



3T-STD
HYDRAULIC POSITIONER
TAP-3-STD



Instruction & Service Manual

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WARNING



Arc welding and cutting can be injurious to yourself and others. Take precautions when welding. Ask for your employer's safety practices which should be based on manufacturer's hazard data.



ELECTRIC SHOCK can kill.

- Install and earth the welding unit in accordance with applicable standards.
- Do not touch live electrical parts or electrodes with bare skin, wet gloves or wet clothing.
- Insulate yourself from earth and the work piece.
- Ensure your working stance is safe.



FUMES AND GASES can be dangerous to health.

- Keep your head out of the fumes.
- Use ventilation, extraction at the arc, or both, to keep fumes and gases from your breathing zone and the general area.



ARC RAYS can injure eyes and burn skin.

- Protect your eyes and body. Use the correct welding screen and filter lens and wear protective clothing.
- Protect bystanders with suitable screens or curtains.



FIRE HAZARD

- Sparks (spatter) can cause fire. Make sure therefore that there are no inflammable materials nearby.



NOISE can damage hearing.

- Protect your ears. Use earmuffs or other hearing protection.
- Warn bystanders of the risk.



MALFUNCTION

- Call for expert assistance in the event of malfunction.

READ AND UNDERSTAND THE INSTRUCTION & SERVICE MANUAL BEFORE INSTALLING AND OPERATING.

PROTECT YOURSELF AND OTHERS!

INSTRUCTION MANUAL

1. SAFETY FUNCTIONS

Users of handling equipment have ultimate responsibility for ensuring that anyone who works with or near the equipment observes all the relevant safety precautions.

The following recommendations should be observed in addition to the standard regulations that apply to the work place.

All work must be carried out by trained personnel who are familiar with the operation of TAP-STD series positioners. Incorrect operation of the equipment may lead to a hazardous situation which can result in injury to the operator or damage to the equipment.

Staying under the workpiece during the working cycle is absolutely forbidden! Staying on top of the workpiece during the working cycle is forbidden without the correct safety equipment employed.

1. Anyone who uses the TAP-STD positioner must be familiar with
 - it's operation
 - the location of the emergency stop
 - it's function
 - relevant safety precautions

To make this easier each switch, pushbutton or potentiometer is marked with a symbol that indicates its function when activated.

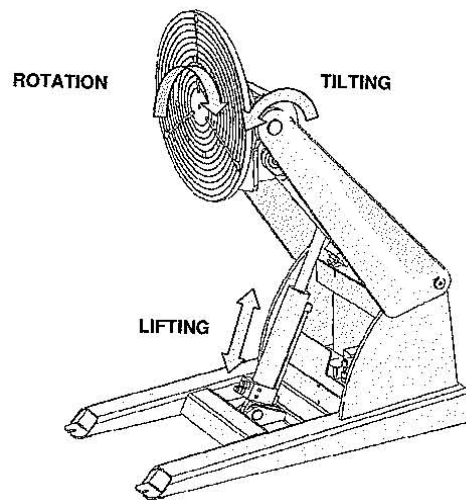
2. The operator must ensure that
 - no unauthorized person is stationed within the working area of the machine when it is energised
 - personnel UV protection is employed when the arc is struck including others working in the area of the TAP-STD positioner
3. The work place must
 - be suitable for the purpose
 - be free from loose objects
 - be clean, because dust and welding flux can cause excessive wear on rotating components
4. Personal safety equipment
 - always wear recommended personal safety equipment, such as safety glasses, flame-proof clothing, safety gloves
 - do not wear loose fitting items such as scarves, bracelets, rings etc., which could become trapped or cause burns
5. General precautions
 - make sure the welding return cable is connected securely to the workpiece.
 - work on high voltage equipment may only be carried out by a qualified electrician
 - appropriate fire extinguishing equipment must be clearly marked and close at hand
 - lubrication and maintenance must not be carried out on the equipment during it's operation; follow the lubrication instructions
 - check the tightness of the hydraulics, repair all possible leaks immediately. In other problem cases please contact the producer or his representative
 - these products should not be lubricated or serviced during operation.

2. INTRODUCTION

2.1 General

Positioners are designed to facilitate manual and mechanized welding. All models meet or exceed the EN occupational safety requirements. With positioners, the work piece is always turned to the most favourable position. If you use the positioner for any other purpose please confirm suitability from the manufacturer or his representative.

The TAP-STD series positioners have 3 axis of movement: height, tilting angel and rotation.
The 3-axis operation guarantees the ideal ergonomic working position for the welder.



1. Table Plate
2. Rotation Machinery
3. Arm
4. Hydraulic Cylinders
5. Frame
6. Holes for Basement Fastening
7. Electric Cabinet
8. Removable cover Electric Cabinet
9. Pendant

2.2 TAP-STD Series Technical Specifications

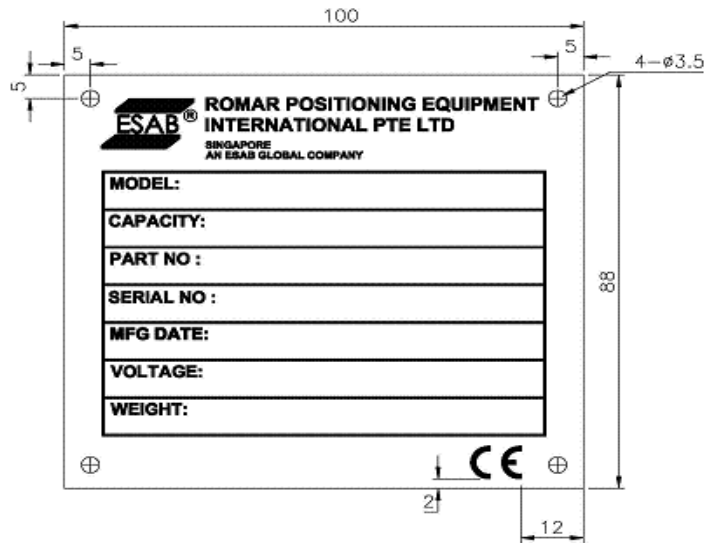
TAP-STD Model**

MODEL	TAP-1-STD	TAP-3-STD
CAPACITY (LOADING)	REFER TO CAPACITY CHART	REFER TO CAPACITY CHART
CAPACITY (TILTING)	REFER TO CAPACITY CHART	REFER TO CAPACITY CHART
ROTATING SPEED	0.1-1.5 RPM AT 5-50HZ	0.06-0.6 RPM AT 5-50Hz
TILT RANGE OF TABLE	0-135 °	0-135 °
TILT RANGE OF ARM	0-45 °	0-45 °
INCOMING SUPPLY	400V-3PH-50Hz	400V-3P-50Hz
CONTROL VOLTAGE	24VAC	24VAC
DIAMETER OF TABLE	Φ900mm	Φ1000mm
IP CLASSIFICATION (MOTOR)	IP 55	IP 55
IP CLASSIFICATION (ELECTRICAL)	IP 43	IP 43
EARTHING	800A	800A
WEIGHT (KG)	782	1500
DIMENSIONS (LxBxH)	1930x1025x756	2040x1268x1019

** These are the technical values for standard models. If you have ordered a special, the values might be different from these.

*** Please refer the latest GA Drawing for the latest Technical Specification.

2.3 Machine Plate



It has important information:

Type	The type of machine
Capacity	The capacity of machine
Ser.No.	The serial number of machine
Part.No.	The ESAB article number for the machine
Man.year	The manufacturing year of the machine.
Weight	The weight of the machine.







NOTE! THE WEIGHT IS WITHOUT ACCESSORIES!

The machine plate has electrical information:

Hz	Mains supply connection Hz
V	Mains supply connection V
KW	Mains supply connection KW

NOTE! WHEN ORDERING SPARE PARTS, PLEASE STATE ALL THE INFORMATION IN MACHINE PLATE!

2.4 Warning Information Sticker

S/N	Information Text	Picture of sticker
1	<p>General Warnings a] electric shock warning b] moving parts warning c] falling equipment warning</p>	
2	<p>DO NOT OVERLOAD! CHECK CAPACITY ON DATAPLATE!</p>	
3	<p>FACTORY DEFAULT SETTINGS FOR 400V-3P-50HZ</p>	
4	<p>THIS EQUIPMENT IS PHASE SENSITIVE</p>	
5	<p>ATTENTION! CHECK HYDRAULIC POWER PACK</p>	
6	<p>NO STEP</p>	

2.5 Installation

IMPORTANT!!!

No Fluid in the Hydraulic System (Refer Appendix D – Hydraulic System Page D4).

Read all relevant manuals and safety precautions carefully before starting to unpack and install the equipment!
NOTE! Make sure installation is carried out by suitably trained personnel.

Handling and storage of the machine

The machine is packed on a base suitable for lifting by crane and/or forklift. Lift the machine from the lifting points (Lifting Loops) only.

Unload the machine from the packing and check the outer condition. Do not store the machine outside or in damp places.

NOTE! CHECK THE MACHINE WEIGHT FROM THE TECHNICAL DATA. BE CAREFUL AND OBSERVE THE GENERAL LIFTING INSTRUCTIONS.

2.6 Start Up Instruction

- Check the required space from the dimensional drawing and ensure that the electric cabinet can be opened freely. Take into consideration the shape and external dimensions of work pieces (can the work piece be handled freely).
- Access to the work point must be free and it should be possible to rotate the work point to a convenient working position.
- The foundation should be flat and made of non cracked concrete. The foundation strength has to be 30 N/mm² or better.
- Positioners are mounted to the foundation with anchor bolts.
- Check the weight of the workpiece and the location of centre of gravity with relation to rotational and tilting axes (checked with the calculation instructions and loading curves).
- Take into consideration all possible special demands caused by the welding process.
- Connect the remote control. NOTE! Plug fits only in one position.
- Before connecting the mains supply, check that the main switch is OFF and that the mains voltage is the same as the connection voltage (qualified Electrician).
- Check the amount of hydraulic oil.
- If the hydraulic lifting and tilting do not function the main supply phase rotation may be incorrect. It should be changed from the supply mains point in the cabinet (qualified Electrician).
- Turn the supply on by main switch – The signal lamp should light.
- Test the function of each axis via the push buttons on the remote control pendant.
- Test rotation and speed control of positioner in both directions.
- Test the height adjustment – if the lifting movement is jerky there is air in the hydraulic system. Run positioner up and down until the air has been expelled.
- Connect foot pedal if any, and test the action.

NOTE! IF YOU HAVE TO TAKE OFF THE STOP SCREW FROM THE HOLE IN THE TABLE PLATE CENTRE, MAKE SURE THAT THE HOLE WILL BE BLOCKED AGAIN BEFORE WORKING, SO THAT DUST AND OTHER DIRT DO NOT GET INSIDE THE MACHINE.

ALWAYS CONNECT THE EARTHING OF THE WELDING POWER SOURCE TO THE POSITIONER'S OWN EARTHING CONNECTOR. MARKED WITH THE SYMBOL.

DO NOT DRIVE AGAINST THE FLOOR WHEN TILTING AS DOING SO CAN DAMAGE THE POSITIONER.

FOLLOW THE OPERATING INSTRUCTIONS AND POSITIONER'S LOADING DIAGRAMS.

READ AND UNDERSTAND THE USE OF THE LOADING DIAGRAMS AND LOADING CALCULATIONS.

2.7 Operation Instructions

Loading, fastening and unloading of the work piece

- Use the table plate holes and T-slots for work piece fastening (Figure A).
- Check that the fastening of the work piece is permanent during all the working time. Check regularly that the fastening is tight!
- Check that the welding return terminal of the welding machine is connected to the positioner's own return connector (Figure B).

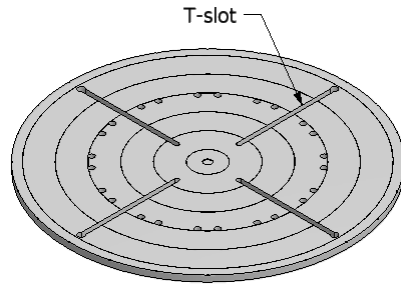


Figure A

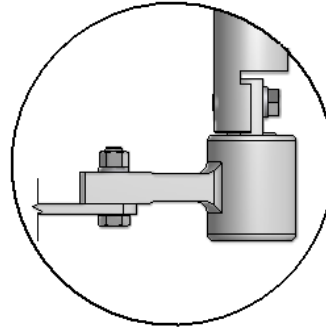


Figure B

Control Devices

This cabinet contains all the necessary electrical components such as the inverter, fuses, circuit breaker etc. The front panel is equipped with an interlock isolator and E-stop button.

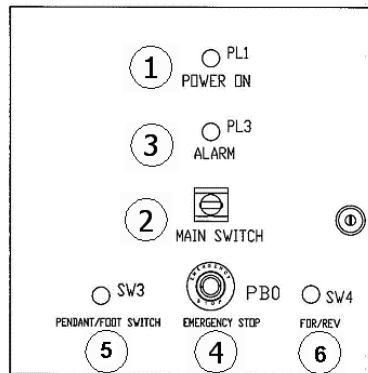


Figure C

Table (1) Control Devices Table

Item	Description	Type	Function
1	Light	White	Power ON Indication
2	Switch	Interlock & lockable	Isolator ON/OFF
3	Light	Amber	Alarm Indication
4	Button	Rotary Release	Emergency-stop
5	Selector Switches	3-Stay Put	Pendant/Foot Switch
6	Selector Switches	3-Stay Put	Forward/Reverse
7	Data Plate	NA	Info.

