Mobile Column Lifts

ST 1055
ST 1060
ST 1072

Installation - operation - service

325-58-990A

PLEASE DELIVER TO THE LIFT ALL OPERATION, INSPECTION AND MAINTENANCE MANUALS AND ALL OTHER INSTRUCTIONAL MATERIAL FURNISHED WITH THE LIFT, TO THE LIFT OWNER/USER/EMPLOYER.

PLEASE READ AND UNDERSTAND ALL INSTRUCTIONS IN THIS MANUAL BEFORE INSTALLING, OPERATING OR MAINTAINING THIS LIFT

DIRECTIONS ASSEMBLY AND SERVICING MANUAL FOR THE 10,000/16,000 LBS STERTIL-KONI HYDRAULIC MOBILE COLUMN LIFTS

MODEL

ST 1055 / ST 1060 ST 1072

Starting at Serial Number

TN 72000 TH 49869

This document belongs with mobile column lift no.:

TN..... TH.....

Date first used:

…….

Date: 01-10-2003

EC DECLARATION OF CONFORMITY in application of the European 'Machines' Directive (98/37/EC)

Manufacturer	: Stertil B.V., Postbox 23, 9288 ZG KOOTSTERTILLE Holland	**Model**	: ST 1055 / ST 1060 / ST 1072
Machine	: Hydraulic mobile column lifts	**Version**	: Primary column and Secondary column
Make	: STERTIL-KONI	**Variants**	: Widened model ST 1072 V : Extended forks and base leg length for recreational vehicles ST1055-RV

The undersigned, H. Claus, Director, for this purpose authorised by Stertil BV, hereby declares that the mobile column lift described above, has been designed according to the 'Machines' Directive and has been found to meet the fundamental safety requirements stipulated by this directive.

This Wheel Engaging Mobile Automotive Lifts are approved by:
ETL, Testing Laboratories, Inc. - Lexington,
KY 40510 USA, under report no.: J99024825

Stertil, Kootstertille
H. Claus
Director
Signature:
Date, 14-05-01

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PREFACE

Prior to the operation of your Stertil-Koni mobile lift make sure that you read the instructions thoroughly. These instructions are found in this manual. Please note that your warranty can be voided if you do not read the manual and understand its content

If you have any questions, concerning operation, safety or application of your mobile lift, please contact Stertil Koni USA at the following toll-free number: 800 336 6637 or call 410 643 9001. The address for Stertil Koni USA Inc. is 200 Log Canoe Circle, Stevensville, Maryland 21666.

An automotive lift operator shall have certain qualifications before he/she can safely operate a Stertil Koni mobile lift and these include ability in written or oral communications as demonstrated by either a high school diploma or certificate of equivalency, aptitude test or job experience. He/she must also have the ability to understand the mathematical, mechanical and electrical principles of automotive lifts as demonstrated by one of, or a combination of aptitude test, training program, technical vocational school or job experience.

The owner/employer of the Stertil Koni mobile lift must ensure that the operator of the mobile lift must be instructed and trained in the safe use and operation of the lift using the manufacturer-provided instructions and warning labels and the Automotive Lift Institute Publications, "Lifting It Right" and "Safety Tips".

The lift that has been delivered to you contains the supply operating instructions, general safety information, safety tips and warning labels on the master control console. As an owner, or employer, it is requested that you display these materials in a conspicuous location in the lift operating area.

The owner or employer shall appropriately document operator training by completing an operator training log which shall be part of the management documentation.

The operator shall operate the automotive lift only after being properly instructed or trained in accordance with manufacturer supplied instructions found in the this manual.

The operator shall use all applicable safety features provided on the automotive lift and operate the lift in accordance with the instructions provided by Stertil-Koni.

The lift operator or employer shall take all appropriate steps to follow the recommended inspection procedures of the lift manufacturer but in no event shall the lift operator fail to inspect or take notice of the following features on a daily basis.

1. accessibility and readability of the operating procedures, safety tips and generic safety material
2. accessibility and readability of safety warning labels
3. readability of the rated load capacity of the lift
4. proper operation of the lift controls, restraints and locking devices
5. deformation or excessive wear of any of the lift structural components
6. deformation or excessive wear of other components such as hoses, electrical wires
7. evidence of hydraulic leaks
8. unusual noises

If any of the conditions described above are observed before, during or after operation of the lift, the operator shall stop using the lift and report the condition to the supervisor, employer or owner. If any of the conditions listed above are observed, then the lift shall not be used until the cause of the problem has been determined and the appropriate repairs made by qualified Stertil Koni service authorized personnel. In order to ensure that the lift is not used until the repairs have been effected, the lift shall be locked out or tagged in accordance with ANSI/Z244.1-1982.

The owner or employer shall establish a periodic preventive maintenance procedure in accordance with the recommendations listed in this manual.

Stertil-Koni USA shall not be responsible for any actions not specifically called out for in this manual or in this notice.

Please note that there shall be no modifications or reconstruction made to the Stertil Koni mobile lift without the express written permission of the manufacturer.

Please make sure that caution labels are not frayed and are on the lift. Please call the manufacturer if these caution labels have been removed or through age are no longer on the lift.

Please read and understand the attached Statement of Warranty for the Stertil Koni mobile lift.

Thank you for the purchase of your Stertil Koni product.

STATEMENT OF WARRANTY

Stertil KONI USA lifting systems are warranted for a period of two (2) years for parts and labour commencing from the effective date of acceptance by the Customer. During the warranty period, equipment that is found to be defective will be repaired or replaced (at the option of Stertil-KONI USA) without charge.

The equipment must be returned and freight charges prepaid, with proof of delivery date to a Stertil-KONI USA Authorized Service Center. The repaired or replaced equipment will be returned with freight charges prepaid by Stertil-KONI USA.

Hydraulic cylinders are warranted for a period of five (5) years. There is a lifetime warranty on nylon guide rollers used in Stertil-KONI lifting products that utilize such rollers.

This warranty does not apply where equipment has been damaged due to abnormal wear, misuse, overloading, accident (including shipping), improper maintenance, alteration, improper fluid maintenance, or other causes not the result of defective materials or workmanship.

Repair or replacement is the exclusive remedy for allegedly defective equipment under this warranty, and Stertil-KONI USA will not be liable for any consequential or incidental damages for breach of any express or implied warranty on this equipment. Stertil-KONI USA is not responsible for claims not made by persons other than Stertil-KONI USA authorized service or sales representatives.

Please contact Stertil-KONI USA for the location of authorized Service Centers throughout the United States.

Stertil-Koni USA Inc.
200 Log Canoe Circle
Stevensville, Maryland 21666
tel. 00 1 410 643 9001
fax. 00 1 410 643 8901
Toll-free number: 800 336 6637

Column Serial Numbers: _____ _____
_____ _____
_____ _____
_____ _____

_____

Signature Date

1. GENERAL

1.1 MANUFACTURER'S INFORMATION

Stertil BV
Westkern 3, 9288 CA
Postbus 23, 9288 ZG
E-mail: info@stertil.nl
Website: www.stertil.nl

Kootstertille (NL)
Telephone 31(0)512334444
Telefax 31(0)512334430

1.2 SPECIFICATIONS

Also see type plate on the mobile column lift.

Model	**ST 1055**	**ST 1060**	**ST 1072**
Capacity	10,000 lbs	12,000 lbs	16,000 lbs
Pressure relief valve	3,200 psi (sealed ex-works with plastic cap)	3,800 psi (sealed ex-works with plastic cap)	3,800 psi (sealed ex-works with plastic cap)
Electrical power			
3 Phase	3 HP	3 HP	3 HP
1 Phase	1,5 HP	1,5 HP	1,5 HP
Mains supply			
3x208/230V 60 Hz	3x phase, 1x earth, 1x zero	3x phase, 1x earth, 1x zero	3x phase, 1x earth, 1x zero
3x460V 60 Hz	3x phase, 1x earth	3x phase, 1x earth	3x phase, 1x earth
3x575V 60 Hz	3x phase, 1x earth	3x phase, 1x earth	3x phase, 1x earth
1x208/230V 60 Hz	1x phase, 1x earth	1x phase, 1x earth, 1x zero	1x phase, 1x earth
Mains fuse	See Amperage Power Supply Consumption table	See Amperage Power Supply Consumption table	See Amperage Power Supply Consumption table
3x208/230V 60 Hz	30 A (slow)	30 A (slow)	30 A (slow)
3x460V 60 Hz	15 A (slow)	15 A (slow)	15 A (slow)
3x575V 60 Hz	10 A (slow)	10 A (slow)	15 A (slow)
1x208/230V 60 Hz	30 A (slow)	30 A (slow)	30 A (slow)
Operational voltage	24 V=	24 V=	24 V=
Stroke	71"	71"	68 7/8"
Lifting speed 3 Phase	62"/min	62"/min	50"/min
1 Phase	30"/min	30"/min	24"/min
Lifting/lowering time			
3 Phase	71 sec/57 sec	71 sec/57 sec	83 sec/60 sec
1 Phase	142 sec/57 sec	142 sec/57 sec	170 sec/60 sec
Noise level	max 73 dB(A)	max 73 dB(A)	max 73 dB(A)
Set-up	Indoors / outdoors	Indoors / outdoors	Indoors / outdoors
Weight	900 lbs	900 lbs	1050 lbs
Electrical supply cable length	62' – 4"	62' – 4"	62' – 4"
Lifting column interconnection cable length	39' - 4"	39' - 4"	39' - 4"
Maximum distance between lifting columns	29' - 6"	29' - 6"	29' - 6"
Maximum floor pressure	5800 psi	7000 psi	8000 psi
Maximum floor load	(per front wheel) 4200 lbs	(per front wheel) 5000 lbs	(per front wheel) 6750 lbs

Amperage Power Supply Consumption															
Number of lifting columns: max. 3 additional columns at 1 (one) primary column; see instruction		Supply Voltage 3 Phase									Number of lifting columns: max. 1 additional columns at 1 (one) primary column; see instruction		Supply Voltage 1 Phase		
Total Composition		208/230 V			460 V			575 V			Total Composition		208/230 V		
		ST1055 (Amps)	ST1060 (Amps)	ST1072 (Amps)	ST1055 (Amps)	ST1060 (Amps)	ST1072 (Amps)	ST1055 (Amps)	ST1060 (Amps)	ST1072 (Amps)			ST1055 (Amps)	ST1060 (Amps)	ST1072 (Amps)
2:	1 Primary + 1 Additional column	12	14,5	16	5	6,5	7	4	5	6	2:	1 Primary + 1 Additional column	13	15,5	17,5
3:	1 Primary + 2 Additional columns	18	21	24	8	10	11	6	8	9	3:	2 Primary + 1 Additional column	13 + 7	15,5 + 7,5	17,5 + 9
4:	1 Primary + 3 Additional columns	24	29	32	10	13	14	8	10	12	4:	2 Primary + 2 Additional column	2 x 13	2 x 15,5	2 x 17,5
6:	1 Primary + 3 Additional columns 1 Primary + 1 Additional column	24 12	29 14,5	32 16	10 5	13 6,5	14 7	8 4	10 5	12 6	6:				
etc											etc.				

2. DIRECTIONS

2.1 SCOPE

This manual refers to the **Mobile Column Lift**.

This manual contains useful and important information for proper functioning and maintenance of the lifting system. It also contains important instructions to prevent accidents and serious damage prior to and during operation of the lifting system, and it enables the product to perform as safely and flawlessly as possible. Read this manual carefully before using the lifting system, familiarize yourself thoroughly with the functioning and operation of the lifting system and strictly observe the directions given.

2.2 LIABILITY

The data published in this manual are based on the latest information available. They are subject to future modification.

We reserve the right to change the construction and/or design of our products, without being obliged to adapt earlier supplies accordingly.

2.3 GUARANTEE

The guarantee conditions stated in our terms of delivery, which are in your possession, are applicable to this product. The guarantee on your lifting system will become null and void if:

- service and maintenance are not carried out strictly in accordance with the instructions, repair work is not carried out by our personnel or has been performed without our prior consent in writing;
- the lifting system has been modified without our prior consent in writing;
- non-original parts are used;
- the lifting system is used inexpertly, incorrectly, carelessly or not in accordance with its nature or intended use.

Wearing parts are not covered by the guarantee.

2.4 SAFETY MEASURES

The lifting system is provided with safety and protection features. Even so, caution is required when using the lifting system.

Work safely!
Stertil B.V. have made every effort to inform you as correctly and completely as possible on any dangers associated with operation of the lifting system. You must ensure and are responsible for compliance with these behavioural guidelines.
The buyer/user is obliged to familiarise operating, cleaning and maintenance personnel with these instructions.

Upon their arrival, check deliveries for:

- any damage and/or missing parts due to transport. Make sure that the carrier draws up a transport damage report on the spot.
- correctness and completeness; have all parts (additionally) and or accessories ordered been supplied?

In the event of damage always contact Stertil B.V. or the supplier.

All worn or broken parts need to be replaced with genuine lift manufacturer supplied parts.

MANUFACTURERS INSTRUCTIONS TO THE LIFT OWNER/EMPLOYER

The owner/employer shall ensure that lift operators are qualified and that they are trained in the safe use and operation of the lift using the manufacturers operating instructions; ALI/SM 93-1, ALI Lifting it Right safety manual; ALI/ST-90, ALI Safety Tips card; ANSI/ALI ALOIM, American National Standard for Automotive Lifts-Safety Requirements for Operation Inspection and Maintenance; ALI/WL Series, ALI Uniform Warning Label Decals/Placards.

The owner/employer shall establish procedures to periodically inspect the lift in accordance with the lift manufacturers instructions; ANSI/ALI ALOIM, American National Standard for Automotive Lifts-Safety Requirements for Inspection and Maintenance; and the employer shall ensure that lift inspectors are qualified and that they are adequately trained in the inspection of the lift.

The owner/employer shall maintain the periodic inspection and maintenance records recommended by the manufacturer or ANSI/ALI ALOIM, American National Standard for Automotive Lifts-Safety Requirements for Inspection and Maintenance; and the employer shall ensure that lift inspectors are qualified and that they are adequately trained in the inspection of the lift.

The owner/employer shall display the lift manufacturers operating instructions; ALI/SM 93-1, ALI Lifting it Right safety manual; ALI/ST-90, ALI Safety Tips card; ANSI/ALI ALOIM, American National Standard for Automotive Lifts-Safety Requirements for Operation Inspection and Maintenance; in a conspicuous location in the lift area convenient to the operator.

The owner/employer shall provide necessary lockout/tagout means for energy sources per ANSI Z244.1-1982 (R1993), Safety Requirements for the Lockout/Tagout of Energy Sources, before beginning any lift repairs.

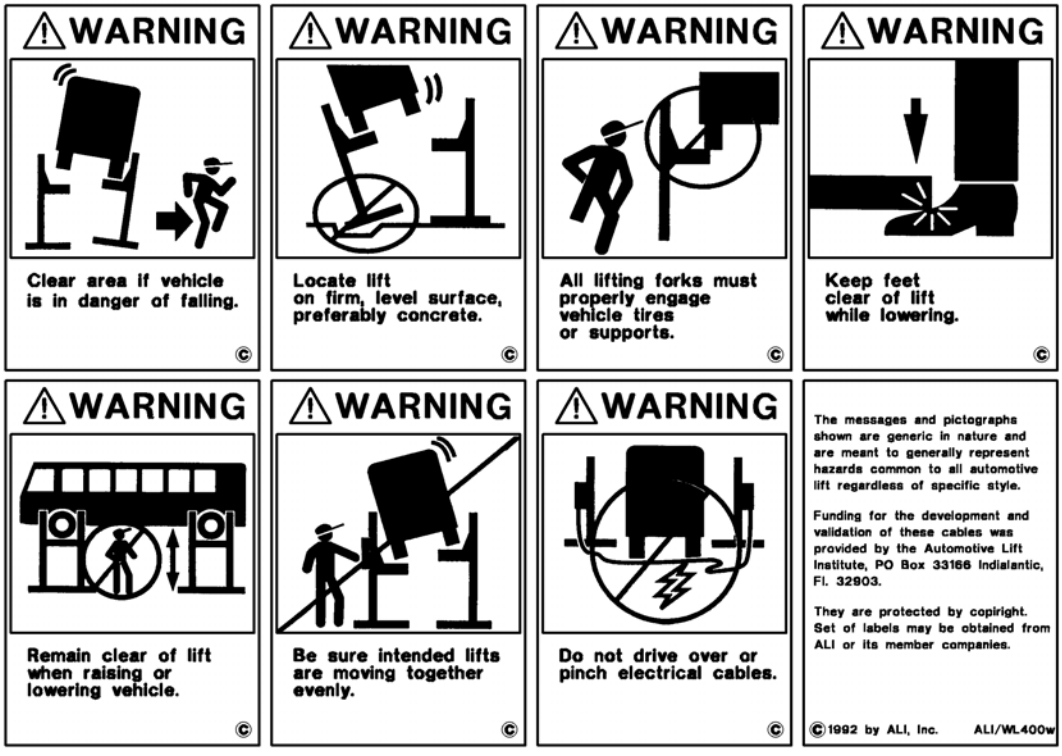
The owner/employer shall not modify the lift in any manner without the prior written consent of the manufacturer.

