SALES ORDER REQUISITION & SUPPLY OF VESSELS

QRN No.	**QRN:8204 R2**
Type.	
Job No.	SO – 676
Date	30/08/2022
Rev	R0

ChemDist Process Solutions Pvt Ltd

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1.0 SCOPE OF SUPPLY :

Our scope of supply includes Manufacturing & Supply of below listed items:

1. Description	**Catcher Tank Decanter (DT-50)**
Quantity	**1 No**
Process Details	
Working Capacity	1 m^3
Gross Capacity	1.1 m^3
Design Pressure Shell Side	FV – 0.19 MPa (g)
Design Temperature Shell Side	50 Deg C
Design Pressure Coil Side	0.55 MPa (g)
Design Temperature Coil Side	50 Deg C
Hydrotest Pressure	0.71 MPa (g)
Shell/End Radiography	10% Spot + All T Joints / Full for Dishend
Vessel Details	
Shell Diameter (ID)	800 mm
Shell Height (Bottom TL to Top TL)	2000 mm
Top/Bottom	2:1 Ellipsoidal
Shell Thickness	5 mm
Top/Bottom end Thickness	6 mm (NOM)
Body Flanges	NA
Type of Support	Leg Supports, Qty – 3 nos, 80 NB Sch 80S
Lifting Lug	2 Nos
Shell MOC	SA 240 Gr 304
Dish ends MOC	SA 240 Gr 304
Body Flange MOC	NA
Nozzles pipe MOC	SA 312 TP 304 Upto 150 NB Above 150 NB SA 240 Gr 304
Nozzle Flange MOC	SA 182 F 304

Leg Support MOC	SA 106 Gr B with SS 304 Pad and IS 2062 Gr B Base plate
Lifting Lug MOC	IS 2062 Gr B with SS 304 Pad plate
Gasket MOC	PTFE
Nut & Bolts	SA 193 Gr B8 + SA 194 Gr 8
Spares	10% of Installed hardware of each size minimum 1 number 200% of Installed gaskets as a spare will be provided
Foundation Bolts	M20, 6 Nos, MOC - MS

Nozzle Details:

NOZZLE NO.	SERVICE	Qty	NOZZLE PIPE		End Connection	
			NB	SCH	Type	Class
A	Manhole with cover	1	450	6 Thk	SORF	ASME 150#
B	Liquid Inlet with Insert Pipe	1	65	SCH 40S	SORF	ASME 150#
C	Liquid Outlet	1	50	SCH 80S	SORF	ASME 150#
D	Vent	1	25	SCH 80S	SORF	ASME 150#
E	Pressure Gauge	1	25	SCH 80S	SORF	ASME 150#
F	Temperature Gauge	1	40	SCH 80S	SORF	ASME 150#
G	Liquid Inlet	1	25	SCH 80S	SORF	ASME 150#
H	Liquid Outlet	1	25	SCH 80S	SORF	ASME 150#
I	N2 Inlet	1	25	SCH 80S	SORF	ASME 150#
J	Gas Outlet	1	50	SCH 80S	SORF	ASME 150#
K1 to 3	Liquid Outlet	3	50	SCH 80S	SORF	ASME 150#
L	Liquid Outlet	1	50	SCH 80S	SORF	ASME 150#
M M'	Light, Sight Glass	2	100	-	PAD Type	-
N N'	Liquid Level gauge	2	As per dwg	-	-	-
O	Spare with Blind	1	25	SCH 80S	SORF	ASME 150#

2. Description	Vessel (DT-59)
Quantity	1 No
Process Details	
Working Capacity	0.27 m^3
Gross Capacity	0.3 m^3
Design Pressure Shell Side	FV – 0.19 MPa (g)
Design Temperature Shell Side	50 Deg C
Hydrotest Pressure	0.29 MPa (g)
Shell/End Radiography	10% Spot + All T Joints / Full for Dishend
Vessel Details	
Shell Diameter (ID)	650 mm
Shell Height (Bottom TL to Top TL)	700 mm
Top/Bottom	2:1 Ellipsoidal
Shell Thickness	5 mm
Top/Bottom end Thickness	6 mm (NOM)
Body Flanges	NA
Type of Support	Leg Supports, Qty – 3 nos, 50 NB Sch 80S
Lifting Lug	2 Nos
Shell MOC	SA 240 Gr 304
Dish ends MOC	SA 240 Gr 304
Body Flange MOC	NA
Nozzles pipe MOC	SA 312 TP 304 Upto 150 NB Above 150 NB SA 240 Gr 304
Nozzle Flange MOC	SA 182 F 304
Leg Support MOC	SA 106 Gr B with SS 304 Pad and IS 2062 Gr B Base plate
Lifting Lug MOC	IS 2062 Gr B with SS 304 Pad plate
Gasket MOC	PTFE
Nut & Bolts	SA 193 Gr B8 + SA 194 Gr 8
Spares	10% of Installed hardware of each size minimum 1 number 200% of Installed gaskets as a spare will be provided
Foundation Bolts	M20, 6 Nos, MOC – MS

Nozzle Details:

NOZZLE NO.	SERVICE	Qty	NOZZLE PIPE		End Connection	
			NB	SCH	Type	Class
A	Handhole with cover	1	200	5 Thk	SORF	ASME 150#
B	Liquid Inlet with Insert Pipe	1	65	SCH 80S	SORF	ASME 150#
C	Liquid Outlet	1	50	SCH 80S	SORF	ASME 150#
D	Spare with Blind	1	25	SCH 80S	SORF	ASME 150#
E	Pressure Gauge	1	25	SCH 80S	SORF	ASME 150#
F	Temperature Gauge	1	40	SCH 80S	SORF	ASME 150#
J	Gas Outlet	1	50	SCH 80S	SORF	ASME 150#
K, K1	Liquid Outlet	2	50	SCH 80S	SORF	ASME 150#
L	Liquid Outlet	1	50	SCH 80S	SORF	ASME 150#
M M'	Light, Sight Glass	2	100	-	PAD Type	-
N N'	Liquid Level gauge	2	As per dwg	-	-	-

3. Description	Vessel (CT-100)
Quantity	1 No
Process Details	
Working Capacity	1.94 m^3
Gross Capacity	2.15 m^3
Design Pressure Shell Side	FV – 0.19 MPa (g)
Design Temperature Shell Side	60 Deg C
Hydrotest Pressure	0.29 MPa (g)
Shell/End Radiography	10% Spot + All T Joints / Full for Dishend
Vessel Details	
Shell Diameter (ID)	1200 mm
Shell Height (Bottom TL to Top TL)	1600 mm
Top/Bottom	2:1 Ellipsoidal
Shell Thickness	5 mm
Top/Bottom end Thickness	6 mm (NOM)
Body Flanges	NA
Stiffening Ring	75 mm W x 5 mm Thk Qty 1 No
Type of Support	Leg Supports, Qty – 3 nos, ISA 110 x 110 x 10 thk
Lifting Lug	2 Nos
Shell MOC	SA 240 Gr 304
Dish ends MOC	SA 240 Gr 304
Body Flange MOC	NA
Nozzles pipe MOC	SA 312 TP 304 Upto 150 NB Above 150 NB SA 240 Gr 304
Nozzle Flange MOC	SA 182 F 304
Leg Support MOC	IS 2062 Gr B with SS 304 Pad and IS 2062 Gr B Base plate
Lifting Lug MOC	IS 2062 Gr B with SS 304 Pad plate
Gasket MOC	PTFE
Nut & Bolts	SA 193 Gr B8 + SA 194 Gr 8
Spares	10% of Installed hardware of each size minimum 1 number 200% of Installed gaskets as a spare will be provided
Foundation Bolts	M20, 6 Nos, MOC – MS