Pendant

This is mounted on a 6m control cable

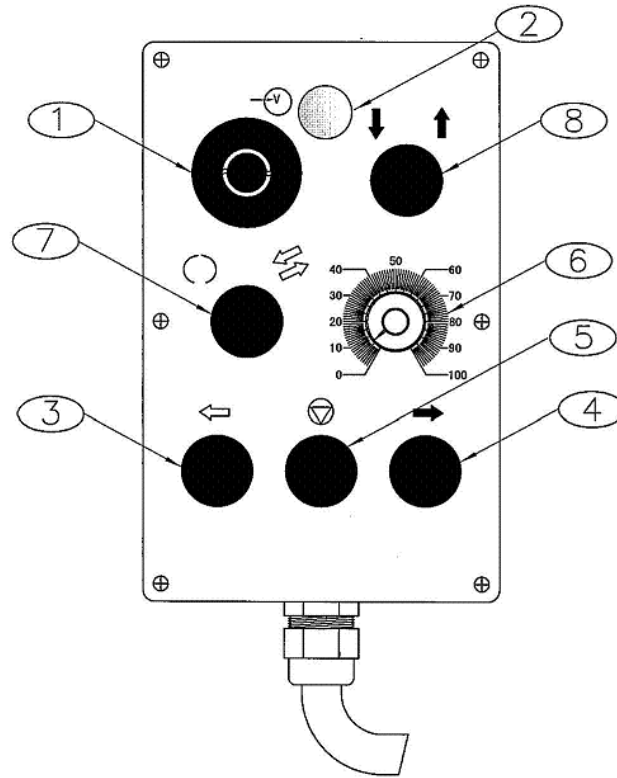


Figure D

Table (2) pendant Function Table

Item	Symbols	Type	Description
1	PB1	Mushroom Head Push Button	Emergency Stop
2	PL2	Pilot Light with Integral LED	Power On Light
3	PB3	Push Button	Rotation Drive Forward
4	PB4	Push Button	Rotation Drive Reverse
5	PB2	Push Button	Rotation Drive Stop
6	VR1	Potentiometer	Rotation Drive Speed Setting
7	SW2	3-stay put selector Switches	Tilt Range of arm or tilt range Selector
8	SW1	3-stay put selector Switches	Up or Down Selector

Note: Change any 2 input phase at isolator if orientation of table rotation is incorrect from as shown in Figure E. (qualified electrician)

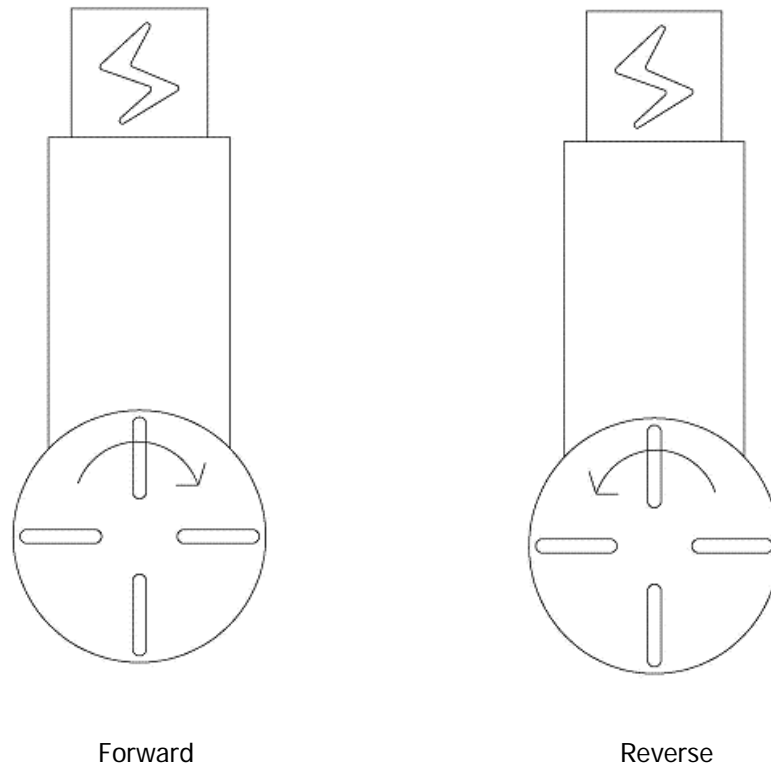
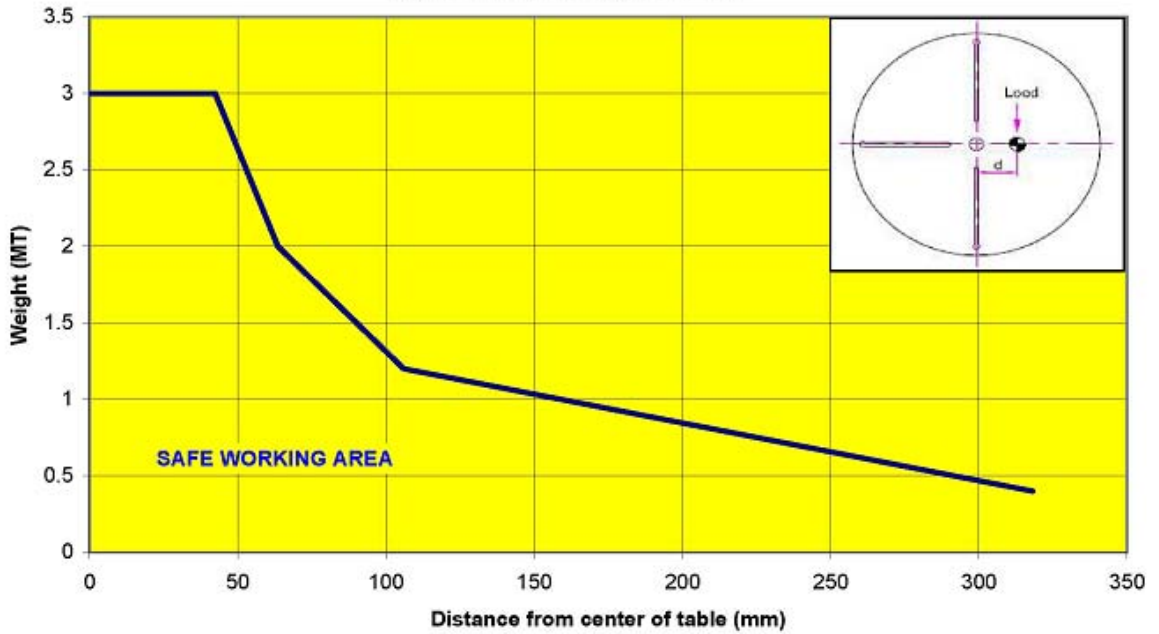


Figure E Orientation of Table Rotation

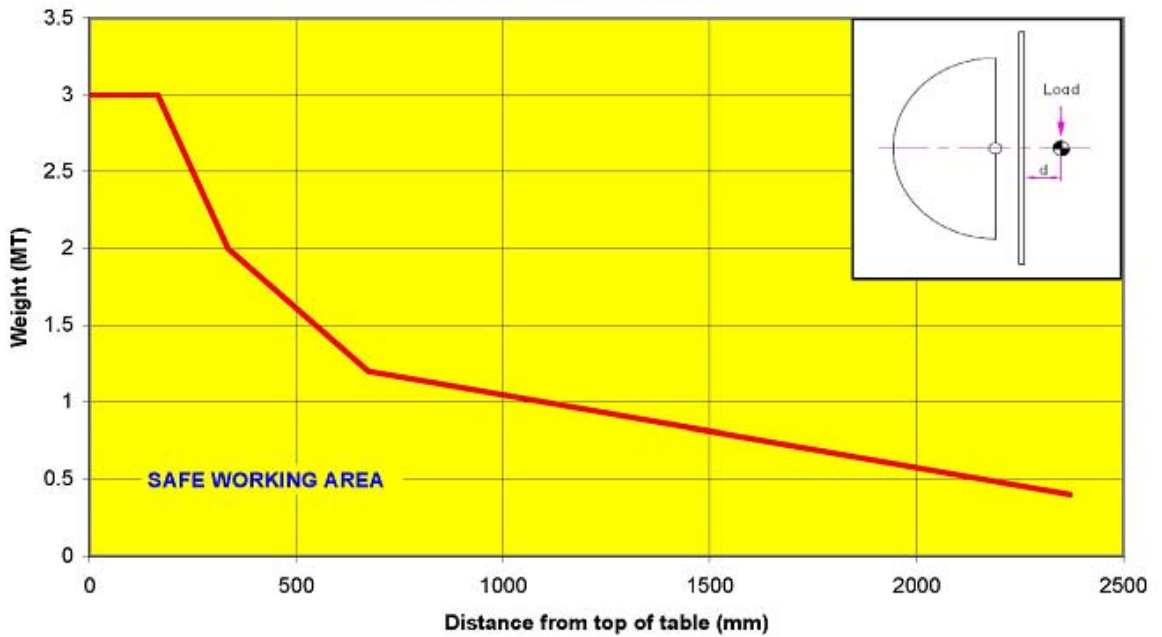
2.8 Loadchart



TAP3-STD LOADCHART
Max. ROTATIONAL torque 1,250 Nm



TAP3-STD LOADCHART
Max. TILTING torque 9,980 Nm



3. INTRODUCTION

3T-STD Hydraulic Positioner

3-1 General

A welding positioner is one of the most indispensable pieces of equipment in welding applications. ESAB's hydraulic positioner TAP-STD series is developed specifically to meet the rugged and harsh environment of welding such as ship building, oil and gas, pressure vessel, boiler and structural steel industries etc. Unlike conventional welding positioners the TAP-STD series allows elevating movement of table in addition to the usual tilting and rotation function. A lot of design attention has been focused on areas such as safety during use, ease of use and maintenance, robust construction just to name a few. Coupled with polyurethane paintwork to guard against corrosive environments, you can be assured that your positioner will provide you with years of uninterrupted use.

3-2 Construction & Description

General

The hydraulic positioned consists of

- a) Base Frame
- b) Elevating Arm
- c) Tilting Assembly
- d) Table Top
- e) Rotation Assembly
- f) Elevating Assembly
- g) Power pack
- h) Earth Assembly
- i) Electrical panel
- j) Control Pendant

Base Frame

Elevating arm and rotation assembly, these are welded structural parts with precisely machine holes for assembly purpose after welding process.

Table Top

This is machined from a solid piece of steel plate. It has 4 slots for jigs & fixtures, thus enabling easy securing of the work piece onto the Table.

Concentric indents are also available on the table to aid the centric positioning of a work piece.

A centre recess spigot is available for the fitting an optional 3-Jaw chuck.

Tilting Assembly/Rotation Assembly

This is fitted to the rotation assembly, a short bronze bush on each side that engages into the elevating arms front end.

This suspended rotation assembly is tilted by the action of a tilting hydraulic cylinder that is fitted between the side of the elevating arm and an offset point on the rotation assembly.

The rotation assembly is independant of the tilting assembly. It carries a thrust bearing that is engaged to the output shaft of a worm drive gearbox, which is in turn mounted to an AC motor that provides the rotation. The steeples speed of rotating is controlled via an inverter.

Elevating Assembly

The rear end of the elevating arm is connected at each side of the base frame.

An elevating hydraulic cylinder is fitted to engage the base frame and the elevating arm. The action of the cylinder moves the elevating arm which is pivoted on the base frame thus providing the elevating feature of the rotation assembly that is fitted to the front end of the elevating arm.

Power pack

This is a self contained vane type hydraulic power unit that is located under the rear end elevating arm. It provides 16Mpa of pressure and the circuit is fitted with solenoid valve, control valve, pressure gauge etc. for the control of elevating cylinder and tilting cylinder.

Earth Assembly

This rotary earth (welding return) unit is connected directly to the table top. A Copper bar connects between the rotating weld return while the other end protrudes out from the rotation assembly. The rating is 800 Amp.

3-3 Installation & Commissioning

Pre-requisites for Installation

- a) Use lifting eyes provided on equipment.
- b) The thicknesses of floor must not be less than 150mm.
- c) Anchor should be either encased type or chemical type. Do not use expansion bolt.
- d) Grout after leveling.
- e) Correct size of mains supply cable to panel.
- f) Electrical connections to be carried out by qualified electrical person.

After Installation

- a) Check rotation gearbox oil level
- b) Top up hydraulic tank
- c) Incoming cable is properly protected
- d) No loose connections at terminals (qualified electrical person)
- e) Clear up the area

3-4 Gearbox Oil

Equipment Model	Type of Oil	First Stage (Gear Oil)	Second Stage (Grease)	Second Stage (Gear Oil)
TAP3-STD & TAP3-HD	CPC HD320 Gear Oil	1.25 L	3.6 KG	1.38 L

* CPC HD320 Gear Oil which is equivalent to ISO – VG 320, Mobil gear 632, Shell Omala 320 and Energol GR-XP 320.

