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Masterfil

INSTALLATION, OPERATING INSTRUCTIONS &

MAINTENANCE MANUAL FOR MASTERFIL

MODEL: *CAPPING MACHINE*

CUSTOMER: *POLACRUSH*

MACHINE NO: *4346*

WARNING

FLAMEPROOF APPLICATIONS

This machine is not FLAMEPROOF and therefore NOT SUITABLE

(ELECTRICALLY SAFE) for use with flammable liquids unless specially stated.

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INSTALLATION, OPERATING INSTRUCTIONS & MAINTENANCE MANUAL FOR MASTERCAP SINGLE HEAD CAPPING MACHINE

Machine No:-

This manual will assist you in the running and efficient operation of your CAPPING MACHINE. Please follow these maintenance and operating instructions so your capping line will give you satisfactory operation.

Please consult MASTERFIL if you need further help.

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HEALTH & SAFETY AT WORK ACT 1974

The MASTERCAP should be used only in the manner and for the purpose for which we are advised they we intended and in accordance with the recommendations of our Technical Sales Department, product data sheets, catalogues and operating instructions.

Safety glasses should be worn by operators. The machine is guarded to protect users against danger when capping harmless liquids, unless the machine has been supplied explicitly to fill named liquids whose risks have been made known to MASTERFIL LIMITED.

Do not operate the machine without guards. In case of any malfunction or displacement of a container press emergency stop. Only a trained person should be allowed to realign containers or reset the machine when, not before, all movement has ceased.

Do not adjust the machine without guards or attempt to circumvent the guarding unless you have taken precautions to render the operation as safe as if the guards were in place. Any staff who adjust the machine with any guard removed should receive training which ensure that they are fully familiar with all possible motions within the machine under these conditions.

All interlock and safety equipment on machines must be fully maintained and regularly checked to ensure proper operation.

GENERAL DESCRIPTION

The MASTERCAP is an automatic single head capping machine, that can be fitted into any production line where there is a continuous flow of containers.

The MASTERCAP is normally supplied with its own variable speed conveyor, to accept containers from a proceeding operation. There is also an elevator/sorter which will supply caps to the capping chuck. The chuck and elevator/sorter are mounted to the main drive assembly which can be easily raised or lowered by a pneumatically powered lifting mechanism. This height depends on the size of container and the type of cap. The MASTERCAP is fitted with a chuck suitable for either a screw on or push in type cap. Change of cap/container are simple; with quick bolt on change parts.

The caps are fed from the elevator/sorter via a track into an escapement. A reciprocating arm transfers the cap from the escapement to the chuck. The cap is gripped in the chuck by side pressure. Containers are then fed by conveyor into the fully enclosed capping zone into a starwheel indexing mechanism. The starwheel indexes the container beneath the chuck, allowing the chuck to descend and securely cap the container.

The MASTERCAP is equipped with no cap/no bottle detection and is fitted with electrical/mechanical overload protection as well as fully interlocked guarding.

The running sequence of the machine is controlled by a programmable logic controller or 'PLC'. This is mounted in an electrical cabinet at the rear of the capper. If the MASTERCAP is flameproof the machine is controlled by a pneumatic circuit.

INSTALLATION

1. The MASTERCAP should be manoeuvred at all times with a forklift. The forks should span the full width of the base frame before attempting to lift.

2. The MASTERCAP frame contains the conveyor centre chassis and must be adjusted to suit conveyor height required.

3. Assemble the conveyor idler and drive ends to the centre chassis and level.

4. Remove end covers from conveyors idler and drive ends, check drive motor gearbox oil level and top up if required. Connect power supply to motor and check for correct rotation.

   NOTE: The conveyor slat chain must be pulled by the drive motor.

5. Unroll the plastic rubbing strips, the rubbing strip from the drive end fits to the bottom of the chassis and to the top of the idler end, use sticky tape to hold the ends in position.

6. Feed the slat chain from drive end onto the bottom rubbing strip to the idler end and along the top strip, join the slat chain by tapping the pin into slat joint, (note the arrow on underside of chain denotes direction of travel).

7. Check that the slat chain is located correctly on rubbing strips and on drive sprockets, remove the sticky tape holding rubbing strips. Fit Ø12mm (½") guide rails into brackets and run conveyor to check operation.

8. Hook the elevator/sorter to the side of the capper and tighten locking screws.

9. Check all nuts, bolts and locking screws are tight. Close all doors on the machine, which are all interlocked. If a door is open the machine will be in emergency stop position.

10. Fill the lubricator on large air service unit only with oil to manufacturers specification, connect main air hose to the factory air supply, ensure the tap on the air service unit is switched off.

11. Turn on air supply and check the air pressure on the air service units 5-6 bar 75-80 PSI. Check for any air leaks. Connect power supply.

12. Press the capper start button. This will initiate run on PLC and start the elevator.

13. Operate emergency stop or door interlock to test safety functions.

Installation and operating instruction for EAS®-E clutches

(B 4.7)

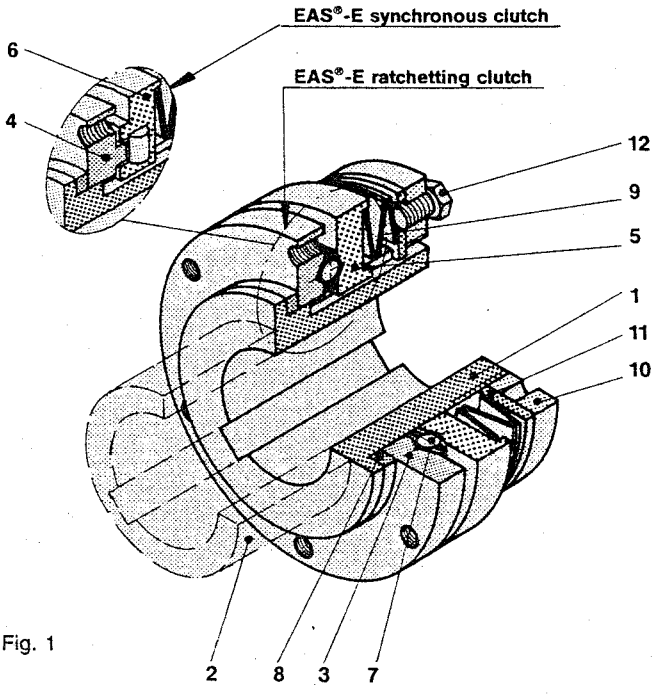

Fig. 1

Parts List

1 hub standard
2 long projecting hub
3 pressure flange ratchetting
4 pressure flange synchronous
5 control element ratchetting
6 control element synchronous
7 ball cage
8 axial sliding bearing
9 disc spring
10 adjusting nut
11 lock washer
12 set screw

Boring the hub

The clutch is supplied with finish bore and with keyway to DIN 6885/1 or with pilot bore according to the indications of the order.

The clutch must be dismantled in order to bore and keyway the pilot bored hub.

Attention has to be paid to the maximum permissible bore diameter, the prescribed form of the keyway and the permissible true running deviation of the bore to the hub diameter (true running deviation max. 0,05 mm). Displace keyway to hub outer keyway by 45°.

Dismantling the clutch

- unscrew setscrew (12) from the adjusting nut (10).
- unscrew adjusting nut (10) with a face wrench from the hub (1, 2).
- remove lock washer (11) and disc springs (9) from the hub (1, 2).
- remove control element (5, 6) from the hub (1, 2).

Attention: the balls of the ball cage (7) lie loose in the cage in ratchetting clutch sizes 0 and 1.

- remove ball cage (7) with the ratchetting clutch, pressure flange (3, 4) and axial sliding bearing (8) from the hub (1, 2).

Clutch assembly

The clutch is assembled in the reverse sequence of dismantling or according to figure 1. Grease the ball cage (7) of the ratchetting clutch and the recesses in the control element (5) and the pressure flange (3, 4).

You can find the correct disc spring configuration (9) under the heading "disc spring layer configuration" and from figure 7.

The lock washer (11) has four extruded tabs on the internal diameter. The lock washer (11) is pushed onto the hub (1, 2) that the last disc spring (9) is located at its internal diameter on these tabs.

The heading "torque adjustment" gives information on the adjustment of the clutch for limiting torque for a required overload.

Bores and location on shaft

The clutch is pushed onto the shaft and fixed axially backlash free by means of a locking disc, figure 2.

Axial play changes the switching distance of the attached limit switch resulting in a different switching-off torque.

Fitting the drive elements

The drive elements (chain sprockets, belt pulleys, gears etc.) are screwed onto the pressure flange (3, 4).

It is essential to ensure that no axial forces are applied to the pressure flange (3, 4) of the clutch by the drive element, for example, by misaligned pull of the chain or axial deforming by improper fastening during fitting the drive element, figure 2.

The resultant radial force of the drive element should be at the bearing centre to avoid toe-in of the drive element and pressure flange (3, 4), figure 3.

The location of the drive element is different depending on the design of the clutch.

Figure 2: For the type with the standard hub (1) the drive element can be located without bearing onto the hub collar and screwed onto the pressure flange (3, 4). In case of high overload frequency and high radial force at the drive element a bearing bushing should be installed between hub (1) and drive element.

Figure 3: An additional bearing has to be provided due to the width of the drive element and the high radial force. The radial force acts nearly in the centre of the bearing; no toe-in of the drive element and the pressure flange (3, 4). During installation the drive element is first installed together with the bearing onto the shaft. Afterwards the EAS®-E clutch is pulled onto the shaft and screwed to the drive elements.

Figure 4: In case of the design with long projecting hub (2), the drive element and bearing is pulled onto the hub (2) and screwed to the pressure flange (3, 4). The diameter of the hub (2) and the fit is adapted to the bearing dimensions. This design is especially suitable for wide drive elements.

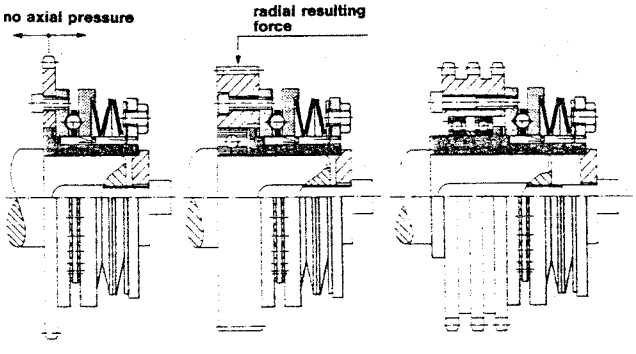

Fig. 2 Fig. 3 Fig. 4

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Pulling off the clutch

According to the mounting condition either use the tapped holes in the adjusting nut (10) or in the pressure flange (3, 4) for pulling off the clutch.

In case of the standard design EAS®-E with drive element in bearing, figure 3, the drive element is unscrewed from the pressure flange (3, 4) before pulling it off.

Fitting the limit switch

The arrow of the switch direction on the cover of the housing of the mechanical limit switch points in the direction of the adjusting nut (10) or in stroke direction of the control element (5, 6), figure 5.

Adjust the switch distances for the mechanical and contactless limit switch according to figure 5 or figure 6 respectively.

The axial distance 0,5 mm or 1,5 mm respectively can sensitively be adjusted by means of a hexagon screw, wrench size 7, figure 5 or figure 6 respectively.

mechanical limit switch

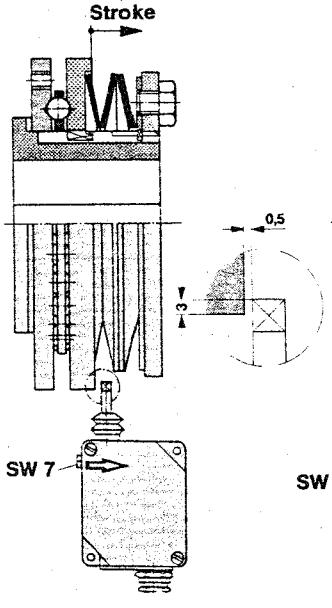


Fig. 5

contactless limit switch

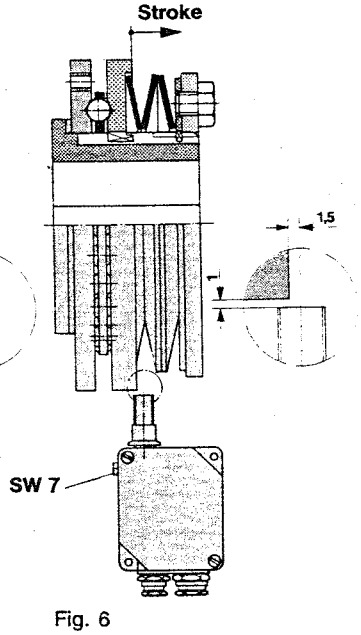


Fig. 6

Disc spring layer configuration

Only the correct disc spring configuration guarantees that the torques mentioned in the catalogue can be achieved and that the torque can be adjusted without problems.

The disc spring configuration is different and depends on the size and type of the clutch.

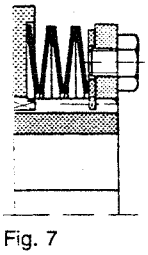
Size 0:

Type 460.40 _ . _	5x single layer
Type 460.50 _ . _	5x single layer
Type 460.600. _	3x double layer

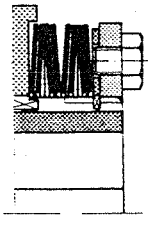
Sizes 1 – 3:

all types	3x single layer

5x single layer



3x double layer



3x single layer

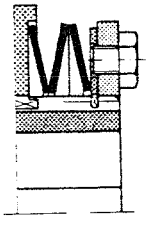


Fig. 7

Torque adjustment

The torque is adjusted by turning the adjusting nut. The torque is increased by clockwise rotation and reduced by counterclockwise rotation (view of adjusting nut shown in figure 8).

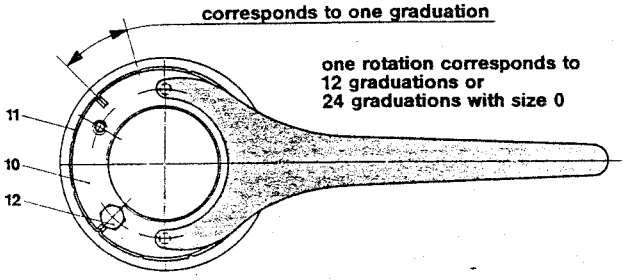


Fig. 8

When the clutch has been assembled, the torque is adjusted:

- grease thread and contact faces of adjusting nut (10), lock washer (11) and hub (1, 2).
- screw on adjusting nut (10) manually until it contacts the disc springs (9).
- continue turning until the 4 notches in the adjusting nut (10) and the notches in the lock washer (11) are in the same position, figure 8.
- turn the adjusting nut (10) with a face wrench by the number of graduations, which corresponds to the required torque, figure 8 (number of graduations is shown in the adjusting diagram).
- screw in the setscrew (12) (notches in adjusting nut (10) and lock washer (11) have to be in the same position).

Adjusting the torque

The overload torque of the clutch is set to 15 Nm for example, and is to be increased to 18 Nm. In the case an overload torque of 15 Nm (25 graduations), and 18 Nm (32 graduations), is achieved according to the torque adjusting diagram, the adjusting nut (10) has to be adjusted in a clockwise direction by the difference of 7 graduations, figure 9.

For that purpose you remove the setscrew (12) and adjust the graduations with a face wrench, figure 8.

Afterwards the setscrew (12) is screwed in again. Here it is essential to ensure that the 4 notches in the adjusting nut (10) and the notches in the lock washer (11) are in the same position.

Torque adjusting diagram

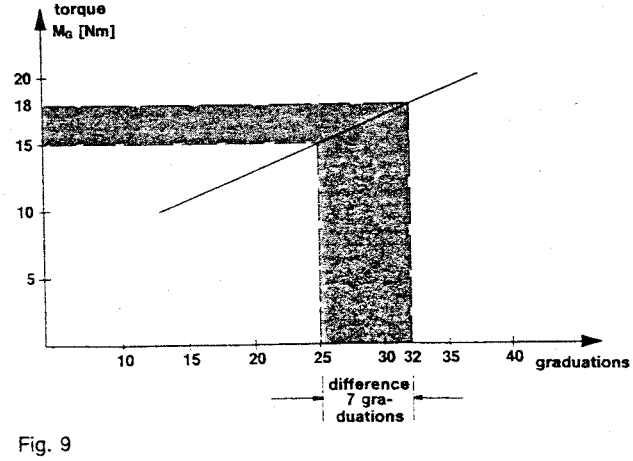


Fig. 9

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GENERAL NOTES ON THE AIR CIRCUIT

The list below explains the colour codes used for the air control circuit.

RED	a	Air for positioning rotary valve actuator for container filling.
	b	Feed for air distributor.
BLUE		Air for cleaning rotary valve actuator, i.e. - no fill.
WHITE	(Natural)	Mains air supply.

C.E.T.O.P. Symbols are used for valve operation. With these symbols, the valve envelope adjacent to the pilot symbol is the operating envelope.

The circuit is shown with a valve in the ready to start position with air supply on.

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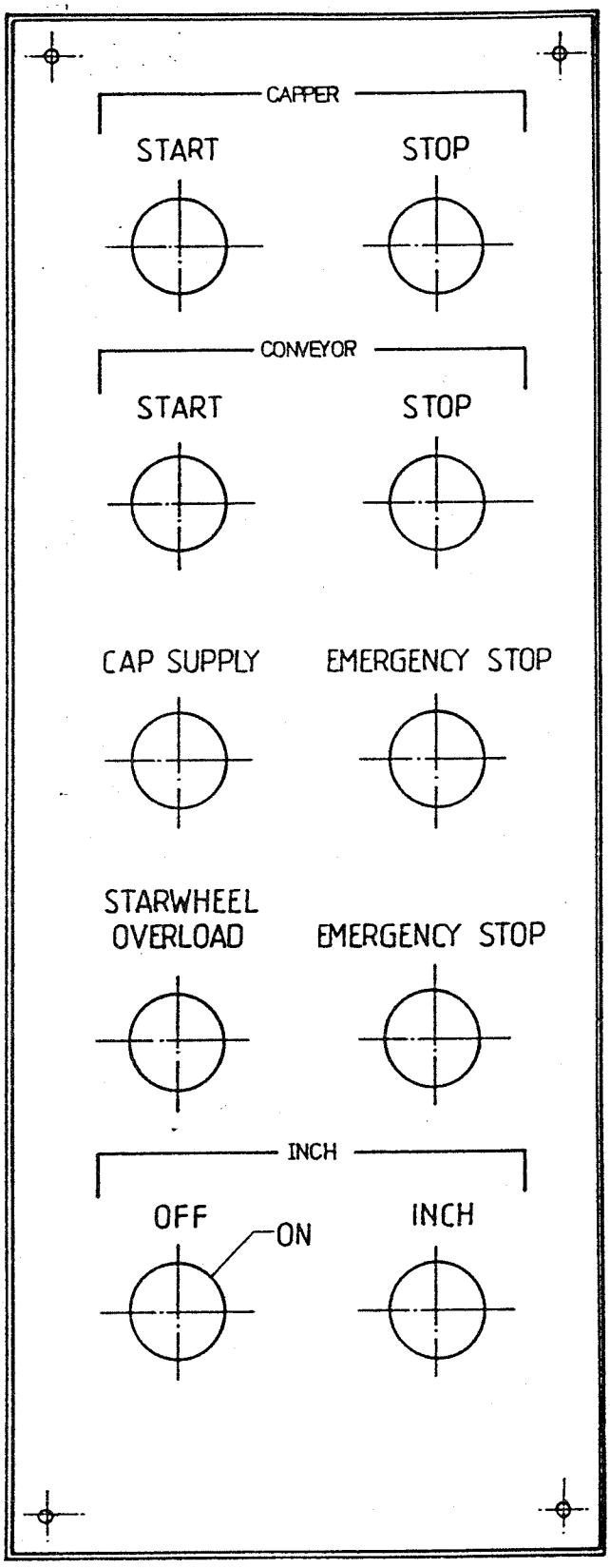
MACHINE CONTROLS

1.	CAPPER START -	Initiates run on PLC and starts elevator.
2.	CAPPER STOP -	Will stop capper and elevator. The machine will stop after a completed index.
3.	CONVEYOR START -	Will start the conveyor.
4.	CONVEYOR STOP -	Will stop the conveyor.
5.	CAP SUPPLY INDICATOR -	Light will come on when there are not enough caps in track.
6.	EMERGENCY STOP BUTTON -	Will immediately remove power from motors and take PLC out of run mode.
7.	STARWHEEL OVERLOAD INDICATOR -	Light will come on when the clutch on the starwheel has tripped out and will emergency stop the machine.
8.	EMERGENCY STOP LIGHT -	Light will come on when emergency stop button is depressed, or when the doors are opened, or when the starwheel overload light is on.
9.	INCH KEY SWITCH -	Is switched on to allow capping to be operational only when yellow inch button is depressed. Usually only used when setting up or changing from one container/cap to another.

MACHINE CONTROLS



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OPERATING PROCEDURE

1. Press the capper start button. This will initiate run on PLC and start the elevator.

2. Pre-load conveyor infeed with containers.

3. Pre-load elevator hopper with caps.

4. Press the conveyor start button. The conveyor will begin to run.

5. Press the capper start button again. The capper will begin to run. When container/cap supply is sufficient.

6. The speed at which the MASTERCAP will run can easily be changed by means of a handwheel located at the lower end of the main motor drive unit. The speed adjustment control must only be operated with the motor running. Access via a small door in the right hand panel.

NOTE:- If the machine will not run, check the following conditions:-

1. That enough containers have passed the infeed sensor.

2. That the containers have cleared the outfeed sensor.

3. The cap supply is below the low level sensor.

Twin speed switch, when fitted, is located top front on the gearbox.

CAP DETECTION STATION

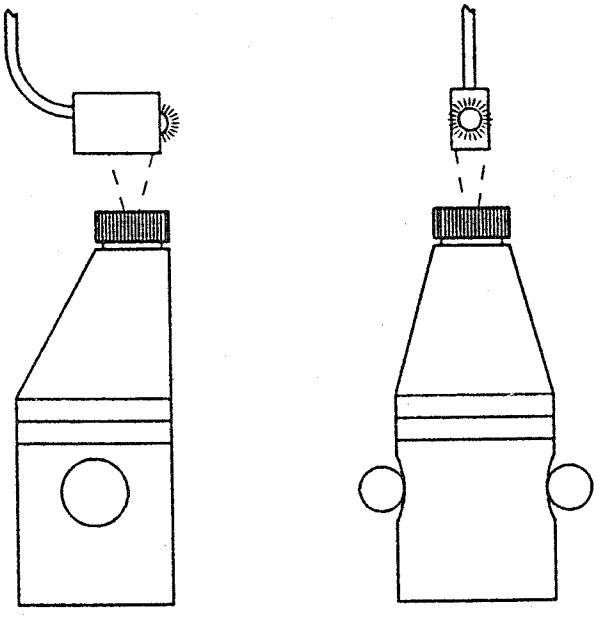
1. Set up height of detector to suit container. The sensor beam should form a focused circle on top of the cap.

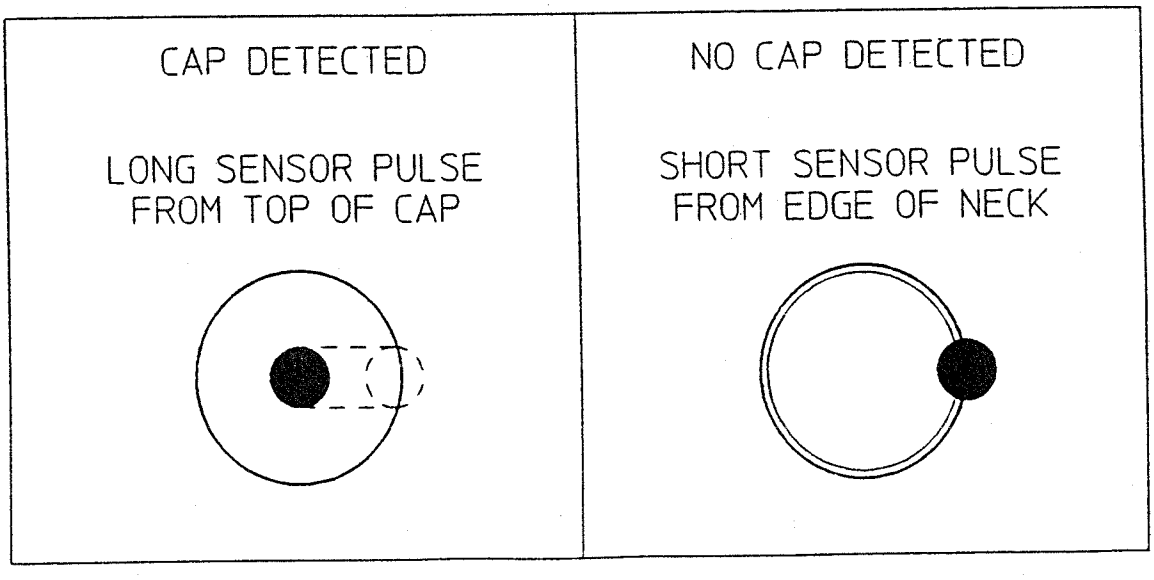
2. When machine is started, detection is automatically operative.

3. When a container without a cap is detected, the capping machine and conveyor will stop. There will also be a flashing beacon.

4. To stop alarm, press any stop button.

5. Re-start conveyor and machine. This automatically resets 'NO CAP DETECTION'.





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MACHINE CHANGE PARTS

The MASTERCAP is supplied with quick bolt on change parts that keep changeover time to a minimum. The change parts are dependent on the size and type of container/cap.

The change parts consist of:-

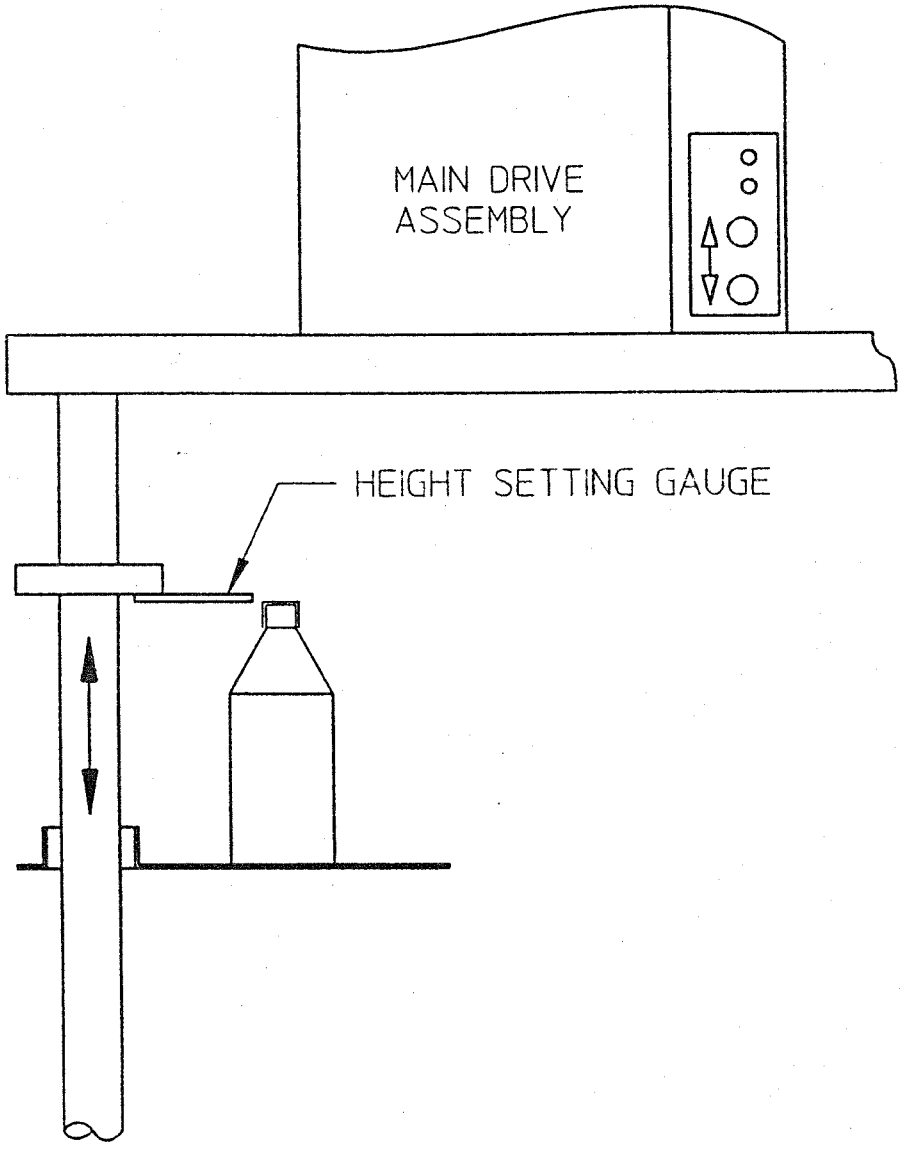
1. TRACK - Transfers cap from elevator/sorter to transfer arm.
2. TRANSFER ARM - Transfers the cap from the end of track to beneath the capping chuck.
3. CHUCK - Grips the cap to screw on or press the cap in the container.
4. STARWHEEL - Indexes the container from the conveyor to beneath the chuck to be capped.
5. BACK GUIDE - Keeps the container securely located in its starwheel pocket.

FITTING CAP TRACK

Mount cap track to elevator/sorter and to mounting bracket on main drive assembly.

BOTTLE HEIGHT ADJUSTMENT

Set the main capping drive assembly to the correct height using the 'Up' and 'Down' controls of the lifting mechanism. The height setting gauge should just touch the top of a capped container.



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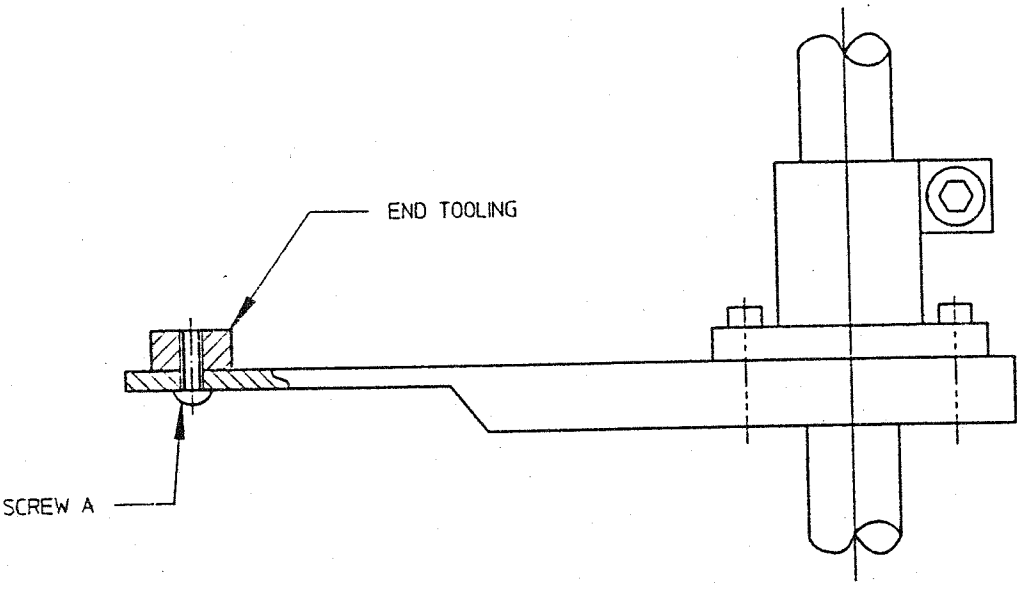
CHANGING TRANSFER ARM TOOLING

1. Remove screw 'A' from end tooling.
2. Remove end tooling.
3. Replace end tooling to suit cap.
4. Replace screw 'A'.



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TRANSFER ARM ADJUSTMENT

1. With the inch key switch in the ON position, inch the drive assembly until the transfer arm is beneath the chuck. The chuck is in its down position to pick up cap. (Position 2, fig. 1)

2. With the cap located on the end of transfer arm, raise the arm until the cap is sufficiently in the chuck and tighten transfer arm clamp.