IMPORTANT SAFETY INSTRUCTIONS

- **Read all instructions.**
- **If an extension cord is necessary, a cord with a current rating equal to or more than the equipment must be used. Cords rated for less current than the equipment may overheat. Care should be taken to arrange the cord so that it will not be tripped over or pulled.**
- **Always unplug equipment from electrical outlet when not in use. Never use the cord to pull the plug from the outlet. Grasp plug and pull to disconnect.**
- **Let equipment cool completely before putting away. Loop the cord loosely around equipment when storing.**
- **To reduce the risk of fire, do not operate equipment in the vicinity of open containers of flammable liquids (gasoline).**
- **Adequate ventilation should be provided when working on internal combustion engines.**

- **Keep hair, loose clothing, fingers and all parts of the body away from moving parts.**
- **To reduce the risk of electrical shock, do not use on wet surfaces or expose to rain.**
- **Use only as described in this manual. Use only manufacturers recommended attachments.**
- **ALWAYS WEAR SAFETY GLASSES. Everyday eyeglass only have impact resistant lenses, they are not safety glasses.**
- **Use by untrained people could result in serious injury and/or damage.**
- **Do not use the lifting system outdoors if the wind velocities mentioned in paragraph 5.5 are exceeded**
- **If the lifting system is used outdoors do not leave the vehicles unattended in the lifted position. The wind speed may change and exceed the safety limits.**
- **Danger of getting injured by electrical shock.**
- **Only remove the covers to carry out maintenance, ensure that the lifting system is disconnected from the power supply.**
- **Care must be taken as burns can occur from touching hot parts.**
- **Prevent damage to the power feed cables on account of driving over or heavy or falling objects.**
- **Do not drive over interconnecting cables. Always disconnect interconnecting cables and remove from vehicle travel path before moving vehicle.**
- **Do not operate equipment with a damaged cord or if the equipment has been dropped or damaged until it has been examined by a qualified serviceman.**
- **In case of using one or two lifting columns (in paired operation), be sure that this will not result in stability risks. In case of doubt, consult your superior. Unsafe lifting can result in serious injury and damage to the lifting system and/or vehicles.**
- **This lifting system should only be used for lifting of vehicles and not for other applications. The positioning of the lifting system must be done in a way that a safe working area will be obtained above and around the lifting columns, thereby creating escape paths for emergency situations (leave passageways of at least 600 mm, 24").**
- **If a vehicle is in the lifted position, its air suspension system may not be used in a view of possible change of track width and/or wheel base.**
- **Use the lifting columns only on a hard and level floor with sufficient bearing capacity, see 1.2 Specifications for floor pressure and floor load.**
- **Once desired height has been reached, it is recommended but not required that the lift be lowered into the mechanical locks.**

SAVE THESE INSTRUCTIONS



3. DESCRIPTION OF THE LIFTING SYSYEM

For the hydraulic system diagram see figure K.

The **mobile column lift** is a movable electrically driven hydraulic column lift used for lifting heavy vehicles. At least two lifting columns are required for lifting a vehicle. The number of lifting columns required depends on the weight of the vehicle and the number of axles.

The main components of the mobile column lift are shown below:

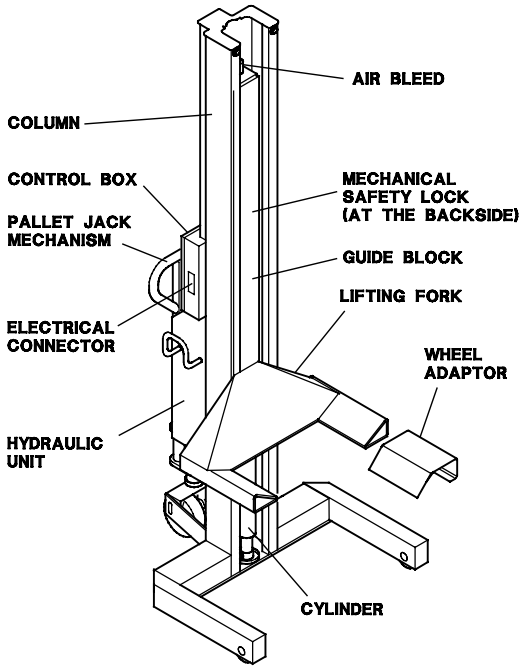


Fig. 3.1

Usually, a set of four lifting columns are used consisting of one primary column and three secondary columns.

ST 1055

Each lifting column has a lifting capacity of 10,000 lbs. Consequently, four columns have a total lifting capacity of 40,000 lbs. The total lifting capacity can be increased by adding lifting columns.

ST 1060

Each lifting column has a lifting capacity of 12,000 lbs. Consequently, four columns have a total lifting capacity of 48,000 lbs. The total lifting capacity can be increased by adding lifting columns.

ST 1072

Each lifting column has a lifting capacity of 16,000 lbs. Consequently, four columns have a total lifting capacity of 64,000 lbs. The total lifting capacity can be increased by adding lifting columns.

The power supply is connected to the primary column. The primary column and secondary columns are interconnected so as to form a ring circuit. All power supplies and the control signals are through the connecting cables.

The primary column can be set to function as a secondary column when more than one primary column is used.

The control system on the lifting columns ensures that the columns are raised or lowered synchronically.
Each lifting column is equipped with a position sensor which transmits the height positions to the control system.
The control system controls and protects the lifting system during lifting or lowering as follows:
- At a difference in height between the lifting columns of over 5/8" mm and less than 1 1/4"mm, an extra adjustment valve in the hydraulic system opens and remains open until the difference has been cancelled out.

- At a difference in height of over 1 1/4" and less than 2 3/8", lowering is interrupted. A lifting fork may be blocked; the cause of the failure must then be traced first. Lifting is still possible, the adjustment valve in the hydraulic system will open and remain open until the difference has been cancelled out.
- At a difference in height of over 2 3/8" mm, the control voltage is switched off, thus blocking all movements. The cause of the failure can then be traced.

In addition, the control system has been designed so that:

- Each lifting column can be operated separately
- Any pair of axles can be handled separately

Also see section 6, Operation

3.1 STRUCTURE OF THE COLUMN LIFT

Each lifting column consists of (see figure 3.1):

- a column and a lifting cylinder
- a hydraulic unit
- a control box
- a pallet jack lifting mechanism
- a mechanical safety lock

• **Hydraulic unit**
The hydraulic system consists of an electrically driven pump, flow control valves, control valves and a liquid reservoir.

• **Column and lifting cylinder**
The column and lifting cylinder form the major part of the mobile column lift. In the U-section of the column are a guide block and rollers. The rollers enable the guide block to move along the full length of the column. The hydraulic lifting cylinder provides the lifting capacity.

• **Control box**
The control box has all the functions controlling the use of the lifting column. The control box of the primary column is provided with a three-position switch allowing the lifting column to be used as a secondary column if necessary.
The control box components and functions have been specified in sections 5 and 6.

• **Pallet jack mechanism**
The two-wheel pallet jack mechanism serves to move the lifting column. The two wheels protect the lifting column from being turned over at the back when it is moved. The pallet jack mechanism lifts the back of the column off the ground so that the column can be easily moved.

The pallet jack mechanism is operated by means of the handle bar and the handle inside the bar.
The handle can be set in three positions:
1. When the handle is set in the upper position, the pallet jack mechanism is lowered.
2. The middle setting is the neutral position; the column can be moved without the system being lifted or lowered.
3. When the handle is in the lower position, the pallet jack mechanism can be raised by moving the handle up and down.

• **Mechanical safety lock**
If the hydraulic pressure fails while a vehicle is on the lifting system or is lifted or lowered, a mechanical safety lock ensures that it cannot drop.

The characteristic clicking of the safety lock indicates that it has been activated.
During lowering the pawl is retracted by a solenoid.

4. INSTALLATION

Remark: Only move the lifting column with the correct type of lifting equipment.
Only raise the lifting column at the correct points. Damage to lifting column and/or injury to persons may occur if the lifting column is not moved in the correct manner.

4.1 UNPACKING AND HANDLING THE LIFTING COLUMN

1. Transport the lifting column to the place of use.
2. Remove the cover from the crate or, when using a stand, remove the straps.

Remark: Do not stand under the lifting column when it is suspended from the lifting equipment. If it falls it will cause serious injury.

3. Fasten a sling with a hoisting capacity of at least 480 kg (1065 lbs) around the lifting column and lift the column from the crate (see fig. 4.1).

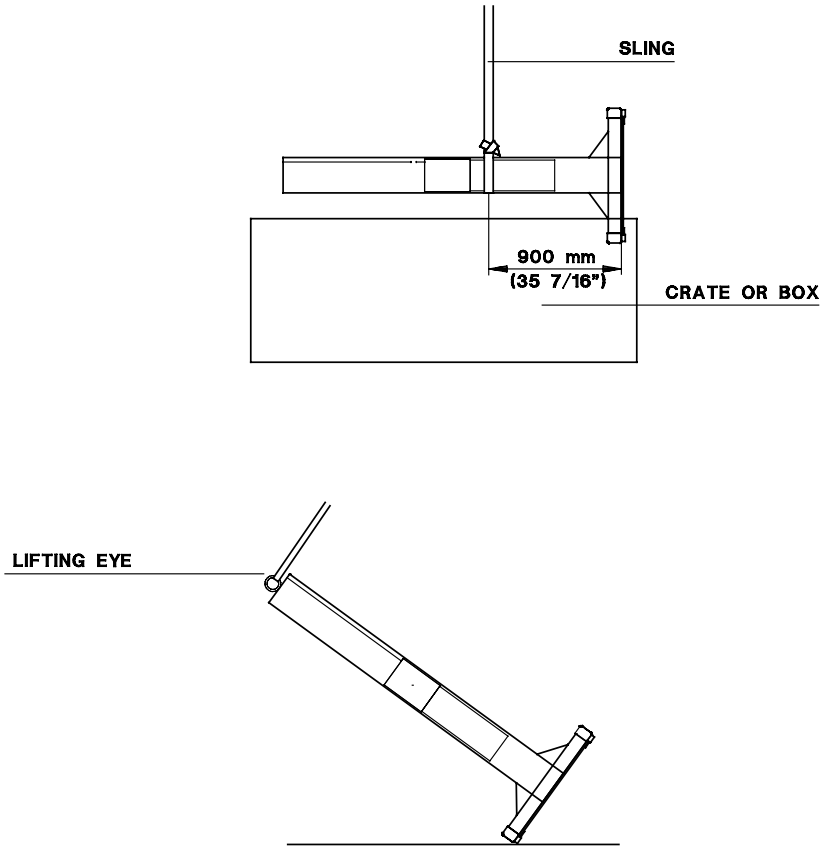


Fig 4.1

4. Carefully lower the lifting column to the floor.
5. Attach a hook to the lifting lug at the top of the column.
6. Lift the column to the upright position.
7. Remove the hook from the lifting lug.
8. Remove the cover from the hydraulic unit
   Remove the plug from the fill opening and install the breather cap. Install the cover on the hydraulic unit.
9. Check for oil leakage.
10. Repeat the procedure for each column.

5. GENERAL USE

5.1 CONTROL

All functions of the lifting system are controlled from the controlpanel on the column.
There are two types of controlpanels:
- Primary column controlpanel.
- Secondary column controlpanel.

These two control boxes are pracically identical. Only the control box of a secondary column is not provided with a main switch and a mains feed cable.

The functions of the switches on the primary control panel are described below (see Fig. 5.1).
1. Emergency release knob; Pressing this all movements (lifting or lowering) are immediately stopped.
2. Main switch; Controls the power to the lifting columns. The switch has three positions:
   0 (OFF); removes electrical power from the lifting column(s)
   1 (ON); switches on power to the lifting column(s);
   2 (SECONDARY COLUMN); allows the primary column to be used as a secondary column, if the mobile column lift has more than one primary column.
3. ⇧ (UP) button; Controls the lifting of the columns.
4. ⇩ (DOWN) button; Controls the lowering of the columns.
5. "SET AXLE" button. This button serves to select the axle functions. These functions are descibed in paragraph 5.3.6.
6. Unlock button. This button controls, in combination with the lowering button, the lowering of the columns.
7. "SET REF" button. This button has several functions. These are descibed in paragraph 5.3.5.
8. Mains voltage indication light. This will go on when the internal control voltage relay is switched on.

Remark: The main switch is not fitted to the secondary column control box.

1. Emergency release knob
2. Main switch
3. Lifting ⇧
4. Lowering ⇩
5. "SET AXLE"-button
6. Unlock button
7. "SET REF"-button/control voltage indication.
8. Control power indicator light.

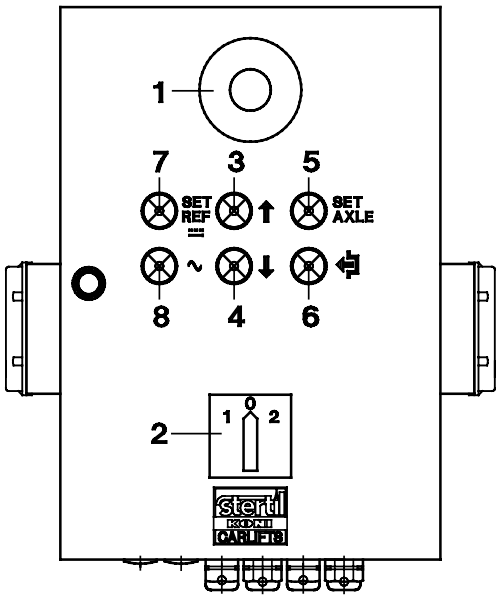


Fig. 5.1, Control box

5.2 CONNECTING LIFTING COLUMNS

A fully closed ring circuit consists of a minimum of two and a maximum of 32 lifting columns (single phase a min. of 2 and a max. of 4 lifting columns).

A column circuit requires at least 1 (one) primary column. The position of a primary column in a circuit is irrelevant, but preferably should be located near the power supply. If in a column circuit there is one primary column, this circuit is called a "set".

A set can consist of 2, 3, 4, 5 or 6 etc. up to 32 lifting columns (single phase 2, 3 or max. 4 lifting columns).

A set has a maximum lifting capacity of 40,000/48,000/64,000 lbs (this is the maximum lifting capacity of a standard set of 4 lifting columns of 10,000/12,000/16,000 lbs each). For higher lifting capacities, "sets" are to be combined in a column circuit as specified in the table below (also see fig. 5.2).

3 Phase				
Lifting capacity in lbs			Minimum number of primary columns	Maximum number of secondary columns
up to 40,000	up to 48,000	up to 64,000	1	5
40,000 to 80,000	48,000 to 96,000	64,000 to 128,000	2 (2 sets required)	10
80,000 to 120,000	96,000 to 144,000	128,000 to 192,000	3 (3 sets required)	15
120,000 to 160,000	144,000 to 192,000	192,000 to 256,000	4 (4 sets required)	20
etc.	etc.	etc.	etc.	etc.

1 Phase				
Lifting capacity in lbs			Minimum number of primary columns	Maximum number of secondary columns
ST 1055	**ST 1060**	**ST 1072**		
up to 40,000 lbs	up to 48,000 lbs	up to 64,000 lbs	2	2

Primary columns are arranged in a circuit so that the weight of the load of the "set" (primary column followed by the secondary columns up to the next primary column) does not exceed 40,000/48,000/64,000 lbs. To increase the flexibility of a system, it is possible to select a primary column as a secondary column.

To ensure safety, each primary column is provided with a thermal relay preventing a set from being overloaded and protecting the lifting system against power overloads.