3-5 Maintenance & Care

Table (3) Maintenance & Care

S/N	Location	Things To do	Month	Observation
1	Entire Equipment	Unlade operation	daily	Unusual sound, smell or vibration
2	Entire Equipment	Visual suspect	daily	Rust, oil leak, water retention
3	E-Stop	Press E-stop	daily	Stop all functions
4	Incoming Voltage	Check voltage	1mth	Within \pm 10%
5	Electrical panel	Remove dirt dust	3mth	Cleanliness induces fife
6	Wiring	Test "looseness"	3mth	Tight connected
7	Fasteners	Retighten	6mth	Looseness
8	Gearbox(Primary)	Refer to (3-4 Gearbox Oil)	1yr	Refer to (3-4 Gearbox Oil)
9	Gearbox(Secondary)	Refer to (3-4 Gearbox Oil)	1yr	Refer to (3-4 Gearbox Oil)
10	Hydraulic oil	Refer to (7 Hydraulic Oil)	1yr	Refer to (7 Hydraulic Oil)
11	Rotary Earth	Renew Earth grease	3yr	Use conductive grease

* To renew oil after 1st month of new equipment operation

3-6 Operation & Use

General

- (1) It is recommended that the operator is knowledgeable enough of the theories behind the function of this equipment
- (2) Read this manual thoroughly before operating
- (3) Put on personal protective equipment
- (4) Observe all the safety rules & regulations in your company

Start-Up

- (1) Ensure no encumbrances around equipment
- (2) Turn "on" wall isolator
- (3) Turn "on" panel isolator
- (4) Release "E-stop" on panel
- (5) Release "E-stop" on pendant
- (6) Follow daily check as shown in table (3)
- (7) If there is a work piece on the equipment, check that it is still securely fastened and there is no encumbrance to the work piece
- (8) Check welding return is in good condition
- (9) Operate machine via the pendant as in table (2)

Usage

- (1) Always turn potentiometer to low (anti-clockwise)
- (2) Start the rotation and adjust potentiometer to desired speed
- (3) Always allow the table to come to a complete halt before changing rotation direction
- (4) Do not allow the pendant cable to pass under the equipment (crush hazard)
- (5) Do not leave pendant on floor or area that is subjected to water or fluids

Shut down

- (1) Turn potentiometer to low position
- (2) Depress "E-Stop" on pendant
- (3) Depress "E-stop" on panel
- (4) Turn "off" panel isolator
- (5) Turn "off" wall isolator
- (6) Clean and clear up the work area

3-7 Troubleshooting

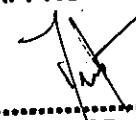
S/N	Problem	Possible cause	Remedy
1	No Rotation	1) No Incoming Supply	1) Turn on Isolator & Release E-Stop
		2) Faulty potentiometer	2) Replace
		3) Inverter Alarm	3) Refer Inverter manual
		4) Faulty push button	4) Lubricate or replace
		5) Faulty contactor	5) Replace
		6) Faulty Transformer	6) Replace
2	No speed adjustment	1) Faulty potentiometer	1) Replace
		2) Inverter Alarm	2) Rater Inverter manual
		3) Faulty inverter	3) Replace
3	No cylinder movement	1) Wrong Rotation direction on power pack motor	1) change 2 phases at wall isolator
		2) Air trapped in system	2) purge the system
		3) Faulty solenoid valve	3) Replace
		4) Faulty push button	4) Replace
		5) Faulty contactor	5) Replace
		6) Faulty transformer	6) Replace
		7) Faulty power pack motor	7) Replace

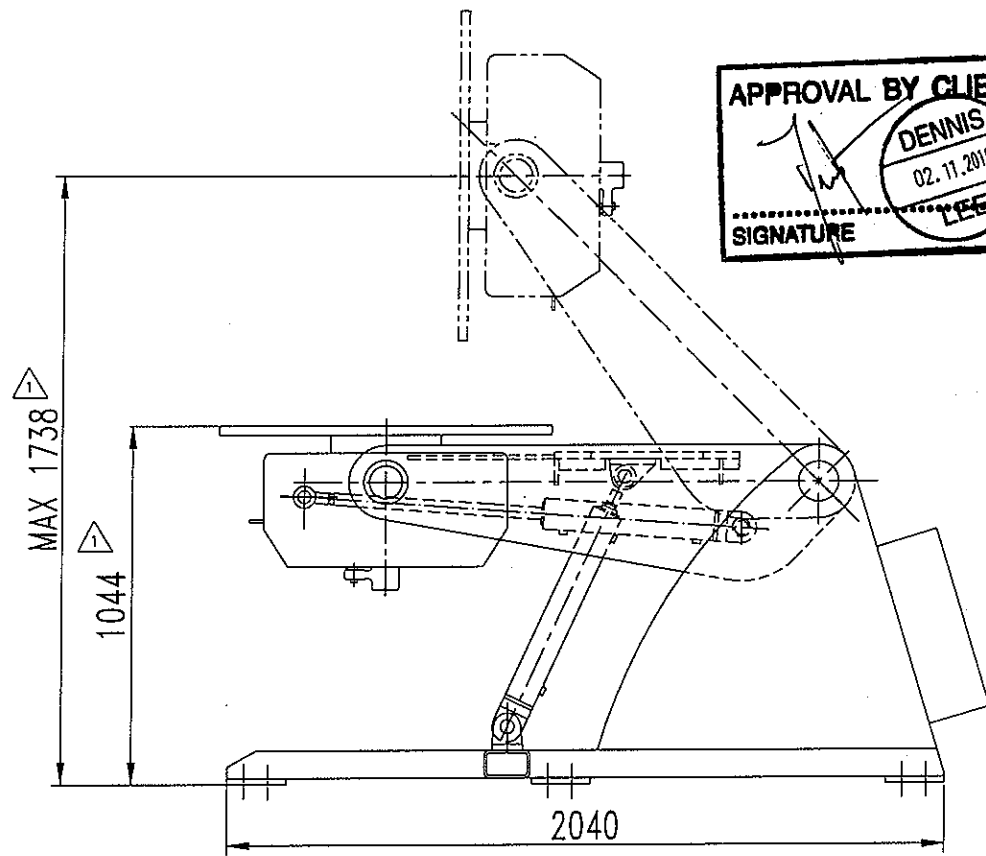
APPENDIX A GENERAL ARRANGEMENT DRAWING

The general arrangement is a CAD module illustrating the general set up of the equipment. The main specifications of the equipment are also listed in the GA. The general arrangement drawing for the TAP-3-STD hydraulic positioner is presented on the following page.


specification for positioner

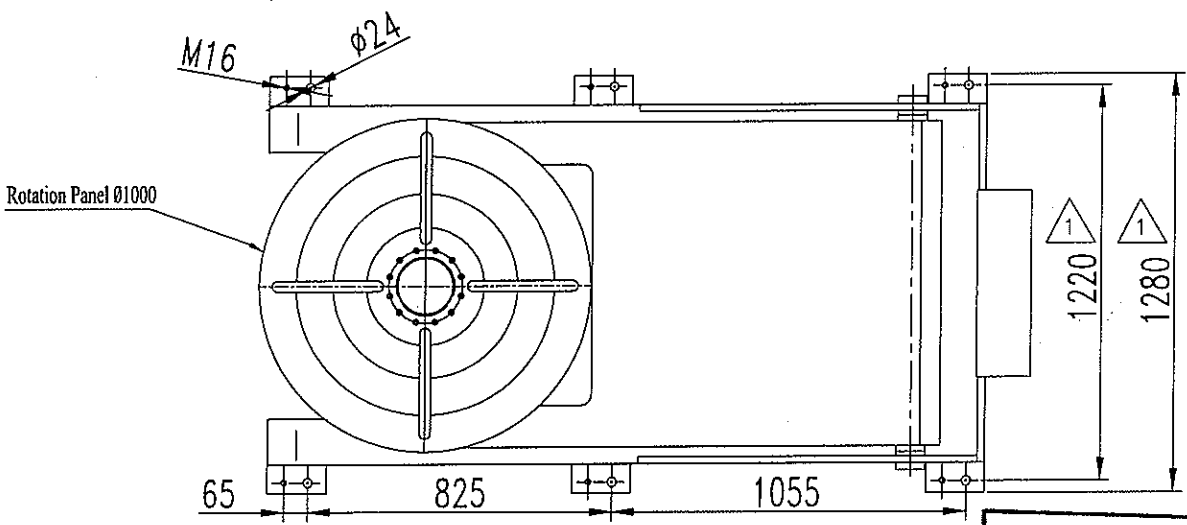
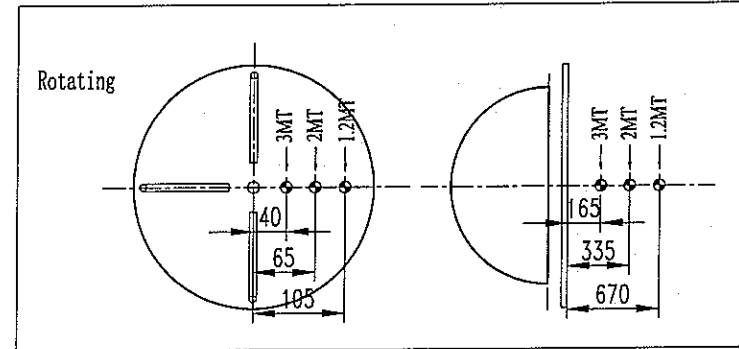
1	Model	Positioner TAP 3T (0370250751)
2	Capacity(Turning)	3MT @ 150mm (Please refer to load chart)
3	Capacity(Tilting)	3MT @ 150mm (Please refer to load chart)
4	Electrical Panel	YES
5	Rotation Speed	0.077-0.77rpm at 5-50Hz
6	Tilt Range Of Table	0-135 Degree
7	Incoming Supply	380V-3P-50HZ
8	Control Voltage	24VAC
9	Diameter of table	Ø1000 mm
10	Rotation Drive Control	1.5Kw AC inverter
11	Control Means	Via Push Button Pendant c/w 6m cable
12	Rotation Drive Motor	1 X 1.5kw c/w force Cooling
13	Tilt Range Of Arm	0-45deg.
14	Lifting Drive & Vertical	Hydraulic Unit System 21Mpa 3Kw 23L
15	Hydraulic Cylinders	Till, 2" (Bore -Ø80 RodsizeØ50). Lifting, 1" (Bore -Ø100 RodsizeØ70)
16	Earthing	800A
17	Surface Preparation	Gritblast to SA2.5
18	Painting	2 coats Zinc phosphate, 1 coat Polyurethane
19	Color	Esab Yellow and Black
20	Qty	5 units
21	Est Weight(kg)	~1780Kg

APPROVAL BY CLIENT:

DENNIS
 02.11.2010
LEE
SIGNATURE



Note: - Equipments must be certified CE
 - Factory default for incoming supply is 380V-3P-50Hz

LOAD CHART 



ALL DIMENSION IN MM UNLESS OTHERWISE SPECIFIED

Controlled To:
PROJECT

02.11.10	Revised Dimension	Dennis	1	
Date	Description	By	Rev	Remark
ESAB				
PROJECT/MODEL : Positioner TAP 3T (0370250751)				
CLIENT : ESAB Saldatura S.P.A				
DRAWN : [Signature] 02.11.2010				
DWG. NAME : GENERAL ARRANGEMENT				
APPROVER : [Signature] 02.11.2010				
DWG. NO. : PJ-5069-GA03				
				SCALE: N.T.S.
				REVISION: 1
				SHEET NO: 1 OF 1
THE ORIGINAL AND ALL COPIES OF THIS DRAWING TOGETHER WITH THE COPYRIGHT THEREOF ARE THE SOLE PROPERTY OF R.P.E.I PTE. LTD. SINGAPORE				

NICK
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APPENDIX B ELECTICAL DRAWINGS



Electrical Drawings are compiled in this section to give the user a detailed graphical illustration of the electrical components and circuit diagrams associated with the equipment. For more information regarding the electrical and electrical system of this positioner, please visit the respective manufacturer's website.



