

QUALITY ASSURANCE DEPARTMENT

FACTORY ACCEPTANCE TEST PROTOCOL CUM REPORT FOR AUTOMATIC CAPSULE FILLING MACHINE AF 90 T-11

FACTORY ACCEPTANCE TEST PROTOCOL CUM REPORT

EQUIPMENT NAME: AUTOMATIC CAPSULE FILLING MACHINE AF 90 T-II

REVISION HISTORY

Rev.	Date	Authorized By:	Revision Summary	
00	NA	NA	NA	



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- **2.0 Objective:** The objective of this protocol cum Report is to ensure that the Automatic Capsule Filling Machine AF90T is manufactured as per designed specification at manufacturer site and to check the basic performance of the machine at manufacturer Site.
- **3.0 Scope:** This protocol is applicable to the machine manufactured by M......
- 4.0 Responsibility:
 - 4.1 ACG PAM Engineers Shall be responsible for:
 - **4.1.1** Fabrication of Equipment as per Design Specification.
 - **4.1.2** To manufacture the machine as per URS.
 - **4.1.3** To provide all related drawings Equipment manual, safety feature.
 - 4.2 Shall be responsible for:
 - **4.2.1** To carry out the execution of FAT
 - **4.2.2** To verify that machine is designed as per URS
 - **4.2.3** To verify that machine complies GMP standard

5.0 Procedure:

- **5.1** Take out photocopy of the approved protocol cum Report for the Factory Acceptance Test to be carried out at manufacture's Site.
- 5.2 Carry out the below tests mentioned in the below table at manufacture's Site.
- **5.3** Check the basic operation of the machine.
- 5.4 In case any deviation observes during FAT, document it in deviation section.
- **5.5** Ensure that corrective action taken is meeting the user requirement specification.
- 5.6 If deviation is acceptable, document in observed deviation section and provide proper justification.
- 5.7 If deviation does not acceptable, inform the manufactures for necessary action.
- 5.8 If deviation acceptable, provide final conclusion.
- **5.9** Ensure that following listed documents are provided.
 - Operation & Maintenance Manual
 - Electrical & mechanical schematic diagram
 - Process and utility diagram
 - Critical spare part list



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6.0 Acceptance Criteria:

- 6.1 The equipment shall fulfill the selection criteria & its purpose of application.
- 6.2 The equipment shall be as per purchase order.
- 6.3 Accessories shall be as per purchase order.
- 6.4 The equipment shall meet pre-selected design parameters.

7.0 Verification Sheet:

S.No.	Parameter	Specification	Observation	Checked By (Sign & Date)	
Capsul	le Filling Machine			(0.8.2 00 2 0.00)	
1.	Output				
	For powder filling	Up to 90, 720 capsules/hr.			
	Capsule Size	#0/#2 powder filling			
	Overall Dimension	2820 (L) mm x 2600 (W) mm x 2050 (H)			
		mm Approx.			
	Equipment weight	2000 kg Approx.			
2.	Structure			1	
	Material	Mild Steel, painted, enclosed on all sides			
		by SS 304 covers			
	Structure covers	120-140 grit finish outside			
3.	Top cover Assembl	y			
	Position	Above top plate			
	Manufacturer	ACG-Pam			
	Specification	Enclosure with toughened glass			
		doordoor			
	Material of support	Aluminium anodized, phoenix Mecanno			
	frame	make			
	Surface Finish	Satin finish			
4.	Drive Assembly				
	Position	Below the top plate for performing			
		various operations			
	Manufacturer	ACG-Pam			
	Specification	Drive assembly for AF 90T			
	Material	Alloy Steel			
	Cams	En 36			
	Bearings	INA/IKO/RNST/FAG			
5.	Turret Assembly			I	