3. Continue to inch the drive mechanism until the transfer arm has returned to its furthermost point past the end of the track.

4. Adjust the height of the end track assembly, allowing a cap to fall onto the transfer arm tooling. Adjust the pitch of the miniature air cylinders to suit the diameter of the cap. (See fig. 2)

5. Correct height adjustment of the transfer arm, should give both smooth pick up out of the end track and enables the chuck to pick the cap off the transfer arm.

TRANSFER ARM ADJUSTMENT

POSITION 1 - Chuck fully up.

POSITION 2 - Chuck down to pick up cap.

POSITION 3 - Chuck up to clear transfer arm.

POSITION 4 - Chuck in down position with cap screwed on.

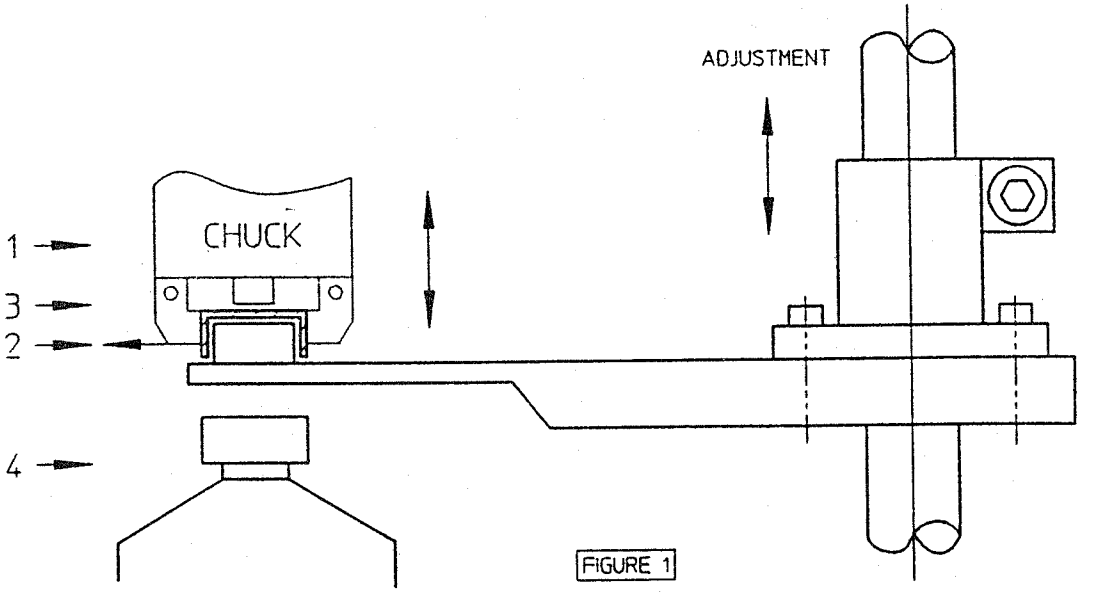

FIGURE 1

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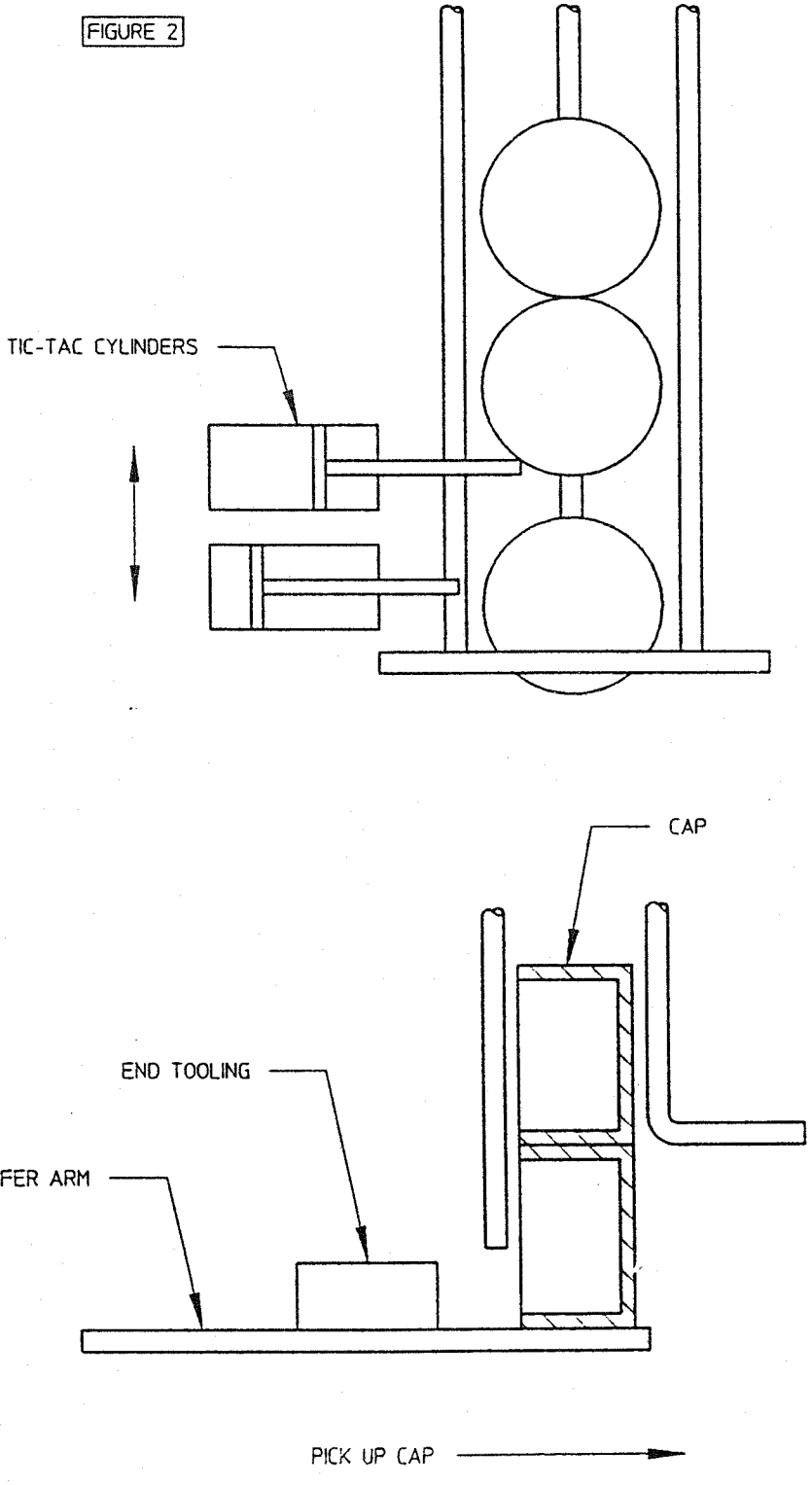
END TRACK ASSEMBLY

FIGURE 2



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STARWHEEL & BACK GUIDE
CHANGE PARTS - ADJUSTMENT & REMOVAL

TO REPLACE STARWHEEL:-

1. Remove screws 'B'.
2. Replace with new starwheel.
3. Replace screws 'B' and tighten.

TO ADJUST STARWHEEL HEIGHT:-

1. Loosen screws 'A'.
2. Adjust to height required & re-tighten screws.

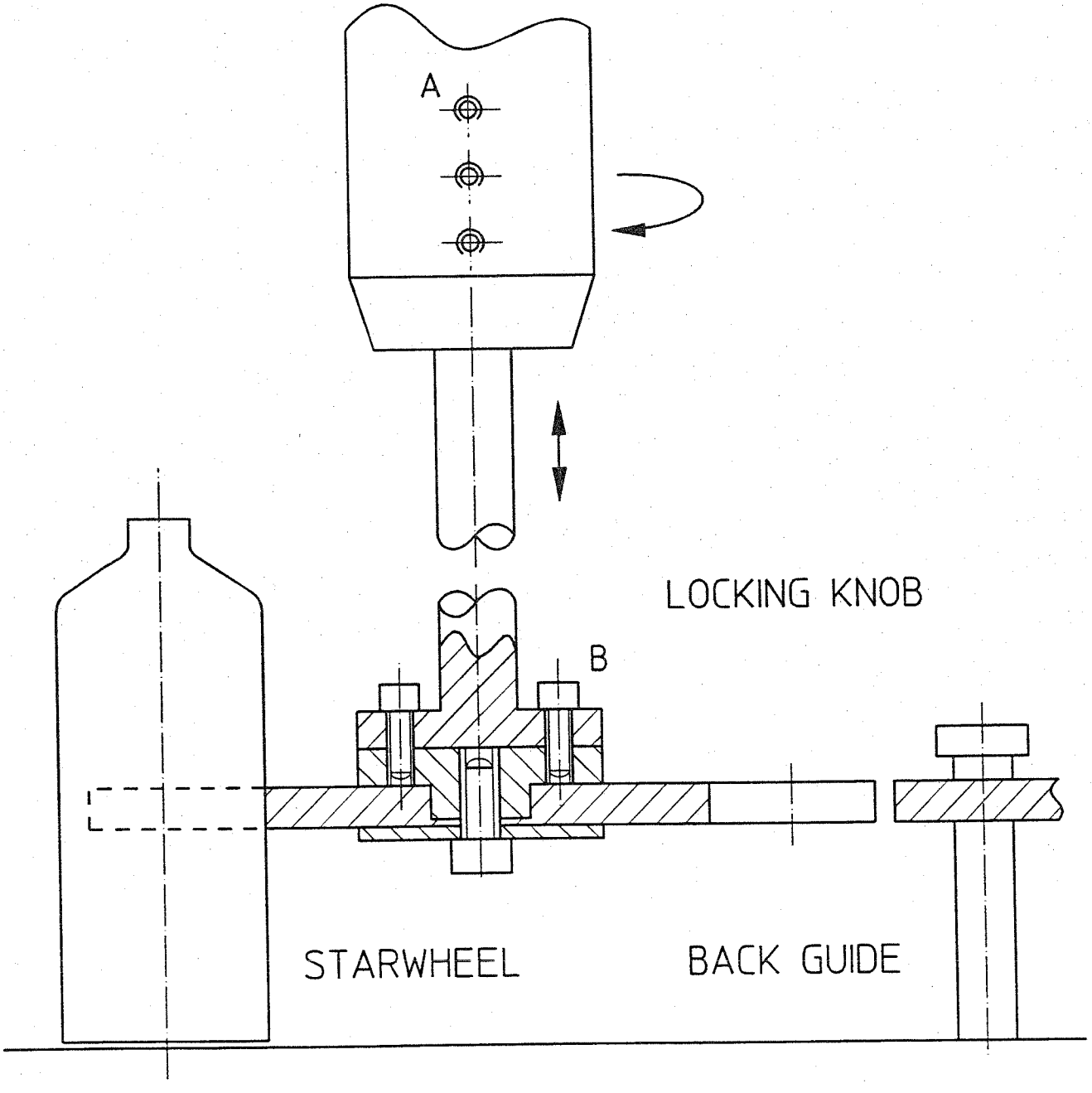
TO REPLACE BACK GUIDE:-

1. Remove locking knobs.
2. Change the length of spacers if required.
3. Replace new back guides.
4. Replace locking knobs and tighten.

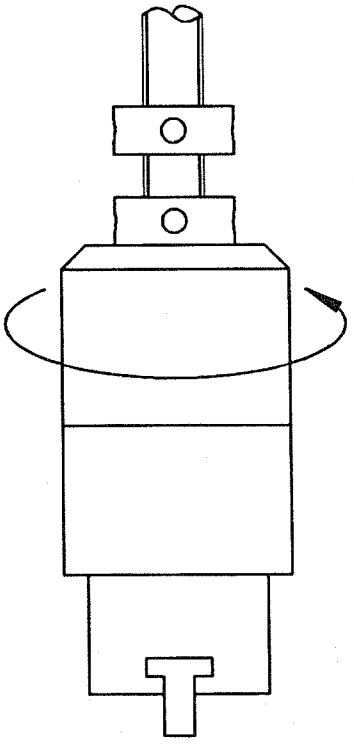
NOTE:-

The starwheel should be level with the back guide and should locate about the middle of the container. If a large container is being capped a double starwheel and back guide is supplied.

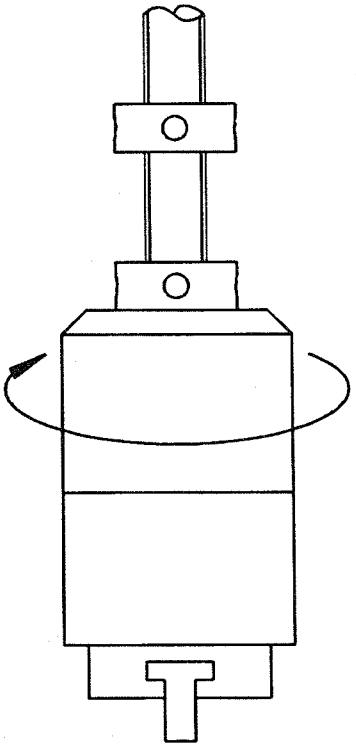
STARWHEEL AND BACKGUIDE CHANGE PARTS ADJUSTMENT AND REMOVAL



ADJUSTMENT OF TORQUE SETTING
MAGNETIC DRIVE CAPPING CHUCK



TO DECREASE THE AMOUNT OF TORQUE, SLACKEN TOP NUT. TURN MAIN CHUCK BODY ANTI-CLOCKWISE. RE-TIGHTEN TOP NUT.



TO INCREASE THE AMOUNT OF TORQUE, SLACKEN TOP NUT. TURN MAIN CHUCK BODY CLOCKWISE. RE-TIGHTEN TOP NUT.

BELT DRIVE FOR CHUCK

Belt drive for chuck assembly when the infeed is from the right - when facing the front of the machine, starwheel index is anti-clockwise. (See fig. 1)

Belt drive for chuck assembly when the infeed is from the left - when facing the front of the machine, starwheel index is clockwise. (See fig. 2)

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BELT DRIVE FOR CHUCK

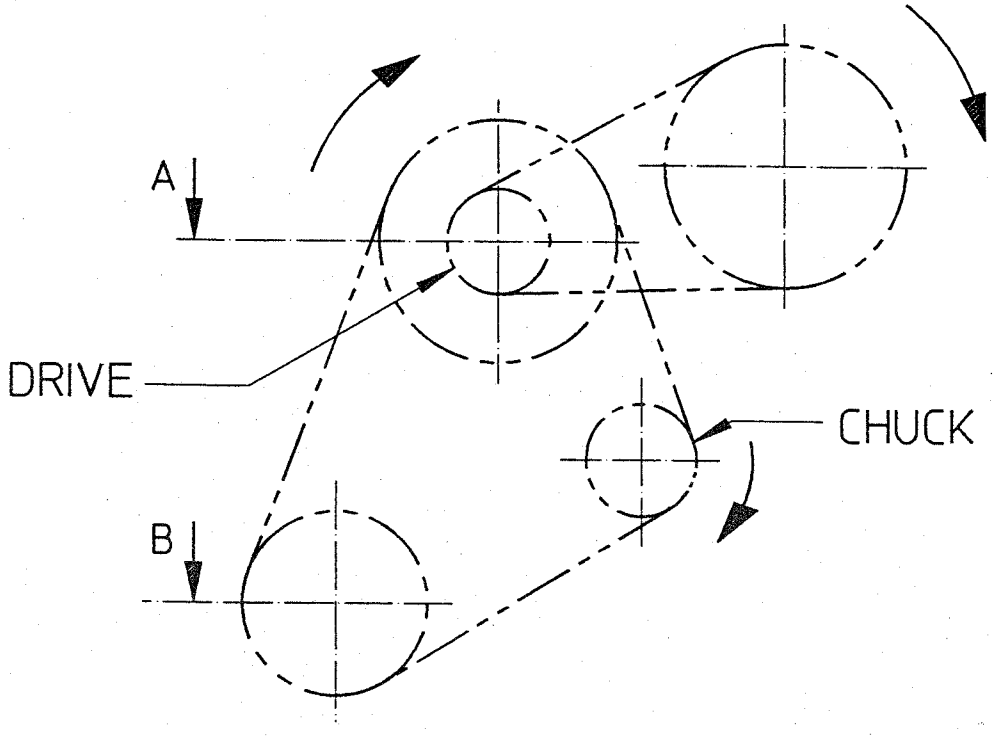


FIG 1

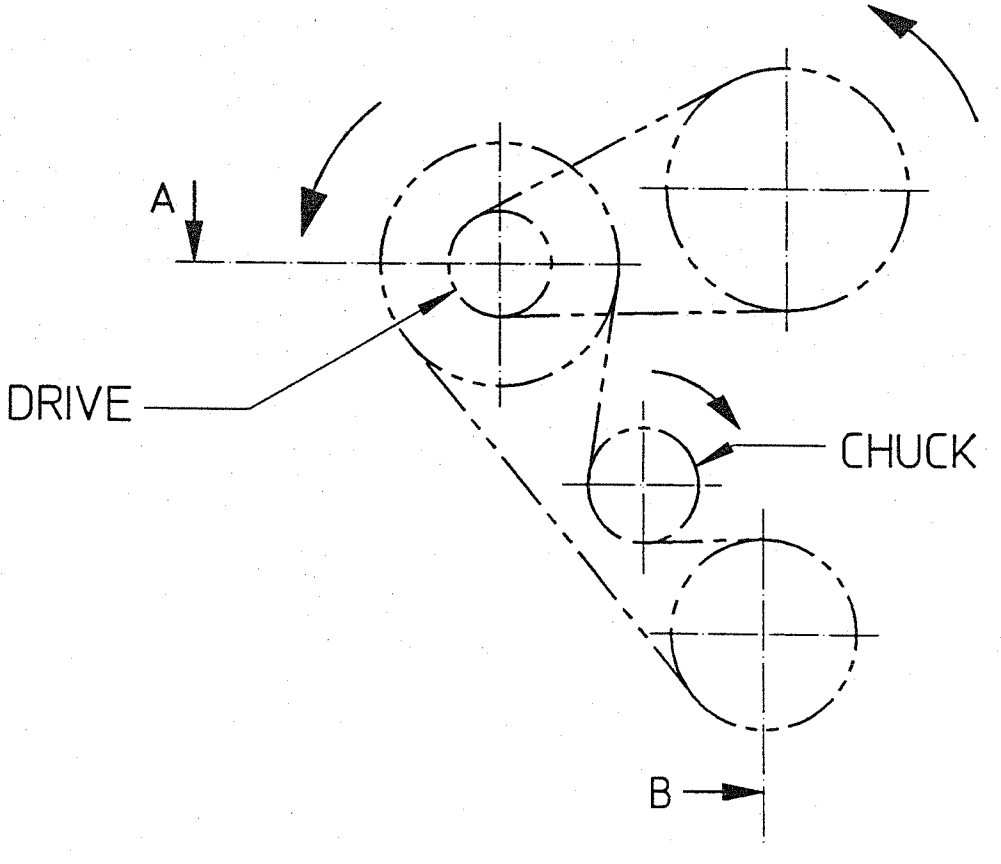
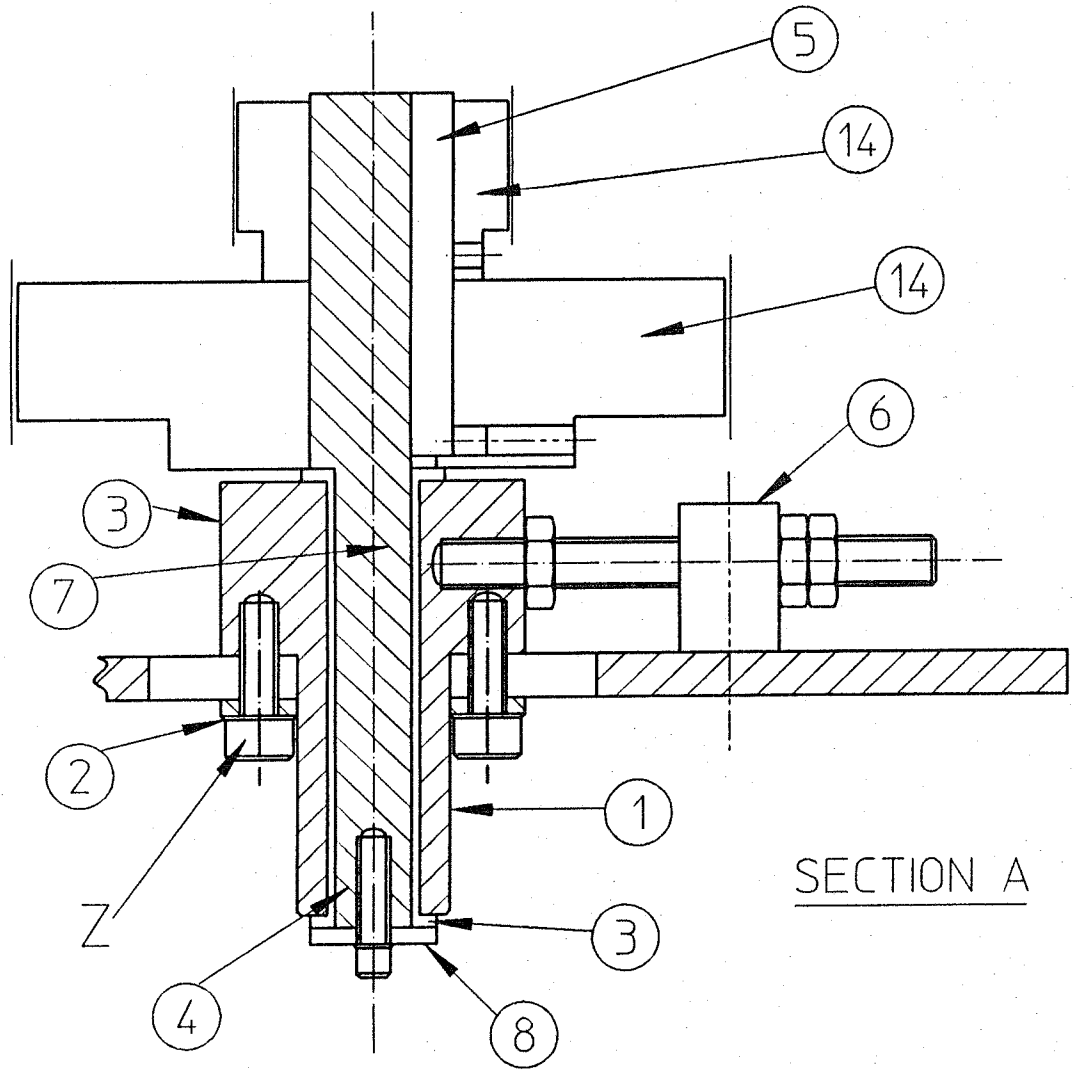


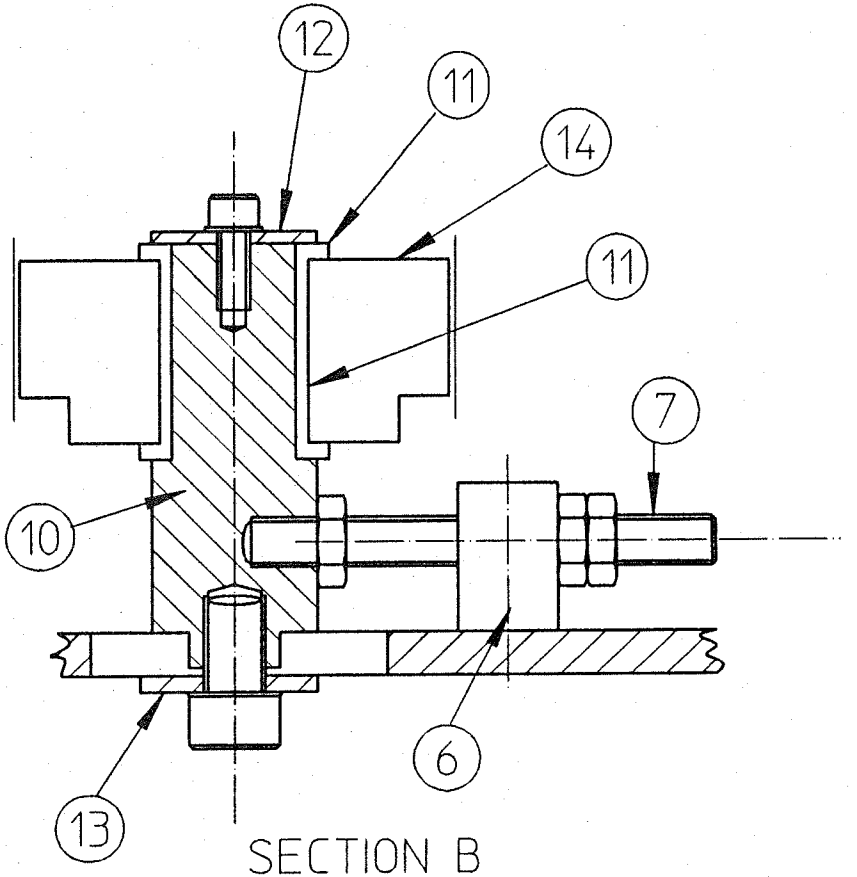
FIG 2

TO TENSION OR REPLACE DRIVE BELTS

1. Loosen clamping screws 'Z'.
2. Loosen M12 locknuts.
3. Replace or tension drive belt.
4. Tighten locknuts and clamping screws.



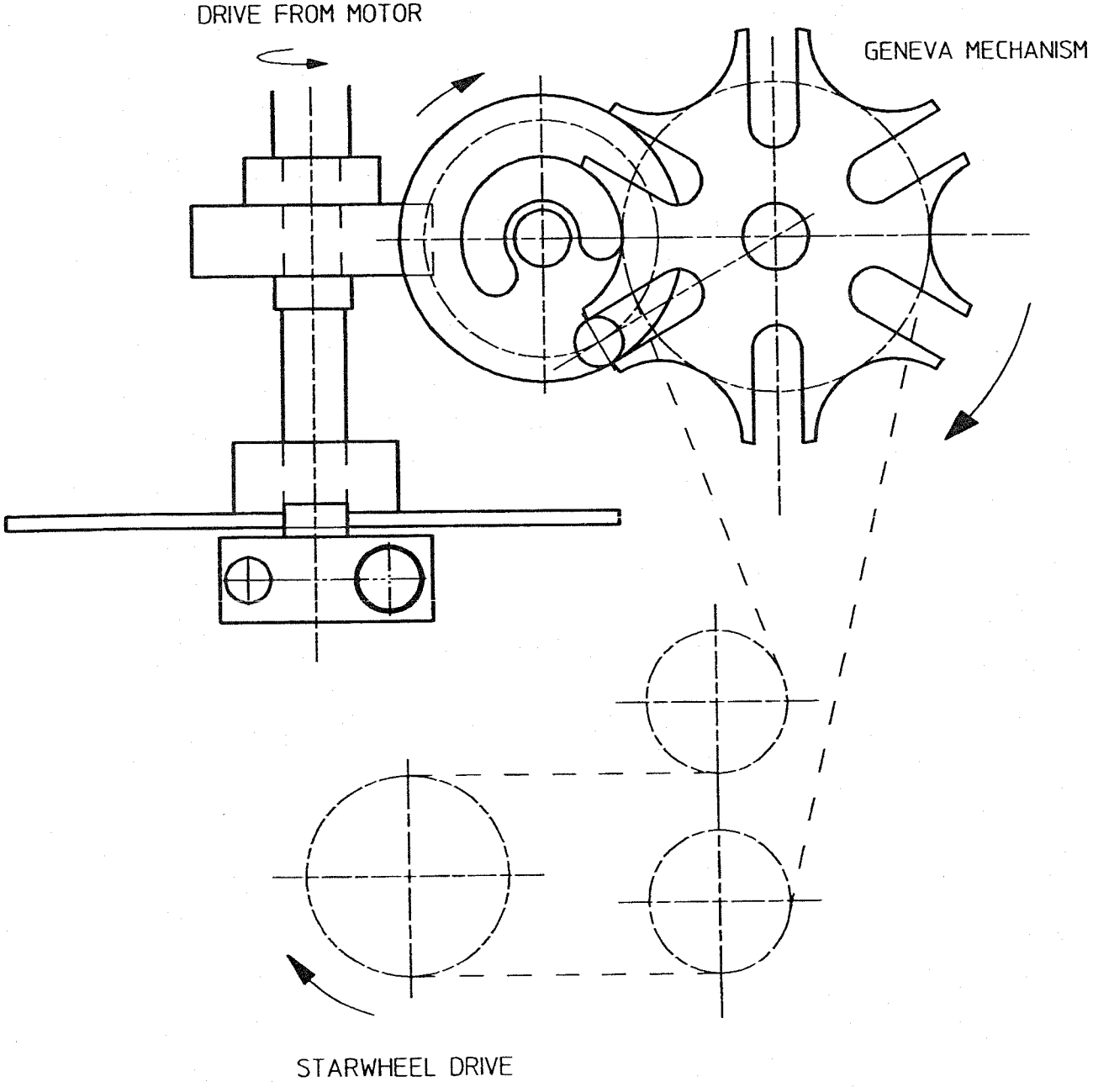
SECTION A



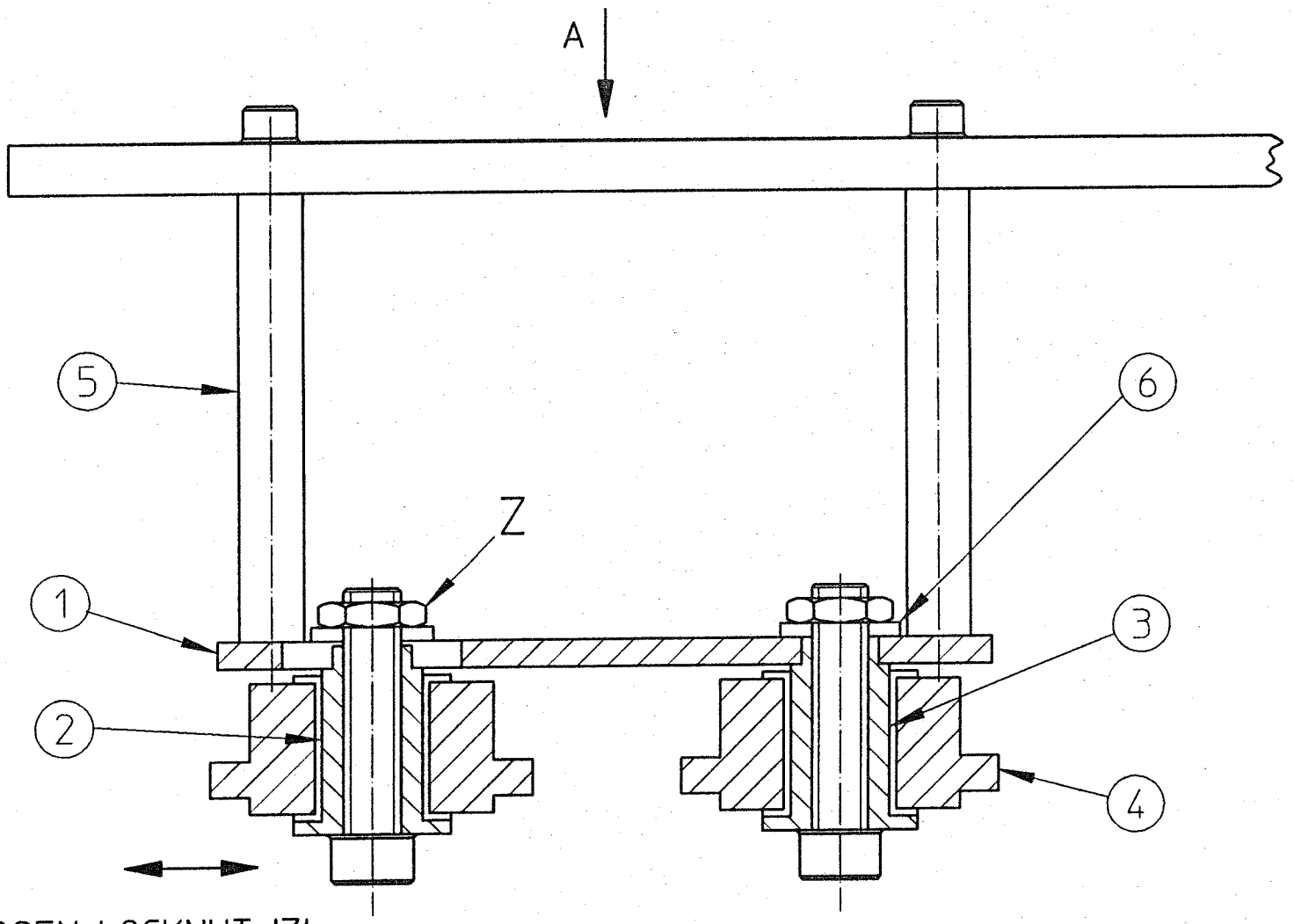
SECTION B

DRG No. C3-5421

MAIN CHAIN DRIVE & INDEXING MECHANISM FROM MOTOR TO STARWHEEL



MASTERFIL LIMITED
17 Farmbrough Close, Stocklake, AYLESBURY, Bucks. HP20 1DQ. England
Tel:- 01296 425001 Fax:- 01296 425002



1. LOOSEN LOCKNUT 'Z'
2. TENSION CHAIN
3. TIGHTEN LOCKNUT

CHAIN DRIVE ADJUSTMENT

DRG No C3-5417

MAINTENANCE

DAILY:-

1. Check lubricator level & refill.
2. Drain water separators.
3. Check for any leaks.
4. At the end of the days run, clean all drip trays and generally clean machine and conveyor.