DRAWING LIST

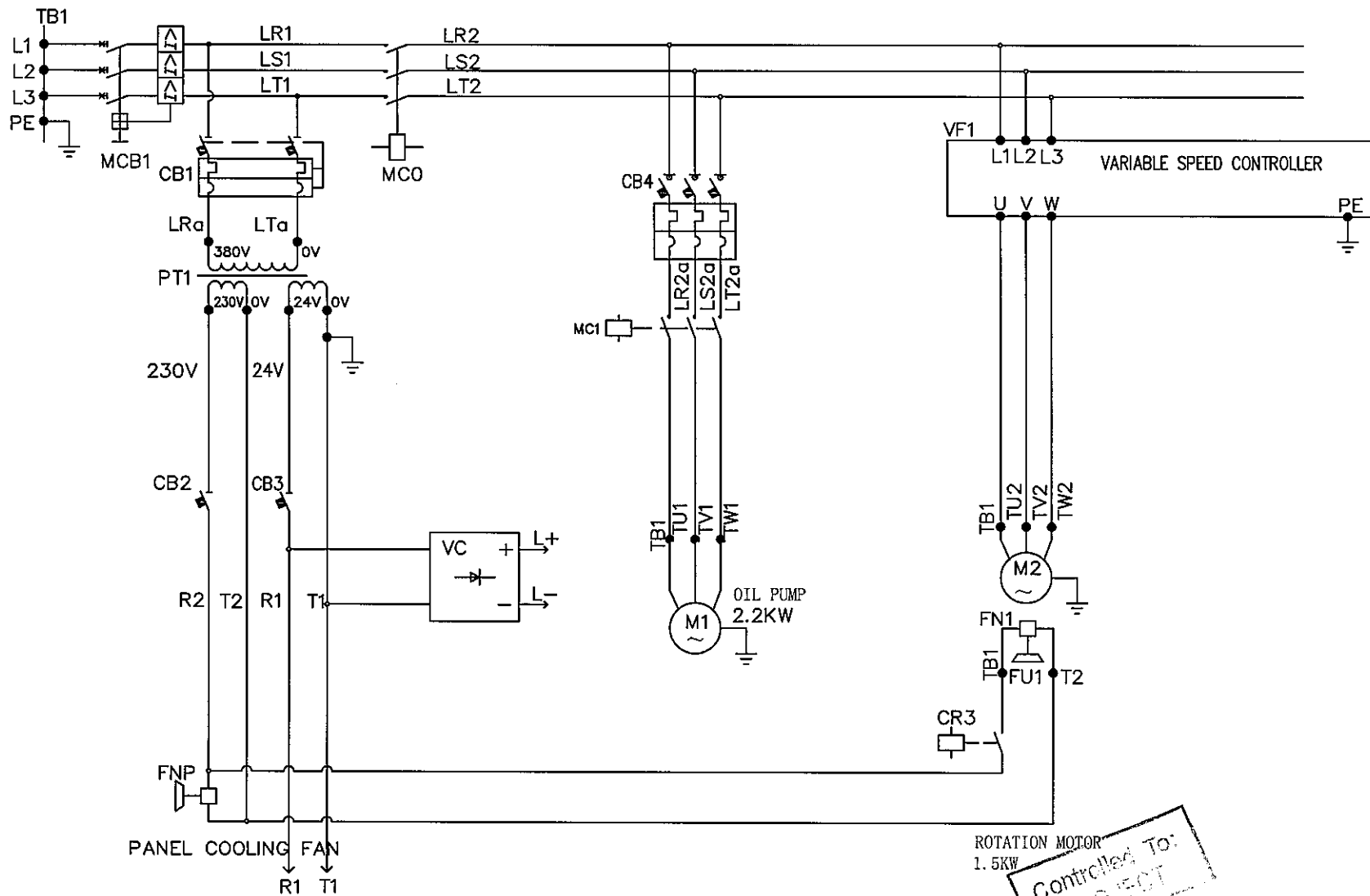
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Customer/Project	Esab Saldatura S.p.A	No. of Units	5
Product	Positioner	Reference No	6PJ-5069-ED31
Model	POSITIONER-TAP3T(0370250751)	Revision	0

Controlled By:
PROJECT


Prepared By : 	Approved By : 	Issued To :
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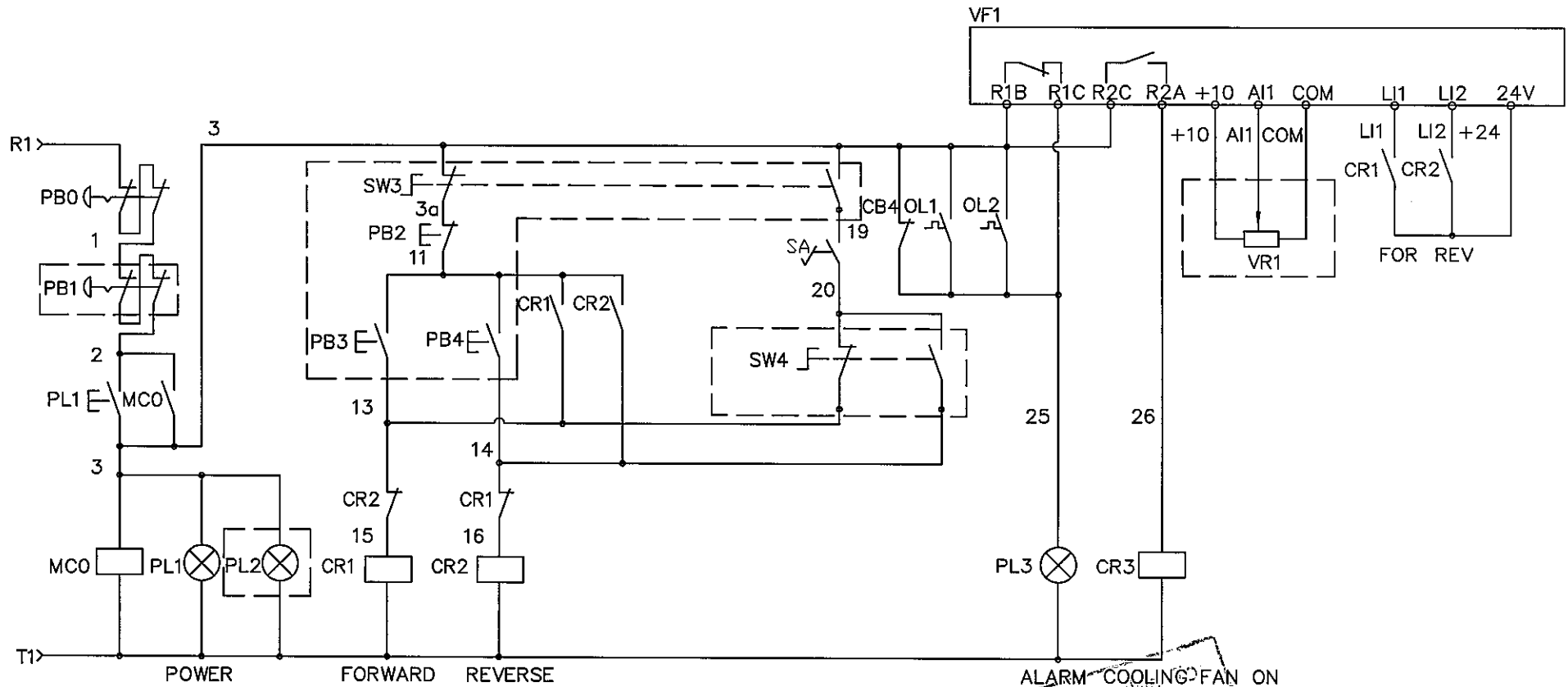
No	Drawing No.	Sht	Rev	Description	Qty/Unit
1	6PJ-5069-E301	1	0	MAIN CIRCUIT DIAMRAM	N/A
2	6PJ-5069-E302	1	0	CONTROL CIRCUIT DIAMRAM 1	N/A
3	6PJ-5069-E303	1	0	CONTROL CIRCUIT DIAMRAM 2	N/A
4	6PJ-5069-E304	1	0	BLOCK DIAGRAM	N/A
5	6PJ-5069-EP31	1	0	PANEL EQUIPMENT DIAGRAM	N/A
6	6PJ-5069-EP32	1	0	OUTSIDE VIEW OF PENDANT CONTROLLER	N/A
7	6PJ-5069-EC31	1	0	CONTROL PANEL EQUIPMENT LIST	N/A
8	6PJ-5069-EW31	1	0	CABLE LIST	N/A
9	6PJ-5069-ES31	1	0	INVERTER SETTING TABLE	N/A
10					
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Note:






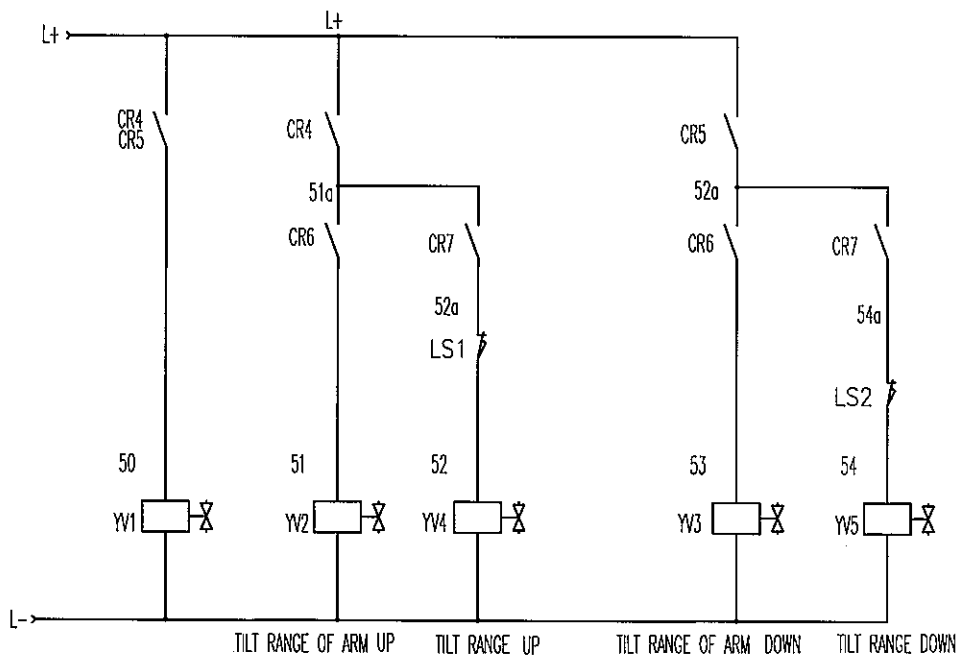
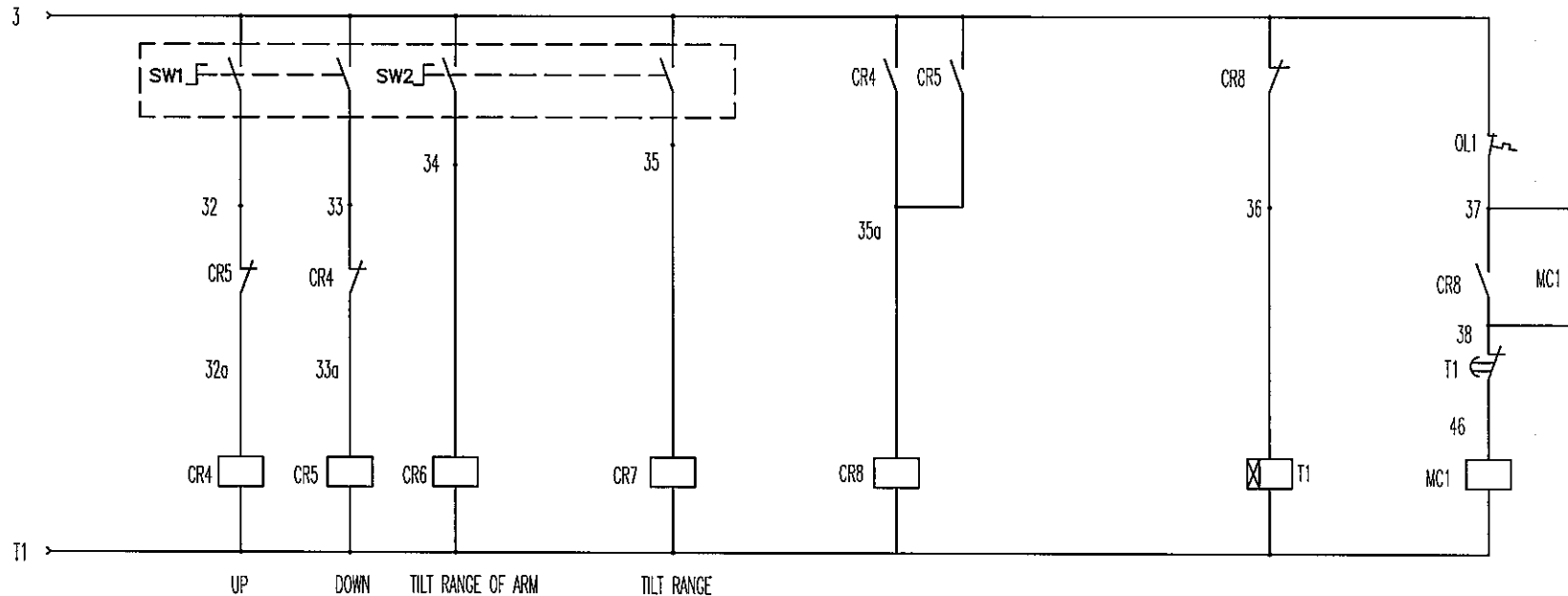
Rotation Motor
1.5KW
Controlled To:
PROJECT

 ROMAR POSITIONING EQUIPMENT INTERNATIONAL PTE LTD SINGAPORE AN ESAB GLOBAL COMPANY			PROJECT/MODEL : POSITIONER-TAP3T(0370250751)	
DRAWN : ZYJ DATE : 19-06-10			CLIENT : Esab Saldatura S.p.A	
APPROVED : <i>Grande</i>			DWG. NAME : Main Circuit Diagram (主电路原理图)	
			DWG. NO. : 6PJ-5069-E301	
			SCALE: N/A REVISION: 0 SHEET NO: 1 OF 1	
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ALARM COOLING FAN ON
Control
PROJECT

