requires correctly rated ballast to operate at either:

220v 50hz or 60hz,
230/240v 50hz,
or 110v 50hz or 60hz.

At 240v it draws approximately 9.0 amps at start up.

The separate ballast unit is fitted with a 10A MCB (20A for 110v operation) which serves as an isolating switch and short circuit protection. A red neon indicates mains supply. A 1½m mains cable is fitted. A seven conductor flexible multicore cable 3 metres long is fitted to the Followspot head and terminated to a Phoenix Heavy Con type connector.

Position the ballast clear of the Followspot operating area in a position of free air movement.

Connect the Followspot head to the ballast using the connector clips to lock the multiconnector securely together.

5.0. STARTING PROCEDURE

Turn on the mains supply to the ballast, turn on ballast MCB - red neon should be lit. The Followspot fan should be operating. Check green earth continuity neon is lit on the Followspot control panel. **IF THE NEON IS NOT LIT DO NOT PROCEED, SEEK QUALIFIED SERVICE ADVICE.**

*Check Dowser, Cutter and Iris are open.

*Check 1/2 Power Switch is off.

Push on Red push switch - indicator light will come on and ignitor will fire the lamp (*this makes a distinctive sound*).

The lamp will take several minutes to achieve full brightness, changing colour as it does.

N.B. The lamp will start if 1/2 power switch is live but will take considerably longer to fire and is therefore not recommended.

6.0. TRIMMING THE LAMP

First focus the beam onto a white or similar surface. Switch to 1/2 power as alignment is easier to see.

The socket position is aligned at the factory and should only require minor trim adjustments to centre the beam and achieve the desired light field. Correct beam alignment is required to ensure evenly distributed output and colour composition.

To trim the lamp use the three finger screw knobs arranged in a triangle on the lamp tray: The bottom knob lifts or drops the lamp in the reflector while the two knobs above move the lamp from left to right.

7.0. ELAPSED HOUR METER

Records lamp operating hours. Ensure no lamp is used for more than 1,000 hours due to the increased likelihood of the lamp exploding. The meter is not able to be reset. A lamp log book is recommended to record lamp usage.

8.0. RESTART

The lamp will not restart when hot. Restrike time is between 7 to 10 minutes.

9.0 RE-LAMPING

Allow sufficient time for the lamp to cool before carrying out re-lamping as per 3.0. New lamps will need to be trimmed refer 6.0.

10.0. 1/2 POWER

This switch drops out one half of the ballast from the circuit effectively reducing light output to 48% of full power.

This facility is useful for:

*When a lower powered spot is required onstage, to provide a subtle highlight of the Performer, a requirement often found in opera.

*Standby position, if there is a considerable time period between cues 1/

2 power will reduce the heat output, stress on the dowser/cutter/iris and save power!

11.0 MECHANICAL DOWSER

Operated from the top of the Followspot this bi-parting door provides mechanical dimming down to 1.5% of the output. A wipe action blackout closes off the dowser.

The dowser is set to achieve the desired output onstage, balancing the spot with the rest of the stage lighting. With practice precise fade up and downs can be achieved. A scale is located by the operating lever to record the position.

12.0 CUTTERS

Horizontal cutters provide a top and bottom framing of the beam. The cutters provide the fastest snap black out.

13.0 IRIS

Precision twenty leaf incoloy iris defines the beam aperture. To achieve the sharpest image bring the iris diaphragm just into the beam, using the focus trim knob set the desired focus. Focus will vary if there is a great variation in throw distances - use the focus trim knob to adjust as necessary.

A scale is mounted beside the iris shaft to record positions.

IMPORTANT NOTE : The iris is a precision diaphragm with twenty moving leaves. To maximise life the iris is mounted on an aluminium heatsink and is force cooled. It is good practice to protect the iris from unnecessary heating between cues by closing the cutters or dowser and reducing to 1/2 power.

14.0. GOBO/PATTERN & GOBO ROTATOR

The Performer can accept a pattern, using the gobo/pattern holder accessory (20PFGH) or a DHA gobo rotator. The pattern size is 'M' size but please note image size of M pattern is 49.5 mm, gate size of Performer is 35mm.

