CUMFLOW RP400XD
ROTATING PAN MIXER

PARTS
&
OPERATION MANUAL

WINGET LIMITED
PO BOX 41
EDGEFOLD INDUSTRIAL ESTATE
PLODDER LANE
BOLTON
LANCS
BL4 OLS
Tel: ++ 44 (0) 1204 854650
Fax:++ 44 (0) 1204 854663
crokersales@winget.co.uk
parts@winget.co.uk
www.winget.co.uk

INDEX

The contents of this handbook although correct at the time of publication, may be subject to alteration by the manufacturers without notice and Winget Limited can accept no responsibility for any errors or omissions contained within the following pages. Nor can we accept any liability whatsoever arising from the use of this manual howsoever caused.

Winget Limited operate a policy of continuous product development. Therefore, some illustrations or text within this publication may differ from your machine

Winget Limited can accept no responsibility for incorrectly supplied spare parts unless the part number and a full description of the items required is given when the order is placed.

NOTE

Imperial fixings (bolts, setscrews, nuts, washers etc) have been progressively changed to Metric. If in doubt as to whether you have a Metric or Imperial fixing please order the metric items listed, i.e. bolt or set screw and associated or flat and spring washers to replace the existing items.

OPERATING

AND

MAINTENANCE MANUAL

SECTION 1

GENERAL INFORMATION

COMPANY DETAILS AND GENERAL INFORMATION

For any spares or service work, please contact:-

Winget Limited
P.O. Box 41
Edgefold Industrial Estate
Plodder Lane
Bolton
Lancs U.K.
BL4 OLS

Telephone No: ++ 44 (0)1204 854650
Facsimile No: ++ 44 (0)1204 854663
'E Mail' crokersales@winget.co.uk
parts@winget.co.uk

ORDERING SPARES

To help us to complete your order promptly and correctly we need:-

- Machine type and serial number
- Description and quantity of parts required
- The full address to which the parts are to be sent

Winget Limited can accept no responsibility for incorrectly supplied spare parts unless the part number and a full description of the items required is given when the order is placed.

IMPORTANT NOTICE

The CUMFLOW RP400XD is a high performance mixer

The following precautions are necessary to obtain the best results and to avoid damage to the MIXING STAR and PAN DRIVE

ENSURE TRANSIT BAR AND RING ARE REMOVED FROM DOOR BEFORE STARTING MACHINE.

AGGREGATES

Strict control of graded aggregates must be maintained
Maximum size 19mm

Oversize lumps of aggregate or rogue materials must be prevented from entering the Pan

MIXING STAR BLADES

They are to a special shape and material to prolong wear life. They should not be modified in any way and only replaced with GENUINE '**CROKER**' spares Obtained from **WINGET LIMITED.**

A daily check is advisable to ensure that the Blades/Wearing parts are secure and undamaged.

PAN RIM & BASE WEARING PLATES

They must be replaced before excessive wear causes distortion.

MAXIMUM BATCH LOADS

UNDER NO CIRCUMSTANCES should the Maximum Batch Loads quoted be exceeded nor should the mixer be or re-started when there is a mix in the Pan

MIXING PAN

Ensure that the Mixing Pan is rotating concentrically and that the pan base is Rotating in horizontal place, otherwise damage may occur to the door mechanics.

WARNING

THE MANUFACTURER ACCEPTS NO RESPOSIBILITY FOR ANY DAMAGE OR FAILURE RESULTING FROM OPERATIONAL MISUSE OR MALPRACTICE. ANY MODIFICATIONS TO THE MACHINE WILL AFFECT ITS WORKING PARAMETERS AND SAFETY FACTORS. REFER TO THE MANUFACTURERS BEFORE FITTING ANY NON STANDARD EQUIPMENT OR PARTS.

THE MANUFACTURERS ACCEPT NO RESPONSIBILITY FOR ANY MODIFICATIONS MADE AFTER THE MACHINE HAS LEFT THE FACTORY, UNLESS PREVIOUSLY AGREED IN WRITING. THE MANUFACTURERS WILL ACCEPT NO LIABILITY FOR DAMAGE TO PROPERTY, PERSONNEL OR THE MACHINE IF FAILURE IS BROUGHT ABOUT DUE TO SUCH MODIFICATIONS, OR THE FITMENT OF SPURIOUS PARTS.

RP400XD
OPERATIONAL AND SAFETY REQUIREMENTS

PRE-DELIVERY

1.1 Drive coupling alignments, pan and star meshing of pan rack and drive gear.

1.2 Operating clearances star blade to pan. Fixed blade to pan wall.

1.3 Discharge blade to pan base.

1.4 Rollers to register ring.

1.5 Correct oil level in gearboxes. All grease points charged. Gear teeth greased.

1.6 Air system tested.

1.7 Door operation and seating.

1.8 No load test. Correct rotations.

PRE INSTALLATION

2.1 Check consignment.

2.2 Offload equipment using certified lifting gear of suitable capacity, by a competent person (see separate chart for nett weight).

INSTALLATION

3.1 Refer to contract arrangement and site instructions.

3.2 Mixer to be mounted on supports of adequate strength and rigidity to prevent undue vibration when mixing and securely bolted.

3.3 Mixer frame to be level on structure, add packers as required.

3.4 Check that pan is correctly seated on Rollers and that pan rack and drive gear are in correct mesh.

3.5 Check locating rollers to register ring.

3.6 Check operating clearances star blade to pan. Fixed blade to pan wall. Discharge blade to pan base. See maintenance section Ops Manual.

ELECTRICAL SERVICES

4.1 Refer to wiring diagrams in Section 6. All wiring to be undertaken by competent electrician.

4.2 Refer to pneumatic circuit diagram in Section 7. Connect compressor. Supply compressed air 5.5 bars as required (80psi).

4.3 Refer to wiring diagram in Section 6 when connecting air control valves.

4.4 Remove transit bar and ring from door BEFORE starting mixer.

4.5 Ensure starters are mounted away from mixer on supports free of vibration.

4.6 Ensure starters are fitted with correct overloads – see technical specification power units.

OPERATION

5.1 Correct oil level, gearboxes. Air line lubricator.

5.2 Mixing pan clear of loose nuts and bolts to prevent damage to fingers and blades.

5.3 Check correct rotation – mixing star – anti clockwise; mixing pan – anti clockwise. All when viewed from the top.

5.4 Discharge door and blade correct operation.

5.5 Blade operating clearances adjust in line with maintenance instructions.

5.6 Never exceed manufacturer's maximum capacity as detailed in specification.

SHUTDOWN

6.1 Prior to any work being carried out mixer to be isolated and physically locked off. Recommended equipment double key exchange system.

6.2 Follow procedure detailed in company and users' Health and Safety Policy at all times.

6.2 Ensure all storage bins containing materials to be mixed are isolated.

6.3 Shut off water supply and drain off water tank or flowmeter

MAINTENANCE

7.1 Ensure that all maintenance is carried out in accordance with the Parts and Operating manuals and proprietary manufacturer's specific instruction.

7.2 Isolate electrical and other services to the mixer as section 6 above.

7.3 Service at recommended intervals.

7.4 Use Croker manufactured replacement parts supplied by WINGET LIMITED.

GENERAL

8.1 Under no circumstances should the Maximum Batch Loads be exceeded by either weight and volume as stated in Technical Specification.

8.2 Mixer star blades to be checked daily for damage.

8.3 Pan rim and base wearing plates must be replaced before excessive wear causes distortion.

8.4 Ensure mixing pan is rotating concentrically and pan base is rotating in horizontal plane.

8.5 Mixer must not be stopped and started when there is mix in the pan.

8.6 Refer to Contract Drawing for scope of supply. Site instruction notes outlining weights etc.

8.7 Refer to Method Statement when installation and commissioning is responsibility of Winget Limited.

Nett Weights Max (kgs)

9.1

RP50XD	788	RP1250XD	4840
RP100XD	814	RP1500XD	4980
RP200XD	1400	RP3000XD	7112
RP400XD	2000	FP1000	4040
RP550XD	2150	FP1500	4065
RP850XD	2600	FP2000	4100

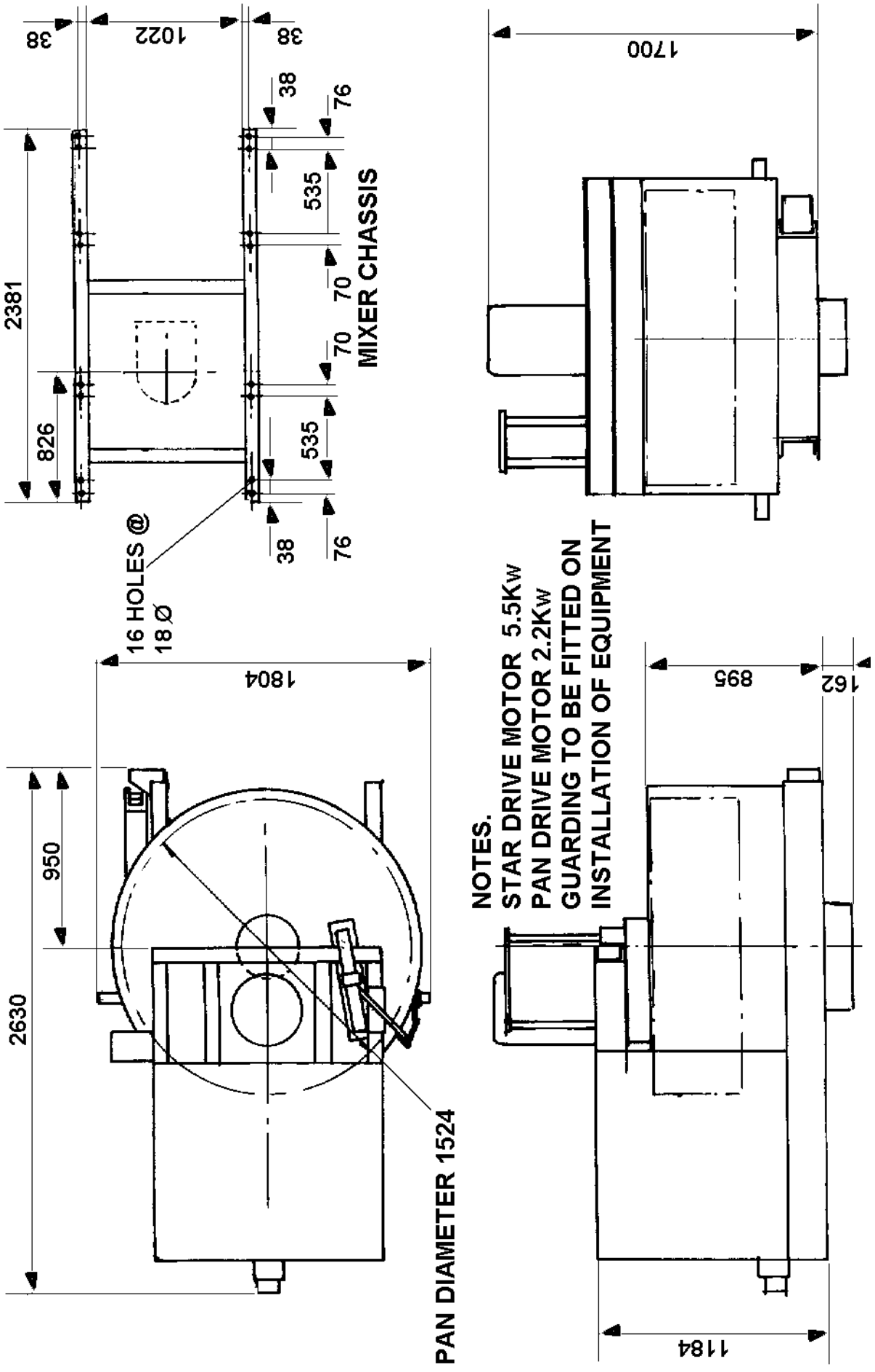
9.2 Refer to technical specification for nett weights of ancillary equipment.

9.3 Refer to contract drawing for nett weights of ancillary equipment.

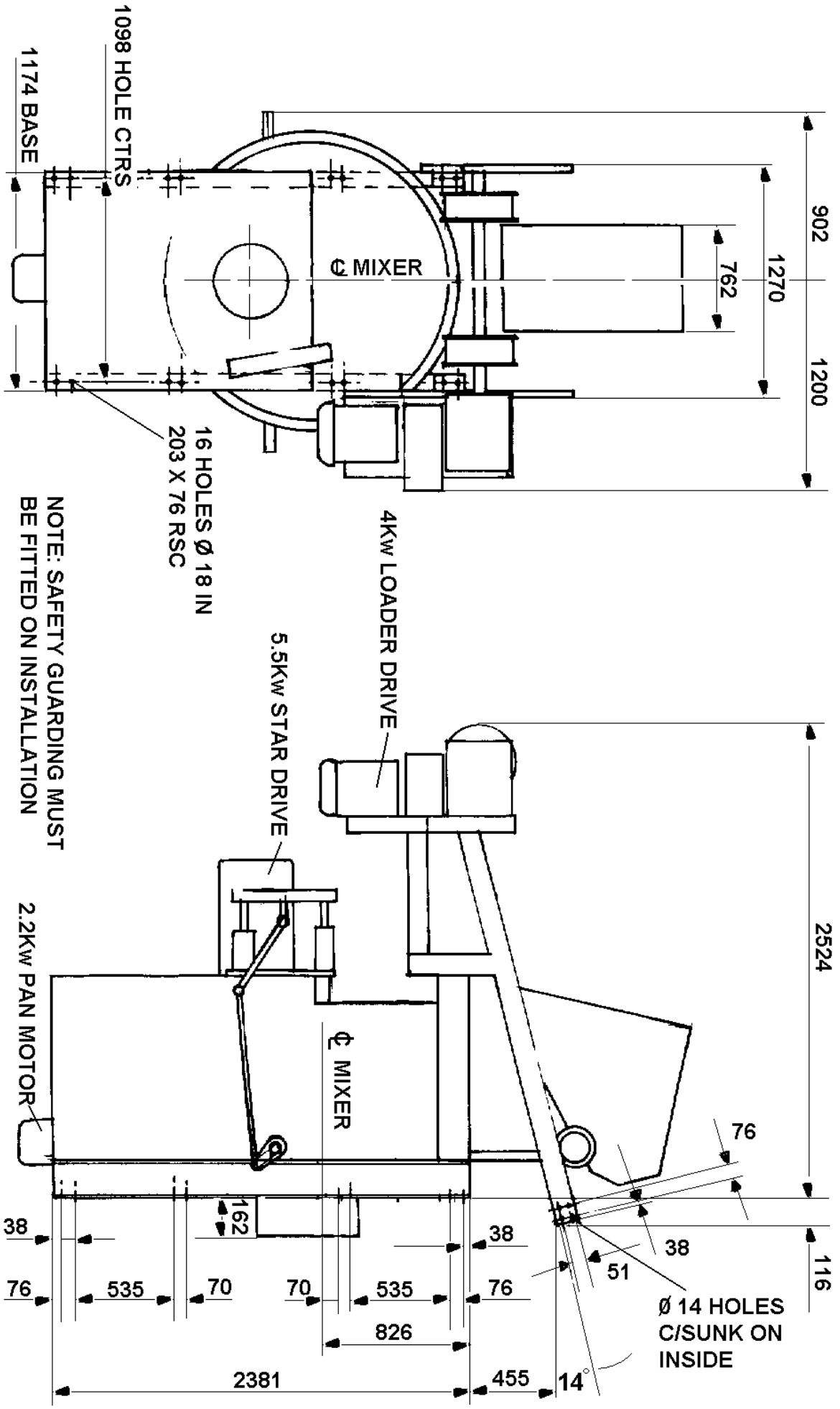
Miscellaneous

10.1 Noise measured in accordance with Directive 79/113 EEC 85LPA.

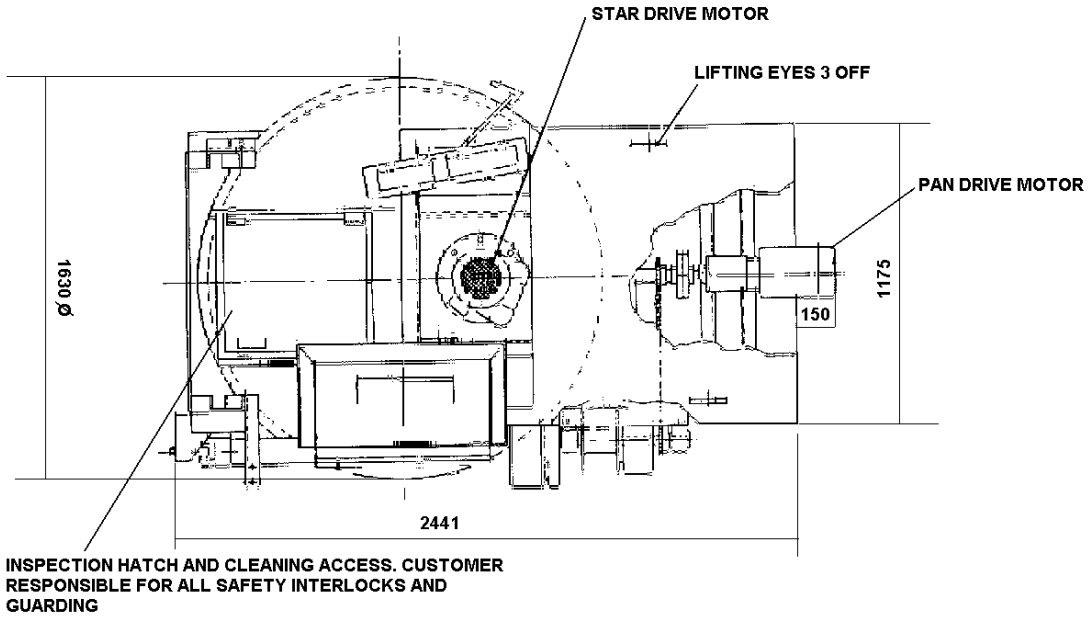
RP400XD GENERAL ARRANGEMENT BASIC MACHINE



RP400XD GENERAL ARRANGEMENT WITH LOADER

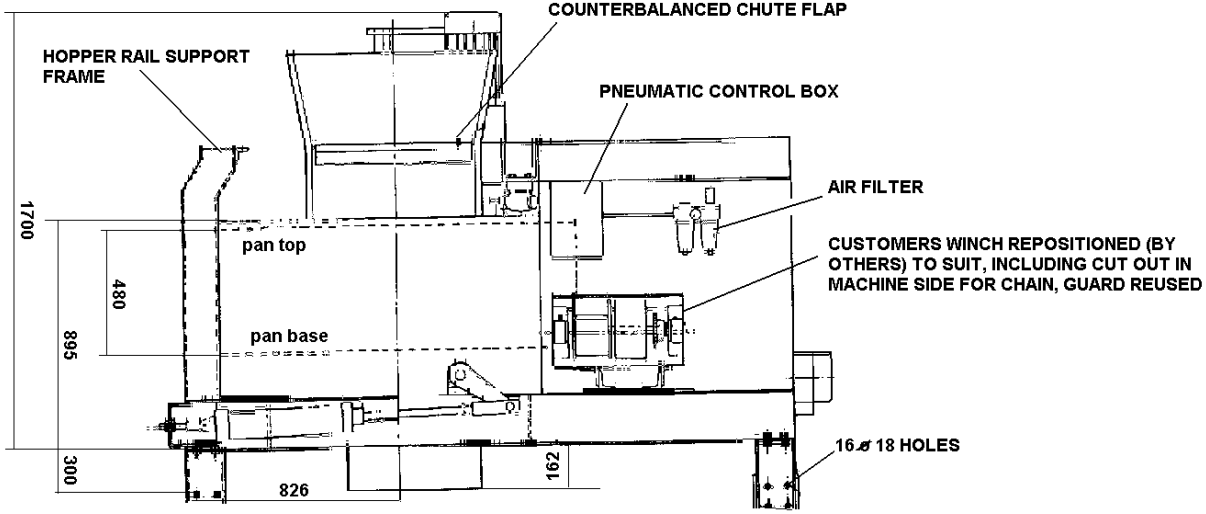


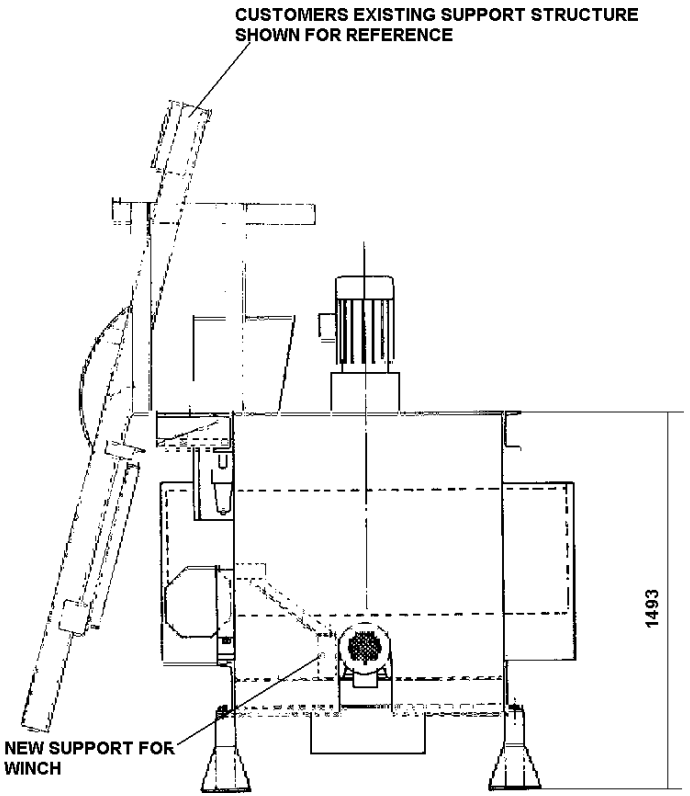
RP400XD GENERAL ARRANGEMENT-PLANT



PLANT LAYOUT AS SUPPLIED TO BORDER CONCRETE PRODUCTS

TOTAL WEIGHT 2000KG
PAN DRIVE MOTOR ELECTRICITY SUPPLY = 2.2kw @380V/420V
STAR DRIVE MOTOR = 5.5kw 380V/420V
AIR CONSUMPTION = 5.4 ATM (80PSI)





OPERATING

AND

MAINTENANCE MANUAL

SECTION 2

INSTALLATION AND OPERATING INSTRUCTIONS

PRE-INSTALLATION

On arrival of the equipment it is advisable to check that all packages listed on the consignment note have been received.

The equipment must be offloaded using certified lifting gear of suitable capacity, by a competent person.

When unloading the mixer, care must be taken to ensure the discharge chute remains clear of obstructions as the chute and door hang below the chassis.

An outline drawing and bolt hold plan is normally sent prior to the despatch of the machine and will enable preparations to be made for the installation. With the `picture` of what the machine will look like when it is assembled, the ancillary equipment dismantled for transport can easily be identified.

INSTALLATION

Please refer to contract arrangement and site instructions as applicable.

It is recommended that a concrete foundation (to take foundation bolts – not supplied) should be provided for each leg of the support structure and runway when fitted. When the machine is supplied without a support structure it should be mounted on supports of sufficient strength and rigidity to prevent undue vibration when the machine is working. When making provision for a loading hopper pit it is strongly recommended that the pit is concreted out so that it can easily be kept clean and free from any build up which could prevent the bottom limit switch from operating correctly.

Before completing the installation, check that the main mixer frame is level with a spirit level. Packings should be inserted as required under the structure legs or main frame. The packings under the mixing pan roller brackets are set during manufacturing and must not be disturbed under any circumstances.

Check that the pan is seated and that the pan rack and drive gear are in mesh.. Also check that all the blade clearances are in line with the maintenance instructions. It is essential that the machine is level and all rollers are in contact with the pan roller track, if any of the rollers fail to revolve the trouble is usually found to be uneven foundations.

On connecting to the power supply, the wiring diagram must be referred to. A check that the wiring is correct is rotation of the following:-

- The mixing pan and mixing star rotate anti-clockwise when looking from the top.

- The loader winch rotates anti-clockwise looking from the rope drum end when the raise button is pressed.

- The whirler unit rotates clockwise when looking from the top.

It is advisable to mount the starters away from the machine on supports free from vibration. Ensure that the starters are fitted with suitable overloads – see technical specification – power units.

A simple Water Flow Meter is available as an option to the water tank, this has a range of 0-100 litres and features an adjustable flow indicator with a reset facility allowing very accurate measurement of water flow irrespective of the pressure. The Flow Meter is normally fitted with a manual ‘on/off’ valve and is protected by a washable in line strainer.

A supply of compressed air at 5.5 bars is required. The inlet for the connection from the air line is tapped ½" B.S.P. A drop in pressure will cause incorrect operation of the pneumatic system.

OPERATING THE MACHINE

Before starting production the following points should checked:-

(1) That there is oil in
- (a) the Star Drive Gearbox
- (b) the Pan Drive Gearbox
- (c) the Loader Winch Gearbox (when fitted)
- (d) the Air Line lubricator

(2) The Mixing pan should be clear of loose nuts, bolts, spanners etc., as these will damage the fingers and blades.

(3) Check that the Discharge Door and Discharge Blade are operating correctly.

(4) Check that the blade clearances are correct and if necessary adjust, in line with the maintenance instructions.

(5) Check that the limit switches on the loader stop the Loading Hopper in the required positions at the top and bottom of the runway and that the magnetic brake is applied.

(6) Check that the Water tank is set to the required amount and is filling up to this level. (See later page for further information on Water Tank operation, where fitted).

(7) If a Flow Meter is fitted check that the pointer is reset to zero and the strainer is clean and free from debris.

(8) When Weigh Gear is fitted check that the setting arrangements and any lubrication requirements have been carried out. .

IMPORTANT:

The CUMFLOW is a high performance Mixer.

The following precautions are necessary to obtain the best results and to avoid damage to the Mixing Star and Drive.

AGGREGATES:

Strict control of graded aggregates must be maintained. Maximum Size 19mm.

Oversize lumps of aggregate or rogue material must be prevented from entering the Pan.

MIXING STAR BLADES:

They are of a special shape and material to prolong wear life. They should not be modified in any way and only replaced by genuine 'WINGET CROKER' spares.

A daily check is advisable to ensure that the Blades/Wearing Pieces are securely bolted and undamaged.

PAN RIM & BASE WEARING PLATES:

They must be replaced before excessive wear causes distortion.

MAXIMUM BATCH LOADS:

Under no circumstances should the Maximum Batch Loads quoted be exceeded nor should the Mixer be stopped and re-started when there is a mix in the Pan.

After each mix the contents of the pan must be completely discharged before attempting to close the discharge door. At the end of each period of operation the mixing pan, mixing blades, discharge blade and fingers, discharge chute, discharge door and seating must be washed down to prevent concrete setting on them and so impairing the efficiency of the machine.

WARNING:

THE MAUFACTURER ACCEPTS NO RESPONSIBILITY FOR ANY DAMAGE OR FAILURE RESULTING FROM OPERATIONAL MIS-USE OR MALPRACTICE.

OPERATING INSTRUCTIONS FOR WEIGH GEAR MECHANISM

HYDROSTATIC LOADCELL & GAUGE

The Hydrostatic Load Cell is connected by a flexible capillary tube (approx 9.7 metres long) to a 300mm (12”) diameter weigh gauge.

The whole system is assembled and filled with fluid under vacuum and under no circumstances should any of the components be disconnected, in the event of component damage the complete assembly should be returned to Winget Limited for repair.

The system is factory calibrated and any variation between the calculated tare and the actual tare recorded can be corrected by means of the tare adjustment knob on the side of the gauge.

With no load acting on the loadcell the pointer will be below zero, this is to accommodate the weight of the hopper. When the hopper is placed on to the loadcell the pointer will register zero. Final zero adjustment can be made via the zero adjustment knob on the side of the gauge housing.

ELECTRONIC LOADCELL & GAUGE

The electronic Loadcell & Gauge consists of an electrically operated loadcell mounted on the weigher frame and connected to a remote mounted digital readout control box. The connecting lead should be protected from damage and the readout box mounted such that it is not affected by vibrations etc. The mounting instructions detailed within Section 9 of this manual should be followed to avoid excess vibrations damaging the control box. Section 9 also contains detailed advice on setting up, obtaining zero and operation of the loadcell and readout box and should be referred to before the equipment is operated.

NOTE THE FOLLOWING WIRING CONNECTIONS

+ Excite RED
- Excite BLUE

+ Signal GREEN
- Signal YELLOW

OPERATING INSTRUCTIONS FOR 0-100 LITRE WATER FLOWMETER

The simple manually operated 0-100 litre Water Flow Meter is available as an option to the water tank and is normally mounted on the side of the mixer feeding directly into the pan. The meter is normally fitted with 1" hose tail connectors but different sizes of water inlet connections to suit various hose diameters are also available. The meter is normally provided with a simple 'on/off' valve and inline filter/strainer mounted next to but down stream of the flowmeter.

OPERATION

On a daily basis before use the strainer should be removed and checked for debris and obstructions, cleaned and refitted. Ensure the on/off valve is in the 'off ' position and turn on the main water supply. Set the adjustable pointer on the dial face via the central knob to the required amount of water. Check the indicator reads zero, if not operate the reset lever on the side of the meter which will reset the indicator. Turn the on/off valve slowly to the 'on' position watching the movement of the indicator around the dial, when the indicator reaches the pointer sharply turn valve to the 'off ' position. The indicator will register the amount of water delivered. Operate the reset lever to bring the indicator back to zero and repeat the operation for each batch of material mixed.

When shutting down the mixer either at night or at the end of each shift it is recommended that the main water supply to the flow meter and 'on/off' valve is shut off.

If it is expected that the overnight temperatures will drop to or close to freezing it is recommended that the Flow Meter, Valve, Filter and Pipework are drained to prevent damage.

OPERATING THE MIXER

SAFETY NOTES

Never operate the mixer unless you have read and fully understand the contents of the Operators Manual If you are in doubt as to any aspect of the equipments operation contact the manufacturer for guidance

Never operate the mixer whilst wearing loose fitting clothing

Never reach inside the Pan whilst it is rotating

Never operate any equipment unless you have received adequate training

Cement, certain other minerals and organic compounds can cause skin irritation leading to Dermatitis. Always use Personal Protective Equipment i.e. gloves etc to protect the skin from direct contact. If in any doubt about the materials being used consult your employers COSHH manual

Wear Eye protection to protect your eyes from dust and liquid splashes

Do not attempt to remove the pan single handedly, (RP50/100) obtain assistance, use the Pan Trolley (if provided) or use suitable lifting equipment

Do not operate the mixer with any of the guards removed, safety devices or interlocks disconnected. They are there to offer you some protection, ensure they are correctly maintained

Carry out the daily maintenance before operating the mixer and report defects to your supervisors

Oils, Greases and Lubricants are skin irritants and prolonged direct skin contact can cause skin cancer. PPE or barrier creams should be used when carrying out maintenance work, wash your hands on completion

Always dispose of waste oils and lubricants in a proper manner, it is illegal to pour it down drains or bury it. Contact your local authority for a list of authorised disposal sites

Always disconnect the power supply at the mains before carrying out any maintenance work or cleaning the equipment down. Do not turn on the power until everything has dried out

Do not allow waste from the wash down process to enter the public drainage system unless it has been properly filtered.