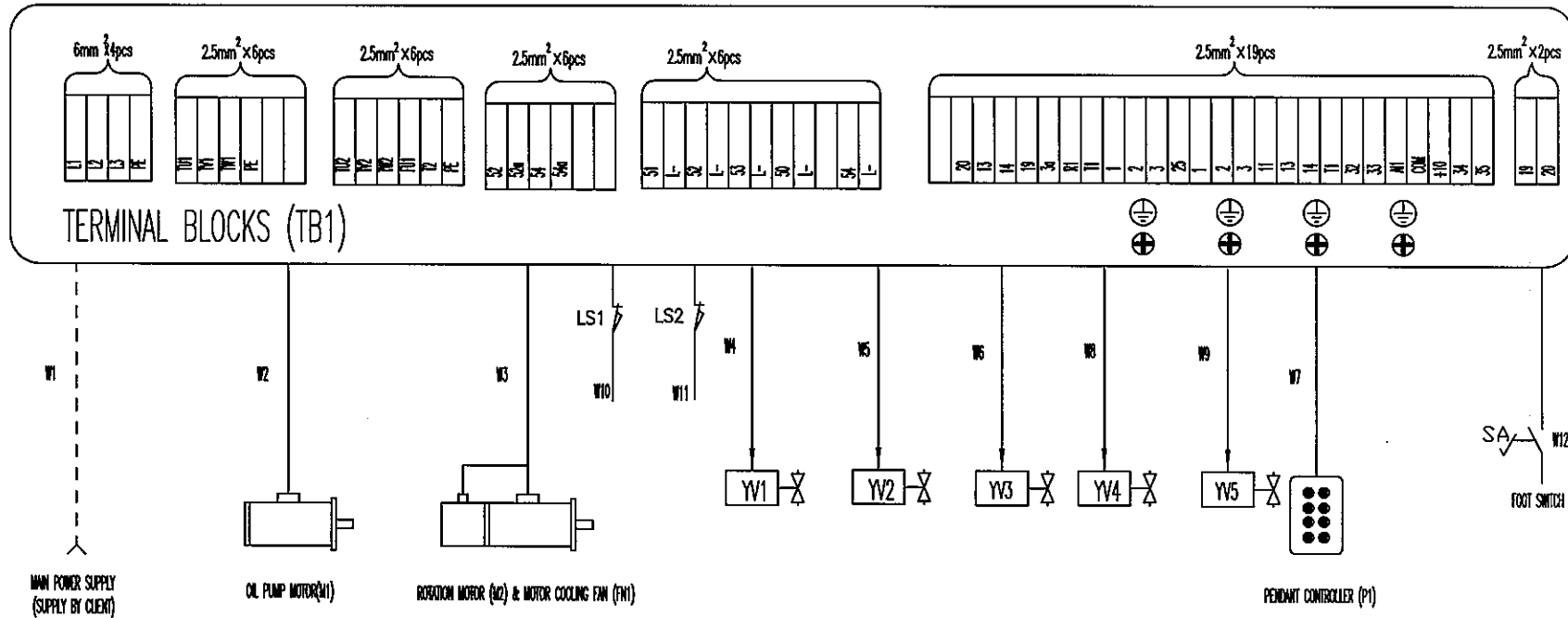
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DRAWN			CLIENT :		
NAME			Esab Saldatura S.p.A		
DATE			DWG. NAME :	SCALE:	
19-06-10			Control Circuit Diagram (控制原理图1)		N/A
APPROVED			DWG. NO. :	REVISION:	
			6PJ-5069-E302		0
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DRAWN		NAME ZYJ	DATE 19-06-10
APPROVED		CLIENT : Esab Saldatura S.p.A	
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		DWG. NO. : 6PJ-5069-E303	
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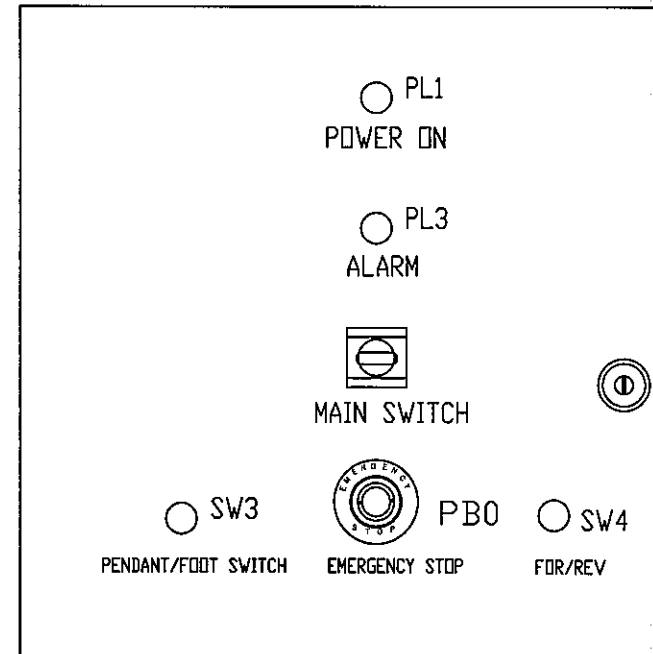
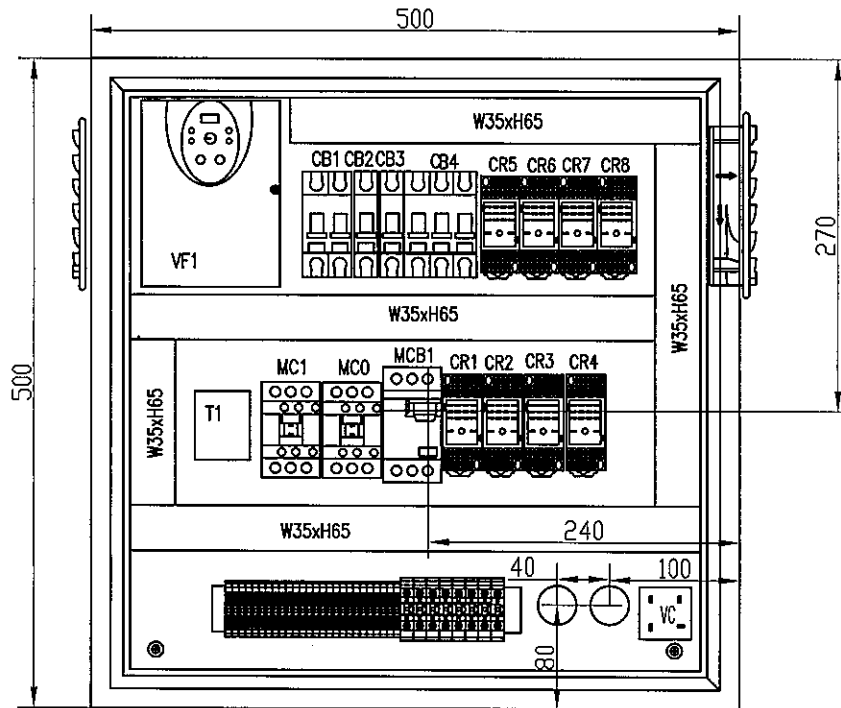
CONTROL PANEL (CP1)



Controlled For
PRO...

ROMAR POSITIONING EQUIPMENT INTERNATIONAL PTE LTD SINGAPORE AN ESAB GLOBAL COMPANY		PROJECT/MODEL :	
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APPROVED			DWG. NAME : Block Diagram (端子接线图)
			DWG. NO. : 6PJ-5069-E304
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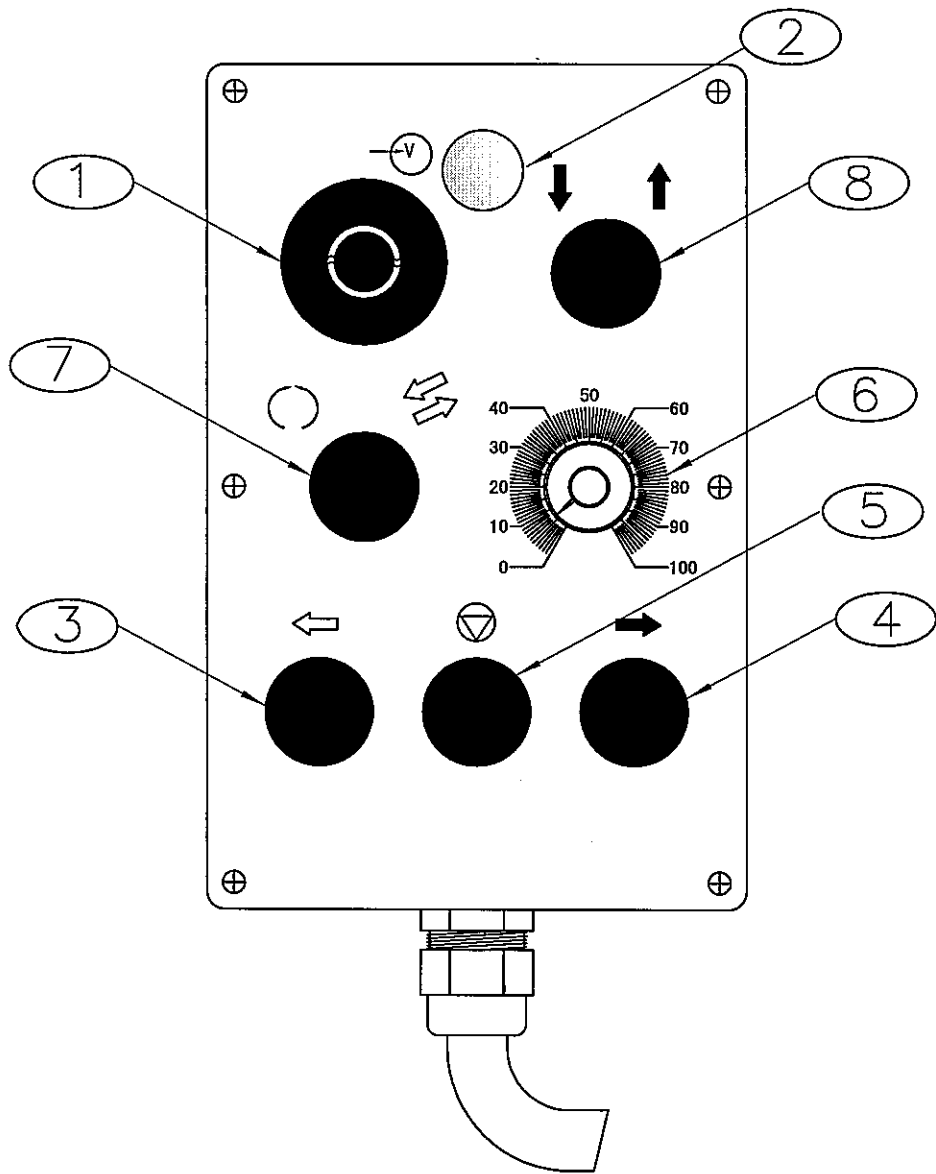
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1 OF 1



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DRAWN	NAME ZYJ	DATE 19-06-10	CLIENT : Esab Saldatura S.p.A
APPROVED			DWG. NAME : Panel Equipment Diagram (元件布置图)
			DWG. NO. : 6PJ-5069-EP31
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SCALE: N/A	④
REVISION: 0	
SHEET NO: 1 OF 1	






PENDANT CONTROLLER(P1)

Specification For Rotator Pendant Controller(P1)

No.	Symbols	Description
1	PB1	Emergency Stop
2	PL2	Power On Light
3	PB3	Rotation Drive Forward
4	PB4	Rotation Drive Reverse
5	PB2	Rotation Drive Stop
6	VR1	Rotation Drive Speed Setting
7	SW2	TILT RANGE OF ARM OR TILT RANGE SELECTOR
8	SW1	Up Or Down Selector

Controlled To:
- 100-100

 ROMAR POSITIONING EQUIPMENT INTERNATIONAL PTE LTD SINGAPORE AN ESAB GLOBAL COMPANY		PROJECT/MODEL : POSITIONER-TAP3T(0370250751)	
CLIENT : Esab Saldatura S.p.A			
DRAWN ZYJ	NAME ZYJ	DATE 19-06-10	SCALE: N/A
APPROVED 		DWG. NAME : Outside View of Pendant Controller (俯視示波圖)	REVISION: 0
		DWG. NO. : 6PJ-5069-EP32	SHEET NO: 1 OF 1
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CONTROL PANEL EQUIPMENT LIST

Sales Order No.:	5069		Customer/Project :	Esab Saldatura S.p.A
Item No.:	03	<div style="border: 1px solid black; padding: 5px; display: inline-block;"> Controlled To PROJECT </div>	Model No :	POSITIONER-TAP3T(0370250751)
No. of Units :	5		Reference No.:	6PJ-5069-EC31
Revison :	0			

Prepared By:		Approved By:		Issued To :	
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No.	Symbol No.	Description	Type	Qty/Unit	Brand	Remarks
1	MCB1	MAIN CIRCUIT BREAKER	GV2-PM20C	1	TELEMECANIQUE	
2		PADLOCK-ABLE EXTERNAL OPERATOR	GV2-AP01	1	TELEMECANIQUE	
3	PL1	PUSH BUTTONS WITH INTEGRAL LED	XB2-BW31B1C (White)	1	TELEMECANIQUE	
4	PL2	PILOT LIGHTS WITH INTEGRAL LED	XB2BVB1C	1	TELEMECANIQUE	
5	PL3	PILOT LIGHTS WITH INTEGRAL LED	XB2-BVB5C (Yellow)	1	TELEMECANIQUE	
6	PB0	MUSHROOM HEAD PUSH-BUTTONS	XB2-BS542C (Red)	1	TELEMECANIQUE	
7	PB1	MUSHROOM HEAD PUSH-BUTTONS	XB2-BS542C (Red)	1	TELEMECANIQUE	
8	PB2	PUSH-BUTTONS	XB2BA42C	1	TELEMECANIQUE	
9	PB3	PUSH-BUTTONS	XB2BA31C	1	TELEMECANIQUE	
10	PB4	PUSH-BUTTONS	XB2BA21C	1	TELEMECANIQUE	
11	SW1	3-STAY PUT SELECTOR SWITCHES	XB2BD53C	1	TELEMECANIQUE	
12	SW2	3-STAY PUT SELECTOR SWITCHES	XB2BD33C	1	TELEMECANIQUE	
13	SW3,SW4	3-STAY PUT SELECTOR SWITCHES	XB2BD25C	2	TELEMECANIQUE	
14	VF1	VARIABLE SPEED CONTROLLER	ATV312HU15N4	1	TELEMECANIQUE	
15	MC0	3-POLE CONTACTORS	LC1-D12B7C	1	TELEMECANIQUE	
16	MC1	3-POLE CONTACTORS	LC1-D09B7C	1	TELEMECANIQUE	
17		OVERLOAD RELAYS TERMINAL BLOCKS	LAD-7B106	2	TELEMECANIQUE	
18	FNP	CONTROL BOX COOLING BLOWER	BG12025HBL2	1		
19	CR1-CR8	RELAY	RMIA4-5024VACM1 (WITH SOCKET)	8	FEME	
20	PT1	TRANSFORMER	IP: 380/400/415/440/460/480V OP:230(150W)/24(150W)	1		300VA
21	CB1	CIRCUIT BREAKER	OSMC32N2D2	1	TELEMECANIQUE	
22	CB2,CB3	CIRCUIT BREAKER	OSMC32N1D4	2	TELEMECANIQUE	
23	CB4	CIRCUIT BREAKER	GV2-ME10C	1	TELEMECANIQUE	