To mount the gobo, fit into holder, remove thumbscrew holding masking plate, swing plate 90° and screw down into the press nut. Position pattern holder or rotator into slot.

Set zoom lens to average throw position and focus using focus trim. Adjust the beam to flat field - refer 6.0.

15.0 ZOOM OPERATION

The 5.5 to 9.2° variable beam is achieved through two linked lens moving in constant relation to each other. The system is designed to provide constant focus through this beam range at a throw of approx. 15-20 metres. The focus trim knob repositions the rear lens in relation to the front lens to fine tune the focus.

This allows the operator to control the beam size within the range of 5.5 - 9.2 degrees using the front slide zoom handle. A fast effective way of increasing the beam to take in an extra Performer or dance line up with all available lighting being delivered into the beam by the zoom optics.

To achieve the best focus over the zoom range set the lens system to wide focus and then use the focus tuning knob to achieve desired focus. This focus setting will vary slightly as you operate the zoom lever.

If you wish to soften the beam edge we recommend a light diffusion media such as Rosco 119 1/2 Hamburg frost.

15.1. To change zoom slide handle from right to left side of the Followspot -

- *Remove the nut and bolt securing the nylon stabilising bearing located in the extruded channel in the left hand slot.

- *Remove the zoom handle by unscrewing it, take care not to lose the washers as you remove the handle.

- *Fasten the stabilising bearing that was guiding the handle with the nut and bolt you have just removed.

- *Pass the handle through the slot and nylon bearing. Screw into the lens carriage ensuring the end of the bolt locates into the stabilising hole in the centre of the lens carriage extrusion.

15.2. IMPORTANT NOTE: When cleaning the lens, movement system, etc., DO NOT LUBRICATE THE CENTRE SHAFT - this is teflon coated, lubricants may destroy this coating.

16.0. COLOUR CHANGER

To fit refer 1.2.

16.1. To Load Colour Filters - flip up the colour holder. Clip and take out the inner clamp ring. Use the outer edge of this ring as a template to cut the filter.

Place the filter in the holder, position the ring.

Clip into place.

16.2. To operate the Colour Changer - flip up the colour, the handle is retained in

position by the spring retention bar. To release or crossfade simply push the handle free.

17.0. OPERATING HINTS

17.1. The Performer is easy to adjust to suit individual operator preferences. Make use of these facilities as the more comfortable you are, the better the result you will achieve.

Check:

*Balance - if the balance doesn't suit your requirement follow the procedure outlined in 2.0.

*Height - different operator prefer different operating heights. With the Performer's Stand you can adjust the height by 350mm. The lower clamp on the Stand locks off the height adjustment.

*Pan Friction - the Performer swivels on a nylon bearing between two plattens (these provide stability). The amount of inertia or "drag" can be adjusted using the top clamp.

*Tilt - the tilt adjustment clamp is on the right hand side. Two discs clamp against the luminaire yoke plate. Adjust the friction to suit yourself.

17.2. Operating Position - again this is a matter of preference, and in some venues you have no choice!

Always check the position of the Stand feet ensuring they're clear of where you wish to stand. Check also that the ballast is positioned out of your way and that the cable will not catch on any obstructions as you move the head around.

Many operators stand slightly forward of the centre of the followspot. From this position you can reach the top controls with your left hand when not required this hand can drop onto the hand channel. The right hand is positioned at the front of the hand channel to guide the direction of the Followspot and operate the Colour Changer.

Check the position of your feet, legs slightly spread for stability and comfort.

17.3. Rear Guide Handle - this accessory bolts into the yoke channel. This handle extends back from the rear casting to form a hand grab and then forms a hoop following the outline of the Performer.

18.0 GENERAL

18.1. Accessories

Following accessories are available for the Performer:-

*Six Colour Changer - front mounting - Order Code: 10PFCCH.

*Gobo/Pattern Holder - for 'M' size gobos (refer 14.0.)

- Order Code: **20PFGH**.