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	Position	Cylindrical disc above Machine Top,		
		holding cap & body bush holders		
	Manufacturer	ACG-Pam		
	Specification	Turret assembly of AF 90T		
	Material	Aluminium casting		
	Surface finish	Electro less nickel plated		
6.	Loader Assembly			1
	Position	Above machine top plate to load empty		
		capsules in bushes		
	Manufacturer	ACG-Pam		
	Specification	Loader assembly AF 90T		
7.	Magazine			<u>l</u>
	Material	Aluminium		
	Surface Finish	Black Hard anodized		
8.	Rectifier raceway &	finger Assembly		<u>l</u>
	Material	SS316/Brass		
	Surface finish	320 grit mirror finish/Electro less nickel		
		plated		
9.	Reservoir & baffled plate			
	Material	SS 316 L		
	Surface finish	320 grit mirror finish		
10.	Powder Filling Dev	ice		
	Position	Above machine top plate to provide		
		powder for filling operation		
	Manufacturer	ACG-Pam		
	Specification	Powder filling device		
11.	Hopper			,I
	Material	SS 316 L		
	Surface finish	320 grit mirror finish		
	Capacity of Hopper	20 Ltrs.		
	Force feeding	Stirrer is provided in mail hopper		
	System			
	Powder level sensor	Power level sensor given at one stages for lower level with visual alarm. Low level sensor will stop the machine after (1-19 sec) of alarm initiation.		
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	Position	Above machine top plate to provide capsule for filling operation.	
	Manufacturer	ACG-Pam	
	Material	SS 316	
	Finish	320 grit mirror finish	
	Capacity of Hopper	27 Ltrs.	
	Sensor in hopper	Two sensors in empty capsule hopper. Low level sensors on the sorter elevator and upper level sensor off the sorter elevator. If low level sensor remains active for 90 sec. the machine is stopped	
13.	Pin plate Assembly		
	Position	Above machine top plate to perform	
		various operations like closing, ejection,	
		bush cleaning, removing unopened	
		capsules	
	Manufacturer	ACG-Pam	
	Specification	Pin Plate Assembly	
	Material	Alloy steel	
	Surface finish	Electroless nickel plated	
14.	Unopen, closing, Ej	ection pin	
	Material	SS 316L	
	Surface finish	Matt finish 120-140 grit matt finish	
15.	Bush cleaning pin		
	Material	Brass	
	Surface finish	ENP	
16.	Limit Switches (4 N	os.)	
	Specification	Door safety switches	
	Position	Aluminium plate of top cover Assembly	
	Manufacturer	Essen	
	Model No.	MBC 1	
	Actuating Force	723 gms. (max.)	
	Release Force	170 gms. (min.)	
	Pre travel	1.5 mm (max.)	
	Over travel	4.6 mm.	
	Movement	0.08 mm. (max)	
	Differential		



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	Salient Features	Spring plunger actuator protected by a
		synthetic rubber cowl
17.	Proximity Sensor (Capacitive) for capsule Hopper
	Specification	Capsule & Pellet low level Sensor
	Position	Capsule & Pellet hopper
	Manufacturer	IFM
	Model No.	KG5043 3008 BPKG / NI
	Sensing range	8 mm
18.	Proximity Switche	s (Capacitive) for powder level
	Specification	Powder low level switches
	Position	Powder tub
	Manufacturer	IFM
	Model No.	KG5043 3008 BPKG / NI
	Sensing range	8 mm
19.	Proximity Sensor (Inductive)
	Specification	To detect '0' position of encoder
	Position	Near encoder assembly (Inside structure)
	Manufacturer	TAP
	Model No.	GLP-12APS
	Sensing range	1 mm
20.	Proximity Sensor (Inductive) for hand wheel
	Specification	To provide the signal for various
		operations
	Position	Inside structure & near wheel shaft
	Manufacturer	TAP
	Model No.	GLP-12APS
	Specification	10-30 VDC 250 mA
	Sensing range	1 mm
21.	Proximity Sensor (Inductive) for main Motor
	Specification	To provide the signal for various
		operations
	Position	Near main motor clutch
	Manufacturer	TAP
	Model No.	GLP-12APS
	Specification	10-30 VDC, 250 mA



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	Sensing range	1 mm			
22.	Proximity Sensor (Inductive) for PMM motor				
	Specification	To provide the signal for various			
		operations			
	Position	On PMM motor gear box			
	Manufacturer	TAP			
	Model No.	GLP-12APS			
	Sensing range	1 mm			
23.	Vacuum Valve				
	Specification	ON/OFF valve for vacuum for capsule			
		loading			
	Position	Inside structure			
	Manufacturer	Univer			
	Model No.	G-3232			
24.	Encoder: 3600 PPR				
	Specification	To provide signals for varous operations			
	Position	Inside strusture			
	Manufacturer	Fritz Kubler GMBH			
	Type No.	8.5000.8351.3600			
	Specification	10-30 VDC, 100mA			
25.	Pressure Switch	Pressure Switch			
	Specification	Air Pressure Switch			
	Position	Inside structure above filter regulator			
	Manufacturer	Indfoss			
	Model No.	IPS-100-20D8276			
	Range	0-100 psi (0-7 Kg/cm²)			
26.	Vacuum valve				
	Specification	ON / OFF valve for vacuum for capsule			
		loading			
	Position	Inside structure			
	Manufacturer	Univer			
	Model No.	AG-3232			
	Range	(610 torr – 0.5 torr) 610 mm Hg – 0.5			
		mm Hg.			
27.	Pressure Switch				