CONTROL PANEL EQUIPMENT LIST

Controlled To:
PROJECT

Sales Order No.:	5069	Customer/Project :	Esab Saldatura S.p.A
Item No.:	03	Model No :	POSITIONER-TAP3T(0370250751)
No. of Units :	5	Reference No.:	6PJ-5069-EC31
Revison :	0		

Prepared By:		Approved By:		Issued To :	
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No.	Symbol No.	Description	Type	Qty/Unit	Brand	Remarks
24	VR1	POTENTIOMETER	10K OHM 2W	1	COSMOS	
25	T1	RELAY TIME	ST3PA-S2,AC24V,RELAY 0~60S	1		
26	VC1	RECTIFYING VALVE	KBPC3510	1		

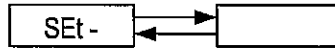
ROMAR POSITIONING EQUIPMENT INTERNATIONAL PTE LTD



CABLE LIST
PROJECT

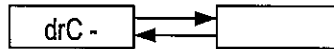
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Model No. :		POSITIONER-TAP3T(0370250751)																
Reference No.:		6PJ-5069-EW31																
Revision :		0																
Cable No.	Cable Size	Est.Length	FROM	TO	Cable Code	Brown	Black	Blue	Yellow/Green									
W1	2.5mm ² x 4C		Control Panel (TB1)	Power Incomming	Wring No.	L1	L2	L3	PE									
W2	1.5mm ² x4C		Control Panel (TB1)	Oil Pump Motor (M1)	Cable Code	1	2	3	4	5	6	7						
					Wring No.	TU1	TV1	TW1			--	PE						
W3	1.5mm ² x 7C		Control Panel (TB1)	Roller Motor (M2)	Cable Code	1	2	3	4	5	6	7						
					Wring No.	TU2	TV2	TW2	FU1	T2	--	PE						
W4	0.75mm ² x 3C		Control Panel (TB1)	YV1	Cable Code	1	2	3	4	5	6	7						
					Wring No.	50	L-				--							
W5	0.75mm ² x3C		Control Panel (TB1)	YV2	Cable Code	1	2	3	4	5	6	7						
					Wring No.	51	L-				--							
W7	0.75mm ² x 18C	6m	Control Panel (TB1)	Pendant Controller(P1)	Cable Code	1	2	3	4	5	6	7	8	9	10	11	12	
					Wring No.	1	2	3	11	13	14	32	33	+10	AI1	COM	T1	
					Cable Code	13	14	15	16	17	18							
					Wring No.	34	35	--	--	--	--							
W6	0.75mm ² X3C		Control Panel (TB1)	YV3	Cable Code	1	2											
					Wring No.	53	L-											
W8	0.75mm ² X3C		Control Panel (TB1)	YV4	Cable Code	1	2											
					Wring No.	52	L-											
W9	0.75mm ² X3C		Control Panel (TB1)	YV5	Cable Code	1	2											
					Wring No.	54	L-											
W10	0.75mm ² X3C		Control Panel (TB1)	LS1	Cable Code	1	2											
					Wring No.	52	52a											
W11	0.75mm ² X3C		Control Panel (TB1)	LS2	Cable Code	1	2											
					Wring No.	54	54a											
W12	0.75mm ² X3C		Control Panel (TB1)	FOOT SWITCH	Cable Code	1	2											
					Wring No.	19	20											
W13					Cable Code													
					Wring No.													
W14					Cable Code													
					Wring No.													
W15					Cable Code													
					Wring No.													
W16					Cable Code													
					Wring No.													

Settings menu



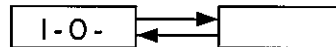
Code	Factory setting	Romar Setting
ACC	3 s	3 s
dEC	3 s	3 s
LSP	0 Hz	5 Hz
HSP	bFr	50 Hz
Ftd	bFr	0Hz

Motor control menu



Code	Factory setting	Romar Setting
bFr	50 Hz	50 Hz
UnS	According to drive rating	380 V
Frs	50 Hz	50 Hz
tFr	60 Hz	50 Hz
UFt	n	L

I/O menu



Code	Factory setting	Romar Setting
tCC	2C ATV31 A: LOC ●●●	2C
r2	nO	rUn

Control menu



Code	Factory setting	Romar Setting
Fr1	AIP	A11

Fun menu



Code	Factory setting	Romar Setting
Adc	Yes	No

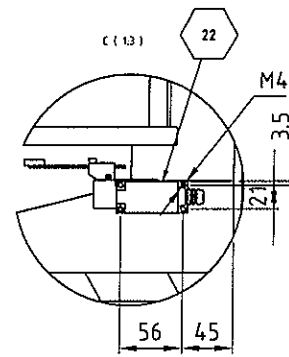
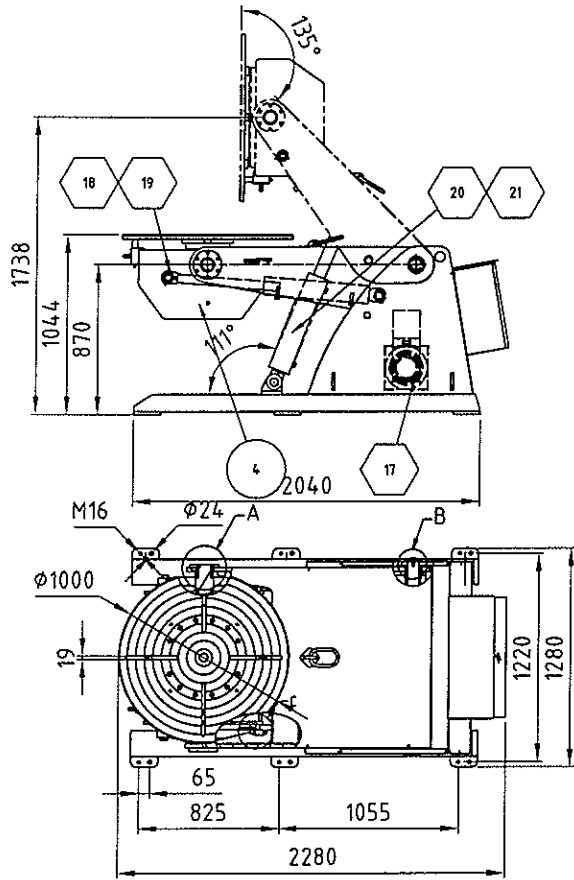
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 <small>ROMAR POSITIONING EQUIPMENT INTERNATIONAL PTE LTD SINGAPORE AN ESAB GLOBAL COMPANY</small>	PROJECT/MODEL :		POSITIONER-TAP3T(0370250751)
	CLIENT :		
DRAWN	NAME	DATE	SCALE: N/A
	ZYJ	19-06-10	REVISION: 0
APPROVED			SHEET NO: 1 OF 1
DWG. NO. :		6PJ-5069-ES31	
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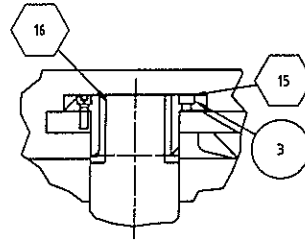
APPENDIX C MECHANICAL PARTS LIST

Parts list drawings are included in this manual for ease of reference when ordering spare parts. Please indicate the item number, part number, description, and quantity of the spare parts when making any purchase.

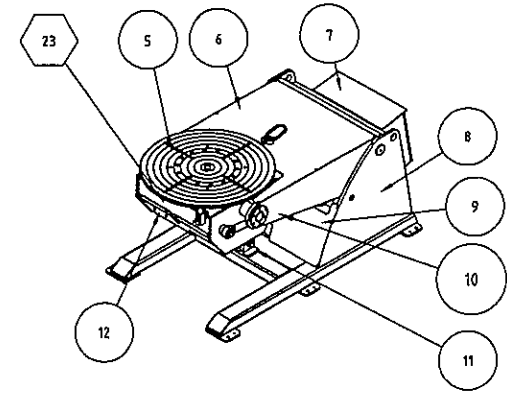
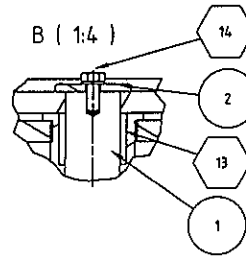
The parts list drawings for the TAP-3-STD hydraulic positioner is found on the following page.



A (1:4)



B (1:4)



17		Powerpack	1	
16	7080F	500# Bearing 2	2	
15	GB/T70.1-2000	Hex. Socket Head Cap Screw M10x30	12	Galvanized
14	GB5783-2000	Hex. Socket Head Cap Screw M16x35	2	Galvanized
13	658060	500# Bearing 1	2	
12	6 506903 04-00	Motor Cover	1	
11	6 506903-P08	Cylinder Pin	2	
10	6 506903 03-00	Arm Assembly	1	
9	6 506903-P07	Plate	1	
8	6 506903 02-00	Base Structure Assembly	1	
7	6 506903-P06	Back Cover	1	
6	6 506903-P05	Top Cover	1	
5	6 506903 01-00	Tilt Box Assembly	1	
4	6 506903-P04	Stopper	2	
3	6 506903-P03	Bearing	2	
2	6 506903-P02	End Cover	2	
1	6 506903-P01	Shaft	1	
NO.	PART NUMBER	DESCRIPTION	QTY	REMARKS

NIC
23/9/10

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PROJECT

23	GB/T70.2-2000	Hex. Socket Head Cap Screw M8 x 16	27	Galvanized
22	XCE 145	Limit Switch	2	
21	GB/T 894.1-1986	Spring Washer 45	4	
20	6 506903-P10	Rotating Hydraulic Cylinder 100x70x425	1	
19	GB/T812-1988	Round Nut M35	8	
18	6 506903-P09	Tilt Hydraulic Cylinder 80x50x465	2	
NO.	PART NUMBER	DESCRIPTION	QTY	REMARKS

ESAB

DRAWN: Tzi Keong 21-09-10

APPROVED: *[Signature]* 22/09/10

PROJECT/MODEL : Positioner TAP 3T-STD

CLIENT : ESAB Saldoturo S.P.A

DWG. NAME : GENERAL ASSEMBLY

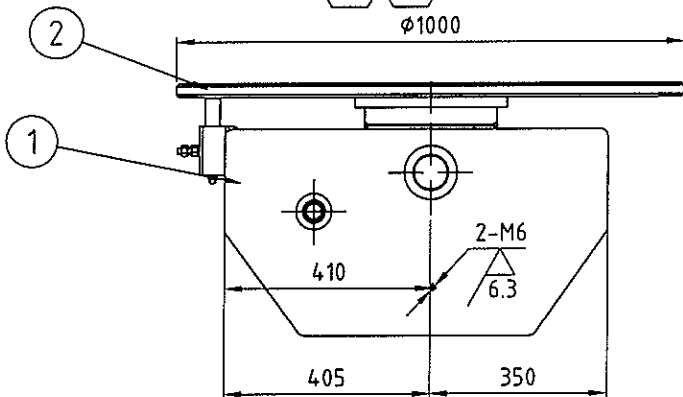
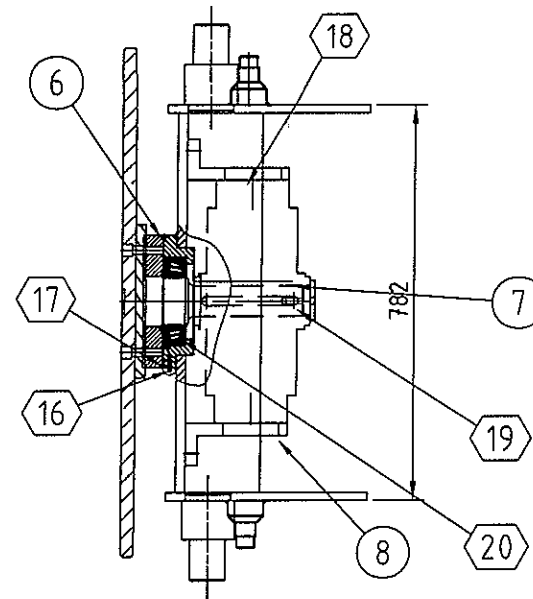
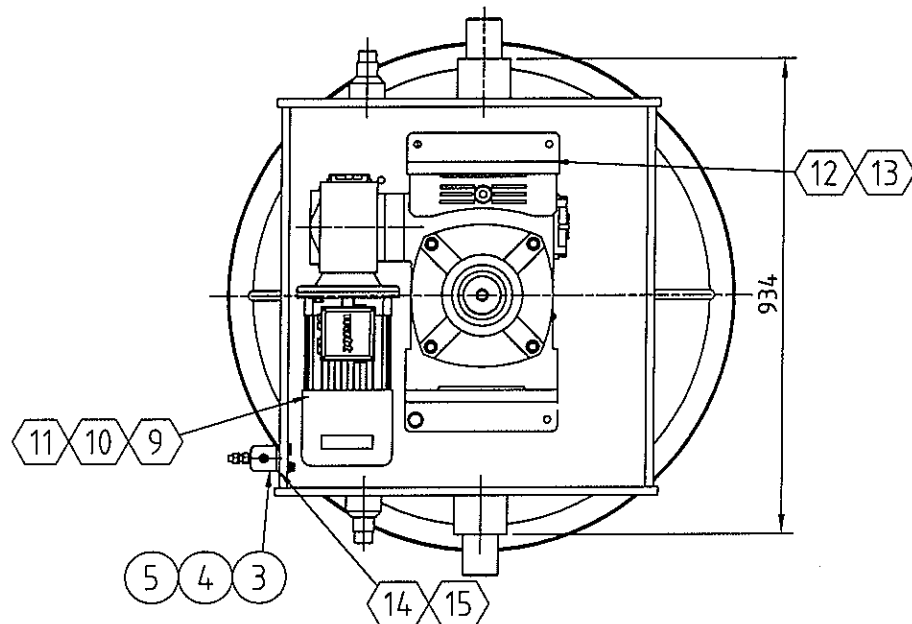
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SCALE: N.T.S.