Nozzle Details:

NOZZLE NO.	SERVICE	Qty	NOZZLE PIPE		End Connection	
			NB	SCH	Type	Class
A	Manhole with cover and Davit	1	450	5 Thk	SORF	ASME 150#
B	Liquid Inlet	1	65	SCH 80S	SORF	ASME 150#
C	Liquid Outlet	1	50	SCH 80S	SORF	ASME 150#
D	Vent	1	65	SCH 80S	SORF	ASME 150#
E	Pressure Gauge	1	25	SCH 80S	SORF	ASME 150#
F	Temperature Gauge	1	40	SCH 80S	SORF	ASME 150#
G	Level Gauge with Blind	1	25	SCH 80S	SORF	ASME 150#
H	Level Gauge with Blind	1	25	SCH 80S	SORF	ASME 150#
I	Spare with Blind	1	50	SCH 80S	SORF	ASME 150#
J	Liquid Inlet	1	50	SCH 80S	SORF	ASME 150#
K	Spare with Blind	1	50	SCH 80S	SORF	ASME 150#

4. Description	Vessel (CT-101)
Quantity	1 No
Process Details	
Working Capacity	4 m^3
Gross Capacity	4.4 m^3
Design Pressure Shell Side	FV – 0.19 MPa (g)
Design Temperature Shell Side	60 Deg C
Hydrotest Pressure	0.29 MPa (g)
Shell/End Radiography	10% Spot + All T Joints / Full for Dishend
Vessel Details	
Shell Diameter (ID)	1500 mm
Shell Height (Bottom TL to Top TL)	2000 mm
Top/Bottom	2:1 Ellipsoidal
Shell Thickness	5 mm
Top/Bottom end Thickness	6 mm (NOM)
Body Flanges	NA
Stiffening Ring	75 mm W x 5 mm Thk Qty 1 No
Type of Support	Leg Supports, Qty – 3 nos, 150 NB Sch 80
Lifting Lug	2 Nos
Shell MOC	SA 240 Gr 304
Dish ends MOC	SA 240 Gr 304
Body Flange MOC	NA
Nozzles pipe MOC	SA 312 TP 304 Upto 150 NB Above 150 NB SA 240 Gr 304
Nozzle Flange MOC	SA 182 F 304
Leg Support MOC	SA 106 Gr B with SS 304 Pad and IS 2062 Gr B Base plate
Lifting Lug MOC	IS 2062 Gr B with SS 304 Pad plate
Gasket MOC	PTFE
Nut & Bolts	SA 193 Gr B8 + SA 194 Gr 8
Spares	10% of Installed hardware of each size minimum 1 number 200% of Installed gaskets as a spare will be provided
Foundation Bolts	M20, 6 Nos, MOC – MS

Nozzle Details:

NOZZLE NO.	SERVICE	Qty	NOZZLE PIPE		End Connection	
			NB	SCH	Type	Class
A	Manhole with cover and Davit	1	450	6 Thk	SORF	ASME 150#
B	Liquid Inlet	1	40	SCH 10S	SORF	ASME 150#
C	Liquid Outlet	1	40	SCH 10S	SORF	ASME 150#
D	Vent	1	40	SCH 10S	SORF	ASME 150#
E	Pressure Gauge	1	25	SCH 40S	SORF	ASME 150#
F	Temperature Gauge	1	40	SCH 40S	SORF	ASME 150#
G	Level Gauge with Blind	1	25	SCH 40S	SORF	ASME 150#
H	Level Gauge with Blind	1	25	SCH 40S	SORF	ASME 150#
I	Spare with Blind	1	50	SCH 10S	SORF	ASME 150#
J	Spare with Blind	1	50	SCH 10S	SORF	ASME 150#

5. Description	N- Butanol Vessel (CT-5090)
Quantity	1 No
Process Details	
Working Capacity	10.4 m^3
Gross Capacity	11.2 m^3
Design Pressure Shell Side	FV – 0.19 MPa (g)
Design Temperature Shell Side	100 Deg C
Hydrotest Pressure	0.29 MPa (g)
Shell/End Radiography	10% Spot + All T Joints / Full for Dishend
Vessel Details	
Shell Diameter (ID)	1800 mm
Shell Height (Bottom TL to Top TL)	3800 mm
Top/Bottom	2:1 Ellipsoidal
Shell Thickness	6 mm
Top/Bottom end Thickness	6 mm (NOM)
Body Flanges	NA
Stiffening Ring	100 mm W x 6 mm Thk Qty 2 Nos
Type of Support	Leg Supports, Qty – 3 nos, 150 NB Sch 80S
Lifting Lug	2 Nos
Shell MOC	SA 240 Gr 304
Dish ends MOC	SA 240 Gr 304
Body Flange MOC	NA
Nozzles pipe MOC	SA 312 TP 304 Upto 150 NB Above 150 NB SA 240 Gr 304
Nozzle Flange MOC	SA 182 F 304
Leg Support MOC	SA 106 Gr B with SS 304 Pad and IS 2062 Gr B Base plate
Lifting Lug MOC	IS 2062 Gr B with SS 304 Pad plate
Gasket MOC	PTFE
Nut & Bolts	SA 193 Gr B8 + SA 194 Gr 8
Spares	10% of Installed hardware of each size minimum 1 number 200% of Installed gaskets as a spare will be provided
Foundation Bolts	M24, 6 Nos, MOC – MS

Nozzle Details:

NOZZLE NO.	SERVICE	Qty	NOZZLE PIPE		End Connection	
			NB	SCH	Type	Class
A	Manhole with cover and Davit	1	500	6 Thk	SORF	ASME 150#
B	Liquid Inlet	1	50	SCH 40S	SORF	ASME 150#
C	Liquid Outlet	1	50	SCH 40S	SORF	ASME 150#
D	Vent	1	50	SCH 40S	SORF	ASME 150#
E	Pressure Gauge	1	25	SCH 40S	SORF	ASME 150#
F	Temperature Gauge	1	40	SCH 40S	SORF	ASME 150#
G	Level Gauge	1	80	SCH 40S	SORF	ASME 150#
H	Level Gauge	1	80	SCH 40S	SORF	ASME 150#
I	Spare with Blind	1	50	SCH 40S	SORF	ASME 150#
J	Liquid Inlet	1	50	SCH 40S	SORF	ASME 150#
K	Spare with Blind	1	50	SCH 40S	SORF	ASME 150#