WEEKLY:-

1. Switch off air, remove water separator bowl and filter then clean with paraffin, ensure that the filter element is free from sediments.
2. Grease all drive system.
3. Check oil in conveyor drive unit and refill if required.

Instructions

WARNING
These units are for use in Industrial Compressed Air Systems only. They must not be used where pressure or temperature may exceed rated operating conditions. See specifications.

Form No. ENI 120f 5/81

General Purpose Compressed Air Processing Equipment

®OLYMPIAN PLUG-IN-SYSTEM

Series 13 1/4, 3/8, 1/2, 3/4 * (8 mm, 10 mm, 15 mm, 20 mm) NOMINAL BORE PIPING INSTALLATIONS

* Overported 3/4 (20mm) End Connectors available for 3/4 piping installations

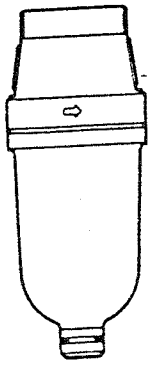
Filters, Filter-Regulators, Lubricators

With Transparent Bowl: Max. Pressure 10 bar (150 p.s.i.) Max. Temp. 50°C (120°F)
With Metal Bowl: Max. Pressure: 16 bar (250 p.s.i.) Max. Temp. 80°C (175°F)

Pressure Regulators

Max. Line Pressure 20 bar (300 p.s.i.) Max. Temp. 80°C (175°F)

PRINCIPAL COMPONENTS

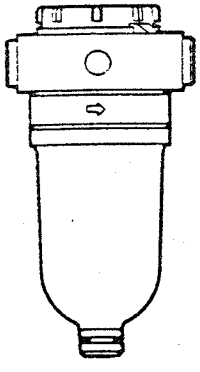


BASIC UNITS

Filter, Regulator, Filter-Regulator or Oil-Fog or Micro-Fog Lubricator. All units have plain UN-THREADED outlet ports and 'O' ring seals.

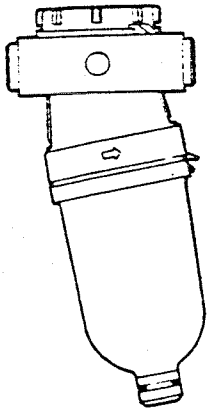
UNIDAPTORS

Single, Double or Treble Unidaptors with selected pipe thread inserts fitted ready to receive Basic Units. Unidaptors can be installed in a pipe system being fitted or extended before final selection of Basic Units is made.



REDIMOUNTS

Comprise Single Unidaptor with selected Basic Unit installed ready for immediate assembly onto a machine or into a pipe system.



INSTALLATION

See page 3.

INSTALLATION NOTES

Ensure that sufficient clearance is left below the pipe centre line to permit units to be installed and removed easily.

ARROWS ON BASIC UNITS AND UNIDAPTOR INDICATE DIRECTION OF AIR FLOW — an interference fit prevents possibility of inserting the units with air flow in wrong direction. Do not restrict flow with undersize piping — blow through to remove foreign matter. It is recommended that the complete REDIMOUNT or CONTROL UNIT be fitted direct into the pipework as an assembly as near as possible to the air operated equipment being served. In certain instances however, where, for example, there is not room to rotate the unit onto the pipe, unplug the unit(s) from the assembly and fit the Unidaptor first. Ensure dirt does not enter the gaps between the yoke and inserts. Once installed, plug the basic units back into the unidaptor making sure that the 'O' ring seals (with smear of grease) are correctly in position at the inlet and outlet ports.

It is important to note that whilst Olympian Units can be assembled in many different configurations that filters are installed upstream of regulators and lubricators, serving the same device,

i.e. first clean and dry the air, then regulate it to the required working pressure and then add the required amount of lubricant.

Connect a short straight drain pipe and connector, both 5mm (3/16") minimum bore, to the G1/8 female pipe thread at the bottom of automatic-drain filters and filter-regulators.

Series 13 Lubricators are NOT recommended for use on MISTCOOL or MACHINE LUBRICATION (bearings, gears .....) nor as Downstream Lubricators. These Lubricators are not designed for full capacity reverse flow.

Fill lubricators with oil to level marked on bowl.

Lubricant Specification:

Recommended list of oils is available, preferably consult maker of device to be lubricated. Compound oils containing soap, fillers etc. are not recommended. Do not use phosphate ester based fire resisting compressor oils as oil carry over can damage the 'O' rings, seals and other components fitted to Norgren units and other pneumatic equipment.

FILTERS, FILTER-REGULATORS AND LUBRICATORS:

**To clean plastic bowls wash in SOAPY WATER only. DO NOT USE SOLVENTS AS THEY WILL DESTROY THE BOWLS.

**Attention is drawn to BS 6005: 1981 Appendix A giving additional important guidance on installation and maintenance.

Note: If Orientable Metal Bowls are fitted the sight-glass can be positioned at any convenient point within a maximum of one revolution of the bowl from its fully tightened position.

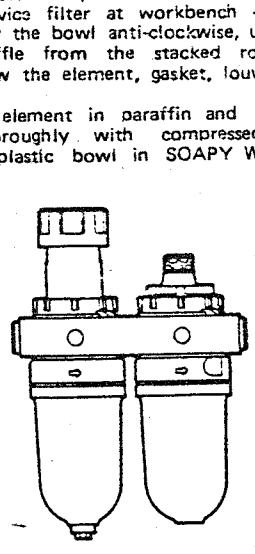
OPERATION NOTES

FILTERS

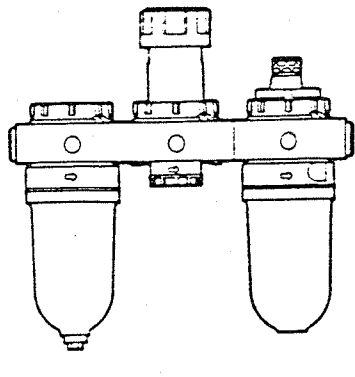
On automatic-drain models no adjustments are necessary. On manual-drain filters drain bowl regularly — before moisture level reaches baffle. Clean filter element and automatic-drain protective screen regularly. If required automatic-drain models can be manually tripped by pushing a blunt ended rod up through the bottom of the mechanism to completely purge the bowl.

To remove the filter element shut off the air supply (bleed off pressure from unit unless exhaust type Shut-Off Valve fitted) and unplug filter from the Unidaptor. Replace with standby unit and service filter at workbench - - - Unscrew the bowl anti-clockwise, unscrew the baffle from the stacked rod and withdraw the element, gasket, louvre and 'O' ring.

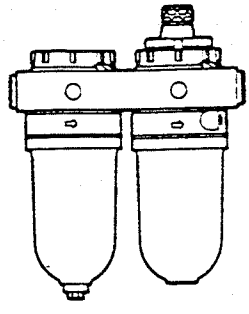
Wash element in paraffin and blow out thoroughly with compressed air. Clean plastic bowl in SOAPY WATER



LUBRO CONTROL UNIT
in double yoke



COMBINATION UNIT
in treble yoke



VITALIZER UNIT
in double yoke

SERVICING

In general it is recommended that units be unplugged for servicing:

TO REMOVE A UNIT

1. Shut off the compressed air — this is merely a 1/4 turn of the Exhaust Shut-Off Valve if fitted — alternatively use the nearest valve upstream and vent the line.
2. Remove pressure gauge (if fitted).
3. Unscrew the clamp ring to force the unit out of the Unidaptor.
*4. Inspect the unit.

TO REPLACE A UNIT

1. Position the clamp ring under the yoke retaining lugs.
2. Check unit 'O' ring seals in position. Check arrows on unidaptor and unit run in same direction.
3. Plug in unit. Screw up clamp ring hand tight.
4. Replace pressure gauge (if fitted).
5. Turn on air supply.

*It is recommended that units to be serviced are replaced with standby units drawn from store. The servicing can be carried out at the workbench when time permits and the unit put in store for future use.

YOKES & UNIDAPTORS

Special Assemblies

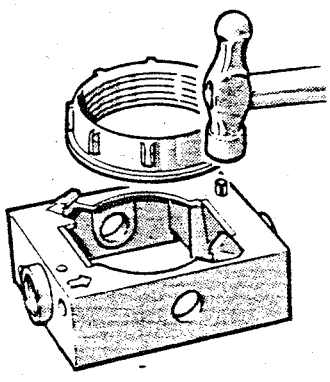
1. Remember to inspect all 'O' rings and to add smear of grease on assembly.
2. All nuts used for construction are 'trapped' within the yoke eliminating requirement for spanners.

UNIDAPTOR ASSEMBLY

Fit selected threaded inserts into the yoke lining up insert groove with retaining pin hole in yoke. Tap in retaining pins to secure.

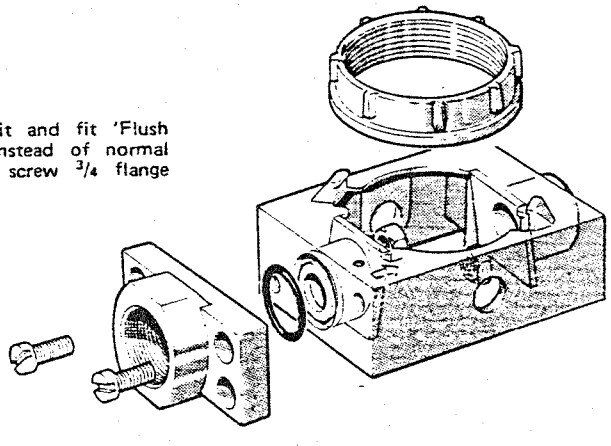
To change an insert tap out retaining pin from underside with dowel and withdraw.

Special Tube Fittings — fit instead of threaded insert in same manner.



3/4 PORTS

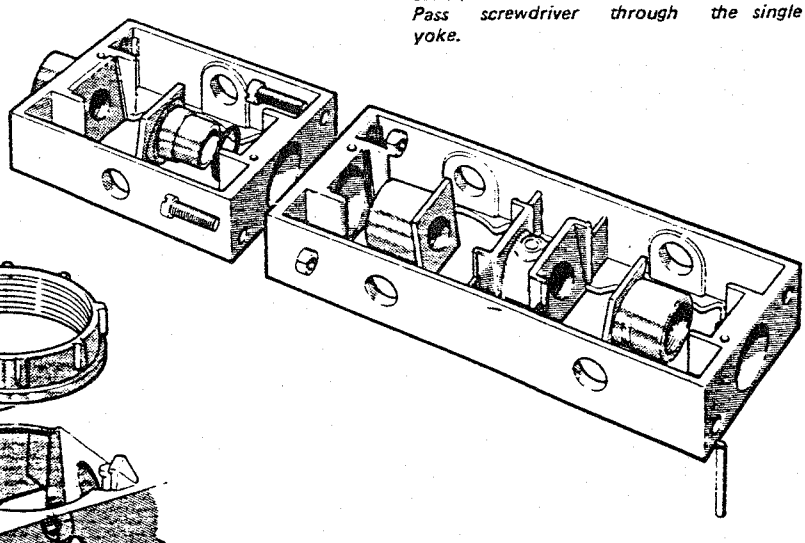
Obtain appropriate Kit and fit 'Flush Insert and 'O' Ring' instead of normal threaded insert and screw 3/4 flange direct to yoke.

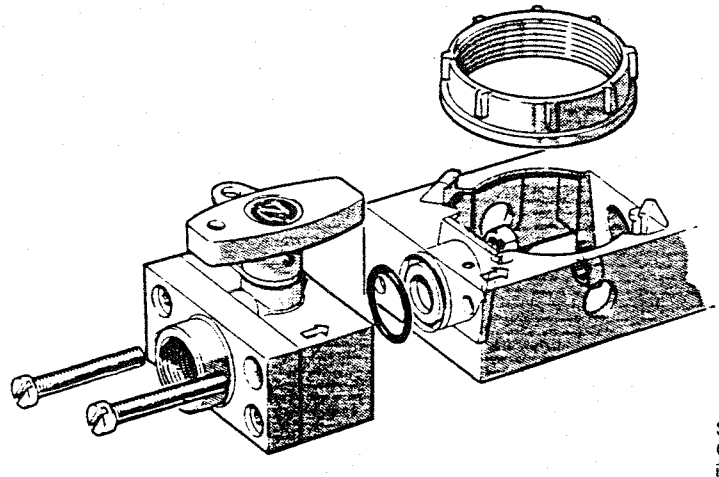


TREBLE UNIDAPTOR

Bolt single and double yokes together using nuts and screws and special interconnecting inserts to make the seal. (Kit 18–026–996)

Pass screwdriver through the single yoke.





SHUT-OFF UNIDAPTOR

Order selected kit and bolt valve to inlet of yoke using flush insert and 'O' ring to make the seal.

REGULATORS

Before admitting air pressure lift the snap action lock (a) and turn adjusting knob anti-clockwise until it is free of spring loading. Turn on air supply and turn adjusting knob clockwise until desired pressure is shown on gauge. Lock setting by pushing down snap action lock.

Tamper-proof setting if required using lockwire and lead seal.

Remember the pressure gauge passes through the front or rear access port in the unidaptor. The other gauge port is plugged.

FILTER-REGULATORS

Refer to individual instructions on Filters and Regulators.

LUBRICATORS

Series 13 Lubricators operate at air flows from 3 c.f.m. (1.5 dm^3/s) approx. at 90 p.s.i. (6 bar).

To Replenish Oil:

Micro-Fog Type: Shut off air, remove filler cap (b) and fill to level mark. Replace cap.

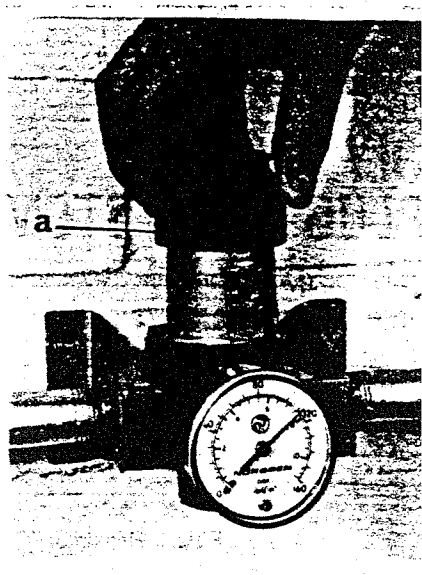
It is recommended that an Olympian exhaust type shut-off valve be fitted upstream for this purpose.

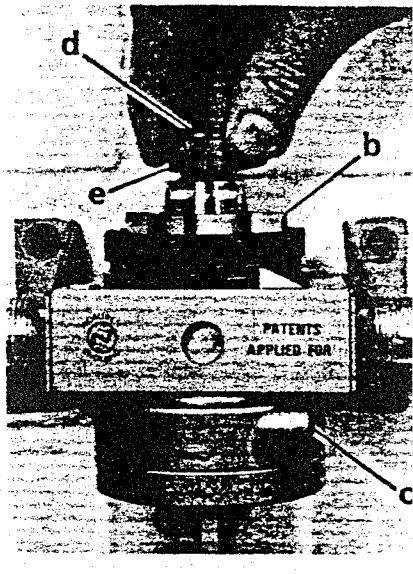
Oil-Fog Type: Depress vent valve (c) and keep depressed until filler cap unscrewed. Fill to oil level mark. Push vent valve and keep depressed when replacing cap.

Adjustment:

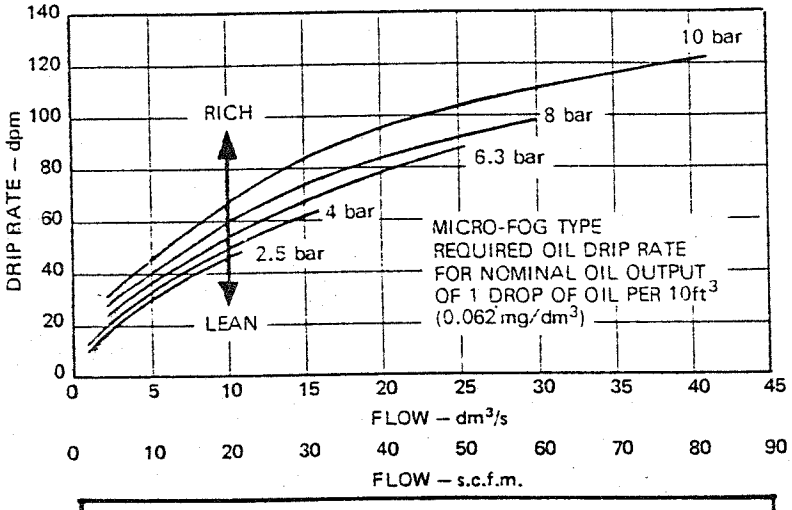
To set on installation turn on air supply and rotate adjusting knob (d) on top of the lubricator sight dome to select required drip rate — locking ring (e) must be in UP position. Rotation clockwise reduces the drip rate and vice versa. The drip rate automatically adjusts with air flow variations. Push locking ring down to lock setting — wire and lead seal if you require to tamperproof.

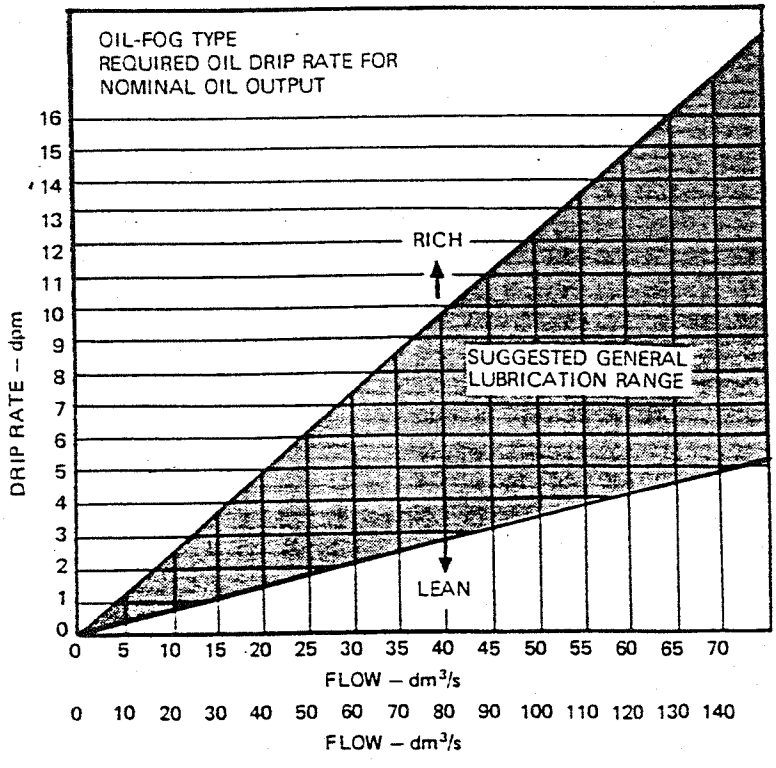
With Micro-Fog lubricators only a small proportion of the oil passing through the sight dome enters the air line as Micro-Fog — the remainder returns to the bowl.

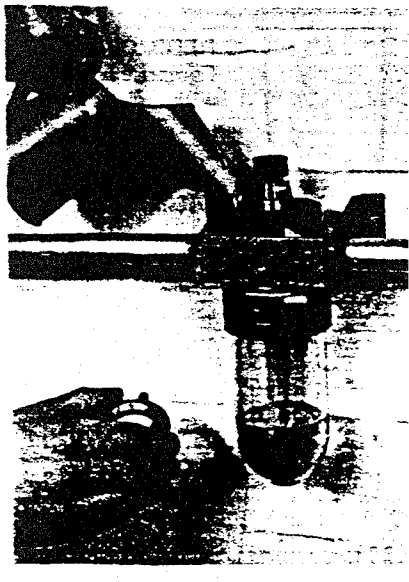


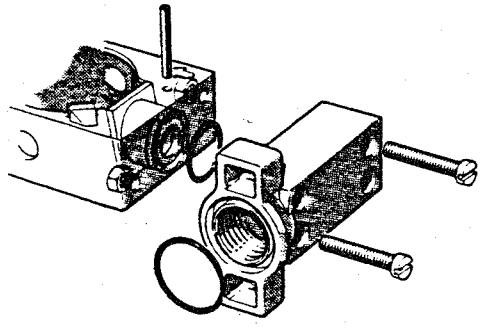


LUBRICATOR PERFORMANCE



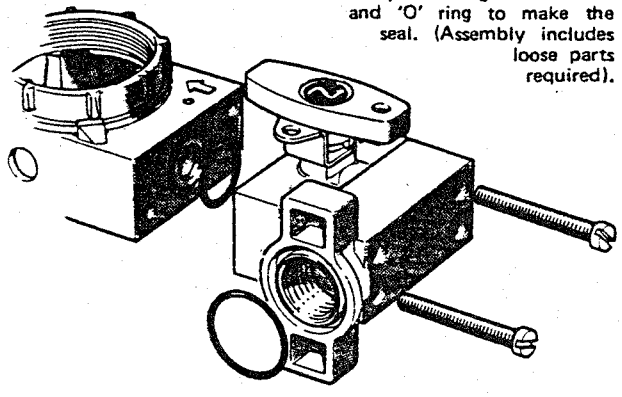


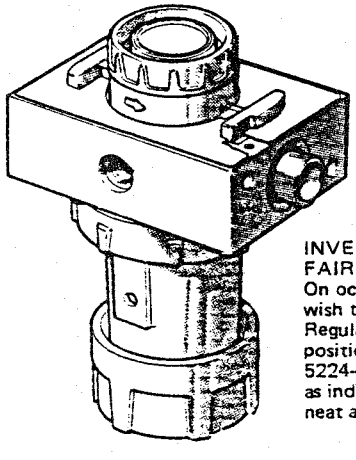




REAR ENTRY BRACKETS
Obtain single (18-026-995) or double (18-026-997) Rear Entry Bracket Kit and bolt to inlet and/or outlet port(s) of yoke as required using flush insert and 'O' ring to make the seal.
Use 8mm screws to fix to flat surface on machine ensuring 'O' ring in position.
Bracket is tapped G¾ for alternative fixing.

SHUT-OFF UNIDAPTOR WITH REAR ENTRY BRACKETS
Bolt Rear Entry Shut-Off Valve Assembly direct to yoke using flush insert and 'O' ring to make the seal. (Assembly includes loose parts required).

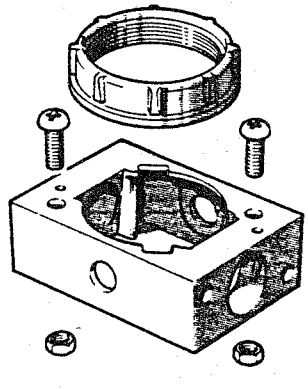




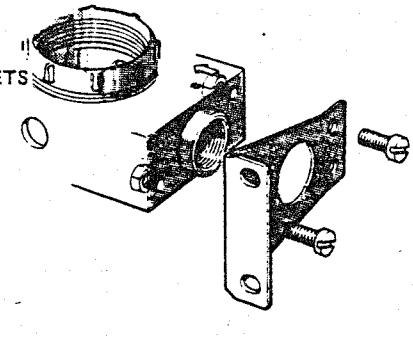
INVERTED REGULATOR—FAIRING PLATE
On occasion you may wish to fit the Redimount Regulator in inverted position. Fairing Plate 5224—97 can be fitted as indicated to give neat appearance.

REGULATOR PANEL MOUNTING
Obtain Kit 13—003—995. Assemble Unidaptor from Yoke provided by fitting preferred inserts in normal manner. Position Regulator into Unidaptor and insert through 60mm ($2^3/_8$") diameter panel* cut out. Rotate to obtain best position for pipe run and screw up panel mounting ring. Use the Yoke as a template to drill the two attachment screw holes in the panel and fit screws and nuts. *Kit comprises Special Yoke, Panel Mounting Ring and Securing Screws and nuts.*

**Maximum Panel thickness 6mm ($^1/_4$")*



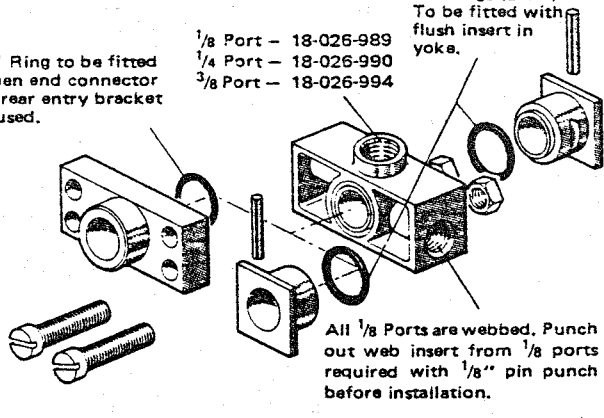
WALL MOUNTING BRACKETS
Obtain Kit 18-001-987.
Slip brackets over insert bosses and bolt to unidaptor or valve. Kit 18-001-985 should be used for ¾ ported unidaptors and for all assemblies using quart bowls.



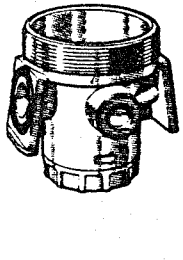
'O' Ring to be fitted when end connector or rear entry bracket is used.

'O' Rings (2 off) To be fitted with flush insert in yoke.

⅛ Port – 18-026-989
¼ Port – 18-026-990
⅜ Port – 18-026-994



All ⅛ Ports are webbed. Punch out web insert from ⅛ ports required with ⅛" pin punch before installation.



BLANKING PLUG 18-999-108
It is possible to fit a blanking plug instead of a basic unit into a unidaptor—the air passes direct from the inlet to the outlet through a bore in the plug.

PORTING BLOCK
G⅛, G¼ or G⅜ Top Take Off Porting Blocks may be fitted to End Connectors, Rear Entry Manifolds, Shut-Off Valves or Rear Entry Shut-Off Valves, Specify. Ensure that correct length screws are used to suit particular application.
Serves several purposes, gauge reading ports, spacers etc. Particularly convenient if it is required to pipe away instrument or other air for auxiliary prior to lubricator.

Recommended Lubricating Oils

Form No. ORGc 1/80

RECOMMENDED LUBRICATING OILS – GENERAL PNEUMATIC EQUIPMENT

Satisfactory operation of Norgren Air Line Lubricators and effective lubrication depends upon the proper selection of lubricating oils. Most lubricating oils, preferably having good corrosion and oxidation resistant properties which conform with the following classifications, are suitable. Accordingly, whilst the oils listed have been tested by us and found satisfactory, they represent only a number of the large range of suitable oils available and your regular oil supplier will give you guidance where any doubt exists. Compound oils containing graphites, soap, fillers etc., are not recommended for Micro-Fog Lubricators. Certain specialised lubricants, particularly synthetic ones, may contain compounds which are not compatible either with the transparent bowl of the Norgren Lubricators, or with the internal 'O' Rings and Seals of Norgren units or other manufacturers equipment. Before using such lubricants, consult IMI Norgren Ltd. IT IS ESSENTIAL TO ALWAYS CONSIDER THE RECOMMENDATIONS OF THE MANUFACTURER OF THE UNIT TO BE LUBRICATED.

HIGH SPEED PNEUMATIC TOOLS

For the lubrication of high speed pneumatic tools, high speed spindles and other light duty requirements, it is recommended that lubricating oils be used which have a viscosity below 50 cSt at 20°C.

		VISCOSITY				SEAL COMPATIBILITY INDEX
OIL COMPANY	GRADE OF OIL	ISO 3448 cSt @ 20°C		REDWOOD No 1 @ 70°F	DEGREES ENGLER @ 20°C	BS4832
CASTROL	Hyspin AWS10	10	18.5	80	2.8	25
B.P.	HLP 10 (150)	10	18.9	79	2.76	16
SHELL	Tellus R10	10	19.5	80	2.85	15
FINA	Cirkan 10	10	21	85	2.9	17
TEXACO	Spintex oil 10	10	22.8	95	3.2	34
TOTAL	Azolla VG 10	10	23	92	3.17	16
DUCKHAMS	Zeroflo 2	11.3	25	102	3.4	14
R.D. NICOL	RDN 45	15	26.5	105	3.6	26
CENTURY	P198	15	28	115	3.75	26
STERNOL	Albatross 15	15	28	120	3.8	17
ROCOL	MO-4	15	29	120	3.9	20
MOBIL	Gargoyle Arctic Oil Light	15	31.5	122	4.1	17
ESSO	Nuto H 15	15	33	128	4.4	12.8
VALVOLINE	R125	22	46	190	6.2	7
CHEVRON	Spindle Oil 22	22	47.5	180	6.3	21
GULF	Harmony 22AW	22	51	183	6.4	9
GERM	Dynobear EL	22	50	194	6.6	15
KILFROST	Pneumatic Tool Anti-Freeze Lubricant	–	52	192	6.3	–

HEAVY DUTY LUBRICATION

For heavier duty lubrication it is recommended that oils should be used having viscosities ranging from 50 cSt at 20°C up to 170 cSt at 20°C.