Decals and Instruction Plates are attached to the equipment to warn against hazards and assist in the safe operation of the equipment, if damaged or defaced they should always be replaced.

It is likely that clutch and/or brake linings may contain asbestos and suitable precautions should be taken to avoid breathing in the dust, protective clothing should be worn. Hands should be washed immediately after handling components and old discarded parts or linings should be disposed of in a responsible manner in line with local or national regulations covering the disposal of asbestos waste.

OPERATING

AND

MAINTENANCE MANUAL

SECTION 3

TECHNICAL SPECIFICATION AND MAINTENANCE

TECHNICAL SPECIFICATION OF CUMFLOW RP400XD

CAPACITIES:	Maximum Batch Capacity	by Weight	610 kgs
		by Volume	400 litres
	Nominal Output (Based on 2.42kg/lt)		254 litres
	Nominal Output (Based on 2.162kg/lt)		282 litres
	Hourly Output @ 40/50/60 batches per/hr		$11m^3/13.75m^3 16.5m^3$
BATCHLOADER CAPACITY			576 kg
AGGREGATES:	Maximum Aggregate Size		19 mm

MIXER FRAME: Strongly constructed from welded Steel Channel

MIXING PAN: Steel Base Pan mounted on three wide track rollers with central discharge door. Pan Rim, Base and Discharge Door fitted with renewable Wearing Plates.

MIXING STAR: Fitted with 3 Spring loaded Star Blades, two at Pan floor level and one for high level mixing.

FIXED BLADE: Spring loaded pan side scraper assembly. Reversible when worn

DISCHARGE BLADE: Pneumatically operated in conjunction with the Discharge Door.

WHIRLER: Intermittent blades mounted on vertical shaft.

POWER UNITS:	Mixing Star)	5.5 kw
	Mixing Pan)	2.2 kw
	Loader Motor (where fitted)	4.0kw
	Whirler Motor (where fitted)	7.5 kw

DRIVES	Mixing Pan	Gear unit with pinion and cast rack
	Mixing Star	Gear unit directly mounted
	Whirler	Vee Rope Drive

SPEEDS	Speed of Pan	12 rpm
	Speed of Mixing Star	56 rpm
	Speed of Loading Hopper	21 metres/min
	Speed of Whirler	720 rpm

FREE AIR CONSUMPTION (PER BATCH 80 PSI) 33.0 litres

WEIGHTS (UNLADEN)	Without Loader	2000 kg
	With Loader (approx)	2816 kg

ELECTRICS	Motor Voltage	415V 3ph 50hz Option 60 hz
	Control Voltage	110V

MACHINE SAFETY DIRECTIVE

All Gears are suitably guarded.

MAINTENANCE

IMPORTANT

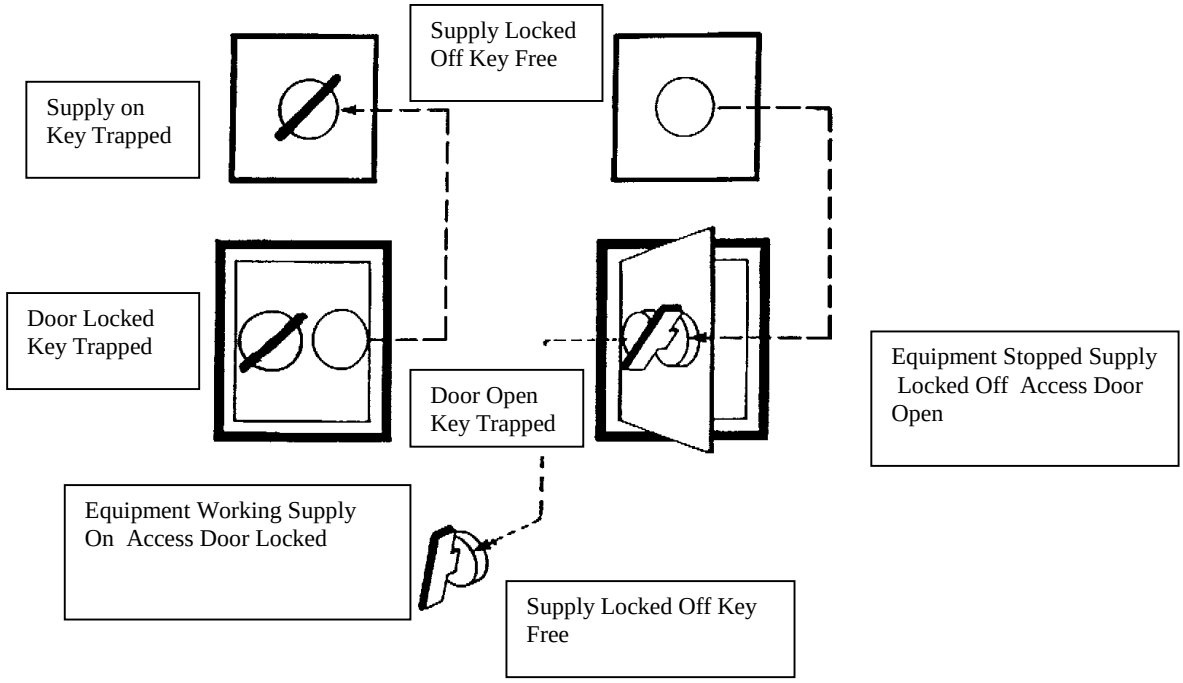
ALWAYS ENSURE APPARATUS IS ISOLATED FROM MAINS SUPPLY BEFORE COMMENCING MAINTENANCE.

SHUTDOWN PROCEDURE

Prior to any work being carried out the apparatus is to be isolated and physically locked off.

We recommend a double key exchange system.

Safe access to equipment with one access door and one control point.



Follow the procedures detailed in your Health and Safety Policy at all times.

Ensure all storage bins containing materials to be mixed are isolated.

Shut down the water supply and drain off any water tanks or flowmeter fitted

MAINTENANCE OF MIXER

IMPORTANT NOTE:

Ensure that all maintenance is carried out in accordance with the Parts and Operating Manual and Proprietary Manufacturer's specific instruction.

PROCEDURE

1 ISOLATE ELECTRICAL, PNEUMATIC AND OTHER SERVICES TO THE MIXER (see separate section).

2 Service at recommended intervals.

3 Use Croker manufactured replacement parts available from **WINGET LIMITED**.

4 Ensure all safety guards and interlocks are reinstated prior to operating the mixer.

5 Main items of wear (see Section 4).

A) Star Blades
B) Fixed Blade
C) Discharge Blade
D) Whirler Blades

Access to mixing pan internals is via the safety interlocks. Each of the above are bolted components and are replaced by simple method and usually achieved in situ without dismantling other components.

E) Pan base and rim wearing plates are also bolted construction and can be replaced in situ. However, pan covers will need to be dismantled to provide the necessary access.

F) Other items prone to less wear are star blade fingers, lower whirler shaft assembly and mixing star. Each can be replaced again in situ but pan covers would require dismantling to provide necessary access.

G) Pan rollers can be adjusted to accommodate wear during operation. These can be replaced when required in situ using jacking method to support pan and provide the necessary access.

MAINTENANCE AND LUBRICATION

DAILY: Using Total Multis EP2 Grease 2 (or equivalent) grease the following points:-

Discharge Blade Lifting Gear Brackets	2 Points
Air Cylinder Lever Pivot Holder	1 Point
Mixing Blade Finger Bearings	3 Points
Fixed Blade Finger Bearsring	1 Point
Discharge Blade Control Rod (Top)	1 Point
Discharge Blade Control Rod (Bottom)	1 Point
Discharge Blade Lifting Lever (Centre)	1 Point
Discharge Blade Lifting Links	2 Points
Loading Hopper Rollers	2 Points
Pan Drive Plummer Bearings	2 Points
Loader Rollers (Where fitted)	4 Points
Whirler (Where Fitted)	2 Points

Inspect and top-up if necessary:-

Air Line Lubricator	Use Total Azolla 27 (or equivalent) or suitable Pneumatic Tool Oil.

WEEKLY: Inspect and top up if necessary:-

(1) **Star Drive Gearbox (Capacities Approximate)**

RENOLD UNITS	Cap 5.6 litres. Use Total Carter EP320 or Shell Omala 320 or equivalent.
FLENDER UNITS	Cap 13.0 litres. Use Total Carter EP220 or Shell Omala 220 or equivalent.
SEVER UNITS	Cap 13.0 litres. Use Total Carter EP220 or Shell Omala 220 or equivalent.

(2) **Pan Drive Gear Box Capacities Approximate)**

RENOLD UNITS	Cap 0.85 litres approx Renold Pan Drives must be run on a Synthetic not a Mineral oil. Use Total Carter EPHT320 or Total Carter SY320 or Mobil Synthetic SHC632 or equivalent Synthetic Oils. Different synthetic oils will not mix with each other so the Gearbox must **always** be drained and flushed prior to topping up or refilling with oil.

FLENDER UNITS

Cap 1.1 litres approx. Flender Pan Drives must be run on a Synthetic not a Mineral Oil. Use Total Carter EPHT460 or Total Carter SY460 or Tribol 800 iso460 or B.P. Eersin SG-XP460 or equivalent Synthetic oils. The different Synthetic Oils will not mix with each other so the Gearbox must **always** be drained and flushed prior to topping up or refilling with oil.

SEVER UNITS

Cap 2.0 litres approx. Sever Pan Drives must be run on a Synthetic not a Mineral Oil. Use Total Carter EPHT460 or Total Carter SY460 or Tribol 800 ISO460 or B.P. Eersyn SG-XP460 or Castrol Alphasyn PG680 or equivalent synthetic oils. The different synthetic oils will not mix with each other so the Gearbox must **always** be drained and flushed prior to topping up or refilling with oil.

(3) **Loader Winch Reduction Gearbox (Renold WU5)**

Cap 4 litres. Use Total Carter EP320, Total Carter EPHT320 or Total Carter SY320 (or equivalent). Carter EPHT and SY320 are Synthetic Oils which will not mix with either Mineral Oils or other makes of Synthetic Oils. If in doubt drain and flush the gearbox before topping up.

Loader Winch Gearbox (Flender)

Cap 5.5 litres. Use Total Carter EPHT460 or Total Carter SY460 or BP Enersyn SG-XP460 or equivalent. These are Synthetic Oils and will not mix with either Mineral Oils or other makes of Synthetic Oils. If in doubt drain and flush the gearbox before topping up.

Inspect and Adjust

(1) Pan Gear and Pinion – Apply Open Gear Lubricant (or equivalent) as required.

(2) Adjust Star Blades, Fixed Blades and Discharge Blade to the following settings, also make sure that Blade fingers are free in their bearings and that the springs are clear of obstructions.

Mixing Blade:	(3 mm) clear of pan base. Adjust by moving the blade down its finger.
Discharge Blade:	Just touching pan base when finger bridge is resting on stop sleeves. Adjust by moving bridge up or down fingers.
Fixed Blade:	(3 mm) clear of pan base and just touching pan rim. Adjust by moving hinge brackets along its slots and blade up or down its fingers. Re-set spring to 100 mm overall length after setting blade.

(3) After the first week's running the Whirler Vee Belt Drive will need adjustment to take up initial wear and stretch. At the correct tension it should be just possible to twist each belt through 90^{o} when gripped between finger and thumb midway between pulleys.

(4) Loading Hopper Wire Rope – clean off grit etc. and inspect for broken strands. Clean and apply a suitable wire rope dressing.

500 HOUR MAINTENANCE FOR PAN AND STAR DRIVE GEAR UNITS

After 500 running tours, the Gearboxes should be drained and thoroughly flushed with a light flushing oil and refilled with new oil of the correct grade listed below. It is advisable to drain, flush and refill with new oil after every 12 months, or more often if operating conditions are severe.

To fill the Gearboxes, remove the oil level plug and the filler breather plug and pour in oil until it flows from the level hole. Replace the plugs making sure that the vent holes in the filler breather plug are clear. Refer to the following notes.

RENOLD UNITS

Capacity of Star Gearbox: (approximate) 5.6 litres

Use Total Carter EP320 or Shell Omala 320 or equivalent

Capacity of Pan Gearbox: (approximate) 0.85 litres

The Renold Pan Drives must be run on a synthetic oil not a mineral. Use Total Carter EPHT320 or Total Carter SY320 or Mobil SHC632 (Synthetic Oils). The different synthetic oils will not mix with each other so the gearbox **must** be drained and flushed prior to topping up or refilling with oil.

FLENDER UNITS

Capacity of Star Gearbox (approximate) 13.0 Litres
Use Total Carter EP220 or Shell Omala 220 or equivalent.
Capacity of Pan Gearbox (approximate) 1.1 Litres
The Flender Pan Drives must be run on a synthetic oil not a mineral. Use Total Carter EPHT460 or Total Carter SY460 or Tribol 800-ISO460 or B.P. Enersyn SG-XP460 (Synthetic Oils). The different synthetic oils will not mix with each other so the gearbox **must** be drained and flushed prior to topping up or refilling with oil.

SEVER UNITS

Capacity of Star Gearbox (approximate) 13.0 Litres
Use Total Carter EP220 or Shell Omala 220 or equivalent.
Capacity of Pan Gearbox (approximate) 2.0 Litres
The Sever Pan Drives must be run on a synthetic oil not a mineral. Use Total Carter EPHT460 or Total Carter SY460 or Tribol 800 iso460 or B.P. Enersin SG-XP460 or Castrol Alphasyn PG680 or equivalent synthetic oil. The different synthetic oils will not mix with each other so the gearbox **must** be drained and flushed prior to topping up or refilling with oil.

MONTHLY: **Inspect:**

(1) All blades for wear – replace when worn.

(2) Pan rim, base and door wear plates – replace when worn

(3) Pan Roller Bearings – replace if necessary

(4) Pan Door Bearing – replace if necessary

(5) Pneumatic system for leaks – repair or replace damaged parts.

(6) Pneumatic Cylinders. Make sure that the door cylinder piston rod is at the end of its travel when the discharge door is just home in its seating.

(7) Check the S.H. bushing securing the Mixing Star and Pan Drive to their respective gearbox shafts are tight. Torque setting 34 nm.

CAUTION: **BEFORE WORKING UNDER LOADING HOPPER, REST HOPPER ON SAFETY BOLTS. DO NOT FORGET TO REMOVE THESE BOLTS BEFORE RE-STARTING THE MACHINE**

Loader Magnetic Brake (see below for N.R. Range brake units.) – adjust if necessary, to the following instuctions (these instructions apply only if a separate brake unit is fitted, refer to the manufacturer if a combined motor and brake unit is fitted):-

Mounting:

Set the brake so that the horizontal centre-line of the shoe corresponds with the centre-line of the brake wheel shaft and the shoe pivots are equally spaced from the vertical centre-line.

Installing:

Slacken back equalising screw (Item 14) Slack nut (Item 5) and adjust screw (Item 3) to give required braking torque.

WARNING:

The end of the adjusting screw (Item 3) must always be visible in the hole at the end of the adjusting nut (Item 6).

Set nuts (Item 5) so that contact is made with the load spring block in the shoe lever when solenoid plunger has moved through half its stoke. Once properly set, this setting should not be altered. With solenoid plunger right down, set equalising screw (Item 14) to give equal friction lining clearances.

Tighten locknuts (Item 5 & Item 14) and be sure that the load spring bracket is in place.

Check adjustments frequently and lubricate brake shoe pivots. To adjust for wear, screw in adjusting screw (Item 3) until the adjusting nuts are clear and only touch lever (Item 1) when plunger is depressed through half its stroke.

When new Brake Linings are fitted, repeat all adjustments. Refer to notes on safe handling and disposal of Asbestos waste and Brake Dust.

Orders and enquiries should always state full description of parts required together with the make and model of brake and motor. The serial number on the brake should always be quoted and when ordering replacement brake shoes give the dimensions and number of rivet holes.

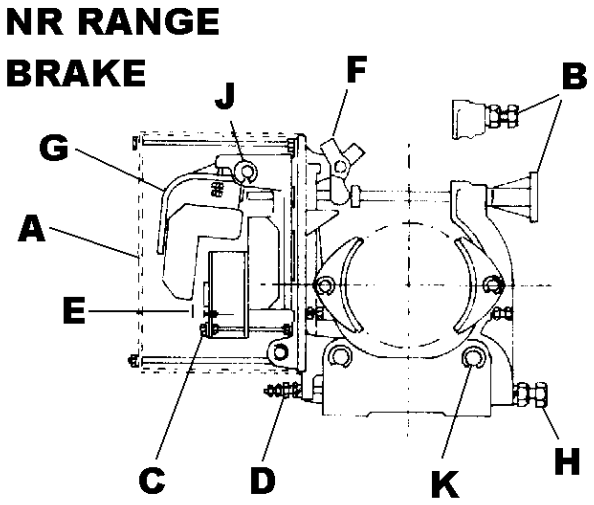
Check that the limit switch on the loader stops the hopper in the required position at the top of the runway.

When operated the limit switch should stop the motor and apply the magnetic brake unit.

If a Batch Weigher is not to be used in conjunction with the Loader, then the skip track must be extended and a lower limit switch and hopper stops incorporated.

The loading hopper must operate the lower limit switch before the hopper stops are reached and allowance made for the rope to slacken once the hopper is in the loading position.

NR Range Loader Magnetic Brakes – adjust if necessary, to the following instructions :-



MOUNTING

(1) Release the spring pressure completely by unscrewing the torque screw H, in most cases the brake can now be slipped over and off the brake drum. If the brake cannot be slipped off the drum due to the proximity of equipment i.e. motors etc, the plain arm can be removed by taking out the pivot pin K and withdrawing the arm from the base. It may be necessary to remove the top rod.

(2) Set the brake unit in position on the bed plate, insert the fixing bolts and screw down finger tight.

(3) If previously removed replace the plain arm, rod and pivot pin. With the brake base resting evenly on the bed plate tighten up the torque screw H until the brake drum is gripped tightly by the shoes.

(4) Tighten down the fixing setscrews or bolts and set the brake arm shoe stop screws Against the shoes to prevent them dropping in the released condition.

WIRING

A 3/4" screwed conduit entry is situated in each side of the base of the armature housing to accommodate the wiring to the terminals, it is essential that the conduit or lead in be flexible.

SETTING UP

(1) Adjust and lock the torque screw H so that only 3mm (1/8") of further adjustment is available to compensate for any reduction in torque due to any wear of the brake linings.

(2) Remove cover A and with no current flowing set gap E, indicated on the brake label, by adjusting the handwheel or alternatively the screw B. Replace the cover.

(3) Adjust the setscrew D so that both shoes lift equally when the brake is energised.

(4) When required the brake can be released manually by applying pressure to the release device F, using a suitable lever

MAINTENANCE AND SERVICE

NOTE, until it is obvious that the friction surfaces have bedded down completely, gap E should be should be carefully checked at frequent intervals. The length of this period will depend on the frequency of the operation of the brake. After this period normal maintenance only will be required. The only lubrication required is an occasional light application to the armature spindle bearing through the holes provided.

COIL REPLACEMENT

Isolate the electrical supply. Remove the armature cover A and disconnect the coil leads. Slacken the top rod adjustments by rotating the handwheel or alternatively the screw B anti-clockwise. Remove the e-clips on the armature spindle J and withdraw the spindle, lift out the armature G. Remove the eight nuts at C and withdraw the coil. Replace the coil and the nuts ensuring the positioning of the inner nuts prevents distortion of the coil flange when the outer nuts are tightened. Refit the armature, spindle and e-clips, reset the gap E as previously described and reconnect the leads. Replace the cover.

BRAKE LINING REPLACEMENT

Isolate the electrical supply. Release the torque spring pressure by unscrewing the torque screw N. Remove the shoe spindle and rotate the shoe around the drum by approximately 90’ in an upward movement and withdraw. Fit new linings and reassemble. Reset as previously described under setting.

WARNING

It is likely that the Brake Lining may contain asbestos and suitable precautions should be taken to avoid breathing in the dust, protective clothing should be worn. Hands should be washed immediately after handling components and old discarded parts or linings should be disposed of in a responsible manner in line with local or national regulations covering the disposal of asbestos waste.

ANNUALLY:

LOADER WORM REDUCTION GEAR UNIT RENOLD WU5

Drain and clean out the gear case and refill with Total Carter EP320, Total Carter EPHT320 or Total Carter SY320 or equivalent. (EPHT and SY320 are Synthetic Oils). Mineral and Synthetic oils and are incompatible and will not mix, neither will different makes of Synthetic Oils. If in doubt thoroughly flush out the unit prior to refilling. When running conditions are severe the oil should be changed more frequently. (Capacities – 8.5 Imperial Pints: 4.0 Litres: 1.5 American Gallons).

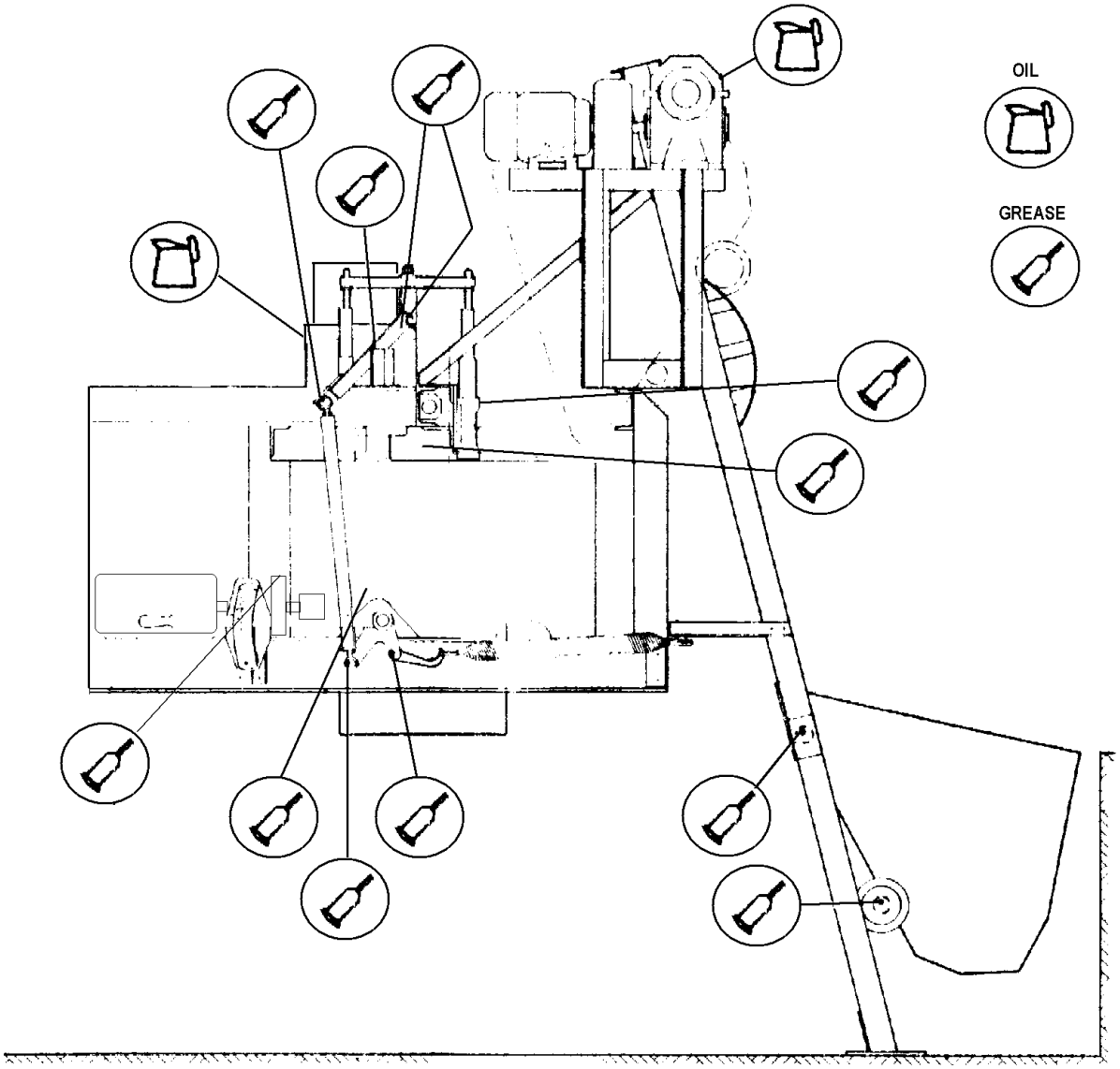
LOADER WINCH GEAR BOX (FLENDER)

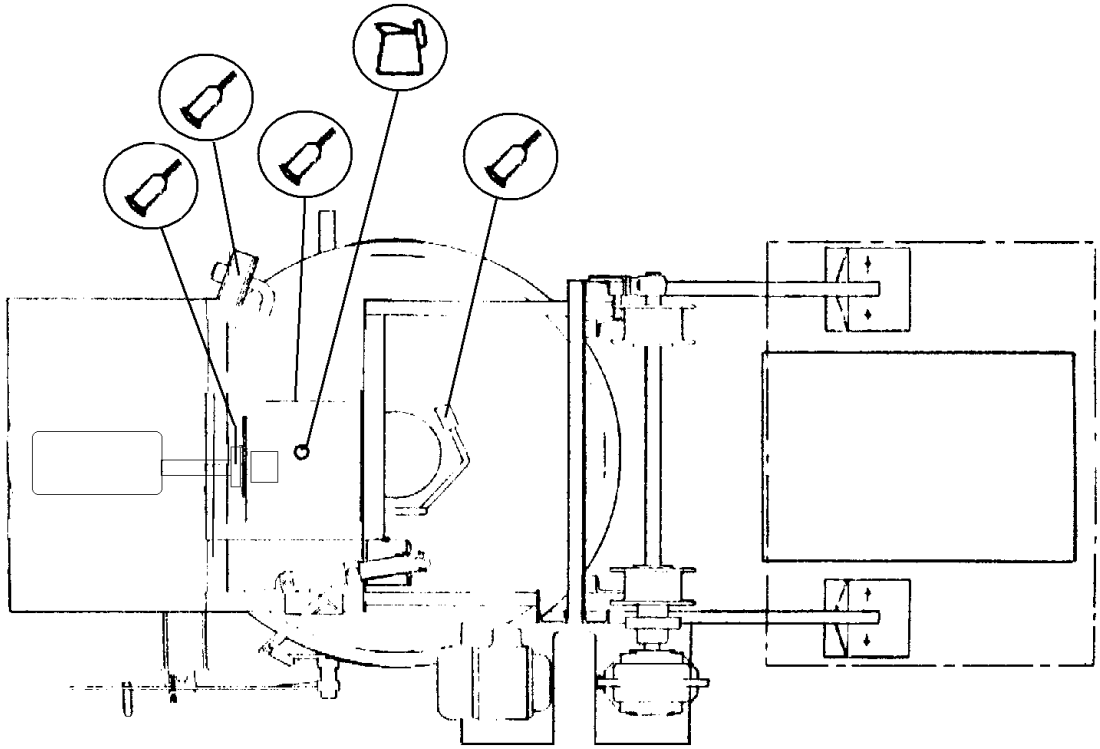
Drain and clean out the gear case and refill with Total Carter EPHT460 or Total Carter SY460 or ICI Tribol 800-ISO460 or BP Enersyn SG-XP460 or equivalent. These are Synthetic Oils, Mineral and Synthetic Oils are incompatible and will not mix, neither will different makes of Synthetic Oils. If indoubt thoroughly flush out the unit prior to refilling. When running conditions are severe this procedure should be adopted more frequently. (Approximate Capacity – 11.6 Imperial Pints: 5.5 litres: 1.45 American Gallons)

NOTE

Electrical cables particularly those with copper conductors suffer from a condition known as ‘relaxation’ which may cause wiring to work loose over a period of time, it is recommended that the tightness of wiring connections and terminals are checked following the first month in service.