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Position		Specification	Air Pressure switch	
Model No. IPS-100-20D8276 Range 0 - 100 psi (0-7 kg/cm²)		Position	Inside Structure above airmatic	
Range		Manufacturer	Indfoss	
28. Pressure Gauge for main Air inlet		Model No.	IPS-100-20D8276	
Specification		Range	0 – 100 psi (0-7 kg/cm²)	
Range 0-(-760) mm Hg Position On FR unit inside structure Manufacturer UTC Size Dia 52 mm 29. Vacuum Gauge for capsule Separation Specification Vacuum Gauge for capsule separation Range 0-(-760) mm Hg Position On vacuum pump Manufacturer UTC Model no. 25-2B Size Dia. 65 mm 30. Gauge for Vacuum pump Specification Vacuum gauge Range 0-(-760) mm Hg Position On Vacuum gauge Range 0-(-760) mm Hg Position Vacuum pump Specification Vacuum pump Specification Vacuum pump The specification Vacuum pump Specification Vacuum pump Annufacturer UTC Size Dia. 50 mm 31. Main Motor Position Inside Structure Manufacturer Bharat Bijli Limited Type 1.10 Kw, 2.0 HP, 705 RPM, Amp-3.90, AC Brake, Motor Frame 112 L, 3 Phase Protection Class IP 55 Power stirrer motor with Gear Box (PMM motor) Position Inside structure Manufacturer Rotomotive	28.	Pressure Gauge for	r main Air inlet	
Position On FR unit inside structure Manufacturer UTC Size Dia 52 mm 29. Vacuum Gauge for capsule Separation Specification Vacuum Gauge for capsule separation Range 0-(-760) mm Hg Position On vacuum pump Manufacturer UTC Model no. 25-2B Size Dia 65 mm 30. Gauge for Vacuum pump Specification Vacuum gauge Range 0-(-760) mm Hg Position On Vacuum Pump Specification Vacuum pump Specification Vacuum Pump Manufacturer UTC Size Dia 50 mm 31. Main Motor Position Inside Structure Manufacturer Bharat Bijli Limited Type 1.10 Kw, 2.0 HP, 705 RPM, Amp-3.90, AC Brake, Motor Frame 112 L, 3 Phase Protection Class IP 55 32. Power stirrer motor with Gear Box (PMM motor) Position Inside structure Manufacturer Rotomotive		Specification	Vacuum gauge for capsule separation	
Manufacturer UTC		Range	0-(-760) mm Hg	
Size		Position	On FR unit inside structure	
29. Vacuum Gauge for capsule Separation		Manufacturer	UTC	
Specification Vacuum Gauge for capsule separation Range 0-(-760) mm Hg Position On vacuum pump Manufacturer UTC Model no. 25-2B Size Dia. 65 mm 30. Gauge for Vacuum pump Specification Vacuum gauge Range 0-(-760) mm Hg Position On Vacuum Pump Manufacturer UTC Size Dia. 50 mm 31. Main Motor Position Inside Structure Manufacturer Bharat Bijli Limited Type 1.10 Kw, 2.0 HP, 705 RPM, Amp-3.90, AC Brake, Motor Frame 112 L, 3 Phase Protection Class IP 55 32. Power stirrer motor with Gear Box (PMM motor) Position Inside structure Manufacturer Rotomotive		Size	Dia 52 mm	
Range 0-(-760) mm Hg Position On vacuum pump Manufacturer UTC Model no. 25-2B Size Dia. 65 mm 30. Gauge for Vacuum pump Specification Vacuum gauge Range 0-(-760) mm Hg Position On Vacuum Pump Manufacturer UTC Size Dia. 50 mm 31. Main Motor Position Inside Structure Manufacturer Bharat Bijli Limited Type 1.10 Kw, 2.0 HP, 705 RPM, Amp-3.90, AC Brake, Motor Frame 112 L, 3 Phase Protection Class IP 55 32. Power stirrer motor with Gear Box (PMM motor) Position Inside structure Manufacturer Rotomotive	29.	Vacuum Gauge for	r capsule Separation	
Position On vacuum pump Manufacturer UTC Model no. 25-2B Size Dia. 65 mm 30. Gauge for Vacuum pump Specification Vacuum gauge Range 0-(-760) mm Hg Position On Vacuum Pump Manufacturer UTC Size Dia. 50 mm 31. Main Motor Position Inside Structure Manufacturer Bharat Bijli Limited Type 1.10 Kw, 2.0 HP, 705 RPM, Amp-3.90, AC Brake, Motor Frame 112 L, 3 Phase Protection Class IP 55 32. Power stirrer motor with Gear Box (PMM motor) Position Inside structure Manufacturer Rotomotive		Specification	Vacuum Gauge for capsule separation	
Manufacturer UTC		Range	0-(-760) mm Hg	
Model no. 25-2B Size Dia. 65 mm 30. Gauge for Vacuum pump Specification Vacuum gauge Range 0-(-760) mm Hg Position On Vacuum Pump Manufacturer UTC Size Dia. 50 mm 31. Main Motor Position Inside Structure Manufacturer Bharat Bijli Limited Type 1.10 Kw, 2.0 HP, 705 RPM, Amp-3.90, AC Brake, Motor Frame 112 L, 3 Phase Protection Class IP 55 32. Power stirrer motor with Gear Box (PMM motor) Position Inside structure Manufacturer Rotomotive		Position	On vacuum pump	
Size Dia. 65 mm 30. Gauge for Vacuum pump Specification Vacuum gauge Range 0-(-760) mm Hg Position On Vacuum Pump Manufacturer UTC Size Dia. 50 mm 31. Main Motor Position Inside Structure Manufacturer Bharat Bijli Limited Type 1.10 Kw, 2.0 HP, 705 RPM, Amp-3.90, AC Brake, Motor Frame 112 I., 3 Phase Protection Class IP 55 32. Power stirrer motor with Gear Box (PMM motor) Position Inside structure Manufacturer Rotomotive		Manufacturer	UTC	
Specification Vacuum gauge Range 0-(-760) mm Hg		Model no.	25-2B	
Specification Vacuum gauge Range 0-(-760) mm Hg Position On Vacuum Pump Manufacturer UTC Size Dia. 50 mm 31. Main Motor Position Inside Structure Manufacturer Bharat Bijli Limited Type 1.10 Kw, 2.0 HP, 705 RPM, Amp-3.90, AC Brake, Motor Frame 112 L, 3 Phase Protection Class IP 55 32. Power stirrer motor with Gear Box (PMM motor) Position Inside structure Manufacturer Rotomotive		Size	Dia. 65 mm	
Range 0-(-760) mm Hg Position On Vacuum Pump Manufacturer UTC Size Dia. 50 mm 31. Main Motor Position Inside Structure Manufacturer Bharat Bijli Limited Type 1.10 Kw, 2.0 HP, 705 RPM, Amp-3.90, AC Brake, Motor Frame 112 L, 3 Phase Protection Class IP 55 32. Power stirrer motor with Gear Box (PMM motor) Position Inside structure Manufacturer Rotomotive	30.	Gauge for Vacuum	n pump	
Position On Vacuum Pump Manufacturer UTC Size Dia. 50 mm 31. Main Motor Position Inside Structure Manufacturer Bharat Bijli Limited Type 1.10 Kw, 2.0 HP, 705 RPM, Amp-3.90, AC Brake, Motor Frame 112 L, 3 Phase Protection Class IP 55 32. Power stirrer motor with Gear Box (PMM motor) Position Inside structure Manufacturer Rotomotive		Specification	Vacuum gauge	
Manufacturer UTC Size Dia. 50 mm 31. Main Motor Position Inside Structure Manufacturer Bharat Bijli Limited Type 1.10 Kw, 2.0 HP, 705 RPM, Amp-3.90, AC Brake, Motor Frame 112 L, 3 Phase Protection Class IP 55 32. Power stirrer motor with Gear Box (PMM motor) Position Inside structure Manufacturer Rotomotive		Range	0-(-760) mm Hg	
Size Dia. 50 mm 31. Main Motor Position Inside Structure Manufacturer Bharat Bijli Limited Type 1.10 Kw, 2.0 HP, 705 RPM, Amp-3.90, AC Brake, Motor Frame 112 L, 3 Phase Protection Class IP 55 32. Power stirrer motor with Gear Box (PMM motor) Position Inside structure Manufacturer Rotomotive		Position	On Vacuum Pump	
31. Main Motor Position Inside Structure Manufacturer Bharat Bijli Limited Type 1.10 Kw, 2.0 HP, 705 RPM, Amp-3.90, AC Brake, Motor Frame 112 L, 3 Phase Protection Class IP 55 32. Power stirrer motor with Gear Box (PMM motor) Position Inside structure Manufacturer Rotomotive		Manufacturer	UTC	
Position Inside Structure Manufacturer Bharat Bijli Limited Type 1.10 Kw, 2.0 HP, 705 RPM, Amp-3.90, AC Brake, Motor Frame 112 L, 3 Phase Protection Class IP 55 32. Power stirrer motor with Gear Box (PMM motor) Position Inside structure Manufacturer Rotomotive		Size	Dia. 50 mm	
Manufacturer Bharat Bijli Limited Type 1.10 Kw, 2.0 HP, 705 RPM, Amp-3.90, AC Brake, Motor Frame 112 L, 3 Phase Protection Class IP 55 Power stirrer motor with Gear Box (PMM motor) Position Inside structure Manufacturer Rotomotive	31.	Main Motor		
Type 1.10 Kw, 2.0 HP, 705 RPM, Amp-3.90, AC Brake, Motor Frame 112 L, 3 Phase Protection Class IP 55 32. Power stirrer motor with Gear Box (PMM motor) Position Inside structure Manufacturer Rotomotive		Position	Inside Structure	
Amp-3.90, AC Brake, Motor Frame 112 L, 3 Phase Protection Class IP 55 32. Power stirrer motor with Gear Box (PMM motor) Position Inside structure Manufacturer Rotomotive		Manufacturer	Bharat Bijli Limited	
Protection Class IP 55 32. Power stirrer motor with Gear Box (PMM motor) Position Inside structure Manufacturer Rotomotive		Туре	1.10 Kw, 2.0 HP, 705 RPM,	
Protection Class IP 55 32. Power stirrer motor with Gear Box (PMM motor) Position Inside structure Manufacturer Rotomotive			Amp-3.90, AC Brake, Motor Frame	
32. Power stirrer motor with Gear Box (PMM motor) Position Inside structure Manufacturer Rotomotive			112 L, 3 Phase	
Position Inside structure Manufacturer Rotomotive		Protection Class	IP 55	
Manufacturer Rotomotive	32.	Power stirrer motor	r with Gear Box (PMM motor)	- 1
		Position	Inside structure	
Type 71B-4 (Motor), B5030251471B5 (Gear		Manufacturer	Rotomotive	
		Туре	71B-4 (Motor), B5030251471B5 (Gear	