When using oils with a viscosity above 50 cSt it may be found that the air flow through the lubricator should be at least 0.5 dm^3/s (1 c.f.m.) above the minimum flow given in the catalogue. With even heavier oils the rates of air flow should be well above the minimum recommended for the lubricator.

		VISCOSITY				SEAL COMPATIBILITY INDEX
OIL COMPANY	GRADE OF OIL	ISO 3448 cSt @ 20°C		REDWOOD No 1 @ 70°F	DEGREES ENGLER @ 20°C	BS4832
SHELL	Tellus 23 22	–	60.0	225	7.8	15
GULF	Harmony 32AW	32	81	259	9.1	7
R.D. NICOL	RDN60	32	73	285	9.5	12
B.P.	HLP32 (150)	32	75	292	9.9	13
TOTAL	Azolla VG32	32	75	297	9.8	13
CHEVRON	EP Hydraulic Oil 32	32	77	305	10.16	10
GULF	Harmony 32	32	82	291	10.2	9
MOBIL	DTE Oil Light	32	79	320	10.4	10
FINA	Hydran 32	32	80	307	10.5	7
ESSO	Nuto H32	32	80	310	10.5	13.6
CASTROL	Hyspin AWS32	32	80	320	10.4	12
STERNOL	Albatross 34	32	84	330	11	11
CENTURY	PWLA	32	85	340	10.75	12
GERM	Dynobear I	32	89	340	11.6	12
DUCKHAMS	Zeroflo 4	31.3	90	340	11.75	10
SHELL	Tellus 37	–	100	370	13.2	15
GULF	Harmony 46AW	46	122	417	14.4	5
B.P.	HLP46 (150)	46	113	440	14.9	11
SHELL	Tellus 46	46	114	430	15	15
TEXACO	Regal Oil R & O46	46	115	453	15.6	6
ROCOL	MO-10	46	120	460	15.7	6
B.P.	HLP68 (150)	68	165	630	21.8	9
GULF	Harmony 68AW	68	193	639	22.2	5

SPECIAL APPLICATIONS

NORGREN MISTCOOL SYSTEM, using soluble or neat oils; lubrication of chains and high temperature installations. Consult your regular oil supplier, machine manufacturer and/or IMI Norgren Ltd., for most suitable oils and oil mixes for these special purposes.

GENERAL NOTES

Approx. 1,400 drops of oil = 1 fluid ounce = 28.4 cm^3. The Grade designation of ISO 3448 is equal to the midpoint viscosity in cSt at 40°C (104°F) BS.4832: 1972 Method for Assessing the compatibility of Hydraulic and Lubricating Fluids with Elastomeric Sealing materials.

BEARING LUBRICATION Refer to separate sheet (OBL) for Oil Recommendations for Bearing Lubrication.

IMI NORGREN LTD.
SHIPSTON-ON-STOUR, WARWICKSHIRE, ENGLAND.
Telephone: 0608-61676 Telex: 83208

NORGREN MARTONAIR

Lubrication Data

Lubricants for use with Norgren Martonair Equipment

IN-LINE LUBRICATION

For in-line lubrication the following oils are compatible with all Norgren Martonair products.

Operating Temperature +5°C to +80°C

Manufacturer	Product	ISO 3448 Viscosity Number
CASTROL	Hyspin AWS32	32
MOBIL	Gargoyle Arctic Oil Light	15
MOBIL	DTE 24	32
MOBIL	DTE Oil Light	32
SHELL	Tellus 22	22
SHELL	Tellus 37	37

Low Temperature Oils

anufacturer	Product	ISO 3448 Viscosity Number
MOBIL	SHC 624	32
DUCKHAMS	Zeroflo 32	32

NORGREN LUBRICATORS

Where Norgren Lubricators are used for applications other than lubricating Norgren Martonair equipment, the following oils are recommended for use with Norgren Lubricators only.

Light Duty/High Speed Tool Requirements (ISO 3448 Viscosity Grades 10 - 22)

Manufacturer	Product	ISO 3448 Viscosity Number
BP	Energal HLP 10	10
CASTROL	Hyspin AWS10	10
SHELL	Tellus R10	10
TOTAL	Azolla ZS10	10
CENTURY	P198	15
DUCKHAMS	Zeroflo 15	15
ELF	Elfolna 15	15
ESSO	Nuto H 15	15
ROCOL	MO-4	15

Heavy Duty Lubrication (ISO 3448 Viscosity Grades 32 - 68)

Manufacturer	Product	ISO 3448 Viscosity Number
BP	Energal HLP32	32
CENTURY	PWLA	32
ELF	Elfolna 32	32
ESSO	Nuto H32	32
GULF	Harmony 32	32
MOBIL	SHC 524	32
GULF	Hydrasil 46	46
BP	Energal HLP46	46
SHELL	Tellus 46	46
TEXACO	Regal Oil R & 046	46
ROCOL	MO-10	46
BP	Energal HLP68	68

Anti Freeze Lubrication

Manufacturer	Product
CASTROL	Anti Freeze Mist Lubricant

ASSEMBLY GREASES

1. Airline Equipment:
   BP Energrease LS2
   With exception of:
   a) Automatic Drain Mechanisms which retain a silicone grease
   b) Water Council approved products
   c) Certain non-pneumatic applications

2. Valves and Cylinders:
   BP Energrease LS2
   Molyibdenum Disulphide Grease (cylinders)

2.1 For applications requiring compatibility with food:
Synthetic Lubricant Co. Spray Grease

2.2 For applications requiring silicone grease:
Dow Corning Molykote 111

2.3 For Low Temperature applications:
Kluber Unisilicon L50/2

WARNING

These products are intended for use in industrial compressed air systems only. Do not use these products where *pressures* and *temperatures* can exceed those listed under **'Technical Data'.** Please refer to relevant catalogue sheet.

Before using these products with fluids other than those specified, for non-industrial applications, life-support systems, or other applications not within published specifications, consult NORGREN MARTONAIR.

Through misuse, age, or malfunction, components used in fluid power systems can fail in various modes. The system designer is warned to consider the failure modes of all component parts used in fluid power systems and to provide adequate safeguards to prevent personal injury or damage to equipment in the event of such failure.

System designers must provide a warning to end users in the system instructional manual if protection against a failure mode cannot be adequately provided.

System designers and end users are cautioned to review specific warnings found in instruction sheets packed and shipped with these products.

WARRANTY

The company undertakes to repair (at its option) products which are shown to have been defective at delivery either as a result of faulty materials or workmanship or because they do not comply with sections 13, 14 and 15 of the Sales of Goods Act 1979.

Providing notice is given to the company of the defect within one month of becoming aware of the same, but in any event within two years of despatch. This shall not apply to defects that are due to wear and tear, modifications, repairs or faulty installation used outside of published or otherwise specified operating limits or any other cause arising after delivery. Attention is drawn to full warranty as detailed in 'General Conditions of Sale' on company invoices.

UK REGIONAL CENTRES

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RAM MILL, GORDON STREET, CHADDERTON,
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TELEPHONE: 0543 414333
FAX: 0543 268052
TELEX: 338555 (NORMAR G)

MASTERFIL RECOMMEND KLÜBER LUBRICATION FOR USE ON ALL THEIR MACHINES

For general lubrication of machine, e.g. racks, gears and slides, use:-

Klüber Structovus BHD in aerosol form. (H2 Foodgrade product)

For lubrication of ball screws use:-

Klüber Isoflex NBU-15

For a Foodgrade USDA H1 alternative to the above two lubricants use:-

Klüber Paraliq GA351

For pneumatic system use:-

Klüberoil 4 UH132 (This is also a H1 Foodgrade product).

MASTERFIL LIMITED
17 Farmbrough Close, Stocklake, AYLESBURY, Bucks. HP20 1DQ. England
Tel:- 01296 25001 Fax:- 01296 25002

ROSSI MOTORIDUTTORI
S.p.A. MODENA - ITALIA

VIA EMILIA OVEST 915/A - MODENA
C.P. 310 - I 41100 MODENA
(059) 33 02 88
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ROSSIRIDUTTORI MODENA

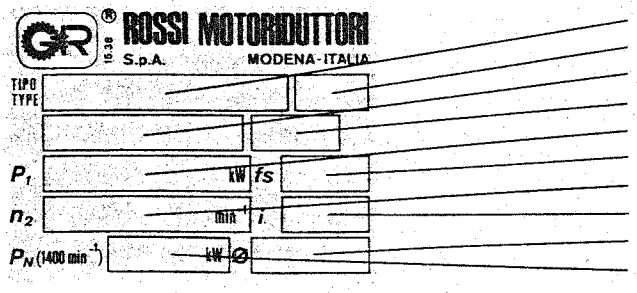
GEAR REDUCERS AND GEARMOTORS: INSTALLATION AND MAINTENANCE INSTRUCTIONS

UT. D 045
9.93 VIII - 5.000 I GB

Index

1 - How supplied

Unless otherwise stated on the lubrication plate, oil-lubricated gear reducers are supplied WITHOUT OIL; grease-lubricated gear reducers are supplied already FILLED WITH GREASE.
Each gear reducer carries an identification/lubrication plate.



Machine type, train of gears, size, design
Year of manufacture
Non-standard designs
Mounting position
Motor power
Gearmotor service factor
Gearmotor output speed
Transmission ratio
Ø of flange and motor shaft
Gear reducer nominal power

Gear reducers have an external coating in epoxy powder or in synthetic paint colour blue RAL 5010 DIN 1843 appropriate for resistance to normal industrial environments and suitable for the application of further coats of synthetic paint.
Shaft ends and hollow shafts are greased for protection with a long-life anti-rust product. All internal parts are protected with an anti-rust oil.

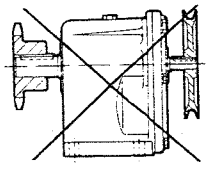
2 - Storing

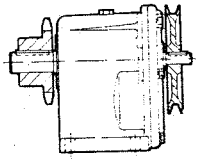
Surroundings should be sufficiently clean, dry and free from excessive vibration (to avoid damage to bearings; excessive vibration should also be guarded during transit); ambient storage temperature should be 0 ÷ 40 °C: peaks of 10 °C above and below are acceptable.
Assuming normal surroundings, and the provision of adequate protection during transit, gear reducers are supplied for storage of up to one year.
If longer periods are envisaged, or storage in the open or in a hostile environment is necessary, consult us.
The gear reducers filled with oil must be positioned according to the mounting position mentioned on the order during transport and storing.

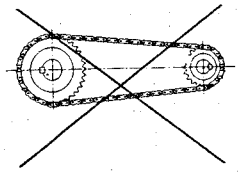
3 - Installation

General points. Position the gear reducer or gearmotor so as to allow a liberal passage of air for cooling both gear reducer and motor (especially at the fan side, whether gear reducer or motor).
Avoid: any obstruction to the air flow; heat sources near the gear reducer that might affect the temperature of cooling-air; insufficient air recycle or any other factor hindering the steady dissipation of heat.
Star-delta starting should be adopted for starting on no load (or with a very small load) and/or when the necessity is for smooth starts, low starting current and limited stresses.
Mount the gear reducer or gearmotor so as not to receive vibration.
Mating surfaces should be clean and sufficiently rough to provide a good friction coefficient, when external loads are present use pins or locking blocks if necessary. Locking adhesives such as LOCTITE should be used to ensure that bolts joining gear reducer and driven machine do not work loose.
If overloads are imposed for long periods of time, or if shocks or danger of jamming are envisaged, then motor-protection, electronic torque limiters, fluid couplings, safety couplings, control units, or other similar devices should be fitted.
Align the gear reducer carefully with the motor and the driven machine, with the aid of shims if need be and interposing flexible couplings whenever possibile.
It is reccomended that the holes of parts keyed onto shaft ends should be machined to H7 tolerance; for high speed shaft ends having D≥55 mm, tolerance G7 is permissible provided that the load is uniform and light; for worm gear reducers and parallel and right angle shaft gear reducers model 2 and 3 (new series) tolerance must be **K7**, when load is not uniform and light.
Before mounting, clean mating surfaces thoroughly and lubricate against seizure and fretting corrosion.
Installing and removal operations should be carried out with the aid of a jacking screw or puller using the tapped hole at the shaft butt-end; for H7/m6 and K7/j6 fits it is advisable that the part to be keyed be preheated to a temperature of 80 ÷ 100 °C.
For machine shaft ends onto which the hollow shafts of gear reducers are to be keyed, j6 or k6 tolerances are recommended, according to requirements.
In polluting surroundings, take suitable precautions against lubricant contamination (dirt infiltrating through vented filled plugs — if any — and sealing rings).
When installing in the open, or in a hostile environment, protect the gear reducer or gearmotor with an anticorrosion paint. Added protection may be afforded by applying water-repellent grease, especially around the rotary seating of sealing rings, and at shaft end access points.
Gear reducers and gearmotors should be protected whenever possible, and by whatever appropriate means, from solar radiation and extremes of weather; weather protection **becomes essential** when high or low speed shafts are vertically disposed or when the motor is installed vertical with fan uppermost.

In those cases where the transmission link between gear reducer and machine or motor generate shaft end loads, ensure that:
— loads do not rise above catalogue values bearing in mind that the load's angular position is crucial;
— transmission overhang is kept to a minimum;
— gear-type transmissions must guarantee a minimum of backlash on all mating flanks;
— drive-chains should not be tensioned;
— drive-belts should not be over-tensioned.


Incorrect


Correct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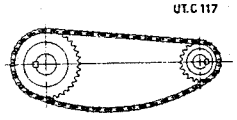
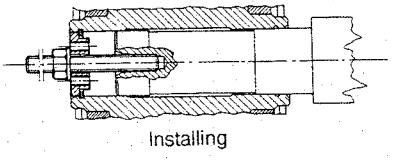


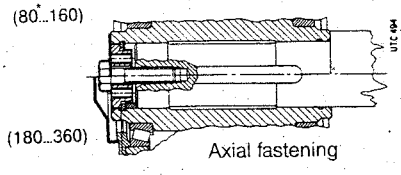
Correct

For ambient temperature greater than 40 °C or less than 0 °C, consult us.

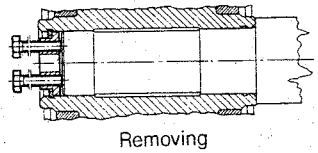
Shaft-mounting. When shaft mounted, the gear reducer must be supported both axially and radially by the machine shaft end, as well as anchored against rotation only, by means of a reaction having **freedom of axial movement** and sufficient **clearance in its couplings** to permit minor oscillations always in evidence without provoking dangerous overloading on the gear reducer itself.
Follow the relevant pointers given in our catalogues in connection with the reaction arrangement type.

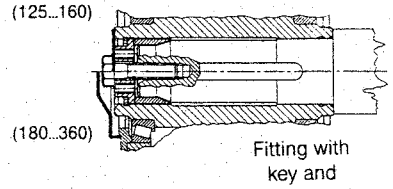
Hollow low speed shaft. Follow the indications given in our catalogues, especially those concerning key-length, and clearance between key-top and keyway-bottom.
When installing and removing gear reducers with hollow low speed shaft incorporating a circlip groove whether with keyway or locking-assembly proceed as per the drawing alongside.
The system shown alongside is good for axial fastening mounting of hollow-shaft gear reducers with keyway provided with circlip groove. When the shaft end of the machine has no shoulder (as in the lower half of the drawing) a spacer may be located between the circlip and the shaft end itself. A washer for installing, removing and axial fastening of gear reducer and a guard can be supplied on request with or without locking bush. Parts in contact with the circlip must have sharp edges.
The use of a **locking bush**, as shown in the drawing alongside, will permit easier and more accurate installing and removing and to eliminate backlash between the key and keyway.
The locking bush is fitted after mounting; we recommend the use of a locking adhesive such as LOCTITE 601 and to comply the tightening torque shown in the table alongside when fitting the bolt.


Installing



Axial fastening


Removing



Fitting with key and locking bush

* Not possible for worm gear reducer size 80.

Size		125	140	160	180	200	225	250	280	320	360
	parallel and right angle shafts										
	worm	125	160		200		250				
M [daN m]		14	20	34	43	66	83	135	166	257	315

Water cooling by coil. Water fed into the system should not be too hard, and flow at 10 ÷ 20 l/min, pressure 2 ÷ 4 bar, maximum temperature 20 °C.
Where ambient temperature may be less than 0 °C, make provision for water drain and compressed-air inlet, so as to be able to empty out the coil completely and avoid freezing-up.

Safety guards. Safety guards for masking off unused exposed shaft ends are the Buyer's responsibility (89/392/CEE).

4 - Lubrication

Depending on the type, gear reducers may be either oil-lubricated, and supplied WITHOUT OIL (unless otherwise specified on the lubrication plate) or grease-lubricated, and supplied already FILLED WITH GREASE.
Bearings are normally lubricated automatically and continously (bathed, splashed, through pipes or by a pump) utilizing the main gear reducer lubricant. The same applies for backstop devices, when fitted to gear reducers.
In certain gear reducers in vertical mounting positions V1, V3, V5 and V6, and right-angle shaft gear reducers in horizontal positions B3, B6 and B51 (though not gearmotors in this case, for which the above indications hold good) upper bearings are lubricated independently with a special grease «for life», assuming pollution-free surroundings. The same applies for motor bearings (except some cases in which relubrication device is adopted) and backstop devices when fitted to motors.
Always make certain that the gear reducer is located as per the mounting position ordered, which appears on the name plate. When no such indication is given, the gear reducer may be used in horizontal mounting position B3 or B5, or vertical position V1 in the case of RC right-angle shaft gear reducers in the design incorporating flange FO1...
Lubrication depends upon the type of gear reducer, as indicated in the **lubrication chart**.

Combined gear reducer units. Lubrication is independent, signifying that information supplied for single gear reducers holds good.

5 - Putting into service

Carry out an overall check, making particularly sure that the gear reducer is filled with lubricant, and that the breather plug if any is free of obstructions. Before wiring-up gearmotors, make certain that motor voltage corresponds to input voltage.
Where star-delta starting is being used, input voltage must match the motor's lower voltage (i.e. Δ). If the direction of rotation is not as desired, invert two phases at the terminals.
When wiring-up the electric motor, consult instructions either printed on the name plate or supplied separately in print.
Brake motors, DC motors, and any other special types all carry their own instructions.
Before running gear reducers fitted with backstop for the first time, make certain that the direction of rotation in machine, gear reducer, and motor, all correspond correctly.
A **running-in** period of approx. 200 ÷ 400 h is advisable, in order that:
— gear reducers with worm gear pairs reach maximum efficiency;
— gear reducers with bevel and/or cylindrical gear pairs reach maximum functionality.
The temperature of both gear reducer and lubricant may well rise beyond normal values during running-in.
After the running-in period it may be necessary to verify the gear reducer fixing bolt tightness.

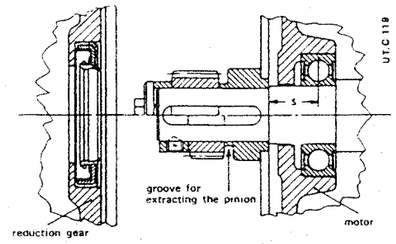
6 - Maintenance

General points. Make periodic checks on the state of cleanliness of all out surfaces (as frequently as environmental conditions dictate) and be sure that air has free passage to the gear reducer/gearmotor in order that cooling remains fully effective.
In the case of water-cooled gear reducers, the coil should be emptied out once temperature falls below 0 °C, using compressed air to blast out all traces of the coolant, so as to avoid freezing-up which would cause the coil to break.
For lubrication, see the **lubrication chart**.
Maximum oil-temperatures indicated in the chart do not represent a hidrance to the gear reducer's regular function.
Warning: for gear reducers with filler plug with valve (symbol ⊣◯⊢) before unscrewing it wait until the unit has cooled and then open with caution.

Motor replacement. As all our gearmotors are fitted with standard motors, motor replacement in case of breakdown is extremely easy.
Simply observe the following instructions:
— ensure that the mating surfaces are machined under accuracy rating (UNEL 13501-69);
— clean surfaces to be fitted thoroughly;
— check, and if necessary, lower the parallel key so as to leave a clearance of 0,1 ÷ 0,2 mm between its tip and the bottom of the keyway of the hole;

when the motor shaft end is keyed direct to worm, or to bevel pinion:
— check that the fit-tolerance (push-fit) between shaft end and hole is G7/j6 for diameter ⩽28 mm, F7/k6 for diameter ⩾38 mm;
— lubricate surfaces to be fitted against fretting corrosion;

when a cylindrical pinion is keyed onto the motor shaft end:
— check that the fit-tolerance (standard locking) between shaft end and holes is K6/j6 for diameter ⩽28 mm, and J6/k6 for diameter ⩾38 mm; key length should be at least 0,9 pinion width;
— locate the spacer and pinion on the motor (pinion pre-heated to 80 ÷ 100 °C) locking the entire assembly by means of a bolt to the butt-end, or a stop collar;
— grease the pinion teeth, the sealing ring's rotary seating and the ring itself, and assemble with great care;
— make sure that the motors have bearing location and overhang (distance S) as shown in the table.



Motor size	Min. dynamic load capacity [da N] Front	Rear	Max. dimension 'S' mm
63	450	335	16
71	630	475	18
80	900	670	20
90	1 320	1 000	22,5
100	2 000	1 500	25
112	2 500	1 900	28
132	3 550	2 650	33,5
160	4 750	3 350	37,5
180	6 300	4 500	40
200	8 000	5 600	45
225	10 000	7 100	47,5

LUBRICATION CHART

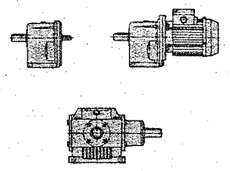
Type of lubricant (Identification through special lubrication plate) ▶

Gear reducer type (type of lubrication **normally** envisaged) ▶

SYNTHETIC GREASE

Coaxial gear reducers (except size 160, vertical mounting position V1, V3, V5, V6 and sizes 80 ... 160 for agitators)

Right angle shaft gear reducers R C sizes 80 ... 125



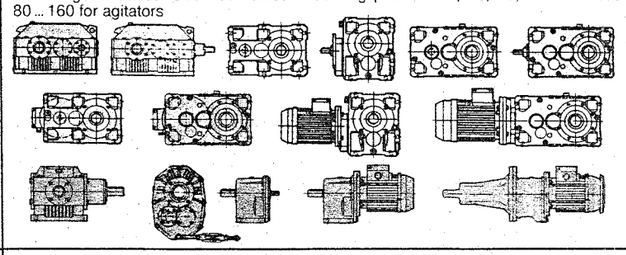
MINERAL OIL

Parallel and right angle shaft gear reducers (except R C sizes 80 ... 125)

Parallel and right angle shaft gear red. mod. 2 and 3 (new series) sizes 100 ... 360

Shaft mounted gear reducers

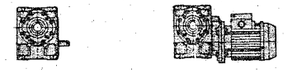
Coaxial gear reducer size 160 vertical mounting position V1, V3, V5, V6 and sizes 80 ... 160 for agitators



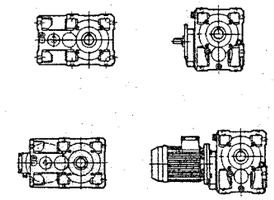
Worm gear reducers sizes 100 ... 250

SYNTHETIC OIL

Worm gear reducers sizes 32 ... 80

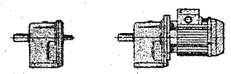


Parallel and right angle shaft gear reducers model 2 and 3 (new series) sizes 63 e 80



Gear reducer type (**special** lubrication on demand) ▶

Coaxial gear reducers sizes 80 ... 160



All gear reducers lubricated with mineral oil. Expecially recommended for:
— worm gear reducers
— high speed gear reducers apart worm types
— extending oil-change interval «long life»
— widening ambient temperature range
— increasing thermal power or reducing oil temperature
— improving efficiency

How supplied ▶

Plugs ▶

FILLED WITH GREASE
SHELL Tivela Compound A
IP Telesia Compound A
MOBIL RR 103 B
With/without (R C 80 ... 125) filler/drain plug

WITHOUT OIL
(unless otherwise stated on lubrication plate)

Filler with valve (or breather), drain and level plugs

FILLED WITH OIL
AGIP Blasia S 220,
KLÜBER LUBRICATION Syntheso D 220 EP,
MOBIL Glygoyle 30, SHELL Tivela WB
With filler/drain plug
For worm gear reducers with worm speed ⩽ 280 min⁻¹ KLÜBER LUBRICATION Syntheso D 460 EP

Direction for first fill ▶

Before putting into service, fill to specified level with **mineral oil** (AGIP Blasia, ARAL Degol BG, BP-Energol GR-XP, ESSO Spartan EP, IP Mellana oil, MOBIL Mobilgear 600, SHELL Omala, TEXACO Meropa, TOTAL Carter EP) or **synthetic oil** (KLÜBER LUBRICATION Syntheso D ... EP, MOBIL Glygoyle, SHELL Tivela oil) having the ISO viscosity-grade given in the table.

ISO viscosity-grade
Mean kinematic viscosity [cSt] 40 °C

Speed n_2 min⁻¹	Ambient temperature[1] [°C] mineral oil 0÷20	mineral oil 10÷40	synthetic oil 0÷40
> 224	150	150	150
224 ÷22,4	150	220	220
22,4÷ 5,6	220	320	220
< 5,6	320	460	460

ISO viscosity-grade
Mean kinematic viscosity [cSt] 40 °C

Worm speed min⁻¹	Ambient temperature[1] [°C] mineral oil 0÷20	mineral oil 10÷40	synthetic oil 0÷40
2 800÷710	150	320	220
710÷180	220	460	460
<180	320	680	460

1) Peaks of 10 °C (20 °C for synthetic oil) above and 10 °C below the ambient temperature range are acceptable.

Oil-change interval ▶

Grease-lubricated «**for life**», assuming pollution-free surroundings

Grease quantities [kg] for coaxial gear reducer

Size	B3, B6, B7, B8	V5, V6	B5	V1, V3
32	0,14	0,25	0,1	0,18
40	0,26	0,47	0,19	0,35
50	0,48	0,85	0,4	0,72
63, 64	0,9	1,5	0,63	1,3
80, 81	1,7	2,9	1,2	2,7
100	3,3	5,7	2,7	4,5
125	6,3	11,7	4,2	9,3
160	9	—	6,4	—

Ambient temperature 0 ÷ 40 °C and peak temperature up to —20 °C and +50 °C.

An overall guide to **oil-change interval**, is given in the table, and assumes pollution-free surroundings. Where overloads are present, halve the value.

Oil temperature [°C]	Oil-change interval [h] mineral oil	synthetic oil
⩽65	8 000	25 000
65÷80	4 000	18 000
80÷95	2 000	12 500

Oil temp. [°C]	Oil-change interval [h] mineral oil	synthetic oil
⩽65	5 000	18 000
65÷80	2 500	12 500
80÷95	1 250	9 000
95÷110	—	6 300
110÷125	—	4 500

After running in, oil-change is recommended for worm speed > 180 min⁻¹, accompanied by a thorough clean-out, if possible.

Oil quantities [l] for sizes 32 ... 80
Other sizes: quantity specified as per the level

Size	R V, MR V B3[1] V5, V6	B6, B7	B8	R IV, MR IV B3[1] V5, V6	B6, B7	B8
32	0,16	0,2	0,16	0,2	0,25	0,2
40	0,26	0,35	0,26	0,32	0,4	0,32
50	0,4	0,6	0,4	0,5	0,7	0,5
63	0,8	1,2	0,8	1	1,3	1
80	1,3	2,2	1,7	1,5	2,5	2

1) Not indicated on plate.

Never mix synthetic oil with mineral oil, or with different makes of synthetic oil: if oil-change involves use of a type other than that previously used, then give the gear reducer a thorough clean-out.

Ambient temperature: 0 ÷ 40 °C with peak temperature up to — 20 °C and + 50 °C.

Oil temp. [°C]	Oil-change interval [h]
⩽65	18 000
65÷80	12 500
80÷95	9 000
95÷110	6 300
110÷125	4 500

Grease lubricated «**for life**» assuming pollution free surroundings.

Oil quantities [l] for sizes 63 and 80
Other sizes: quantity specified as per the level

Size	R I B3[1] B8	B7	B6, V5, V6	R 2I, 3I B3[1] B8	B6	MR 2I, 3I B7, V5, V6
63	0,7	0,8	1	1	1,5[2]	1,3
80	1,2	1,5	1,9	1,7	2,9[2]	2,5

Size	R CI B3[1] B6, B7	B8	MR CI V5, V6	R ICI B3[1] B7	B6	MR ICI B8, V5, V6
63	0,8	1	0,95	1	1,6	1,2
80	1,3	1,7	1,6	1,6	2,5	1,9

1) Not indicated on plate.
2) Reduced to 1,2 and 2,3 respectively for MR 2I.

Independently-lubricated bearings, motor-bearings, backstop fitted to motor. ▶

Lubrication is «for life» (except some cases of motors in which relubrication device is adopted). Should there be either a possibility of the grease becoming contaminated, or a particular type of duty-cycle, it is good policy to check on the state of the grease (either between one change and the next, or every year or 2 years) and remove and replace grease in independently-lubricated bearings (every change or every other change, or every 2 or 4 years). Bearings should be filled with ESSO BEACON 3 bearing-grease for ball bearings. KLÜBER STABURAGS NBU 8 for roller bearings and backstop device.