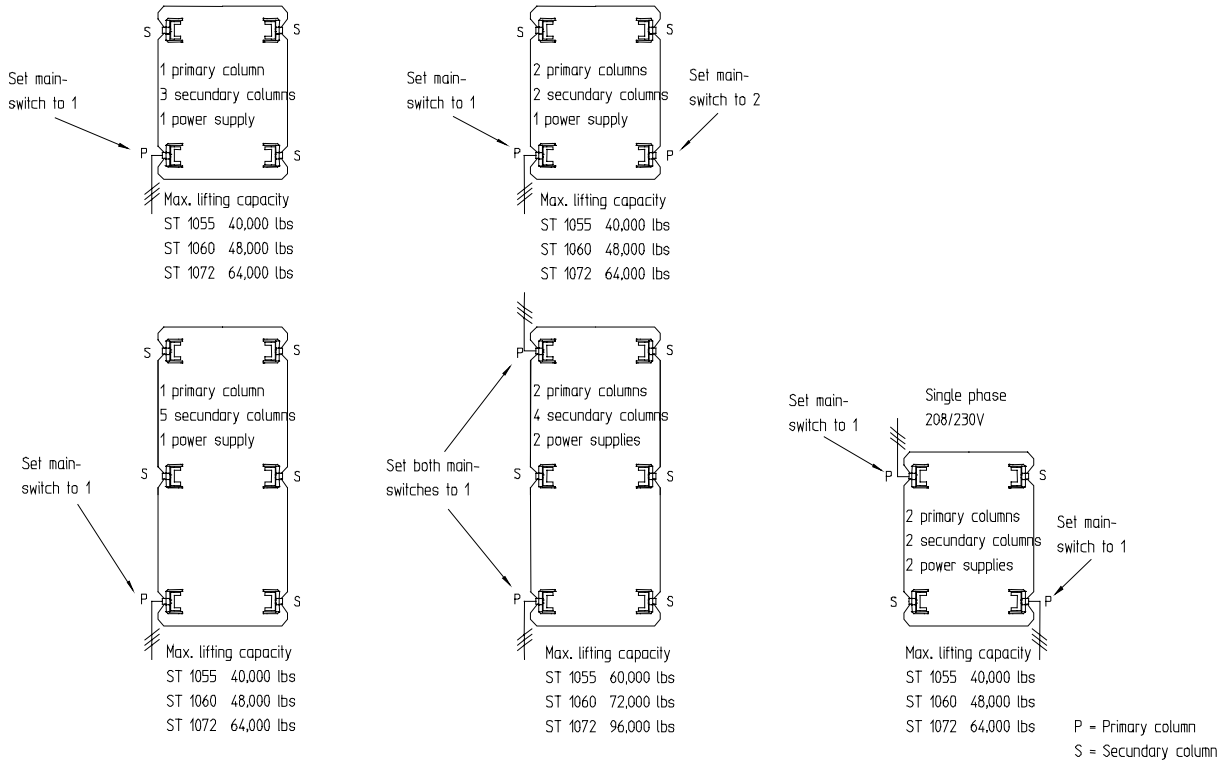


Fig. 5.2, Connecting lifting columns

5.3 DESCRIPTION OF THE MOBILE COLUMN LIFT SYSTEM

The mobile column lifts are designed in such a way as to offer maximum flexibility and convenience.
A lifting system can consist of a minimum of 2 and a maximum of 32 lifting columns.
The control system is equipped with the following features:
- simultaneous operation of all lifting columns
- operation of one pair of lifting columns (per vehicle axle): the so-called paired operation
- operation of one lifting column

Each lifting column is provided with these control functions without selector switches having to be set.

The control system of the mobile column lift is set-up as follows:

1. Connect the lifting columns in a full circuit as indicated in 5.2, Connecting Lifting Columns.
   - The column sequence in this circuit can be selected at random; primary columns or secondary columns can be positioned at any place, provided the maximum lifting capacity of 40,000/64,000 is not exceeded as described in 5.2.
   - A system must have at least one primary column (single phase must have at least 2 primary columns).
   - The maximum number of lifting columns in a system is 32 (single phase a max. of 4 columns).

2. With respect to all primary columns:
   - Eensure that the main switch is in the O (OFF) position, then connect the feed cable to the right mains connection.
   - Set the main switch to 1 (ON).
     If the circuit consists of more than one primary column, ensure that all other main switches have been set to 1(ON) or 2 (SECONDARY COLUMN).
   - If the switch of another primary column has been set to 1, this column also has to be connected to the mains.
   - When the column has been set to 2, it will function as a secondary column and does not need to be connected to the mains.

3. Take care that the emergency stop button of each lifting column has been released.

4. Press the "SET REF" button.
   The light in button 8 (feed) will come on indicating that:
   - the system control has been checked for its proper functioning
   - the sequence of all lifting columns has been stored in the system memory
   - the primary column in the system has been connected to the mains.

5. Press the "SET REF" button again.
   The light in this button will come on indicating that:
   - the height position of each lifting column has been stored in the system.
   - the lifting columns can now be activated.
   All functions are possible now except paired operation.

6. Setting paired operation (only possible with an even number of lifting columns):
   - Select the primary columns at one axle to set this function (e.g. the front wheel axle).
   - Press the "SET AXLE" button on one of the lifting columns belonging to the selected axle for approx. 3 seconds.
   - The "SET AXLE" button will flash indicating that the setting procedure has been selected.
   - Within 30 seconds press the "SET AXLE" button of the control panel of the lifting column on the other side of the axle and also keep it pressed for 3 seconds.

   The "SET AXLE" buttons of all lifting columns will go on indicating that paired operation has been set.

   When setting paired operation, the other pairs of axles in the control system are automatically selected as pairs. This only works satisfactorily if all lifting columns have been connected in a closed circuit as described in 5.2.

All system functions are now available by pressing:
- button 3 ⇑, all columns are raised;
- button 4 ⇓, lowered and locked;
- buttons 6 and 4 ⇓, all columns are lowered;
- buttons 5 (SET AXLE) and 3 ⇑, one axle is raised (2 lifting columns);
- buttons 5 (SET AXLE) and 4 ⇓, one axle is lowered (2 lifting columns);
- buttons 7 (SET REF) and 3 ⇑, one column is raised;
- buttons 7 (SET REF) and 4 ⇓, one column is lowered.

5.4 WHEEL ADAPTERS

The mobile lifting columns can be used to lift vehicles with a wheel diameter of R12 (19 3/4") to R22.5 (45") Wheel adapters are required for use with different wheel diameters. One adapter is provided with the lifting column, the second is optional.
Two adapters are required for wheel diameters of R12 (19 3/4") to R15 (25 1/2").
One adapter is required for wheel diameters of R15 (25 1/2") to R17 (35 1/2").
No adapters are required for wheel diameters of R17 (35 1/2") to R22.5 (45").
There are special adapters for smaller wheel diameters (<19 3/4").

5.5 LENGTHENED WHEEL ADAPTERS

(optional only for ST 1055 / ST 1060, see fig. L)

Special (8" longer) wheeladaptors are available for in-set wheels (for RVs, schoolbuses etc).
These **longer adaptors can only be used together with wheelarm extensions** for the column.
The lifting capacity will be reduced to 8,800 lbs (see fig. 5.3a). The reduced capacity is clearly indicated on the sides of the longer wheel adaptors.
Please note that with the longer adaptors, the lifting capacity still remains 10.000 lbs for ST 1055 and 12.000 for ST 1060, check the maximum load that has to be lifted carefully.
The longer wheeladaptors are available for the same diameter range as the standard adaptors (see §5.4).
The capacity is with removed wheel adaptors is 10.000 lbs for ST 1055 and 12.000 for ST 1060; the lower wheelarm extentions do not have to be removed (see fig. 5.3.b).

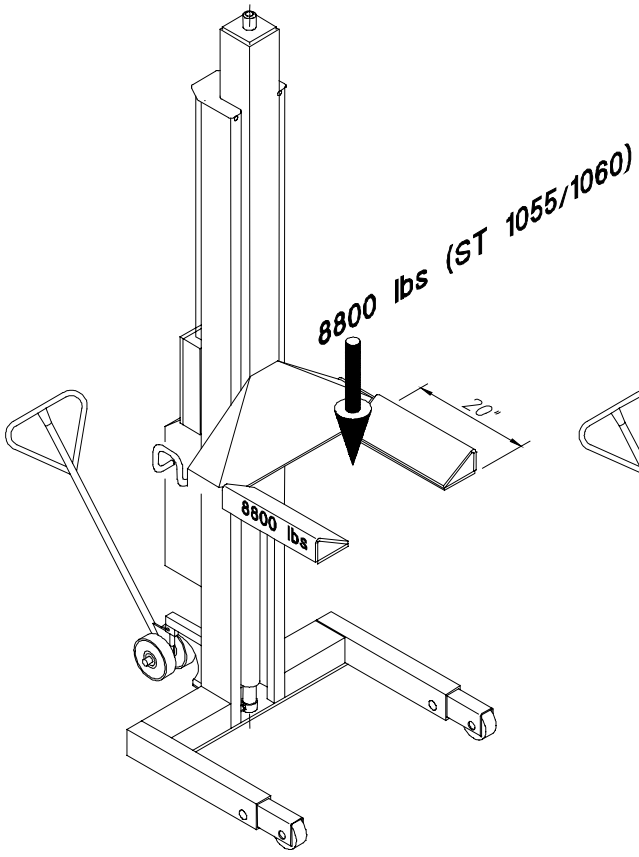


Fig. 5.3a

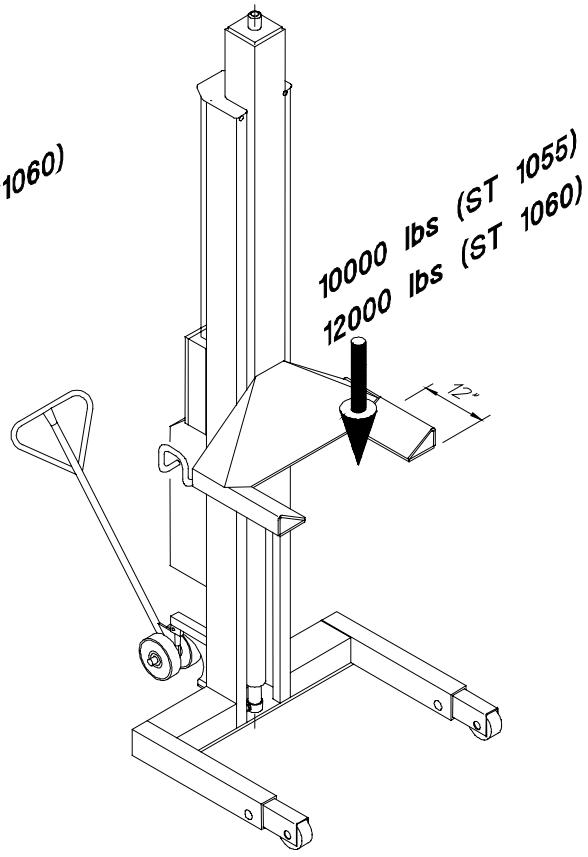


Fig. 5.3b

5.6 USING OUTDOORS

When using the lifting system outdoors you must be aware of the admissible wind speed.
The admissible wind speeds for different types of vehicle are shown in the table below.

The values in the table are average values and should only be used as a guide.

The admissible wind speed is dependent on the type as well as the weight of the vehicle.
When lifting large high-sided vehicles, the value for lighter vehicles must be used.

The operator must consider all factors when deciding if it is safe to use the lifting system
If any doubt exists, always use the lower wind speed.

Vehicle Type	Weight (empty) *metric tons* **lbs**	Max. admissible wind speed *mtr/s* on side of vehicle **miles/h** Beaufort
Light cars or lorries with long swop bodies.	*4.5 - 10* **10,000 - 22,000**	*14* **32** 6
Buses	*10 - 15* **22,000 - 33,000**	*20* **45** 8
Lorries and Heavy vehicles	*>> 10* **>> 22,000**	*24* **54** 10

6. OPERATION

Remarks:

- **When using this lifting system leave a space for a 24" wide passage around the lifting system which can serve as escape route.**

- **Before using the Mobile Lifting Columns, ensure that the maximum load for each lifting column is not more than 10,000 lbs (ST 1055), 12,000 lbs (ST 1060), 16,000 lbs (ST 1072).**

- **Ensure that before use the lifting system is placed vertically seen from the sides as well as from the front.**

- **Refer to section 5.6 for lifting system wind speed limits.**

- **Make sure that the pallet jack mechanism it is fully lowered before lifting a vehicle.**

6.1 PREPARATION

1. If necessary install the wheel adapters on the fork of the lifting columns.
2. Place the required number of lifting columns.
3. Ensure that the fork of each lifting column is slid around the wheel as far as possible.
4. Lower the pallet jack mechanism by lifting the handle inside the tow bar.
5. Make sure the main switch on the primary lifting column(s) control box is set to 0 (OFF).
6. Connect the connecting cable between the lifting columns in a closed circuit.
7. Connect the power supply cable to the correct mains supply.
8. Make sure that the Emergency Release buttons are unlocked on all the lifting columns.
9. On the primary column control box, set the main switch to position 1 (ON).
10. Push the “SET REF”-button. Make sure the control voltage and the main supply light are on.
11. Check the mechanical safety lock.

6.2 RAISING AND LOWERING ALL LIFTING COLUMNS

See section 5, paragraph 5.3: Description of the mobile column lift system.

6.3 RAISING AND LOWERING OF TWO LIFTING COLUMNS (ONE VEHICLE AXLE); PAIRED OPERATION

See section 5, paragraph 5.3: Description of the mobile column lift system.

6.4 RAISING AND LOWERING A SINGLE LIFTING COLUMN

See section 5, paragraph 5.3: Description of the mobile column lift system.

6.5 EMERGENCY RELEASE

In emergency situations it is possible to lower the lifting columns manually.
Manual lowering must only be performed by a qualified engineer.

7. INSPECTION AND MAINTENANCE

7.1 GENERAL

During inspection and maintenance the car lift should be in the lowest position and the main switch should be turned off. This means that the main switch should be turned to the 0 position and is to be secured with a padlock.

The current should be turned on again only for the adjustments and checks that require it.

Lubrication chart

The car lift must be regularly serviced as listed.
Once a year the lift must be subjected to a highly detailed check and inspection.
You can have the car lift professionally checked by STERTIL mechanics by entering into a maintenance contract.

Maintenance and inspection	Description	Monthly	yearly
Cylinder	Lubricate dry piston rod (machine oil)	X	
Check oil level in reservoir	Top up (with car lift at ground level only)		X
Several pivot points	Grease		X

HYDRAULIC OIL

It is strongly recommended that the hydraulic oil be changed at least every 2 years, irrespective of the amount of use to which the lift is subjected.

OIL CHANGING

1. Lower lift to fullest extent and drain all the oil.
2. Refill with hydraulic oil UNIL HVC S15, filtered at 4 micron max.

Model	ST 1055 ST 1060 ST 1072
Litre	7

Lubrication chart

7.2 DAILY (BY OPERATOR)

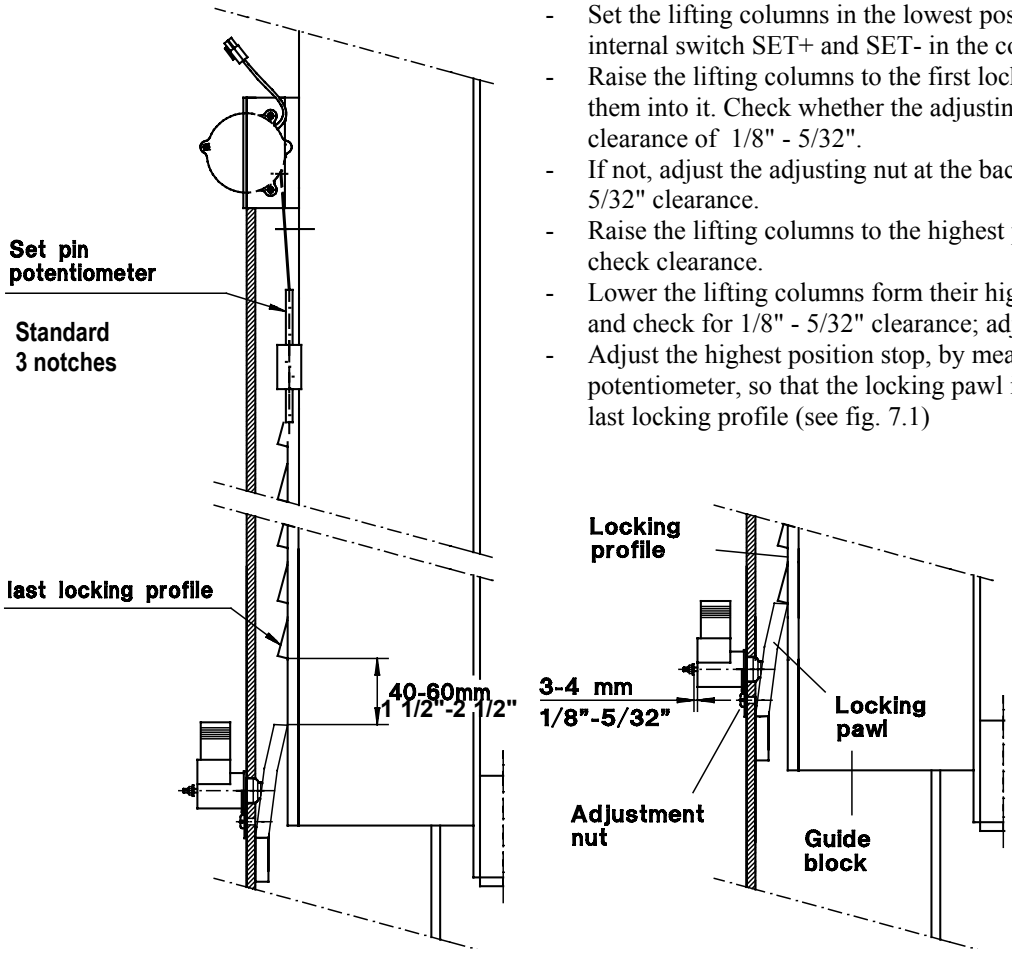
- Check for visible damage.
- Check for oil leaks in the hydraulic unit, lines and cylinder.