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		Box) 0.37 KW, 0.5 HP, 1350 RPM, Amp	
		1.0	
	Protection class	IP 55	
33.	Machine Mount		
	Position	Below structure	
	Manufacturer	Avmount	
	Specification	NAV 08 M 16 x 1.5	
34.	Pneumatic cylinder		
	Position	Inside turret well	
	Manufacturer	Festo	
	Type No.	AEVC-32-5-I-5	
	Operating pressure	6 bar (6 kg/cm²)	
	Max. Pressure	10 bar (10 kg/cm²)	
35.	Pneumatic cylinder	for capsule loading	
	Position	On loader plate	
	Manufacturer	Festo	
	Type No.	ADVU-20-10-P-A,	
	Operating pressure	6 bar (6 kg/cm²)	
	Max. pressure	10 bar (10 kg/cm²)	
36.	Pneumatic cylinder	for group sampling	
	Position	Below exit chut	
	Manufacturer	Festo	
	Type No.	DG-6-10	
	Operating pressure	6 bar (6 kg/cm²)	
	Max. pressure	10 bar (10 kg/cm²)	
37.	Solenoid Valve		
	Position	On pneumatic panel inside structure	
	Manufacturer	Festo	
	Type No.	MFH-3-1/8 SEU	
	Model No.	Type MFH-3-1/8 SEU Part no. 1121	
	Operating pressure	6 bar (6 kg/cm²)	
	Max pressure	10 bar (10 kg/cm²)	
38.	Solenoid Valve		
	Position	On pneumatic panel inside structure	
	Manufacturer	Festo	