ITEM No.	PRODUCT NUMBER	QTY	DESCRIPTION	X
0001A	SC4-6935/R3	1	MAIN CAPPING MACHINE MK.5 50/50 140	
0001B	4-18055/16	1	ROSSI MOTOR .37KW CHUCK DRIVE MR2140	
0001C	4-18055/7	1	ROSSI FIXED MOTOR MRV50 U02A-71B4	
0002	SC3-6480/1	1	PARALLEL JAW CHUCK ASSY (STD.CAPPER)	
0003A	SC1-6891/R	1	ELEVATOR SORTER (ROSSI)	
0003B	SC4-6875	1	AGITATOR ASSY	
0003C	4-18055/9	1	ROSSI MOTOR MVV50 U02A-E1 FCIA-71B4	
0003D	SC4-8064/1	1	HOPPER COVER ASSY ELEVATOR SORTER	
0004A	SC4-7567	1	NECK SENSOR ASSY	
0004B	S4-24113/PU	1	OUTFEED SENSOR ASSY PET UNIVERSAL	
0004C	SC4-6816/2	1	NO CAP/HIGH CAP DETECTION (L-R)	
0004D	SC4-8735/1	1	NO FOIL DETECTION/TRACK ASSY DIA.34	
0005B	SC4-6200/4	1	OFFSET BOTTLE CLAMP ASSY	
0006	SC4-8597/1	1	CABINET ASSY (1100x750x300) NO HMI	
0007A	SC4-6289	1	CAPPER LABELS	
0007B	C4-7448	1	BOTTLE CLAMP/TWIN SPEED LABEL	
0007C	C3-8730	1	INVERTER SPEED CONTROL LABEL	
0008	SC3-6365/36	1	AIR CIRCUIT 2 SPEED TIC-TAC (ETC.)	
0010A	S4-25442/25	1	TUNNEL ASSY L/H 4.5" X 600 LONG	
0010B	S4-25443/50	1	TUNNEL ASSY R/H 4.5" X 600 LONG	
0011A	SC4-6057/152	1	MACHINE CHANGE PARTS RAYNER 4346	
0011B	SC4-9223	1	EXTRA PARTS FOR ELEVATOR 4346	
			RECOMMENDED SPARE	X

DATE	19/05/05	Masterfil	ISSUE 2
DRAWN	RIH		SHEET 1 OF 2
TITLE	CAPPING MACHINE (50/50) R-L		M/C No.
CLIENT			SCH.No. SC4-6000/123

ITEM No.	PRODUCT NUMBER	QTY	DESCRIPTION	X
0012A	SC3-8500/A4	1	CAPPER ELEC.CIRC.MK.2 MITSI NO CONV.	
0012B	SC4-8500/S1	1	CAPPER SENSOR ASSY (4280)	
0012C	SC4-8500/4B	1	STD CAPPER CIRC. LOW LEVEL NO FOIL	
0012D	SC4-8500/7B	1	CAPPER MK.2 EMC FILTER NO CONVEYOR	
0013	SC4-6249/447	0	ADDITIONAL C'PARTS RAYNER 4346/005	
0014	S3-32597	0	VACUUM CONVERS-TRAN/ARM 4346/006 MK5	
			RECOMMENDED SPARE	X

DATE	19/05/05	Masterfil	ISSUE 2
DRAWN	RIH		SHEET 2 OF 2
TITLE	CAPPING MACHINE (50/50) R-L		M/C No.
CLIENT			SCH.No. SC4-6000/123

ITEM No.	PRODUCT NUMBER	QTY	DESCRIPTION	X
0001	SC1-6137/R1	1	MAIN DRIVE ASSY (140 CRS) 50/50	
0002	SC4-6915/8	1	CAPPER FRAME FAB.(140 CRS)RH CABINET	
0003	SC1-5490/3	1	CAPPER LIFTING MECHANISM	
0004	SC4-6178/8	1	MAIN DRIVE CAMS 50/50	
0005	SC4-6899	1	TRACK PARTS	
			RECOMMENDED SPARE	X

DATE	19/05/05	Masterfil	ISSUE 1
DRAWN	RIH		SHEET 1 OF 1
TITLE	MAIN CAPPING MACHINE MK.5 50/50 140		M/C No.
CLIENT			SCH.No. SC4-6935/R3

ITEM No.	PRODUCT NUMBER	QTY	DESCRIPTION	X
0001A	C4-8499/1	1	MODS TO BEARING (4-18270/14)	
0001B	C4-8499	1	MODS TO BEARING	
0002	4-18270	3	FLANGED BEARING RHP SFTG25	
0003	4-18270/16	1	FLANGED BEARING RHP PSFT 1.5"	
0006	28080015	2	SNG.ROW RADIAL BEARING SKF6005-2RS1	
0007	28080014	1	SNG.ROW BEARING SS SKF6004-2RS1	
0008	28052024	2	BEARING AMF 20-24-16 'OILITE'	
0009	25012022	2	CAM FOLLOWER KR 22 (SKF OR INA)	
0010	25012016	8	CAM FOLLOWER NAKD 16	
0011	28112547	2	RING BLOCK R8-801-494	
0012	4-18200/17	1	CLUTCH EAS-0/490.515.0 LOW TORQUE	
0014	C4-5408/3	1	P'WHEEL MODS 4 POS GENEVA LG CLUTCH	
0015	C4-5408/2	1	MODS TO PLATEWHEEL	
0016A	26023301	1	HELICAL GEAR MOD3 H3-16-RS2524	
0016B	26023303	1	HELICAL GEAR MOD3 H3-32-RS2524	
0016C	C4-9149	1	SPACER COLLAR - TOP BEARING	
0016D	C4-9150	1	SPACER COLLAR - BOTTOM BEARING	
0018A	26042002	4	1/2" PITCH ROLLER CHAIN 08B-1	
0018B	26073102	1	CONNECTING LINK 1/2" PITCH CHAIN	
0020	27041129	1	EXTENSION SPRING LE069F-9 MUSIC WIRE	X
0021	C3-7992	1	DRIVE SHAFT (CAM UP/DOWN) [ROSSI]	
0023A	C3-6129/1	1	DRIVE SHAFT (TRANSFER ARM)	
			RECOMMENDED SPARE	X

DATE	23/05/05	Masterfil	ISSUE 3
DRAWN	M.H.		SHEET 1 OF 3
TITLE	MAIN DRIVE ASSY (140 CRS) 50/50		M/C No.
CLIENT			SCH.No. SC1-6137/R1

ITEM No.	PRODUCT NUMBER	QTY	DESCRIPTION	X
0023B	C3-5406	1	DRIVEN WHEEL SUPPORT BAR	
0024	C2-5761/2	1	DRIVE SHAFT - STARWHEEL LARGE CLUTCH	
0025	C3-5762	1	SHAFT - STARWHEEL HEIGHT ADJUSTMENT	
0026	C3-5763	1	CAM FOLLOWER SHAFT	
0027A	C4-5599	1	SPRING POST (TRANSFER ARM SHAFT)	
0027B	C4-7421	1	EXTENSION LINK	
0028	C3-5389/1	1	DRIVER	
0029	C3-5390	1	DRIVEN WHEEL	
0030	C4-5407	1	BEARING HOUSING	
0031	C4-5399	2	CAM LOCATOR	
0032	C4-5439	1	WASHER	
0033	C3-5681	0	TRANSFER ARM MOUNTING BLOCK	
0034	C4-6126/4	1	SPACER DIA.32 X 15.9 LONG (I/D=25)	
0035A	C3-6147/1	1	CAM VALVE MOUNTING BRACKET	
0035B	C4-5447	2	MOUNTING BOSS - CAM (I/D=32)	
0035C	C4-8524	1	MICRO SWITCH MOUNTING BRACKET	
0036	C4-5552	1	SWITCH MOUNTING BRACKET	
0037	28214323	1	GEAR HUB CLAMP CT20 - DIA.23	
0040	SC2-6113	1	CHUCK RISE/FALL & ROTATING MECH.ASSY	
0041	SC2-5772	1	TRANSFER ARM DRIVE ASSY	
0043A	C4-6564/2	1	MODS TO DRIVE CHAIN SPROCKET (A=30)	
0043B	C4-7543	1	MODS TO SPROCKET (DRIVEN)	
			RECOMMENDED SPARE	X

DATE	23/05/05	Masterfil	ISSUE 3
DRAWN	M.H.		SHEET 2 OF 3
TITLE	MAIN DRIVE ASSY (140 CRS) 50/50		M/C No.
CLIENT			SCH.No. SC1-6137/R1

ITEM No.	PRODUCT NUMBER	QTY	DESCRIPTION	X
0043C	26041203	140	DUPLEX ROLLER CHAIN 3/8" PITCH 06B2	
0043D	26071106	1	CONNECTING LINK DUPLEX 3/8" PITCH	
0044	SC3-5417	1	IDLER SPROCKET ASSY	
0045	SC1-6136/6	1	FRAME FAB.+GUARD DRIVE ASSY 50/50	
0046	SC4-6170/2	1	CAM (AIR VALVE) 50/50	
0047	C4-6126/3	1	SPACER DIA.32 X 11.5 LONG (I/D=25)	
0048	31124608	2	EQUAL SOCKET 1/8" BSP ES1	
0049	28001005	2	1/8" BSP GREASE NIPPLE (STRAIGHT)	
0051	C4-7097/1	1	COLLAR	
0052	C3-8536	1	AIR JET & VALVE MOUNTING BRACKET	
0053	C4-9115	2	SHOULDER BOLT	
			RECOMMENDED SPARE	X

DATE	23/05/05	Masterfil	ISSUE 3
DRAWN	M.H.		SHEET 3 OF 3
TITLE	MAIN DRIVE ASSY (140 CRS) 50/50		M/C No.
CLIENT			SCH.No. SC1-6137/R1

ITEM No.	PRODUCT NUMBER	QTY	DESCRIPTION	X
0001	28080027	2	BEARING 61808-2RZ LOW FRICTION	
0002	28052532	1	PLAIN BUSH AMC 25-32-25	
0003	C4-6099	2	FLANGE (BEARING)	
0004	28021620	2	BEARING MB 16-20 DU	
0005	25012022	1	CAM FOLLOWER KR 22 (SKF OR INA)	
0006	C4-5362	1	BEARING HOUSING	
0007	C4-5363	1	GUIDE SHAFT	
0008	C4-6125	2	SPLIT COLLAR	
0009	C3-5364	1	SLIDING BLOCK	
0010	C4-5365	1	CLAMP PLATE - DRIVE HUB	
0011	C4-5366	1	BEARING HOUSING CHUCK DRIVE	
0012	C4-5367	0	MODS TO PULLEY 22-8M-20	
0014	C3-5368	1	DRIVE HUB - CAP SHAFT	
0015	C3-6098	1	DRIVE SHAFT (CHUCK)	
0017	4-17019/190	1	KEY 8 X 7 X 190 LONG	
0018	C4-5372	1	SPRING ANCHOR	
0019	C4-5373	1	SPRING ANCHOR	
0020	27041122	1	EXTENSION SPRING SS LE-055E-12	X
0021	C4-5882/3	1	SPACER DIA.20 X 8 LONG (I/D=10.5)	
0022	28080061	2	NEEDLE R³ BEARING AXK 2542+2AS (INA)	
0023	28053025	2	BEARING AMC 25-30-25	
0025	28001005	1	1/8" BSP GREASE NIPPLE (STRAIGHT)	
			RECOMMENDED SPARE	X

DATE	23/05/05	Masterfil	ISSUE 8
DRAWN	MAS		SHEET 1 OF 2
TITLE	CHUCK RISE/FALL & ROTATING MECH.ASSY		M/C No.
CLIENT			SCH.No. SC2-6113

ITEM No.	PRODUCT NUMBER	QTY	DESCRIPTION	X
0026	C4-5370	1	ADAPTOR	
0027	51120156	1	O SEAL NITRILE 0156-24	X
			RECOMMENDED SPARE	X

DATE 23/05/05	Masterfil	ISSUE 8	
DRAWN MAS		SHEET 2 OF 2	
TITLE CHUCK RISE/FALL & ROTATING MECH.ASSY		M/C No.	
CLIENT		SCH.No. SC2-6113	

ITEM No.	PRODUCT NUMBER	QTY	DESCRIPTION	X
0001	C3-5764	1	TRANSFER ARM DRIVE MOUNTING PLATE	
0002	C4-5765	1	TRANSFER ARM DRIVE RACK	
0003	C3-5766	1	TRANSFER ARM DRIVE SLIDE	
0004	C4-5767	4	TRANSFER ARM DRIVE BEARING MOUNTING	
0005	C4-5768	1	TRANSFER ARM DRIVE PINION	
0006	28080011	5	DEEP GROOVE BEARING SKF 630/8-2RS1	
0007	C4-5769	1	SPACER DIA.8 X 14 LONG (I/D=6)	
0008	C4-5856	1	SPACER BAR	
0009	C4-5771	4	WASHER	
0010A	22085650	2	DOWEL PIN DIA.6 X 50 LONG (SS)	
0010B	22085614	2	DOWEL PIN DIA.6 X 14 LONG (SS)	
			RECOMMENDED SPARE	X

DATE 23/05/05	Masterfil	ISSUE 3	
DRAWN RIH		SHEET 1 OF 1	
TITLE TRANSFER ARM DRIVE ASSY		M/C No.	
CLIENT		SCH.No. SC2-5772	

ITEM No.	PRODUCT NUMBER	QTY	DESCRIPTION	X
0001	C4-5371	1	SPROCKET MOUNTING PLATE	
0002	C4-5418	2	LOCATING SPIGOT	
0003	28012011	4	BEARING FMB 20-11.5 DU	
0004	C4-5419	2	MODS TO SPROCKET	
0005	C4-5420	2	SPACER DIA.16 X 91.5 LONG(M8 B.ENDS)	
0006	C4-5410/1	1	WASHER	
0007	C4-6081	1	ADJUSTING SCREW	
0008	C4-6080	1	END PLATE	
			RECOMMENDED SPARE	X

DATE 23/05/05	Masterfil	ISSUE 2	
DRAWN N.H.		SHEET 1 OF 1	
TITLE IDLER SPROCKET ASSY		M/C No.	
CLIENT		SCH.No. SC3-5417	

ITEM No.	PRODUCT NUMBER	QTY	DESCRIPTION	X
0001	C1-6134/2	1	BOTTOM PLATE	
0002	C1-6135/2	1	TOP PLATE	
0003	C2-7568/3	1	MOTOR MOUNTING PLATE (ROSSI)	
0004	C3-5755	2	REAR SUPPORT POST	
0005A	C3-5756	1	FRONT SUPPORT POST	
0005B	C3-5756/2	1	FRONT SUPPORT POST	
0007	4-11007	0	SPACER (GEAR BOX) O/D=20 I/D=8.2 X 4	
0008	C3-6172	1	BEARING MOUNTING BAR (FRONT)	
0009	C4-5402	4	SPACER DIA.25 X 153 LONG(M10 B.ENDS)	
0010	C3-6483	1	BEARING MOUNTING BAR (REAR)	
0011	C4-6174	1	BEARING MOUNTING PLATE	
0012A	C3-6109/1	1	BEARING MOUNTING PLATE (LOWER)	
0012B	C4-6105/1	1	CLAMP PLATE	
0014	C3-6104/1	1	BEARING MOUNTING PLATE	
0015	C4-6105	2	BEARING CLAMP PLATE	
0016	C4-6106	4	SPACER DIA.16 X 90 LONG (M8 B.ENDS)	
0017	C4-5373	1	SPRING ANCHOR	
0018	4-12262/1	0	SPACER DIA.20 X 44 LONG (M10 B.ENDS)	
0019	C2-5757/2	1	DRIVE ASSEMBLY MOUNTING FRAME	
0020	C3-5989/1	1	R/H SIDE PLATE	
0021	C3-5990	1	DOOR	
0022	C3-5991	1	TOP PANEL	
			RECOMMENDED SPARE	X

DATE 23/05/05	Masterfil	ISSUE 3	
DRAWN R.C.		SHEET 1 OF 2	
TITLE FRAME FAB.+GUARD DRIVE ASSY 50/50		M/C No.	
CLIENT		SCH.No. SC1-6136/6	

ITEM No.	PRODUCT NUMBER	QTY	DESCRIPTION	X
0023	C4-5992/1	1	L/H FRONT SIDE PLATE	
0024	C4-5993	1	L/H REAR SIDE PLATE	
0026	22081624	8	ROLL PIN M6 X 24 (ST.ST)	
0027	29010018	1	LATCH 69-10-501-11	
0029	C4-8112	1	DOOR LATCH (GEAR BOX)	
			RECOMMENDED SPARE	X

DATE	23/05/05	Masterfil	ISSUE 3
DRAWN	R.C.		SHEET 2 OF 2
TITLE	FRAME FAB.+GUARD DRIVE ASSY 50/50		M/C No.
CLIENT			SCH.No. SC1-6136/6

ITEM No.	PRODUCT NUMBER	QTY	DESCRIPTION	X
0002	C4-8502	9	CAM - CONTROL SWITCH 2 LOBE	
			RECOMMENDED SPARE	X

DATE 23/05/05	Masterfil	ISSUE 1	
DRAWN R.C.		SHEET 1 OF 1	
TITLE CAM (AIR VALVE) 50/50		M/C No.	
CLIENT		SCH.No. SC4-6170/2	

ITEM No.	PRODUCT NUMBER	QTY	DESCRIPTION	X
0001	C2-5758	1	REAR CORNER SECTION	
0002	C2-5493/1	1	REAR CORNER SECTION	
0003	C1-8518	1	FRONT L/H CORNER SECTION	
0004	C2-5495	1	FRONT R/H CORNER SECTION	
0005	C3-5496	1	TOP CROSS FRAME	
0006	C3-5496/1	1	TOP CROSS FRAME	
0007	C3-5497	1	FRONT TOP CROSS FRAME	
0008	C3-5499/3	1	BASE FRAME COVER	
0009	4-11383/1	30	SPACER DIA.12 X 26 LONG (M6 B.ENDS)	
0010	C3-5777	1	LOWER FRONT CROSS FRAME	
0011	C3-5513/2	1	LOWER R/H PANEL	
0012	C3-5778	1	LOWER FRONT PANEL	
0013	C3-5498	1	LOWER BACK PANEL	
0014	C3-5512	1	UPPER BACK DOOR	
0016A	C3-8662	1	UPPER R/H PANEL - REAR	
0016B	C3-8663	1	UPPER R/H PANEL - FRONT	
0018	C4-5501	1	PVC DOOR	
0019	4-10224	1	WASHER	
0020	4-11416/13	1	HINGE PIN (A=1282/1283)	
0022	4-18160/1	4	DRIVE STRAIGHT CAM HANDLE 1601RE SQ.	
0023	29002202	4	M16 MOUNTING FOOT X 150MM STUDDING	
0025	C4-5820/18	4	SPACER (DIA.20 X 30 LONG)	
			RECOMMENDED SPARE	X

DATE 23/05/05	Masterfil	ISSUE 3	
DRAWN N.H.		SHEET 1 OF 3	
TITLE CAPPER FRAME FAB. (140 CRS) RH CABINET		M/C No.	
CLIENT		SCH.No. SC4-6915/8	

ITEM No.	PRODUCT NUMBER	QTY	DESCRIPTION	X
0026	4-13941/4.5	0	MOUNTING BRACKET (CONVEYOR) 4.5"	
0029	C4-5507	1	COVER PLATE	
0033	C3-8504/4.5	0	CONTAINER SUPPORT 4.5"	
0035	C4-5820/39	4	SPACER (DIA.20 X 145 LONG)	
0036	C4-5820/102	2	SPACER (DIA.20 X 109 LONG)	
0037	36191135	4	KNOB M8 VH153/35B/M8	
0038A	C3-5558	1	SUPPORT BRACKET R/H	
0038B	C3-5558/1	1	SUPPORT BRACKET L/H	
0038C	C4-6443	1	REAR SUPPORT - BEARING	
0039	C4-5559	2	TUBE SUPPORT	
0040	C4-5584	3	SUPPORT ANGLE	
0042	C3-6895	1	LOWER L/H PANEL	
0044	C4-6898	1	FIXED GUARD	
0045	C4-6896/1	1	MOVING GUARD	
0046	C3-6894/2	1	UPPER L/H PANEL	
0047	C4-6350	1	SS MASTERCAP LABEL	
0048	4-10448	1	ADDRESS LABEL	
0050	C4-6897	1	MOVING GUARD	
0052	C4-6913/1	1	TOP ANGLE	
0054	C4-7375	1	REAR DOOR SAFETY SWITCH BRACKET	
0055	4-26241	0	SPACER PLATE FOR GUARDMASTER KEY	
0056	4-28495/6	1	SERVICE TRANSFER TUBE	
			RECOMMENDED SPARE	X

DATE	23/05/05	ISSUE	3
DRAWN	N.H.	SHEET	2 OF 3
TITLE	CAPPER FRAME FAB. (140 CRS) RH CABINET	M/C No.	
CLIENT		SCH.No.	SC4-6915/8

ITEM No.	PRODUCT NUMBER	QTY	DESCRIPTION	X
0057	C4-7744	1	BRIDGE PLATE	
0058	S4-20095	1	DOOR HINGE ASSY	
			RECOMMENDED SPARE	X

DATE 23/05/05	Masterfil	ISSUE 3	
DRAWN N.H.		SHEET 3 OF 3	
TITLE CAPPER FRAME FAB. (140 CRS) RH CABINET		M/C No.	
CLIENT		SCH.No. SC4-6915/8	

ITEM No.	PRODUCT NUMBER	QTY	DESCRIPTION	X
0001	29082003	1	SCREW JACK ROT-001-US-0325-P	
0002	4-18112/2	1	AIR MOTOR 6AM-FRV-23A	
0003	C4-5472	1	MODS TO COUPLING L070	
0004	C3-5473	1	MOUNTING PLATE (JACK)	
0005	C4-5474	4	SPACER DIA.16 X 39 LONG (I/D=M8)	
0006	C4-5475	1	MOUNTING PLATE (AIR MOTOR)	
0007	C1-5476/3	1	BASE FRAME	
0008	C3-5477	4	SUPPORT TUBE	
0009	C4-5478/1	1	CROSS TUBE	
009A	C4-5478/2	1	CROSS TUBE	
0012	C4-5481	4	MODS TO BEARING BM16-25	
0014	C4-5482	6	MODS TO BEARING	
0015	C4-5483	6	WASHER	
0016	C4-5484	4	INNER SPINDLE	
0017	C4-5485	2	BOSS	
0018	C1-5486	1	SCISSOR BASE FRAME	
0019	C1-5487	1	SCISSOR TOP FRAME	
0020	C2-5488	2	OUTER SCISSOR	
0021	C2-5489	2	INNER SCISSOR	
0022	C2-5757	0	DRIVE ASSEMBLY MOUNTING FRAME	
0023	C4-5509	4	SPACER DIA.25 X 44 LONG (REDUCED)	
0025	C4-5554	2	BEARING MOUNTING PLATE	
			RECOMMENDED SPARE	X

DATE 23/05/05	Mastercfil	ISSUE 1	
DRAWN NEC		SHEET 1 OF 2	
TITLE CAPPER LIFTING MECHANISM		M/C No.	
CLIENT		SCH.No. SC1-5490/3	

ITEM No.	PRODUCT NUMBER	QTY	DESCRIPTION	X
0026	C4-5555	1	SHAFT	
0027	C4-5556	2	RACK	
0028	28011612	2	BEARING FMB 16-12 DU	
0029	4-10163	2	SPUR GEAR	
0030	4-17007/56	6	SS STUDDING M10 X 56 LONG	
0031	4-17017/30	2	KEY 5 X 5 X 30 LONG	
0032	C4-6023	1	HEIGHT SETTING BLOCK	
0033	C4-6024	1	POINTER	
0034	C4-6679	1	VALVE PLATE	
0035	C4-5980/1	2	ELEVATOR BOTTOM BRACKET	
			RECOMMENDED SPARE	X

DATE 23/05/05	Masterfil	ISSUE 1	
DRAWN NEC		SHEET 2 OF 2	
TITLE CAPPER LIFTING MECHANISM		M/C No.	
CLIENT		SCH.No. SC1-5490/3	

ITEM No.	PRODUCT NUMBER	QTY	DESCRIPTION	X
0001	C2-8871/1	1	CAM - CHUCK RISE & FALL	
0002	C3-5770/3	1	TRANSFER ARM CAM	
			RECOMMENDED SPARE	X

DATE 23/05/05	Masterfil	ISSUE 3	
DRAWN R.C.		SHEET 1 OF 1	
TITLE MAIN DRIVE CAMS 50/50		M/C No.	
CLIENT		SCH.No. SC4-6178/8	

ITEM No.	PRODUCT NUMBER	QTY	DESCRIPTION	X
0001	SC4-5792/1	2	TRACK STOP CYLINDER ASSY	
0002	C3-7251	1	LOW LEVEL SENSOR BRACKET	
0003A	C4-7250	1	HIGH LEVEL SENSOR BRACKET	
0003B	C4-7250/1	1	HIGH LEVEL SENSOR BRACKET	
0004	C2-5878	1	TRACK MOUNTING BRACKET	
0005	36191135	1	KNOB M8 VH153/35B/M8	
0006	4-10304	1	SS TENSION SPRING OD 3/16" X 1.25"LG	X
0007	C4-7527	1	HALFEN TRACK SENSOR MOUNTING	
0008	4-23981/104	2	SPACER DIA.10 X 40 LONG (M5 B.ENDS)	
			RECOMMENDED SPARE	X

DATE 23/05/05	Masterfil	ISSUE 5	
DRAWN RIH		SHEET 1 OF 1	
TITLE TRACK PARTS		M/C No.	
CLIENT		SCH.No. SC4-6899	

ITEM No.	PRODUCT NUMBER	QTY	DESCRIPTION	X
0002	C4-5876	1	AIR CYLINDER MOUNTING	
0003	C4-5877	2	CLAMP BRACKET	
0004	C4-8905	1	AIR CYLINDER SLEEVE	
0005	35671203	1	AIR CYLINDER EG-12-25	
			RECOMMENDED SPARE	X

DATE 23/05/05	Masterfil	ISSUE 3	
DRAWN N.H.		SHEET 1 OF 1	
TITLE TRACK STOP CYLINDER ASSY		M/C No.	
CLIENT		SCH.No. SC4-5792/1	

ITEM No.	PRODUCT NUMBER	QTY	DESCRIPTION	X
0001	51120516	2	O SEAL NITRILE 0516-24	X
0002	51110151	1	O SEAL NITRILE 0151-16	X
0003	21020015	1	EXTERNAL CIRCLIP 7100-015	
0004	28080031	2	SS BALL BEARING 6002 2RS1	
0005	4-18253/4	16	MAGNET N d F e B 25 x 7.5 x 6.0 (A)	
0006	27011144	3	COMPRESSION SPRING SS LC-063F-6	X
0007	C4-7305	1	BODY NUT	
0008	C3-6468/1	1	CHUCK SHAFT	
0009	C3-6469	1	OUTER MAGNET HOUSING	
0010	C4-6470	1	LOCATOR (MAGNET)	
0011	C3-6471	1	INNER MAGNET HOUSING	
0012	C4-6472	1	OUTER COVER	
0013	C4-6473	1	CLAMP PLATE	
0014	C3-6474	1	CYLINDER	
0015	C3-6475	1	PISTON	
0016A	C4-6476/1	3	PIN (DIA.4 X 16 LONG)	
0016B	C4-6476/2	3	PIN (DIA.4 X 10 LONG)	
0017	C4-6477	3	LEVER	
0018	C4-6478	3	SLIDING BLOCK	
0019	C4-6479	1	CLAMP PLATE	
0020	C4-6522	1	INNER LOCATING RING	
0021	C4-6523	1	OUTER LOCATING RING	
			RECOMMENDED SPARE	X

DATE 19/05/05	Mastercfil	ISSUE 2	
DRAWN RIH.		SHEET 1 OF 2	
TITLE PARALLEL JAW CHUCK ASSY (STD.CAPPER)		M/C No.	
CLIENT		SCH.No. SC3-6480/1	

ITEM No.	PRODUCT NUMBER	QTY	DESCRIPTION	X
0022	C4-6524	1	OUTER LOCATING RING	
0023	C4-6525	1	INNER LOCATING RING	
0024	C4-7105	1	SPACER RING	
0025	22250303	6	SCREW SLOTTED/GRUB SS M3 X 3	
0026	C4-8797	2	TOMMY BAR DIA.8	
			RECOMMENDED SPARE	X

DATE 19/05/05	Masterfil	ISSUE 2	
DRAWN RIH.		SHEET 2 OF 2	
TITLE PARALLEL JAW CHUCK ASSY (STD.CAPPER)		M/C No.	
CLIENT		SCH.No. SC3-6480/1	

ITEM No.	PRODUCT NUMBER	QTY	DESCRIPTION	X
0001	SC4-6873/R	1	JIB/DRIVE ASSY (ROSSI)	
0002	SC4-6878	1	RETURN CHUTE ASSY	
0003	SC4-6843	1	IDLER END ASSY	
0005	C4-7099	1	COVER PLATE - TOOLING	
0006	C4-7100	1	FRONT COVER (PVC)	
0007	C4-7101	1	L/H SIDE (JIB)	
0008	C3-6901	40	FLIGHT MOUNTING PLATE	
0009	C3-6885	1	MOUNTING PLATE (TAKE OFF TOOLING)	
0010	C4-6889	1	END TRACK PLATE - MOUNTING BRACKET	
0011	36191135	4	KNOB M8 VH153/35B/M8	
0012	C4-8326	1	FIBRE OPTIC MOUNTING BRKT ELEVATOR	
0013	29012007	2	ADJUSTABLE HINGE E6-10-301-10	
0014	17217533	1	ACETAL BAR 12MM X 5MM X 2M LONG	
			RECOMMENDED SPARE	X

DATE 19/05/05	Mastercfil	ISSUE 4	
DRAWN M.H.		SHEET 1 OF 1	
TITLE ELEVATOR SORTER (ROSSI)		M/C No.	
CLIENT		SCH.No. SC1-6891/R	

ITEM No.	PRODUCT NUMBER	QTY	DESCRIPTION	X
0001	4-18055/9	0	ROSSI MOTOR MVV50 U02A-E1 FCIA-71B4	
0002	4-18270/5	3	FLANGED BEARING RHP SFT20	
0003	C3-7991	1	DRIVE SHAFT - ELEVATOR SORTER (ROSSI	
0004	C3-6627	1	DRIVEN/CLUTCH SHAFT ELEVATOR SORTER	
0005	C4-6628	2	DRIVE SPROCKET	
0006	4-18200/1	1	CLUTCH ROBA-SPROC (SLIP HUB)	
0007A	C4-5741	1	DRIVE SPROCKET	
0007B	26042002	3	1/2" PITCH ROLLER CHAIN 08B-1	
0007C	26073102	1	CONNECTING LINK 1/2" PITCH CHAIN	
0008	C4-6629	4	MOTOR MOUNTING SPACER DIA.20 X 30 LG	
0009A	C4-6857	1	RETURN GUIDE	
0009B	C4-6857/1	1	RETURN GUIDE	
0010A	C3-6871	1	SUPPORT GUIDE	
0010B	C3-6871/1	1	SUPPORT GUIDE	
0011	C1-6872	1	ELEVATOR JIB	
0012	C4-6654	6	SPACER DIA.12 X 197 LONG (M6 B.ENDS)	
0013	C3-6888	1	MOUNTING BRACKET 'H' FRAME	
0014	4-18200/7B	2	ELEVATOR CHAIN & ATTACHMENTS	
0015A	C3-6861	2	SUPPORT BRACKET - ELEVATOR SORTER	
0015B	36191135	4	KNOB M8 VH153/35B/M8	
0016	C4-6874	1	BOTTOM COVER	
0019	C3-5840/1	1	CHAIN GUARD - ELEVATOR SORTER	
			RECOMMENDED SPARE	X

DATE 23/05/05	Mastercfil	ISSUE 3	
DRAWN NEC		SHEET 1 OF 2	
TITLE JIB/DRIVE ASSY (ROSSI)		M/C No.	
CLIENT		SCH.No. SC4-6873/R	

ITEM No.	PRODUCT NUMBER	QTY	DESCRIPTION	X
0020	4-17562	2	SPACER DIA.12 X 100 LONG (M6 B.ENDS)	
0021	C3-7231	1	TOOLING PLATE SIDE COVER	
0022	C1-6876	1	HOPPER	
0023	C3-7265	1	WIPER BAR	
0024	C4-7266	1	SIDE PLATE TOOLING	
0025	C4-8102	1	FILLER PLATE - TOOLING	
			RECOMMENDED SPARE	X

DATE 23/05/05	Mastercfil	ISSUE 3	
DRAWN NEC		SHEET 2 OF 2	
TITLE JIB/DRIVE ASSY (ROSSI)		M/C No.	
CLIENT		SCH.No. SC4-6873/R	

ITEM No.	PRODUCT NUMBER	QTY	DESCRIPTION	X
0001	C2-6879	1	CAP RETURN CHUTE	
0002	C3-6880	1	RETURN CHUTE MOUNTING PLATE	
			RECOMMENDED SPARE	X

DATE 23/05/05	Masterfil	ISSUE 2	
DRAWN N.H.		SHEET 1 OF 1	
TITLE RETURN CHUTE ASSY		M/C No.	
CLIENT		SCH.No. SC4-6878	

ITEM No.	PRODUCT NUMBER	QTY	DESCRIPTION	X
0001	C3-6844	1	TOP COVER	
0002	C4-6620	2	IDLER SPROCKET	
0003	C3-6621	1	IDLER SHAFT	
0004	C4-6382	2	ADJUSTING BLOCK - ELEVATOR	
0005	C3-6381	2	IDLER ADJUSTING PLATE	
0006	4-17008/130	2	SS STUDDING M12 X 130 LONG	
0007	28022525	2	BEARING MB 25-25 DU	
			RECOMMENDED SPARE	X