REVISION: 0

SHEET NO: 1 OF 1

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13	GB/T93-1987	Spring Washer 16	12	Galvanized
12	GB5783-2000	Hex. Socket Head Cap Screw M16x50	12	Galvanized
11	GB/T93-1987	Spring Washer 10	4	Galvanized
10	GB5783-2000	Hex. Socket Head Cap Screw M10x50	4	Galvanized
9	YD3NF 90L4 FC	1.5KW Motor	1	
8	6 506903 01-P06	Gearbox Mounting	2	
7	6 506903 01-P05	Cover	1	
6	6 506903 01-P04	Turning Shaft	1	
5	6 506903 01-P03	Insulation Plate	1	
4	6 506903 01-P02	Insulation Washer	4	
3	6 506903 0102-00	Grounding Assembly	1	
2	6 506903 01-P01	Table Top	1	
1	6 506903 0101-00	Tilt Box Frame	1	
NO.	PART NUMBER	DESCRIPTION	QTY	REMARKS

20	32219U	NTN Bearing	1	
19	GB5783-2000	Hex. Socket Head Cap Screw M12x60	1	Galvanized
18	UHX135-80-1/1800-2	Gearbox	1	(with 15x185 Double Round Key)
17	GB 3452.1 - 1992	"O" Ring 250 x 7	1	
16	JB/T794.0.1-1995	Greese Nipple M6x1.0	1	
15	GB/T93-1987	Spring Washer 8	4	Galvanized
14	GB5783-2000	Hex. Socket Head Cap Screw M16x50	4	Galvanized
NO.	PART NUMBER	DESCRIPTION	QTY	REMARKS

		PROJECT/MODEL :		
		Positioner TAP 3T-STD		
DRAWN: Tzi Keong 21-09-10 APPROVED: <i>[Signature]</i> 22/09/10		CLIENT :		SCALE: N.T.S. REVISION: 0 SHEET NO: 1 OF 1
		ESAB Soldadura S.P.A		
		DWG. NAME :		
		GENERAL ASSEMBLY		
		DWG. NO. :		
		PJ-5069-A302		
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APPENDIX D HYDRAULIC SYSTEM

Index

1. Description
2. Main technical parameter
3. Operation guide
4. System maintenance
5. Important note
6. Troubleshooting

1. Description

The hydraulic power pack is specially designed and built for ESAB. The configuration pump and motor are assembled in line to achieve low headroom and compactness. The special design facilitates relatively easy maintenance.

2. Operation Guide

- a) Fill the tank until the level indicator is reached.
(Note: always use a filter when adding oil)
- b) Start the power pack and check that rotation of the cooling fan on the motor is same as the arrow indicator.
- c) Let the motor idle 5-10 minutes before you use the equipment. The pressure is factory set and no further adjustment is generally necessary. However, if there is need adjust the required pressure of the system (pressure increase is clockwise, and decrease is anti clockwise). Lock pressure adjustment nut tightly after operation.
- d) Pressure reducing valve.
- e) Control the supply flow of system with the throttle valve's adjustment, this controls the flow rate to cylinders.

3. System Maintenance

- a) Check that the system pressure falls within the standard range daily.
- b) Observe if there is any abnormal noise when the system is operating.
- c) The oil temperature must be within standard range, ie. not more than 60°C.
- d) Incoming voltage must be kept within the range +5% to -15% (qualified electrician).
- e) Check the leakage of oil or frayed hoses.
- f) Change the filter at least once a year or more frequent (depending on the site condition)

4. Main Notice

- a. Stop the machine when the temperature is above 60°C or below 15°C.
- b. Stop the machine when the oil in the oil tank fall below the gauge mark.
- c. Stop immediately if there is gushing oil or serious oil leak.
- d. Suggest to use hydraulic oil that meet 8/9(NAS1638) and viscosity degree to 25-54CST.

5. Ordinary trouble and operation procedure

Out of order	Possible Cause	Remedy
1.No. oil flow	a. Wrong rotating directing of motor.	Stop immediately and revise the way
	b. The Pump not working.	Check the Motor power is electric or not, key board is damaged or not
	c. Suction pipe or filter is blocked	Check the suction pipe's circulation and clean the suction filter
	d. Oil viscosity is to high.	Change to the stipulated viscosity (According to the sample)
	e. Leaking at suction pipe.	Check the suction pipe circulation
	f. The tank's filter above the liquid	Add oil to the upper line of oil gauge
	g. Vane concentricity is off.	Repair the Pump
2.Abnormal noise	a. Suction filter is blocked.	Clean the suction filter
	b. Suction pipe suck the air.	Screw the pump's suction port tightly and check that the other suction port is tight.
	c. Vane concentricity is off.	Repair the Pump.
	d. Pressure set too high.	Check the pressure gauge.
	e. Pump wore out.	Oil is too dirty and must be replace, also replace the pump.
3.Insufficient flow	a. No oil flow out.	Refer to no.1
	b. Rotor wore out.	Repair the pump or replace it.
	c. Pump cap is loose	Re-tighten.
	d. Viscosity	Change to lighter oil grade.

6. Main Component List

Description	Model	QTY	Remarks
Oil tank	16L	1	Hydraulic Power
Gear Pump	2.1cc/r	1	Hydraulic Power
Motor	1.5KW/380V/50Hz	1	Hydraulic Power
Main Block	Aluminium Alloy	1	Hydraulic Power
Single Block	Aluminium Alloy	2	Hydraulic Power
Suction Filter	Power Unit Use	1	Hydraulic Power
Air Breathe	Power Unit Use	1	Hydraulic Power
Check Valve	Power Unit Use	1	Hydraulic Power
Solenoid operated directional valve	SWH-G02-C4-R240-20	2	Hydraulic Power
Modular Blance Valve	MCS -02A-K-2-20	1	Hydraulic Power
Modular Throttle Valve	MTC-02W-K-20	1	Hydraulic Power
Pressure Relief	Power Unit Use	1	Hydraulic Power

7. Hydraulic Oil

Detail of Mineral Based Hydraulic Oil.

Hydraulic oil ISO 46 (For Cold Weather Area)				
Mineral based hydraulic oil				
Property	Value in metric unit		Value in US unit	
Density at 60°F (15.6°C)	0.871 *10 ³	kg/m ³	54.4	lb/ft ³
Kinematic viscosity at 104°F (40°C)	46.3	cSt	46.3	cSt
Kinematic viscosity at 212°F (100°C)	6.94	cSt	6.94	cSt
Viscosity index	106		106	
Flash point	220	°C	428	°F
Pour Point	-30	°C	-22	°F
Aniline Point	108	°C	226	°F
Color	max. 2.0		max. 2.0	

Hydraulic oil ISO 100 (For Hot Weather Area)				
Mineral based hydraulic oil				
Property	Value in metric unit		Value in US unit	
Density at 60°F (15.6°C)	0.882 *10 ³	kg/m ³	55.0	lb/ft ³
Kinematic viscosity at 104°F (40°C)	96.7	cSt	96.7	cSt
Kinematic viscosity at 212°F (100°C)	11.0	cSt	11.0	cSt
Viscosity index	100		100	
Flash point	254	°C	489	°F
Pour Point	-27	°C	-17	°F
Aniline Point	113	°C	235	°F
Color	max. 2.5		max. 2.5	

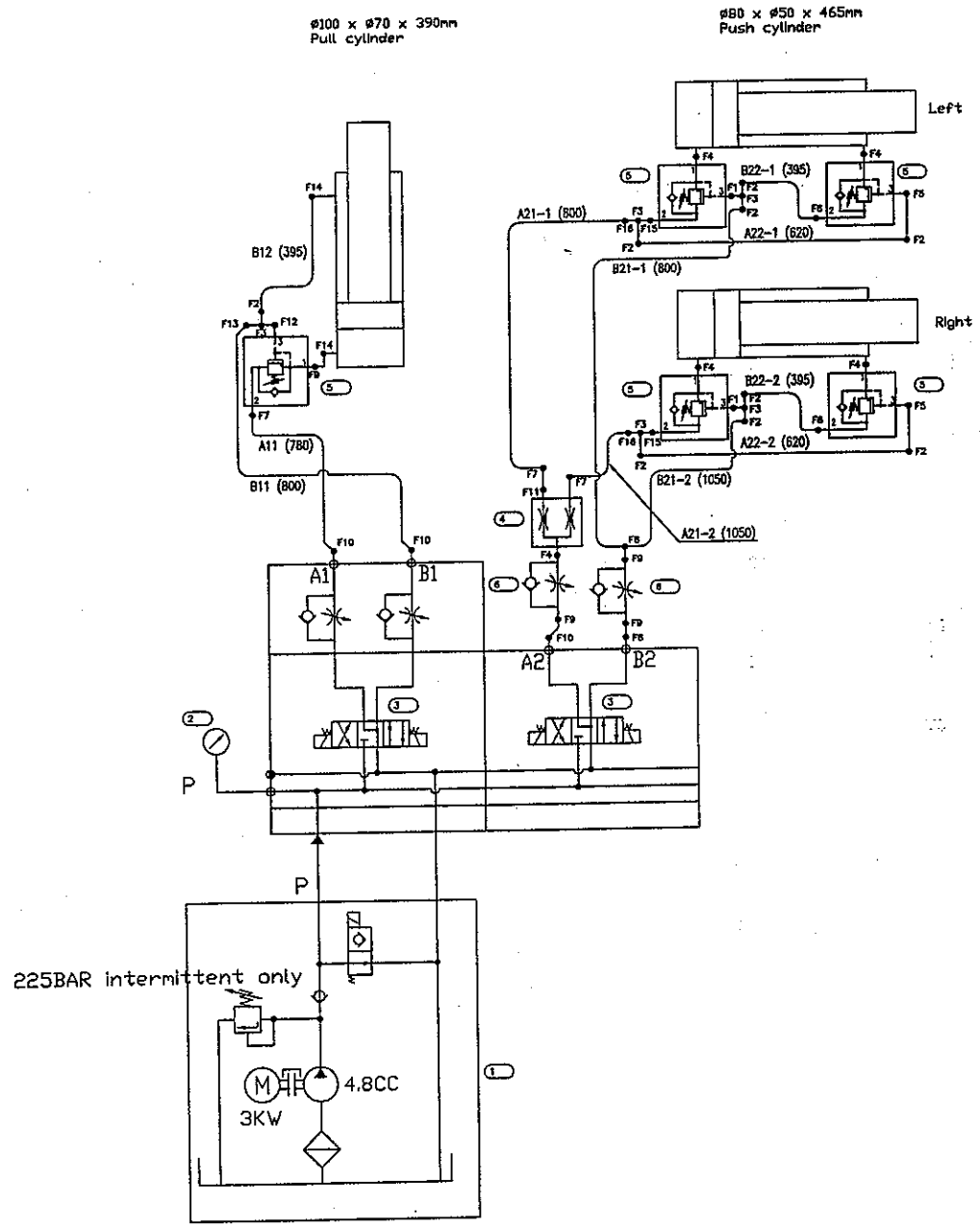
Type of Fluid & Quality of Hydraulic System.