7.3 MONTHLY (BY OPERATOR)

Check hydraulic fluid level, and replenish as necessary.
- Remove the cover from the hydraulic unit. Ensure that the column is in its lowest position and check the oil level in the plastic tank; the level must between the two horizontal marks.
- Fill up with UNIL HVC S15, filtered on 4 microns, up to the end of the dipstick.

Check the emergency release mechanism.
- Push the emergency release button when the columns are moving. All the columns should stop immediately.
- To release the emergency stop button turn it counter-clockwise, set the main switch(es) to O and then to 1 and press the "SET REF"-button to restore control power.

Check the mechanical safety lock (see fig. 7.1).



- Set the lifting columns in the lowest position (if necessary, use the internal switch SET+ and SET- in the control cabinet).
- Raise the lifting columns to the first locking device and then lower them into it. Check whether the adjusting nut of the solenoid has a clearance of 1/8" - 5/32".
- If not, adjust the adjusting nut at the back of the solenoids to 1/8" - 5/32" clearance.
- Raise the lifting columns to the highest position and during raising check clearance.
- Lower the lifting columns form their highest position in the safety lock and check for 1/8" - 5/32" clearance; adjust, if necessary.
- Adjust the highest position stop, by means of the set pin of the potentiometer, so that the locking pawl is placed 1 ½" to 2 ½" past the last locking profile (see fig. 7.1)

Fig. 7.1, Mechanical safety lock adjustment

Examine the lifting system for fluid leaks and signs of damaged or worn parts.
Examine the electrical cables and connectors for signs of damage.
Oil the dry piston shaft.

7.4 ANNUALLY (BY SERVICE DEPARTMENT)

The lifting system must be inspected once a year by the service department of Stertil B.V. or by an agency approved by Stertil B.V. A maintenance contract can be arranged for this annual inspection with the Stertil B.V. Service Department. If no maintenance contract is entered into, the user himself should make an appointment each year for this inspection and servicing.
This inspection is recorded on the inspection checklist (see page 43 or the ANSI/ALI ALOIM) and should include the following checks.

- Daily and Monthly checks.
- Check the gas spring for its proper functioning.
  - With the pallet mechanisms in the highest position, lift a vehicle of 8,800 lbs, or more, approximately 4".
  - Then check whether the back of each column rests on the floor.
- Check the general operation of the lifting columns.
- Take the locking device apart, clean its components, place it back and reset it.
- Check the hydraulic oil level.
  - Every two years the hydraulic oil must be changed, even if the lifting system has not been used regularly.
- Set the lifting column at its lowest position. Remove the drain plug, from the bottom of the tank, and drain the oil. Install the drain plug.
- Fill the system (capacity 7 litres) with UNIL HVC S15 filtered at 4 microns max.

7.5 MAINTENANCE SWITCHES

Maintenance switches are located inside the control box to assist the technician when servicing the lifting system (see fig. 8.1). These switches can be used to check the correct functioning of the lowering valve, unlock solenoid and the hydraulic unit. As long as the control system is still functional, the switches can also be used to check the safety margins for control.

Switch	Description	Function
DOWN	Lower and unlock.	Operates the lowering valve and the unlock solenoid on the lifting column at which the switch is operated.
UP	Lifting.	Operates the electric motor on the lifting column at which the switch is operated (lifting column raises).
SET+	Lifting without safety limits	These switches lift and lower aal the lifting columns in the loop. The safety margins of 1 1/4" and 2 1/2" mm are by-passed. The system will control the heights of the guide bolcks so that they become level.
SET -	Lowering without safety limits.	

7.6 REMOVAL/INSTALLATION OF THE LIFTING CYLINDER

To remove the cylinder:

- At the top of the lifting column, remove the plastic cap and the nut and washer.
- Lift the guide block to the maximum height and then lower it to the first catch position.
- Push the SET REF and ⇓ (DOWN) buttons to lower the cylinder. It will take approximately 2 minutes for the cylinder to lower completely.
- At the bottom of the cylinder, release the hydraulic connection.
- Lift the cylinder approximately 3/4" mm to release the bottom of the cylinder from the notch. Pull the cylinder forward and away from the guide block.
- Remove the elastic ring from the cylinder head.

To install the cylinder:

- Place the elastic ring on the cylinder head
- Position the cylinder inside the guide block and engage the notch in the hole in the bottom plate of the cylinder.
- At the bottom of the cylinder, connect the hydraulic connection.
- Push the SET REF and the ⇑ (UP) buttons to lift the cylinder.
- Release the buttons when the cylinder starts to lift the guide block (the cylinder head must be positioned through the hole in the head plate).
- Press SET REF and the ⇓ (DOWN) buttons to lower the guide.
- Mount the nut and the washer.
- Push the SET REF and the ⇑ (UP) buttons and open the air bleed until a continuous flow of oil appears. Close the air bleed and install the cap.

7.7 ADJUSTING THE PALLET JACK MECHANISM (ONLY ST 1072)

When moving the handle bar up and down, with the handle in position 3 (see fig. 7.2), the cylinder should at the correct setting be raised approx. 5/16" per stroke. Set the handle to position 2 and move the handle bar up and down; at a correct setting the cylinder will not be raised now.
When the cylinder is raised, nut 1 must be loosened and the adjusting nut be turned clockwise. When the cylinder comes down, the adjusting screw must be turned anti-clockwise until the cylinder does not come down any further.
Bring the cylinder in its highest position and set the handle to position 1; now the cylinder should come down. When it comes down slowly or not at all, the adjusting screw must be slightly tightened.

Repeat the aforementioned steps until all movements are normal. When the settings are right, nut 1 can be tightened.

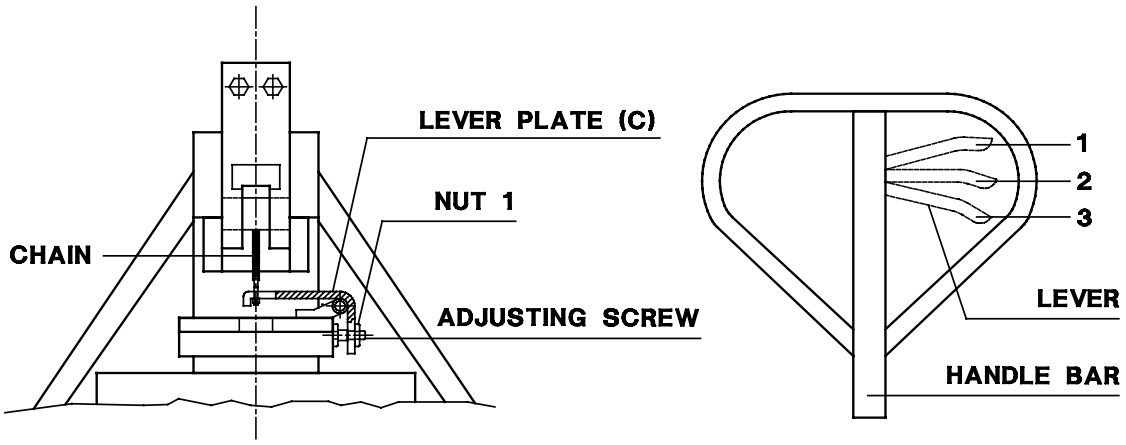


Fig. 7.2, Adjusting the pallet jack mechanism

8. SERVICE

8.1 GENERAL

Attention: ***All repairs carried out on the lifting system by non-service department personnel, the consequences of such repairs are entirely at the user's risk.***

The term 'service department' is the Stertil service department or a service department recognized by Stertil.

Two tables are provided to assist the service technician in locating faults in the lifting system .
The first table shows the faults indicated by the LEDs on the printed circuit (see fig. 8.1) and the second table shows possible mechanical faults.
When a fault occurs, the "SET REF" light on the control panel will go out. On the box where the fault has occurred the "SET REF" light will start flashing. When serious failures occur, e.g. height differences of over 60 mm between columns and an emergency stop, both the "SET REF" light and the mains power light will go out. In the box subject to failure faults are indicated by means of 4 LEDs (see sticker (fig. 8.1) in the control box and table on page 23).

Remarks:

- **Danger of getting injured by voltage and when used inexpertly .**

- **Only remove the covers to carry out maintenance. In this case make sure that the lifting system is disconnected from the electrical power supply.**

The control system controls the phase sequence and the presence of 3 phases during start-up. In the event of a phase fault, the control buttons 3, 4 and 6 will flash alternately.

The microprocessor board is equipped with 4 LEDs for indicating failures; the order in which they are lit indicates the type of defect as described in 8.2.

To see the LEDs open the control box cover.

Refer to fig. E and H for identification of components.

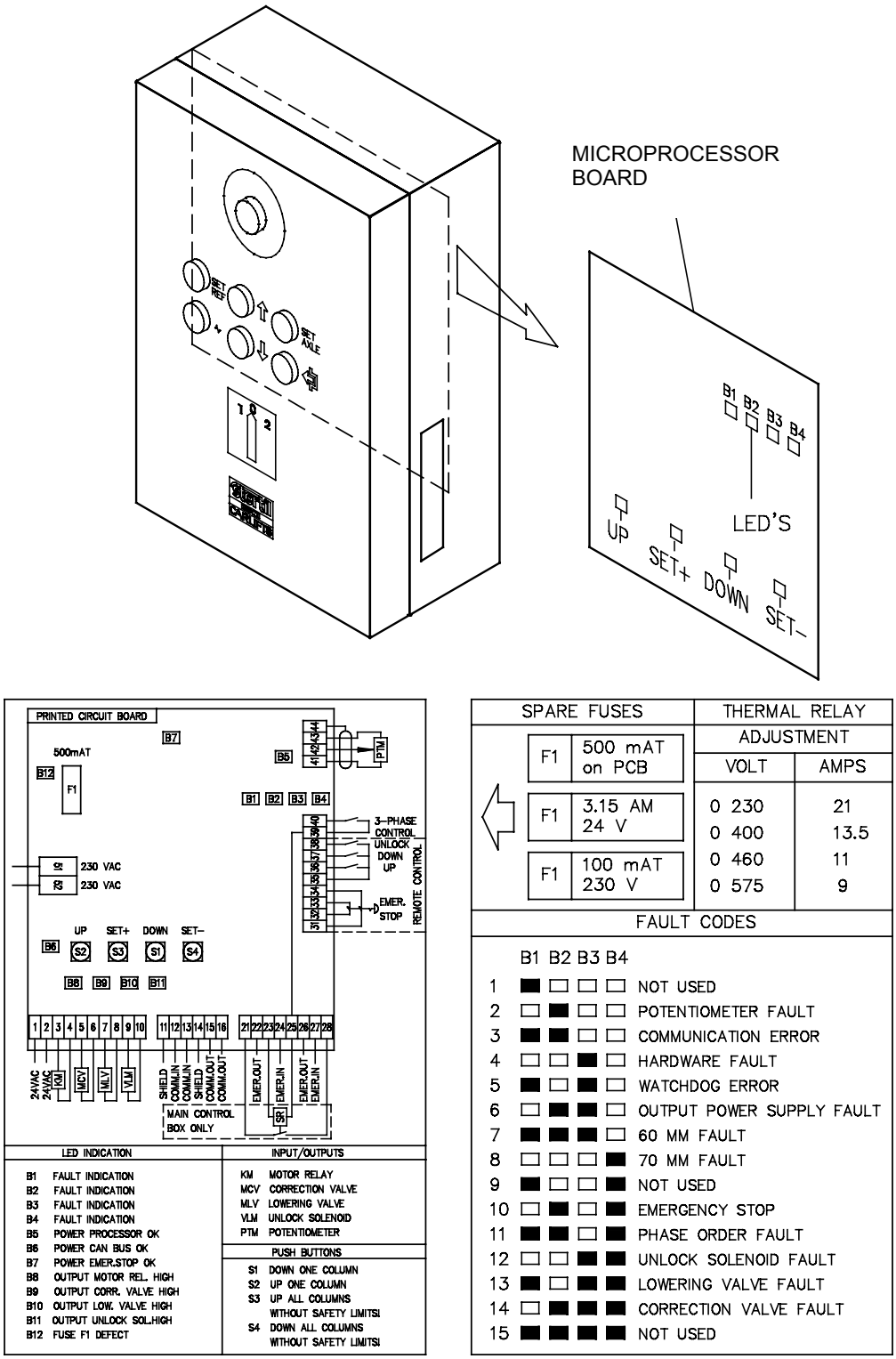


Fig. 8.1, Location of fault LED's

8.2 TROUBLE-SHOOTING

LED INDICATION	POSSIBLE FAULT	REMEDY
□ ■ □ □	Potentiometer Fault	Check the wiring to the potentiometer. Turn power OFF then ON, push twice on the "SET REF" button. If the fault occurs again, contact the Stertil B.V. Service Department.
■ ■ □ □	Communication Fault	Check the connecting cables between the boxes. Connect one auxiliary box to the main box using - preferably - new cables. Start the system according to the standard procedure. Continue extending the system by one auxiliary box until the defective cable or box has been traced. If necessary, replace the connecting cable or have the control PC replaced by the service department.
□ □ ■ □	Hardware fault in the communication circuit.	Check if all wires in the box and of the communicationcable are connected. If the fault occurs again, contact the Stertil B.V. Service Department
■ □ ■ □	A defect in the control system	Set the main switch to OFF and then again to ON and press the "SET REF" button twice. If the defect occurs again, contact the service department.
□ ■ ■ □	defect in the 24V outputs	Set the main switch to OFF. Check and if necessary replace fuse F2 (3, 15 A). Also check and if necessary reset the thermal relay. Turn the switchbox on again according to normal procedure. When this defect occurs repeatedly contact the service department.
■ ■ ■ □	Since the last zero setting of the system, height differences of over 2 1/2" have occurred during operation.	Check the hydraulic system for leaks. Check whether the load per lifting column is higher than 10,000/12,000/16,000 lbs. Set the main switch to OFF and then again to ON , press the "SET REF" button twice to make the system ready for operation again. When the defect occurs again, contact the service department.
□ □ □ ■	A difference of 2 3/4" or over has occurred during standstill.	Check whether the hydraulic system leaks. Set the main switch to OFF and then again to ON , press the "SET UP" button twice to make the system ready for operation again. When the defect occurs again, contact the service department.
□ ■ □ ■	Emergency stop	Check the emergency stop switches and release them if necessary. Set the main switch to OFF and ON. Press the "SET REF" button twice to get the system ready for operation again.,
■ ■ □ ■	Phase Check Fault	Switch power OFF. Check the fuses in main power supply. Switch the power ON again. If the fault occurs again (when the system is used for the first time or when using a new wall supply socket) switch two phase wires in the power plug and start the system again.
□ □ ■ ■	Fault in the unlocking solenoid circuit	Set the main switch to OFF. Check the wiring and coil for short-circuits and breaks and repair where necessary. Set the main switch to ON. Press the "SET REF" button twice to get the system ready for operation again. If necessary contact the service department.
■ □ ■ ■	Fault in lowering valve circuit	
□ ■ ■ ■	Fault in adjusting valve circuit	

FAULT	POSSIBLE CASE	REMEDY
Column does not lift.	No mains power.	Have fault corrected by a qualified electrician.
	Oil level too low.	Add oil as necessary, refer to lubricating instructions on lifting column.
	Air in hydraulic pump (only possible after the tank has been empty).	Press the ⇑ (UP) and SET REF buttons until the lifting column rises (max. 1 minute).
	Safety valve not properly adjusted	Have valve adjusted, contact Service Department to check valve.
	Pump has insufficient yield.	Replace the pump.
	Power interrupted by thermal relay in primary control box.	Reset the thermal relay. If the defect occurs again, contact the service department.
	Maximum height difference (more than 2 1/2") exceeded.	Set the main switch to OFF and ON. Press the "SET REF" button twice to make the system ready for operation again. If the defect occurs again, contact the service department.
Column does not lower.	No mains power.	Have fault corrected by a qualified electrician.
	Catch not disengaged from locking system.	Raise column approximately 2" and then lower.
	The electrically operated lowering valve on the hydraulic unit does not open.	No mains power for solenoid or lowering valve is faulty. fault Have corrected by the Service Department.
	Dirty lowering valve.	Have valve cleaned or replaced by service department.
	Maximum height difference (more than 1 1/4") exceeded.	Press on lifting until the height difference has been cancelled out. If lifting is not desired, the "SET REF" button can be pressed once. Following, lowering can be activated. The difference of 1 1/4" will be maintained. If the defect occurs again, contact the service department.
	Maximum height difference (more than 2 1/2") exceeded.	Set the main switch to OFF and ON. Press the "SET REF" button twice to make the system ready for operation again. If the defect occurs again, contact the service department.
	(From highest position) Setting to the highest position practically coincides with the engagement of the catch.	Slightly raise the ramp by touching S2. Then set highest position stop (see fig. 7.1)

FAULT	POSSIBLE CASE	REMEDY
Column lowers by itself.	The cylinder seal is damaged, oil leaks continually.	Have seals or cylinder replaced by service department.
	Leaks in the oil line couplings.	Tighten couplings and coupling nuts.
	Dirty or damaged non-return valve.	Clean the filter and the ball behind the filter.
	Dirty or damaged lowering or correction valve.	Clean or replace valve.
Column does not lift properly.	Oil level in tank too low.	Add oil as necessary, refer to lubricating instructions on lifting column.
	Pump drawing-in air.	Tighten the suction filter fastening or crimp tighter.
	The steel plug has not been replaced by the breather cap	Install the breather cap
	Breather cap blocked.	Clean breather cap.
Columns lift at different heights.	Control system not working correctly.	Use internal switches S3 and S4. S3 lifts the column and S4 lowers the column. Operate the switches until the columns are synchronised. If the fault occurs again, contact the Service Department.
No control power (control power indicator is OFF, mains power indicator is ON).	Lifting system may not be set up correctly.	Follow the procedures in sections 6.1 and 6.2 of this manual. If the fault occurs again, contact the Service Department.
	LED defective.	Contact the service department.
	Blown fuse.	Check the fuses F1, F2 and F3. If necessary, replace the fuse(s) in the control box. If fault occurs again, contact the Service Department.
	Main switch OFF.	Set main switch ON.
	Broken cable or loose connector.	Check cable and and connector.
	The emergency stop button has not been unblocked.	Release the button. Set the main switch to OFF and ON. Press the "SET REF" button twice to make the system ready for operation again.
	The thermal relay in the main switch box has been disconnected.	Reset the thermal relay. If the defect occurs again, contact the Service Department.