6. Description	N-Butanol Vessel (CT-5091)
Quantity	1 No
Process Details	
Working Capacity	4.15 m^3
Gross Capacity	4.6 m^3
Design Pressure Shell Side	FV – 0.19 MPa (g)
Design Temperature Shell Side	100 Deg C
Hydrotest Pressure	0.29 MPa (g)
Shell/End Radiography	10% Spot + All T Joints / Full for Dishend
Vessel Details	
Shell Diameter (ID)	1500 mm
Shell Height (Bottom TL to Top TL)	2100 mm
Top/Bottom	2:1 Ellipsoidal
Shell Thickness	5 mm
Top/Bottom end Thickness	6 mm (NOM)
Body Flanges	NA
Stiffening Ring	75 mm W x 5 mm Thk Qty 1 No
Type of Support	Leg Supports, Qty – 3 nos, 150 NB Sch 80S
Lifting Lug	2 Nos
Shell MOC	SA 240 Gr 304
Dish ends MOC	SA 240 Gr 304
Body Flange MOC	NA
Nozzles pipe MOC	SA 312 TP 304 Upto 150 NB Above 150 NB SA 240 Gr 304
Nozzle Flange MOC	SA 182 F 304
Leg Support MOC	SA 106 Gr B with SS 304 Pad and IS 2062 Gr B Base plate
Lifting Lug MOC	IS 2062 Gr B with SS 304 Pad plate
Gasket MOC	PTFE
Nut & Bolts	SA 193 Gr B8 + SA 194 Gr 8
Spares	10% of Installed hardware of each size minimum 1 number 200% of Installed gaskets as a spare will be provided
Foundation Bolts	M20, 6 Nos, MOC - MS

Nozzle Details:

NOZZLE NO.	SERVICE	Qty	NOZZLE PIPE		End Connection	
			NB	SCH	Type	Class
A	Manhole with cover and Davit	1	500	6 Thk	SORF	ASME 150#
B	Liquid Inlet	1	65	SCH 40S	SORF	ASME 150#
C	Liquid Outlet	1	50	SCH 40S	SORF	ASME 150#
D	Vent	1	65	SCH 40S	SORF	ASME 150#
E	Pressure Gauge	1	25	SCH 40S	SORF	ASME 150#
F	Temperature Gauge	1	40	SCH 40S	SORF	ASME 150#
G	Level Gauge	1	80	SCH 40S	SORF	ASME 150#
H	Level Gauge	1	80	SCH 40S	SORF	ASME 150#
I	Spare with Blind	1	50	SCH 40S	SORF	ASME 150#
J	Liquid Inlet	1	50	SCH 40S	SORF	ASME 150#

7. Description	Vessel (CT-190)
Quantity	1 No
Process Details	
Working Capacity	4 m^3
Gross Capacity	4.4 m^3
Design Pressure Shell Side	FV – 0.19 MPa (g)
Design Temperature Shell Side	50 Deg C
Hydrotest Pressure	0.29 MPa (g)
Shell/End Radiography	10% Spot + All T Joints / Full for Dishend
Vessel Details	
Shell Diameter (ID)	1500 mm
Shell Height (Bottom TL to Top TL)	2000 mm
Top/Bottom	2:1 Ellipsoidal
Shell Thickness	5 mm
Top/Bottom end Thickness	6 mm (NOM)
Body Flanges	NA
Stiffening Ring	75 mm W x 5 mm Thk Qty 1 No
Type of Support	Leg Supports, Qty – 3 nos, 150 NB Sch 80S
Lifting Lug	2 Nos
Shell MOC	SA 240 Gr 304
Dish ends MOC	SA 240 Gr 304
Body Flange MOC	NA
Nozzles pipe MOC	SA 312 TP 304 Upto 150 NB Above 150 NB SA 240 Gr 304
Nozzle Flange MOC	SA 182 F 304
Leg Support MOC	SA 106 Gr B with SS 304 Pad and IS 2062 Gr B Base plate
Lifting Lug MOC	IS 2062 Gr B with SS 304 Pad plate
Gasket MOC	PTFE
Nut & Bolts	SA 193 Gr B8 + SA 194 Gr 8
Spares	10% of Installed hardware of each size minimum 1 number 200% of Installed gaskets as a spare will be provided
Foundation Bolts	M20, 6 Nos, MOC - MS

Nozzle Details:

NOZZLE NO.	SERVICE	Qty	NOZZLE PIPE		End Connection	
			NB	SCH	Type	Class
A	Manhole with cover and Davit	1	450	6 Thk	SORF	ASME 150#
B	Liquid Inlet	1	50	SCH 40S	SORF	ASME 150#
C	Liquid Outlet	1	40	SCH 40S	SORF	ASME 150#
D	Vent	1	50	SCH 40S	SORF	ASME 150#
E	Pressure Gauge	1	25	SCH 40S	SORF	ASME 150#
F	Temperature Gauge	1	40	SCH 40S	SORF	ASME 150#
G	Level Gauge with Blind	1	25	SCH 40S	SORF	ASME 150#
H	Level Gauge with Blind	1	25	SCH 40S	SORF	ASME 150#
I	Spare with Blind	1	50	SCH 40S	SORF	ASME 150#
J	Spare with Blind	1	50	SCH 40S	SORF	ASME 150#

8. Description	Separator Vessel (DT-100)
Quantity	1 No
Process Details	
Working Capacity	0.83 m^3
Gross Capacity	1.1 m^3
Design Pressure Shell Side	FV – 0.19 MPa (g)
Design Temperature Shell Side	80 Deg C
Hydrotest Pressure	0.29 MPa (g)
Shell/End Radiography	10% Spot + All T Joints / Full for Dishend
Vessel Details	
Shell Diameter (ID)	800 mm
Shell Height (Bottom TL to Top TL)	2000 mm
Top/Bottom	10% Torrispherical
Shell Thickness	5 mm
Top/Bottom end Thickness	6 mm (NOM)
Body Flanges	NA
Stiffening Ring	NA
Type of Support	Leg Supports, Qty – 3 nos, 80 NB Sch 80S
Lifting Lug	2 Nos
Shell MOC	SA 240 Gr 304
Dish ends MOC	SA 240 Gr 304
Body Flange MOC	NA
Nozzles pipe MOC	SA 312 TP 304 Upto 150 NB Above 150 NB SA 240 Gr 304
Nozzle Flange MOC	SA 182 F 304
Leg Support MOC	SA 106 Gr B with SS 304 Pad and IS 2062 Gr B Base plate
Lifting Lug MOC	IS 2062 Gr B with SS 304 Pad plate
Gasket MOC	PTFE
Nut & Bolts	SA 193 Gr B8 + SA 194 Gr 8
Spares	10% of Installed hardware of each size minimum 1 number 200% of Installed gaskets as a spare will be provided
Foundation Bolts	M24, 6 Nos, MOC – MS

Nozzle Details:

NOZZLE NO.	SERVICE	Qty	NOZZLE PIPE		End Connection	
			NB	SCH	Type	Class
A	Manhole with cover and Davit	1	500	5 Thk	SORF	ASME 150#
B	Liquid Inlet with Insert Pipe	1	65	SCH 40S	SORF	ASME 150#
C	Liquid Outlet	1	50	SCH 40S	SORF	ASME 150#
D	Gas Outlet	1	65	SCH 40S	SORF	ASME 150#
E	Pressure Gauge	1	15	SCH 40S	SORF	ASME 150#
F	Light Nozzle	1	150	-	PAD type	-
G	Liquid Outlet	1	65	SCH 40S	SORF	ASME 150#
H	Level Sensor with Blind	1	40	SCH 40S	SORF	ASME 150#
H'	Level Sensor with Blind	1	40	SCH 40S	SORF	ASME 150#
I	Spare with Blind	1	50	SCH 40S	SORF	ASME 150#
J	Spare with Blind	1	50	SCH 40S	SORF	ASME 150#
K	Liquid Outlet	1	65	SCH 40S	SORF	ASME 150#
L	Sight Glass	1	150	-	PAD Type	-
G, G'	Liquid Level Gauge	2	As per dwg	-	-	-