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	Specification	Single Solenoid		
	Type No.	MFH-3-1/8 SEU		
	Operating pressure	6 bar (6 kg/cm²)		
	Range	0.5-8 bar		
39.	Solenoid Valve for	Capsule loading cylinder ON/OFF		1
	Position	On pneumatic panel inside structure		
	Manufacturer	Festo		
	Specification	Single loaded		
	Type No.	MFH-5-1/8		
	Operating pressure	6 bar (6 kg/cm²)		
	Range	1.8-8 bar		
40.	Solenoid Valve coil		L	1
	Position	Fitted on solenoid valve		
	Manufacturer	Festo		
	Type No.	MSFG-24DC/42AC		
41.	Filter Regulator for	Main Air		
	Specification	To provide the filtered air at a set		
		pressure		
	Position	Inside structure near hand wheel		
	Manufacturer	Airmatic		
	Model No	B13-023		
	Size	6 mm		
	Max. Pressure	12 Kg/cm ²		
	Pressure Range	0-9 Kg/cm ²		
	Element Rating	25 microns		
42.	Timer Belt			
	Position	Drive assembly		
	Manufacturer	Optibelt		
	Specification	8 mm pitch, 1200 mm length, 30 mm		
		width, 150 teeth		
43.	A.C. Drives	•		
	Position	Control sample assembly		
	Manufacturer	Schneider Electric		
	Specification	ATV12HU15M2, 1.5 KW/2.0 HP		
44.	PLC			