*Truss Mounting Yoke - refer 18.2. below - Order Code: **10PFTMY**.

*Spare MSR1200 lamp - Order Code: **MSR1200**.

*Rear Handle - refer 17.3 - Order Code: **10PFRH**.

18.2. Truss Mounting Yoke

A special yoke is required if the Performer is to be suspended - do not attempt to use the standard yoke.

The yoke is longer to allow full tilt and is adjustable along the length of the Followspot. The yoke has a T.V. standard spigot (1-1/8") and is supplied with a Barrel Clamp for securing to 48mm O.D. scaffold pipe.

18.3. The MSR Lamp - the following information is reproduced from the Philips Product Information Sheet.

MSR1200 -Lamp Voltage: 100v;
Base: G22/30x53;
Burning Position - Any;
Average life hours - 800; Replace after 1000 hours.
Ordering No. 9280 781 051.

Photometric Data:

Initial luminous flux - 110,000 lm.
Luminous efficacy lm/w - 91. Colour rendering index - 95 Ra.
Colour temperature - 5600 K.
Average change of colour temperature over life approx. 0.5 Kelvin per hour.
CIE Chromacity Coordinate - 330X 330Y U.V.
Output - 100w.
Dimming to minimum 480w power without colour change.

Warning to Users

The hand-held measuring device available in the market to measure the colour temperature of a light source and to calculate the filters to match the light source to the available daylight and film type cannot be used for MSR lamps. The hand-held meters are calibrated for filament types of lamps with a continuous spectrum. Since the MSR lamps have a discontinuous spectrum (line spectrum), this equipment can give completely false readings. Depending on the power level at which the MSR lamp is used, the difference between the real colour temperature (Tk) and the temperature as measured with the available hand-held equipment can be as high as 3000K.

MSR lamps are high pressure discharge lamps with short arc length (10mm). The lamps are filled with a noble gas, mercury, halides and with additives of rare earths.

The average internal pressure in the lamp is between 10 and 20 bar.

18.4. Ultra Violet.

As advised MSR lamps emit high levels of U.V. Radiation. The MSR lamp must never be operated outside the luminaire enclosure.

Selecon have conducted U.V. proximity test on the Performer, the results of which prove this unit to be totally safe to the operator and audience provided the luminaire is operated in accordance with the above recommendations.

The tests were conducted using a Crawform Type 760 Meter at 140mm from the luminaire body. The following readings were recorded:

Sides - 110mw
Top - above controls 150mw
Top - above vents 120mw
Rear - 140mw

A reading of 350mw was measured in the light beam at a distance of 9m.

These readings compare to:

A typical overcast day - 500mw

18.5. Effect of Voltage drop on Light Output.

A 2% drop in line voltage will result in a 5% drop in light output. e.g.

240V - 20,000 lux
325V - 19,000 lux

PERFORMER 1200**TECHNICAL & SERVICE INFORMATION**

IMPORTANT NOTE - SERVICE WORK SHOULD ONLY BE CARRIED OUT BY QUALIFIED SERVICE PERSONNEL. PLEASE CONTACT YOUR SELECON DEALER OR SELECON DIRECT FOR FURTHER INFORMATION.

1.0. DESCRIPTION OF CIRCUIT - Please refer to drawings:

*Circuit - Performer Followspot.

*Circuit - Ballast Box.

The Performer 1200 uses two conventional copper iron ballasts wired in parallel mounted in a separate box. The mains power to the ballast is isolated via an MCB (10A - 220/240v, 20A - 110v) which serves as an ON/OFF switch and as protection against short circuits. A neon (red) indicates the mains supply is on.

The mains supply charges the powerfactor capacitors before passing to the ballast and then the head. The 1/2 power facility is provided by dropping one of the two ballasts out of the circuit. This facility along with the direct mains supply for the fan is accommodated by a flexible 7 core 1.5mm multicore cable running from the followspot head.

The multicore cable connects to the ballast via a Phoenix Heavy Con 6 pin and earth connector. The cable and connector are numbered, viz -

- 1 - Active to Followspot Control circuitry.
- 2 - Neutral - common with 6.
- 3 - Earth - common with 7.
- 4 - Ballast A.
- 5 - Ballast B.
- 6 - Neutral - common with 2.
- 7 - Earth, Plug chassis, common with 3.