9. Description	Vessel (HWT-5900)
Quantity	1 No
Process Details	
Working Capacity	0.05 m^3
Gross Capacity	0.055 m^3
Design Pressure Shell Side	FV – 0.55 MPa (g)
Design Temperature Shell Side	150 Deg C
Hydrotest Pressure	0.83 MPa (g)
Shell/End Radiography	10% Spot + All T Joints / Full for Dishend
Vessel Details	
Shell Diameter (ID)	350 mm
Shell Height (Bottom TL to Top TL)	450 mm
Top/Bottom	2:1 Ellipsoidal
Shell Thickness	5 mm
Top/Bottom end Thickness	6 mm (NOM)
Body Flanges	NA
Stiffening Ring	NA
Type of Support	Lug Supports, Qty – 2 nos
Lifting Lug	2 Nos
Shell MOC	SA 516 Gr 70
Dish ends MOC	SA 516 Gr 70
Body Flange MOC	NA
Nozzles pipe MOC	Sa 106 Gr B
Nozzle Flange MOC	SA 105
Lug Support MOC	IS 2062 Gr B with SA 516 Gr 70 Pad plate
Lifting Lug MOC	IS 2062 Gr B with SA 516 Gr 70 Pad plate
Gasket MOC	PTFE
Nut & Bolts	SA 193 Gr B7 + SA 194 Gr 2H
Spares	10% of Installed hardware of each size minimum 1 number 200% of Installed gaskets as a spare will be provided
Foundation Bolts	M16, 2 Nos, MOC - MS

Nozzle Details:

NOZZLE NO.	SERVICE	Qty	NOZZLE PIPE		End Connection	
			NB	SCH	Type	Class
A	Inlet	1	100	SCH 40S	SORF	ASME 150#
B	Outlet	1	100	SCH 40S	SORF	ASME 150#
C	Spare with Blind	1	80	SCH 40S	SORF	ASME 150#
D	Pressure Sensor	1	25	SCH 40S	SORF	ASME 150#
E	Drain and Vent	1	100	SCH 40S	SORF	ASME 150#
F	Spare with Blind	1	50	SCH 40S	SORF	ASME 150#

10. Description	Vessel (HT-001)
Quantity	1 No
Process Details	
Working Capacity	0.38 m^3
Gross Capacity	0.38 m^3
Design Pressure Shell Side	FV – 0.55 MPa (g)
Design Temperature Shell Side	60 Deg C
Hydrotest Pressure	0.825 MPa (g)
Shell/End Radiography	10% Spot + All T Joints / Full for Dishend
Vessel Details	
Shell Diameter (ID)	700 mm
Shell Height (Bottom TL to Top TL)	820 mm
Top/Bottom	2:1 Ellipsoidal
Shell Thickness	6 mm
Top/Bottom end Thickness	6 mm (NOM)
Body Flanges	NA
Stiffening Ring	NA
Type of Support	Leg Supports, Qty – 3 nos, ISA 100 x 100 x 10 thk
Lifting Lug	2 Nos
Shell MOC	SA 240 Gr 304
Dish ends MOC	SA 240 Gr 304
Body Flange MOC	NA
Nozzles pipe MOC	SA 312 TP 304 Upto 150 NB Above 150 NB SA 240 Gr 304
Nozzle Flange MOC	SA 182 F 304
Leg Support MOC	IS 2062 Gr B with SS 304 Pad and IS 2062 Gr B Base plate
Lifting Lug MOC	IS 2062 Gr B with SS 304 Pad plate
Gasket MOC	PTFE
Nut & Bolts	SA 193 Gr B8 + SA 194 Gr 8
Spares	10% of Installed hardware of each size minimum 1 number 200% of Installed gaskets as a spare will be provided
Moving Trolley MOC	MS with 4 Nos Polyurethane Wheels
Foundation Bolts	M20, 6 Nos, MOC - MS

Nozzle Details:

NOZZLE NO.	SERVICE	Qty	NOZZLE PIPE		End Connection	
			NB	SCH	Type	Class
A	Manhole with Hinge, cover	1	450	6 Thk	SORF	ASME 150#
B	Gas Outlet	1	40	SCH 80S	SORF	ASME 150#
C	Liquid Outlet	1	40	SCH 80S	SORF	ASME 150#
D	Gas Inlet	1	40	SCH 80S	SORF	ASME 150#
E	Pressure Gauge	1	20	SCH 80S	SORF	ASME 150#
F	Sight Glass	1	100	-	PAD type	-
F1	Sight Glass	1	100	-	PAD type	-
G	Manhole	1	300	6 Thk	SORF	ASME 150#
H	Liquid Inlet	1	40	SCH 80S	SORF	ASME 150#

11. Description	Storage Tank (CHWT-1)
Quantity	1 No
Process Details	
Working Capacity	15 m^3
Gross Capacity	20 m^3
Design Pressure Shell Side	ATM – 0.0012 MPa (g)
Design Temperature Shell Side	80 Deg C
Hydrotest Pressure	0.00156 MPa (g)
Orientation	Horizontal
Shell/End Radiography	10% Spot + All T Joints / Full for Dishend
Vessel Details	
Shell Diameter (ID)	2500 mm
Shell Length (TL to TL)	3250 mm
Side Ends	2:1 Ellipsoidal
Shell Thickness	8 mm
Top/Bottom end Thickness	8 mm (NOM)
Body Flanges	NA
Stiffening Ring	180 mm W x 8 mm Thk X Qty 2 nos
Type of Support	Saddle Support, 2 Nos
Lifting Lug	2 Nos
Shell MOC	SA 516 Gr 70
Dish ends MOC	SA 516 Gr 70
Body Flange MOC	NA
Nozzles pipe MOC	SA 106 Gr B Upto 150 NB Above 150 NB SA 516 Gr 70
Nozzle Flange MOC	SA 105
Saddle Support MOC	IS 2062 Gr B with SA 516 Gr 70 Pad plate
Lifting Lug MOC	IS 2062 Gr B with SA 516 Gr 70 Pad plate
Gasket MOC	PTFE
Nut & Bolts	SA 193 Gr B7 + SA 194 Gr 2H
Spares	10% of Installed hardware of each size minimum 1 number 200% of Installed gaskets as a spare will be provided
Foundation Bolts	M24, 8 Nos, MOC - MS
Ladder & Support Railing MOC	MS

Nozzle Details:

NOZZLE NO.	SERVICE	Qty	NOZZLE PIPE		End Connection	
			NB	SCH	Type	Class
M1	Manhole with cover and Davit	1	500	8 Thk	SORF	ASME 150#
N2	Liquid Outlet	1	300	8 Thk	SORF	ASME 150#
N3	Liquid Outlet	1	80	SCH 40S	SORF	ASME 150#
N4	Liquid Outlet	1	50	SCH 40S	SORF	ASME 150#
N5 A/B	Level Sensor	2	80	SCH 40S	SORF	ASME 150#
N6	Temperature Gauge	1	40	SCH 80S	SORF	ASME 150#
N7	Spare with Blind	1	80	SCH 40S	SORF	ASME 150#
N8	Liquid Inlet	1	40	SCH 40S	SORF	ASME 150#
N9	Vent	1	300	8 Thk	SORF	ASME 150#
N10	Liquid Inlet with Dip Pipe	1	100 x 80	SCH 40S	SORF	ASME 150#
N11	Liquid Inlet with Dip Pipe	1	250 x 200	SCH 40S	SORF	ASME 150#
N12	Spare with Blind	1	80	SCH 40S	SORF	ASME 150#
N13	Spare with Blind	1	80	SCH 40S	SORF	ASME 150#