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	CPU make	Mitsubishi
	Position	Inside the control panel box
	Model	40MT/ESSLOT13Y
	PLC Input /	24 Input / 16 Output
	Output	
45.	MMI	
	Model	GOT 1000
	Position	On pendant control panel
	Manufacturer	Mitsubishi
	Keyboard	Touch Screen
	Serial interface	RS-232, RS422
	Display	5.7" diagonal
	Supply Voltage	20.4-26.4±20% VDC
46.	Vacuum Pump for O	Capsule Separation
	Specification	Dry Vacuum Pump
	Manufacturer	Becker
	Туре	KVT3.80
	Pressure	22-25" of Hg
47.	Motor for Vacuum l	Pump
	Position	Fitted in Vacuum pump
	Manufacturer	Becker
	Туре	2.4 KW, 1140 RPM, Amp 6.6, 3 phase
48.	Basic cGMP	There should not be any crack crevice easy to
	Requirement	operate and to clean. All the safety has been covered

8.0 Technical Specification of Air Displacement Unit (Model ADU 100)

S.No.	Parameter	Specification	Observation	Checked By (Sign & Date)
1.	Main structure with handle			



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	Material	SS304		
	Surface Finish	320 grit mirror finish		
2.	Dust Collector with cover			
	Position	Above the main structure		
	Specification	Powder Collector		
	Manufacturer	ACG-Pam		
	Material	SS316		
	Surface finish of Frame	320 gritt mirror finish		
3.	Filter Bag			
	Position	Inside dust collector		
	Manufacturer	RP trading		
	Specification	5 micron		
	Air Permeability at WC 10M	4 to 9 cc/sec/cm ²		
	Material	Synthetic fabric		
4.	Impeller housing		1	
	Position	Inside structure		
	Manufacturer	ACG-Pam		
	Specification	Provide suction inside dust collector		
	Material	Aluminium casting		
5.	Motor			
	Position	Above blower casing		
	Manufacturer	Hindustan Electric Motors		
	Туре	1.5 KW, 2.0 HP, 2860 RPM, 3.10 Amp, 3		
		phase		
	Protection	IP 55		

9.0 Technical Specification of Compact Air Displacement Unit (Model-CADU 100)

S.No.	Parameter	Specification	Observation	Checked By (Sign & Date)
1.	Trolley structure with covered	er		



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FACTORY ACCEPTANCE TEST PROTOCOL CUM REPORT FOR AUTOMATIC CAPSULE FILLING MACHINE AF 90 T-11

	Material	Mild steel, SS304		
	Manufacturer	ACG-Pam		
	Surface Finish	120-140 grit matt finish		
2.	Dust Collector with cove	er		
	Position	Above the main structure		
	Specification	Powder Collector		
	Manufacturer	ACG-Pam		
	Material	SS316		
	Surface finish of Frame	320 gritt mirror finish		
3.	Filter Bag		1	
	Position	Inside dust collector		
	Manufacturer	RP trading		
	Specification	5 micron		
	Air Permeability at WC	4 to 9 cc/sec/cm ²		
	10M			
	Material	Synthetic fabric		
4.	Impeller housing			
	Position	Inside structure		
	Manufacturer	ACG-Pam		
	Specification	Provide suction inside dust collector		
	Material	Aluminium casting		
5.	Motor			
	Position	Above blower casing		
	Manufacturer	Hindustan Electric Motors		
	Туре	1.5 KW, 2.0 HP, 2860 RPM, 3.30 Amp, 3		
		phase		
	Protection	IP 44		

10.0 Technical Specification of Empty Capsule Sorter Model ECS 100

S.No.	Parameter	Specification	Observation	Checked By (Sign & Date)
1.	Main body with doors			



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FACTORY ACCEPTANCE TEST PROTOCOL CUM REPORT FOR AUTOMATIC CAPSULE FILLING MACHINE AF 90 T-11

