

COMMISSIONING WORK INSTRUCTION - ACE MACHINES

Sl.No.	Description	Reference / Remarks
A	MECHANICAL	
1	Check for any physical damages to the machine and accessories supplied with the machine	
2	If any damages noticed intimate the area & cause for the damage through deviation report to MMT/ACE	Deviation Reports
3	Check the items against packing list annexures. If any short supplied items or missed out items, note down the same and raise MRN to ACE.	
B	GENERAL, INPUT REQUIREMENTS and FLUID FILLING	
1	Confirm the machine placed as per the machine layout plan. Check for sturdy and vibration free floor	
2	Remove the moisture absorbent bags if any and also remove the rust preventive applied using kerosene & soft cloth where ever applicable.	
3	Level the machine within the limits i.e. < 0.02 for 1 meter by ensuring the gap between machine & leveling pad of 5-10 mm. After leveling ensure proper tightness of lock nuts.	<0.02 for 1 mtr
4	Fill the hydraulic power pack with oil as mentioned in the ACE instruction Manual (System 68 grade)	
5	Fill the lubrication tank with oil as mentioned in manual (Slide way 68 grade)	
6	Fill the coolant tank with DM water and non synthetic coolant oil as per machine tank capacity with the ratio of 20 :1 (water:coolant)	
7	Confirm the air drier fixed with machine. and check air pressure quality and quantity, (Use refrigerant air drier to deliver moisture free dry air) Recommended to install 40 microns prefilter Connect the air connection and set air pressure at 5 bar If required	
C	ELECTRICAL	
1	Check Power connection is made with lug crimped cable of multistand copper. (Main distributor to stabiliser to machine)	
2	Check Power connection is made with 6 / 10 / 16 sq mm multi-stand 4 core copper cable (as per power rating of machine – refer installation manual)	
3	Check connection from main distributor to the stabilizer & stabilizer to machine for firm and correct connections.	
4	Use ELCB before stabilizer I/P	
5	End of cycle lamp to be fitted on the machine top. If required	
6	Check and ensure proper earth connection from earth pit to machine earth, earth resistance should be less than 100 ohms. Recommended to have separate earthpit for every machine to avoid the leakage transfer (one machine to other machine)	<100 ohms
D	MACHINE CONNECTIONS-CHECKING AND VALIDATION	
1	Tighten all the T.Bs / junctions /shorting links etc. in the Main electrical panel.	
2	Tighten the connection of all the MCBs, MPCBs, contactor, Relay/ SSR PCBs, plugs, all motor terminals.	
3	Tighten all connections of CNC and drive I/P & O/P Connections	
4	Check for all connector on all the PCBs, drives and system for proper and firm seating.	
5	Check for any loose connections and firm connection apart from Main panel, limit switches, proximity switches, float switch, flow switch, pressure switches ect. Where ever applicable.	
6	Check for cable routing & over tight clamping of cable & over tightening of conduit fittings ect and confirm that they are in right order.	
7	Check for proper routing of hoses, firm connections of fittings and connectors used on hydraulics, lubrication and coolant system	
8	Check and confirm proper sealing of electrical cabinet door/ OCP door to ensure no AC leakage and also moisture entry	
E	MACHINE ENERGISING, CHECKING AND ENSURING ALL THE MACHINE OPERATION	
1	Switch on the mains and the stabilizer. Check for Input and output voltage at the stabiliser for 415 V 3PHASE AC +/- 10 %	3 phase, 415VAC, +/- 10%
2	Monitor and ensure earth-leakage voltage between earth & neutral for less than 3 V	<3V
3	Switch on the mains of the machine, check I/P voltage of 3 Phase 415v AC, also the AC & machine tube light must get on.	
4	Check and ensure Input and Output voltages of the transformer for 3 Phase 415v & 200v AC respectively. (415/415 AC -Siemens)	
5	Check up o/p voltages from 24V DC 15A SMPS & DC 24V 2A power supply (as per machine ratings)	

Sl.No.	Description	Reference / Remarks
6	Check and ensure 3 phase AC 200V I/p supply at PSM & System	
7	Check cooling Fan on CNC, Drives and Spindle motor cooling fan proper running and direction	
8	Switch on the CNC and check for EMG-Alarm on the screen	
9	Release emergency push button and Check for the correct rotation of the hydraulic / lub motor as indicated on the motor by arrow mark.	
10	Check for of Hydraulic system Pressure high pressure of 30 kg/cm sq(As per machine specification of Hydraulic power pack) and also check for lubrication pressure of 15 Kg/Cm2 with lub motor ON for a fixed time of 3sec.	
11	Check and ensure counter balancer cylinder Hydraulic pressure as per machine specification(VTL-Machines)	
12	Check and ensure the auto lubrication system working, with interval time of 27 mins and on time of 3 Sec.	
13	Check for working of all cooling fans & blower fans. Check the setting of the A.C. temperature controller at 32°	
14	Select the position on the CNC screen & jog mode in the selector switch, move the axes & check the % of current of X & Z, and optional axes should be less than 40%.	
15	Move both the axis for about 100 mm towards spindle(- direction) select reference (ZRN) mode in selector switch & reference the axis by pressing the X + , Z + , additional & optional axis P.B(cycle start) axis will start moving in home direction & stops at the home positions displaying ref. X & Z (LED) on the operator panel. check for reference	
16	Select Jog mode ,check for turret indexing in forward direction.Select MDI mode & execute the tool command for all the stations check for shortest path of turret operation.	
17	Check for Turret-Live tool function with forward /reverse direction in different speeds for smother operation(Machines with Live tool Turret)	
18	Check for tail stock quill /tail stock body function in foot switch & auto mode. check and ensure the T.S. quill /body Interlock for cycle start	
19	Check for spindle function using M codes in MDI Mode.Check and ensure no abnormal spindle load at different speeds.	
20	Check and confirm for Spindle function for low gear/High gear at different speeds (Gearbox /Power up series machines)	
21	Check and ensure coolant - Regular/Chip flush etc.-operation in manual/Auto mode.	
22	Check for chip conveyor function operation in manual & auto mode.	Optional
23	Check for the auto door function in manual & auto mode by M codes	Optional
24	Check for parts catcher function in auto mode by M Code	Optional
25	Check for steady rest function in manual and auto mode	Optional
26	Check for all other accessories functions in manual and auto mode	Optional
27	Check for any hydraulic leakage & arrest	
28	Check for any coolant leakage & arrest	
29	Give customer Machine connect software demo and Training if customer ready with the requirements then Install the machine connect on customer computer and give demo to customer	
30	Check for data transfer and take machine Backup	
F	Tooled up machines - Component trials as per the Scope	
1	Conduct trials based on trials conducted at ACE as per the scope and as per the tooled up details received from ACE . If required Prove all the quality parameters as per the scope and conclude the trials.	
2	Prepare final quality report obtain customer clearance in case of tooled-up machines	
3	Write a small program which consists of all the machine functions viz. chuck clamp & de-clamp, axis movement in rapid & feed movements, spindle operation in both directions with step speeds, turret indexing, tail stock quill / body functions, coolant functions, parts catcher function and all the optional feature/accessories function etc. Run the program for at least for one hour and Observe for any abnormalities . PROGRAM SHOULD BE WRITTEN AFTER CONSIDERING SAFETY FOR ALL PARTS OF MACHINE	
4	Check and ensure for no abnormalities on the areas of machine operations , no leakages of hydraulics and coolant system. If any correct the same.	
5	Capture the deviations for improvements and product reliability	Deviation Reports
Note: Considered all the possible points of machine scope in preparation of this document .Please refer Scope of supply		