12. Description	Blow Down Tank (BL-9000)
Quantity	1 No
Process Details	
Working Capacity	30 m^3
Gross Capacity	31.5 m^3
Design Pressure Shell Side	ATM – Full of Water
Design Temperature Shell Side	150 Deg C
Hydrotest Pressure	Full of Water
Orientation	Square, Horizontal
Radiography	10% Spot
Vessel Details	
Tank Dimensions	3000 mm Length x 3000 mm Width x 3500 mm Height
Top/Bottom	Flat Plate
Shell Thickness	8 mm
Top/Bottom Plate Thickness	8 mm
Body Flanges	NA
Stiffening Angles	ISA 75 mm x75 mm x 8 thk
Type of Support	ISMC – 150 Base Frame
Lifting Lug	4 Nos
Shell MOC	SA 240 Gr 304
Top and Bottom Plate MOC	SA 240 Gr 304
Body Flange MOC	NA
Nozzles pipe MOC	SA 312 TP 304 Upto 150 NB Above 150 NB SA 240 Gr 304
Nozzle Flange MOC	SA 240 Gr 304
Support MOC	ISMC – 150
Lifting Lug MOC	IS 2062 Gr B with SA 240 Gr 304 Pad plate
Gasket MOC	GF 300 (Asbestos Free)
Nut & Bolts	SA 193 Gr B8 + SA 194 Gr 8
Spares	10% of Installed hardware of each size minimum 1 number 200% of Installed gaskets as a spare will be provided
Foundation Bolts	M20, 12 Nos, MOC - MS
Ladder & Support railing MOC	MS

Nozzle Details:

NOZZLE NO.	SERVICE	Qty	NOZZLE PIPE		End Connection	
			NB	SCH	Type	Class
N1	Manhole with cover and hinge	1	500	8 Thk	As per dwg	-
N2	Outlet Drain	1	80	SCH 40S	SORF	ASME 150#
N3	Outlet Drain	1	80	SCH 40S	SORF	ASME 150#
N4	Spare Drain with Blind	1	80	SCH 40S	SORF	ASME 150#
N5	Spare Drain with Blind	1	80	SCH 40S	SORF	ASME 150#
N6	Vapor In	1	125	SCH 40S	SORF	ASME 150#
N7	Vapor In	1	125	SCH 40S	SORF	ASME 150#
N8	Vapor In	1	125	SCH 40S	SORF	ASME 150#
N9	Vapor In	1	125	SCH 40S	SORF	ASME 150#
N10	Vapor In	1	125	SCH 40S	SORF	ASME 150#
N11	Vapor In	1	125	SCH 40S	SORF	ASME 150#
N12	Vapor In	1	200	SCH 40S	SORF	ASME 150#
N13	Vapor In	1	200	SCH 40S	SORF	ASME 150#
N14	Vapor In	1	200	SCH 40S	SORF	ASME 150#
N15	Vapor In	1	150	SCH 40S	SORF	ASME 150#
N16	Vapor In	1	150	SCH 40S	SORF	ASME 150#
N17	Vapor In	1	150	SCH 40S	SORF	ASME 150#
N18	Vapor In	1	150	SCH 40S	SORF	ASME 150#
N19	Vapor In	1	150	SCH 40S	SORF	ASME 150#
N20	Manhole with Cover and hinge	1	500	8 Thk	As per dwg	-
N21	Liquid In	1	80	SCH 40S	SORF	ASME 150#
N22	Nitrogen with Blind	1	40	SCH 40S	SORF	ASME 150#
N29 A/B	Liquid level with Blind	2	50	SCH 40S	SORF	ASME 150#
N30	Gas Outlet with Vent Pipe	1	80	SCH 40S	SORF	ASME 150#

13. Description	Xylene Tank (TM-CMX)
Quantity	1 No
Process Details	
Working Capacity	5.1 m^3
Gross Capacity	6.4 m^3
Design Pressure Shell Side	FV – 0.19 MPa (g)
Design Temperature Shell Side	100 Deg C
Hydrotest Pressure	0.29 MPa (g)
Shell/End Radiography	10% Spot + All T Joints / Full for Dishend
Vessel Details	
Shell Diameter (ID)	1600 mm
Shell Height (Bottom TL to Top TL)	2650 mm
Top/Bottom	2:1 Ellipsoidal
Shell Thickness	5 mm
Top/Bottom end Thickness	6 mm (NOM)
Body Flanges	NA
Stiffening Ring	75 mm W x 5 mm Thk x Qty 2 Nos
Type of Support	Leg Supports, Qty – 3 nos, 80 NB SCH 80S
Lifting Lug	2 Nos
Shell MOC	SA 240 Gr 304
Dish ends MOC	SA 240 Gr 304
Body Flange MOC	NA
Nozzles pipe MOC	SA 312 TP 304 Upto 150 NB Above 150 NB SA 240 Gr 304
Nozzle Flange MOC	SA 182 F 304
Leg Support MOC	SA 106 Gr B with SS 304 Pad and IS 2062 Gr B Base plate
Lifting Lug MOC	IS 2062 Gr B with SS 304 Pad plate
Gasket MOC	PTFE
Nut & Bolts	SA 193 Gr B8 + SA 194 Gr 8
Spares	10% of Installed hardware of each size minimum 1 number 200% of Installed gaskets as a spare will be provided
Foundation Bolts	M36, 6 Nos, MOC - MS

Nozzle Details:

NOZZLE NO.	SERVICE	Qty	NOZZLE PIPE		End Connection	
			NB	SCH	Type	Class
A	Manhole with cover, davit and handle	1	500	5 Thk	SORF	ASME 150#
B	Liquid Inlet with J type Insert Pipe	1	50	SCH 40S	SORF	ASME 150#
C	Liquid Outlet	1	50	SCH 40S	SORF	ASME 150#
D	Vent	1	50	SCH 40S	SORF	ASME 150#
E	Pressure Gauge	1	25	SCH 40S	SORF	ASME 150#
F	Temperature Sensor	1	40	SCH 40S	SORF	ASME 150#
G	Level Sensor	1	80	SCH 40S	SORF	ASME 150#
H	Level Gauge Spare with Blind	1	80	SCH 40S	SORF	ASME 150#
I	Spare with Blind	1	50	SCH 40S	SORF	ASME 150#
J	Liquid Inlet with J type Insert Pipe	1	50	SCH 40S	SORF	ASME 150#