FAULT	POSSIBLE CASE	REMEDY
No mains power (control power indicator and mains power indicator are off)	No mains supply.	Have fault corrected by qualified electrician.
	Mains fuse blown.	Replace fuse.
	Mains switch OFF.	Set mains switch ON.
	LEDs faulty.	Contact the service department.
Push button indicator (LED) flashes when the ⇑ (UP) button is pressed.	The column has reached the maximum height.	The column will function normally if the ⇓ (DOWN) button is pressed.

8.3 IDENTIFICATION

The lifting system has an identification label, a typical label is shown below.
The label is located on the left side of the lifting column, above the control box.

9. LIST OF PARTS AND APPENDICES

9.1 PARTS LIST

The titles of the columns on the parts list mean the following:

Index	The numbers in this column refer to the numbers in the parts drawing.
Reference	The numbers in this column are STERTIL-KONI order numbers. Please give these numbers when ordering.
Description	This column gives the names of the parts.

9.2 ORDERING SPARE PARTS

Replacement parts can be ordered from Stertil, for addresses see §1.1.
The following information should be given when ordering spare parts:

Type of lifting system	: ST 1055 - ST 1060 - ST1072
Serial number	: see preceding or type plate on lifting column.
Reference nr.	: see fig. A t/m L.

FIG. A - MOBILE LIFTING COLUMN

IN-DEX	REFERENCE		DESCRIPTION	IN-DEX	REFERENCE		DESCRIPTION
	ST 1055/ 1060	**ST 1072**			**ST 1055/1060**	**ST 1072**	
1	325-00-101	325-00-101	Cable channel	29	65-055-015	65-055-015	Washer M6DIN125A
2	305-01-003	305-01-003	Packing ring	30	65-055-013	65-055-013	Washer M4 DIN 125A
3	341-00-103	325-00-103	Cover	31	65-034-222	65-034-222	Screw M4x16
4	1020-50-00-30	325-00-104	Roller	32	1038-34-02-40	1038-34-02-40	Retaining washer A24 DIN 679
5	340-00-105	325-00-105	Angle support	34	65-055-021	65-055-021	Washer M12 DIN125A
6	340-00-106	325-00-116	Wheel	35	65-015-001	65-015-001	Bolt M12x30 DIN 6914
7	340-01-050	325-51-200	Column (Standard)	36	1036-46-03-45	1036-46-03-45	Set screw M5x12
		325-79-050	Column (ST 1072-V)	37	65-025-055	65-025-055	Stud Bolt M6x30
8	340-01-150	325-51-150	Top plate	38	325-50-111	325-50-111	Bolt M6x12 DIN 933
9	325-00-109	325-00-109	Shaft	39	65-055-014	65-055-014	Washer M5 DIN 125 A
10	340-02-050	325-52-050	Guide block (Standard)	40	1036-25-05-12	1036-25-05-12	Screw crosshead M5x12 DIN 7985
		325-79-100	Guide block (ST 1072 V)	41	325-00-107	325-00-107	Support
11	325-03-050	325-03-050	Wheel adaptor 16”	42	65-003-291	65-003-291	Bolt M6x30 DIN 933
	325-03-900	325-03-900	Wheel adaptor 65mm wider (option)	43	325-00-108	325-00-108	Cable Support
				44	65-003-488	65-003-488	Bolt M14x30 DIN 933
12	325-56-075	325-56-075	Oil pipe	45	65-055-023	65-055-023	Washer M14 DIN 125A
13	See fig. D	See fig. D	Hydraulic cylinder	46	66-201-056	66-201-056	Spacer 6.3-15-15
14	See fig. E+F	See fig. E+F	Control box (Prim.)	47	65-051-028	65-051-028	Locknut M6
14	See fig. G+H	See fig. G+H	Control box (Sec.)	48	65-003-403	65-003-403	Bolt M10x20 DIN 933
**15	See fig. I	See fig. I	Connection cable	49	65-058-028	65-058-028	Washer M10 DIN 127B
16	325-56-150	325-56-150	Hydraulic hose	51	68-700-018	68-700-018	Straight adaptor GE 10-PS
17	300-01-006	300-01-006	Slide plate	52	340-00-150		Support lever
18	300-07-400	300-07-400	Potentiometer unit	53	66-201-039	66-201-039	Nut cap M20 0342044 Skiffy
19	See fig. C	See fig. C	Hydraul. unit	54	69-090-050	69-090-050	Grommet No. 2790 type 2
*20	340-00-260		Lever	56	65-870-011	65-870-011	Locking ring special M6
20		See fig. B	Pallet jack mechanism	57	65-050-124	65-050-124	Nut M4 DIN 934
21	325-50-110	325-50-110	Pawl	58	65-050-134		Nut M10 DIN 934
22	325-50-115	325-50-115	Nut special	*59	66-001-010		Wheel Ø175x60
23	300-01-004	300-01-004	Clamp	*60	65-055-432		Washer M16 DIN 9021
24	66-201-085	66-201-085	Buffer	*61	65-251-040		Lock nut M16 DIN985
25	69-451-400	69-451-400	Solenoid	62	65-003-405		Bolt M10x25 DIN933
26	65-055-028	65-055-028	Washer M20 DIN 125A				
27	65-050-144	65-050-144	Nut M20 DIN934				
28	1035-38-04-11	1035-38-04-11	Bolt M6x10 DIN933	*	340-00-250		Lever (Assy)

** Item not shown on figure.

FIG. A

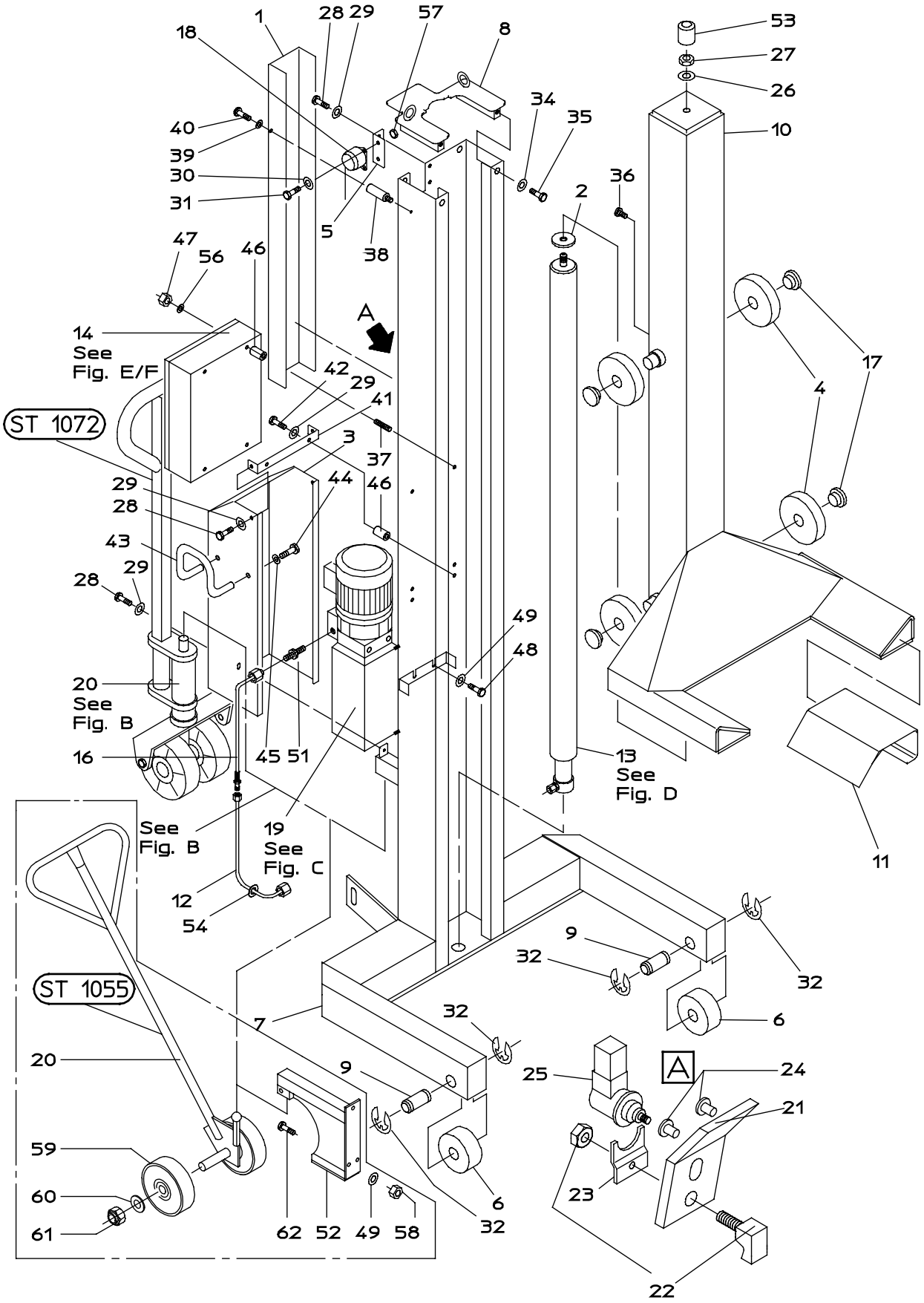

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Fig. E/F
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Fig. B
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FIG. B - PALLET JACK MECHANISM (OPTION)

INDEX	REFERENCE	DESCRIPTION	INDEX	REFERENCE	DESCRIPTION
	ST 1055 ST 1060 ST 1072			**ST 1055 ST 1060 ST 1072**	
	325-56-200	Jack assembly	42	328-00-112	Shaft
●	325-56-201	Pump plunger (ITTD 101)	●* 43		O-ring (ITTD 143)
●	325-56-202	Washer (ITTD 102)	●* 44		Y-ring (ITTD 144)
●	325-56-203	Spring (ITTD 103)	● 45	325-56-245	Shaft (ITTD 145)
●* 4		Dust ring (ITTD 104)	46	325-50-101	Cap
●* 5		Y-ring (ITTD 105)	● 47	325-56-247	Piston rod (ITTD 147)
● 6	325-56-256	Screw (ITTD 106)	●* 48		Dust ring (ITTD 148)
● *		O-ring (ITTD 107)	●* 49		Oil plug (ITTD 149)
● 7	325-56-208	Spring (ITTD 108)	● 50	325-56-250	Shaft (ITTD 150)
●	325-56-209	Valve spindle (ITTD 109)	● 51	325-56-251	Handle holder (ITTD 151)
●	325-56-210	Valve seat (ITTD 110)	● 52	325-56-252	Roller (ITTD 152)
●* 11		O-ring (ITTD 111)	● 53	325-56-253	Shaft (ITTD 153)
● 12	325-56-212	Steel ball (ITTD 112)	● 54	65-077-048	Roll pin 2,5x26 DIN 1481
● 13	325-56-213	Base (ITTD 113)	● 55	65-077-119	Roll pin 4,5x28 DIN1481
● 14	325-56-214	Retaining ring for axle (ITTD 114)	56	325-56-256	Short shaft (ITTD 207)
15	65-077-190	Roll pin 8x40 DIN 1481	57	325-50-102	Shaft
○	325-56-216	Wheel (ITTD 116)	58	60-203-002	Gasspring
17	325-56-217	Wheel shaft (ITTD 117)	59	60-203-003	Pin locking
18	325-56-218	Supporting base (ITTD 118)	60	1401-10-15-00	Steel ball
20	1038-40-04-50	Retaining ring DIN 471	61	325-56-261	Spring (ITT 601)
21	325-56-221	Bearing cover (ITTD 121)	62	325-56-262	Blade spring (ITT 602)
22	325-56-222	Bearing (ITTD 122)	63	325-56-263	Roller (ITT 603)
23	65-077-144	Roll pin 5x50 DIN 1481)	64	65-077-101	Roll pin 4x30 DIN 1481
24	325-56-224	Dust cover (ITTD 124)	65	65-077-096	Roll pin 4x20 DIN 1481
25	325-56-225	Round nut (ITTD 125)	66	65-077-161	Roll pin 6x30 DIN 1481
26	325-56-226	Lockplate (ITTD 126)	67	65-077-094	Roll pin 4x16 DIN 1481
○	325-56-227	Bearing (ITTD 127)	68	325-56-268	Lever (ITT 608)
○	325-56-228	Bearing (ITTD 128)	69	325-56-269	Pull rod (ITT 609)
● 29	325-56-229	Spring (ITTD 129)	70	325-56-270	Handle tube (ITT 610)
● 30	325-56-230	Valve pin (ITTD 130)	71	325-56-271	Screw
●* 31		O-ring (ITTD 131)	72	325-56-272	Chain (ITT 612)
● 32	325-56-232	Lever plate (ITTD 132)	73	325-56-273	Pin
● 33	325-56-233	Adjusting screw (ITTD 133)	74	325-56-274	Adjusting screw (ITT 614)
●	325-56-234	Nut (ITTD 134)	75	325-56-275	Nut
●* 35		O-ring (ITTD 135)	76	325-56-276	Spring washer
● 36	325-56-236	Valve sleeve (ITTD 136)	77	325-56-277	Flat washers
●* 37		Housing (ITTD 137)	78	1037-07-50-08	Nut
38		Retaining Ring DIN 6799	79	652-14-358	Screw
39	340-00-300	Support			
40	325-50-150	Channel	*	325-56-280	Seal kit (ITTD 113X)
41	66-201-055	Bush	●	325-56-281	Pumpunit (ITTD 113A)
			○	325-56-282	Wheel assembly