The lamp start and 1/2 power facility are mounted on the control panel located on the right hand side at the rear of the followspot. The green neon monitors earth continuity throughout the system. The 4A fuse protects the control circuit comprising the power switches, fan(s) and relay.

The Followspot is started by pushing the latching illuminated (red) push button. This activates a 20A relay to connect the ignitor in circuit to both ballasts. The ignitor stays in circuit after firing.

The integrity of lamp operation is protected by microswitch cutouts on the top cowling and lamp tray. The relay will not operate if either microswitch is released.

The safety interlock circuit also includes a heat sensor located above the fan. If the temperature rises above 100°C the sensor will activate causing the relay to open cutting the supply to the lamp.

2.0. ACCESS

2.1. **Ballast** - Remove the top panel (10 x M5x10 screws). Further access can be gained by disassembling the side panels.

2.2. Followspot

2.2.1. To access reflector, lens assembly, dowser, cutter and iris. Remove top cowling by unscrewing the self tapping (10x 3/8") screws - 3 each side, 4 each end. Remove handles off the dowser, cutter and iris. Lift cowling at each end to clear control levers.

2.2.2. To access ignitor, fan, relay. Loosen off multi-core cable gland. Remove rear casting fastening screws (10 of 8x5/8" self tapping). N.B. - Ensure lock washers are replaced to maintain earth continuity to all componentary.

Withdraw rear casting and reflector tray 150mm, to limit of wires and earth strap.

Remove top cowling (2.2.1.) the components can then be reached either by withdrawing bottom tray to the rear casting or through the cut-outs in the intermediate tray.

2.3. **Control Panel** - Remove the two M4 machine screws and pull panel out.

3.0. COMPONENTS

3.1. Ballast

*1-1/2m mains cable, 3 core, 2.0mm². Brown (live), Blue (neutral), Green (earth). (Computer Order Code - **MSR-WIRE**)

*For N.Z. & Australia - Clipsal 418 plug. (Computer Order Code - **TAPONNON**)

*Panel mount socket 6 way + earth Phoenix Heavy Con PHCC - 36 series. (Computer Order Code - **MSR-PLUG**)

*4 pces 30mf powerfactor capacitors. (Computer Order Code - **MSR CAP**)

*2 pces OGH 700-15 Ballast. (Computer Order Code - **MSR CHOKE**)

*10A MCB. (Computer Order Code - **MSR-20CB**)

*Neon - Red (Computer Order Code - **MSR-N/R**)

3.2. Followspot Head

- *Control Panel - Sprecher & Schuh. 10A push button latching illuminated switch. OFF/ON - (red) N/O. 1/2 power - (Amber). (Computer Order Code - **MSR-SWITCH**)
 - Elapsed Hour Meter - Grasslin not resetable. (Computer Order Code - **HOURCOUNT**)
 - Fuse Holder - 20mm miniature. - Fuse - 4A. (Computer Order Code - **MSR-FUSE/H**)
- *2 pces 16A microswitch (cutout) - Honeywell. (Computer Order Code - **SWITCH**)
- *Thermal Cutout - Klikon T175 9700K-26-11. (Computer Order Code - **MSR-TC**)
- *Relay - 20A contact 2 x N/O. **RELAY-2NO**)
- *Ignitor - A2RM 20ES. (Computer Order Code - **IGMOTOR**)
- *Lamp Base - G22. (Computer Order Code - **20G22**)
- *Fan - Samcon DP201A. (Computer Order Code - **MSRFAN**)
- *Cable - 7 Conductor x 1.5mm² "AFLEX". (Computer Order Code - **MSR-WC**)