14. Description	Xylene Tank (TM-DMX)
Quantity	1 No
Process Details	
Working Capacity	5.1 m^3
Gross Capacity	6.4 m^3
Design Pressure Shell Side	FV – 0.19 MPa (g)
Design Temperature Shell Side	100 Deg C
Hydrotest Pressure	0.29 MPa (g)
Shell/End Radiography	10% Spot + All T Joints / Full for Dishend
Vessel Details	
Shell Diameter (ID)	1600 mm
Shell Height (Bottom TL to Top TL)	2650 mm
Top/Bottom	2:1 Ellipsoidal
Shell Thickness	5 mm
Top/Bottom end Thickness	6 mm (NOM)
Body Flanges	NA
Stiffening Ring	75 mm W x 5 mm Thk x Qty 2 Nos
Type of Support	Leg Supports, Qty – 3 nos, 80 NB SCH 80S
Lifting Lug	2 Nos
Shell MOC	SA 240 Gr 304
Dish ends MOC	SA 240 Gr 304
Body Flange MOC	NA
Nozzles pipe MOC	SA 312 TP 304 Upto 150 NB Above 150 NB SA 240 Gr 304
Nozzle Flange MOC	SA 182 F 304
Leg Support MOC	SA 106 Gr B with SS 304 Pad and IS 2062 Gr B Base plate
Lifting Lug MOC	IS 2062 Gr B with SS 304 Pad plate
Gasket MOC	PTFE
Nut & Bolts	SA 193 Gr B8 + SA 194 Gr 8
Spares	10% of Installed hardware of each size minimum 1 number 200% of Installed gaskets as a spare will be provided
Foundation Bolts	M36, 6 Nos, MOC - MS

Nozzle Details:

NOZZLE NO.	SERVICE	Qty	NOZZLE PIPE		End Connection	
			NB	SCH	Type	Class
A	Manhole with cover, davit and handle	1	500	5 Thk	SORF	ASME 150#
B	Liquid Inlet with J type Insert Pipe	1	50	SCH 40S	SORF	ASME 150#
C	Liquid Outlet	1	50	SCH 40S	SORF	ASME 150#
D	Vent	1	50	SCH 40S	SORF	ASME 150#
E	Pressure Gauge	1	25	SCH 40S	SORF	ASME 150#
F	Temperature Sensor	1	40	SCH 40S	SORF	ASME 150#
G	Level Sensor	1	80	SCH 40S	SORF	ASME 150#
H	Level Gauge Spare with Blind	1	80	SCH 40S	SORF	ASME 150#
I	Spare with Blind	1	50	SCH 40S	SORF	ASME 150#
J	Liquid Inlet with J type Insert Pipe	1	50	SCH 40S	SORF	ASME 150#

15. Description	Vessel (VCT-9901,9902,9903)
Quantity	3 Nos
Process Details	
Working Capacity	0.72 m^3
Gross Capacity	1 m^3
Design Pressure Shell Side	FV – 0.19 MPa (g)
Design Temperature Shell Side	80 Deg C
Hydrotest Pressure	0.29 MPa (g)
Shell/End Radiography	10% Spot + All T Joints / Full for Dishend
Vessel Details	
Shell Diameter (ID)	900 mm
Shell Height (Bottom TL to Top TL)	1400 mm
Top/Bottom	10% Torrispherical
Shell Thickness	5 mm
Top/Bottom end Thickness	6 mm (NOM)
Body Flanges	NA
Stiffening Ring	NA
Type of Support	Leg Supports, Qty – 3 nos, 50 NB Sch 80S
Lifting Lug	2 Nos
Shell MOC	SA 240 Gr 304
Dish ends MOC	SA 240 Gr 304
Body Flange MOC	NA
Nozzles pipe MOC	SA 312 TP 304 Upto 150 NB Above 150 NB SA 240 Gr 304
Nozzle Flange MOC	SA 182 F 304
Leg Support MOC	SA 106 Gr B with SS 304 Pad and IS 2062 Gr B Base plate
Lifting Lug MOC	IS 2062 Gr B with SS 304 Pad plate
Gasket MOC	PTFE
Nut & Bolts	SA 193 Gr B8 + SA 194 Gr 8
Spares	10% of Installed hardware of each size minimum 1 number 200% of Installed gaskets as a spare will be provided
Foundation Bolts	M20, 6 Nos, MOC - MS

Nozzle Details:

NOZZLE NO.	SERVICE	Qty	NOZZLE PIPE		End Connection	
			NB	SCH	Type	Class
A	Handhole with Cover and Handle	1	250	SCH 10S	SORF	ASME 150#
B	Exhaust Air Inlet	1	80	SCH 40S	SORF	ASME 150#
C	Drain	1	50	SCH 40S	SORF	ASME 150#
D	To Vacuum Pump with Insert Pipe	1	80	SCH 40S	SORF	ASME 150#
E	Spare with Blind	1	50	SCH 40S	SORF	ASME 150#
F	Pressure Gauge	1	25	SCH 40S	SORF	ASME 150#

16. Description	EHT-RD (HT-002)
Quantity	1 No
Process Details	
Working Capacity	0.36 m^3
Gross Capacity	0.41 m^3
Design Pressure Shell Side	FV – 0.55 MPa (g)
Design Temperature Shell Side	80 Deg C
Hydrotest Pressure	0.83 MPa (g)
Shell/End Radiography	10% Spot + All T Joints / Full for Dishend
Vessel Details	
Shell Diameter (ID)	700 mm
Shell Height (Bottom TL to Top TL)	820 mm
Top/Bottom	2:1 Ellipsoidal
Shell Thickness	5 mm
Top/Bottom end Thickness	6 mm (NOM)
Body Flanges	NA
Stiffening Ring	NA
Type of Support	Leg Supports, Qty – 3 nos, 50 NB Sch 80S
Lifting Lug	2 Nos
Shell MOC	SA 240 Gr 304
Dish ends MOC	SA 240 Gr 304
Body Flange MOC	NA
Nozzles pipe MOC	SA 312 TP 304 Upto 150 NB Above 150 NB SA 240 Gr 304
Nozzle Flange MOC	SA 182 F 304
Leg Support MOC	SA 106 Gr B with SS 304 Pad and IS 2062 Gr B Base plate
Lifting Lug MOC	IS 2062 Gr B with SS 304 Pad plate
Gasket MOC	PTFE
Nut & Bolts	SA 193 Gr B8 + SA 194 Gr 8
Spares	10% of Installed hardware of each size minimum 1 number 200% of Installed gaskets as a spare will be provided
Movable Trolley MOC	MS with 4 Nos Polyurethane Wheels
Foundation Bolts	M20, 6 Nos, MOC - MS

Nozzle Details:

NOZZLE NO.	SERVICE	Qty	NOZZLE PIPE		End Connection	
			NB	SCH	Type	Class
A	Manhole with Hinge, Cover and Handle	1	250	5 Thk	SORF	ASME 150#
B	Gas Outlet	1	40	SCH 40S	SORF	ASME 150#
C	Liquid Outlet	1	40	SCH 40S	SORF	ASME 150#
D	Spare with Blind	1	25	SCH 40S	SORF	ASME 150#
E	Pressure Gauge	1	25	SCH 40S	SORF	ASME 150#
F	Sight Glass	1	100	-	PAD Type	-
F1	Light Glass	1	100	-	PAD Type	-
G	Manhole with cover and handle	1	250	5 Thk	SORF	ASME 150#
H	Gas Inlet	1	20	SCH 40S	SORF	ASME 150#