LUBRICATION CHART





OPERATING

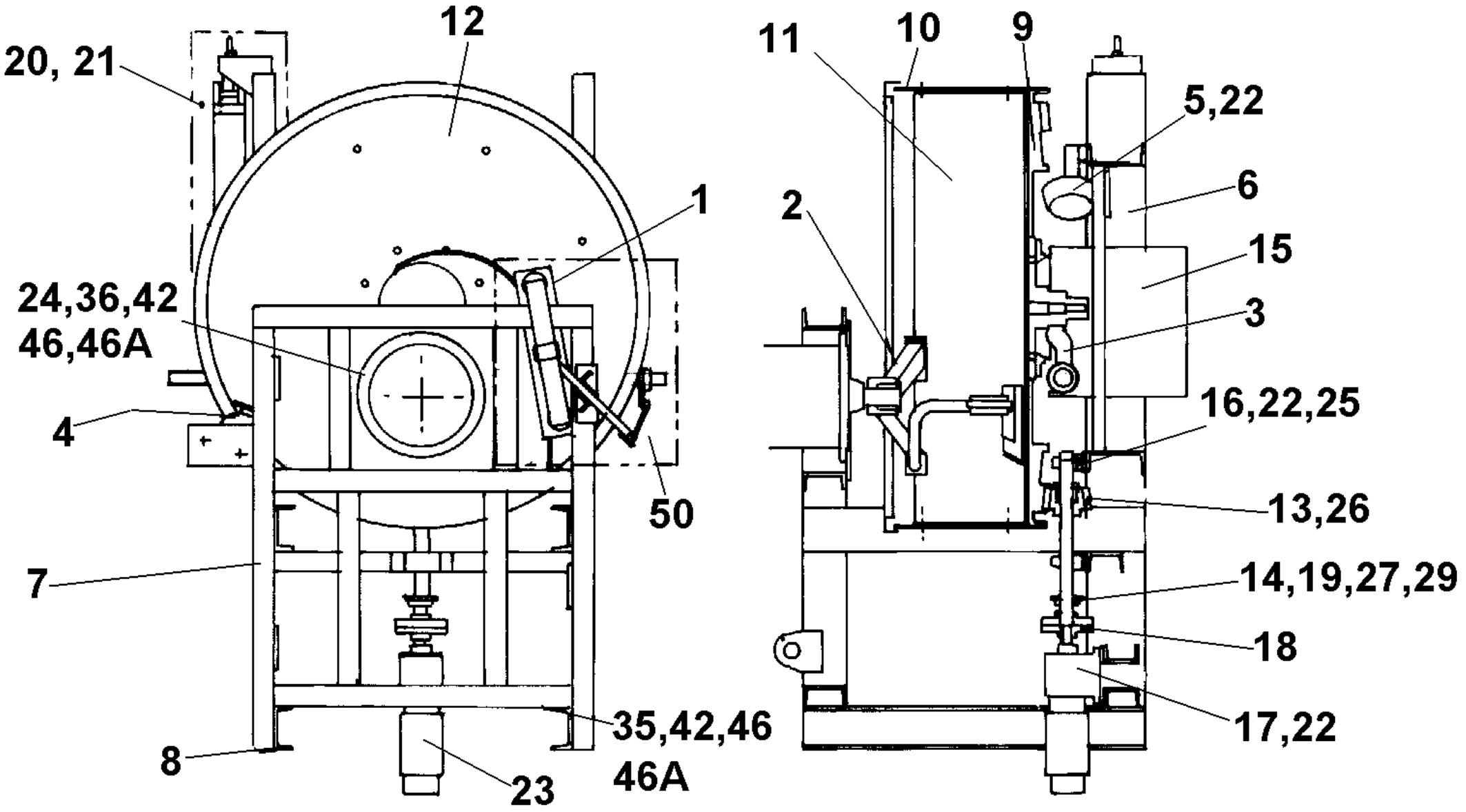
AND

MAINTENANCE MANUAL

SECTION 4

MIXER SPARE PARTS

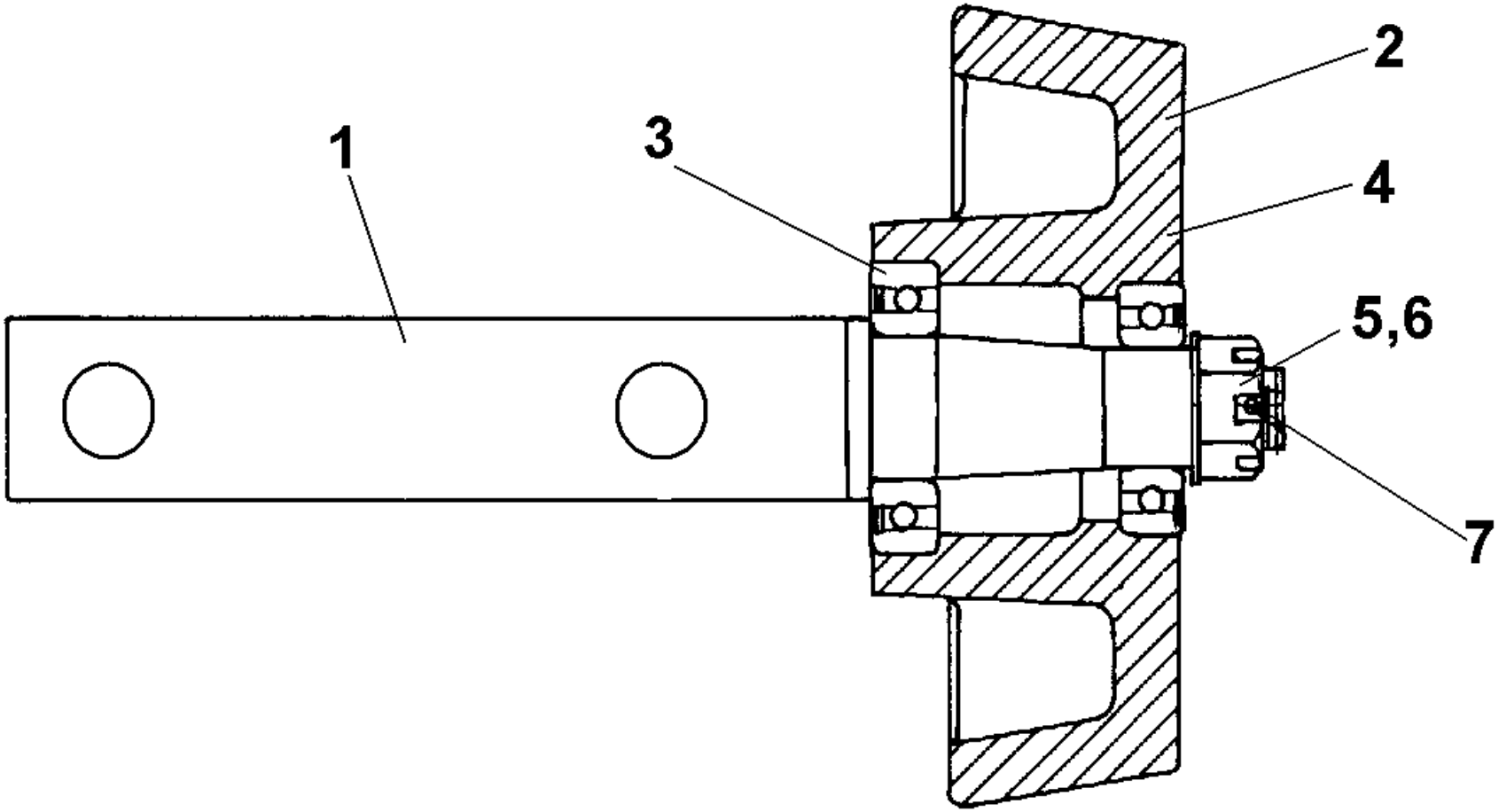
RP400XD GENERAL ARRANGEMENT



RP400XD GENERAL ARRANGEMENT

1	CR09100202	Discharge Blade Assembly	1
2	CR08100174	Arrangement of Mixing Star	1
3	CR09100178	Discharge Door Assembly	1
4	CR09100200	Fixed Blade Assembly	1
5	CR09100222	Pan Roller Assembly	3
6	CR26100157	Chassis	1
7	CR26100163	Top Structure	1
8	CR26100164	Top Structure Support	4
9	CR21100151	Pan Rack	1
10	CR54100152	Pan Rim	1
11	CR54100153	Pan Rim Wear Plate, Mild Steel	3
11	CR54100153SS	Pan Rim Wear Plate, Stainless Steel	3
12	CR54100154	Pan Base Wear Plate, Mild Steel	4
12	CR54100154SS	Pan Base Wear Plate, Stainless Steel	4
13	CR46100155	Bevel Pinion	1
14	CR52100156	Pan Drive Shaft	1
15	CR51100203	Discharge Chute	1
16	CR53100219	Packing	A/R
17	CR53100218	Packing	A/R
18	CR23100220	Pan Drive Shaft Coupling	1
19	CR46100224	Scraper Shovel Pinion	1
20	CR269280	Guard (Door Cylinder)	1
21	CR269281	Guard (Door Cylinder)	1
22	CR532016	Weldable Stops Roller Spindles, Bearings Etc.	8
23	CR299084	Pan Drive Gear Unit (FLENDER) 50Hz	1
23A	CR29100626	Pan Drive Gear Unit USA/CAN Spec 60Hz	1
24	CR299085	Mixing Star Gear Unit (FLENDER) 50Hz	1
24A	CR29100625	Mixing Star Gear Unit USA/CAN Spec 60Hz	1
25	CR159012	Bearing Pillow Block	2
26	CR189004	SH Centre Bushing	1
27	CR329074	Parallel Key	1
29	57S05D2	Screw Grub M8 x 10	1
35	11S06H	Screw Set M16 x 50	32
36	8S06H	Bolt M16 x 60	12
42	7S06	Nut M16	44
46	267S09	Washer Flat M16	44
46A	17S08	Washer Spring M16	44
50	CR54100432	Discharge Blade Guard	1
51	CR53100639	Forklift Support Channel (Not Illustrated)	2
52	CR53100437	Extension Feet (Not Illustrated)	4

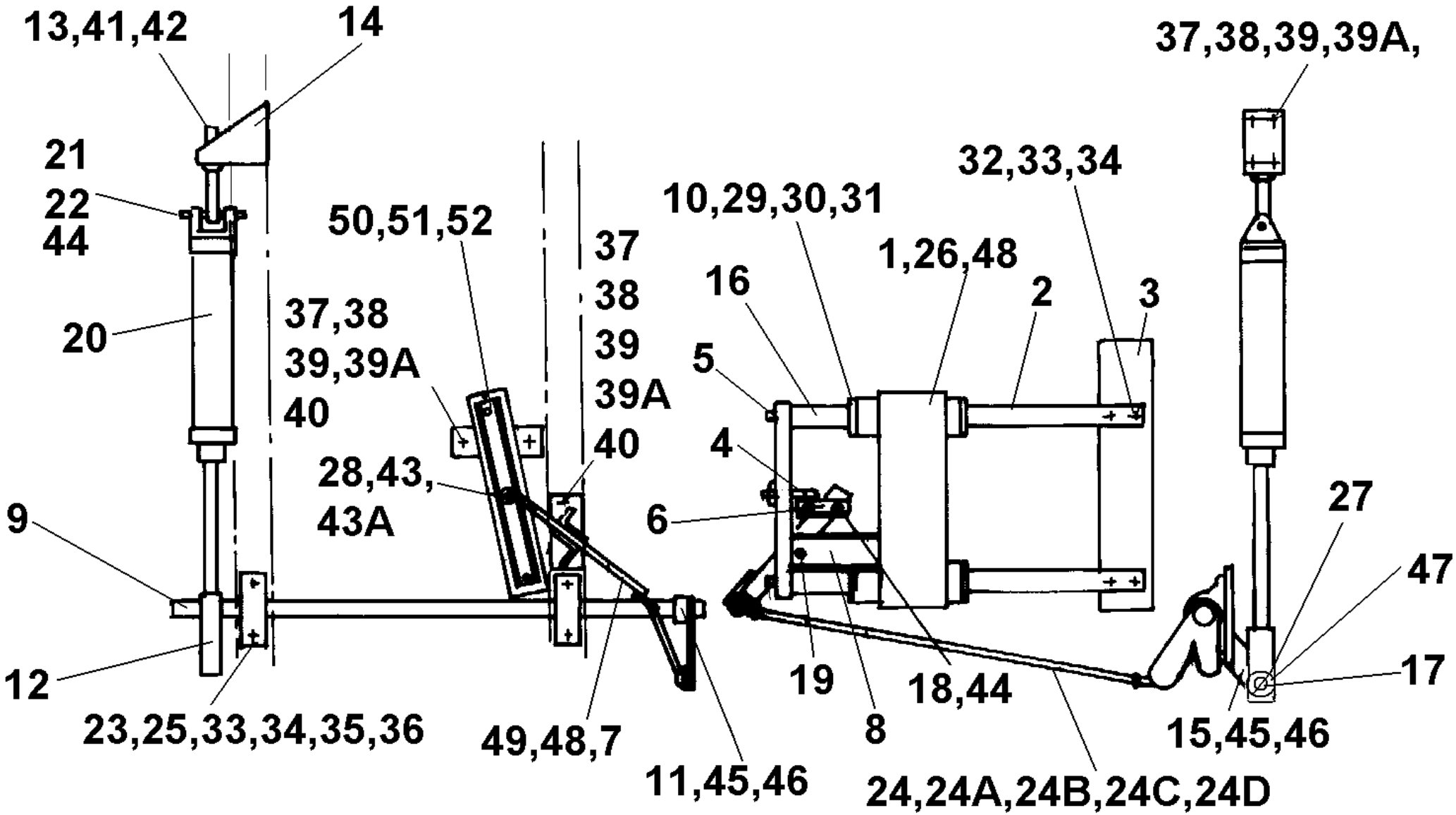
RP400XD PAN ROLLER ASSEMBLY



RP400XD PAN ROLLER ARRANGEMENT

1	CR52100216	Pan Roller Spindle	4
2	CR21100217	Pan Roller	4
3	88S17C	Bearing	4
4	88S13C	Bearing	4
5	228S11	Hex Castle Nut	4
6	267S12	Flat Washer M24	4
7	44S16J	Split Pin	4
8	CR532016	Stop Roller Spindle, Not Illustrated	8
9	105S07	Washer Tapered, Not Illustrated	8
10	8S06R	Bolt M16 X 120, Not Illustrated	8
11	267S09	Washer Flat M16, Not Illustrated	8
12	61S06	Nut Binx M16, Not Illustrated	8

RP400XD DISCHARGE BLADE ASSEMBLY



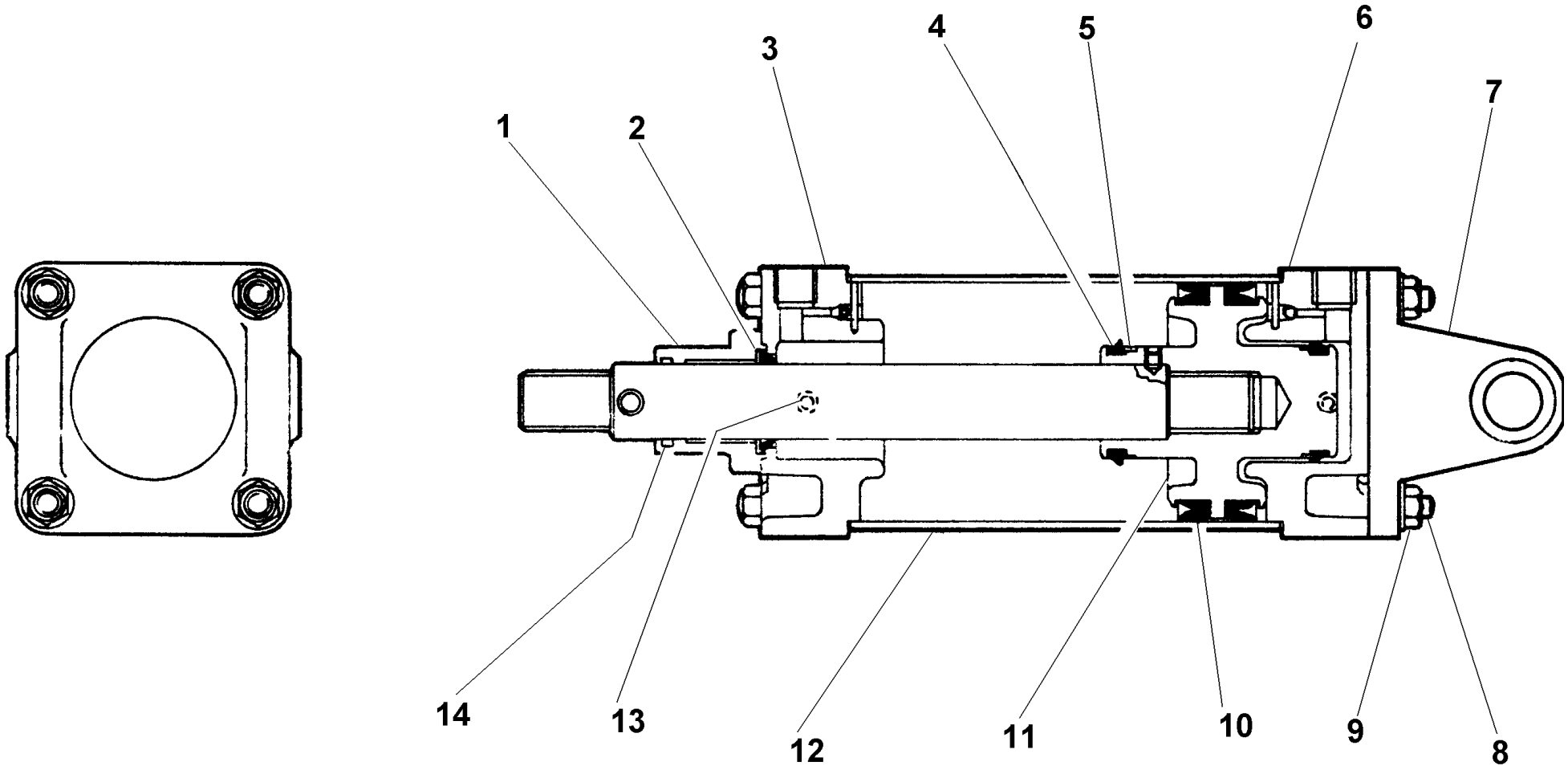
RP400XD DISCHARGE BLADE ASSEMBLY

1	CR26100170	Finger Bracket	1
2	CR52100171	Discharge Blade Finger,Mild Steel	2
2	CR52100171SS	Discharge Blade Finger, Stainless Steel	2
3	CR540650	Discharge Blade, obsolete use item 3 below	
3	CR54100172	Discharge Blade, Mild Steel	1
3	CR54100172H	Discharge Blade, Wear Resistant Steel	1
3	CR54100172SS	Discharge Blade, Stainless Steel	1
4	CR52100173	Bridge Hinge	1
5	CR26100175	Finger Bridge	1
6	CR53100176	Blade Lifting Link	2
7	CR26100177	Lifting Lever	1
8	CR26100189	Lever Bracket	1
9	CR52100201	Discharge Door Shaft	1
10	CR53100194	Wiper Seal Housing, Mild Steel	4
10	CR53100194SS	Wiper Seal Housing, Stainless Steel	4
11	CR53100192	Discharge Door Shaft Lever	1
12	CR26100191	Lever Pivot Holder	1
13	CR53100190	Cylinder Pivot Holder	1
14	CR541854	Air Cylinder Bracket	1
15	CR53100197	Air Cylinder Lever	1
16	CR53100198	Stop Pipe	2
17	CR52100044	Pin	1
18	CR52100195	Hinge Pin	3
19	CR52100196	Locking Pin	3
20	CR110298	Air Cylinder	1
30A	CR110325	Seal Kit Air Cylinder	1
21	CR630075	Spacer	2
22	CR520441	Clevis Pin	1
23	CR159013	Bearing	2
24	CR030072	Control Rod	1
24A	CR140004	L.H. Ball Joint	1
24B	CR140005	R.H. Ball Joint	1
24C	CR241648	Checknut - R.H. Thread 3/8" B.S.P.	1
24D	CR241657	Checknut - L.H. Thread 3/8" B.S.P.	1
25	CR539103	Packer Plate Adaptor	2
26	CR159011	Bearing	4
27	44S16J	Split Pin	2
28	267S12	Washer Flat M24	1
29	11S02C	Screw Set M6 x 25	16
30	17S03	Washer Spring M6	16
31	CR579003	Wiper Seal	4
32	52S05N	Screw C/Sunk M12 x 65	4
33	7S05	Nut M12	8
34	17S06	Washer Spring M12	8
35	8S05K	Bolt M12 x 70	4
36	105S05	Washer Tapered M12	4
37	11S06H	Screw Set M16 x 50	11
38	7S06	Nut M16	11
39	267S09	Washer Flat M16	11
39A	17S08	Washer Spring M16	11
40	105S07	Washer Tapered M16	7

RP400XD DISCHARGE BLADE ASSEMBLY

41	7S08	Nut M24	2
42	267S12	Washer Flat M24	2
43	7S08	Nut M24	1
43A	56S08	Nut Lock Thin M24	1
44	44S18P	Split Pin	5
45	CR329002	Key Parallel	2
46	57S05D2	Screw Grub M8 x 10	3
47	10S41	Washer Flat 1"	2
48	131S01	Grease Nipple 1/8" Straight	3
48A	176S01	Cover Nipple Grease	3
49	CR280008	Grease Nipple 1/4" 45' Angle	1
49A	176S01	Cover Nipple Grease	1
50	7S07	Nut M20	4
51	267S10	Washer Flat M20	4
52	56S07	Nut Thin M20	2

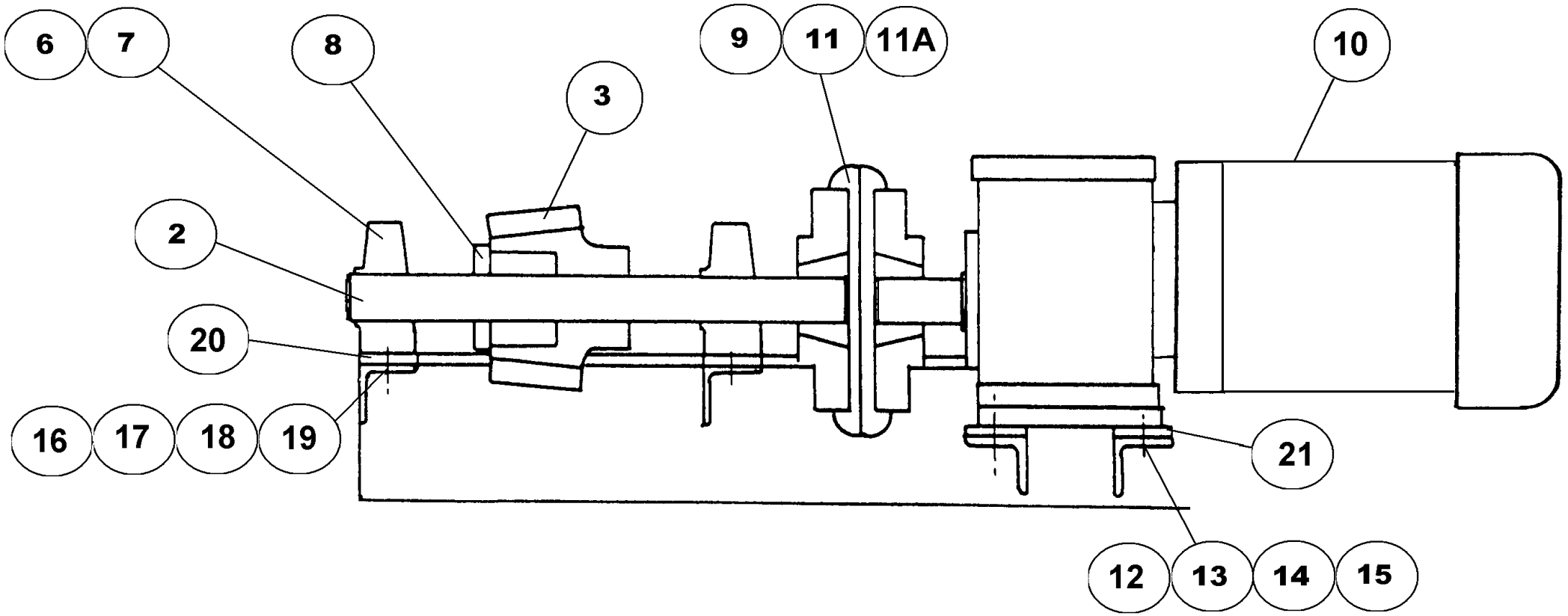
RP400XD DISCHARGE DOOR AIR CYLINDER



RP400XD DISCHARGE DOOR AIR CYLINDER

	CR110298	Air Cylinder Assembly Complete	1
	CR110325	Seal Kit for above	1
1	CR110336	Bearing Assembly	1
2	CR110337	Piston Rod Packing	1
3	CR110338	Front End Cover Assembly	1
4	CR110339	Cushion Seal	2
5	CR110340	Cushion SealRetaining Ring	2
6	CR110342	Rear End Cover Assembly	1
7	CR110349	Rear Clevis Mounting	1
8	CR110344	Tie Rod	4
9	CR110343	Tie Rod Nut	8
10	CR110346	Piston Seal	2
11	CR110341	Piston & Piston Rod Assembly	1
12	CR110347	Barrel	1
13	CR110348	O' Ring	2
14	CR110345	Wiper Seal	1

RP400XD PAN DRIVE ASSEMBLY

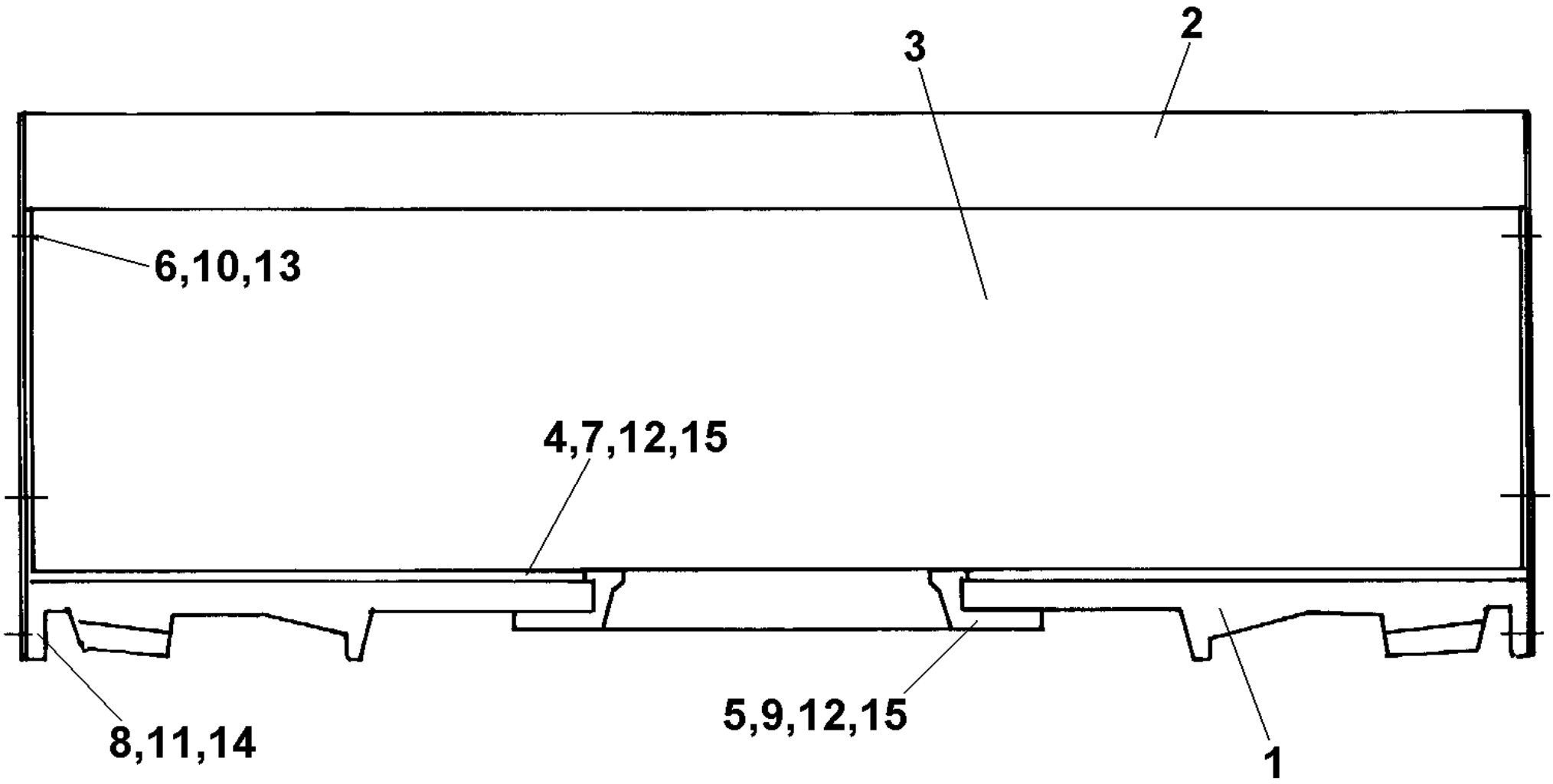


RP400XD PAN DRIVE ASSEMBLY

2	CR52100156	Pan Drve Shaft	1
3	CR46100155	Bevel Pinion	1
6	CR159012	Bearing Plummer Block	2
7	CR532016	Bearing Stop	4
8	CR189004	SH Centre Bushing, Taper Lock	1
9	CR23100220	Flexible Coupling Assembly	1
10	*CR299084	*Pan Drive Gearbox Flender 2.2kw	1
10A	*	*Pan Drive Gearbox Renold 2.2kw	1
10B	*	*Pan Drive Gearbox Sever UK Spec	1
10C	CR29100626	*Pan Drive Gearbox USA/CAN Spec 60Hz	1
11	CR329074	Key Parallel	2
11A	57S05D2	Screw Grub M8 x 10	2
12	8S05H	Bolt M12 x 50	4
13	267S07	Washer Flat M12	8
14	105S05	Washer Tapered M12	4
15	61S05	Nut Binx M12	12
16	8S06H	Bolt M16 x 50	4
17	267S09	Washer Flat M16	8
18	105S07	Washer Tapered M16	4
19	61S6	Nut Binx M16	4
20	CR53100218	Packing Large Hole (not illustrated)	A/R
21	CR53100219	Packing Small Hole (not illustrated)	A/R

*Quote Make & Model of motor/gearbox when ordering spares for this item

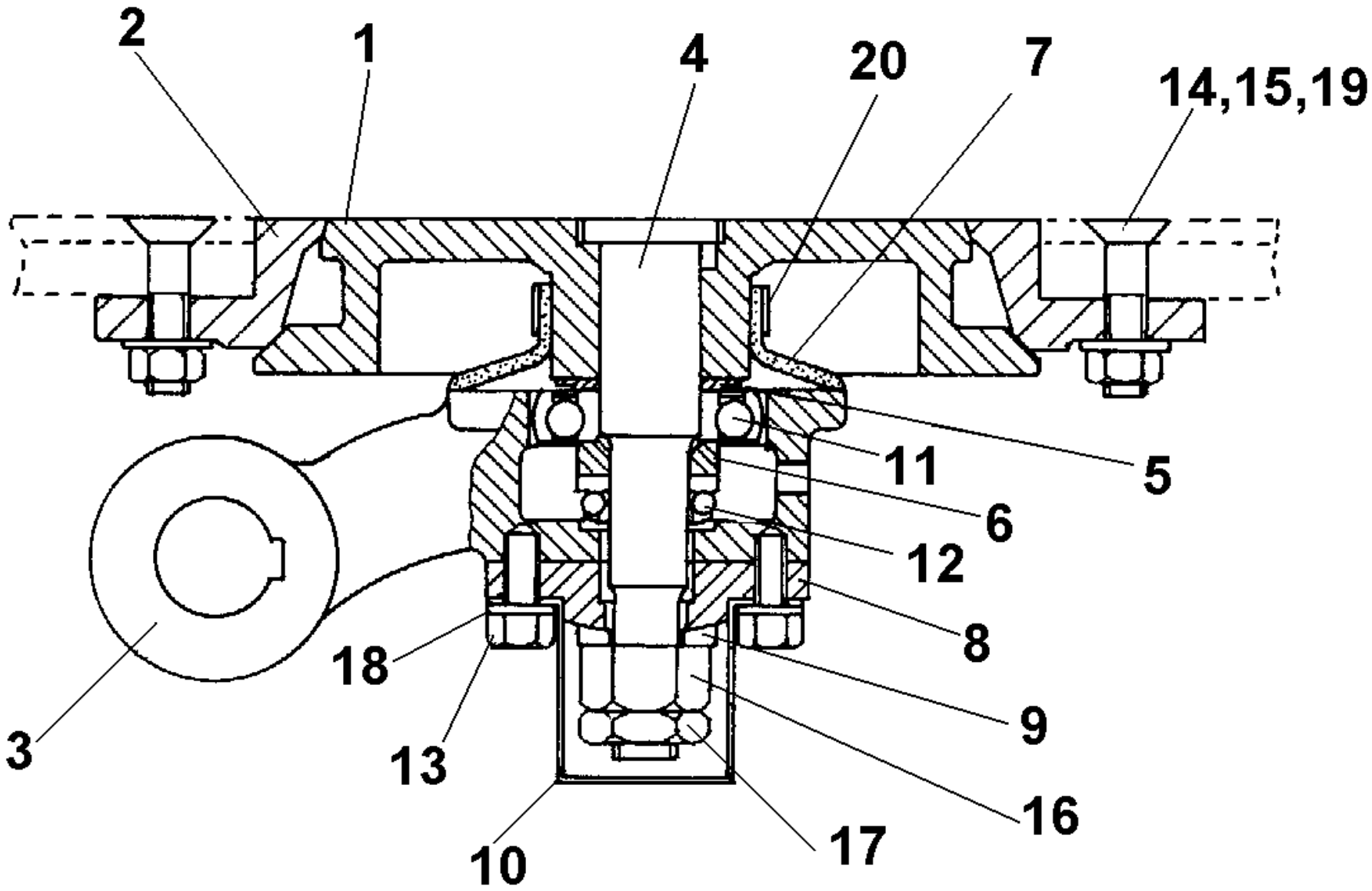
RP400XD MIXING PAN ASSEMBLY



RP400XD PAN ASSEMBLY

1	CR21100151	Pan Rack	1
2	CR54100152	Pan Rim	1
3	CR54100153	Pan Rim Wear Plates, Mild Steel	3
3	CR54100153H	Pan Rim Wear Plates, Wear Resistant Steel	3
3	CR54100153SS	Pan Rim Wear Plates, Stainless Steel	3
4	CR54100154	Pan Base Wear Plates, Mild Steel	4
4	CR54100154H	Pan Base Wear Plates, Wear Resistant Steel	4
4	CR54100154SS	Pan Base Wear Plates, Stainless Steel	4
5	CR54100154	Door Seat, Mild Steel	1
5	CR54100154SS	Door Seat, Stainless Steel	1
6	52S03E	Pan Rim Wear C/Sunk Screws M8 x 25	24
7	52S06N	Pan Base Wear Plate C/Sunk Screws M16 x 65	8
7A	52S06R	Pan Base Wear Plate C/Sunk Screws M16 x 80	8
8	11S05F	Pan Rim Hex Set Screws M12 x 40	12
9	52S06AG	Pan Door Seating C/Sunk Screws M16 x 85	8
10	7S03	Nut M8	24
11	61S05	Nut Binx M12	12
12	7S06	Nut M16	24
13	17S04	Washer Spring M8	24
14	267S07	Washer Flat M12	12
15	17S08	Washer Spring M16	24