4.0. MAINTENANCE

Operator Maintenance is confined to:-

- 4.1. **Cleaning Optical System** - due to the force cooling and heat generation considerable dust can build up on all components. Regular cleaning is recommended to maintain your Performer in top condition.
 - *Lens should be wiped clean using a window cleaner or meths dampened soft cloth. Polish clean.
 - *Remove lamp from reflector and wipe clean with a soft cloth.
 - *Remove all dirt build up from the moving parts viz dowser, cutter, iris, lens moving system.
 - *N.B. - Do not add lubricant to the lens rod which is teflon coated, simply wipe clean.
- 4.2. Check lamp socket contacts are clean. If socket contacts show signs of corrosion replace to avoid unnecessary damage to the lamp pins.
- 4.3. **Lamp** - Take special care to ensure you do not touch the quartz glass envelope. If this should happen wipe clean with ethanol.
- 4.4. **Cable** - Check all cable connections are secure and cable clamps are effective.

5.0. CHECK LIST - for possible fault.

If your Performer fails to start -

- 5.1. Check mains supply is on, ballast MCB is on and ballast red neon is on. If neon is not lit check mains; use alternative mains supply.
- 5.2. Ballast neon is on - Followspot green neon is off - indicates lack of earth continuity possible faults include wrongly connected mains supply, or disconnected earth at the supply or in the Performer.

DO NOT USE - SEEK QUALIFIED SERVICE ASSISTANCE.

- 5.3. Mains supply is present, earth continuity neon is lit. Ignitor fails to function when ON/OFF switch is pushed.

Likely cause one of the three safety interlocks have been activated, either
Microswitch cutout on - Lamp tray
- Top cowling,
or Heat sensor.

Check lamp tray and top cowling are correctly located and fastened.

Heat sensor will reactivate circuit when the temperature drops below 65°C.

- 5.4. Ignitor works lamp fails to strike.
Check - lamp is fitted.
- Lamp is securely located in the socket.
- 5.5. Lamp fails to restart - allow cool down time of 7 to 10 minutes before restriking lamp.

6.0. ELECTRICAL SPECIFICATION

6.1. STANDARDS

The Performer ballast and ignitor comply to the following IEC standards.

HID Standard. Ballast for HID - General & Safety.

Publication: 922 - Safety.

923 - Performance.

Ignitors and Starting Devices.

Publication: 926 - Safety.

927 - Performance.

And the Australian Standard ASI 468 - Ballasts for High Pressure Mercury Vapour and Low Pressure Sodium Vapour discharge lamps.

6.2. MAINS VOLTAGE

It is important to match the correct ballasts with your voltage/frequency. Ballasts are available for:-

* 220v 50hz.

* 220v 60hz.

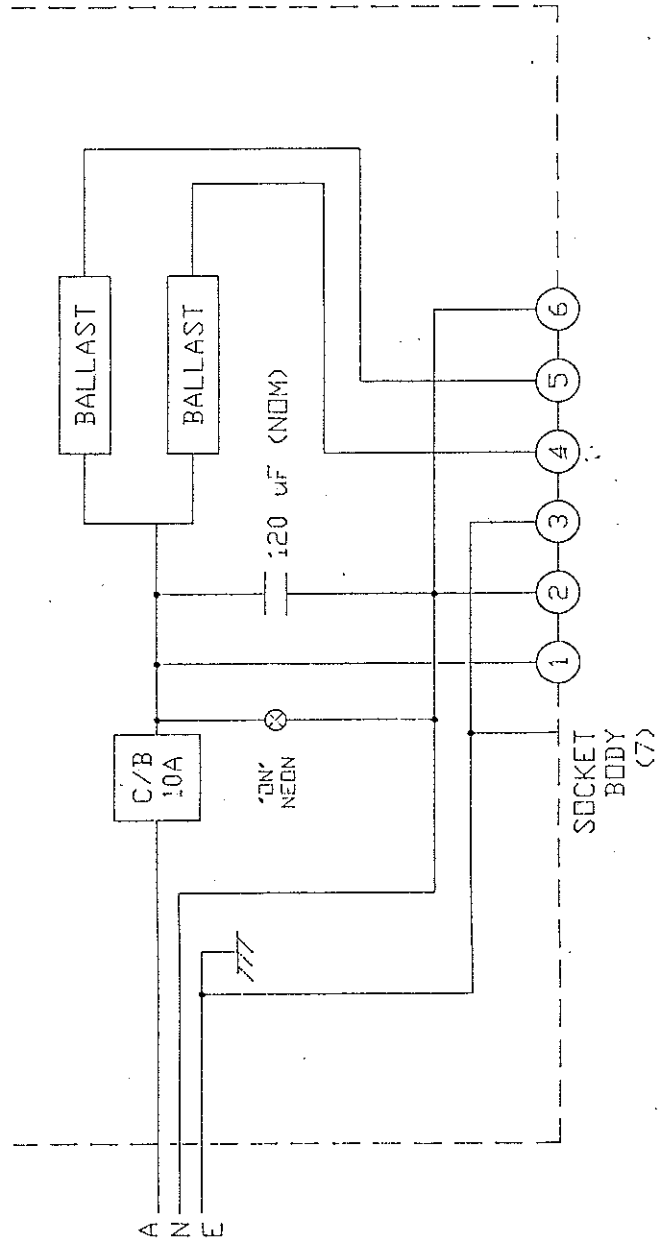
* 230-240v 50hz.