DATE 23/05/05	Masterfil	ISSUE 1	
DRAWN N.H.		SHEET 1 OF 1	
TITLE IDLER END ASSY		M/C No.	
CLIENT		SCH.No. SC4-6843	

ITEM No.	PRODUCT NUMBER	QTY	DESCRIPTION	X
0001	C4-7140	1	AGITATOR CAM	
0002	35672201	1	AIR CYLINDER M6025/25	X
0003	C3-7103	1	AIR CYLINDER MOUNTING BRACKET	
0004	4-10054	2	AIR CYLINDER MOUNTING BRACKET	
0005	C4-6514	1	CLEVIS	
0006	C4-6515	1	LINK	
0007	C4-6516	1	BEARING	
0008	C4-6517	2	PIVOT PLATE	
0009	C3-6847	1	AGITATOR	
0010	C3-6877	1	AGITATOR GUARD	
0011	28011007	2	BEARING FMB 10-07 DU	
0012	SC4-5949/8	1	AGITATOR AIR CIRCUIT	
0013	31122720	1	BULKHEAD FITTING 6MM-6MM 100290600	
0014	4-29044/5	1	SPACER POLYACETAL DIA.20 X 10 LONG	
			RECOMMENDED SPARE	X

DATE	19/05/05	Masterfil	ISSUE 5
DRAWN	RIH		SHEET 1 OF 1
TITLE	AGITATOR ASSY		M/C No.
CLIENT			SCH.No. SC4-6875

ITEM No.	PRODUCT NUMBER	QTY	DESCRIPTION	X
0031	33164314	1	5/2 ROLLER VALVE X3-0451-02	
0032	C4-7140	0	AGITATOR CAM	
0033	C4-5698/1	2	SPACER DIA.12 X 28 LONG (M5 THRO')	
0034	33184202	2	FLOW REGULATOR 10TA00418 4MM X 1/8"	
			RECOMMENDED SPARE	X

DATE	23/05/05	Masterfil	ISSUE 4
DRAWN	N.H.		SHEET 1 OF 1
TITLE	AGITATOR AIR CIRCUIT		M/C No.
CLIENT			SCH.No. SC4-5949/8

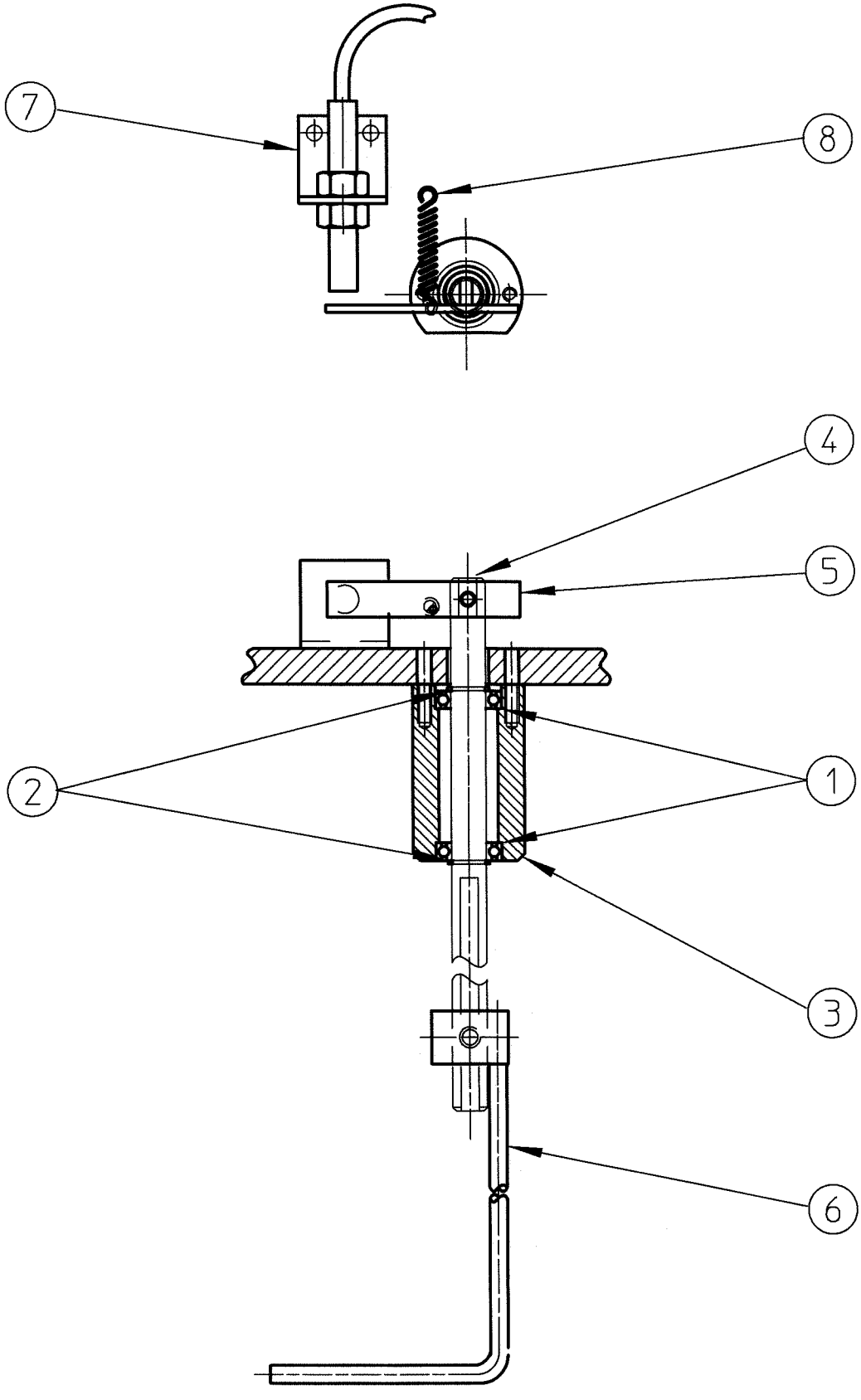
ITEM No.	PRODUCT NUMBER	QTY	DESCRIPTION	X
0001	C4-8059/1	1	HOPPER COVER - FIXED	
0002	C4-8062/1	1	HOPPER COVER - HINGED	
0003	C4-8069	1	FILLER PLATE	
0004	29012001	1	HINGE PIN SS 122013/H 1.5"	
0005	25079001	1	HANDLE M643/140 (37311)	
0006	29012007	3	ADJUSTABLE HINGE E6-10-301-10	
			RECOMMENDED SPARE	X

DATE 19/05/05	Masterfil	ISSUE 1	
DRAWN NEC		SHEET 1 OF 1	
TITLE HOPPER COVER ASSY ELEVATOR SORTER		M/C No.	
CLIENT		SCH.No. SC4-8064/1	

ITEM No.	PRODUCT NUMBER	QTY	DESCRIPTION	X
0001	28080013	2	DEEP GROOVE BEARING SKF 61800	
0002	21020010	2	SALTERFIX EXTERNAL CIRCLIP 7100.010	
0003	C4-7487	1	BEARING HOUSING	
0004	C4-7488	1	PIVOT BAR	
0005	C4-7566	1	SENSOR LEVER	
0006	C4-7491	1	NECK SENSOR LEVER	
0007	C4-7490	1	SENSOR MOUNTING BRACKET	
0008	4-10304	1	SS TENSION SPRING OD 3/16" X 1.25"LG	X
			RECOMMENDED SPARE	X

DATE 19/05/05	Masterfil	ISSUE 1	
DRAWN CLR		SHEET 1 OF 1	
TITLE NECK SENSOR ASSY		M/C No.	
CLIENT		SCH.No. SC4-7567	

REMOVE ALL BURRS & SHARP EDGES



SCALE.	GEN.TOL.	NECK SENSOR ASSY CAPPER INFEED	Masterfil
	± 0,1		

ATL:	DRN: M.H.	DRAWING No:	ISS.
FINISH:	DATE: 05/11/01	SC4-7567	01.a

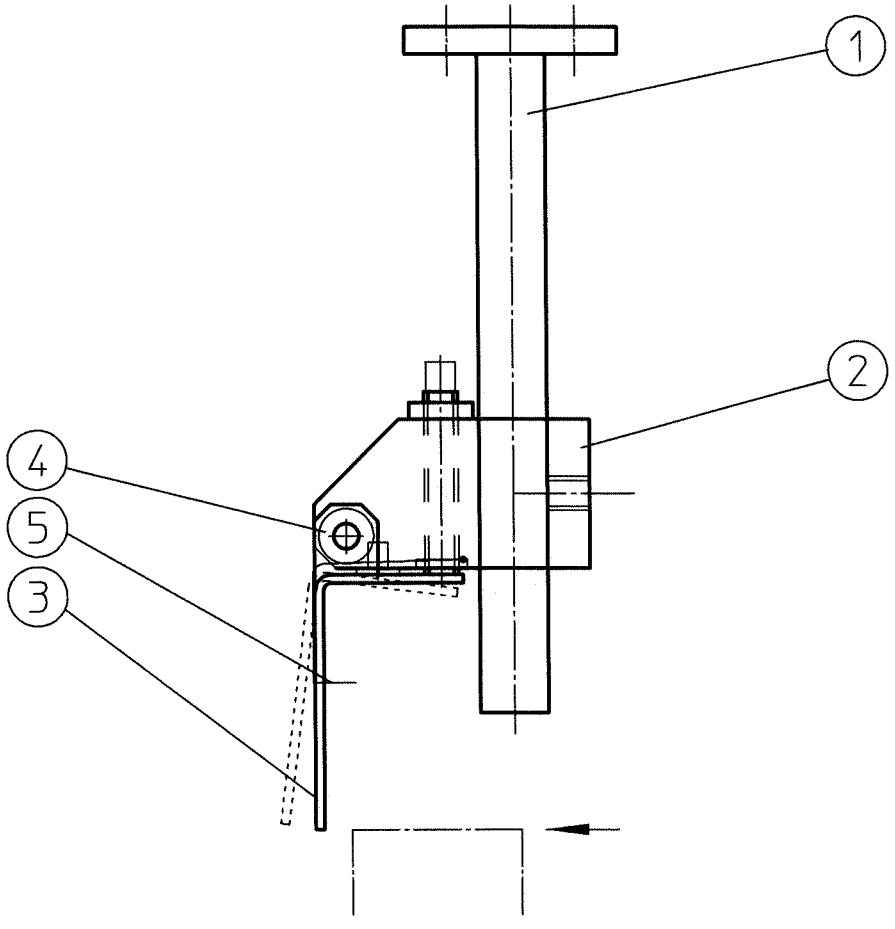
ITEM No.	PRODUCT NUMBER	QTY	DESCRIPTION	X
0001	3-28376/1	1	OUTFEED SENSOR BRKT DIA.18 X 30 DEG.	
0002	4-24115	1	MODS TO CLAMP	
0003	36191110	1	KNOB M10 VH153/54B/M10	
0004	47504024	0	SENSOR NBB10-30GM50-E2-V1	
			RECOMMENDED SPARE	X

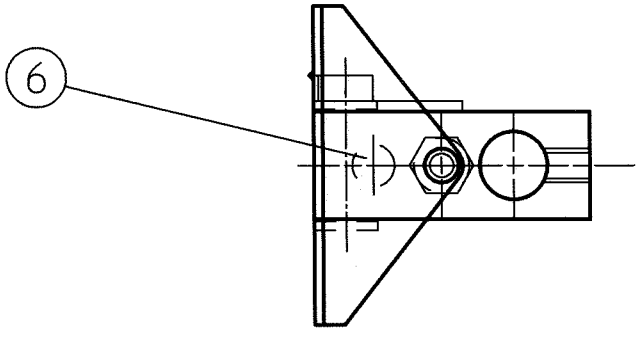
DATE	19/05/05	Masterfil	ISSUE 3
DRAWN	MAS		SHEET 1 OF 1
TITLE	OUTFEED SENSOR ASSY PET UNIVERSAL		M/C No.
CLIENT			SCH.No. S4-24113/PU

ITEM No.	PRODUCT NUMBER	QTY	DESCRIPTION	X
0001	C4-7191	1	SENSOR MOUNTING POST	
0002	C4-8401/1	1	MTG BLOCK NO CAP/COCKED CAP SENSOR	
0003	C4-8402/1	1	FLAP BRACKET NO CAP/COCKED CAP SENS.	
0004	C4-8403	1	SPACER - TORSION SPRING DIA.13 X 10	
0005	27071101	1	TORSION SPRING LTL 040H-4SS	X
0006	4-10036	1	BEARING PLUG	
0009	25076002	1	ADJUSTABLE HANDLE 2865 B M8 FEMALE	
0010	C4-8450	1	STEPPED WASHER	
			RECOMMENDED SPARE	X

DATE	19/05/05	Masterfil	ISSUE 5
DRAWN	RIH		SHEET 1 OF 1
TITLE	NO CAP/HIGH CAP DETECTION (L-R)		M/C No.
CLIENT			SCH.No. SC4-6816/2

REMOVE ALL BURRS & SHARP EDGES



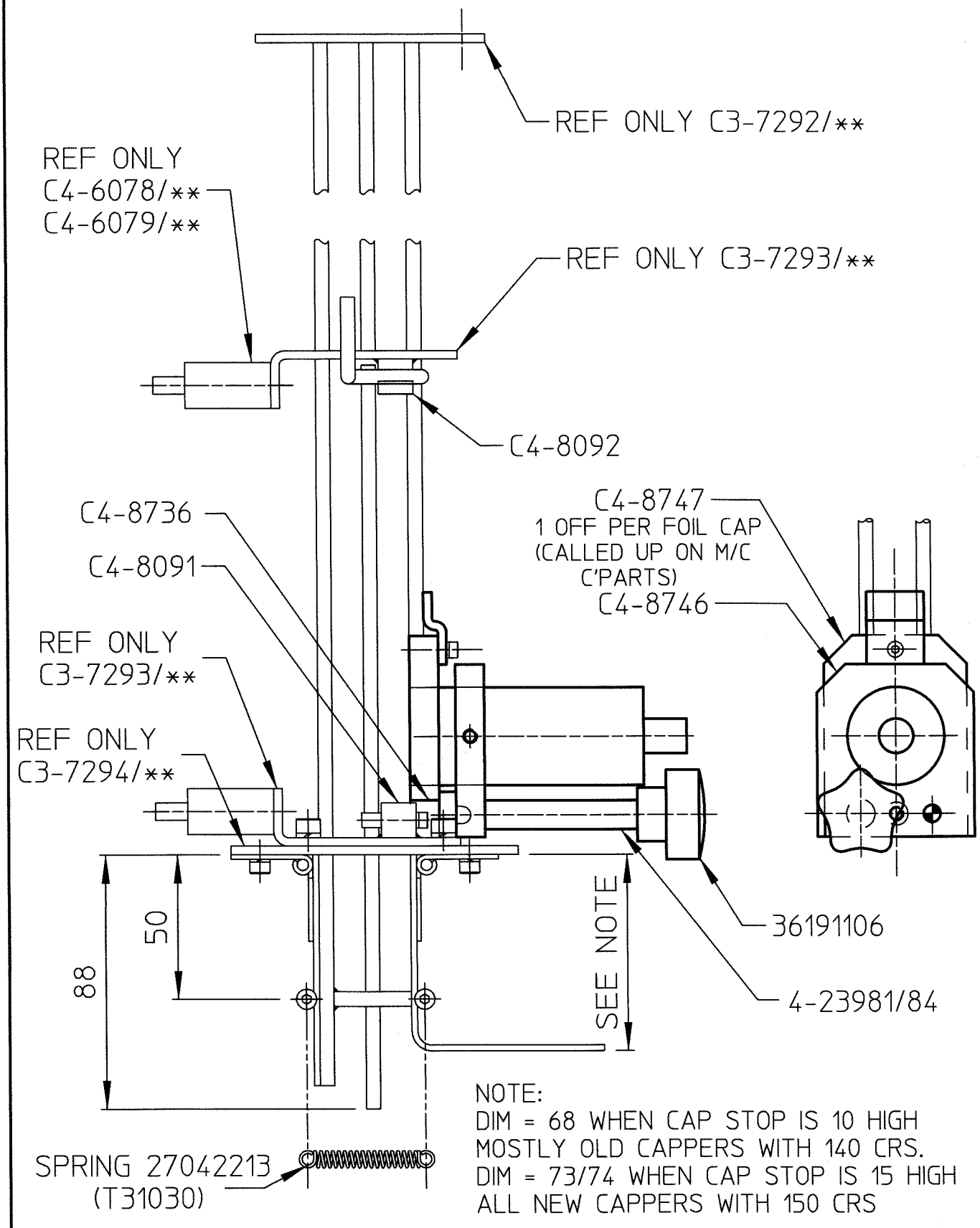


SCALE.	GEN.TOL.	NO CAP DETECTOR INDUCTIVE PROXIMITY	Masterfil	
1:2	± 0,1			
MATL:		DRN: N.H.	DRAWING No: SC4-6816/002	ISS. 01
FINISH:		DATE: 28.08.96		

ITEM No.	PRODUCT NUMBER	QTY	DESCRIPTION	X
0001	C4-8736	0	MOUNTING BLOCK - SENSOR	
0002	4-23981/84	1	SPACER DIA.10 X 59 LONG (M6 B.ENDS)	
0003	36191106	1	KNOB M6 VC192/30B/M6	
0004	C4-8746	1	SENSOR MOUNTING PLATE DIA.34	
0005	C4-8747	0	SENSOR ANTI SENSE PLATE	
0006	32107002	2	HOSE PACK 'MODULAR HOSE' RS695-923	
0007	32107003	1	90 DEG. NOZZLE KIT RS773-720	
			RECOMMENDED SPARE	X

DATE 19/05/05	Masterfil	ISSUE 3	
DRAWN MAS		SHEET 1 OF 1	
TITLE NO FOIL DETECTION/TRACK ASSY DIA.34		M/C No.	
CLIENT		SCH.No. SC4-8735/1	

REMOVE ALL BURRS & SHARP EDGES



NOTE:
DIM = 68 WHEN CAP STOP IS 10 HIGH
MOSTLY OLD CAPPERS WITH 140 CRS.
DIM = 73/74 WHEN CAP STOP IS 15 HIGH
ALL NEW CAPPERS WITH 150 CRS

SCALE.	GEN.TOL.	NO FOIL DETECTION IN TRACK DIA 34 SENSOR	Masterfil	
1:2	± 0,1			
MATL:		DRN: RIH	DRAWING No: SC4-8735/001	ISS 01
FINISH:		DATE: 26.11.98		

ITEM No.	PRODUCT NUMBER	QTY	DESCRIPTION	X
0001	S4-10280	1	BOTTLE STOP ASSY (40 STROKE)	
0002	4-20395	1	MODS TO BOTTLE STOP	
0003	4-15793/15	4	SPACER DIA.16 X 120 LONG (M8 B.ENDS)	
0004	C3-6186	1	MOUNTING PLATE	
0005	C4-6187	2	SUPPORT BAR (A=450)	
0006	C4-6188	1	CLAMP MOUNTING BRACKET	
0007	C4-6189	1	CLAMP PLATE	
0008	C4-7307	1	JOINING PLATE	
0010	25076002	2	ADJUSTABLE HANDLE 2865 B M8 FEMALE	
0011	C4-8513/2	1	SPACER PLATE BOTTLE CLAMP (A=1/2")	
0012	33184201	1	FLOW REGULATOR 10K 510618 6MM X 1/8"	
0013	C3-8511	0	BOTTLE CLAMP BLOCK (REF. ONLY)	
0014	21062008	0	HEADED INSERT (TAPPEX) 003M8	
			RECOMMENDED SPARE	X

DATE 19/05/05	Masterfil	ISSUE 1	
DRAWN RIH		SHEET 1 OF 1	
TITLE OFFSET BOTTLE CLAMP ASSY		M/C No.	
CLIENT		SCH.No. SC4-6200/4	

ITEM No.	PRODUCT NUMBER	QTY	DESCRIPTION	X
0001	51120116	1	O SEAL NITRILE 0116-24	X
0002	51130245	2	O SEAL NITRILE 0245-30	X
0003	4-10281	1	STOP CYLINDER	
0004	4-10282	1	PISTON	
0005	4-10283	1	PISTON ROD	
0006	4-10284	1	BEARING	
0007	4-10285	1	END CAP & GUIDE	
0008	4-10286	1	COVER TUBE	
0009	4-10287	1	END PLATE	
0010	22230612	0	SCREW CAP SOCKET SS M6 X 12	
0011	51120316	2	O SEAL NITRILE 0316-24	X
			RECOMMENDED SPARE	X

DATE 23/05/05	Masterfil	ISSUE 1	
DRAWN LMS		SHEET 1 OF 1	
TITLE BOTTLE STOP ASSY (40 STROKE)		M/C No.	
CLIENT		SCH.No. S4-10280	

ITEM No.	PRODUCT NUMBER	QTY	DESCRIPTION	X
0001	1-28824/5A	1	CONTROL CABINET (1100 X 750 X 300)	
0002	25070101	2	SS SPANNER LOCK ESS6SQ/22	
0003	25070102	1	KEY 26K6S (FOR ESS6SQ/22)	
0004	S4-20095	1	DOOR HINGE ASSY	
0005	4-17289/38	1	ALI PANEL (900 X 680 X 3)	
			RECOMMENDED SPARE	X

DATE 19/05/05	Masterfil	ISSUE 1	
DRAWN N.H.		SHEET 1 OF 1	
TITLE CABINET ASSY (1100x750x300) NO HMI		M/C No.	
CLIENT		SCH.No. SC4-8597/1	

ITEM No.	PRODUCT NUMBER	QTY	DESCRIPTION	X
0001	29012002	1	HINGE ASSY LH 96-50-420-11	
0002	29012004	1	HINGE ASSY RH 96-50-410-11	
			RECOMMENDED SPARE	X

DATE 23/05/05	Masterfil	ISSUE 3	
DRAWN RIH		SHEET 1 OF 1	
TITLE DOOR HINGE ASSY		M/C No.	
CLIENT		SCH.No. S4-20095	

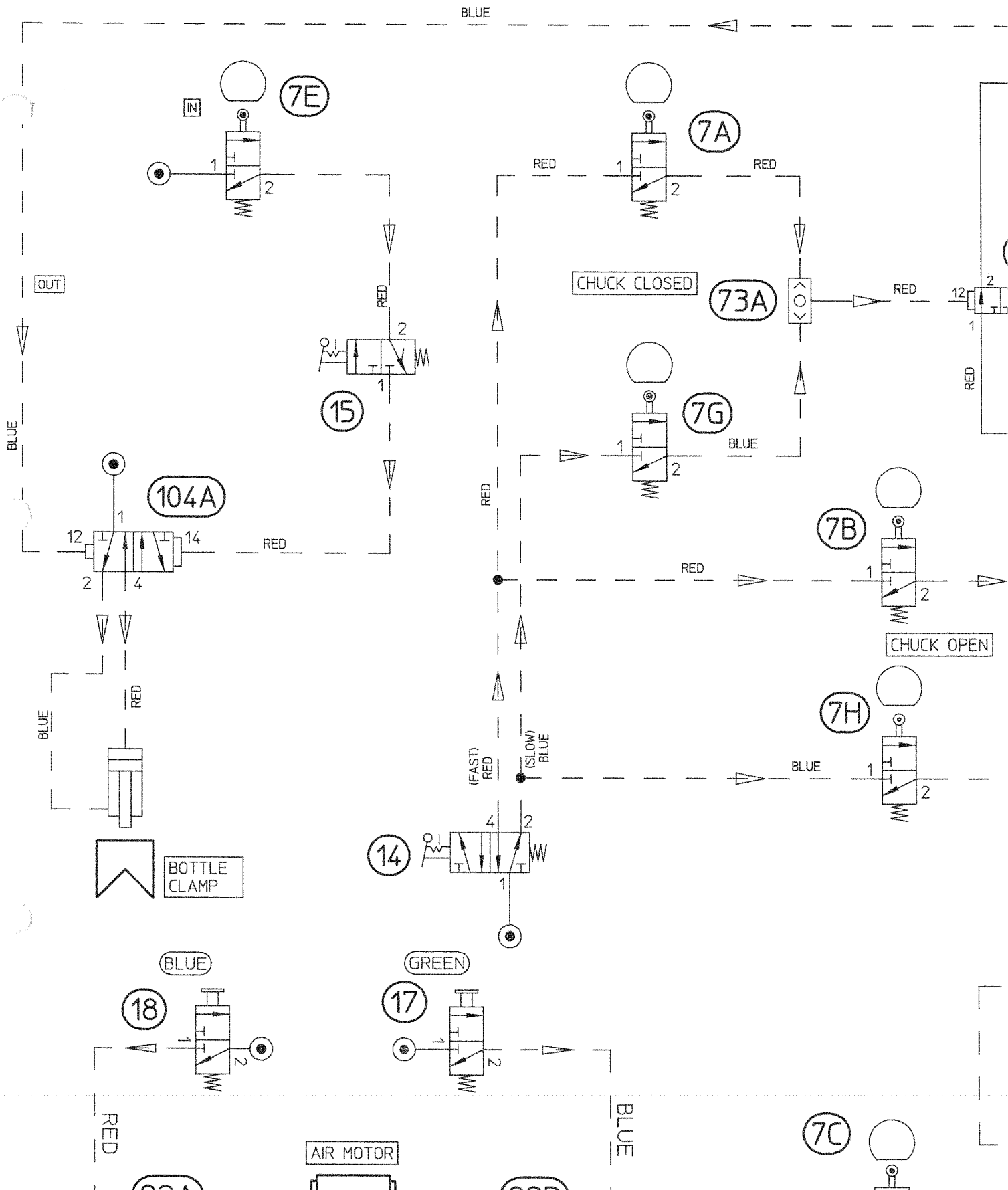
ITEM No.	PRODUCT NUMBER	QTY	DESCRIPTION	X
0001	C1-6767/2	1	CAPPER FRONT LABEL	
0002	C4-7664	1	GREASE WEEKLY/DAILY LABEL	
0003	C4-6350	1	SS MASTERCAP LABEL	
			RECOMMENDED SPARE	X

DATE 19/05/05	Masterfil	ISSUE 6	
DRAWN RIH		SHEET 1 OF 1	
TITLE CAPPER LABELS		M/C No.	
CLIENT		SCH.No. SC4-6289	

ITEM No.	PRODUCT NUMBER	QTY	DESCRIPTION	X
0007	33124511	7	3/2 VALVE ROLLER/SPRING M1553/8	X
0014	33128402	1	5/2 PILOT VALVE NC+NO 30700032 (3/2)	
0015	33128401	1	3/2 ROTARY SWITCH VALVE N/C 30700023	
0017	33121514	1	PB VALVE GREEN M1553/51/G	
0018	33121515	1	PB VALVE BLUE SPGB/RFE 24667	
0020	44166103	2	PRESSURE SWITCH 81-513-552	
0022	33127510	1	3/2 VALVE S667/40 (N.O)	
0023	33127508	1	3/2 VALVE S666/40	
0027	36160113	1	AIR SERVICE UNIT (1/2") BL64-421	
0042	33127544	1	3/2 VALVE PRESS/DIFF 03-0612-02 .25"	X
0045	S4-10502	1	FILTER REGULATOR .125" BSP (1/8")	
0073	33185103	3	VALVE 'OR' ELEMENT 81-540-001	
0074	4-18134/15	2	3/2 SOLENOID MS4/10 + M/P43086 24VDC	
0086	31853010	1	AIR COUPLING 1005-020-037 "DEUBLIN"	
0092	33127523	2	3/2 VALVE 03-0601-02	
0104	33167309	2	5/2 VALVE PRESS/DIFF 6MM M1701/33	
0127	33184119	2	AIR FLOW REGULATOR T1000C1800	
			RECOMMENDED SPARE	X

DATE 19/05/05	Mastercfil	ISSUE 1	
DRAWN RIH		SHEET 1 OF 1	
TITLE AIR CIRCUIT 2 SPEED TIC-TAC (ETC.)		M/C No.	
CLIENT		SCH.No. SC3-6365/36	

REMOVE ALL BURRS & SHARP EDGES



Masterfil	SCALE: 1:1	MATL:	DRN
	GEN TOL. ±0,1	FINISH:	DAT 14

ITEM No.	PRODUCT NUMBER	QTY	DESCRIPTION	X
0001	36114901	1	FILTER REGULATOR B07-101-M1EG (1/8")	
0003	36122002	1	PRESSURE GAUGE 18-013-990 (1/8")	
0004	29020201	1	BRACKET 18-001-053 (1/8")	
			RECOMMENDED SPARE	X

DATE 23/05/05	Mastergil	ISSUE 4	
DRAWN RIH		SHEET 1 OF 1	
TITLE FILTER REGULATOR .125" BSP (1/8")		M/C No.	
CLIENT		SCH.No. S4-10502	

ITEM No.	PRODUCT NUMBER	QTY	DESCRIPTION	X
0001	3-27287/3	1	PLASTIC TUNNEL (ELEVATOR)550x600x520	
0002	3-25441/8	2	TUNNEL SUPPORT	
0003	4-26165	2	BRACKET - PLASTIC TUNNELS	
			RECOMMENDED SPARE	X

DATE 19/05/05	Masterfil	ISSUE 3	
DRAWN RIH		SHEET 1 OF 1	
TITLE TUNNEL ASSY L/H 4.5" X 600 LONG		M/C No.	
CLIENT		SCH.No. 54-25442/25	

ITEM No.	PRODUCT NUMBER	QTY	DESCRIPTION	X
0001	3-25441/19	2	TUNNEL SUPPORT	
0002	3-26164/3	1	PVC TUNNEL (520 X 600 X 600)	
0003	4-26165	2	BRACKET - PLASTIC TUNNELS	
			RECOMMENDED SPARE	X

DATE 19/05/05	Masterfil	ISSUE 1	
DRAWN M.H.		SHEET 1 OF 1	
TITLE TUNNEL ASSY R/H 4.5" X 600 LONG		M/C No.	
CLIENT		SCH.No. S4-25443/50	

ITEM No.	PRODUCT NUMBER	QTY	DESCRIPTION	X
0001A	SC4-6249/312	1	STARWHEEL ASSY - 325ML (LAMICON)	
0001B	SC4-6249/313	1	STARWHEEL ASSY - 500ML (LAMICON)	
0001C	SC4-6249/314	1	STARWHEEL ASSY - 1000ML ROUND	
0001D	SC4-6249/328	0	STARWHEEL ASSY - 400ML (LAMICON)	
0001E	C4-5820/18	4	SPACER (DIA.20 X 30 LONG)	
0002	C4-7333/3	1	CAP STOP (A=10 B=7 C=25)	
0003A	C3-7367/139	1	CHUCK JAWS DIA.33xDIA.31 TAPER X 27	
0003B	SC4-5832/178	1	TRACK ASSY DIA.33xDIA.31 TAPER X 27	
0003C	C4-8078/4	1	TRANSFER ARM TOOLING - SHAPED	
0004A	C3-7367/140	1	CHUCK JAWS DIA.33.5 x 19 FLIP TOP	
0004B	SC4-5832/179	1	TRACK ASSY DIA 34 X 19 FLIP TOP	
0004C	C4-7942/21	1	TRANSFER ARM TOOLING DIA.28.6	
0004D	C4-7329/12	1	CAP SUPPORT	
0005	SC4-6217/1	1	TRANSFER ARM ASSY	
0006	SC4-6903/12	1	ELEVATOR C/P 25W X 12H - 23 HIGH CAP	
0007	SC4-7850/14	1	S/W BEARING 4.5" 20MM GAP NEW CONV.	
0008A	C3-8504/4.5	1	CONTAINER SUPPORT 4.5"	
0008B	SC4-8721/1	1	CONV. CONTAINER SUPPORT SPACERS STD	
0009	SC4-7531	1	GUIDE RAIL EXTENSION ASSY	
0010	4-13941/4.5	2	MOUNTING BRACKET (CONVEYOR) 4.5"	
			RECOMMENDED SPARE	X