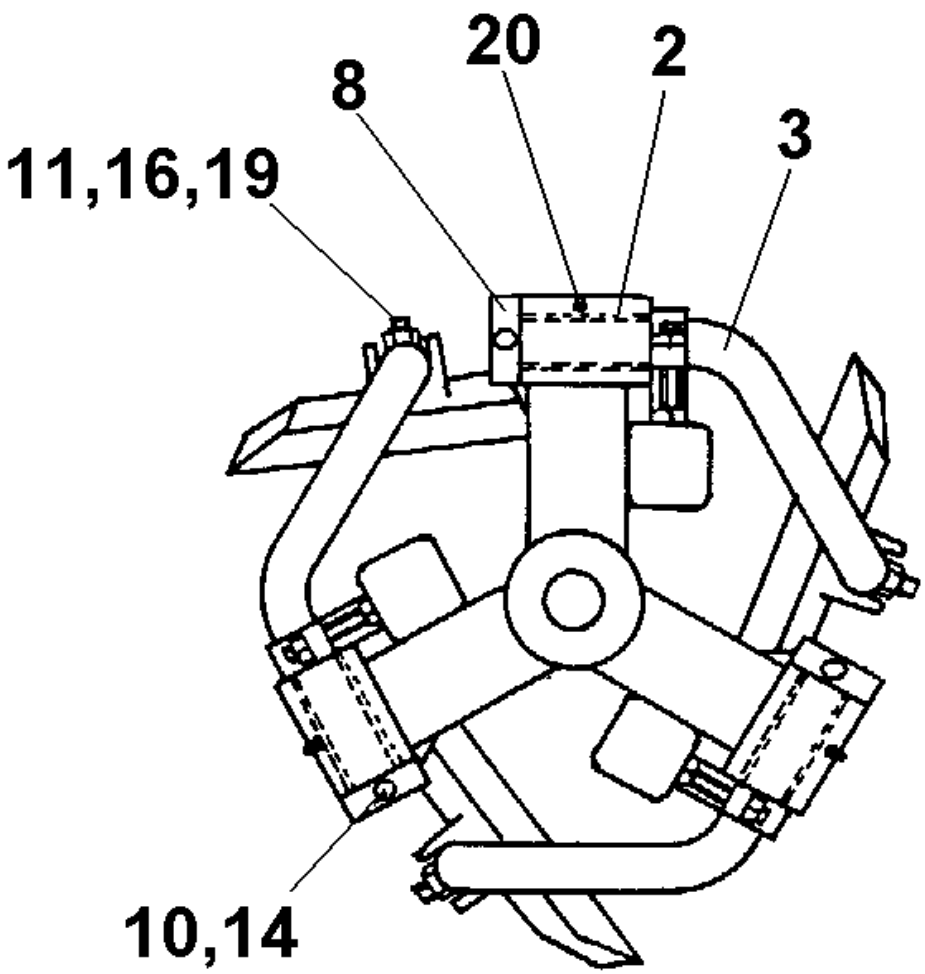
RP400XD DISCHARGE DOOR ASSEMBLY

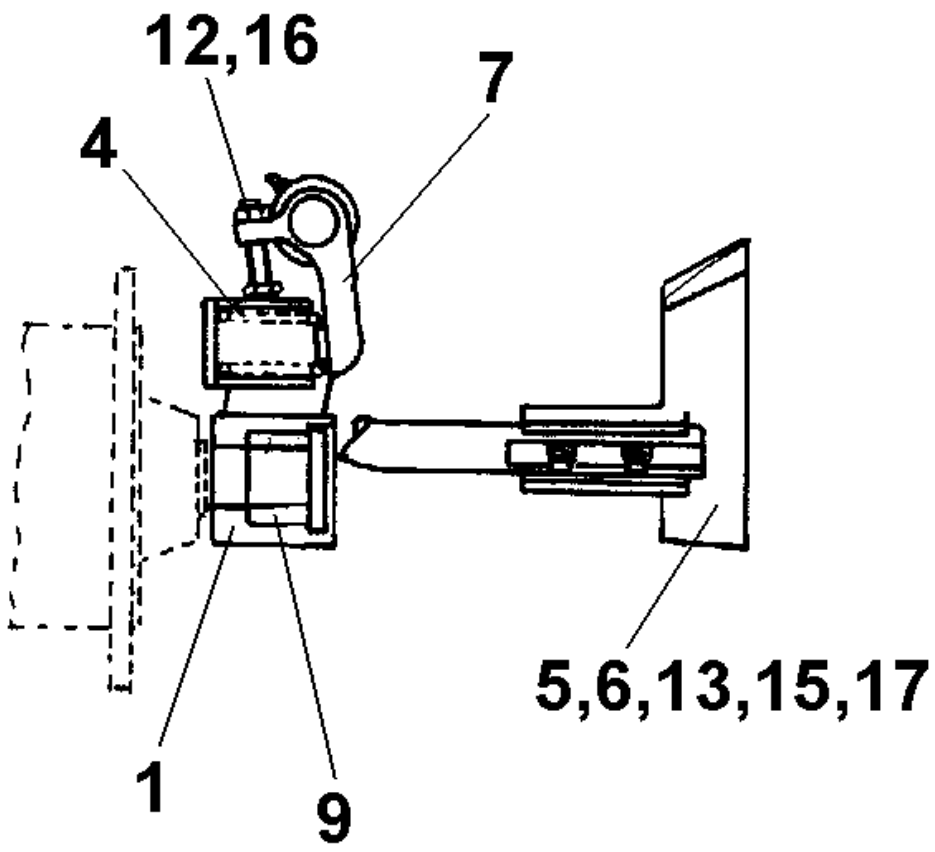


RP400XD DISCHARGE DOOR ARRANGEMENT

			1
1	CR21100179	Door, Mild Steel	1
2	CR21100180	Door Seating, Mild Steel	1
2	CR21100180SS	Door Seating, Stainless Steel	
3	CR21100181	Door Lever	1
4	CR52100182	Spindle	1
5	CR630387A	Thrust Washer	1
6	CR630387B	Distance Piece	1
7	CR570017	Rubber Seal	1
8	CR210093	Bottom Cover	1
9	CR49100187	Bottom Cover Washer	1
10	CR540451	Nut Cover	1
11	CR150423	Bearing	1
12	CR150347	Bearing Thrust	1
13	11S05E	Screw Set M12 x 35	4
14	52S06AG	C/sunk Screw M16 x 85	8
15	7S06	Nut M16	8
16	7S08	Nut M24	1
17	56S08	Nut Lock Thin M24	1
18	17S06	Spring Washer M12	4
19	17S08	Spring Washer M16	8
20	97S15	Clip Hose	1

RP400XD MIXING STAR ASSEMBLY

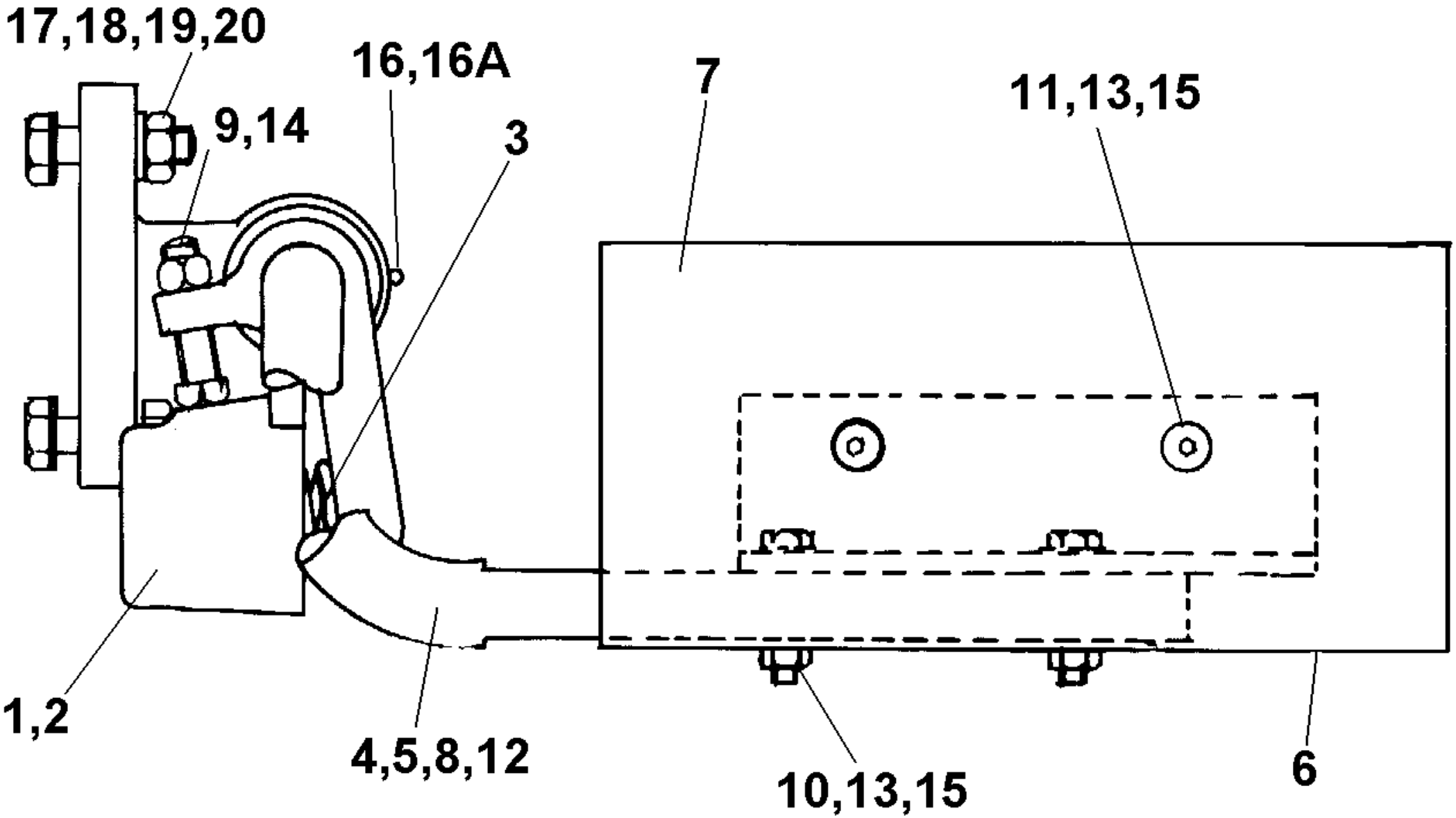




RP400XD MIXING STAR ARRANGEMENT

1	CR26100161	Mixing Star, Mild Steel	1
1	CR26100161SS	Mixing Star, Stainless Steel	1
2	CR189008	Bush Oilite	6
3	CR26100162	Star Blade Finger inc Lever, Mild Steel	3
3	CR26100162SS	Star Blade Finger inc Lever, Stainless Steel	3
4	CR330062	Spring	3
5	CR210007	Star Blade (Less Wearing Plate)	3
5A	CR210007P	Star Blade Polyurethane (Alternative)	3
5B	CR210035	Star Blade Cast, obsolete use item 5B below	
5B	CR21100015	Star Blade, Cast, replaces CR210035	3
5B	CR21100015SS	Star Blade, Stainless Steel, alternative to cast CR21100015	3
6	CR210123	Blade Wearing Plate (Obsolete use Item 6A Below)	
6A	CR21100169	Blade Wearing Plate	3
6B	CR21100262	Blade Wearing Plate (Alternative to Item 6B)	3
7	CR26100166	Lever, part of item 3 not supplied separately	
8	CR63100167	Collar	3
9	CR189009	SH Star Shaft Centre Bushing	1
10	8S04N	Bolt M10 x 90	3
11	11S06M	Screw Set M16 x 70	6
12	8S06Q	Bolt M16 x 110	3
13	52S05L	C/Sunk Screw M12 x 55	6
14	61S04	Nut Binx M10	3
15	61S05	Nut Binx M12	6
16	7S06	Nut M16	9
17	267S07	Washer Flat M12	6
19	17S08	Washer Spring M16	6
20	CR280008	Grease Nipple 1/4" B.S.P. 45' Angle	3

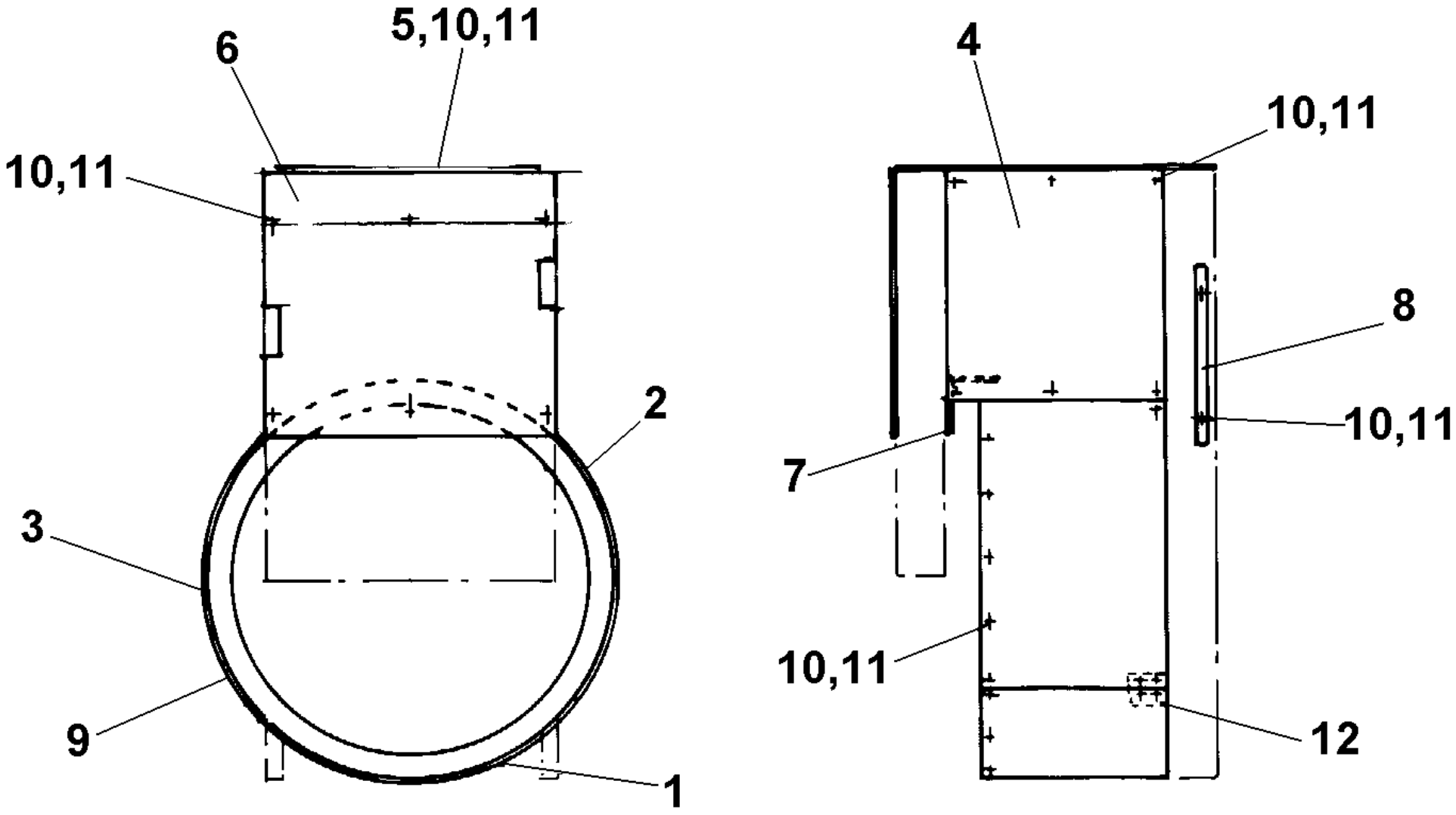
RP400XD FIXED BLADE ASSEMBLY



RP400XD FIXED BLADE ASSEMBLY

1	CR210102	Fixed Blade Spring Box	1
2	CR660008	Star Finger Bush	1
3	CR330063	Spring	1
4	CR53100199	Fixed Blade Finger and Lever, Mild Steel	1
4	CR53100199SS	Fixed Blade Finger and Lever, Stainless Steel	1
5	CR63100159	Collar	1
6	CR530491	Fixed Blade Angle, Mild Steel	1
6	CR530491SS	Fixed Blade Angle, Stainless Steel	1
7	CR530490	Fixed Blade, Mild Steel	1
	CR530490H	Fixed Blade, Wear Resistant Steel	1
7	CR530490SS	Fixed Blade, Stainless Steel	1
8	8S04K	Bolt M10 x 70	1
9	11S06M	Screw Set M16 x 70	1
10	8S05M	Bolt M12 x 80	2
11	52S05H	C/Sink Screw M12 x 40	2
12	61S04	Nut Binx M10	1
13	7S05	Nut M12	4
14	7S06	Nut M16	1
15	17S06	Washer Spring M12	4
16	CR289002	Grease Nipple 1/4" B.S.P. 90' Angle	1
16A	176S01	Cover Nipple Grease	1
17	8S06J	Bolt M16 x 65	2
18	267S09	Washer Flat M16	4
19	17S08	Washer Spring M16	2
20	7S06	Nut M16	2

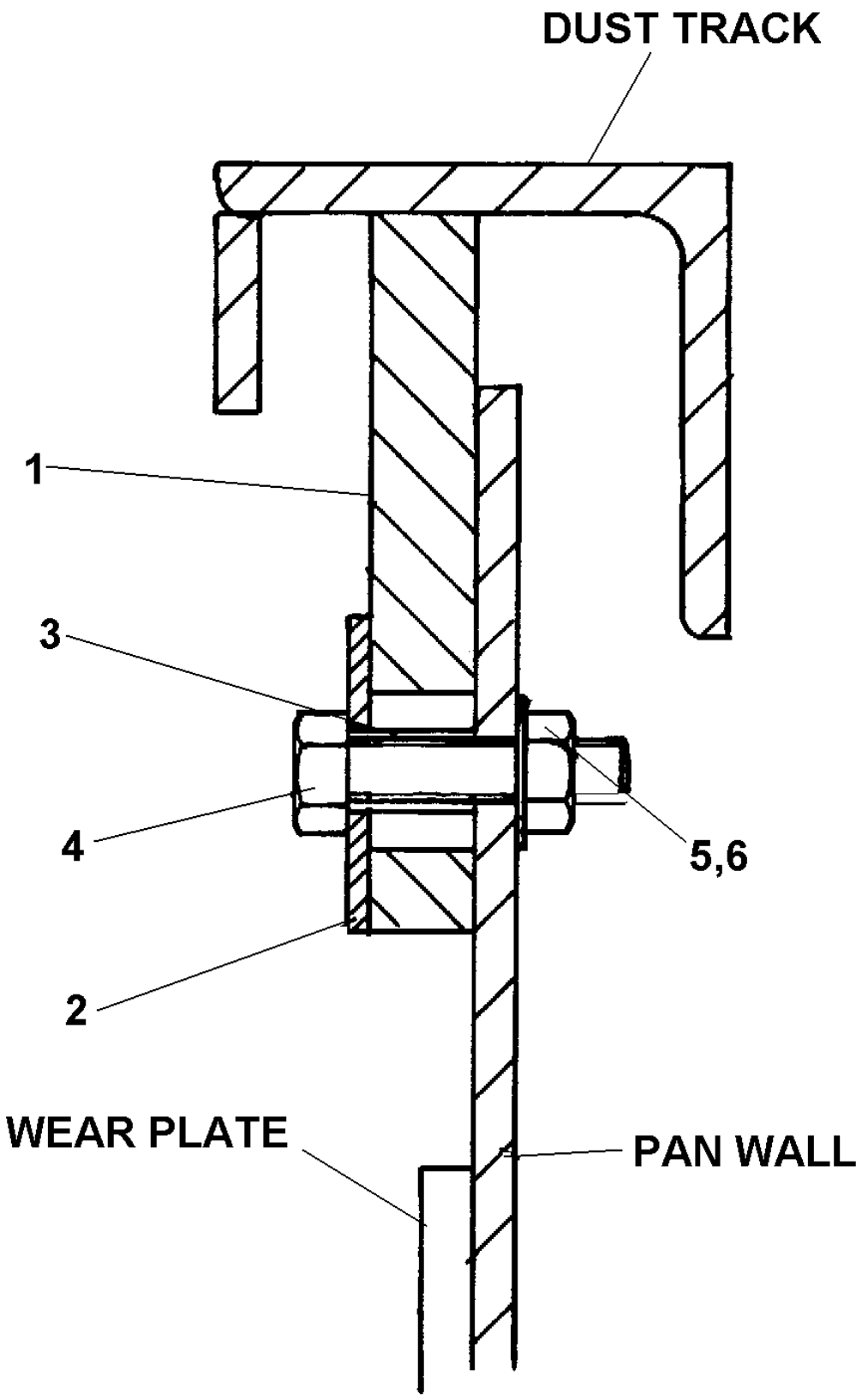
RP400XD PANELS & GUARDS



RP400XD PANELS AND GUARDS

1	CR54100204	Pan Guard	1
2	CR54100205	Pan Guard	1
3	CR54100206	Pan Guard	1
4	CR54100207	Side Guard	2
5	CR54100208	Rear Guard	1
6	CR54100209	Top Guard	1
7	CR54100210	Splash Guard	1
8	CR54100211	Bottom Guard	1
9	CR26100212	Pan Guard Top Support	1
10	CR242141	Screw Set M8 x 16	40
11	CR499017	Washer Spring M8	40
11A	267S05	Washer Flat M8	40
12	CR53100214	Support Angle	2
13	CR54100203	Discharge Chute (Not Illustrated)	1
14	11S04D	Srew Set M10 x 30 (Not Illustrated)	4
15	267S06	Washer Flat M10 (Not Illustrated)	8
16	17S05	Washer Spring M10 (Not Illustrated)	4
17	7S04	Nut M10 (Not Illustrated)	4

RP400XD PAN SEALING EARLY VERSION



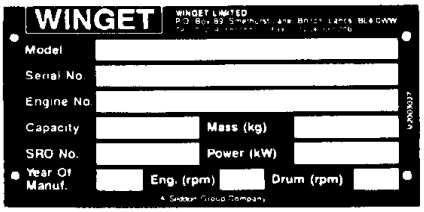
RP400XD PAN SEALING STRIP (EARLY TYPE)

1	CR479005	Pan Sealing Rubber	4
2	CR539124	Holding Plate	4
3	CR529035	Spacer	16
4	8S03C	Bolt M8 x 35	16
5	61S03	Nut Binx M8	16
6	267S05	Washer Flat M8	16

RP400XD DECALS AND LOGOS

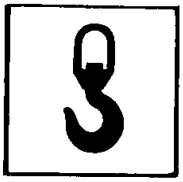
1 CROKER CUMFLOW RP400XD

2



4

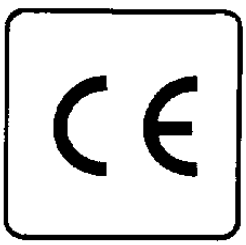
5



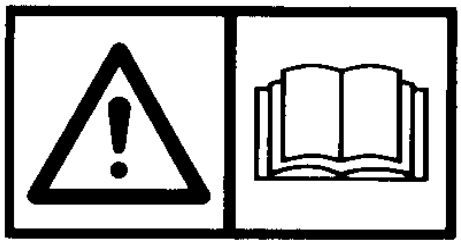
6

7

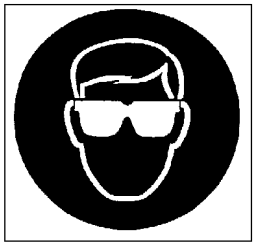
8



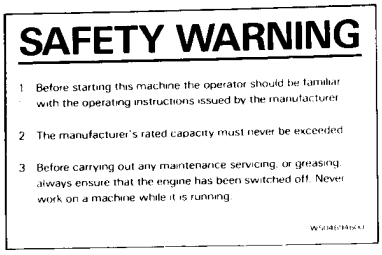
9



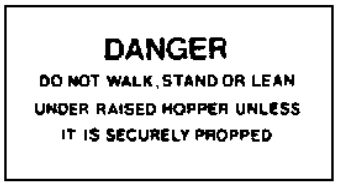
10



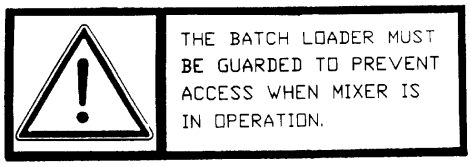
11



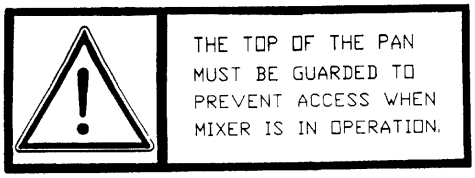
12



13



14



RP400XD DECALS AND LOGOS

1	CR85100765	Decal RP400XD	3
2	V2003037	Plate Serial Number	1
3	101S05D	Rivet Pop	4
4	V2003039	Decal WINGET Medium	3
5	V2003665	Decal Sling Point	4
6	V2003598	Decal British Made	3
7	V2004307	Decal Electrical Hazard	5
8	V2004223	Decal CE Mark	1
9	V2004229	Decal Operators Handbook	3
10	V2004744	Decal Eye Protection	3
11	504694600	Decal Safety	3
12	513331600	Decal Danger	8
13	CR85100771	Decal Batch Loader Guarding	2
14	CR85100772	Decal Pan Guarding	2