* 110v 60hz.

Lamp Current - 7.0A.

Start Current - 9.0A.

BALLAST BOX

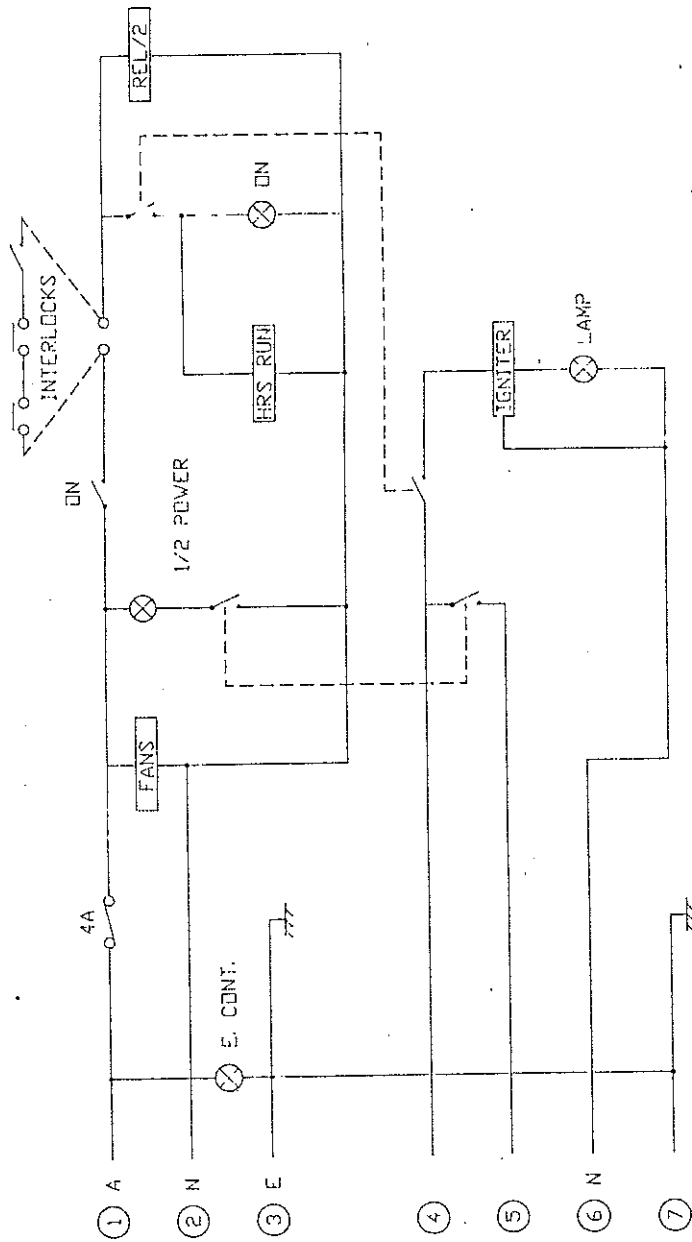


REV.	DESCRIPTION	SIGNED	DATE

WIRING CIRCUIT
"PERFORMER" FOLLOWSPOT

Designed by: Date: 19.8.92 Scale: Drawing No.: Rev:
 Drawn by: SVB Scale: NTS: FSPOT: 1/1
 Checked by: HK