FIG. B

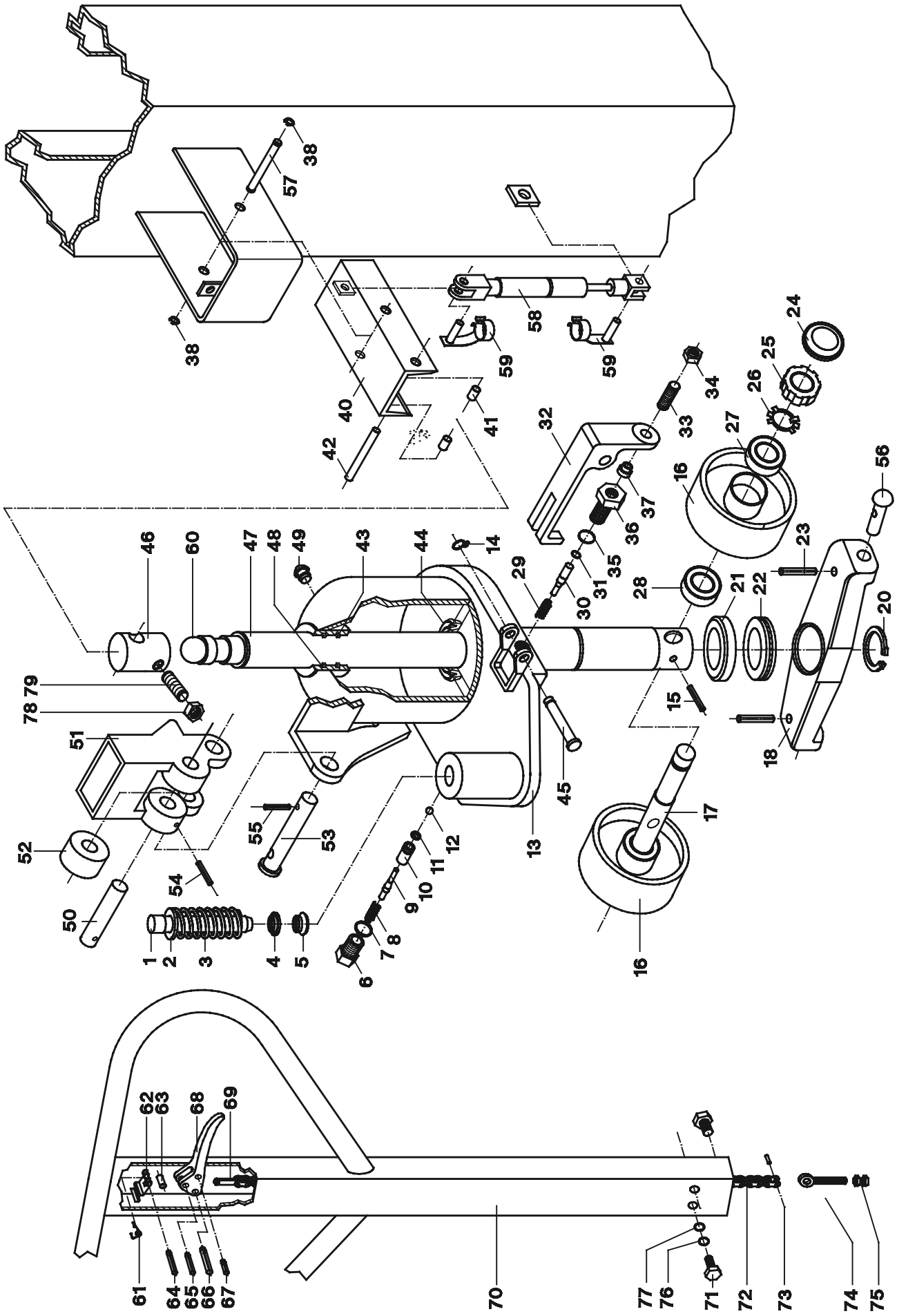
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FIG. C - HYDRAULIC UNIT 60 HZ

INDEX	PREFERENCE			DESCRIPTION
	ST 1055	**ST 1060**	**ST 1072**	
	68-036-122			Hydr. unit 1,1cc, 3x208/460V, 60 Hz, 220 bar
	68-035-122			Hydr. unit 1,1cc, 1x208/230V, 60 Hz, 220 bar
			325-56-900	Hydr. unit 1,2cc, 3x208/460V, 60 Hz, 265 bar
		68-036-127		Hydr. unit 1,1cc, 3x208/460V, 60 Hz, 265 bar
	68-037-122			Hydr. unit 1,1cc, 3x575V, 60 Hz, 220 bar
			325-56-930	Hydr. unit 1,2cc, 3x575, 60 Hz, 265 bar
			325-56-940	Hydr. unit 1,2cc, 1x208/230V, 60 Hz, 265 bar
1	68-039-003	68-039-003	68-039-003	Tank plastic 7 liter
3	68-510-911	68-510-911	68-510-911	O-ring 110.72x3.53
4	325-06-103	325-06-103	325-06-103	Suction filter D.62 dia. 3/8"
5	320-06-254	320-06-254	320-06-254	Return filter 10 micron
6	68-039-008	68-039-008		Pump 1.1 CM3/REV
6			325-16-105	Pump 1.2 CM3/REV
7a	68-308-013	68-308-013	68-308-013	2/2 Valve NC (ex. solenoid)
7b	68-308-005	68-308-005	68-308-005	2/2 Valve NC (ex. solenoid) (incl. manual lowering)
8	68-510-124	68-510-124	68-510-124	O-ring 12.42 x 1.78
9	69-481-501	69-481-501	69-481-501	Solenoid 24 VDC EC 30D
12	68-039-006	68-039-006		Pressure relief valve 220 bar
12			325-56-908	Pressure relief valve 265 bar
13	325-06-108	325-06-108	325-06-108	Half coupling pumpside
14	325-06-109	325-06-109	325-06-109	Half coupling motorside
15	325-56-901	325-56-901	325-56-901	Electric motor 2HP 3x208/460V 60Hz
	325-56-931	325-56-931	325-56-931	Electric motor 2HP 3x575V 60Hz
	325-56-941	325-56-941	325-56-941	Electric motor 1,5HP 1x208/230V 60Hz
16	322-06-261	322-06-261	325-56-904	Check valve
17	68-039-004	68-039-004	68-039-004	Breather cap
18	325-56-907	325-56-907	325-56-907	Plastic cap
19	325-56-902	325-56-902	325-56-902	Flow control valve 2 Ltr.
20	325-56-910	325-56-910		Flow control valve 4.5 Ltr.
20			325-56-903	Flow control valve 6 Ltr.
21	68-039-005	68-039-005	68-039-005	Transport plug

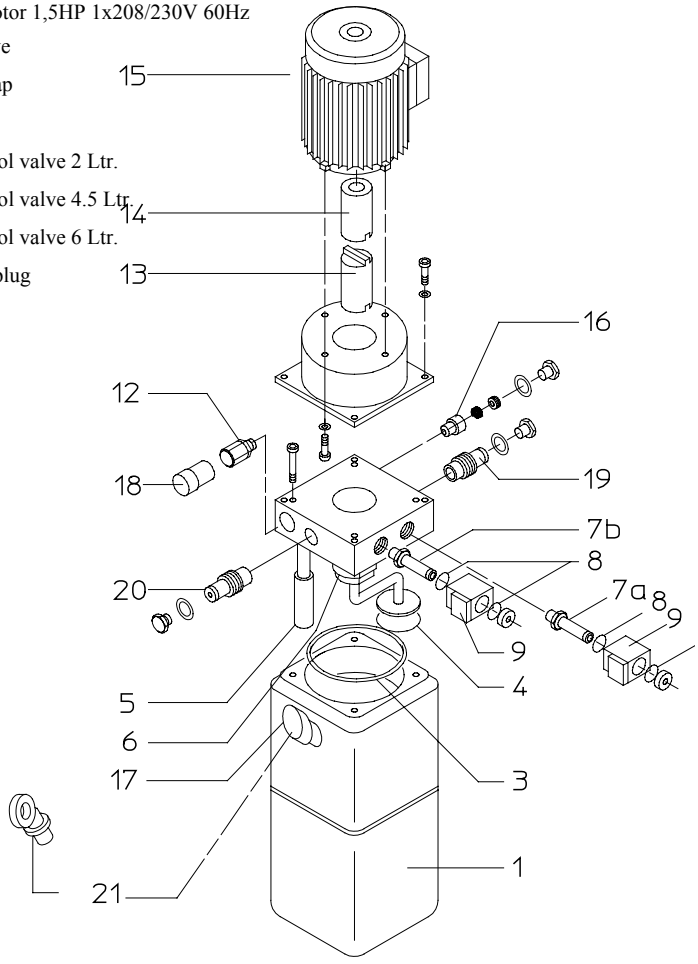
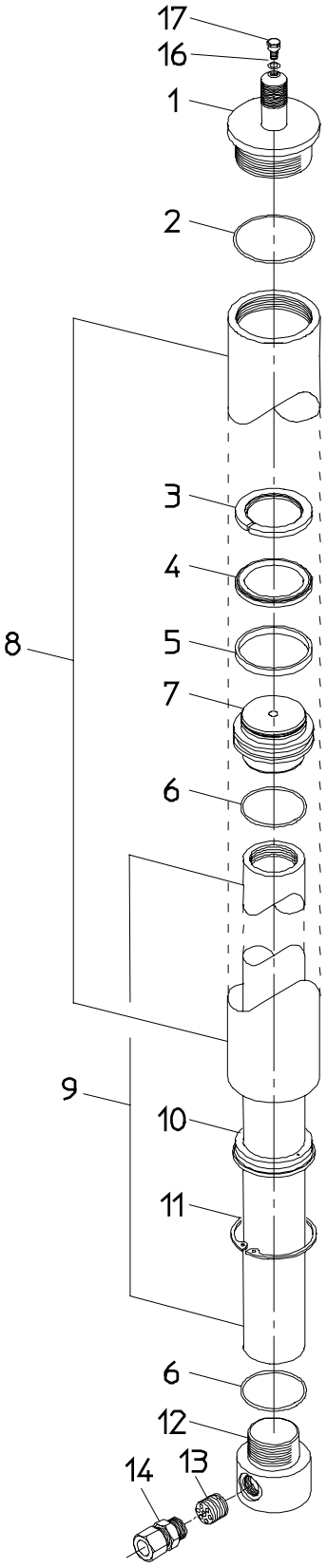
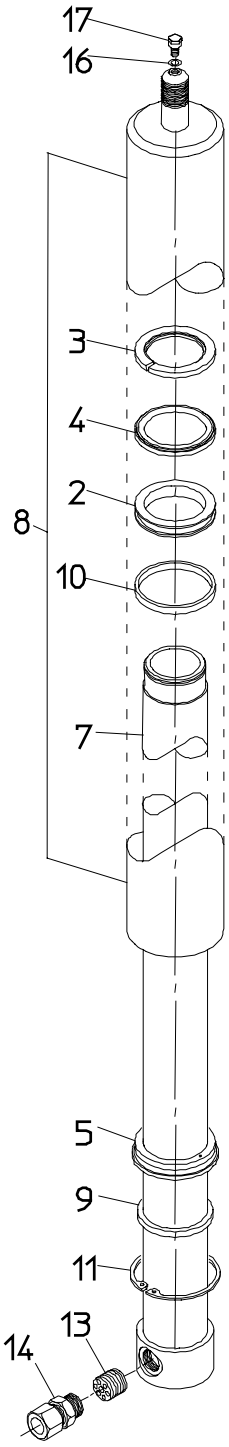


FIG. D - HYDRAULIC CYLINDER

INDEX	REFERENCE		DESCRIPTION
	ST 1055 / ST1060	**ST 1072**	
	340-06-750	325-06-750	Cylinder (assembly)
1	340-06-802		Cylinder bottom
* 2	68-515-552		O-ring Ø55x2,5
2		325-06-752	Guide ring holder
3	340-06-753	325-06-753	Retaining ring
• * 4	68-554-550	68-554-630	Piston seal
* 5	68-575-550	325-06-751	Bearing ring
* 6	68-515-402		O-ring Ø40x2
7	340-06-828	325-06-825	Piston
8	340-06-801	325-06-800	Cylinder
9	340-06-826		Piston rod
• 9		68-500-501	Scraper
• * 10	340-06-751	68-575-630	Bearing ring
11	65-263-006	65-261-068	Retaining ring
12	340-06-827		Piston cap
13	68-228-005	1003-91-80-38	Hose burst check valve
14	68-700-451	68-700-450	Union GE10 PSR 1/4"
16	65-455-001	65-455-001	Copper sealing ring
17	68-900-000	68-900-000	Air bleeding nipple
•		325-99-000	Seal kit (ST 1072)
*	340-99-000		Seal kit (ST 1055)



ST 1055/ST 1060



ST 1072

FIG. E - CONTROL BOX (MASTER COLUMN)

INDEX	REFERENCE	DESCRIPTION
	ST 1055 **ST 1060** **ST 1072**	
	325-57-110	Primary controlbox 3x400V (incl cables)
	325-57-210	Primary controlbox 3x230V (incl. cables)
	325-57-960	Primary controlbox 1x208/230V (incl. cables) (Single Phase)
1	325-57-126	Box
2	69-900-130	PCB
3	69-500-007	Trafo
	69-500-016	Trafo Single Phase
4	69-152-006	Motor relay
5	69-154-001	Main safety relay
6	69-153-003	Thermal relay (3x400V 13,5A) - (3x460V 11A) - (1x230V 16A)
	69-153-002	Thermal relay (3x230V 21A)
	69-153-004	Thermal relay (3x575V 8,5A)
8	01-615-655	Emergency stop button
9	01-615-656	Holder 3 SB 1902-1AC
10	69-120-010	NC contactor 3 SB 1400-0C
11	69-090-114	Connector
12	69-090-112	Connector internals (male)
13	69-090-111	Connector internals (female)
14		Cable gland UNI-PG21 154uz20
15		Cable gland UNI-PG13,5 152u9
16		Cable gland UNI-PG13,5 152 um2x6
17		Cable gland UNI-PG16 153 um2x8
19	69-141-025	Main switch
20	69-151-002	Safety relais
21	69-900-131	Pushbuttonboard and flatcable
23	69-206-010	Fuse 125 mAT
24	69-206-012	Fuse 3,15 AM
25	69-206-011	Fuse 500 mAT
26	69-141-115	Pushbutton
27	69-141-120	Lamp socket

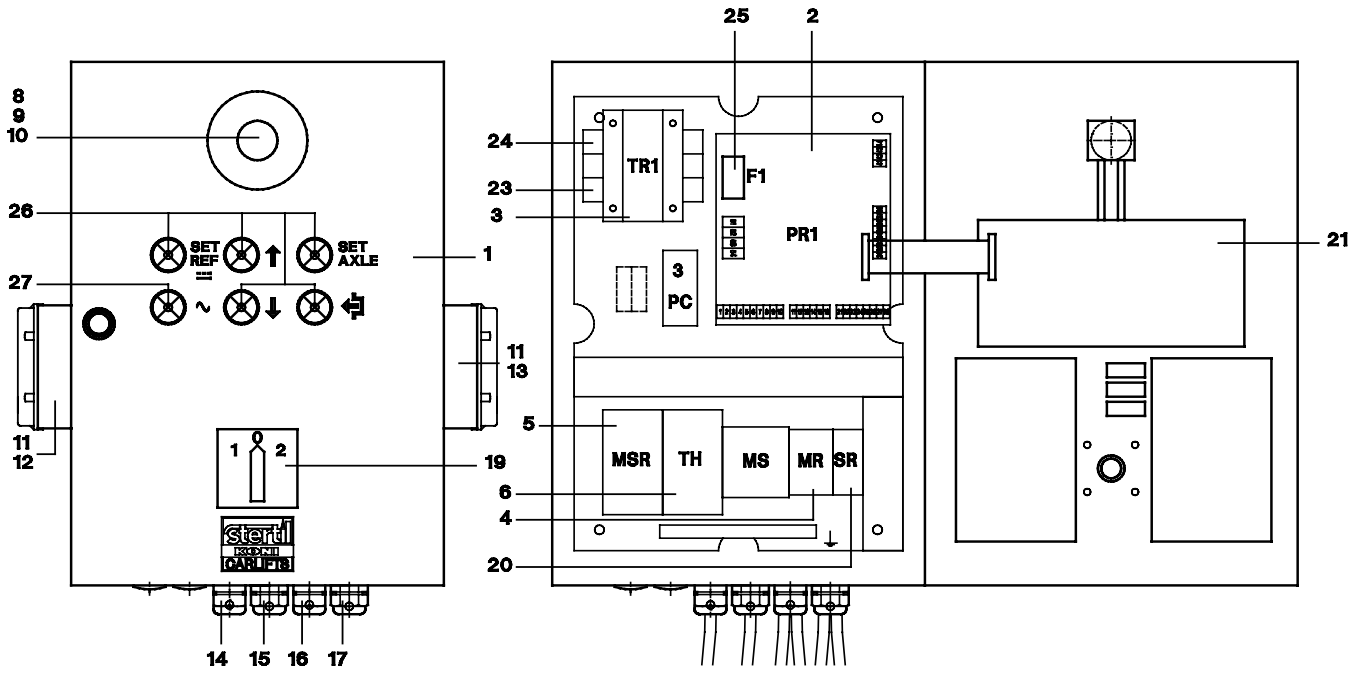
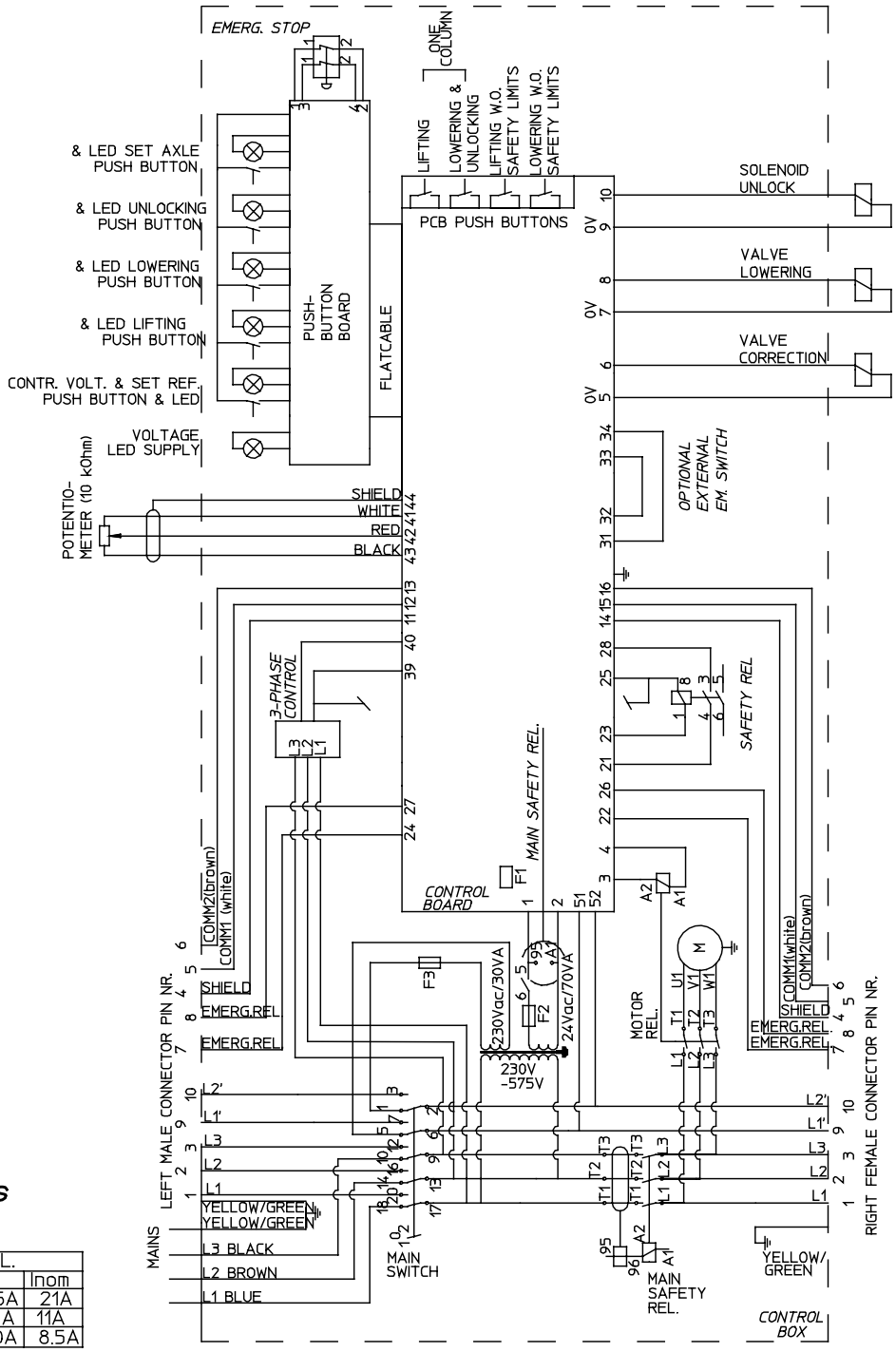
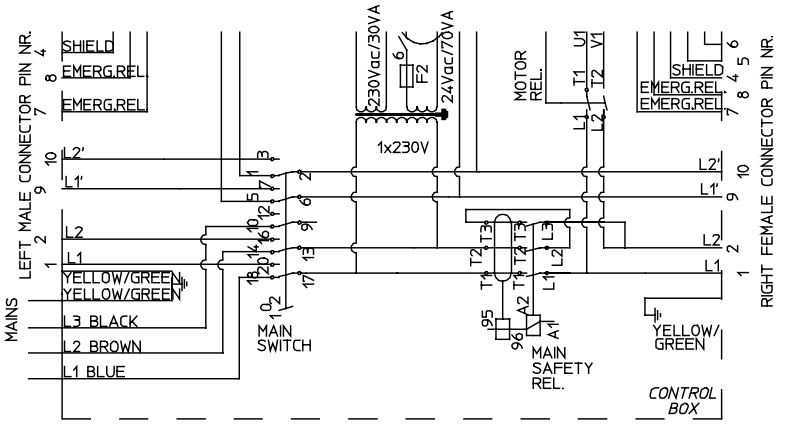