INTENTIONALLY BLANK PAGE

INTENTIONALLY BLANK PAGE

INTENTIONALLY BLANK PAGE

OPERATING

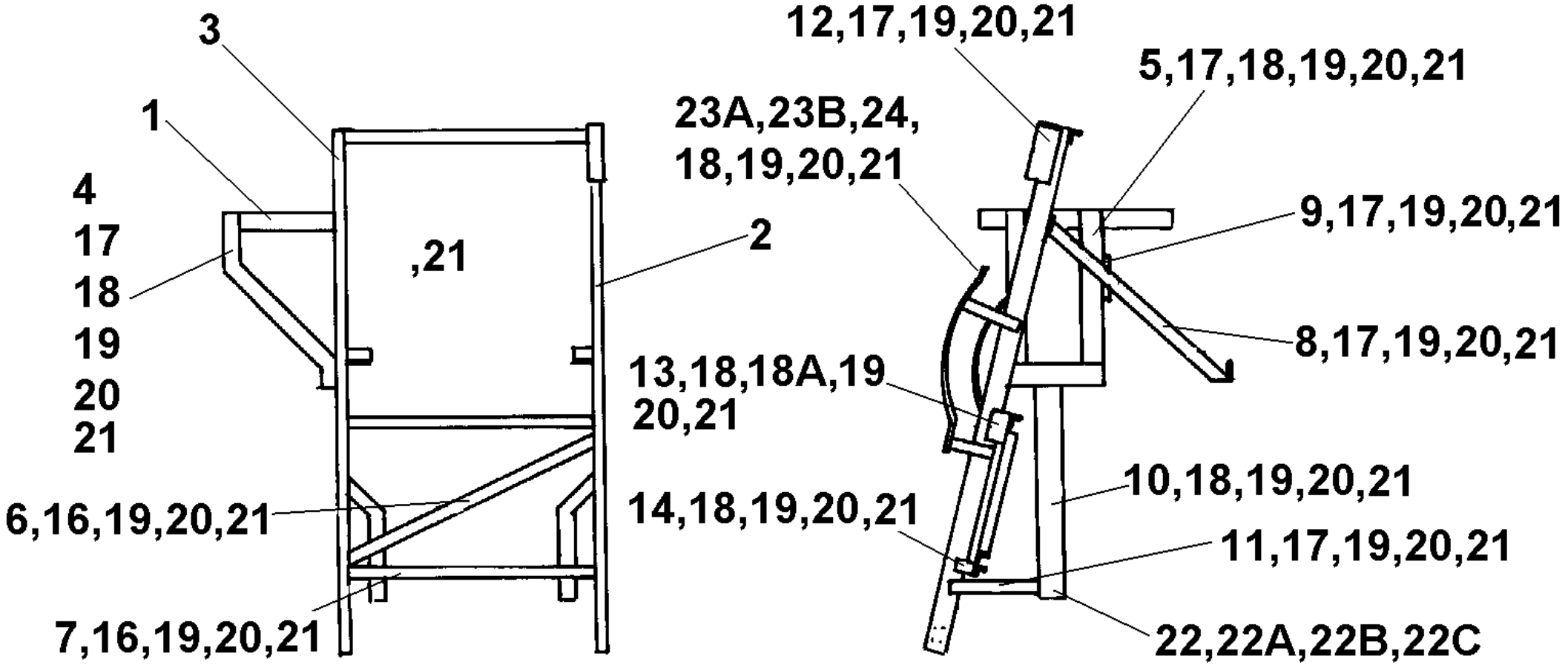
AND

MAINTENANCE MANUAL

SECTION 5

OPTIONAL ANCILLARY EQUIPMENT
SPARE PARTS

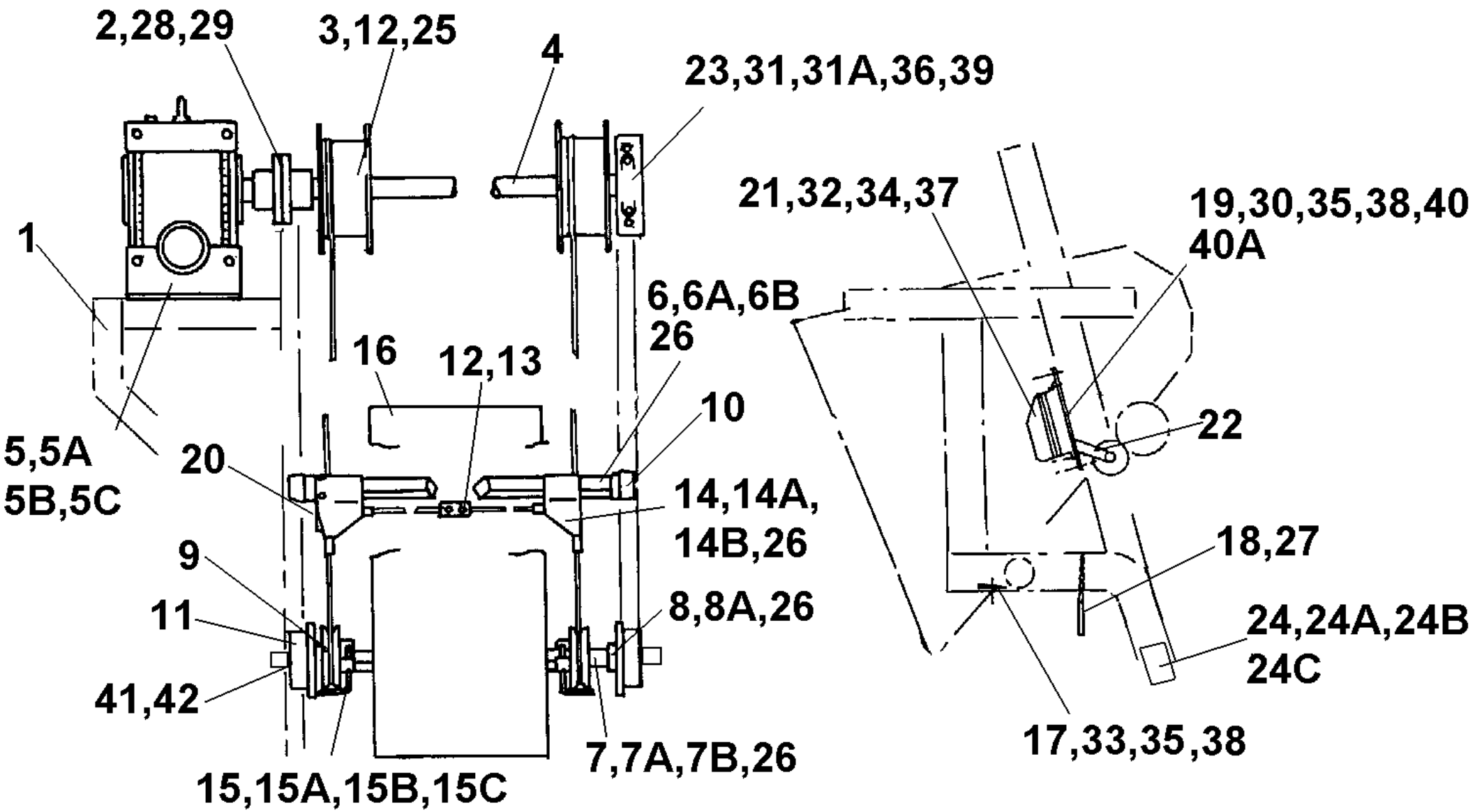
RP400XD LOADER CHASSIS ASSEMBLY



RP400XD LOADER CHASSIS ASSEMBLY

1	CR549002	Bedplate Winch Unit	1
2	CR269108	Runway, Loader R.H.	1
3	CR269109	Runway, Loader L.H.	1
4	CR539088	Support Angle, Winch Unit Bedplate	2
5	CR539089	Channel Bedplate Support	1
6	CR539090	Brace Diagonal	1
7	CR539091	Brace Horizontal	3
8	CR26100312	Tie Beam, Long	1
9	CR26100313	Tie Beam, Short	1
10	CR53100314	Channel, Runway Support	2
11	CR53100288	Lower Tie Bracket	2
12	CR532191	Plummer Block Bearing Support Angle	1
13	CR532244	Cleat Bracing Support Bracket	2
14	CR532245	Bracing Angle Support Bracket	2
16	8S05B	Bolt M12 x 30	8
17	8S05C	Bolt M12 x 35	28
18	52S05G	Bolt C/Sunk M12 x 35	28
18A	52S05K	Bolt C/Sunk M12 x 50	2
19	7S05	Nut M12	66
20	17S06	Washer Spring M12	66
21	267S07	Washer Flat M12	66
22	8S06F	Bolt M16 x 50	10
22A	17S08	Washer Spring M16	10
22B	267S09	Washer Flat M16	10
22C	7S06	Nut M16	10
23A	CR531003691	Guide Rail L.H.	2
23B	CR531003692	Guide Rail R.H.	2
24	CR53100368	Packing, Guide Rail	4

RP400XD LOADER C/W COMBINED MOTOR, BRAKE & GEAR UNIT



RP400XD LOADER C/W COMBINED MOTOR, BRAKE & GEAR UNIT

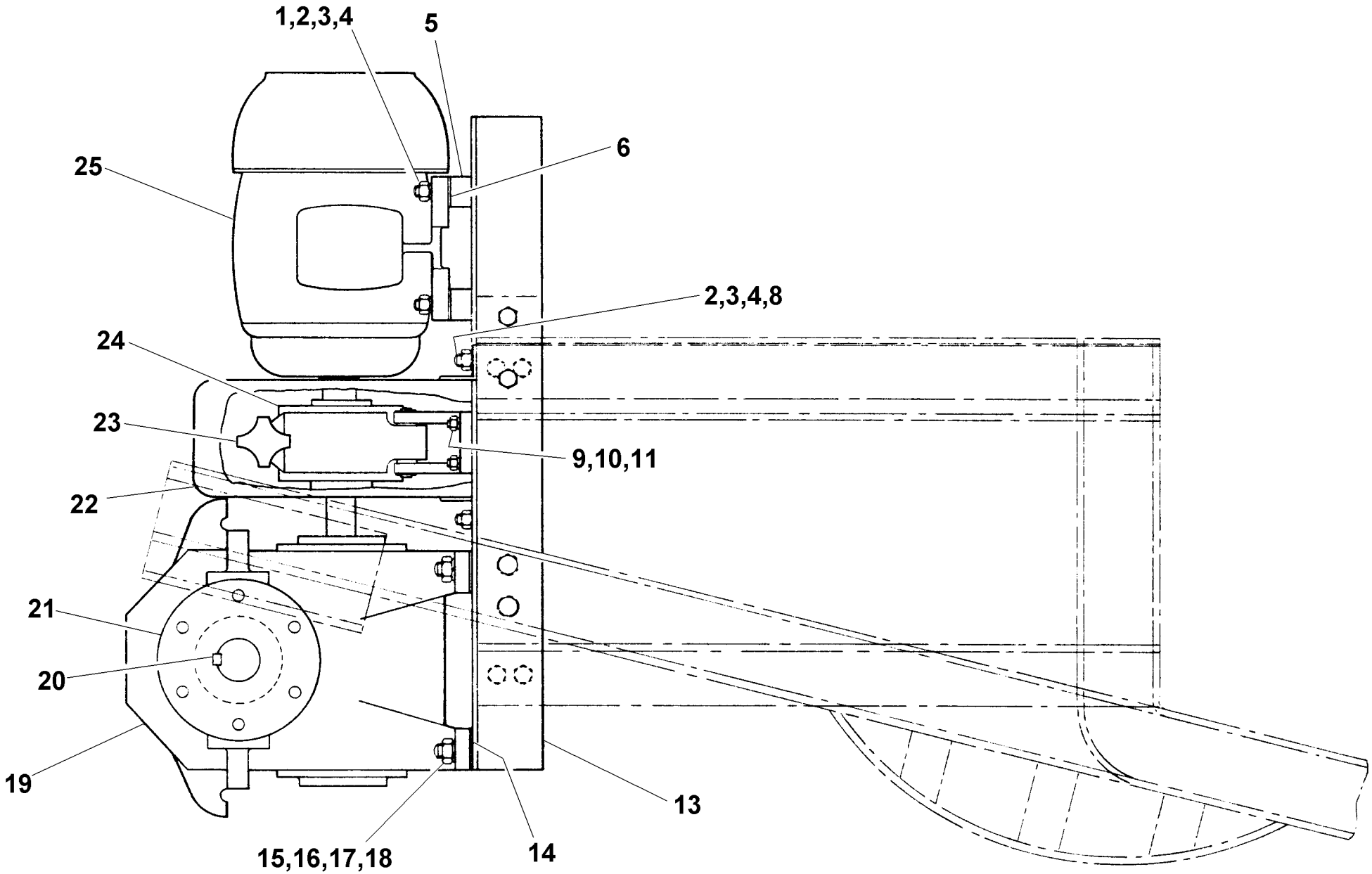
1		Chassis Assembly, See Separate Page	1
2	CR239020	Rigid Couping c/w Taper Lock Bushes 1 x 60mm, 1 x 2"	1
3	CR210191	Rope Drum	2
4	CR520416	Rope Drum Shaft	1
5	CR299102	Combined Motor Brake & Gear Unit Assembly	1
5A	8S07K	Bolt M20 x 70	4
5B	267S10	Washer Flat M20	4
5C	61S07	Nut Binx M20	4
6	CR520143A	Axle Top	1
6A	8S05L	Bolt Axle M12 x 75	2
6B	61S05	Nut Binx M12	2
7	CR520143C	Axle Lower	1
7A	8S05L	Bolt Axle M12 x 75	2
7B	61S05	Nut Binx M12	2
8	CR630209	Axle Collar	2
8A	57S05D2	Screw Grub	2
9	CR210192	Rope Pulley	2
10	CR530896	Taper Roller	2
11	CR21100121	Flanged Roller (Obsolete Use Item Below)	
11	CR210157	Flanged Roller	2
12	CR243033	Anchor Bolt	6
13	CR530692	Rope Retaining Block	1
14	CR260769	Hopper Rope Guide	2
14A	8S05L	Bolt M12 x 75	2
14B	61S05	Nut Binx M12	2
15	CR091036	Hopper Rope Guide	2
15A	7S05	Nut M12	2
15B	8S05L	Bolt M12 x 75	2
15C	61S05	Nut Binx M12	4
16	CR540756	Loading Hopper	1
17	CR089028	Hopper Stop Wedge	2
18	CR530968	Hopper Stop Pin (See Note)	2
19	CR530450	Limit Switch Plate	1
20	CR261502	Limit Switch Striker Plate	1
21	CR220005	Limit Switch (Obsolete Use Item 22A Below)	
22	CR220100	Limit Switch Arm (Obsolete Use Item 22A Below)	
22A	CR229083	Limit Switch	1
22B	8S01D	Limit Switch Securing Bolts (For CR229083) M5 x 40	4
22C	17S02	Washer Spring M5	4
22D	7S01	Nut M5	4
23	CR150884	Bearing Plummer Block	1
24	CR620006	Caution Plate	2
24A	11S02B	Screw Set M6 x 20	8
24B	17S03	Washer Spring	8
24C	7S02	Nut M6	8
25	CR320020	Gib Head Key	2
26	333104020	Grease Nipple 1/4" B.S.P.	4
27	CR600005	Chain (See Note)	2

* Items 18 & 27 can be purchased as assembly CR530062

RP400XD LOADER C/W COMBINED MOTOR, BRAKE & GEAR UNIT

28	CR329053	Parallel Key	1
29	CR329002	Parallel Key	1
30	8S05D	Bolt M12 x 40	2
31	8S06G	Bolt M16 x 55	2
31A	267S09	Washer Flat M16	2
32	52S04G	Screw Set C/Sunk M10 x 35	3
33	52S05H	Screw Set C/Sunk M12 x 40	2
34	7S04	Nut M10	3
35	7S05	Nut M12	2
36	17S08	Washer Spring M16	2
37	17S05	Spring Washer M10	3
38	17S06	Spring Washer M12	4
39	7S06	Nut M16	2
40	105S05	Tapered Washer M12	2
40A	267S07	Washer Flat M12	2
41	10S43	Washer Flat Axle Shaft	2
42	44S17K	Pin Split	2
43	CR531003691	Guide Rail LH (Not illustrated)	1
43	CR531003692	Guide Rail RH (Not illustrated)	1

RP400XD WINCH UNIT, SEPARATE MOTOR, BRAKE & GEAR UNIT



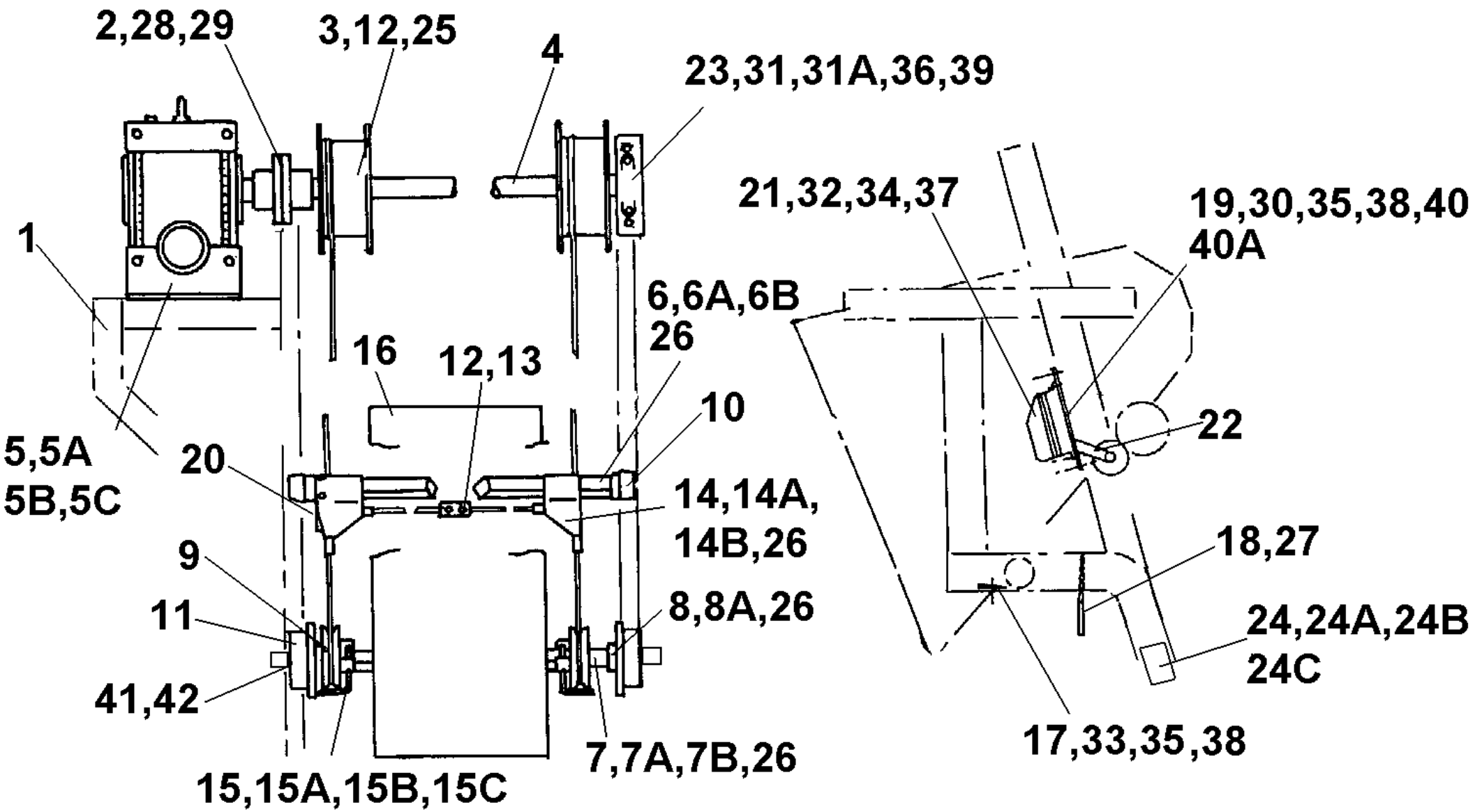
RP400XD LOADER WINCH SEPARATE MOTOR, BRAKE & GEAR UNIT

1	8S05L	Bolt M12 x 75	4
2	7S05	Nut M12	14
3	267S07	Washer Flat M12	6
4	17S06	Spring Washer M12	14
5	CR539021	Packing	4
6	CR530893	Packing	4
7	8S05B	Bolt M12 x 30	6
8	11S05C	Bolt M12 x 25	2
9	8S04E	Bolt M10 x 45	4
10	7S04	Nut M10	4
11	17S05	Spring Washer M10	4
12	52S04F	Bolt Csk Skt Head M12 x 30	2
13	CR540522	Hoisting Unit Bedplate, Obsolete see item 13A	
13A	CR549002	Hoisting Unit Bedplate, Replaces item 13	1
14	CR539020	Packing Reduction Unit	4
15	8S06J	Bolt M16 x 65	4
16	7S06	Nut M16	4
17	17S08	Spring Washer M16	4
18	267S09	Washer Flat M16	4
19	CR679000	Reduction Gear Renold WU5	1
20	CR320020	Key Gib Head 9/16" x 5" Long	1
21	CR239004	Reduction Gear Coupling RM30 c/w Taperlock Bus	1
22	CR540537	Magnetic Brake Guard	1
23	CR550114	Dewhurst 6" Diameter Magnetic Brake	1
24	CR210188	Drum, Magnetic Brake Assembly, See Separate Page	
25	CR229014	4 KW Electric Motor D132M	1
*	CR220074	Coil }	1
*	CR551423	Brake Lining Kit c/w screws} Used with Item 23	1 set
*	CR551424	Brake Lining Screws }	12

* Not illustrated

If the Brake Unit fitted to your machine is not a 'Dewhurst' unit please quote make, model and serial number when ordering replacement parts or brake shoes or brake assembly

RP400XD LOADER C/W SEPARATE MOTOR, BRAKE & GEAR UNIT



RP400XD LOADER C/W SEPARATE MOTOR, BRAKE & GEAR UNIT

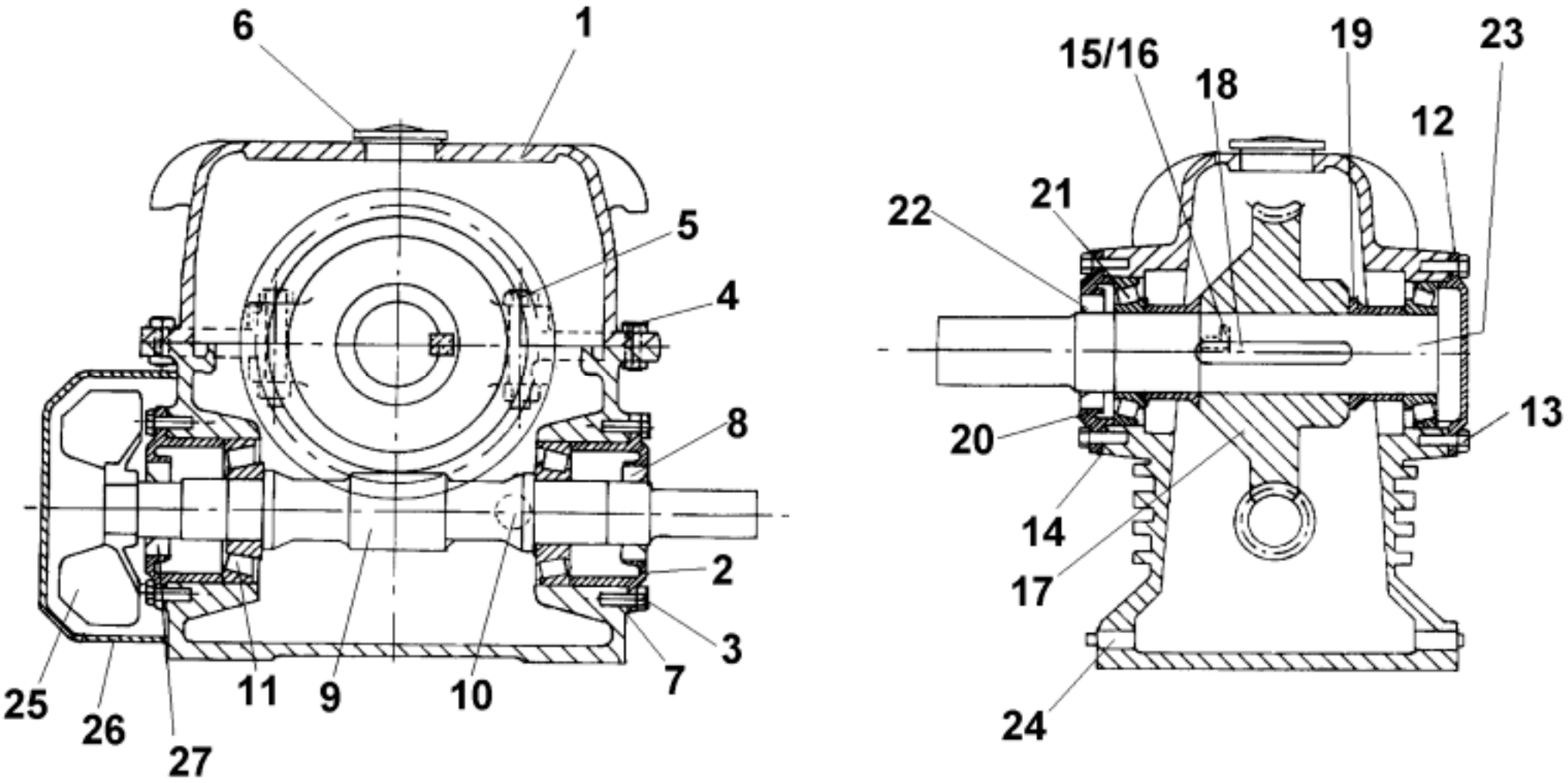
1		Chassis Assembly, See Separate Page	1
2	CR230112	Rigid Couping c/w Taper Lock Bushes RM30	1
3	CR210191	Rope Drum	2
4	CR520416	Rope Drum Shaft	1
5		Motor, Electric see Winch Unit on separate page	
5A		Reduction Unit Renold WU5, see Winch Unit on sep page	
5B		Brake Assembly, see Winch Unit on separate page	
5C		Brake Guard, see Winch Unit on separate page	
6	CR520143A	Axle Top	1
6A	8S05L	Bolt Axle M12 x 75	2
6B	61S05	Nut Binx M12	2
7	CR520143C	Axle Lower	1
7A	8S05L	Bolt Axle M12 x 75	2
7B	61S05	Nut Binx M12	2
8	CR630209	Axle Collar	2
8A	57S05D2	Screw Grub	2
9	CR210192	Rope Pulley	2
10	CR530896	Taper Roller	2
11	CR21100121	Flanged Roller (Obsolete Use Item Below)	
11	CR210157	Flanged Roller	2
12	CR243033	Anchor Bolt	6
13	CR530692	Rope Retaining Block	1
14	CR260769	Hopper Rope Guide	2
14A	8S05L	Bolt M12 x 75	2
14B	61S05	Nut Binx M12	2
15	CR091036	Hopper Rope Guide	2
15A	7S05	Nut M12	2
15B	8S05L	Bolt M12 x 75	2
15C	61S05	Nut Binx M12	4
16	CR540756	Loading Hopper	1
17	CR089028	Hopper Stop Wedge	2
18	CR530968	Hopper Stop Pin (See Note)	2
19	CR530450	Limit Switch Plate	1
20	CR261502	Limit Switch Striker Plate	1
21	CR220005	Limit Switch (Obsolete Use Item 22A Below)	
22	CR220100	Limit Switch Arm (Obsolete Use Item 22A Below)	
22A	CR229083	Limit Switch	1
22B	8S01D	Limit Switch Securing Bolts (For CR229083) M5 x 40	4
22C	17S02	Washer Spring M5	4
22D	7S01	Nut M5	4
23	CR150884	Bearing Plummer Block	1
24	CR620006	Caution Plate	2
24A	52S02D	Screw Set C/Sunk M6 x 20	8
24B	17S03	Washer Spring	8
24C	7S02	Nut M6	8
25	CR320020	Gib Head Key	2
26	333104020	Grease Nipple 1/4" B.S.P.	4
27	CR600005	Chain (See Note)	2

* Items 18 & 27 can be purchased as assembly CR530062

RP400XD LOADER C/W SEPARATE MOTOR, BRAKE & GEAR UNIT

28	CR329053	Key Parallel	1
29	CR329002	Key Parallel	1
30	8S05D	Bolt M12 x 40	2
31	8S06G	Bolt M16 x 55	2
31A	267S09	Washer Flat M16	2
32	52S04G	Screw Set C/Sunk M10 x 35	3
33	52S05H	Screw Set C/Sunk M12 x 40	2
34	7S04	Nut M10	3
35	7S05	Nut M12	2
36	17S08	Washer Spring M16	2
37	17S05	Spring Washer M10	3
38	17S06	Spring Washer M12	4
39	7S06	Nut M16	2
40	105S05	Tapered Washer M12	2
40A	267S07	Washer Flat M12	2
41	10S43	Washer Flat Axle Shaft	2
42	44S17K	Pin Split	2
43	CR531003691	Guide Rail LH (Not illustrated)	1
44	CR531003692	Guide Rail RH (Not illustrated)	1

RP400XD WORM REDUCTION GEARBOX RENOLD WU5



RP400XD WORM REDUCTION GEARBOX (RENOLD WU5)

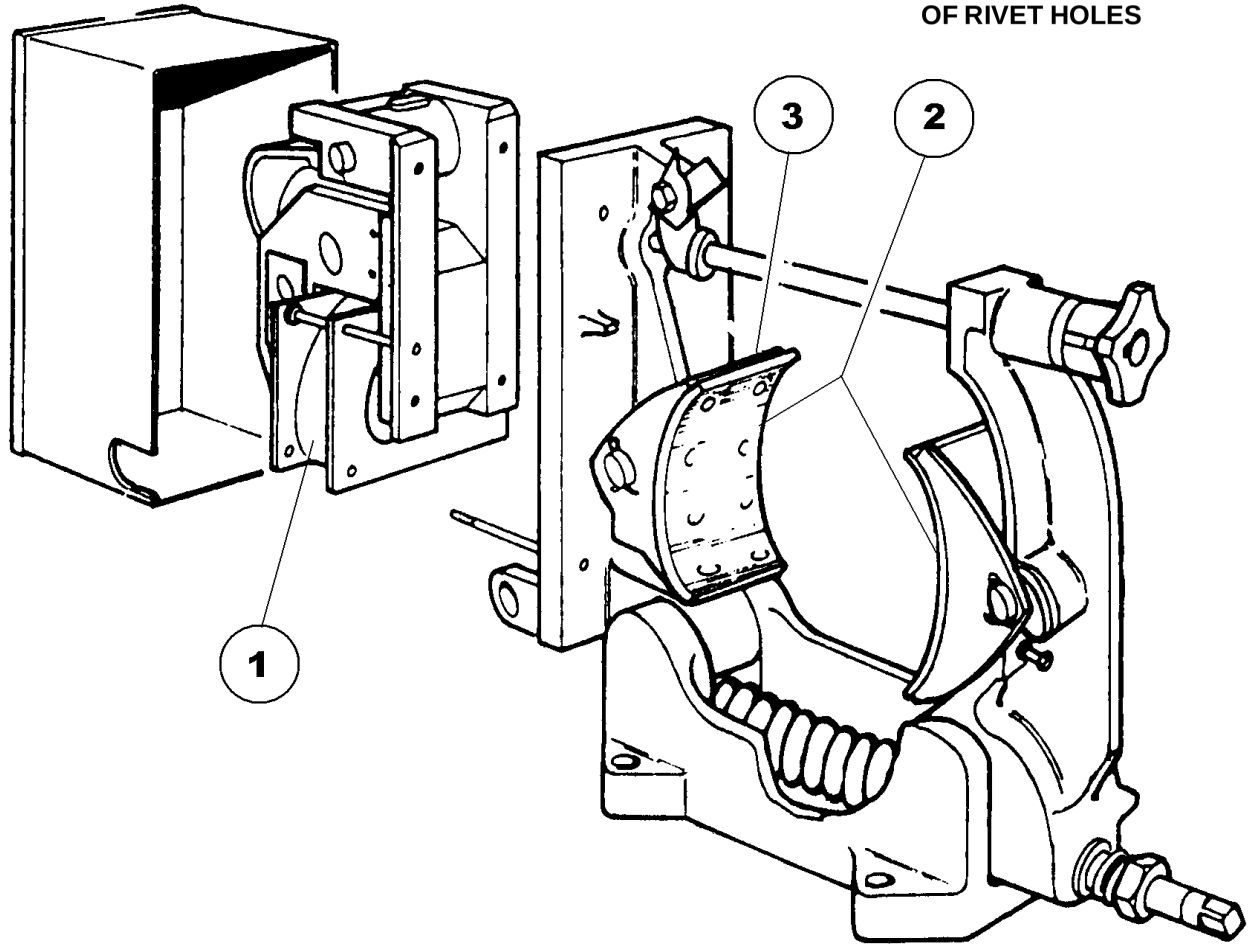
*	CR679000	Gearbox Complete (Renold WU5)	1
1	CR679001	Gear Case	1
2	CR679002	Worm Shaft End Cover	2
3	CR679003	Worm Shaft End Cover Screw	12
4	CR679004	Joint Flange Bolts	4
5	CR679005	Joint Boss Bolts	4
6	CR679006	Filler Plug and Washer	1
7	CR679007	Worm Shaft Shims	as reqd.
8	CR679008	Worm Shaft Oil Seals	1
9	CR679009	Worm Shaft	1
10	CR679010	Oil Level Plug and Washer	2
11	CR679011	Worm Shaft Bearing	2
12	CR679012	Wheel Shaft Blank End Cover	1
13	CR679013	End Cover Screws	12
14	CR679014	Wheel Shaft Shims	as reqd.
15	CR679015	Oil Collector Boxes	2
16	CR679016	Oil Collector Box Screws	4
17	CR679017	Worm Wheel	1
18	CR679018	Wheel Shaft Key	1
19	CR679019	Wheel Shaft Distance Piece	2
20	CR679020	Wheel Shaft End Cover	1
21	CR679021	Wheel Shaft Bearing	2
22	CR679022	Wheel Shaft Oil Seal	1
23	CR679023	Wheel Shaft	1
24	CR679024	Oil Drain Plugs	2
25	CR679025	Fan	1
26	CR679026	Fan Guard	1
27	CR679027	Oil Seal Fan End	1