SELECON NEW ZEALAND
 26 PUTIKI ST. GREY LYNN AUCKLAND.
 PH. (09) 360.1718 FAX. (09) 360.1719



REV.	DESCRIPTION	SIGNED	DATE

WIRING CIRCUIT
"PERFORMER" FOLLOWSPOT

Designed SF
Drawn SUB
Checked AK

Date 19.8.92
Scale NTS

Drawing No. FSP072
Rev.

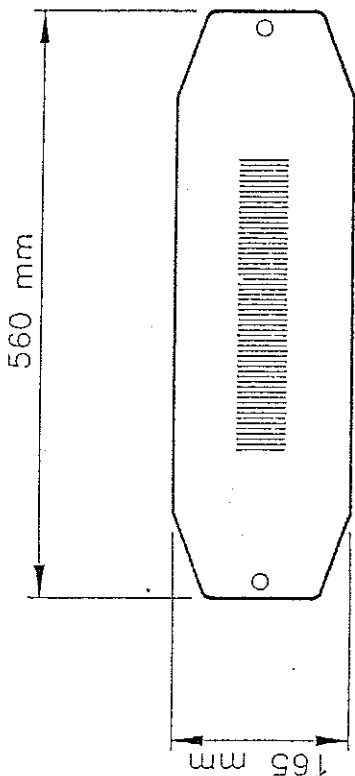
SELECON NEW ZEALAND

26 PUTIKI ST
GREY LYNN
AUCKLAND

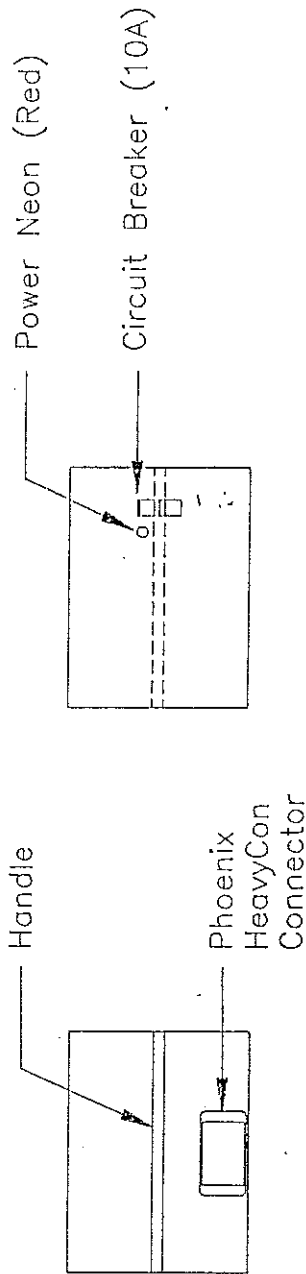
ph. (09) 360 1718 fax. (09) 360 1719

PERFORMER 1200W MSR/HMI BALLAST SPECIFICATIONS

Electro Magnetic Ballast
 Weight = 23.4 kg
 Available 220v 50hz, 230-240v 50hz, or 110v 60hz
 Starting Current - 9.0 A
 Operating Current - 7.0 A
 Complies with IEC requirements
 922 - Safety
 923 - Performance
 Power Factor Correction -120uf
 Change in Temp. - 75° C
 TW - 130° C