DATE 19/05/05	Masterfil	ISSUE 1	
DRAWN RIH		SHEET 1 OF 1	
TITLE MACHINE CHANGE PARTS RAYNER 4346		M/C No.	
CLIENT		SCH.No. SC4-6057/152	

ITEM No.	PRODUCT NUMBER	QTY	DESCRIPTION	X
0001	4-18500/135	1	STARWHEEL B'GUIDE SET 325ML LAMICON	
0002	C4-5820/21	8	SPACER (DIA.20 X 100 LONG)	
0003	C4-5606	1	STARWHEEL BOSS	
0004	C4-5607	1	CLAMP PLATE	
0005	22085628	2	DOWEL PIN DIA.6 X 28 LONG (SS)	
0006	C4-8149/8	1	GUIDE PLATE BEARING (A=17)	
0007	C4-8150	1	CLAMP PLATE - GUIDE PLATE BEARING	
			RECOMMENDED SPARE	X

DATE	23/05/05	Masterfil	ISSUE 1
DRAWN	RIH		SHEET 1 OF 1
TITLE	STARWHEEL ASSY - 325ML (LAMICON)		M/C No.
CLIENT			SCH.No. SC4-6249/312

ITEM No.	PRODUCT NUMBER	QTY	DESCRIPTION	X
0001	4-18500/136	1	STARWHEEL/B'GUIDE SET 500ML LAMICON	
0002	C4-5820/14	8	SPACER (DIA.20 X 135 LONG)	
0003	C4-5606	1	STARWHEEL BOSS	
0004	C4-5607	1	CLAMP PLATE	
0005	22085628	2	DOWEL PIN DIA.6 X 28 LONG (SS)	
0006	C4-8149/8	1	GUIDE PLATE BEARING (A=17)	
0007	C4-8150	1	CLAMP PLATE - GUIDE PLATE BEARING	
			RECOMMENDED SPARE	X

DATE 23/05/05	Mastercfil	ISSUE 1	
DRAWN RIH		SHEET 1 OF 1	
TITLE STARWHEEL ASSY - 500ML (LAMICON)		M/C No.	
CLIENT		SCH.No. SC4-6249/313	

ITEM No.	PRODUCT NUMBER	QTY	DESCRIPTION	X
0001	4-18500/137	1	STARWHEEL/B'GUIDE SET 1000ML ROUND	
0002	C4-5820/10	4	SPACER (DIA.20 X 115 LONG)	
0003	C4-5820/14	4	SPACER (DIA.20 X 135 LONG)	
0004	C4-5606	1	STARWHEEL BOSS	
0005	C4-5607	1	CLAMP PLATE	
0006	22085628	2	DOWEL PIN DIA.6 X 28 LONG (SS)	
0007	C3-8511/6	0	BOTTLE CLAMP BLOCK - DIA.82 BOTTLE	
0008	C4-8513/2	1	SPACER PLATE BOTTLE CLAMP (A=1/2")	
0009	C4-8149/8	1	GUIDE PLATE BEARING (A=17)	
0010	C4-8150	1	CLAMP PLATE - GUIDE PLATE BEARING	
			RECOMMENDED SPARE	X

DATE	23/05/05	ISSUE	1
DRAWN	RIH	SHEET	1 OF 1
TITLE	STARWHEEL ASSY - 1000ML ROUND	M/C No.	
CLIENT		SCH.No.	SC4-6249/314

ITEM No.	PRODUCT NUMBER	QTY	DESCRIPTION	X
0001	4-18500/156	1	STARWHEEL/BACKGUIDE SET 400ML LAMIC.	
0002	C4-5820	8	SPACER (DIA.20 X 120 LONG)	
0003	C4-5606	1	STARWHEEL BOSS	
0004	C4-5607	1	CLAMP PLATE	
0005	22085628	2	DOWEL PIN DIA.6 X 28 LONG (SS)	
0006	C4-8149/8	1	GUIDE PLATE BEARING (A=17)	
0007	C4-8150	1	CLAMP PLATE - GUIDE PLATE BEARING	
			RECOMMENDED SPARE	X

DATE 23/05/05	Masterfil	ISSUE 1	
DRAWN RIH		SHEET 1 OF 1	
TITLE STARWHEEL ASSY - 400ML (LAMICON)		M/C No.	
CLIENT		SCH.No. SC4-6249/328	

ITEM No.	PRODUCT NUMBER	QTY	DESCRIPTION	X
0001	C3-7292/47	1	TOP TRACK PLATE	
0002	C3-7293/55	2	LOWER TRACK PLATE	
0003	C3-6779/59	1	END TRACK PLATE	
0004	C4-6078/14	2	TRACK PLATE SPACER (THREADED) A=30	
0005	C4-6079/14	2	TRACK PLATE SPACER (SPIGOT) A=30	
0006	4-10055	1	TIE BAR (A=170)	
0007	27042213	1	EXTENSION SPRING T41030	X
0008A	C4-8091	1	BLOCK - TRACK ESCAPEMENT	
0008B	C4-8092	1	CATCH BRACKET - TRACK ESCAPEMENT	
0009	C4-8736	1	MOUNTING BLOCK - SENSOR	
			RECOMMENDED SPARE	X

DATE 23/05/05	Masterfil	ISSUE 1	
DRAWN RIH		SHEET 1 OF 1	
TITLE TRACK ASSY DIA.33xDIA.31 TAPER X 27		M/C No.	
CLIENT		SCH.No. SC4-5832/178	

ITEM No.	PRODUCT NUMBER	QTY	DESCRIPTION	X
0001	C3-7292/48	1	TOP TRACK PLATE	
0002	C3-7293/56	2	LOWER TRACK PLATE	
0003	C3-6779/60	1	END TRACK PLATE	
0004	C4-6078/1	2	TRACK PLATE SPACER (THREADED) A=20	
0005	C4-6079/1	2	TRACK PLATE SPACER (SPIGOT) A=20	
0006	4-10055	1	TIE BAR (A=170)	
0007	27042213	1	EXTENSION SPRING T41030	X
0008A	C4-8091	1	BLOCK - TRACK ESCAPEMENT	
0008B	C4-8092	1	CATCH BRACKET - TRACK ESCAPEMENT	
0009	C4-8736	1	MOUNTING BLOCK - SENSOR	
			RECOMMENDED SPARE	X

DATE	23/05/05	Masterfil	ISSUE 1
DRAWN	RIH		SHEET 1 OF 1
TITLE	TRACK ASSY DIA 34 X 19 FLIP TOP		M/C No.
CLIENT			SCH.No. SC4-5832/179

ITEM No.	PRODUCT NUMBER	QTY	DESCRIPTION	X
0001	C3-5681	1	TRANSFER ARM MOUNTING BLOCK	
0002	C3-6496	1	TRANSFER ARM	
			RECOMMENDED SPARE	X

DATE 23/05/05	Masterfil	ISSUE 1	
DRAWN MAS		SHEET 1 OF 1	
TITLE TRANSFER ARM ASSY		M/C No.	
CLIENT		SCH.No. SC4-6217/1	

ITEM No.	PRODUCT NUMBER	QTY	DESCRIPTION	X
0001	C4-6902/8	40	ELEVATOR FLIGHT 25W X 12H	
0002	C3-6886/1	1	THROAT PLATE	
0004	C4-6078/10	2	TRACK PLATE SPACER (THREADED) A=25	
0005	C4-6079/10	2	TRACK PLATE SPACER (SPIGOT) A=25	
0006	C3-6885	0	MOUNTING PLATE (TAKE OFF TOOLING)	
0007	3-32103/1	1	CAP GUIDE PLATE - FLAT	
			RECOMMENDED SPARE	X

DATE 23/05/05	Masterfil	ISSUE 4	
DRAWN N.H.		SHEET 1 OF 1	
TITLE ELEVATOR C/P 25W X 12H - 23 HIGH CAP		M/C No.	
CLIENT		SCH.No. SC4-6903/12	

ITEM No.	PRODUCT NUMBER	QTY	DESCRIPTION	X
0001	28080033	3	D.GROOVE BEARING SKF 608-2RS1 SS	
0002	C3-8520/6	1	TOP PLATE - BEARING MOUNTING 4.5"	
0003	C4-8519/2	1	MTG BLOCK RAISED SLAT S'WHEEL BRG.	
0004	C4-8201	3	MODS TO BOLT - THIN HEAD	
0005	C4-8149/X	0	GUIDE PLATE BEARING	
0006	C4-8150	0	CLAMP PLATE - GUIDE PLATE BEARING	
0007	C4-8151/X	0	GUIDE PLATE - BEARING	
0008	24012008	2	WASHER BRIGHT SS NORMAL DIA M8	
			RECOMMENDED SPARE	X

DATE	23/05/05		ISSUE 1
DRAWN	RIH	Mastercfil	SHEET 1 OF 1
TITLE	S/W BEARING 4.5" 20MM GAP NEW CONV.		M/C No.
CLIENT			SCH.No. SC4-7850/14

ITEM No.	PRODUCT NUMBER	QTY	DESCRIPTION	X
0001	C4-5820/39	4	SPACER (DIA.20 X 145 LONG)	
0002	C4-5820/102	2	SPACER (DIA.20 X 109 LONG)	
			RECOMMENDED SPARE	X

DATE 23/05/05	Mastercfil	ISSUE 1	
DRAWN RIH		SHEET 1 OF 1	
TITLE CONV. CONTAINER SUPPORT SPACERS STD		M/C No.	
CLIENT		SCH.No. SC4-8721/1	

ITEM No.	PRODUCT NUMBER	QTY	DESCRIPTION	X
0001	C4-7529	2	MODS TO CLAMP (25031002)	
0002	C4-7530	2	GUIDE RAIL EXTENSION	
0003	36191110	2	KNOB M10 VH153/54B/M10	
			RECOMMENDED SPARE	X

DATE	23/05/05	Masterfil	ISSUE 1
DRAWN	N.H.		SHEET 1 OF 1
TITLE	GUIDE RAIL EXTENSION ASSY		M/C No.
CLIENT			SCH.No. SC4-7531

ITEM No.	PRODUCT NUMBER	QTY	DESCRIPTION	X
0001	C4-9144/6	2	CAP GUIDE PLATE A=9	
0002	4-10327	5	SPACER O/D=8 I/D=5 L=5	
			RECOMMENDED SPARE	X

DATE 19/05/05	Masterfil	ISSUE 1	
DRAWN M.H.		SHEET 1 OF 1	
TITLE EXTRA PARTS FOR ELEVATOR 4346		M/C No.	
CLIENT		SCH.No. SC4-9223	

ITEM No.	PRODUCT NUMBER	QTY	DESCRIPTION	X
0002	47001106	3	RDX ACTUATOR FLUSH BUTTON	
0003	47001107	1	RPV EMERGENCY PUSH BUTTON	
0004	47001108	2	RDH-RT10 ACTUATOR EXTENDED BUTTON	
0005	44710011	1	K/M ILL' PUSH BUTTON RED RLT-RT	
0006	47003101	1	RLF-GE YELLOW INDICATOR	
0007	47003102	2	RLF-RT RED INDICATOR	
0008	46891002	4	EFO LAMP SOCKET	
0009A	44974022	1	ISOLATOR H220-41300-281N4	
0009B	44974023	1	SHAFT 211.192.0190	
0010	47922001	1	K/M CONTACTOR 24VDC DIL-EM-10-G	
0011	47961002	1	MOTOR STARTER PKZM0-1.6	
0012	44510025	5	K/M RELAY 24VDC DIL-ER-40-G	
0013	41321002	35	WIELAND WK2.5/U TERM 57.503.0055.0	
0014	41321004	5	WIELAND WK4SL/U EARTH 57.504.9055.0.	
0015	41392006	3	WIELAND COVER AP 2.5-4 07.311.0155.0	
0016	41392007	4	WIELAND END CLAMP Z5.522.8555.0	
0017	41392012	1	WIELAND JUMPER BAR VB WK2.5M	
0018	41392011	4	WIELAND MARKER TAG 04.242.1250.0	
0019	43313060	1	LOVATO TRUNKING 25w x 60h E74	
0020	43780033	1	TERMINAL BOX TB8 (K)	
0021	44400005	2	EK01 N/C CONTACT BLOCK	
0022	44610008	2	11T BUTTON PLATE GREEN	
			RECOMMENDED SPARE	X

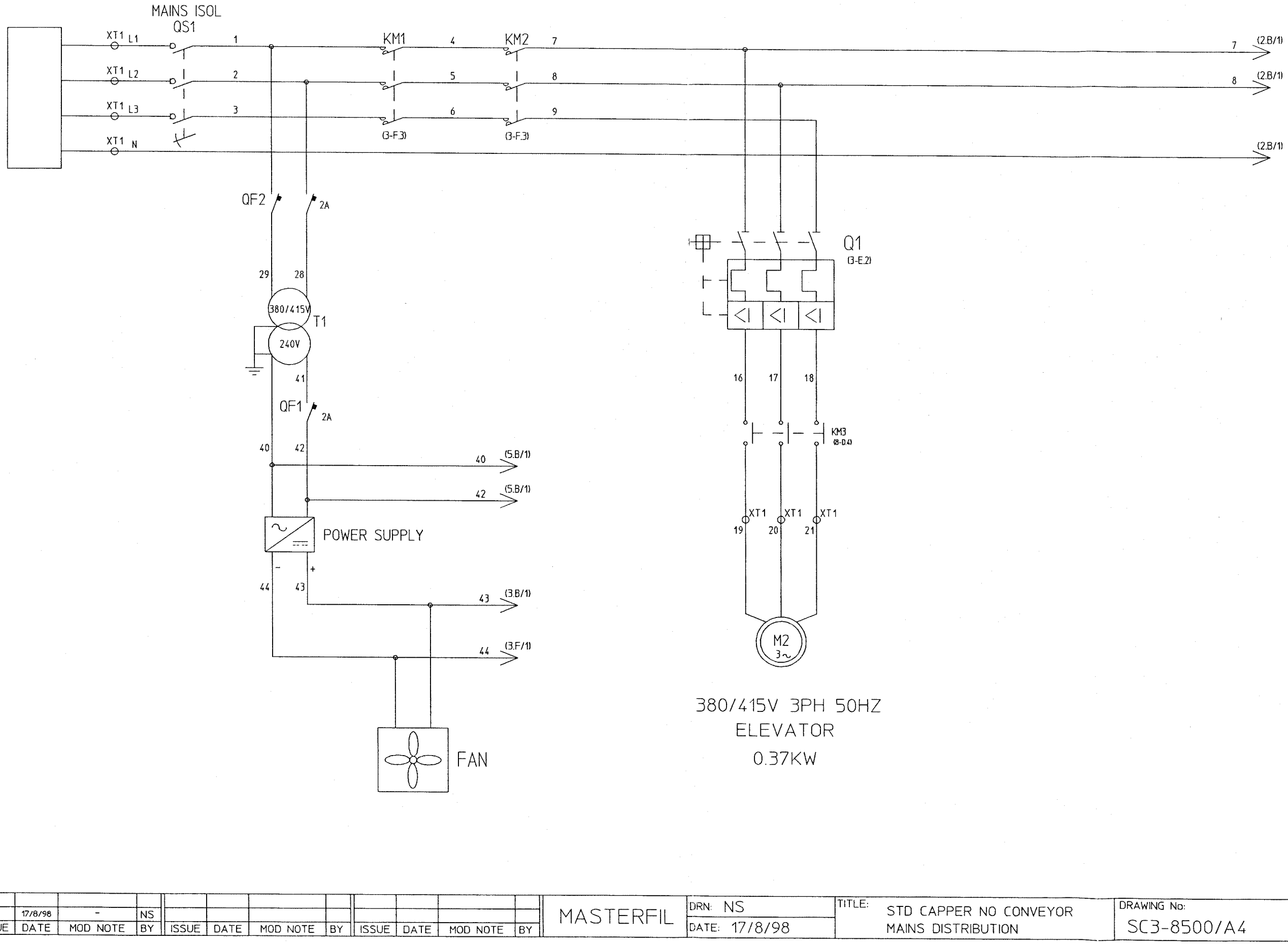
DATE 19/05/05	Masterfil	ISSUE 1	
DRAWN N.S.		SHEET 1 OF 3	
TITLE CAPPER ELEC.CIRC.MK.2 MITSI NO CONV.		M/C No.	
CLIENT		SCH.No. SC3-8500/A4	

ITEM No.	PRODUCT NUMBER	QTY	DESCRIPTION	X
0023	44610009	1	05T BUTTON PLATE YELLOW	
0027	45976003	1	2AMP 1 POLE MCB EP61 D02	
0028	45976007	1	2AMP 2 POLE MCCB EP62 D02	
0031A	49430006	1	FAN 120MM HDF 1225L-24HB	
0031B	49430007	1	FINGER GUARD 120MM 08170	
0032	49450001	2	FILTER RS221-342	
0033	47961003	1	AUXILIARY CONTACT NHI11-PKZMO	
0034	44277006	1	K/M RS-KEY SWITCH	
0035	44400004	7	EK10 N/O CONTACT BLOCK	
0036	47001113	11	BE3 FIXING ADAPTOR	
0037	44510051	1	SAFETY RELAY BD5987.02 24VDC	
0038	44510029	1	K/M AUXILIARY RELAY 11 DIL E	
0039	47361028	1	TRANSFORMER HTE 200.440.240	
0041	33127508	1	3/2 VALVE S666/40	
0042	45764002	1	2A 240V-24VDC POWER SUPPLY S82K05024	
0043	47233049	1	MITSUBISHI PLC FX0N-40MR-ES	
0044	47205002	2	MITSU. INVERTER FR-U120-S 0.4 KER	
0046	41321021	1	WIELAND E/T WKN10 SL/U 57.510.9053.0	
0047	40100007	1	YELLOW END COVER FOR TERMINALS	
0048	43820003	2	DIN RAIL 45 DEG. BRACKET 1TPH1201099	
0049	41155011	1	WEILAND PLUG ST28/10S + ST28/10B	
0050	47002113	3	DIAL MECHANISM RS509-973	
			RECOMMENDED SPARE	X

DATE	19/05/05	Masterfil	ISSUE 1
DRAWN	N.S.		SHEET 2 OF 3
TITLE	CAPPER ELEC.CIRC.MK.2 MITSI NO CONV.		M/C No.
CLIENT			SCH.No. SC3-8500/A4

ITEM No.	PRODUCT NUMBER	QTY	DESCRIPTION	X
0051	49320011	3	POTENTIOMETER RS460-7510 2W 1K	
0052	45976010	2	10AMP 1 POLE MCB EP61 D10	
0053	47922007A	2	AUXILIARY CONTACT 22-DIL-M	
0054	47922016	2	CONTACTOR DIL OMG 24VDC (K/M)	
			RECOMMENDED SPARE	X

DATE 19/05/05	Masterfil	ISSUE 1	
DRAWN N.S.		SHEET 3 OF 3	
TITLE CAPPER ELEC.CIRC.MK.2 MITSI NO CONV.		M/C No.	
CLIENT		SCH.No. SC3-8500/A4	



ISSUE	DATE	MOD NOTE	BY	ISSUE	DATE	MOD NOTE	BY	ISSUE	DATE	MOD NOTE	BY
1	17/8/98	-	NS								

MASTERFIL

DRN: NS
DATE: 17/8/98

TITLE: STD CAPPER NO CONVEYOR
MAINS DISTRIBUTION

DRAWING No: SC3-8500/A4

SHT 1 OF 9
ISSUE: 1

(1.B/8) 7

(1.B/8) 8

(1.B/8) N

QF4 10A

10

FILTER IF REQD

12 11

N L1

KA5

62

(8-B.4)

63

SD

STF

STR

VSD2

10 64

2 65

5 66

C 61

B

U V W

1K 2W
10 TURN
POT

R2

13 XT1 14 XT1 15 XT1

79

(3.D/2)

M1
3~

CAPPER
MAIN DRIVE
0.37KW

QF5 10A

30

FILTER IF REQD

32 31

N L1

KA4

67

(8-E.4)

68

SD

STF

STR

VSD3

10 69

2 70

5 71

C 85

B 61

U V W

1K 2W
10 TURN
POT

R3

(3.D/2)

33 XT1 34 XT1 35 XT1

M4
3~

CAPPER
CHUCK DRIVE
0.37KW

ISSUE	DATE	MOD NOTE	BY	ISSUE	DATE	MOD NOTE	BY	ISSUE	DATE	MOD NOTE	BY
1	17/8/98	-	NS								

MASTERFIL

DRN: NS

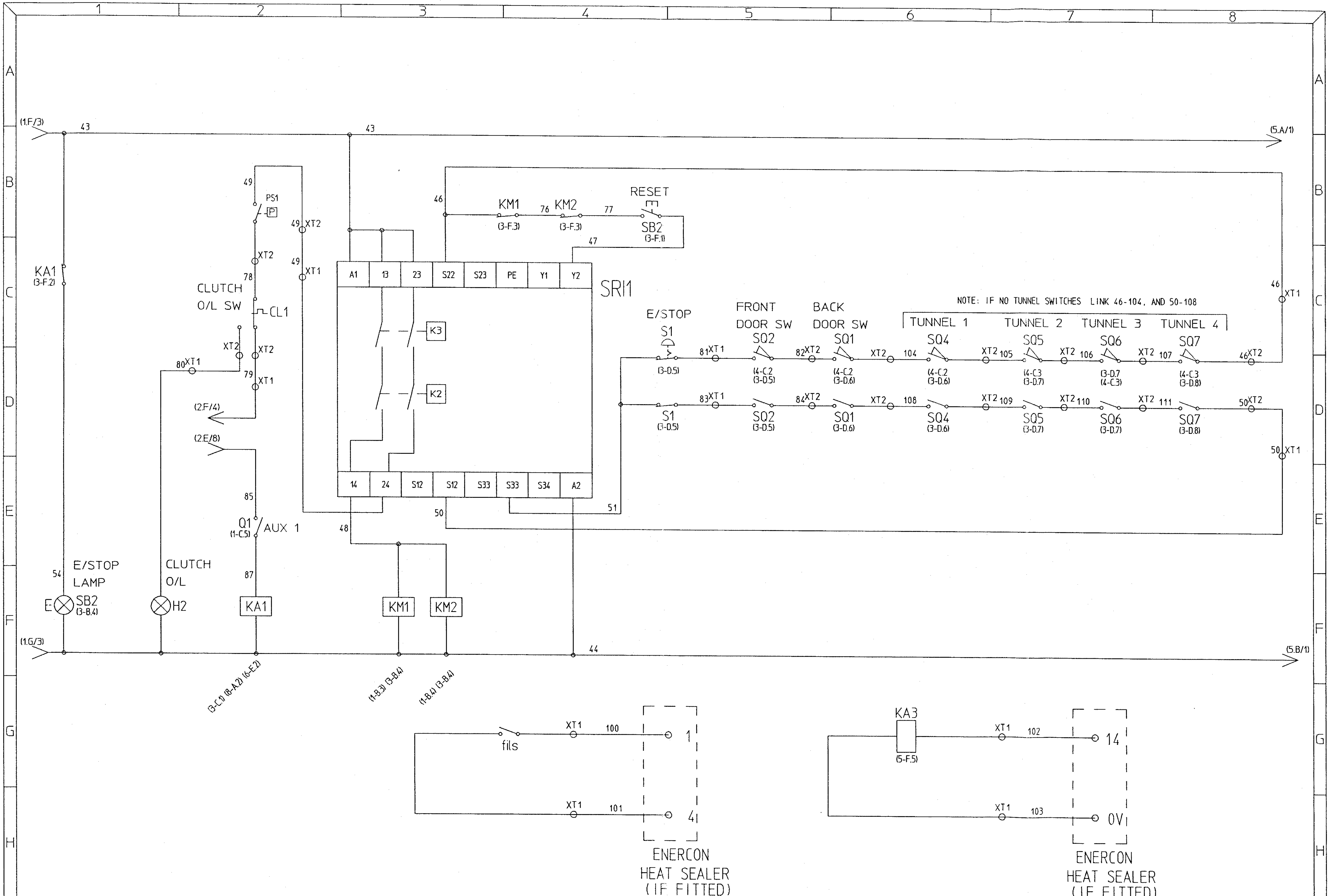
DATE: 17/8/98

TITLE: STD CAPPER NO CONVEYOR
MAINS DISTRIBUTION

DRAWING No: SC3-8500/A4

SHT 2 OF 9

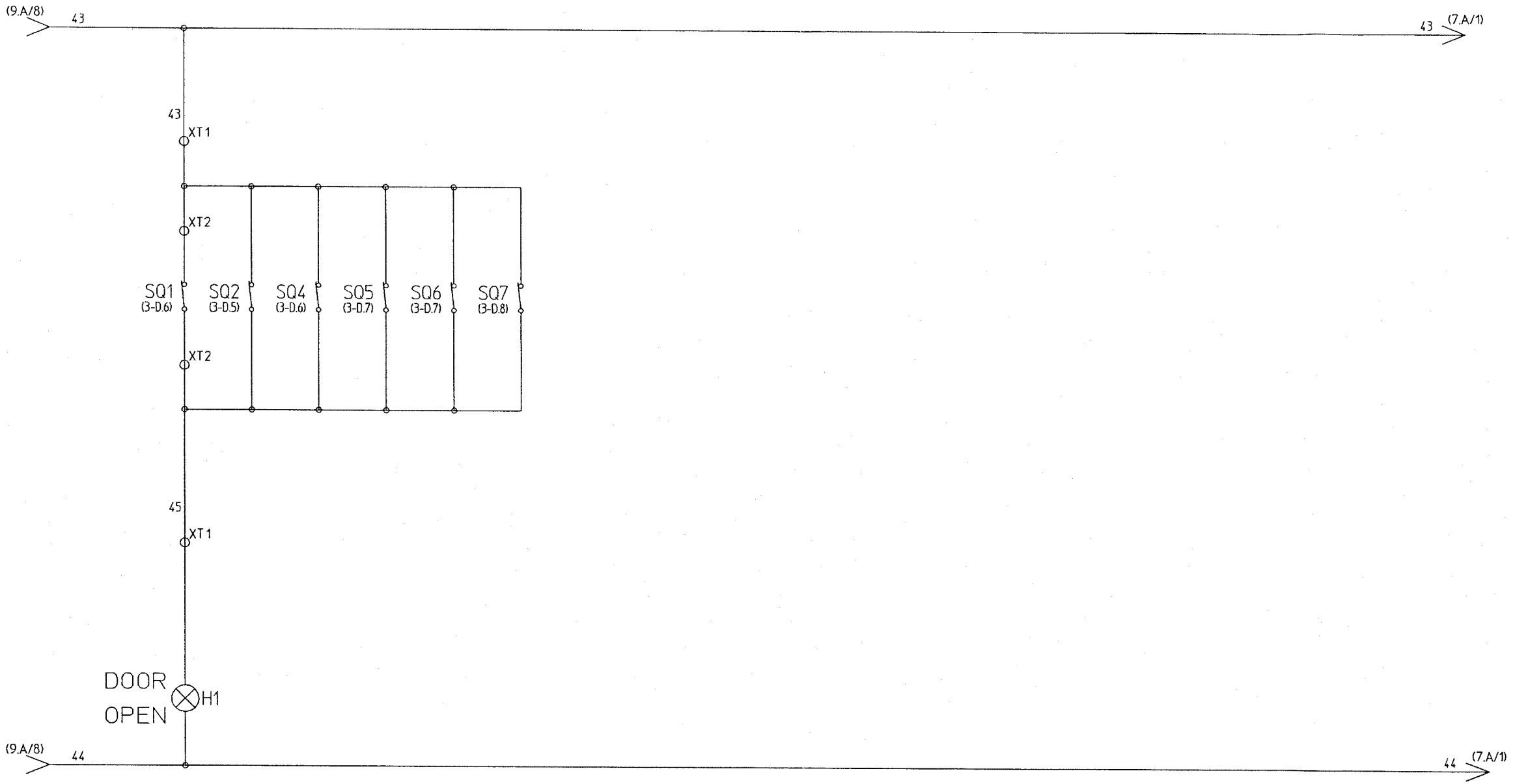
ISSUE: 1



(1.F/3)
43
(5.A/1)
KA1
(3-F.2)
49
PS1
49 XT2
49 XT1
XT2
78
CLUTCH
O/L SW
CL1
XT2
80 XT1
79 XT1
(2.F/4)
(2.E/8)
85
Q1
(1-C.5)
AUX 1
87
46
KM1
(3-F.3)
76
KM2
(3-F.3)
77
RESET
SB2
(3-F.1)
47
A1
13
23
S22
S23
PE
Y1
Y2
SRl1
K3
K2
14
24
S12
S12
S33
S33
S34
A2
48
50
51
NOTE: IF NO TUNNEL SWITCHES LINK 46-104, AND 50-108
E/STOP
S1
(3-D.5)
FRONT
DOOR SW
SQ2
(4-C.2)
(3-D.5)
BACK
DOOR SW
SQ1
(4-C.2)
(3-D.6)
TUNNEL 1
SQ4
TUNNEL 2
SQ5
TUNNEL 3
SQ6
TUNNEL 4
SQ7
81 XT1
82 XT2
XT2 104
XT2 105
XT2 106
XT2 107
46 XT2
46 XT1
83 XT1
84 XT2
XT2 108
XT2 109
XT2 110
XT2 111
50 XT2
50 XT1
E/STOP
LAMP
54
SB2
(3-B.4)
CLUTCH
O/L
H2
KA1
KM1
KM2
(1.G/3)
44
(5.B/1)
(3-C.1) (8-A.2) (6-E.2)
(1-B.3) (3-B.4)
(1-B.4) (3-B.4)
fils
XT1 100
XT1 101
1
4
ENERCON
HEAT SEALER
(IF FITTED)
KA3
(5-F.5)
XT1 102
XT1 103
14
0V
ENERCON
HEAT SEALER
(IF FITTED)

ISSUE	DATE	MOD NOTE	BY	ISSUE	DATE	MOD NOTE	BY	ISSUE	DATE	MOD NOTE	BY
1	17/8/98	-	NS								

MASTERFIL	DRN: NS DATE: 17/8/98	TITLE: STD CAPPER NO CONVEYOR CONTROL CIRCUIT	DRAWING No: SC3-8500/A4	SHT 3 OF 9 ISSUE: 1