FIG. F - ELECTRICAL DIAGRAM CONTROLBOX (PRIMARY)



3-phases

THERMAL REL.		
Supply	Ith	Inom
208V	16-25A	21A
460V	10-16A	11A
575V	7-10A	8.5A



1-phase

THERMAL REL.		
Supply	Ith	Inom
208V	11-16A	16A

FIG. G - CONTROL BOX (SECONDARY COLUMN)

INDEX	REFERENCE	DESCRIPTION
	ST 1055 **ST 1060** **ST 1072**	
	325-67-200	Secondary controlbox 3x230/400/460/575V incl. cables
	325-67-950	Secondary controlbox 1x208/230V incl. cables (Single Phase)
1	325-67-126	Box
2	69-900-130	PCB
3	69-500-007	Trafo
	69-500-016	Trafo Single Phase
4	69-152-006	Motor relay
8	01-615-655	Emergency stop button
9	01-615-656	Holder 3 SB 1902-1AC
10	69-120-010	NC contactor 3 SB 1400-0C
11	69-090-114	Connector
12	69-090-112	Connector internals (male)
13	69-090-111	Connector internals (female)
15		Cable gland UNI-PG13,5 152 uz 13
16		Cable gland UNI-PG13,5 152 um2x6
17		Cable gland UNI-PG16 153 um2x8
21	69-900-131	Pushbuttonboard and flatcable
23	69-206-010	Fuse 125 mAT
24	69-206-012	Fuse 3,15 AM
25	69-206-011	Fuse 500 mAT
26	69-141-115	Pushbutton
27	69-141-120	Lamp socket

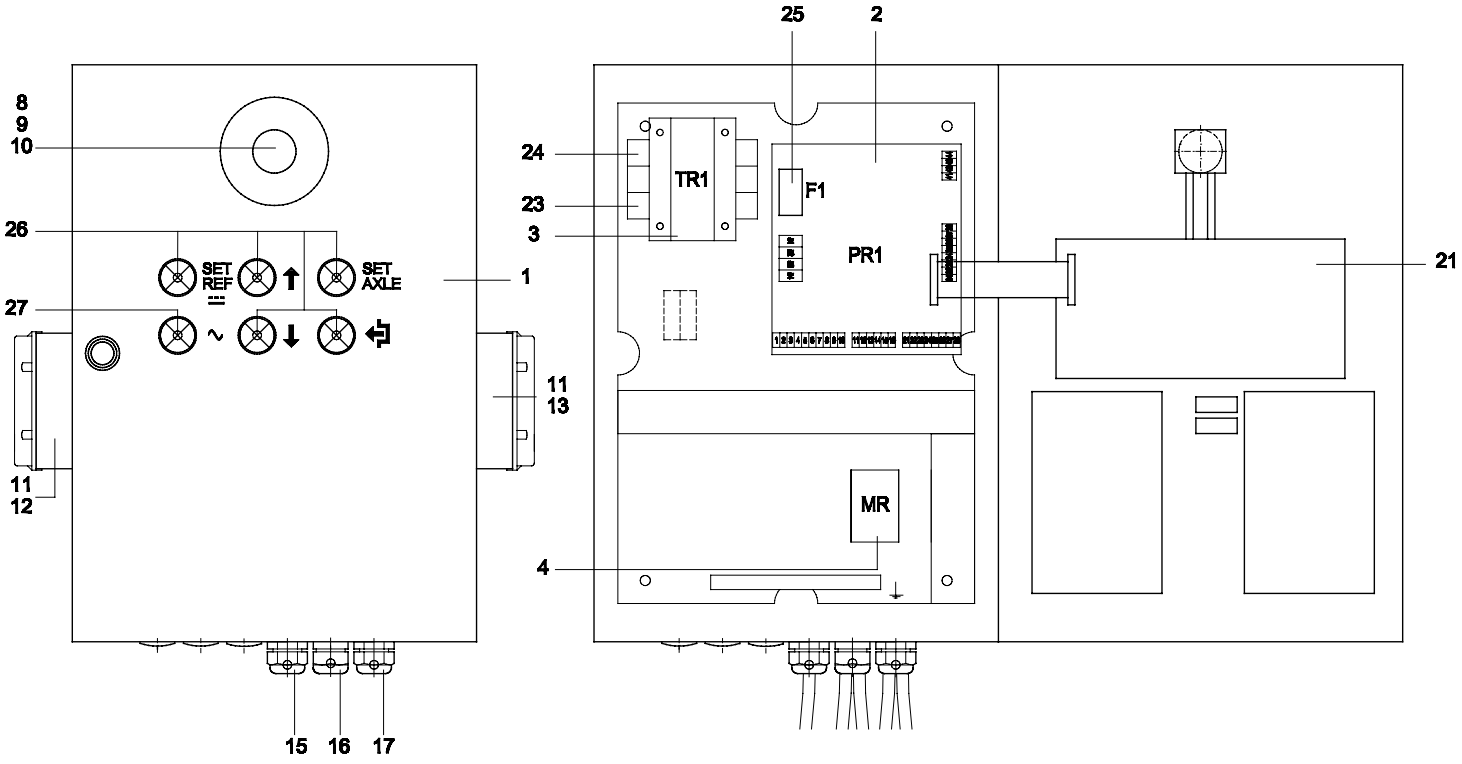
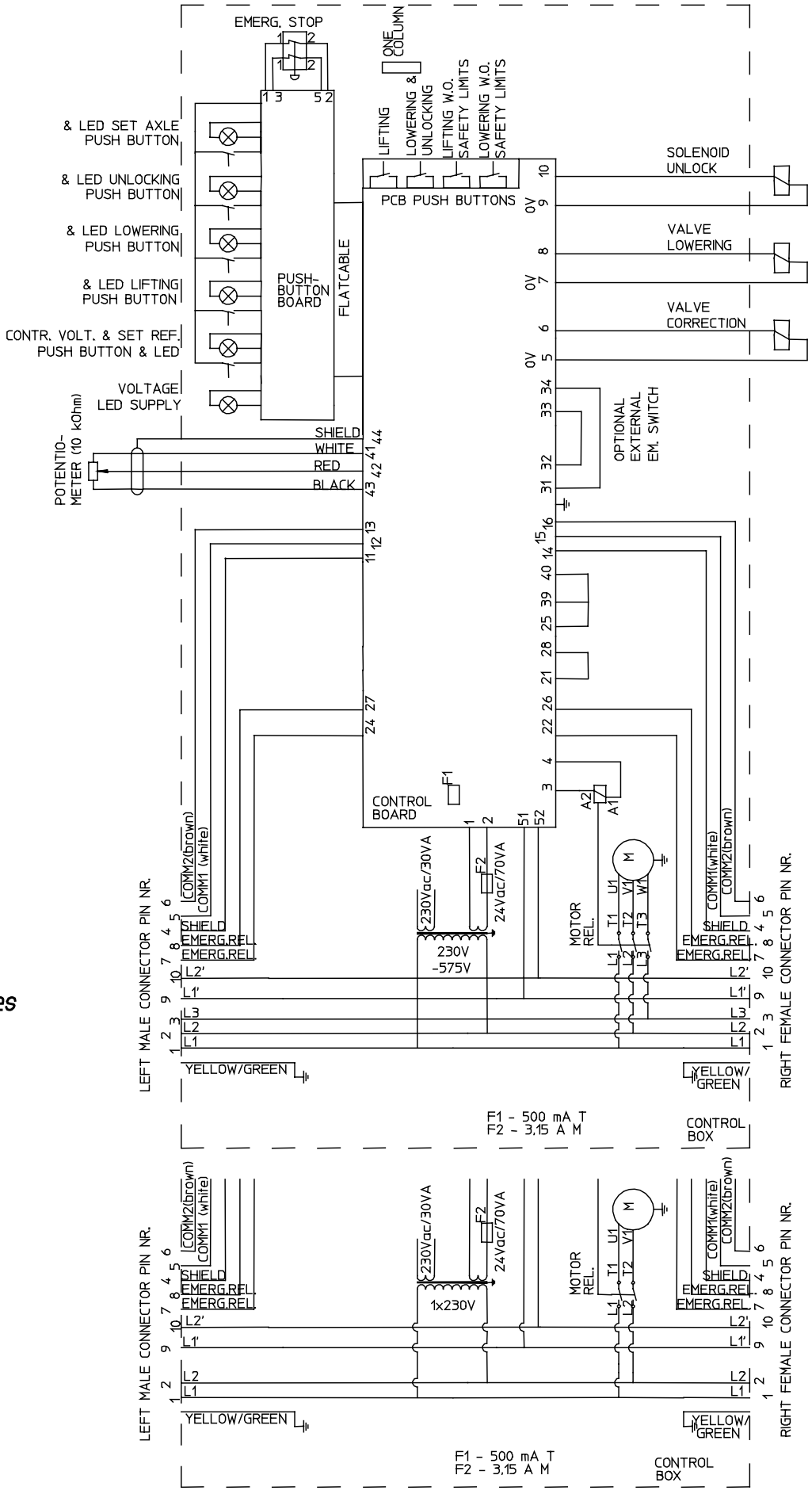


FIG. H - ELECTRICAL DIAGRAM (SECONDARY COLUMN)



3-phases

1-phase

FIG. I - CONNECTION CABLE

INDEX	REFERENCE	DESCRIPTION
	ST 1055 **ST 1060** **ST 1072**	
1	325-57-150	Cable (39’ – 9’’) - assembly)
2	69-090-111	Connector internals (female)
3	69-090-112	Connector internals (male)
4	69-090-113	Housing

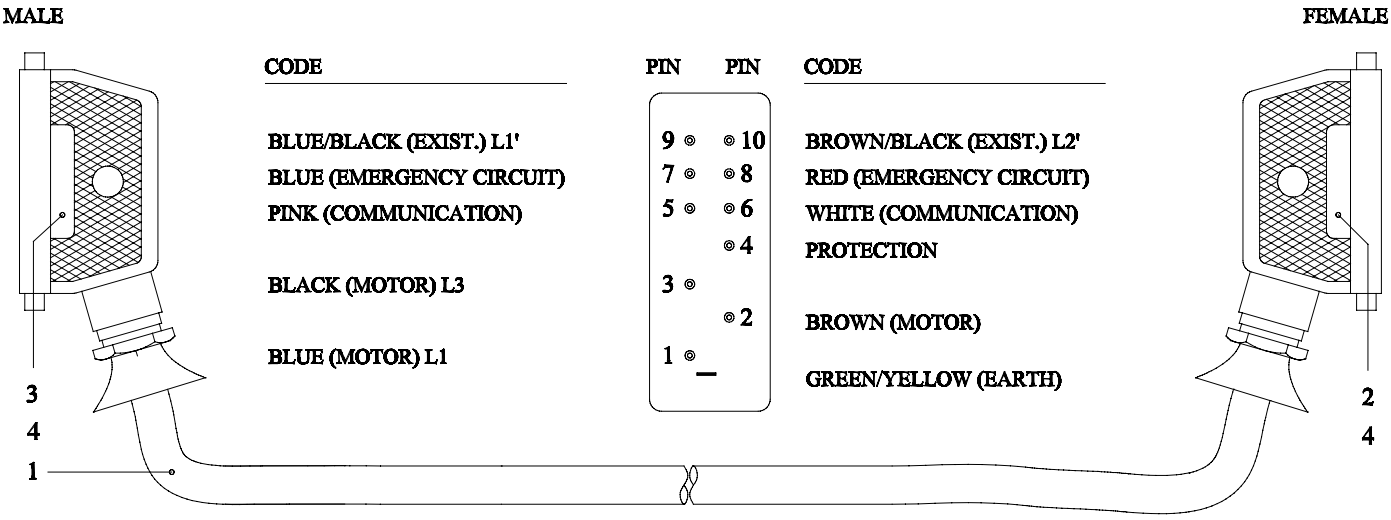


FIG. J - LABEL LOCATIONS

INDEX		REFERENCE			DESCRIPTION
		ST 1055	**ST 1060**	**ST 1072**	
1		60-700-089	60-700-089	60-700-089	User instruction sticker
2		1005.01.01.92	1005.01.01.92	1005.01.01.92	Type plate
4		60-700-061	60-700-061	60-700-061	Large sticker "STERTIL/KONI"
5		60-700-092	60-700-092	60-700-092	Sticker "CAUTION"
6		60-700-143			Capacity sticker "10.000 lbs"
6			60-700-168		Capacity sticker "12.000 lbs"
6				60-700-076	Capacity sticker "16.000 lbs"
7		60-700-093	60-700-093	60-700-093	Sticker "WARNING"
8		60-700-090	60-700-090	60-700-090	Adress sticker "STERTIL KONI USA"
9		60-702-001	60-702-001	60-702-001	ALI-member label
10		60-702-004	60-702-004	60-702-004	Uniform warning label
11		60-702-005	60-702-005	60-702-005	Caution label
12		60-702-006	60-702-006	60-702-006	Safety instruction label
13		60-700-146	60-700-094	60-700-094	Sticker “AMPERAGE POWER SUPPLY CONSUMPTION”
14	*	325-58-990	325-58-990	325-58-990	Service manual
15	*	60-702-002	60-702-002	60-702-002	Safety manual “LIFTING IT RIGHT”
16	*	60-702-003	60-702-003	60-702-003	Card “SAFETY TIPS”
18		60-702-007	60-702-007	60-702-007	Sticker "ETL LISTED"
19	*	60-702-008	60-702-008	60-702-008	American Nat. Standard
20		60-700-134	60-700-134	60-700-134	Label Do not use.../Ne pas...
21		60-702-010	60-702-010	60-702-010	ALI/ETL/CSA label standard 201
22		60-700-133	60-700-133	60-700-133	Label If connected.../Si conn.