Identify gearbox Make & Model before ordering parts

RP400XD DEWHURST ELECTROMAGNETIC BRAKE ASSEMBLY

SEPARATE BRAKE UNITS ONLY

WHEN ORDERING SPARES FOR BRAKE UNIT ALWAYS QUOTE MAKE & MODEL. WHEN ORDERING REPLACEMENT BRAKE SHOES QUOTE SIZE AND NUMBER OF RIVET HOLES



RP400XD DEWHURST ELECTROMAGNETIC BRAKE UNIT

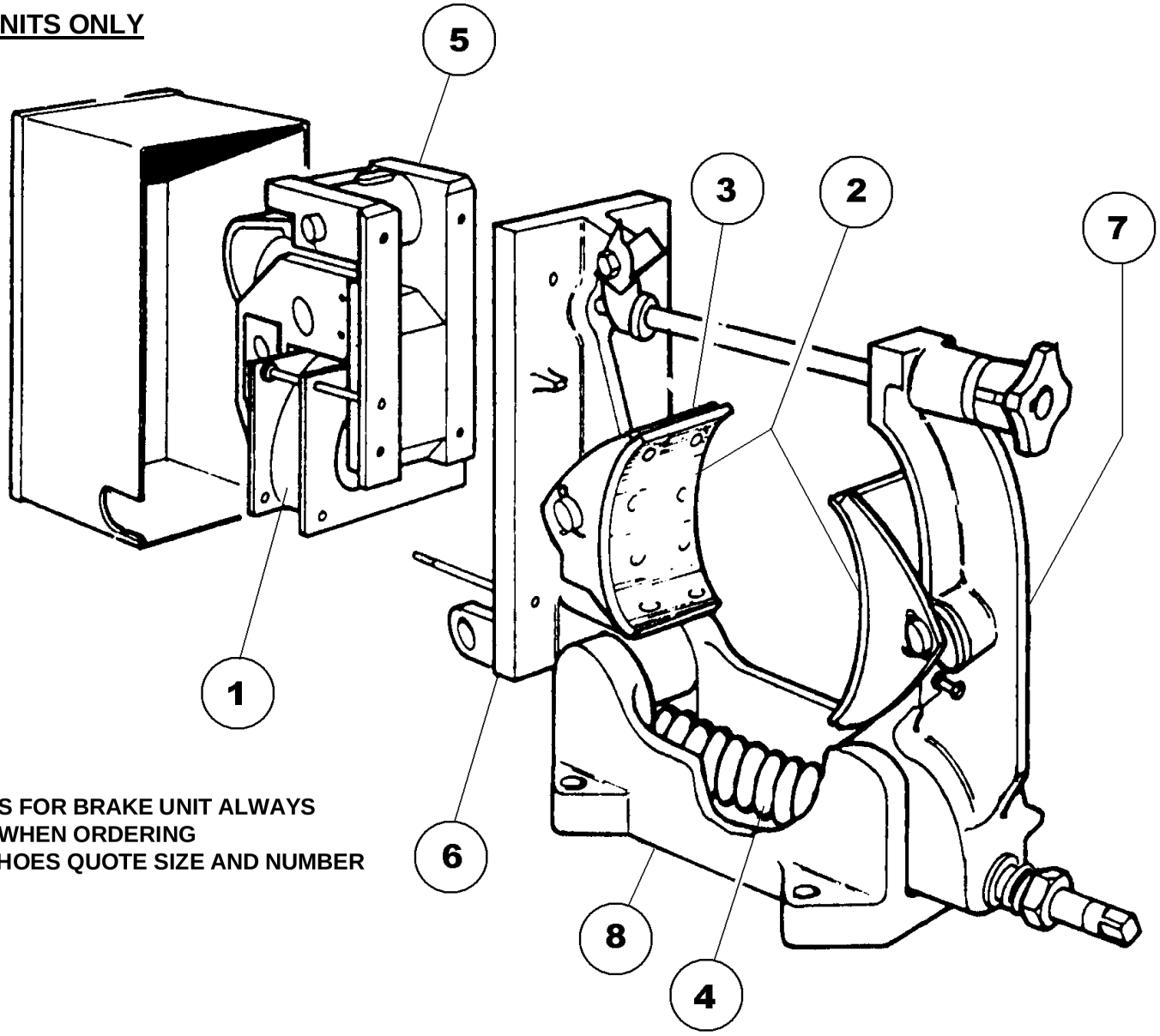
SEPARATE BRAKE UNITS ONLY

	CR550114	Brake Unit Complete Dewhurst 6" Diameter	1
1	CR220074	Electric Coil	1
2	CR551423	Brake Linings & Rivets	1 SET
3	CR551424	Brake Shoes Retaining Screws	12

It is not possible to supply other major parts as separate items. If any other items are required it will be necessary to replace the complete brake assembly.This is due to the number of brake units fitted over the years from different manufacturers and the diffilculties encountered identifying the different types. When ordering spares please quote the voltage, make, model and if possible the serial number together with a full description of the part required. When ordering replacement brake linings please give the physical dimensions together with the number of rivet holes required.

RP400XD N.R. RANGE ELECTROMAGNETIC BRAKE

SEPARATE BRAKE UNITS ONLY



WHEN ORDERING SPARES FOR BRAKE UNIT ALWAYS QUOTE MAKE & MODEL. WHEN ORDERING REPLACEMENT BRAKE SHOES QUOTE SIZE AND NUMBER OF RIVET HOLES

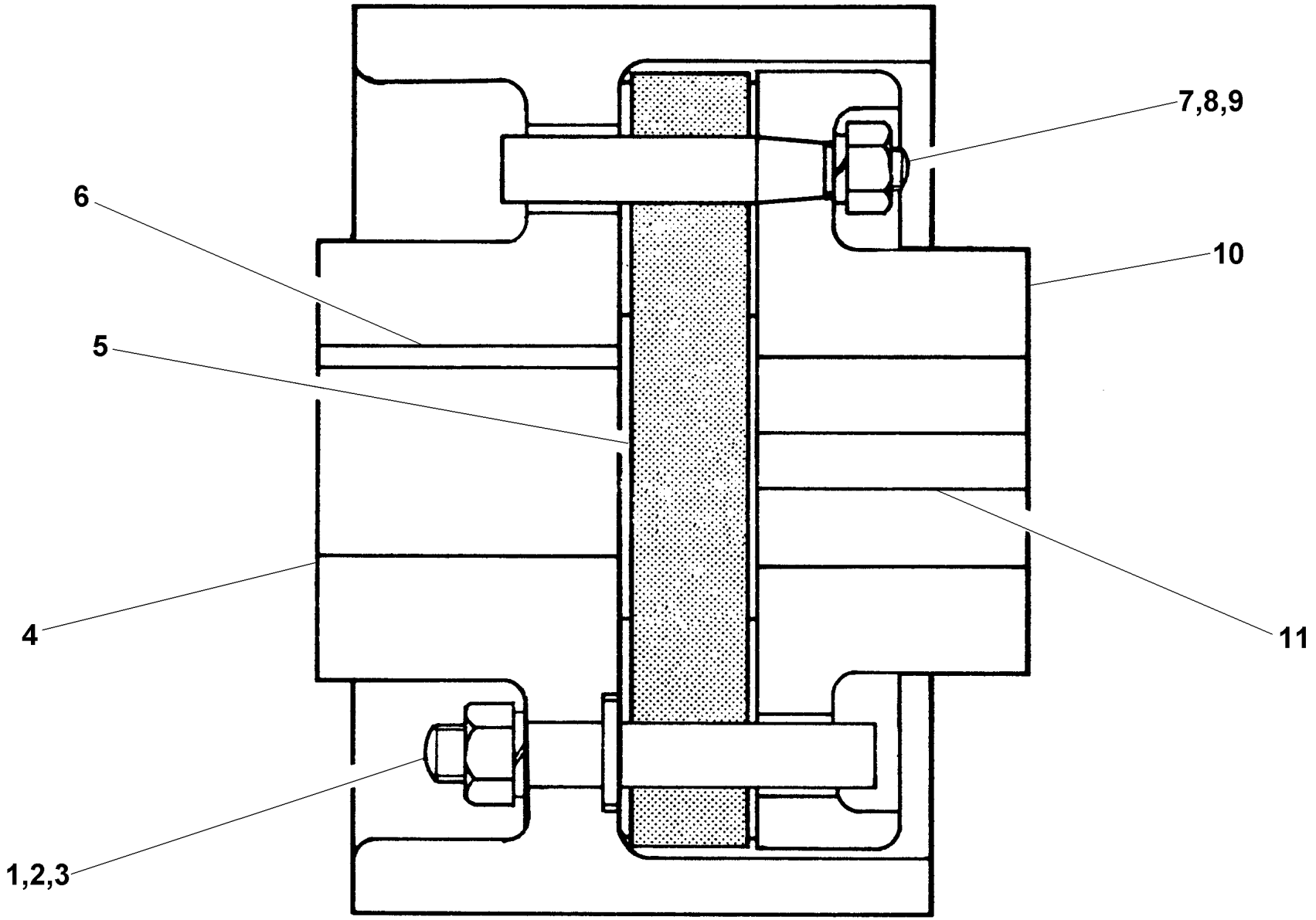
RP400XD NR RANGE ELECTROMAGNETIC BRAKE UNIT

SEPARATE BRAKE UNITS ONLY

	CR550115	Brake unit complete	1
1	CR550116	Electric Coil	1
2	CR550117	Brake Linings & Rivets	1 SET
3	CR550118	Brake Shoes	2
4	CR550119	Torque Spring	1
5	CR550120	Magnet Unit (Less Coil)	1
6	CR550121	Magnet Carrier Arm (Less Shoe)	1
7	CR551022	Plain Arm (Less Shoe)	1
8	CR550123	Base	1

It is not possible to supply other major parts as separate items. If any other items are required it will be necessary to replace the complete brake assembly.This is due to the number of brake units fitted over the years from different manufacturers and the diffilculties encountered identifying the different types. When ordering spares please quote the voltage, make, model and if possible the serial number together with a full description of the part required. When ordering replacement brake linings please give the physical dimensions together with the number of rivet holes required.

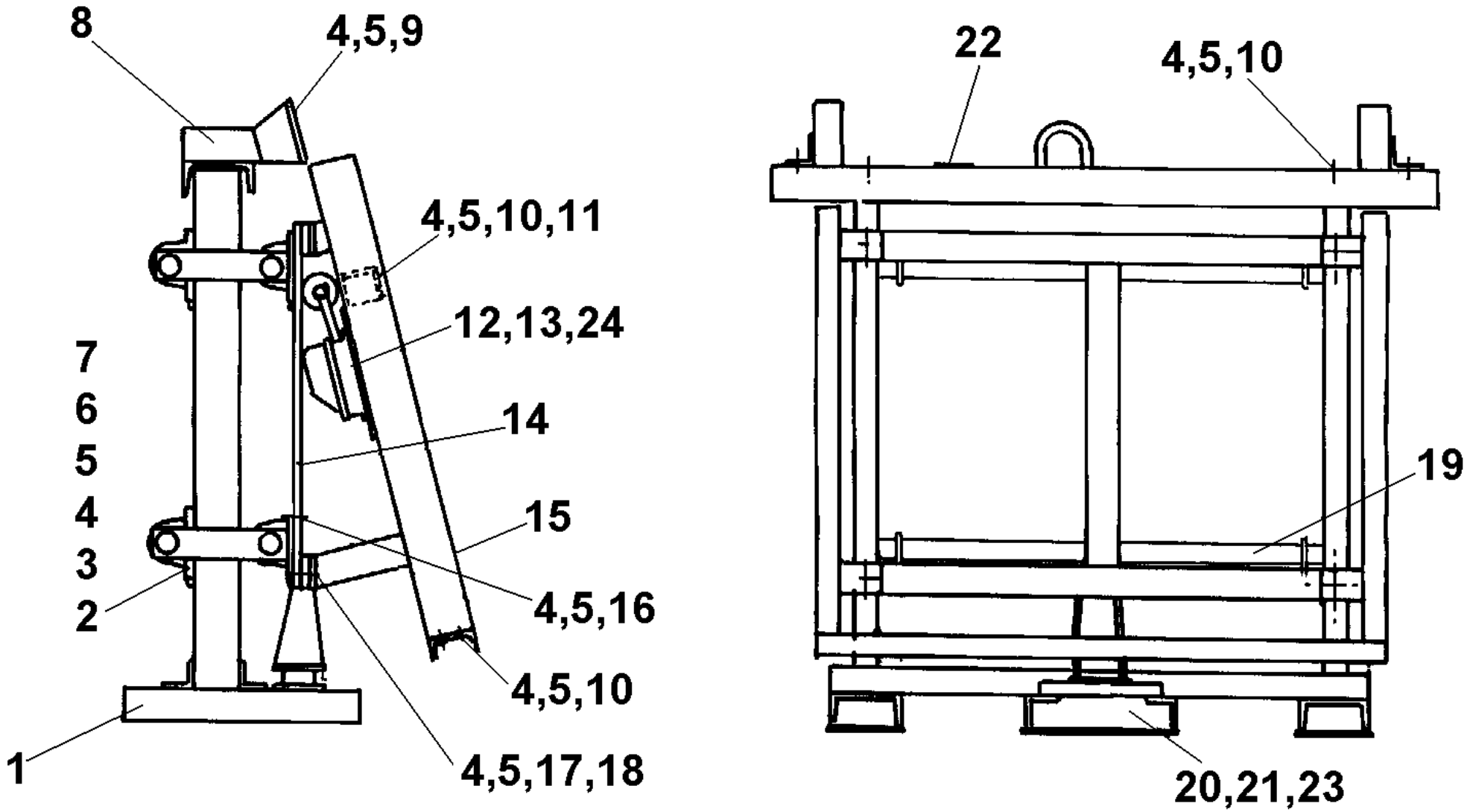
RP400XD MAGNETIC BRAKE DRUM



RP400XD MAGNETIC BRAKE DRUM

1	CR520154	Magnetic Brake Drum Pins	3
2	41S05	Spring Washer 3/8"	3
3	2S04	Nut 3/8" B.S.F.	3
4	CR210188	Magnetic Brake Drum	1
5	CR230010	Magnetic Brake Flexible Disc	1
6	CR320058	Key Gib Head 10 X 8 X 60mm	1
7	CR230011	Magnetic Brake Coupling Pin	3
8	41S04	Spring Washer 5/16"	3
9	2S03	Nut 5/16" B.S.F	3
10	CR230112	Magnetic Brake Coupling	1
11	CR320011	Key Gib Head 3/8"	1

RP400XD BATCHWEIGHER



RP400XD WEIGHBATCHER ASSEMBLY

1	CR091039	Weighbatcher Support Frame Assembly	1
2	CR150921	Bearing Plummer Block, 1.25" Bore	8
3	8S05G	Bolt M12 x 55	8
4	7S05	Nut M12	50
5	17S06	Washer Spring M12	50
6	105S05	Washer Tapered M12	8
7	CR091039F	Bearing Plate & Stop, Welded to item 1	4
8	CR261504	Runway Supports LH & RH	1PR
9	52S05F	Bolt Csk Hd M12 x 30	4
10	8S05B	Bolt M12 x 30	22
11	CR091040J	Hopper Stops LH & RH, Welded to item 15	1PR
12	CR220005	Limit Switch, Obsolete use item 12 Below	
12	CR229083	Limit Switch, CA12-G	1
13	CR532203	Support Plate Limit Switch	1
14	CR261508	Weighbridge, RP400 Standard 4' 2.25" Long	1
15	CR091040	Runway Assembly c/w item 11	1
16	8S05F	Bolt M12 x 50	4
17	8S05M	Bolt M12 x 80	4
18	8S05J	Bolt M12 x 65	4
19	CR261505	Parallel Shaft Units	2
20	CR179002	Hydraulic Loadcell & Gauge Assembly 0-1000Kg Range	1
21	CR179003	Mountings, Anti Side Load	

INTENTIONALLY BLANK PAGE

RP400XD WHIRLER ASSEMBLY

1	CR520520	Whirler Shaft	1
2	CR261471	Bearing Housing	1
3	CR532110	Bearing Cap	1
4	CR532111	Bearing Cap	1
5	CR532109	Spacer Top	1
6	CR569014	Lipseal	1
7	CR569016	Lipseal	1
8	CR150701	Bearing	1
9	CR150538	Bearing	1
10	52S05F	S/Sunk Screw M12 x 30	6
11	CR219006	Whirler Blade Square, Mild Steel	3
11	CR219006SS	Whirler Blade Square, Stainless Steel	3
11	CR219006SSA	Whirler Blade Square, Stainless Steel, Angled	3
11	CR219006H	Whirler Blade Square, Tungsten Carbide Coated	3
11	CR219006AH	Whirler Blade Square, Tungsten Carbide Coated, Angled	3
11	CR219017	Whirler Blade, Two Blades, Tungsten Carbide Coated	A/R
11A	CR219007	Blade Round, Mild Steel	1
11A	CR219007SS	Blade Round, Stainless Steel	1
12	CR539005	Retaining Washer	1
13	11S05F	Screw Set M12 x 40	1
14	17S06	Washer Spring M12	3
16	CR539044	Sleeve	1
17	CR220156	Motor Electric	1
18	CR269165	Bracket	1
19	CR349006	Pulley 'V' Belt	1
20	CR349011	Bush Fenner Taperlock	1
21	CR349006	Pulley 'V' Belt	1
22	CR349002	Bush Fenner Taperlock	1
23	CR169005	Belt "V'	2
24	CR091013	Belt Guard	1
25	CR329001	Key Parallel	1
26	CR329000	Key Parallel	1
27	11S05M	Screw Set M12 x 70	2
28	7S05	Nut M12	2
29	131S01	Nipple Grease Straight	2
30	176S01	Cover Nipple Grease	2
31	CR269147	Support Whirler Motor	1

INTENTIONALLY BLANK PAGE

CROKER LOADER

WIRE ROPE RENEWAL PROCEDURE

1. Place the Hopper on the hopper stops. Loosen nut from rope anchor bolt, item 1, on one rope drum only, item 2.

2. Remove end of old wire rope from anchor bolt.

3. Fit end of new wire rope to anchor bolt and tighten nut.

4. Lay other end of new wire rope end to end with old wire rope removed in part 2. Bind both ends together with sticky tape (electrical or masking tape).

5. Carefully pull on the old wire rope to pull the new wire down to the bottom of the hopper and around the rear axle rope pulley, item 3, and up through the front axle rope guide, item 4.

6. Remove front axle rope retainer blocks, items 5 and 6, and slide onto the new rope.

7. Continue to pull the wire and thread through the second rope guide, item 7, and down around the second rope pulley, item 8, and up to the second rope drum, item 9.

8. Remove old wire from second anchor bolt, item 10, on second rope drum, item 9, and remove tape from ends of old and new wire.

9. Fit second end of new wire to second anchor bolt, item 10, on second rope drum, item 9.

10. Tighten anchor bolt nuts on both rope drums.

11. The new wire should now run over the front edges of both rope drums and down to front edges of both the lower axle rope pulleys, items 3 and 8, and up the back of the rope pulleys to the rope guides, items 4 and 7, with both rope retainer blocks, items 5 and 6, located on the section of wire rope between the two rope guides at the back of the hopper.

12. Start and stop the loader by hand, using the start and stop buttons, and take out all the slack of the wire rope in the raise direction (see important note on page 30), ensuring that the wire slots into both axle rope pulleys, item 2 and 9, and that the wire has wound evenly onto both rope drums. Make sure the hopper is level and sitting on weigher track stops before positioning rope retainer blocks, items 5 and 6, approximately 2 inches

(50 mm) in board of rope guides, item 4 and 7, each side and make fast retainer blocks onto wire.

13. Check that both limit switches are working correctly and the magnetic brake applies correctly.

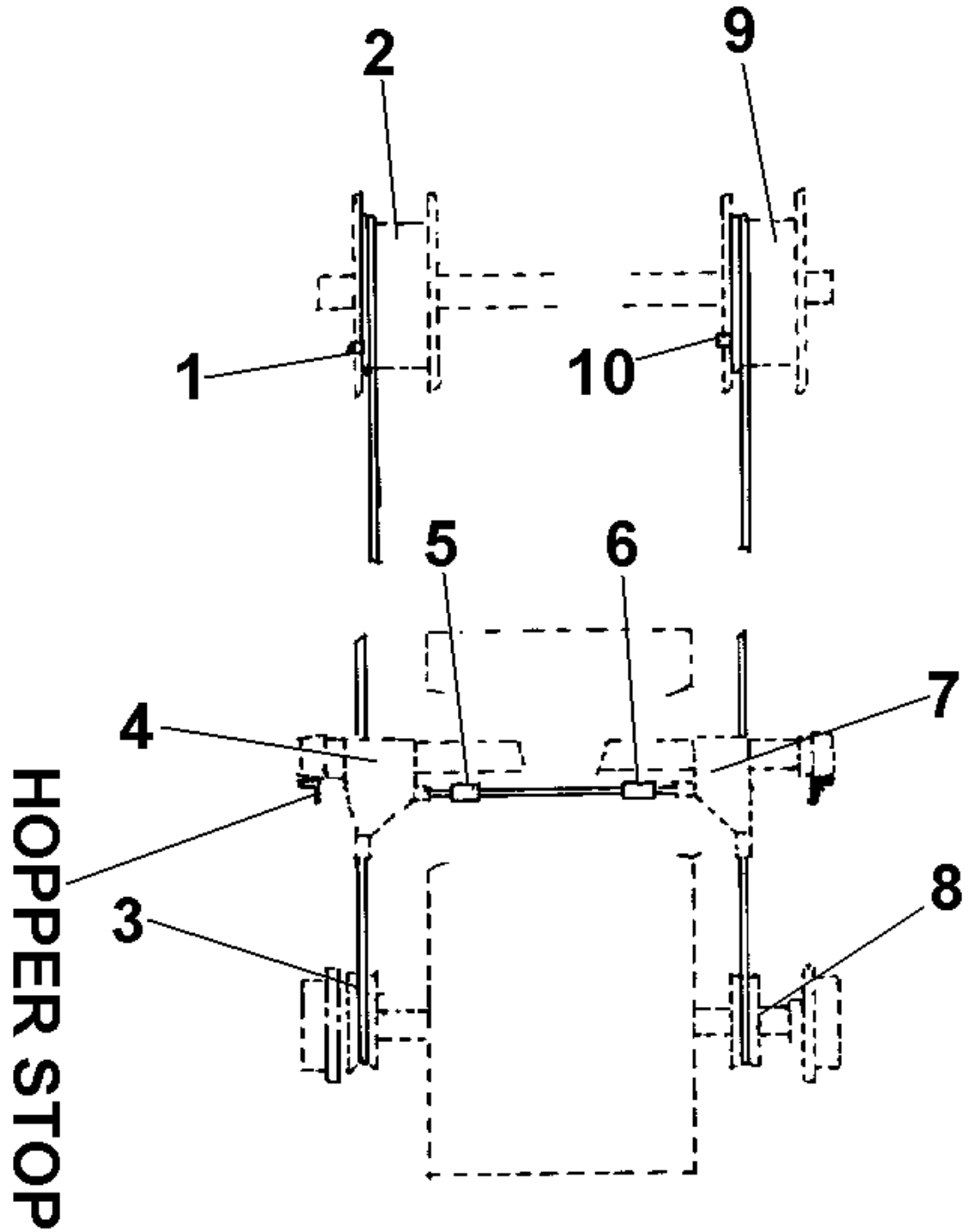
14. Make sure hopper clears both sides of rope drums at the top of its operation.

    NOTE: Hopper reaches end of travel between rope drums.

IMPORTANT NOTE

Ensure that the slack wire is taken up in the raise direction and not the lowering direction. If the rope is wound incorrectly in the reverse direction on to the rope drums the hopper will not stop at the upper limit switch. It will continue until it makes contact with the top of the structure and will continue to heave until the wire rope breaks, with the result , if both sides of the wire fail at the same time, that the hopper will drop to the bottom end of the skip track.

RP400XD WIRE ROPE RENEWAL PROCEDURE



WIRE ROPES

SAFETY NOTES

ALWAYS

Store and handle the wire rope correctly, wear protective gloves and eye protection.

Check the rope test certificate is still in date especially if the rope has been in storage also check that the certificate is applicable to the rope.

Remove the rope from any reel or coil correctly and without kinking.

Only use correct end terminations and rope anchors.

Ensure that the rope is correctly located and seated on the rope drum.

Ensure that the rope is correct for the application and only use good quality ropes from reputable suppliers.

Inspect the wire rope for damage, wear, corrosion or abuse at the start of each shift.

Keep the wire rope clean and maintained in accordance with the manufacturers instructions.

NEVER

Try to shorten any wire rope by knotting.

Bend a wire rope over small radii.

Subject wire ropes to shock loadings.

Allow wire ropes to run over sharp edges or abrasive surfaces etc.

Subject wire ropes to extremes of temperature.

Use wire ropes with obvious signs of mechanical, corrosive or heat damage.

Use wire ropes that are worn, frayed, split or corroded.

STORAGE

Store wire ropes in a clean well ventilated, dry location preferably undercover and protected from extremes of temperatures.

If site conditions are such that undercover storage is not possible cover the rope with a waterproof cover and support clear of the ground.

Rotate stored wire ropes, reels or coils regularly to prevent migration of the rope lubricant, particular in warm environments.

Be aware that subjecting wire ropes to extremes of temperature as can affect the in service performance, high storage temperatures can reduce the effective strength of the rope.

SAFETY

Running wire ropes are hazardous and should be guarded or personnel should be prevented access to them whilst in motion.

Wire ropes develop broken strands during their working life which present a hazard to maintenance personnel, always wear suitable hand and eye protection when handling ropes.

Take care when unfastening a coiled rope as the inherent springiness when released may cause it to strike attendant personnel or other equipment causing damage or injury.

Take care when removing worn, damaged or failed ropes from equipment as they may be tightly coiled, grossly distorted and still retain their springiness.

IN SERVICE INSPECTION AND MAINTENANCE

Wire ropes used for lifting operations should be regularly inspected by a competent person and inspection records kept upto date.

Inspections should not only concentrate on the rope but also extend to the condition of sheaves, drums, guides etc.

Decisions on whether a wire rope is suitable for continued service should only be made by a competent person.

IF IN DOUBT REPLACE THE ROPE.

INTENTIONALLY BLANK PAGE

INTENTIONALLY BLANK PAGE

OPERATING

AND

MAINTENANCE MANUAL

SECTION 6

ELECTRICAL SYSTEM

ELECTRICAL INFORMATION

1. The mixing pan and mixing star motors should be interconnected in the control to operate at the same time, as it is important that both are working before a mix is added. Ensure that suitable overloads are fitted. The mixing pan and mixing star rotate anti-clockwise when looking from the top.

   NOTE: With motors 5.5 kw and above, use Star Delta Starters. Below this, use Direct on Line Starters.

2. When a loader is attached a direct on line reversing starter is required complete with suitable overloads. The loader winch rotates anti-clockwise looking from the rope drum end and when the raise button is pressed.

   The upper and lower limit switches are positioned to break the electrical supply to the loader motor when the loading hopper is in the required position at the top and bottom of the runway.

3. The door control solenoid has to be energised when the mixer door is required in the open position.

   It is advisable to mount the starters away from the machine on supports free from vibration.

4. **IMPORTANT NOTICE:** All work on plant electrics including control panel circuits to be under taken by a suitably qualified and competent electrical person. All wiring in exposed positions should be suitably protected or armoured cable and protected by a suitable earth leakage circuit breaker.