For Cold Weather Area:

Model	Type of Fluid (Oil)	Tank Fluid (L)	Additional amounts standby for each unit, for fill up the empty hoses (L)	Fluid Amounts (L)
TAP3-STD & TAP3-HD	Shell Tellus Oil VG22, Shell Tellus Oil VG32 , Shell Tellus Oil VG46	23	-	23

For Hot Weather Area:

Model	Type of Fluid (Oil)	Tank Fluid (L)	Additional amounts standby for each unit, for fill up the empty hoses (L)	Fluid Amounts (L)
TAP3-STD & TAP3-HD	Shell Tellus Oil VG68, Shell Tellus Oil VG100 ,	23	-	23



ITEM NO	QTY	DESCRIPTION
F1	2	1/4" NPT (M) X 1/4" NPT (M) STRAIGHT
F2	9	1/4" NPT (M) X 3/8" JIC (M) 90°
F3	5	1/4" NPT (F) TEE
F4	5	3/8" NPT (M) X 3/8" NPT (M) STRAIGHT
F5	2	1/4" NPT (M) X 1/4" NPT (F) 90°
F6	2	3/8" NPT (M) X 3/8" JIC (M) STRAIGHT
F7	2	3/8" NPT (M) X 3/8" JIC (M) 90°
F8	1	3/8" JIC (M) TEE
F9	4	3/8" NPT (M) X 3/8" JIC (F) SWIVEL STRAIGHT
F10	3	3/8" NPT (M) X 3/8" JIC (M) 45°
F11	1	3/8" NPT (M) X 3/8" NPT (F) STRAIGHT
F12	1	1/4" NPT (M) X 1/4" NPT (M) 90°
F13	1	1/4" NPT (M) X 3/8" JIC (M) 45°
F14	2	1/2" NPT (M) X 3/8" JIC (M) 90°
F15	2	3/8" NPT (M) X 1/4" NPT (M) STRAIGHT
F16	2	1/4" NPT (M) X 3/8" JIC (M) STRAIGHT
B22-1, B22-2, B12	3	HOSE, PRESSURE 4000 PSI, 3/8" JIC BOTHEND L=395mm
A22-1, A22-2	2	HOSE, PRESSURE 4000 PSI, 3/8" JIC BOTHEND L=620mm
B21-2, A21-2	2	HOSE, PRESSURE 4000 PSI, 3/8" JIC BOTHEND L=1050mm
B21-1, A21-1, B11	3	HOSE, PRESSURE 4000 PSI, 3/8" JIC BOTHEND L=800mm
A11	1	HOSE, PRESSURE 4000 PSI, 3/8" JIC BOTHEND L=780mm
⊗	1	3KW/380~440V/50HZ/4.8cc/rev/23L TANK
⊗	1	PRESSURE GAUGE 0-400BAR RANGE
⊗	2	V62/24DC V/V
⊗	1	FLOW DIVIDER 3/8" NPT (F)
⊗	5	COUNTER BALANCE VALVE w/ manifold block VBSN-08AA-SIZE08 + 3/8" BODY
⊗	2	FLOW CONTROL VALVE 3/8" NPT (F)

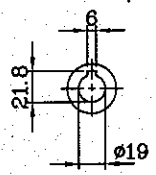
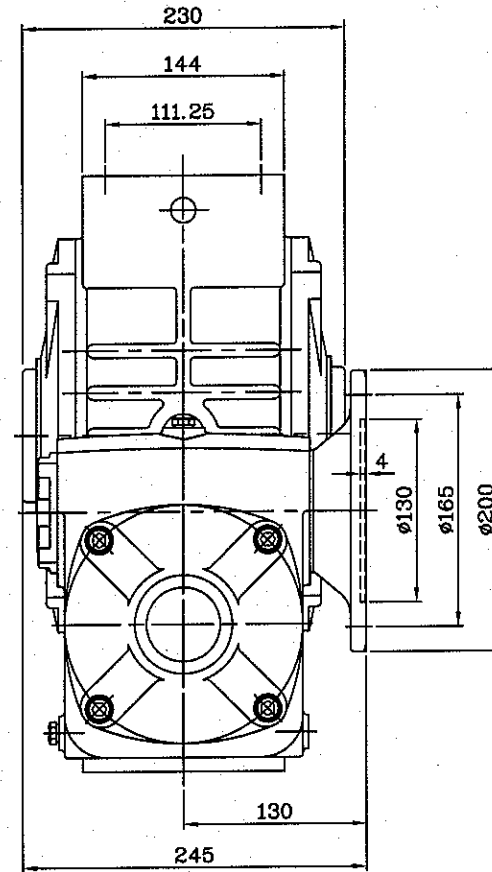
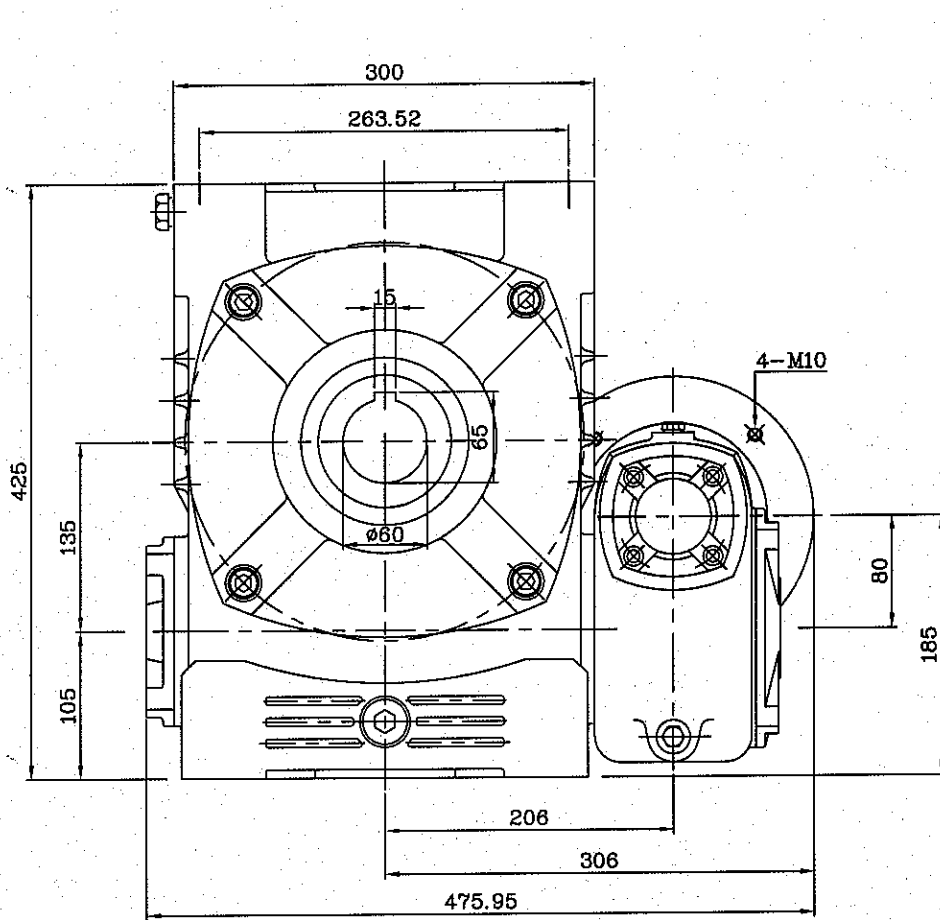
Controlled To:
MASTER

TAUFIQ
30.9.2010

ROMAR POSITIONING EQUIPMENT INTERNATIONAL PTE LTD http://www.romar.com.sg		PROJECT/MODEL : TAP-3-HD	
DRAWN : NAME : DATE :	CLIENT :	DWG. NAME : HYDRAULICS DIAGRAM	SCALE : NTS
APPROVED : TAUFIQ 30.4.2010 SYAHRUL	DWG. NO. : SD-PH03-H003	REVISION : 0	SHEET NO. : 1 OF 1
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APPENDIX E SPECIFICATION OF GEARBOX & MOTOR

Motors in general run at a very high speed and to accommodate the required operating speed of the positioner a gearbox is necessary. The gearbox houses the gearing system for the positioner and it's primary purpose is to provide a torque speed conversion (commonly known as "Gear Reduction" or "Speed Reduction") from a higher speed motor to a slower but more forceful output. Positioner gearboxes always consist of the primary gearbox & secondary gearbox, exploded views of the positioner gearboxes are shown in the DWG on the following page.



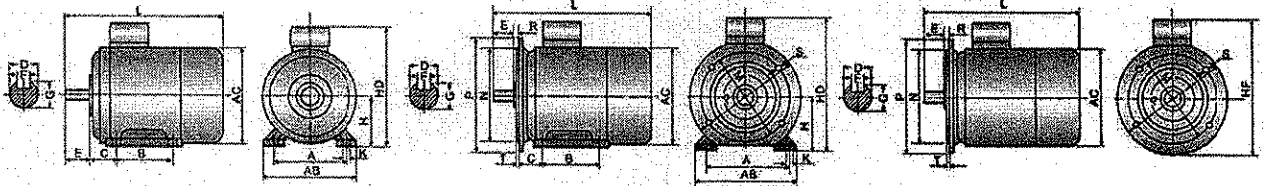
Input Bore

4P- 1HP

			PROJECT/MODEL : UHX-135-80-1HP	
			CLIENT :	 SCALE: N.T.S. REVISION: 0 SHEET NO: 1 OF 1
DRAWN Tel Keong	NAME Tel Keong	DATE 03-10-10	DWG. NAME : Gearbox drawing	
APPROVED			DWG. NO. : UHX-135-80-1HP	
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DIMENSIONS OF MSVF SERIES ALUMINUM HOUSING ELECTRIC MOTORS(WITH FORCE COOLING FAN)

Frame Size	Power(kw)				DIMENSIONS OF MOUNTING TYPE B3, B35 AND B5																
	2P	4P	6P	8P	A	B	C	D	DH	E	F	G	GD	H	K	M	N	P	R	S	T
90L	1.5kw				140	125	56	24	M8*19	50	8	20.0	7	90	10.0	165	130	200	0	12	3.5



IMB3

IMB35

IMB5

Frame Size	Power(kw)				B3 Overall Dimensions(mm)					DIMENSION OF B14					
	2P	4P	6P	8P	AB	AC	HD	L	KK	M	N	P	R	S	T
90L					180	195	250	390	1*M25*1	115	95	140	0	M8	3.5

Specification	IEC 60034-1	Efficiency class	
Motor type	MSVF-90L-B5	Load date	100% 75% 50% 25%
Rated power	1.5 KW	Efficiency	78%
Speed	1500 r.p.m	Power factor	0.85
Voltage	380/400/415 V	Sound pressure level(1m)	dB(A)
Frequency	50/60 Hz	Resistance R20	Ω
Connection	Y	Full load torque	Nm
Amps full load	4.2 A	DOL Starting torque vs FL torque	2.3
Amps no-load		DOL Pull up torque vs FL torque	
Enclosure	IP55	DOL Pull out torque vs FL torque	2.3
Insulation Class	F(temp,riseB(80K))	DOL Starting current vs FL current	6
Cooling	ICO141	Grease type	
Max.coolant temp	40°C	Grease Quantity DE	gr
Max.altitude	1000 mtr,above sea level	Grease Quantity NDE	gr
Comment		Grease Interval	2000 h
Cable entries		Bearing DE	6205ZZC3
Feature	Cast-iron motor	Bearing NDE	6205ZZC3
Rotor Inertia	0.0027 kgm ²		
Weight	29 kg		
Catalog no			

APPENDIX F INVERTER

A variable-frequency drive controls the operating speed of an AC motor by controlling the frequency and voltage of the power supplied to the motor. An inverter provides the controlled power. In most cases, the variable frequency drive includes a rectifier so that DC power for the inverter can be provided from main AC power. Since an inverter is the key component, variable frequency drives are sometimes called inverter drives or just inverters.

This type of positioner can be operated from a minimum of 5Hz to a maximum of 50Hz by adjusting the speed knob found in the pendant controller. This in turn updates the frequency value setting of the inverter.

NOTE! ALWAYS SET THE SPEED TO MINIMUM BEFORE STARTING ANY OPERATION!

NOTE! FOR COMPLETE MANUAL, REFER TO THE ORIGINAL ACCOMPANIED HARDCOPY MANUAL OR SOFTCOPY FROM THE MANUFACTURER'S WEBSITE.

APPENDIX G CE CERTIFICATE

CE-Certificate included in TAP-STD Series Manual.

ROMAR POSITIONING EQUIPMENT INTERNATIONAL PTE LTD
18 TUAS CRESCENT SINGAPORE 638712
TEL: 6861 0928, 6861 3978
FAX: 6861 3363



CERTIFICATE OF CONFORMITY
EC Declaration of Conformity for Machinery
Machinery Directive (2006/42/EC)
Low Voltage Directive (2006/95/EC)
EMC Directive (2004/108/EC)

Machine Description: **Hydraulics Positioners, Three Axis**

Model: **TAP-XX series, TAP-XX-HD series**

Supplied by: **Romar Positioning Equipment International Pte. Ltd.**

It is hereby declared that the named products supplied:

- Conform to the specifications and regulations of the Machinery Directive (2006/42/EC).
- Conform to the directive on electrical material for use within specific voltage limits (Low Voltage Directive (2006/95/EC)
- Conform to the directive on electromagnetic compatibility (EMC Directive 2004/108/EC)

The following (sections of) harmonized standard applies:

EN 12100-1 Machinery safety - Basic terms - General design principles - Part 1:
Basic terminology, methodology.

EN 12100-2 Machinery safety - Basic terms - General design principles - Part 2:
Technical principles and specifications.

EN 1050 Risk Assessment for Machinery

EN 13857 Safety of machinery -- Safety distances to prevent hazard zones being
reached by upper and lower limbs

EN 60204-1: 2005 Safety of Machinery – Electrical Equipment of Machines - Part 1:
General Requirements for Electrical Equipment on Machines

Singapore, 22/04/10

Name: Jesper Kilander
Designation: Managing Director



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