SIDE VIEW



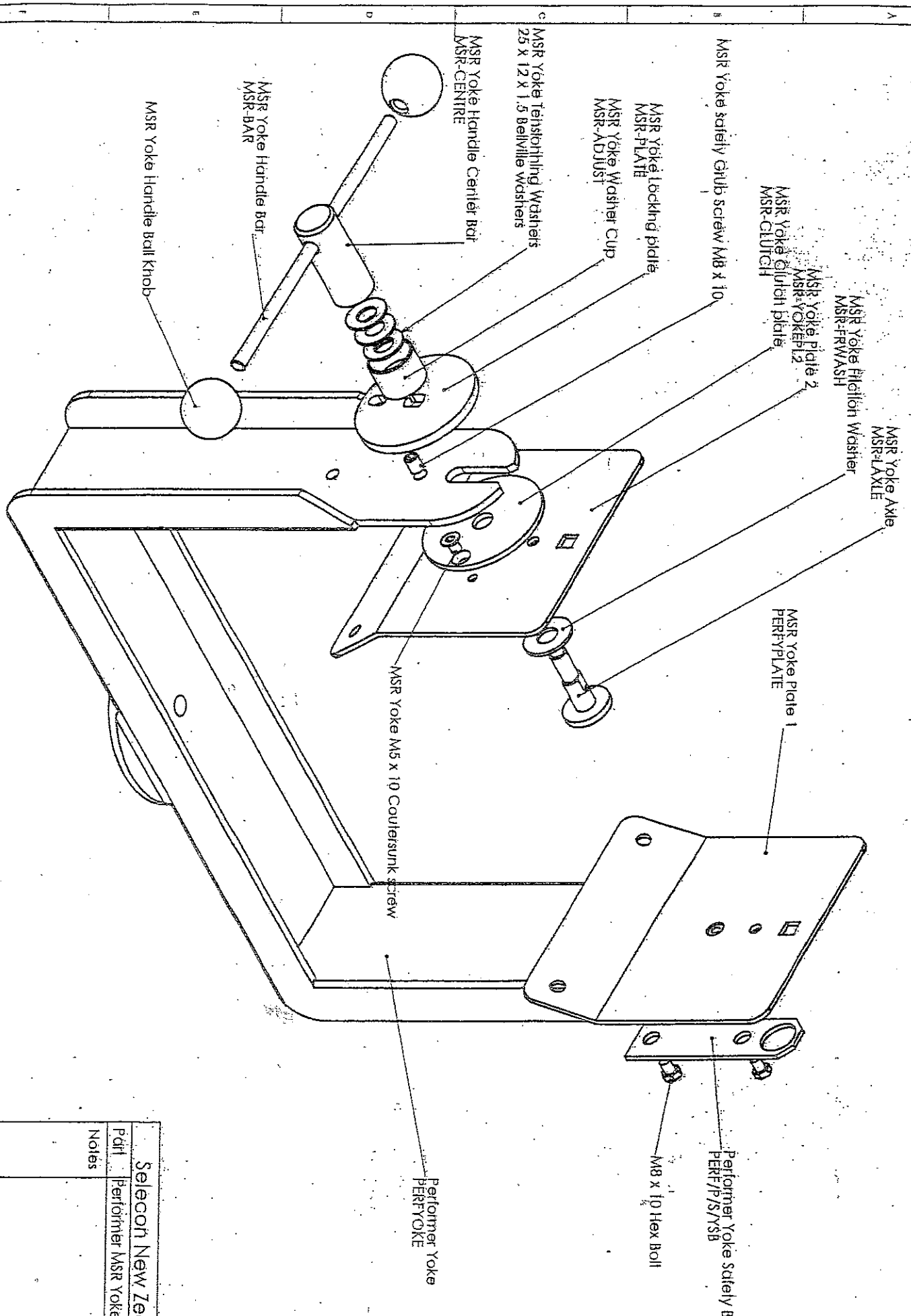
REV.	DESCRIPTION	SIGNED	DATE

PERFORMER 1200W MSR/HMI FOLLOWSPOT BALLAST DETAILS

Designed Date 25.8.92 Scale 1:5 Rev.
 Drawn SJB Drawing No. FSP013
 Checked

SELECON NEW ZEALAND
 26 PUTKI ST GREY LYNN AUCKLAND
 ph. (09) 360 1718 fax. (09) 360 1719

END VIEWS



Date	29/07/99
Seleccon New Zealand Ltd Part Performer MSR Yoke Locking Notes	