17. Description	DT-RJ Vessel (DT-1)
Quantity	**1 No**
Process Details	
Working Capacity	0.46 m^3
Gross Capacity	0.60 m^3
Design Pressure Shell Side	FV – 0.19 MPa (g)
Design Temperature Shell Side	80 Deg C
Hydrotest Pressure	0.29 MPa (g)
Shell/End Radiography	10% Spot + All T Joints / Full for Dishend
Vessel Details	
Shell Diameter (ID)	800 mm
Shell Height (Bottom TL to Top TL)	1000 mm
Top/Bottom	10% Torrispherical
Shell Thickness	5 mm
Top/Bottom end Thickness	6 mm (NOM)
Body Flanges	NA
Stiffening Ring	NA
Type of Support	Leg Supports, Qty – 3 nos, 50 NB Sch 80S
Lifting Lug	2 Nos
Shell MOC	SA 240 Gr 304
Dish ends MOC	SA 240 Gr 304
Body Flange MOC	NA
Nozzles pipe MOC	SA 312 TP 304 Upto 150 NB Above 150 NB SA 240 Gr 304
Nozzle Flange MOC	SA 182 F 304
Leg Support MOC	SA 106 Gr B with SS 304 Pad and IS 2062 Gr B Base plate
Lifting Lug MOC	IS 2062 Gr B with SS 304 Pad plate
Gasket MOC	PTFE
Nut & Bolts	SA 193 Gr B8 + SA 194 Gr 8
Spares	10% of Installed hardware of each size minimum 1 number 200% of Installed gaskets as a spare will be provided
Foundation Bolts	M20, 6 Nos, MOC - MS

Nozzle Details:

NOZZLE NO.	SERVICE	Qty	NOZZLE PIPE		End Connection	
			NB	SCH	Type	Class
A	Handhole with cover and handle	1	200	SCH 40S	SORF	ASME 150#
B	Vent	1	25	SCH 40S	SORF	ASME 150#
C	Liquid Outlet	1	40	SCH 40S	SORF	ASME 150#
D	Liquid Inlet with Insert Pipe	1	50	SCH 40S	SORF	ASME 150#
E	Pressure Gauge	1	25	SCH 40S	SORF	ASME 150#
F	Light Nozzle	1	150	-	PAD Type	-
G	Liquid Outlet	1	50	SCH 40S	SORF	ASME 150#
H	Level Sensor with Blind	1	40	SCH 40S	SORF	ASME 150#
H'	Level Sensor with Blind	1	40	SCH 40S	SORF	ASME 150#
I	N2 Inlet	1	25	SCH 40S	SORF	ASME 150#
J	Gas Outlet	1	50	SCH 40S	SORF	ASME 150#
K	Liquid Outlet with Insert Pipe	1	40	SCH 40S	SORF	ASME 150#
L	Sight Glass	1	150	-	PAD Type	-
M	Temperature Gauge	1	40	SCH 40S	SORF	ASME 150#
N N'	Liquid Level Gauge	2	As per dwg	-	-	-
O	Liquid Outlet	1	50	SCH 40S	SORF	ASME 150#

18. Description	DT-RG Vessel (DT-2)
Quantity	**1 No**
Process Details	
Working Capacity	0.46 m^3
Gross Capacity	0.60 m^3
Design Pressure Shell Side	FV – 0.19 MPa (g)
Design Temperature Shell Side	80 Deg C
Hydrotest Pressure	0.29 MPa (g)
Shell/End Radiography	10% Spot + All T Joints / Full for Dishend
Vessel Details	
Shell Diameter (ID)	800 mm
Shell Height (Bottom TL to Top TL)	1000 mm
Top/Bottom	10% Torrispherical
Shell Thickness	5 mm
Top/Bottom end Thickness	6 mm (NOM)
Body Flanges	NA
Stiffening Ring	NA
Type of Support	Leg Supports, Qty – 3 nos, 50 NB Sch 80S
Lifting Lug	2 Nos
Shell MOC	SA 240 Gr 304
Dish ends MOC	SA 240 Gr 304
Body Flange MOC	NA
Nozzles pipe MOC	SA 312 TP 304 Upto 150 NB Above 150 NB SA 240 Gr 304
Nozzle Flange MOC	SA 182 F 304
Leg Support MOC	SA 106 Gr B with SS 304 Pad and IS 2062 Gr B Base plate
Lifting Lug MOC	IS 2062 Gr B with SS 304 Pad plate
Gasket MOC	PTFE
Nut & Bolts	SA 193 Gr B8 + SA 194 Gr 8
Spares	10% of Installed hardware of each size minimum 1 number 200% of Installed gaskets as a spare will be provided
Foundation Bolts	M20, 6 Nos, MOC - MS

Nozzle Details:

NOZZLE NO.	SERVICE	Qty	NOZZLE PIPE		End Connection	
			NB	SCH	Type	Class
A	Handhole with cover and handle	1	200	SCH 40S	SORF	ASME 150#
B	Vent	1	25	SCH 40S	SORF	ASME 150#
C	Liquid Outlet	1	40	SCH 40S	SORF	ASME 150#
D	Liquid Inlet with Insert Pipe	1	50	SCH 40S	SORF	ASME 150#
E	Pressure Gauge	1	25	SCH 40S	SORF	ASME 150#
F	Light Nozzle	1	150	-	PAD Type	-
G	Liquid Outlet	1	50	SCH 40S	SORF	ASME 150#
H	Level Sensor with Blind	1	40	SCH 40S	SORF	ASME 150#
H'	Level Sensor with Blind	1	40	SCH 40S	SORF	ASME 150#
I	N2 Inlet	1	25	SCH 40S	SORF	ASME 150#
J	Gas Outlet	1	50	SCH 40S	SORF	ASME 150#
K	Liquid Outlet with Insert Pipe	1	40	SCH 40S	SORF	ASME 150#
L	Sight Glass	1	150	-	PAD Type	-
M	Temperature Gauge	1	40	SCH 40S	SORF	ASME 150#
N N'	Liquid Level Gauge	2	As per dwg	-	-	-
O	Liquid Outlet	1	50	SCH 40S	SORF	ASME 150#

19. Description	DT-RD Vessel (DT-3)
Quantity	**1 No**
Process Details	
Working Capacity	0.3 m^3
Gross Capacity	0.33 m^3
Design Pressure Shell Side	FV – 0.19 MPa (g)
Design Temperature Shell Side	80 Deg C
Hydrotest Pressure	0.29 MPa (g)
Shell/End Radiography	10% Spot + All T Joints / Full for Dishend
Vessel Details	
Shell Diameter (ID)	600 mm
Shell Height (Bottom TL to Top TL)	1000 mm
Top/Bottom	10% Torrispherical
Shell Thickness	5 mm
Top/Bottom end Thickness	6 mm (NOM)
Body Flanges	NA
Stiffening Ring	NA
Type of Support	Leg Supports, Qty – 3 nos, 50 NB Sch 80S
Lifting Lug	2 Nos
Shell MOC	SA 240 Gr 304
Dish ends MOC	SA 240 Gr 304
Body Flange MOC	NA
Nozzles pipe MOC	SA 312 TP 304 Upto 150 NB Above 150 NB SA 240 Gr 304
Nozzle Flange MOC	SA 182 F 304
Leg Support MOC	SA 106 Gr B with SS 304 Pad and IS 2062 Gr B Base plate
Lifting Lug MOC	IS 2062 Gr B with SS 304 Pad plate
Gasket MOC	PTFE
Nut & Bolts	SA 193 Gr B8 + SA 194 Gr 8
Spares	10% of Installed hardware of each size minimum 1 number 200% of Installed gaskets as a spare will be provided
Foundation Bolts	M20, 6 Nos, MOC - MS

Nozzle Details:

NOZZLE NO.	SERVICE	Qty	NOZZLE PIPE		End Connection	
			NB	SCH	Type	Class
A	Handhole with cover and handle	1	200	SCH 40S	SORF	ASME 150#
B	Spare with Blind	1	65	SCH 40S	SORF	ASME 150#
C	Liquid Outlet	1	40	SCH 40S	SORF	ASME 150#
D	Liquid Inlet with Insert Pipe	1	50	SCH 40S	SORF	ASME 150#
E	Pressure Gauge	1	25	SCH 40S	SORF	ASME 150#
F	Light Nozzle	1	150	-	PAD Type	-
G G1	Liquid Outlet	2	50	SCH 40S	SORF	ASME 150#
H	Level Sensor with Blind	1	40	SCH 40S	SORF	ASME 150#
H’	Level Sensor with Blind	1	40	SCH 40S	SORF	ASME 150#
I	Spare with Blind	1	25	SCH 40S	SORF	ASME 150#
J	Gas Outlet	1	50	SCH 40S	SORF	ASME 150#
K	Liquid Outlet with Insert Pipe	1	40	SCH 40S	SORF	ASME 150#
L	Sight Glass	1	150	-	PAD Type	-
M	Temperature Gauge	1	40	SCH 40S	SORF	ASME 150#
N N’	Liquid Level Gauge	2	As per dwg	-	-	-

20. Description	DT-RI Vessel (DT-4)
Quantity	**1 No**
Process Details	
Working Capacity	0.4 m^3
Gross Capacity	0.43 m^3
Design Pressure Shell Side	FV – 0.19 MPa (g)
Design Temperature Shell Side	80 Deg C
Hydrotest Pressure	0.29 MPa (g)
Shell/End Radiography	10% Spot + All T Joints / Full for Dishend
Vessel Details	
Shell Diameter (ID)	680 mm
Shell Height (Bottom TL to Top TL)	1000 mm
Top/Bottom	10% Torrispherical
Shell Thickness	5 mm
Top/Bottom end Thickness	6 mm (NOM)
Body Flanges	NA
Stiffening Ring	NA
Type of Support	Leg Supports, Qty – 3 nos, 50 NB Sch 80S
Lifting Lug	2 Nos
Shell MOC	SA 240 Gr 304
Dish ends MOC	SA 240 Gr 304
Body Flange MOC	NA
Nozzles pipe MOC	SA 312 TP 304 Upto 150 NB Above 150 NB SA 240 Gr 304
Nozzle Flange MOC	SA 182 F 304
Leg Support MOC	SA 106 Gr B with SS 304 Pad and IS 2062 Gr B Base plate
Lifting Lug MOC	IS 2062 Gr B with SS 304 Pad plate
Gasket MOC	PTFE
Nut & Bolts	SA 193 Gr B8 + SA 194 Gr 8
Spares	10% of Installed hardware of each size minimum 1 number 200% of Installed gaskets as a spare will be provided
Foundation Bolts	M20, 6 Nos, MOC - MS

Nozzle Details:

NOZZLE NO.	SERVICE	Qty	NOZZLE PIPE		End Connection	
			NB	SCH	Type	Class
A	Handhole with cover and handle	1	200	SCH 40S	SORF	ASME 150#
B	Vent	1	25	SCH 40S	SORF	ASME 150#
C	Liquid Outlet	1	40	SCH 40S	SORF	ASME 150#
D	Liquid Inlet with Insert Pipe	1	50	SCH 40S	SORF	ASME 150#
E	Pressure Gauge	1	25	SCH 40S	SORF	ASME 150#
F	Light Nozzle	1	150	-	PAD Type	-
G	Liquid Outlet	1	50	SCH 40S	SORF	ASME 150#
H	Level Sensor with Blind	1	40	SCH 40S	SORF	ASME 150#
H'	Level Sensor with Blind	1	40	SCH 40S	SORF	ASME 150#
I	N2 Inlet	1	25	SCH 40S	SORF	ASME 150#
J	Gas Outlet	1	50	SCH 40S	SORF	ASME 150#
K	Liquid Outlet with Insert Pipe	1	40	SCH 40S	SORF	ASME 150#
L	Sight Glass	1	150	-	PAD Type	-
M	Temperature Gauge	1	40	SCH 40S	SORF	ASME 150#
N N'	Liquid Level Gauge	2	As per dwg	-	-	-
O	Liquid Outlet	1	50	SCH 40S	SORF	ASME 150#

21. Description	Powder Hopper (VE-100)
Quantity	1 No
Process Details	
Working Capacity	18.6 m^3
Gross Capacity	19.8 m^3
Design Pressure Shell Side	ATM – 0.19 MPa (g)
Design Temperature Shell Side	50 Deg C
Hydrotest Pressure	Water Filled
Shell/End Radiography	10% Spot + All T Joints
Vessel Details	
Shell Diameter (ID)	2500 mm
Shell Height (Bottom TL to Top Flat	3500 mm
Bottom Cone Height	1647 mm
Top/Bottom	Top – Flat, Bottom – Conical
Shell Thickness	8 mm
Top/Bottom end Thickness	Top – 10 mm, Bottom Cone – 8 mm
Body Flanges	NA
Stiffening Ring	75 mm W x 6 mm thk x Qty 2 Nos
Type of Support	Lug Supports, Qty – 4 nos
Lifting Lug	3 Nos
Shell MOC	SA 240 Gr 304
Ends MOC	SA 240 Gr 304
Body Flange MOC	NA
Nozzles pipe MOC	SA 312 TP 304 Upto 150 NB Above 150 NB SA 240 Gr 304
Nozzle Flange MOC	SA 182 F 304
Lug Support MOC	IS 2062 Gr B with SS 304 Pad plate
Lifting Lug MOC	IS 2062 Gr B with SS 304 Pad plate
Gasket MOC	PTFE
Nut & Bolts	SA 193 Gr B8 + SA 194 Gr 8
Spares	10% of Installed hardware of each size minimum 1 number 200% of Installed gaskets as a spare will be provided
Guard pipe MOC	SS 304
Foundation Bolts	M36, 4 Nos, MOC - MS

Nozzle Details:

NOZZLE NO.	SERVICE	Qty	NOZZLE PIPE		End Connection	
			NB	SCH	Type	Class
N1	Powder Out	1	600	6 Thk	SORF	ASME 150#
N2	Vacuum	1	200	SCH 10S	SORF	ASME 150#
N3	Local Ventilation Output	1	150	SCH 10S	SORF	ASME 150#
N4	Spare with Blind	1	150	SCH 10S	SORF	ASME 150#
N5	Spare with Blind	1	150	SCH 10S	SORF	ASME 150#
N6	Spare with Blind	1	150	SCH 10S	SORF	ASME 150#
N7	Nitrogen In	1	25	SCH 40S	SORF	ASME 150#
N10	Vapor In with cover and handle	1	600	6 Thk	SORF	ASME 150#
N11 a,b,c	Air Knocker on Conical Part	3	100	SCH 10S	SORF	ASME 150#
N12 a,b,c,d	Air Knocker on Shell Part	4	100	SCH 10S	SORF	ASME 150#

Notes:

1. All thicknesses shall be confirmed by design team.

Delivery Date (Ex-works)	**28th September 2022 (Ex-works)**
Internal Inspection Report	Required
TPI	YES (By TUV India)
Remark/Instruction	Test Certificates Required as per QAP

Issued By	**Signature**	**Received By**	**Signature**
Marketing		Design/Dwg	
		Manufacturing	
		Purchase	

	Signature		
Prepared By	PMD		
Checked By	PMD		
Approved By	TW		