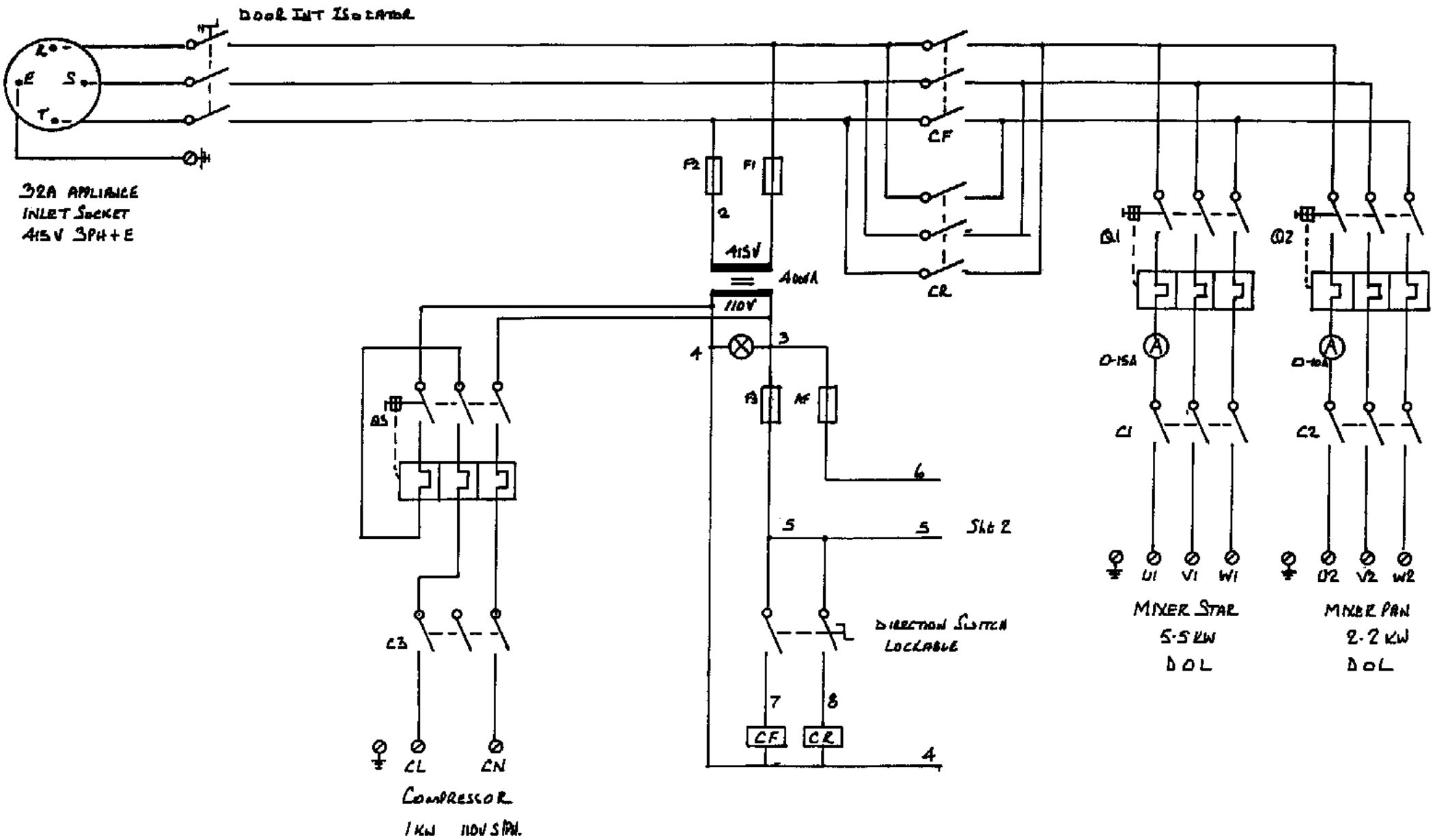
5. The Mixing Star Dive and Pan Drive should be interconnected in order to start in the following sequence:-

   Mixing Star Motor
   Pan Drive Motor

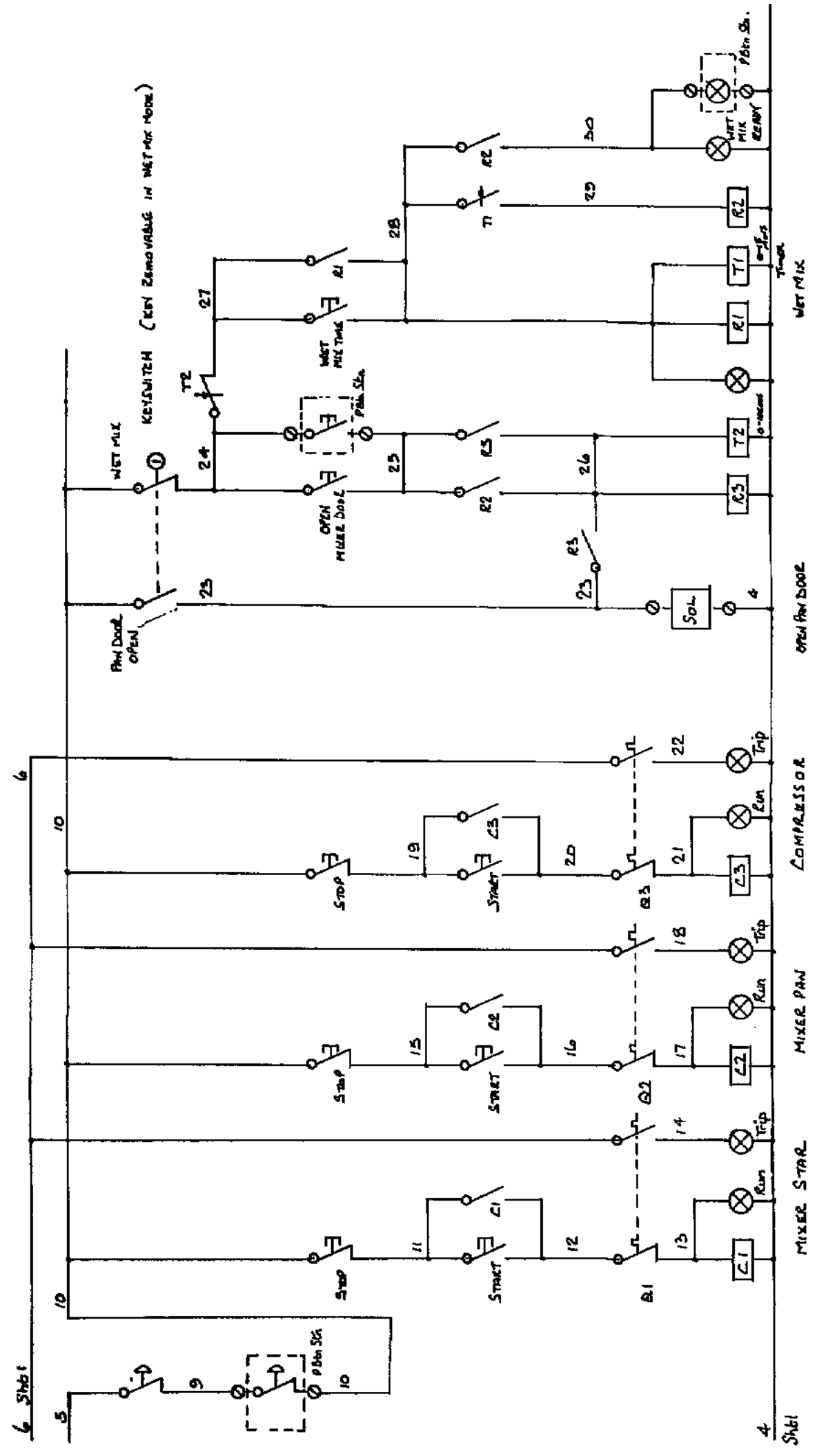
6. When a Whirler is fitted the sequence should be:-

   Whirler Motor
   Mixing Star Motor
   Pan Drive Motor

RP400XD MIXER CONTROL PANEL (SIMS) PAGE 1



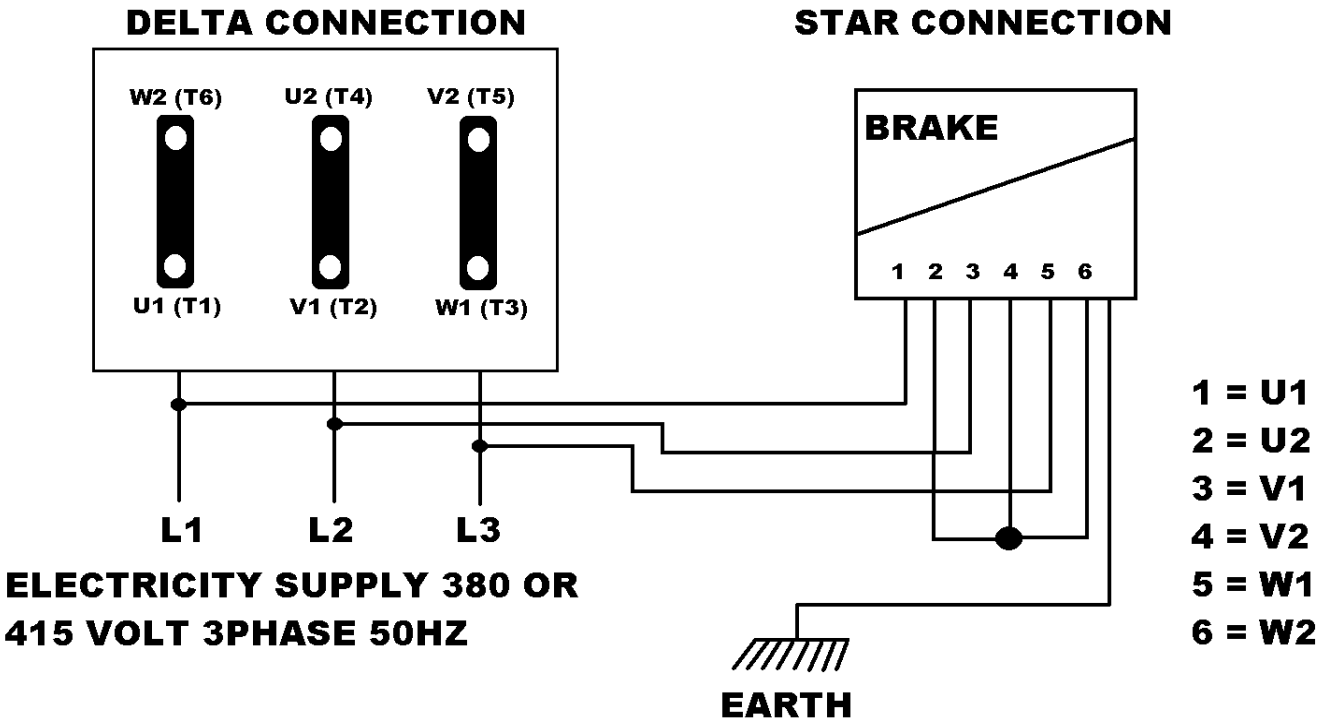
RP400XD WIRING DIAGRAM MIXER CONTROL PANEL (SIMS) PAGE 2

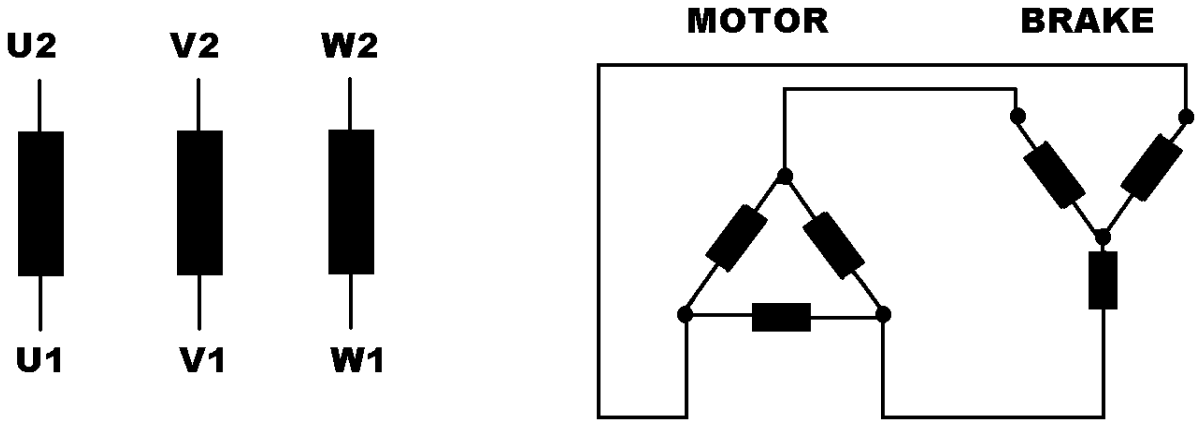


RP400XD WINCH MOTOR BRAKE WIRING

FLENDER MOTORS ABOVE 4KW

BRAKE WIRED ACROSS MOTOR 6 PIN TERMINAL BLOCK

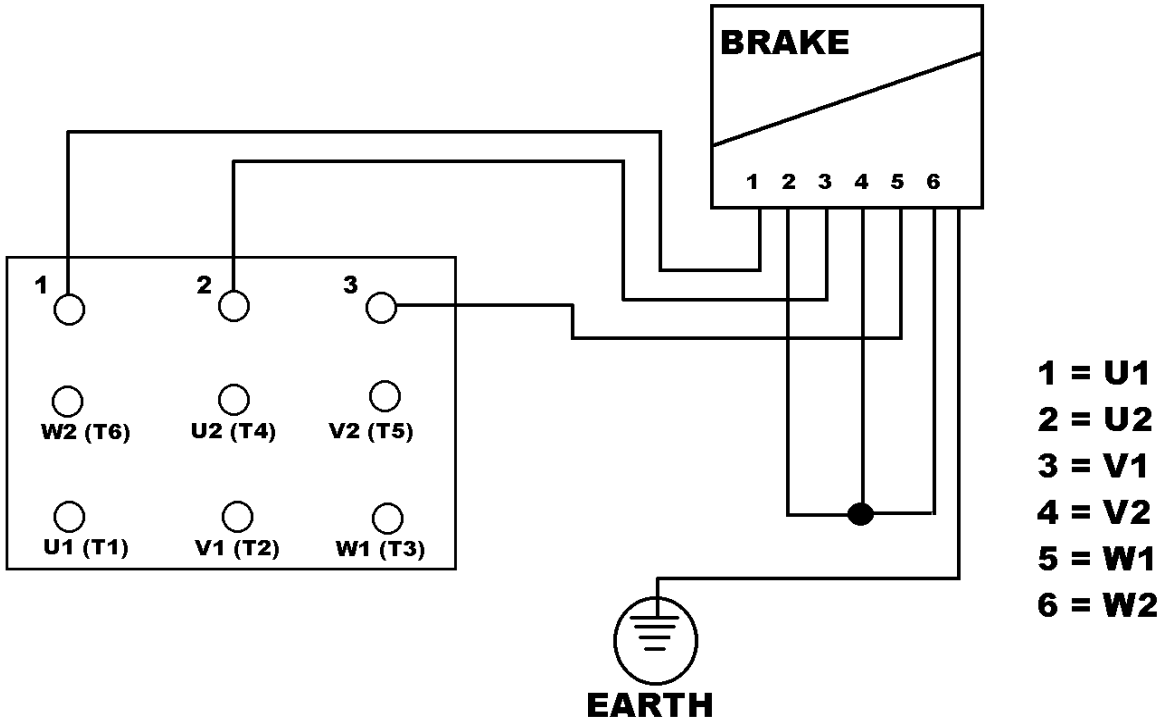


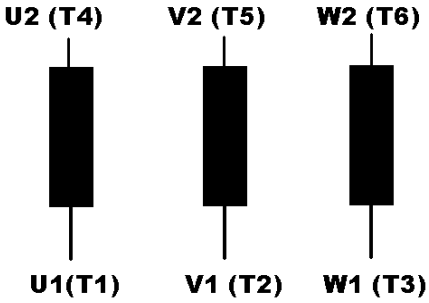


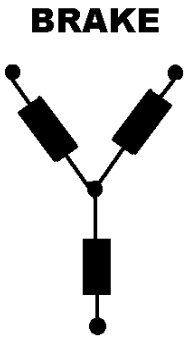
THREE PHASE A.C. BRAKE CONNECTED ACROSS MOTOR TERMINALS. DIRECT-ON - LINE STARTING METHOD ONLY

RP400XD WINCH MOTOR BRAKE WIRING

FLENDER THREE PHASE BRAKE SEPARATELY SWITCHED (9 PIN TERMINAL BLOCK)







MOTOR CONNECTIONS

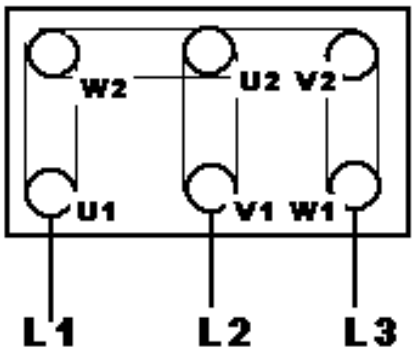
UP TO AND INCLUDING 4.0KW DIRECT ON LINE STARTING	**LINK W2 TO U2** **LINK U2 TO V2**
ABOVE 4.0KW DIRECT ON STARTING	**LINK W2 TO U1** **LINK U2 TO V1** **LINK V2 TO W1**
ABOVE 4.0KW STAR DELTA STARTING	**NO LINKING**

RP400XD FLENDER MOTOR WIRING DIAGRAM

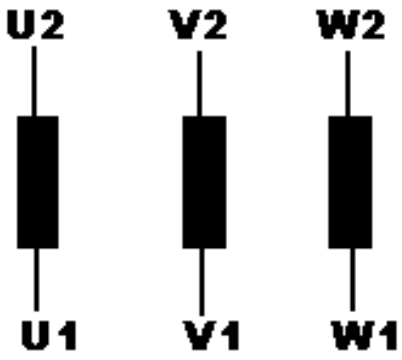
MOTORS UPTO & INCLUDING 4.0Kw

SEE SEPARATE PAGE FOR MOTORS

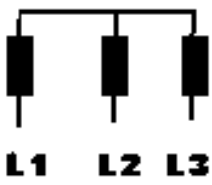
5.5Kw AND ABOVE



MOTOR TERMINAL BLOCK



TO REVERSE DIRECTION OF ROTATION CHANGE OVER ANY TWO SUPPLY LEADS

SUPPLY	METHOD OF START	CONNECTION STAR	LINK
415/3/50 380/3/50	DIRECT ON LINE		W2-U1 U2-V1 V2-W1

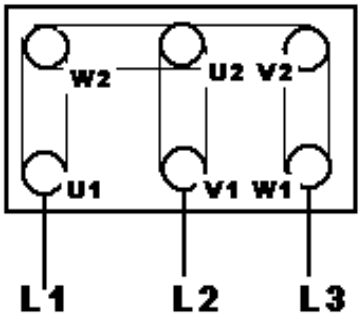
UPTO & INC 4.0Kw

RP400XD FLENDER MOTOR WIRING DIAGRAM

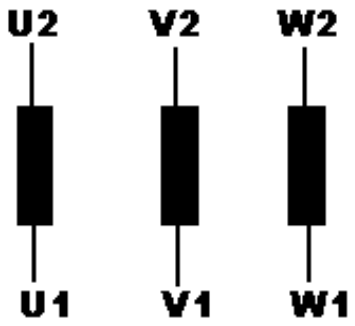
MOTORS 5.5Kw AND ABOVE ONLY

SEE SEPARATE PAGE FOR MOTORS

4.0Kw & BELOW



MOTOR TERMINAL BLOCK



TO REVERSE DIRECTION OF ROTATION CHANGE OVER ANY TWO SUPPLY LEADS

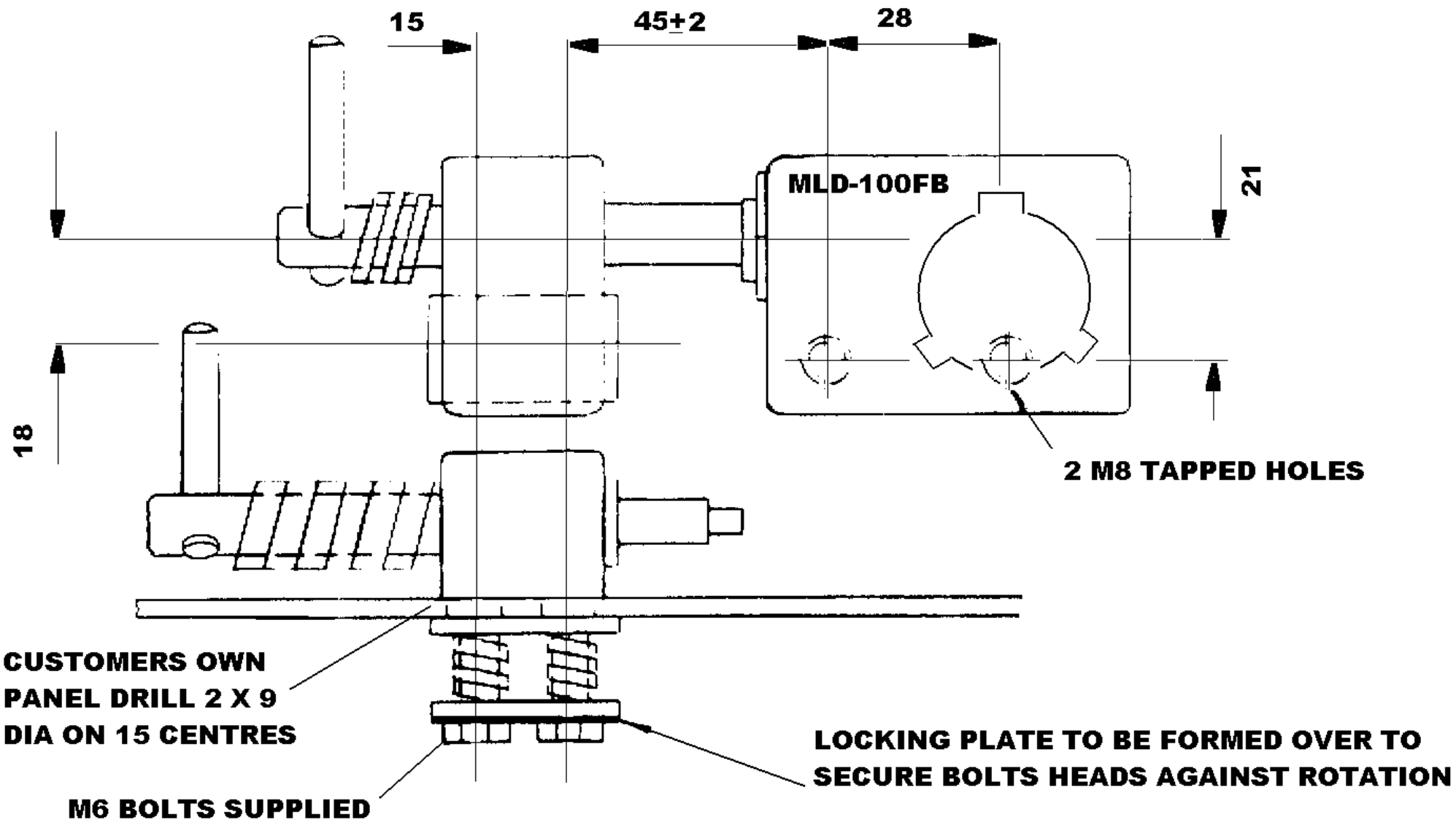
STAR DELTA STARTING NO LINKING REQUIRED

SUPPLY	METHOD OF START	CONNECTION DELTA	LINK
415/3/50 380/3/50	DIRECT ON LINE		W2-U1 U2-V1 V2-W1

5.5Kw & ABOVE

INTENTIONALLY BLANK PAGE

RP400XD INTERLOCK DOOR SWITCH



MISTURA DOOR INTERLOCK MECHANISM

1	CR719072	Interlock Door MLD100FB	A/R
2	CR229093	Key MLK100A Code A	A/R
2A	CR229094	Key MLK100B Code B	A/R
2B	CR229124	Key MLK100C Code C	A/R
3	CR229125	Cap Dust MLM100	A/R

When ordering replacement keys quote code of interlock mechanism

OPERATING

AND

MAINTENANCE MANUAL

SECTION 7

PNEUMATIC SYSTEM

SHUTDOWN PROCEDURE – PNEUMATICS

(This procedure to be read in conjunction with electrical procedure – see section six).

We Recommend

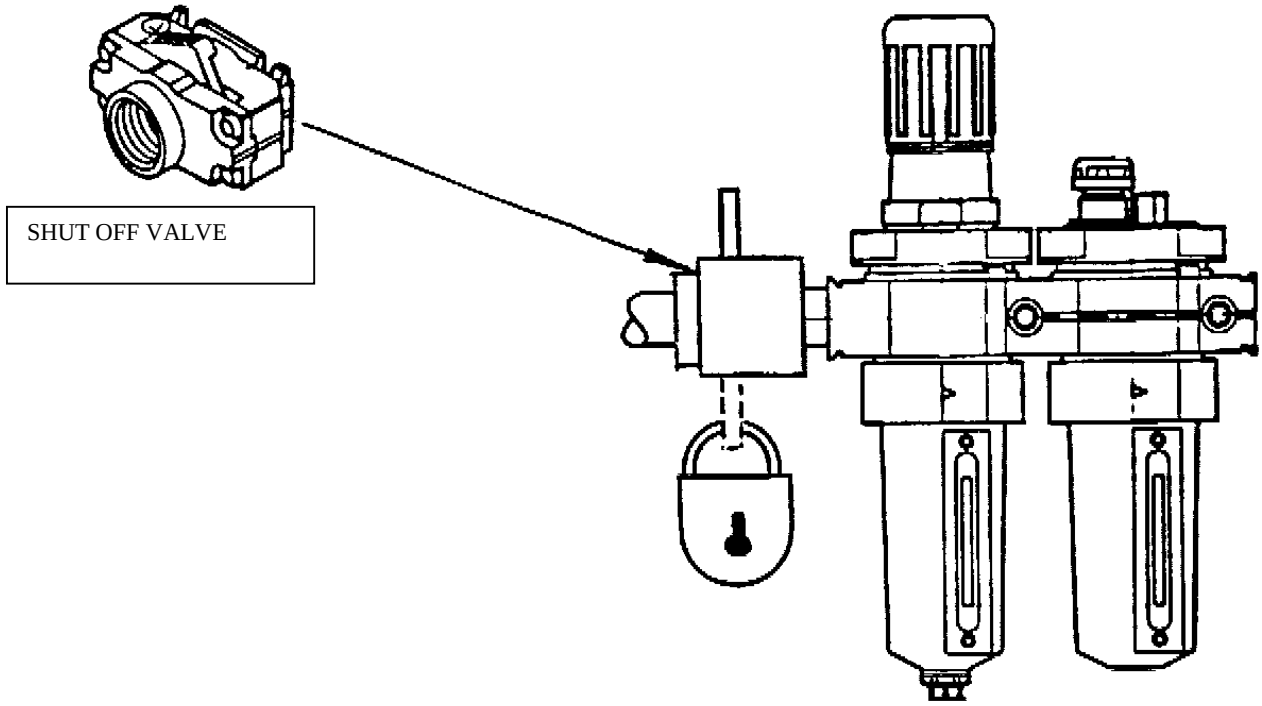
A lockable dump valve be fitted in the feed line to our mixing equipment (see drawing below).

Prior to any maintenance, the mixing equipment must be isolated using the above padlockable shut off valve. When put to the dump position, air will be allowed to vent to atmosphere removing the potential stored energy hazard. With the system in this condition, the mixer door will open and discharge blade will lower.

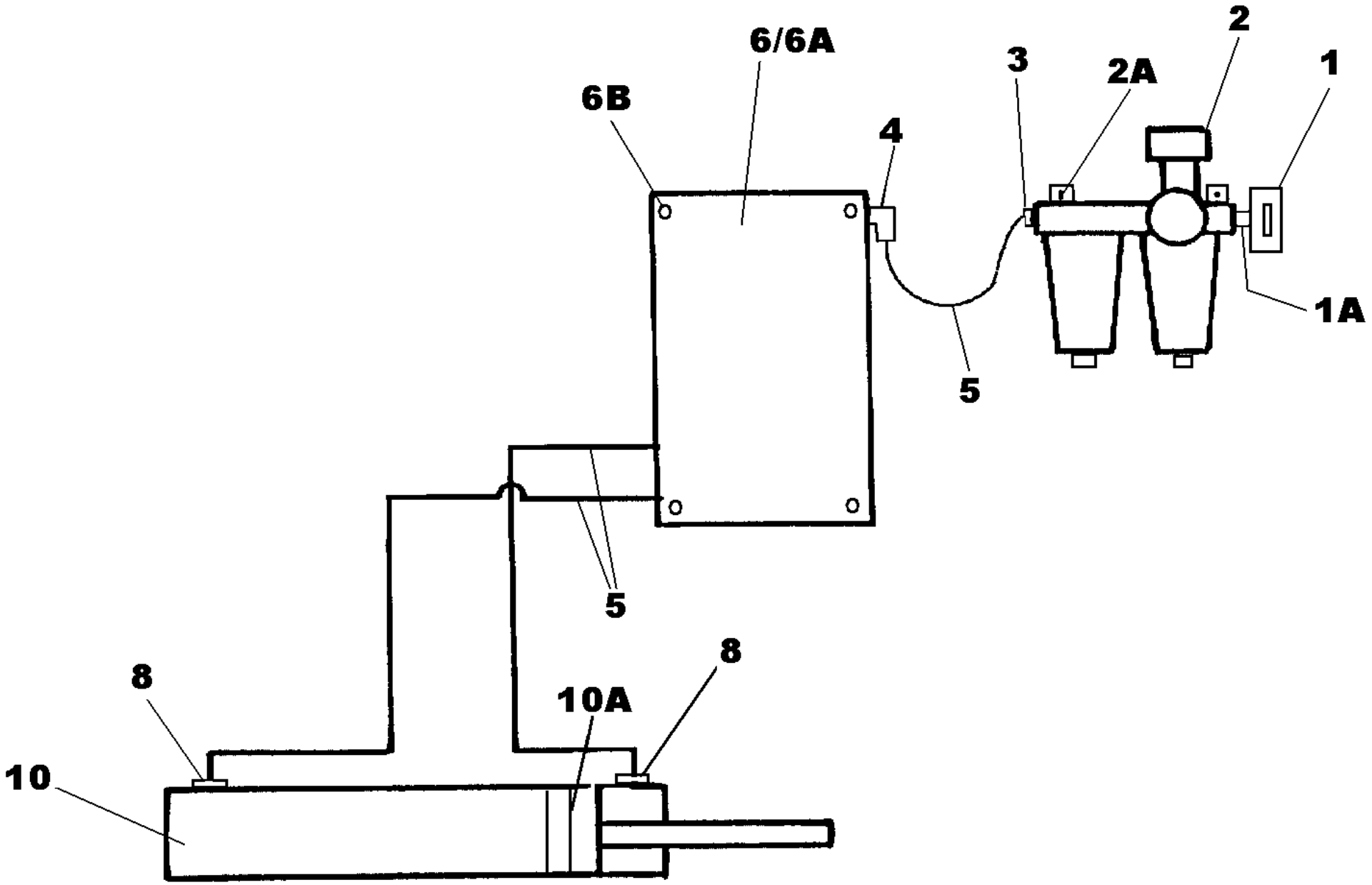
Important

Prior to entry into mixing pan, the air supply must be exhausted and isolated as above. Check door is fully open and the discharge blade rests upon pan base before commencing maintenance/cleaning. Also check that the pressure gauge reads zero.

Should blade or door remain up or partially closed, it is imperative that the cause is investigated and dealt with prior to entering mixing pan. See maintenance section.