ISSUE	DATE	MOD NOTE	BY	ISSUE	DATE	MOD NOTE	BY	ISSUE	DATE	MOD NOTE	BY
1	17/8/98	-	NS								

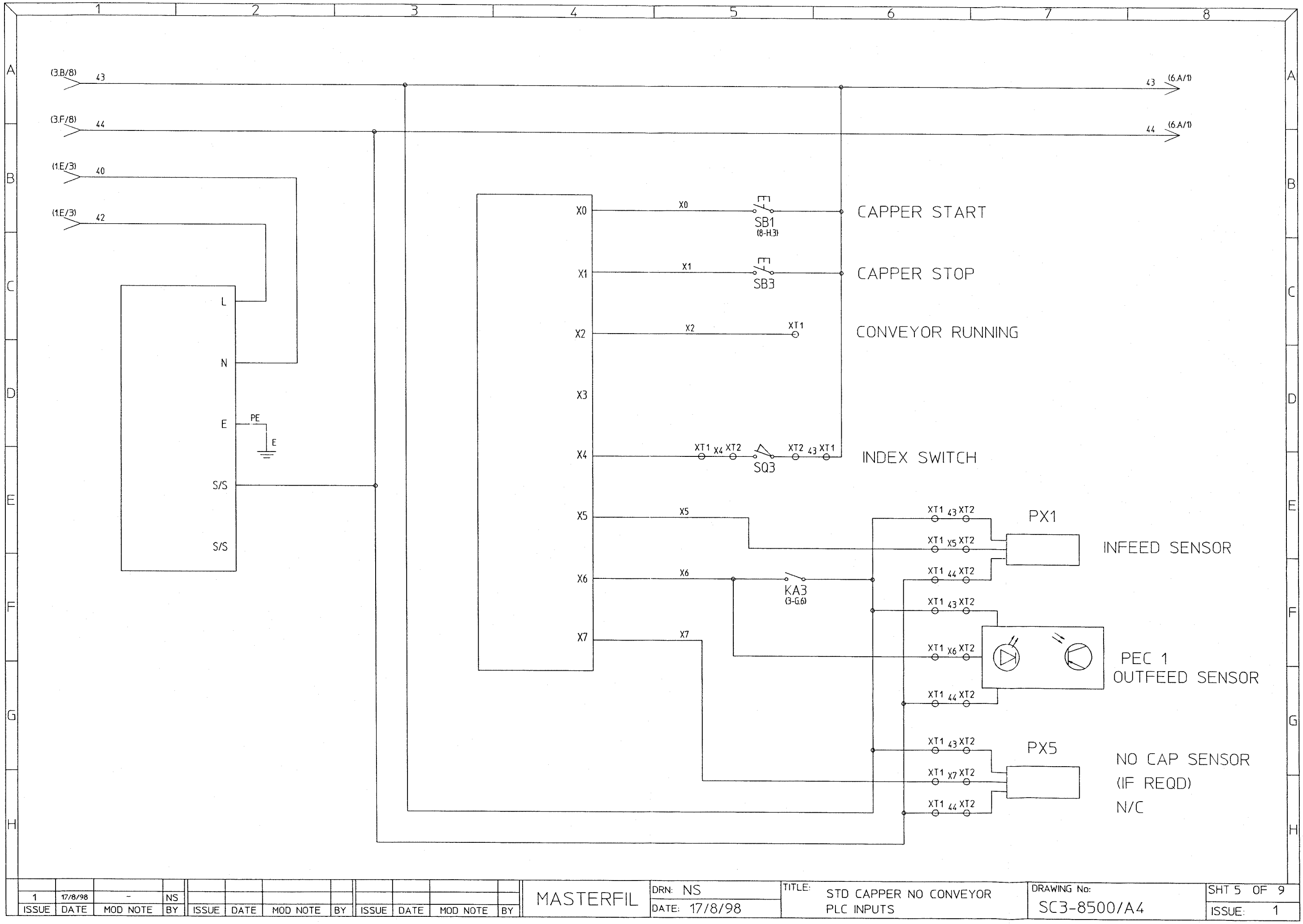
MASTERFIL

DRN: NS
DATE: 17/8/98

TITLE: STD CAPPER NO CONVEYOR
DOOR & TUNNEL MONITORING

DRAWING No: SC3-8500/A4

SHT 4 OF 9
ISSUE: 1



ISSUE	DATE	MOD NOTE	BY	ISSUE	DATE	MOD NOTE	BY	ISSUE	DATE	MOD NOTE	BY
1	17/8/98	-	NS								

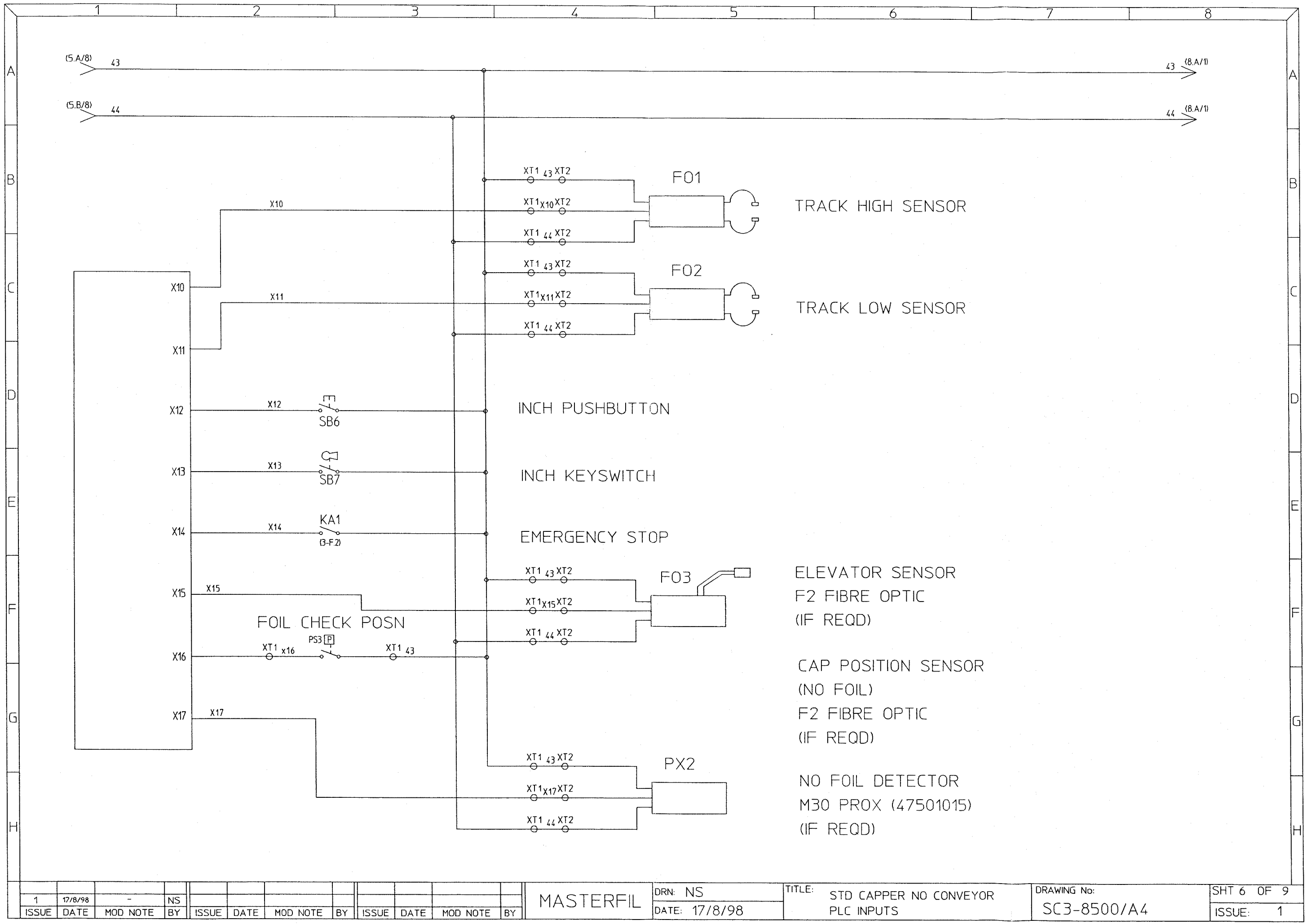
MASTERFIL

DRN: NS
DATE: 17/8/98

TITLE: STD CAPPER NO CONVEYOR PLC INPUTS

DRAWING No: SC3-8500/A4

SHT 5 OF 9
ISSUE: 1



ISSUE	DATE	MOD NOTE	BY	ISSUE	DATE	MOD NOTE	BY	ISSUE	DATE	MOD NOTE	BY
1	17/8/98	-	NS								

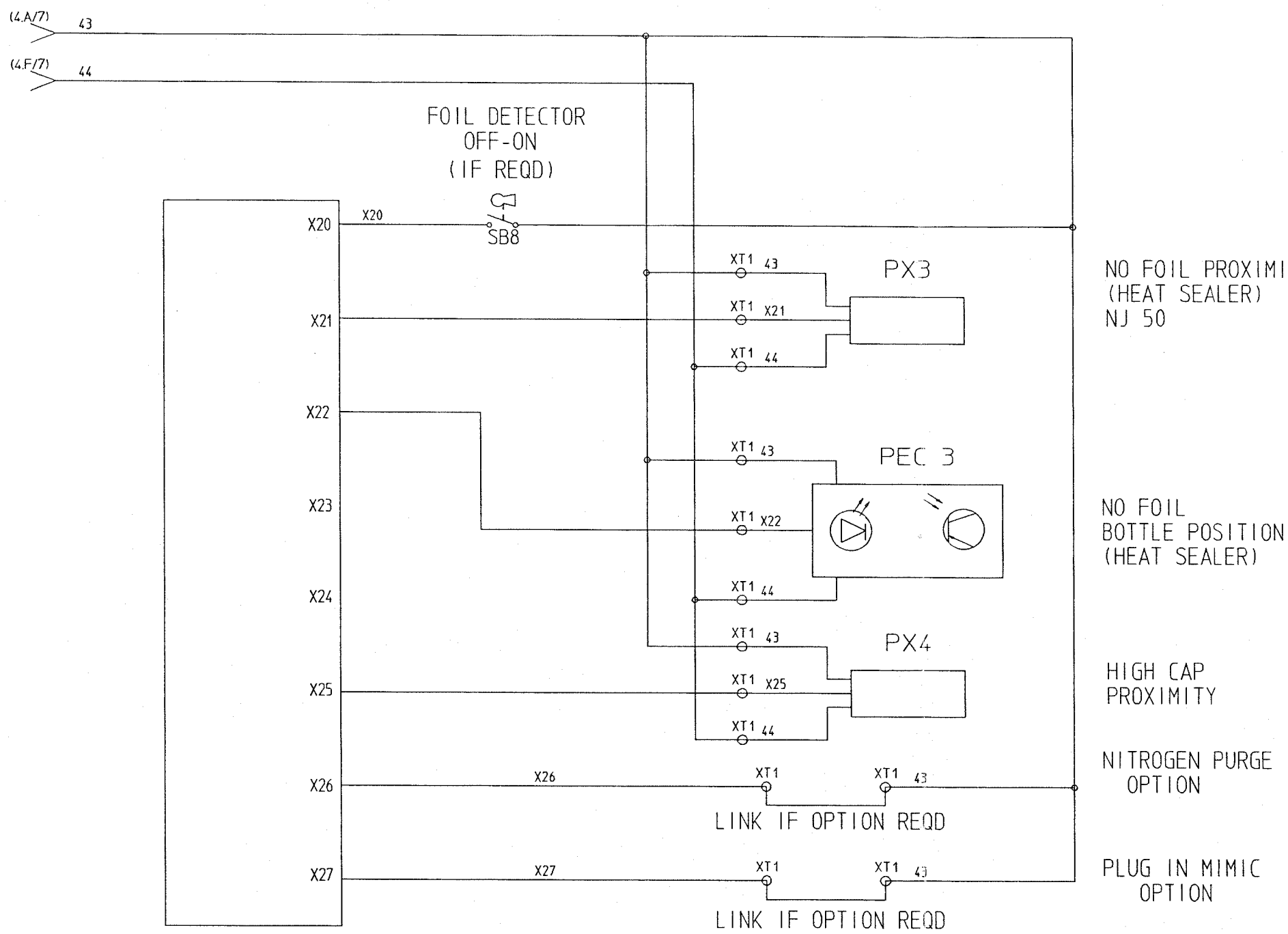
MASTERFIL

DRN: NS
DATE: 17/8/98

TITLE: STD CAPPER NO CONVEYOR PLC INPUTS

DRAWING No: SC3-8500/A4

SHT 6 OF 9
ISSUE: 1



ISSUE	DATE	MOD NOTE	BY	ISSUE	DATE	MOD NOTE	BY	ISSUE	DATE	MOD NOTE	BY
1	17/8/98	-	NS								

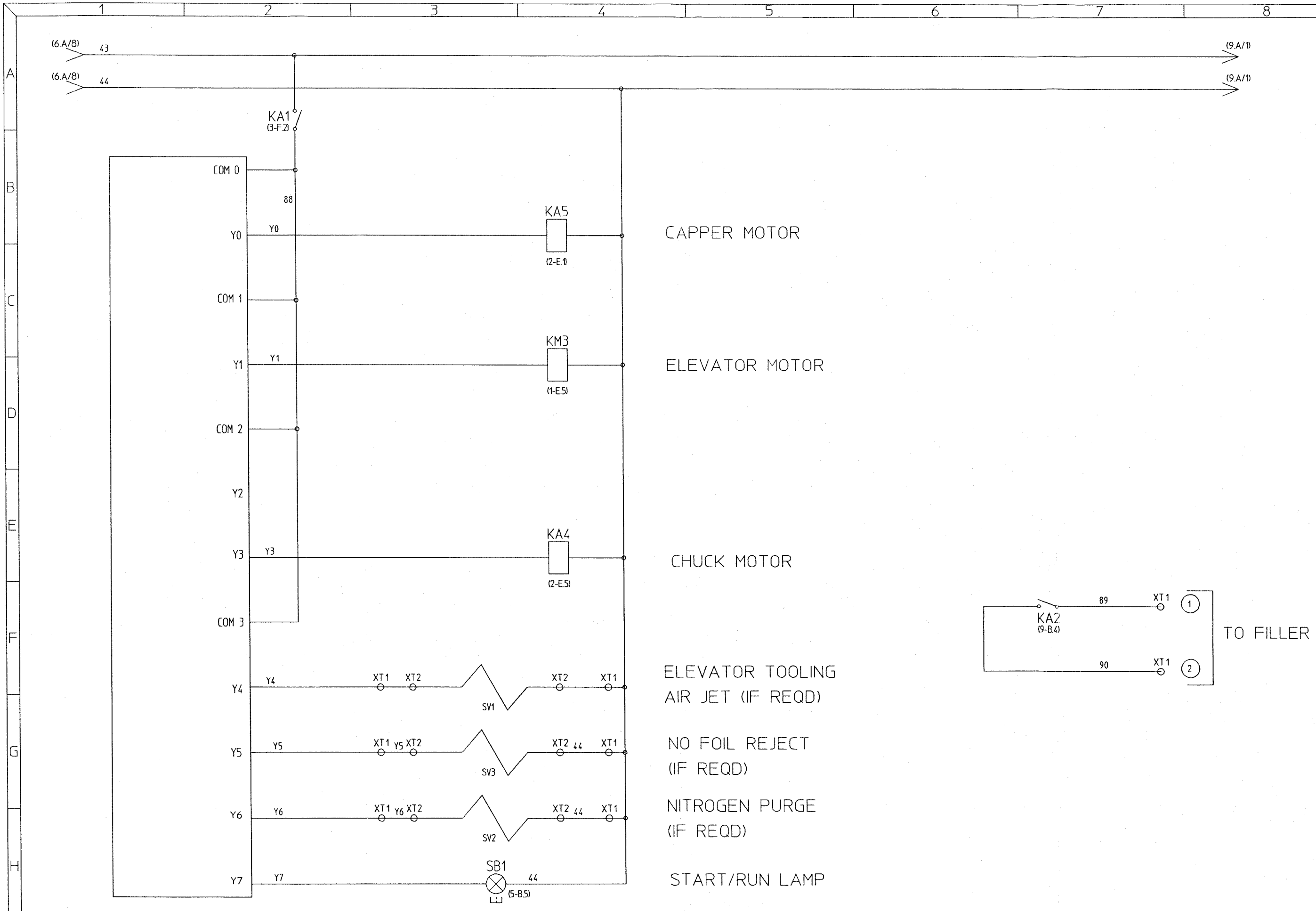
MASTERFIL

DRN: NS
DATE: 17/8/98

TITLE: STD CAPPER NO CONVEYOR PLC INPUTS

DRAWING No: SC3-8500/A4

SHT 7 OF 9
ISSUE: 1



ISSUE	DATE	MOD NOTE	BY	ISSUE	DATE	MOD NOTE	BY	ISSUE	DATE	MOD NOTE	BY
1	17/8/98	-	NS								

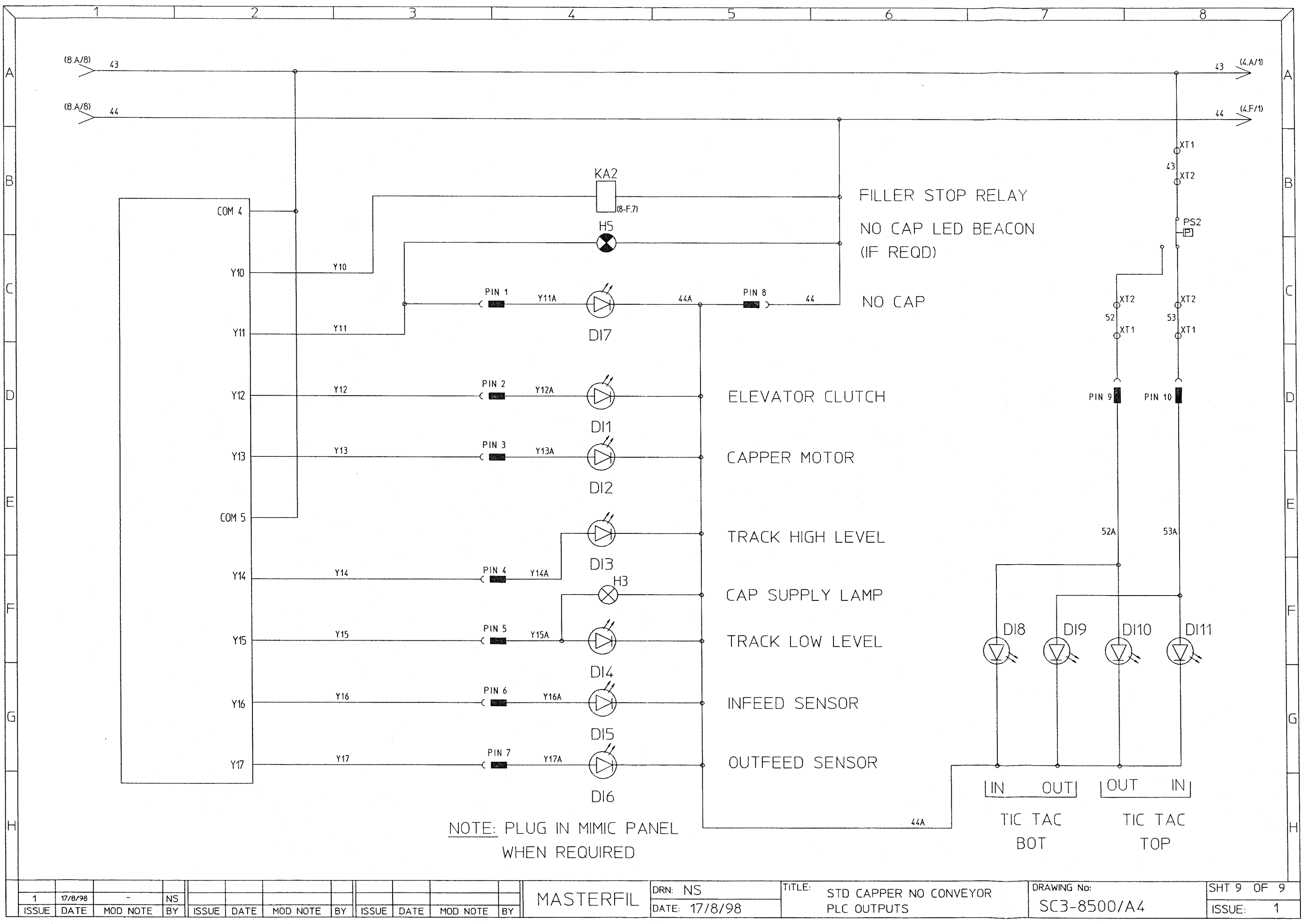
MASTERFIL

DRN: NS
DATE: 17/8/98

TITLE: STD CAPPER NO CONVEYOR PLC OUTPUTS

DRAWING No: SC3-8500/A4

SHT 8 OF 9
ISSUE: 1



ISSUE	DATE	MOD NOTE	BY	ISSUE	DATE	MOD NOTE	BY	ISSUE	DATE	MOD NOTE	BY
1	17/8/98	-	NS								

MASTERFIL

DRN: NS
DATE: 17/8/98

TITLE: STD CAPPER NO CONVEYOR PLC OUTPUTS

DRAWING No: SC3-8500/A4

SHT 9 OF 9
ISSUE: 1

ITEM No.	PRODUCT NUMBER	QTY	DESCRIPTION	X
0001	47507004	3	FIBRE OPTIC SWITCH WLL160-F420	
0002	47506006	2	FIBRE OPTIC SENSOR HEADS EC/T-3	
0003	44153006	1	ROLLER MICROSWITCH RS159-4455	
0004	44123011	1	16A SWITCH RS159-4540	
0005	44166103	1	PRESSURE SWITCH 81-513-552	
0007	47507003	1	INDUCTIVE PROX.N/C IM08-02BPO-ZT1	
0008	47507002	1	INDUCTIVE PROX. N/O IM08-02BPS-ZT1	
0009A	44103006	2	TROJAN 5 DOOR SWITCH 11118	
0009B	4-26241	2	SPACER PLATE FOR GUARDMASTER KEY	
0010	47500009	2	NANO CHNG STRT HEAD M5 403000E03M050	
0011	47507013	1	PHOTOCELL VT180-P440	
0012	47507006	3	M8 4P 5M CONNECTOR STRAIGHT 6009872	
0013	47507007	1	M12 4P 5M CONNECTOR STRAIGHT 7034123	
			RECOMMENDED SPARE	X

DATE	19/05/05	Mastercfil	ISSUE 4
DRAWN	N.S.		SHEET 1 OF 1
TITLE	CAPPER SENSOR ASSY (4280)		M/C No.
CLIENT			SCH.No. SC4-8500/S1

ITEM No.	PRODUCT NUMBER	QTY	DESCRIPTION	X
0001	47507012	1	M34 PROXIMITY SWITCH IB5096 (N/O)	
0002	47507007	1	M12 4P 5M CONNECTOR STRAIGHT 7034123	
0003	44277006	1	K/M RS-KEY SWITCH	
0004	47001113	1	BE3 FIXING ADAPTOR	
0005	44400004	1	EK10 N/O CONTACT BLOCK	
			RECOMMENDED SPARE	X

DATE	19/05/05	Masterfil	ISSUE 1
DRAWN	N.S.		SHEET 1 OF 1
TITLE	STD CAPPER CIRC. LOW LEVEL NO FOIL		M/C No.
CLIENT			SCH.No. SC4-8500/4B

ITEM No.	PRODUCT NUMBER	QTY	DESCRIPTION	X
0001	47205002F	2	FR-ULP06A FILTER FOR FRU120 0.4 INV.	
			RECOMMENDED SPARE	X

DATE 19/05/05	Masterfil	ISSUE 1	
DRAWN N.S.		SHEET 1 OF 1	
TITLE CAPPER MK.2 EMC FILTER NO CONVEYOR		M/C No.	
CLIENT		SCH.No. SC4-8500/7B	

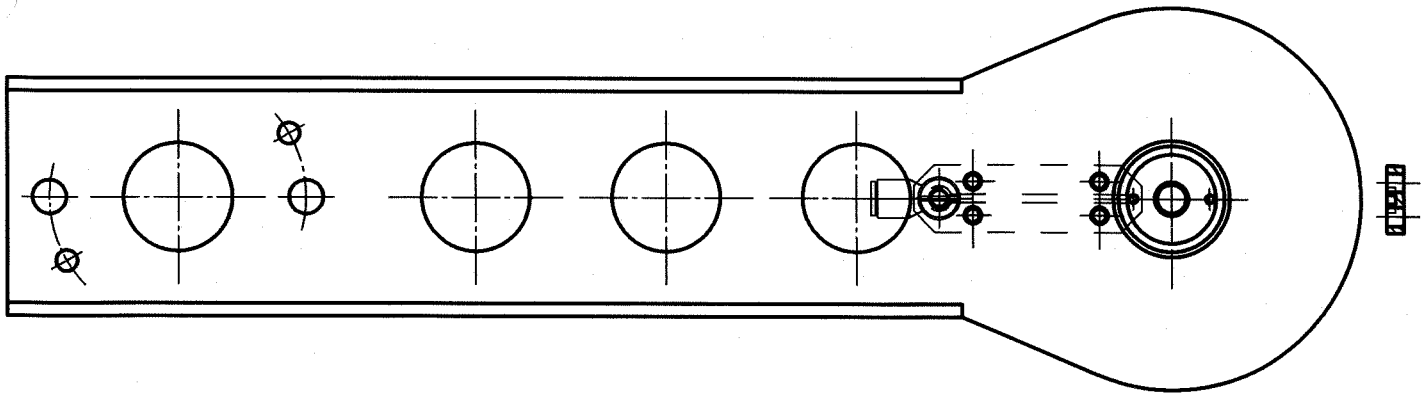
ITEM No.	PRODUCT NUMBER	QTY	DESCRIPTION	X
0001	4-18500/338	1	STARWHEEL & BACK'G SET 650ml LAMICON	
0002	C4-5820/13	8	SPACER (DIA.20 X 160 LONG)	
0003	C4-5606	1	STARWHEEL BOSS	
0004	C4-5607	1	CLAMP PLATE	
0005	22085628	2	DOWEL PIN DIA.6 X 28 LONG (SS)	
0006	C4-8149/8	1	GUIDE PLATE BEARING (A=17)	
0007	C4-8150	1	CLAMP PLATE - GUIDE PLATE BEARING	
			RECOMMENDED SPARE	X

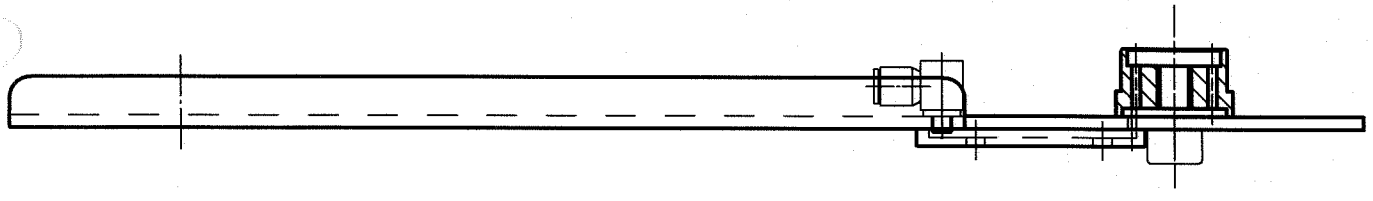
DATE	19/05/05	Masterfil	ISSUE 1
DRAWN	N.H.		SHEET 1 OF 1
TITLE	ADDITIONAL C'PARTS RAYNER 4346/005		M/C No.
CLIENT			SCH.No. SC4-6249/447

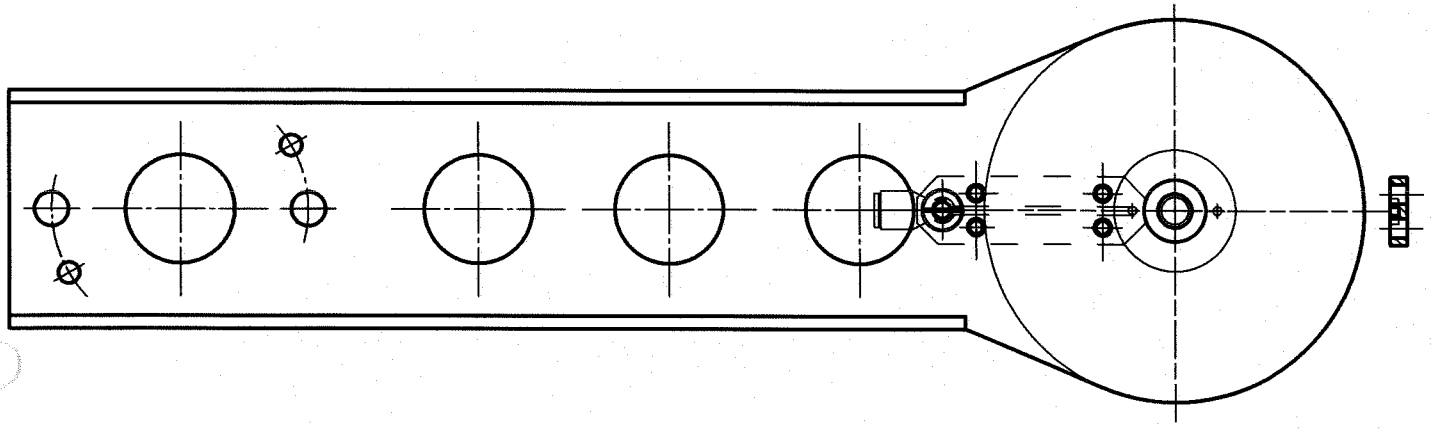
ITEM No.	PRODUCT NUMBER	QTY	DESCRIPTION	X
0001	4-32599	1	TRANSFER TOOLING-VACUUM-SQUIRT CAP	
0002	4-32599/1	1	TRANSFER TOOLING - VACUUM - FLIP TOP	
0003	4-32600	1	VACUUM LINK PLATE	
0004	4-32601	1	MOD TO TRANSFER ARM D010302	
0005A	3-32602	1	MOD TO AIR CIRC. VACUUM (SC3-3665/36	
0005B	33167310	1	5/2 VALVE PRESS/DIFF V096533A-X0060	X
0005C	33100124	1	SNG SUB BASE SIDE PORTED V10038-G00	
0005D	33100129	1	VACUUM GENERATOR M/58112/09	
			RECOMMENDED SPARE	X

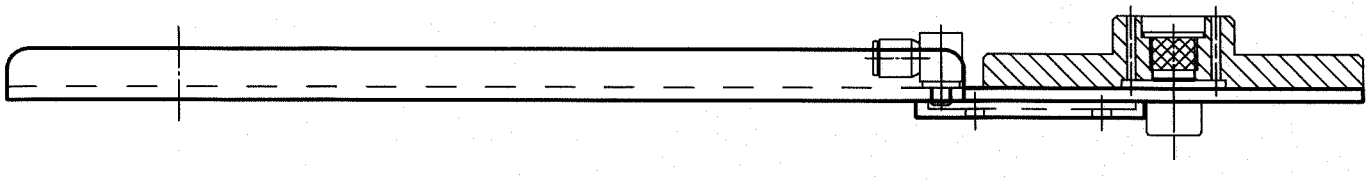
DATE 19/05/05	Mastercfil	ISSUE 1	
DRAWN RIH		SHEET 1 OF 1	
TITLE VACUUM CONVERS-TRAN/ARM 4346/006 MK5		M/C No.	
CLIENT		SCH.No. S3-32597	

REMOVE ALL BURRS & SHARP EDGES









SCALE.	GEN.TOL. ± 0,1	VACUUM CONVERSION - MK5 CAPPER WITH STANDARD TRANSFER ARM			Masterfil
MATL:		DRN: RIH	DRAWING No: S3-32597-000		ISS. 01.a
FINISH:		DATE: 31/01/02			