	Material	SS304			
	Surface Finish	320 grit mirror finish			
2.	Blower	-			
	Position	Inside main body			
	Specification	M.S. body powder coated			
	Manufacturer	ACG-Pam			
3.	Core Tube				
	Position	Above cooling fan			
	Manufacturer	ACG-Pam			
	Material	SS 316			
	Surface finish	320 gritt mirror finish			
4.	Capsule sorting dev	rice			
	Position	Above main body			
	Manufacturer	ACG-Pam			
	Specification	Sorting of capsule			
	Material	SS316			
5.	Empty Capsule Deflector				
	Position	Above capsule sorting device			
	Manufacturer	ACG-Pam			
	Material	SS 316			
	Surface finish	320 grit mirror finish			
6.	Hopper				
	Position	Above empty capsule deflector			
	Manufacturer	ACG-Pam			
	Material	SS 316			
7.	Empty capsule colle	ection Box			
	Position	Fitted to ECS main body cover			
	Manufacturer	ACG-pam			
	Material	SS316			
8.	Motor	Motor			
	Position	Inside main body			
	Manufacturer	VBM Enterprise			
	Туре	Model No-SI 23/15028/S3, 135 Watts,			
		2600 RPM, 0.5 Amp, 230 Volts.			

11.0 Technical Specification of Mini Filled Capsule Sorter (Model MCS 100)



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S.No.	Parameter	Specification	Observation	Checked By (Sign & Date)	
1.	Base structure with doors				
	Material	Mild steel painted with SS cladding			
	Base Structure cover	SS 304			
	Surface Finish	120-140 grit matt finish			
2.	Vibrator Assembly				
	Position	Above the base structure			
	Manufacturer	ACG-Pam			
	Material of support	SS304			
	bracket				
3.	Loose cap sorter assem	ably		<u> </u>	
	Position	Above the vibrator assembly			
	Manufacturer	ACG-Pam			
	Material	SS 316/ Aluminium			
	Frame	320 gritt mirror finish			
	Cover plate	Acrylic sheet			
	Guide plate	Aluminium hard anodized			
	Sorting plate	SS 316			
4.	Motor				
	Position	Above main body			
	Manufacturer	Rotomotive			
	Specification	0.18 KW, 0.25 HP, 1380 RPM, 0.5 amp,			
		3 phase			
	Protection	IP 55			
5.	Vibrator Controller				
	Position	Fitted on the electrical panel			
	Manufacturer	Electroquip			
	Specification	Model-VBC-96 Rang-BELVBTR-0003			
	Surface finish	320 grit mirror finish			

12.0 Technical Specification of sorter elevator (Model SE 100)

Sr. No.	Parameter	Specification	Observation	Checked By
				(Sign & Date)
1.	Structure			
	Material	Mild steel painted & cladded by SS sheet		
		enclosed on all sides by SS 304 covers.		
	Surface cover	120-140 grit matt finish		



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2.	Capsule Hopper Assembly				
	Position	Above structure			
	Manufacturer	ACG-Pam			
	Material of support	SS316			
	bracket				
3.	Sorting Section		1		
	Position	Above structure for sorting capsules			
	Manufacturer	ACG-Pam			
	Material	SS 316/ Aluminium			
	Sorting plate	Aluminium alloy, anodised			
4.	Air Blower Assembly				
	Position	Inside structure			
	Manufacturer	ACG-Pam			
	Material	Aluminium casting			
5.	Delivery Assembly				
	Position	Above machine structure			
	Manufacturer	ACG-Pam			
	Material	SS316			
	Surface finish	320 grit mirror finish			
6.	Air Blower Motor				
	Position	Inside structure			
	Manufacturer	Hindustan electric Motors			
	Туре	0.18 KW, 0.25 HP, 2780 RPM, 0.5 Amp,			
		3 phase			
	Protection	IP 55			
7.	Vibrator Motor				
	Position	Above structure			
	Manufacturer	Hindustan electric Motors			
	Туре	0.093 KW, 0.125 HP, 870 RPM, 0.5			
		Amp, 3 phase			
	Protection	IP 55			

13.0 Technical Specification Metal trap 03-V7

			(Sign & Date)
1. Structure	re Assembly		



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	Material	Mild steel with electroless nickel plating
		with SS stand
2.	Test Coil	
	Position	Above Frame
	Specification	Sensing of metal particales
3.	Inlet Chute	
	Position	Inside test coil
	Material	Polycarbonate
4.	Outlet Chute	
	Position	After test coil
	Material	Polycarbonate
5.	Flap for ejection Mechani	sm
	Position	After test coil
	Material	Food grade material UHMV