RP400XD PNEUMATIC SYSTEM SCHEMATIC



RP400XD PNEUMATIC CIRCUIT (PLASTIC PUSH IN FITTINGS)

1	CR119347	Shut Off Valve	1
1A	191S03	1/2"-1/2" BSP Male/Male Nipple Adaptor Tapered	1
2	CR110005	Air Service Unit/Regulator/Lubricator	1
2A	11S03C	Screw Set Air Unit/Regulator Retaining	4
2B	267S05	Washer Flat	8
2C	17S04	Washer Spring	4
2D	7S03	Nut	4

Available spares for Air Service Unit itemised below:

*	CR119373	Bowl Regulator	1
*	CR119374	Bowl Lubricator	1
*	CR119375	Filter Repair Kit	1
*	CR119376	Filter Element	1
*	CR119377	Lubricator Repair Kit	1
*	CR119378	Pressure Gauge	1
*	CR119379	Bracket Mounting	2
*	CR119380	Knob Regulator	1
3	CR119261	1/2" BSP Male x 12mm Fem Push In Straight Adaptor	1
4	CR119129	3/8" BSP Male x 12mm Female Push In Elbow	1
5	CR119119	12mm Diameter Plastic Air Hose	A/R
6	CR119210	Electric/Pneumatic Solenoid Control Box	1
6A	CR119346	Electric/Pneumatic Solenoid Control Box 60 Hz	1
6B	11S03C	Screw Set Control Box Retaining	4
6C	267S05	Washer Flat	8
6D	17S04	Washer Spring	4
6E	7S03	Nut	4
8	CR119129	3/8" BSP Male x 12mm Female Push In Elbow, Discharge Door Cylinder, both ends	2
10	CR110298	Pneumatic Cylinder Discharge Door	1
10A	CR110325	Seal Kit For Item 10	1
12	V2003253	Cable Tie Nylon Long (not illustrated)	A/R
13	V2003111	Cable Tie Nylon short (not illustrated)	A/R
14	CR119215	M12 Female- M12 Male Push In Elbow, if required	A/R
15	CR119239	Compressor 24 Litre Reciever No Illustrated	1
16	CR119144	Adaptor 1/4" B.S.P.- 12mm Push In Fitting Not Illus	1
17	CR119153	Hose Clip Double (not illustrated)	8
18	CR119288	Hose Clip (not illustrated)	2
19	CR119289	Screw Self Tapping (not illustrated)	10

The following alternative items are used to reduce from 12mm diameter Air Hose to 8mm diameter Air Hose if required

	CR119208	M12 Male - M8 Female Straight Push In Reducer	A/R
	CR119133	8mm Diameter Plastic Air Hose	A/R

INTENTIONALLY BLANK PAGE

OPERATING

AND

MAINTENANCE MANUAL

SECTION 8

MISCELLANEOUS

MISCELLANEOUS

8..1 NOISE DETAILS

Measured in accordance with Directive 79/113EEC at four points around the machine at 1 metre radius and at a height of 1 metre the noise did not exceed 85LPA

INTENTIONALLY BLANK PAGE

INTENTIONALLY BLANK PAGE

INTENTIONALLY BLANK PAGE

INTENTIONALLY BLANK PAGE

OPERATING

AND

MAINTENANCE MANUAL

SECTION 9

ELECTRONIC LOADCELL & INDICATOR/ READOUT BOX

SPECIFICATIONS

Power Requirements:	115 VAC 60 Hz (optional 230 VAC 50/60 Hz) powering a 12 VDC 300 mA wall plug-in UL/CSA listed power supply for the Desktop enclosure. 115 VAC 60 Hz (optional 230 VAC 50/60 Hz) at 0.1A for the NEMA 4X enclosure.
Battery Operation:	12 VDC input jack for operation from an external battery 12 volt, 1.6 Ah for 8 hours operation
Enclosure Size:	Desktop: 8.65" W x 6.5" H x 3" D NEMA 4X: 9.8" W x 7.3" H x 3.2" D
Operating Temperature:	14° to 104° F or -10° to +40° C
Display:	5-digit, 0.6" high, 7-segment red LED
Sensitivity:	0.7uV/graduation (0-3.3 mV/V), Class III
Signal Input Range:	1.0mV min. to 50 mV max.
Transducer Excitation:	8.0 VDC
Number of Load Cells:	8 each, 350 OHM minimum load cells
Load Cell Cable Length:	150' max.; 30' max w/o sense lines
Resolution:	1 part in 20,000 displayed - 1 part in 80,000 internal
Capacities:	1,000 to 10,000 divisions commercial Up to 99,999 divisions noncommercial
Graduation Value:	1, 2 or 5 x 1, 0.1, 0.01 or 0.001
Sample Rate:	1 to 12 samples per second selectable
Auto Zero Range:	0.5 or 1 through 9 graduations
Weighing Units:	Pounds, kilograms, ounces, grams or pounds/kilograms
Keyboard:	Membrane type with 21 keys

STANDARD FEATURES:

- Keyboard or Push Button Tare
- Gross, Tare, Net Conversion
- Metric Conversion
- Bi-directional Serial Interface
- Dual Preset Weight Comparator or Checkweigher with Outputs
- Auto Shut-Off Feature
- Selectable Sleep Mode
- Selectable Filtering
- Selectable Automatic Power On

OPTIONAL FEATURES:

- NEMA 4X Enclosure
- External Relay Box for Preset Weight Comparators or Checkweigher (desktop only)
- Internal Relay Board for Preset Weight Comparators or Checkweigher (NEMA 4X only)

INSTALLATION

The Model 708 Weight Indicating Instrument is available in either a stainless steel desktop enclosure or a stainless steel NEMA 4X wall-mount enclosure. Determine which enclosure version you have and refer to the appropriate section for installation and interconnection.

AUTO-ON

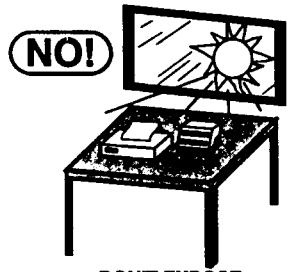
The AUTO-ON jumper J1, when connected, will cause the indicator to power on automatically whenever power is applied to the power input connector. If power is lost momentarily and then reapplied, the indicator will turn on without pressing the ON key. See Figure No. 9 for location.

INTERNATIONAL/ DOMESTIC JUMPER (J14Intl)

Install the International/ Domestic jumper, J14, to comply with OIML requirements (see Figure No. 9). With J14 installed, the 708 will perform the following functions:

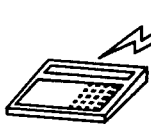
1. A "lamp test" will be performed on power-up.
2. The printout of keyboard tare will be designated as "PT."

Please note the installation precautions.



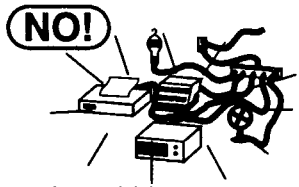
DON'T EXPOSE TO DIRECT SUNLIGHT

DON'T EXPOSE TO TEMPERATURE EXTREMES



PROVIDE ADEQUATE PROTECTION TO MINIMIZE LIGHTNING DAMAGE

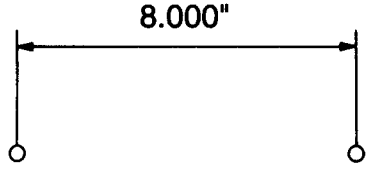
DON'T PLACE IN FRONT OF HEATING/COOLING VENTS



PROVIDE GOOD, SAFE GROUND AND CLEAN AC POWER

KEEP THE AREA AROUND THE SCALE CLEAR TO PROVIDE ADEQUATE AIR CIRCULATION

DESKTOP ENCLOSURE



The 708 desktop enclosure may be mounted on a desktop or other smooth, flat, horizontal surface or it may be mounted on a wall. Refer to Figure No. 1 for a layout of the wall-mounting bolts. Regardless of the manner in which the 708 is installed, the location chosen should be free of temperature extremes and water. It should be in a location where the display is easily viewed and is not subject to direct sunlight. The indicator should be mounted such that it is within easy reach of the operator. If wall mounted, make certain that the structure and mounting bolts are of sufficient strength to support the 708.

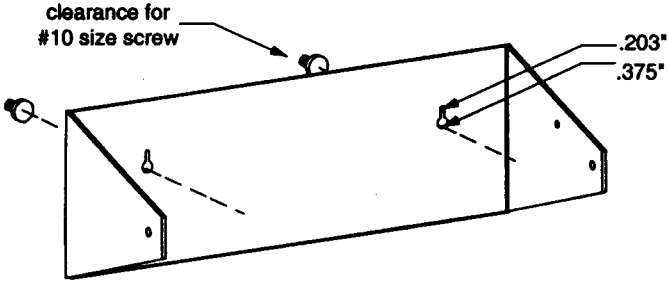


Figure No. 1

All terminations to the Model 708 Desktop Weight Indicating Instrument are made at the rear panel of the instrument. Connections for the Load Cell input, the PWC output and the Serial I/O are all made via "D" subminiture connectors while the 12VDC power is connected using a jack connector. Figure No. 2 illustrates the layout of the connector panel.

external load. When selecting the relays make certain that they are of sufficient capacity to drive the external load. A setup selection determines whether the device is on or off below the preset value. Refer to Figure No. 5 for the layout of the PWC Output connector.

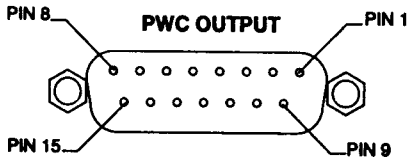


Figure No. 5

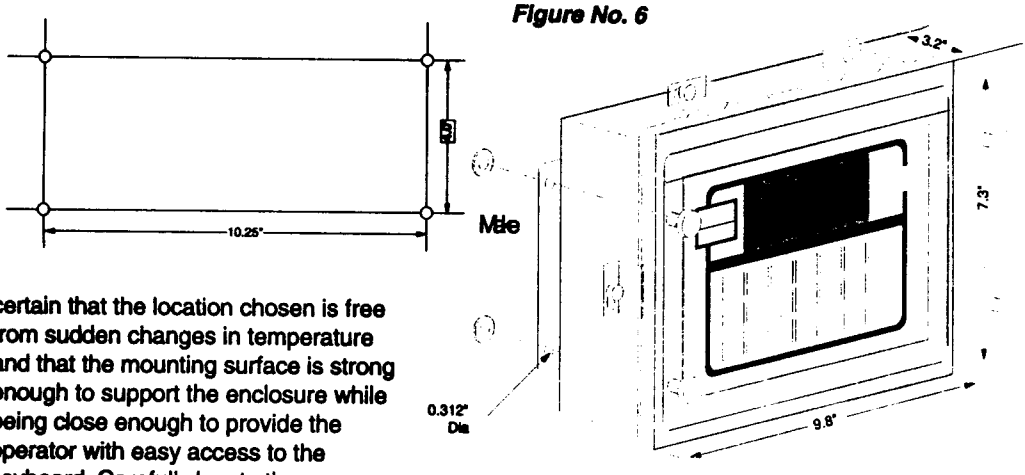
PIN NO.	FUNCTION
10	OVER/PWC1
2	UNDER/PWC2
1	ACCEPT
12	GROUND

NEMA 4X ENCLOSURES

For desk mounting of the 708 in the NEMA 4X enclosure, it is necessary to order separately a "DESK-MOUNT" kit. Refer to Assembly Instruction for Desk-Mount Kit (8539-M097-O1) for mounting instructions.

The Model 708 in a NEMA 4X enclosure is normally mounted on the wall or some other vertical surface. The enclosure is attached to the wall with four (4) bolts. Refer to Figure No. 6 for the hole layout for the NEMA 4X enclosure.

Figure No. 6



certain that the location chosen is free from sudden changes in temperature and that the mounting surface is strong enough to support the enclosure while being close enough to provide the operator with easy access to the keyboard. Carefully locate the mounting hole locations on the wall then drill and install the anchor bolts. Attached the enclosure to the wall and securely tighten the retaining bolts.

Continue installation by opening the front cover on the instrument enclosure. Loosen all four (4) retaining screws and rotate each of the clips to the side. DO NOT REMOVE THESE SCREWS. Fully open the front cover exposing the internal printed circuit board.

Load Cell Connection

Loosen the cable gland connector for the load cell cable. This gland connector is located on the bottom of the enclosure on the right-hand side. Refer to Figure No. 7 for an illustration of the connector layout.

Slip the single cable from the load cell or load cell junction box through the gland connector and into the enclosure. Remove 2 inches of the outer insulation jacket then remove 1/4 inch of insulation from each of the wires (either 4 or 6). Refer to Figure No. 8 for an illustration of the proper method of preparing and then connecting wires to the terminal blocks. Once the cable has been properly prepared, connect it to terminal block P4 on the main printed circuit board. Figure No. 9 shows the location of the terminal blocks on the main printed circuit board.

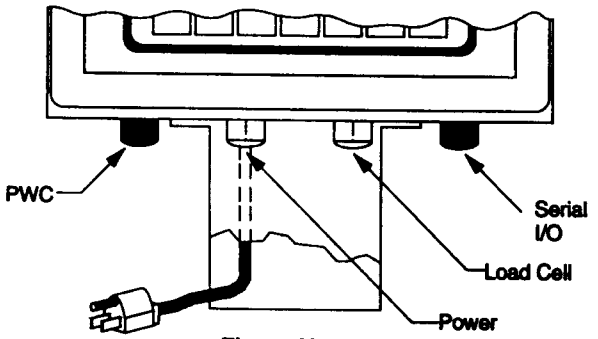


Figure No. 7

Locate the one for the load cell and connect the cable as shown. To install a wire in a terminal block, first press down on the release bar for the terminal, insert the wire into the terminal opening then release the bar locking the wire in place. Repeat this procedure until all of the wires and shield have been installed. NOTE! If the load cell cable does not contain sense leads, you must install plug-in jumpers at J2 and J3 to connect the sense inputs to the excitation leads on the PC board. If the load cell cable does contain sense leads, these jumpers must be removed and stored by placing them on one pin only.

Printer Cable Installation

Loosen the gland connector adjacent to the power cable gland connector (see Figure No. 7). Remove 2 inches of the outer insulating jacket from the cable then remove 1/4 inch of insulation from each of the wires (see Figure No. 8). These wires are to be connected to terminal block P8 at the bottom edge of the printed circuit board. Refer to Figure No. 9 for the location of this terminal block.

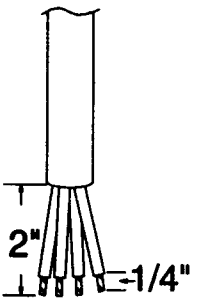
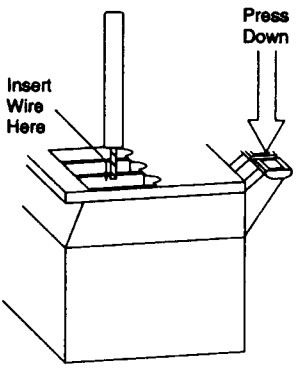


Figure No. 8



Terminal

To terminate the wires, first press down on the terminal release bar then insert the wire into the terminal opening and release the bar to lock the wire in place.

Preset Weight Comparator/Checkweigher Logic Level Output

If you so choose, you may use the logic level outputs from your 708 indicator's preset weight comparators or checkweigher to control peripheral devices used to manage the flow of material or signal when the weight is within preset limits. Note that these outputs are at logic level and cannot drive external devices directly. Solid state relays can be used to accept the logic level output from the 708 and in turn drive the external device.

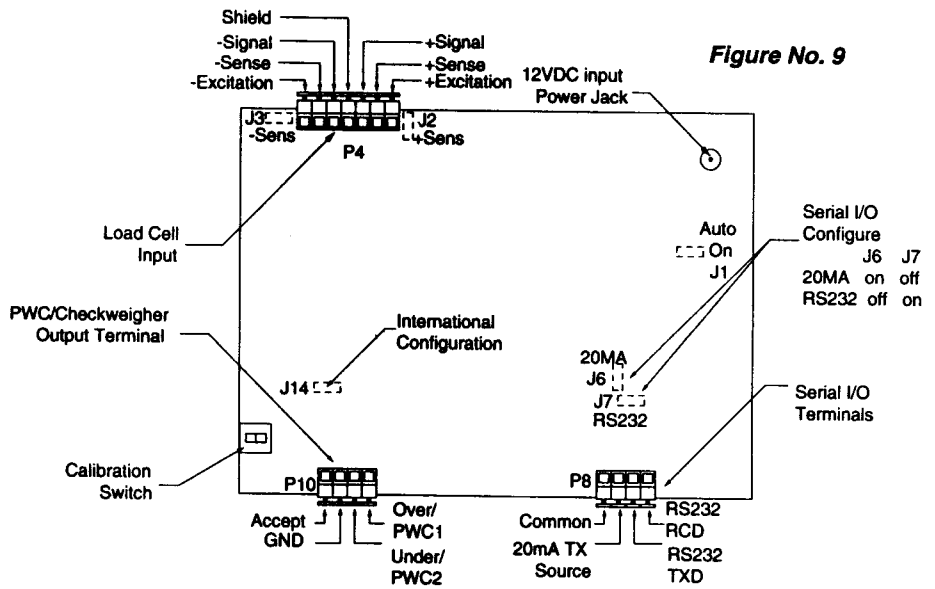


Figure No. 9

KEYPAD FUNCTIONS

The 708 is equipped with a 21-key keypad. The keypad is used to enter commands and data. This section describes each key along with the function it performs. It will be helpful to refer either to Figure No. 12 or to the actual 708 keypad while reading this section.

The membrane keyboard is not to be operated with pointed objects (pencils,pens, fingernails, etc.). Damage to keyboard resulting from this practice will ***NOT*** be covered under warranty.

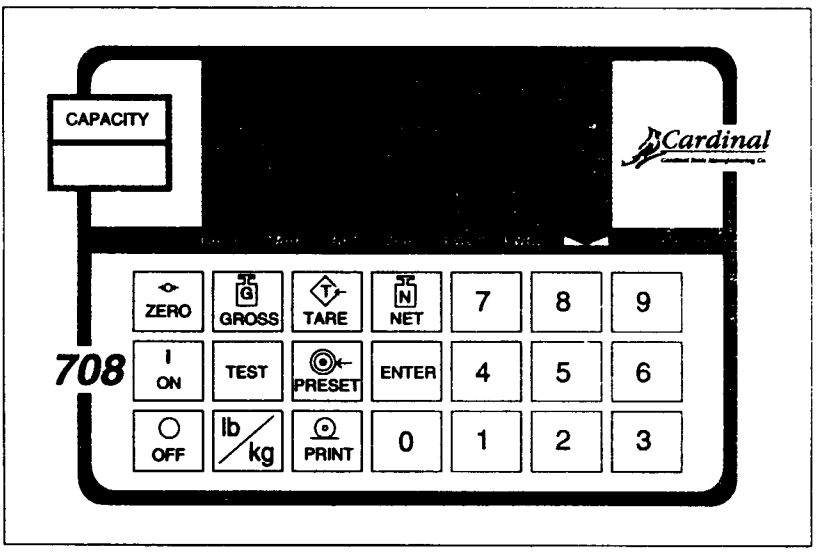


Figure No. 12

I
ON

ON KEY
Pressing this key applies power to the 708 and turns on the display.

OFF

OFF KEY
Pressing this key removes power from the 708 and turns the display off.

ZERO

ZERO KEY
This key is used to reset the gross weight to zero. If the gross weight exceeds the preset limit for this key an error message will be displayed when the key is pressed. The zero limit may be set to either 4% or 100% of scale capacity during setup and calibration of the 708.

G
GROSS

GROSS KEY
This key is used to return the weight display to the Gross Weight mode.In the gross weight mode, the total of all weight placed on the scale since the display was zeroed is displayed. The GROSS annunciator beneath the display window is turned on to signal the display of gross weight.

T
TARE

TARE KEY
This key is used to enter a tare weight of up to four (4) digits and can operate in one of two modes depending on the setup of the 708. If the push button tare feature was selected during the setup of the instrument, pressing this key will cause the 708 to enter the current gross weight as the new tare weight value and automatically enter the net weight mode. The NET annunciator will be turned on to indicate that the 708 is now displaying a net weight. If the push button tare feature was not selected, pressing the TARE key will cause the currently stored tare weight to be displayed and the TARE annunciator will be turned on. The numeric keys may be used to enter a new tare value and the ENTER key pressed to store the new value. Once the new tare value is entered the 708 will automatically enter the Net Weight mode indicated by turning on the NET annunciator.

NET KEY

Pressing this key will cause the 708 to enter the Net Weight mode where the weight displayed is the gross weight less the stored tare weight. The NET annunciator is turned on to show that the displayed weight is the net weight. Note that the 708 will only enter the Net Weight mode if a valid tare weight is currently stored.

TEST KEY

The TEST key is used to conduct a test of all display and memory elements. The test consists of 4 cycles each lasting 2 seconds:

1. All vertical display segments on (no annunciators).
2. All horizontal display segments on (no annunciators).
3. All annunciators and decimal points on.
4. All display elements off.

PRESET KEY

The PRESET key is used to enter the weight values for either the two preset weight comparators or for the checkweigher feature depending on which feature was selected during setup and calibration of the 708. If the Preset Weight Comparator feature was selected, the PWC1 annunciator will flash and the display will show the currently stored value for the number 1 preset weight comparator. If the value displayed is acceptable, press the ENTER key, otherwise, use the numeric keys to enter the new preset value and press the ENTER key. The PWC2 annunciator will now flash and the display will show the currently stored value for the number 2 preset weight comparator. As before, if the value displayed is acceptable, press the ENTER key, otherwise, use the numeric keys to enter the new value and press the ENTER key. If the Checkweigher feature was selected and the PRESET key pressed, the ACCEPT and UNDER annunciators will flash and the preset value for the minimum acceptable weight will be displayed. Press the ENTER key if the displayed value is correct or use the numeric keys and enter the new value and press the ENTER key. The ACCEPT and OVER annunciators will now flash and the display will show the minimum value of weight over the accepted range. As before, if the value shown is correct, press the ENTER key. If the value is incorrect, enter the new value and press the ENTER key to save it. Note that this value must be greater than the accept value. Remember that both the preset weight comparators and checkweigher functions operate on the absolute value of the weight ignoring the polarity. After the second preset value is entered, the 708 will return to normal operation.

lb / kg KEY

Pressing this key will change the weighing units to the alternate units of measurement if selected during setup of the instrument. With pounds displayed (lb annunciator turned on) pressing this key will change the weighing units to kilograms (kg annunciator turned on). Note that this feature must be enabled during setup and calibration for this key to be operational.

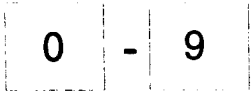
PRINT KEY

Pressing this key will initiate the transmission of weight data via the serial I/O port unless the continuous data output feature was enabled during setup and calibration or setup review. Note that if the continuous data output feature was selected, this key will be disabled.

ENTER KEY

The ENTER key serves two purposes. First, when reviewing setup parameters, pressing the ENTER key will cause the current setting of the parameter to be displayed. Second, the ENTER key is used to signal the completion of the entry of data and causes the 708 to process the data entered.

0 THROUGH 9 KEYS



These keys are used to enter numeric data during the setup and calibration as well as during normal operation of the instrument.

ANNUNCIATORS

Note that annunciators are turned on to indicate that the display is in the mode corresponding to the annunciator label or that the status indicated by the label is active. Some annunciators are flashed on and off to signal that the 708 is waiting for an input from the keypad for use by the feature indicated by the annunciator.

ZERO
The ZERO annunciator is turned on to indicate that the weight is within +/- 1/4 division of the center of zero.

GROSS
The GROSS annunciator is turned on to indicate that the displayed weight is the gross weight which is the total of all weight placed on the scale platform since the display was last reset to zero.

TARE
The TARE annunciator is flashed on and off to show that the 708 is in the tare weight input mode and that the new tare weight value should be entered on the numeric keys.

NET
The NET annunciator is turned on to show that the displayed weight is the net weight which is the gross weight less the tare weight.

PWC1
The PWC1 annunciator is turned on to indicate that the displayed weight is equal to or greater than the weight value stored as preset number 1. Note that this annunciator is active only when the Preset Weight Comparator feature has been enabled.

PWC2
The PWC2 annunciator is turned on to indicate that the displayed weight is equal to or greater than the weight value stored as preset number 2. Note that this annunciator is active only when the Preset Weight Comparator feature has been enabled.

STABLE
The STABLE annunciator is identified with two small triangular shapes and is turned on when the weight display is stable. This means that the change in successive weight samples is less than the motion limits selected during setup and calibration of the 708.

UNDER
The UNDER annunciator is located to the left of the weight display and is used to signal that the displayed weight is less than the minimum value of acceptable weight used in the Checkweigher feature. Note that this annunciator is active only when the Checkweigher feature is enabled.

ACCEPT
The ACCEPT annunciator is located just above the weight display and is used to signal that the displayed weight is within the acceptable weight limits for the Checkweigher feature. That is, it is equal to or greater than the minimum acceptable weight and equal to or less than the maximum acceptable weight. Note that this annunciator is active only when the Checkweigher feature has been enabled.

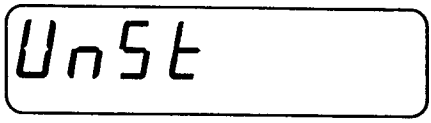
OVER
The OVER annunciator is located to the right of the weight display and is used to signal that the displayed weight is equal to or greater than the minimum value of over weight used in the Checkweigher feature. Note that this annunciator is active only when the Checkweigher feature has been enabled.

lb
The lb annunciator is located to the right of the weight display and is turned on to show that the displayed weight units of measure is pounds.

kg
The kg annunciator is located to the right of the weight display and is used to signal that the units of measurement for the displayed weight is kilograms.

ERROR CODES

The 708 is equipped with software that detects when an error in operation takes place. The following lists the error code displays supported by the 708 along with their meaning. Should you encounter an error display, please refer to this list for the cause and corrective action.

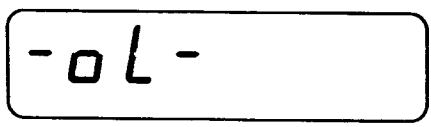


Motion is present when trying to power up, print, zero or perform a push button tare function. CORRECTIVE ACTION: wait for a stable weight display (STABLE annunciator on) before performing these operations.

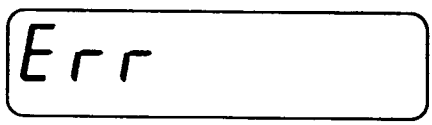
The weight on the scale exceeds the zero range when powering up. CORRECTIVE ACTION: remove the excess load from the scale then press the ZERO key. If the scale has not been calibrated previously, calibration should be completed before attempting further operation.

The scale deadload is less than the zero range when powering up. CORRECTIVE ACTION: replace the scale platform or items normally on the scale when it was calibrated and press the ZERO key. If the scale has not been calibrated previously, calibration should be completed before attempting further operation.

The 708 is attempting to display a positive number greater than 5 digits in length or a negative number of more than 4 digits. CORRECTIVE ACTION: return to the Gross Weight mode and review the Tare value.



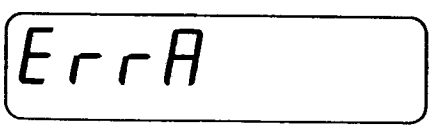
The load on the scale exceeds the scale capacity plus 9 divisions. CORRECTIVE ACTION: remove the over capacity load from the scale platform.



An invalid keypad entry was attempted:

1. PRINT key pressed with a negative weight displayed.
2. TARE key pressed to enter a push button tare value of zero or a negative value.
3. ENTER key pressed to enter a tare weight value that exceeds scale capacity.
4. ENTER key pressed to enter a tare weight value that is inconsistent with the scale's division value. (i.e. attempt to enter a tare value of 123 with scale division value of 5).
5. ZERO key pressed when the gross weight is outside the scale zero weight range.
6. lb/kg key pressed to change to kilograms when the kilogram tare weight value exceeds 4 digits in length.

CORRECTIVE ACTION: determine which of the reasons for the error display is applicable then take the appropriate corrective action.



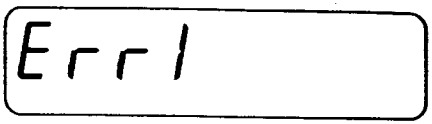
The proper load cell signal is not getting to the signal processing circuit for one or more of the following possible reasons with corrective action:

The load cell output is below the indicator minimum input of 1.0mV. Consult your scale serviceman;

Sense lead jumpers are not installed for four (4) wire load cells. Install both SENS jumpers (see Figure No. 9);

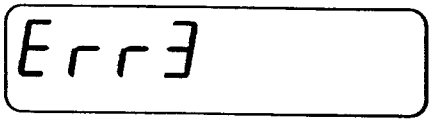
The load cell wiring is incorrect. Check load cell connector wiring;

Load cell or circuit failure. Consult your scale serviceman.

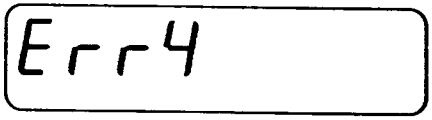


A program checksum mismatch has been detected. CORRECTIVE ACTION:contact your scale serviceman.

A write command to the NOVRAM was attempted while the NOVRAM was in a protected mode (loss of control by program). CORRECTIVE ACTION: contact your scale serviceman.



RAM test failure. CORRECTIVE ACTION: contact your scale serviceman.



NOVRAM failure during startup. CORRECTIVE ACTION: contact your scale serviceman.

NOVRAM response failure. CORRECTIVE ACTION: contact your scale serviceman.

MAINTENANCE

The maintenance on the Model 708 Weight Indicating Instrument should be limited to an occasional cleaning of the outside of the instrument enclosure. There are no user-serviceable components within the enclosure. To clean the enclosure and keyboard, use a soft cloth dampened with water. If you wish to use a detergent, make certain that it is safe and then use it sparingly. Do not wash the Desktop enclosure. Only the NEMA 4X version of the 708 may be washed down.

PERFORMANCE SPECIFICATIONS

Parameter	Units	LOAD CELL CAPACITY ≤ 7500 kg	LOAD CELL CAPACITY ≥ 10000 kg
Rated Output	mV/V ± 0.25%	2	2
Combined Error	%*	< ± 0.05	< ± 0.1
Non-repeatability	%*	< ± 0.025	< ± 0.03
Creep (30 minutes)	%*	< ± 0.05	< ± 0.05
Temperature Effect on Zero Balance	%* / °C	< ± 0.0025	< ± 0.0025
Temperature Effect on Span	%* / °C	< ± 0.008	< ± 0.008
Compensated Temperature Range	°C	-10 to +40	-10 to +40
Operating Temperature Range	°C	-40 to +80	-40 to +80
Safe Overload	%*	150	150
Ultimate Overload	%*	300	300
Zero Balance	%*	< ± 1	< ± 1
Input Resistance	Ω ± 30	380	380
Output Resistance	Ω ± 1.5	350	350
Insulation Resistance	MΩ @ 100 V	> 5000	> 5000
Recommended Supply Voltage	V	10	10
Maximum Supply Voltage	V	15	15

** WITH RESPECT TO RATED OUTPUT*

CABLE SPECIFICATIONS — 4 m - Four core screened, 6mm dia.. with polyurethane outer sheath

POSITIVE EXCITATION = RED — *POSITIVE SIGNAL = GREEN*
NEGATIVE EXCITATION = BLUE — *NEGATIVE SIGNAL = YELLOW*

PHYSICAL DIMENSIONS (mm)

RANGE (kg)	A	B	C	D	E	F	G	H	J	K	L	M	Wt (kg) (Cell)	Wt (kg) (LA90)
500	125	84	42	42	13	M16 x 2	102	174	16	193	40	135	**3**	**13.6**
1000 to 7500	125	84	42	42	13	M24 x 2	102	174	16	193	40	135	**3.6**	**13.6**
10000 / 15000	175	110	55	64	21	none	148	238	21	243	48	175	**8.8**	**22.5**
20000 to 30000	175	110	55	64	27	none	148	238	21	243	50	175	**9.3**	**23.6**