* Item not shown on figure

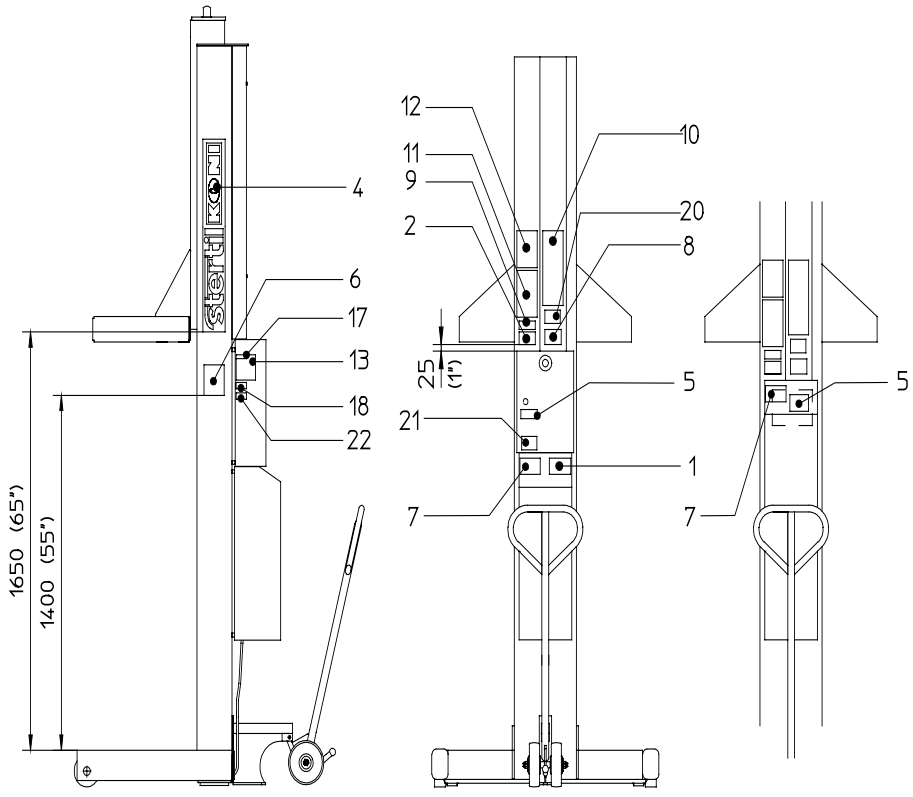
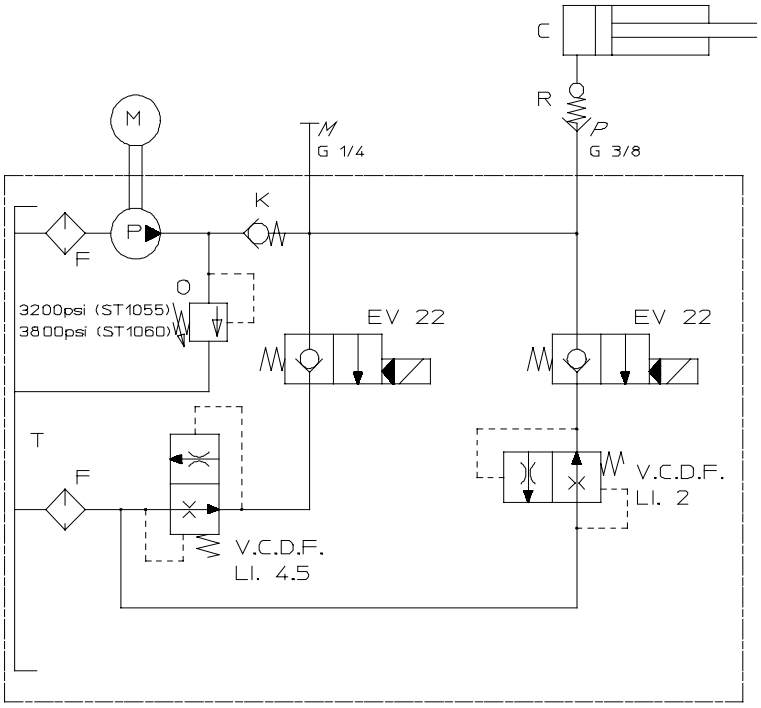
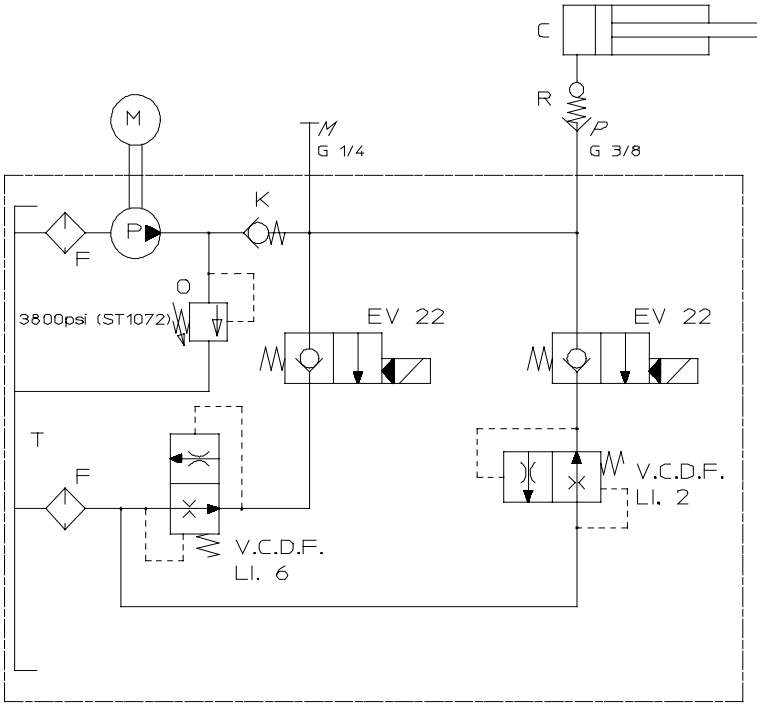


FIG. K - HYDRAULIC SCHEME

ST 1055/1060



ST 1072



C	= Cylinder	P	= Pump
EV22	= 2/2 Valve	T	= Tank
VCDF	= Flow control valve	O	= Safety pressure valve
F	= Filter	M	= Electr. motor
K	= Non return valve	R	= Hose burst check valve

FIG. L - WHEEL ADAPTORS & EXTENDED ARM (OPTION ONLY ST 1055 / ST 1060)

INDEX	REFERENCE	DESCRIPTION
	ST 1055 / ST 1060	
1	325-03-050	Adaptor 16" (length = 12")
2	340-00-925	Extended adaptor 16" (length = 20")
3	325-00-109	Shaft
*4	340-00-920	Extention (length = 20")
*5	340-00-911	Wheel
*6	340-00-912	Shaft
*8	1038-34-02-40	Retaining washer A24 DIN6799
*9	340-00-915	Arm extension
*10	60-700-150	Label 8800 lbs
*	340-00-910	Arm extension set (2x item 4, 2x item 5, 2x item 6, 4x item 8, 2 item 9, 2x item 10)

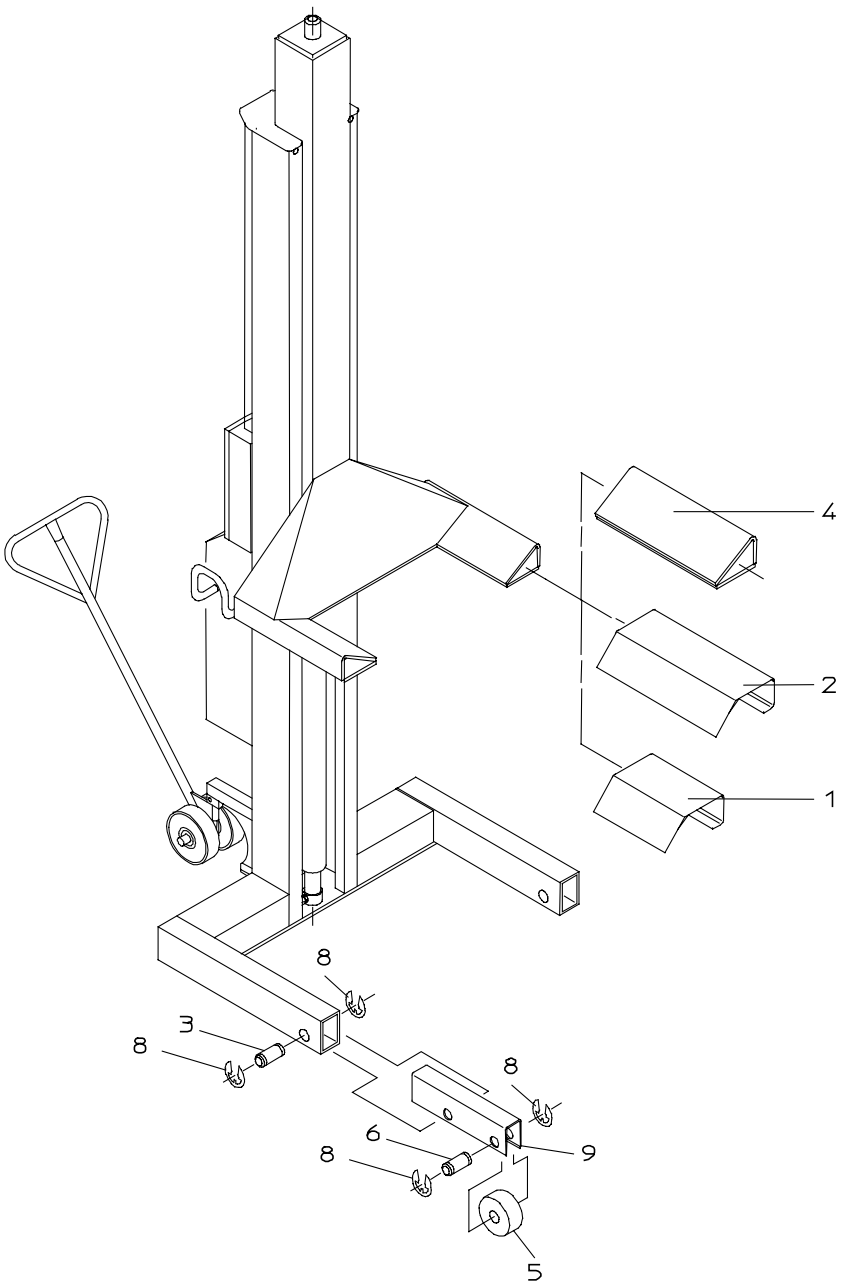
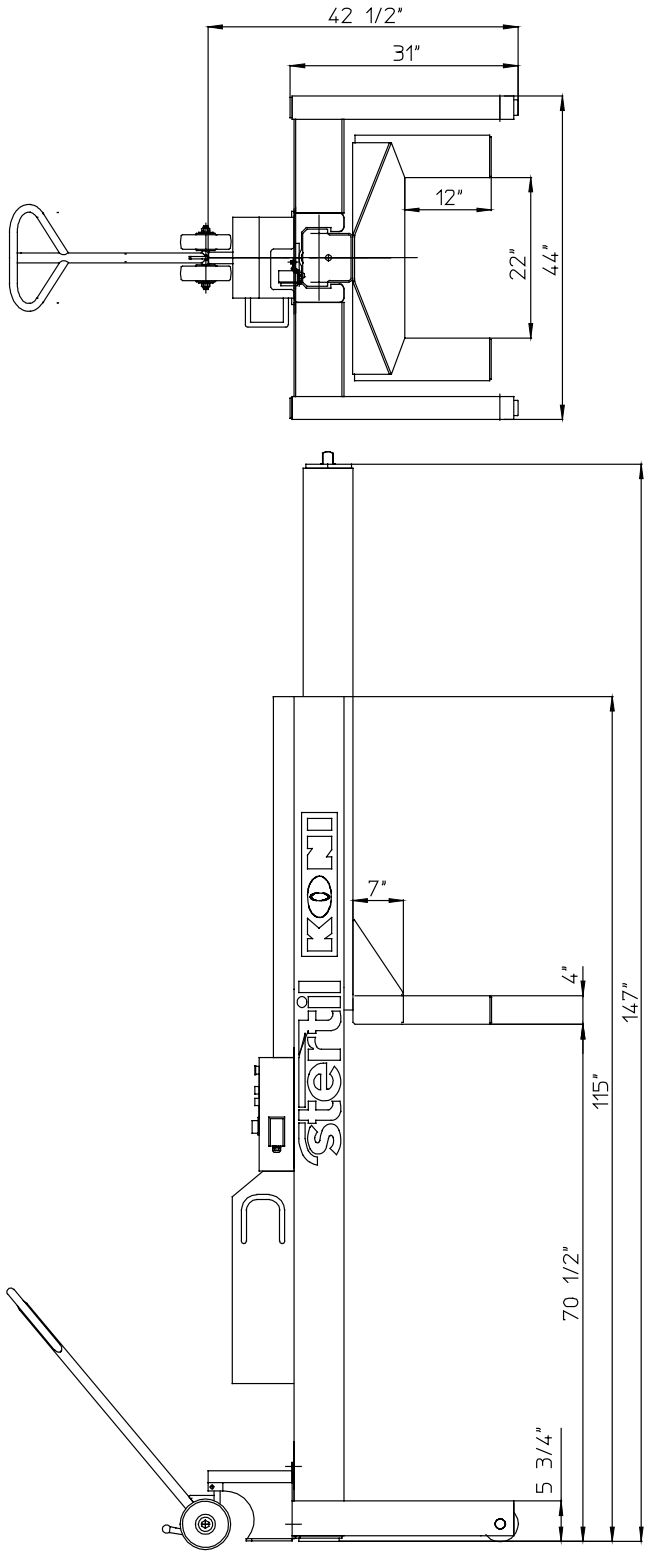
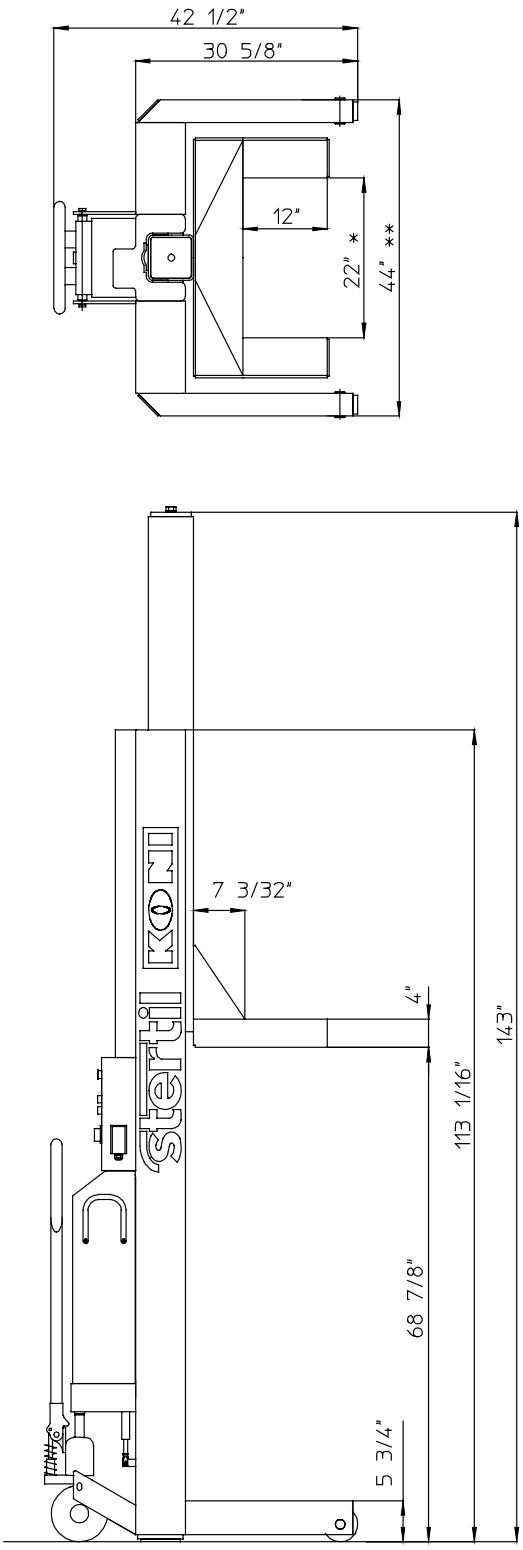


FIG. M - DIMENSIONAL DRAWING





ST 1072-V (widened model): * 27”
** 49 ¼”

ST 1055 / ST 1060 **ST 1072**

INSPECTION CHECK LIST

Annual inspection as described under 7, "Inspection and Maintenance".

Date	*Remarks*	*Name of mechanic*	*Initials of mechnicpass*

Manufactured by:

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