14.0 Technical Specification of Check Weigher (Model CW 100)

S.No.	Parameter	Specification	Observation	Checked By (Sign & Date)	
1.	Main Body with doors			/	
	Material for structure	Mild steel painted, enclosed on all sides			
	frame	by SS304 covers			
2.	Vibrator				
	Position	Inside main body			
	Manufacturer	ACG-Pam			
	Specification	220V AC			
3.	Vibrator Controller				
	Position	Inside main body			
	Manufacturer	Electroquip			
	Model no.	VBC-96			
4.	Weighing Balance				
	Position	Inside main body			
	Manufacturer	AND			
	Specifiaction	FX300I			
	Capacity	320 g			
5.	Printer	1	<u> </u>		
	Position	Outside main body			



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	Manufacturer	Epson		
	Specification	LX 300, 80 column dot matrix printer		
6.	Slot Sensor			
	Position	End of vibrator track		
	Manufacturer	P.G. Electronics		
	Specification	IR slot sensor unit SL-15		
7.	Filter Regulator (For Air)			
	Specification	To provide filtered air at a set pressure		
	Position	On the structure		
	Manufacture	Airmatic		
	Model No.	MB10-023		
	Size	6 mm		
	Max. pressure	12 Kg/cm ²		
	Pressure Range	0-9 Kg/cm ²		
	Element rating	25 micron		
8.	Pressure Gauge			
	Specification	For operating Air Pressure 0-10 bar		
	Range	0-10.6 Kg/cm ²		
	Position	On FR unit outside structure		
	Manufacture	Manometer		
	Size	Dia. 40 mm		
9.	Solenoid Valve			
	Position	Inside structure		
	Manufacturer	Festo		
	Type No	MFH-3-1/8 SEU		
	Operating Pressure	6 bar (6 Kg/cm²)		
	Max. Pressure	0.5-8 bar		
10.	Solenoid Coil		1	
11.	Position	Fitted on solenoid valve		
12.	Manufacture	Festo		
13.	Type	MSFG-24/42-50/60		

15.0 Technical Specification of Filled Capsule Elevator (Model FCE 100)

S.No.	Parameter	Specification	Observation	Checked By (Sign & Date)
<u> </u>				



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1.	Base Plate and housing	ıg			
	Position Base of machine				
	Manufacturer	ACG-Pam			
	Material	SS304			
_	Surface finish	320 grit mirror finish			
2.	Top & Bottom pipe				
	Position	Above of base of machine			
	Manufacturer	ACG-Pam			
	Material	SS316			
3.	Discharge chute				
	Position	At the end of top pipe			
	Manufacturer	ACG-Pam			
	Material	SS316			
4.	Impeller Assembly				
	Position	Inside housing			
	Manufacturer	ACG-Pam			
	Material	SS316			
5.	Air Blower Motor				
	Position	Inside structure			
	Manufacturer	Hindustan Electric Motors			
	Туре	0.18 KW, 0.25 HP, 2780 RPM, 0.5 Amp,			
		3 phase			
	Protection	IP 55			
6.	MPCB				
	Position	Inside structure			
	Manufacturer	Schneider Electric			
	Model	GV2ME05			
	Range	0.63-1 amp			
16.0 1	Deviation:				

6.0	Deviation:
	Detail of Deviation
	Investigation



MOC

PHARMA DEVILS

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FACTORY ACCEPTANCE TEST PROTOCOL CUM REPORT FOR AUTOMATIC CAPSULE FILLING MACHINE AF 90 T-11

Corrective A	ction:					
Acceptable:	Acceptable: Yes/No					
Vame	Designation	Signature	Date			
	Name	Signature	Date			
AT Carried Out By		orginature	Dute			
the Presence of						
I anufacturer						
.0 Abbreviation	n:					
Abbreviati	on Expanded For	m				
FAT	Factory Accepta	ınce Test				

Material of construction



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FACTORY ACCEPTANCE TEST PROTOCOL CUM REPORT FOR AUTOMATIC CAPSULE FILLING MACHINE AF 90 T-11

URS User Requirement Specification

GMP Good Manufacturing Practices

MMI Man Machine Inference



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FACTORY ACCEPTANCE TEST PROTOCOL CUM REPORT FOR AUTOMATIC CAPSULE FILLING MACHINE AF 90 T-11

19.0 Post Approval Sheet:

Executed By (Name & Designation)	Signature	Date
(Production)		
(Quality Assurance)		
(Maintenance)		

Approved By (Name & Designation)	Signature	Date
(Quality Assurance)		