Sr. No.	Description			
01.	**Gate Valves**			
	Type		Gate valve	
	Line Schedule		40S	
	Application		Normally Open or Close	
	Ambient conditions		10 to 60 °C	
	Pressure Rating		**Class 600**	**Class 150**
	Physical State		Liquid	Liquid
	Fluid to be controlled		R-134a	DMW
	Specific Gravity		1.2	1.0
	Quantity w.r.t Line size and Class	DN 100	---	08
		DN 80	---	01
		DN 50	---	12
		DN 40	---	01
		DN 15	19	---
	End connection		RF Flanged (ANSI)	RF Flanged (ANSI)
	Design Pressure (MPa)		7	1.1
	Design Temperature (°C)		150	66
	Hydrostatic Test Pressure (MPa)		9	1.3
	Fluid Entry		Bi-Directional	Bi-Directional
	Orientation		Horizontal	Horizontal
	Actuator Type		Manual	Manual
	Material of Construction (Body, Bonnet, Stem, Flanges, Plugs, Seat ring, upper/lower guides, Tubing/Fitting)		SS-304/SS-316	
	Fire Protection		IP-65	

02.	**Terms and conditions – documentation required**	
	i. 3.1 B Material test certificate. ii. Liquid penetrant Test. iii. Seat leakage Test iv. Standard QA certificate should be provided. v. Hydrostatic Test	vi. Fugitive Emission Test vii. Diagnostic Test viii. Compliance Certificate in accordance with API 602 ix. Relevant technical literature must be provided for all items along-with quotations
03.	**Pre-Shipment Inspection**	
	Pre-shipment inspection by third party at the manufacturer's premises for all items must be ensures before dispatch of shipment. At least one/two pieces of each required item would be tested in accordance with international testing standards, especially ASTM, ASME & API 598, in respect of: • Material • Dimensions • Hydrostatic testing • Pressure & temperature rating and other technical parameters Supplier shall be responsible to provide all witnesses & non-witnessed test certificates /reports prior to dispatch of consignment.	
04.	**Make**	European/ American/Japanese

Sr. No.	Description			
01.	**Globe Valves**			
	Type		Globe with single seat	
	Line Schedule		40S	
	Application		Control	
	Ambient conditions		10 to 60 °C	
	Pressure Rating		**Class 600**	**Class 150**
	Physical State		Liquid	Liquid
	Fluid to be controlled		R-134a	DMW
	Specific Gravity		1.2	1.0
	Quantity w.r.t Line size and Class	DN 100	---	03
		DN 80	---	02
		DN 50	---	02
		DN 40	---	---
		DN 15	04	---
	End connection		RF Flanged (ANSI)	RF Flanged (ANSI)
	Pressure Rating		Class 600	Class 150
	Design Pressure (MPa)		7	1.1
	Design Temperature (°C)		150	66
	Hydrostatic Test Pressure (MPa)		9	1.3
	Fluid Entry		Bottom	Bottom
	Orientation		Horizontal	Horizontal
	Actuator Type		Manual	Manual
	Material of Construction (Body, Bonnet, Stem, Flanges, Plugs, Seat ring, upper/lower guides, Tubing/Fitting)		SS-304/SS-316	
	Fire Protection		IP-65	
02.	**Terms and conditions – documentation required**			
	i. 3.1 B Material test certificate. ii. Liquid penetrant Test. iii. Seat leakage Test iv. Standard QA certificate should be provided. v. Hydrostatie Test		vi. Fugitive Emission Test vii. Diagnostic Test viii. Compliance Certificate in accordance with API 602 ix. Relevant technical literature must be provided for all items along-with quotations	
03.	**Pre-Shipment Inspection**			
	Pre-shipment inspection by third party at the manufacturer's premises for all items must be ensures before dispatch of shipment. At least one/two pieces of each required item would be tested in accordance with international testing standards, especially ASTM, ASME & API 598, in respect of: • Material • Dimensions • Hydrostatic testing • Pressure & temperature rating and other technical parameters Supplier shall be responsible to provide all witnesses & non-witnessed test certificates /reports prior to dispatch of consignment.			
04.	**Make**		European/ American/Japanese	

Sr. No.	Description			
(T)	**Check Valves**			
	Type		Swing check valve	
	Line Schedule		40S	
	Application		Direction Control	
	Ambient conditions		10 to 60 °C	
	Pressure Rating		**Class 600**	**Class 150**
	Physical State		Liquid	Liquid
	Fluid to be controlled		R-134a	DMW
	Specific Gravity		1.2	1.0
	Quantity w.r.t Line size and Class	DN 100	---	---
		DN 80	---	04
		DN 50	---	04
		DN 40	---	02
		DN 15	03	---
	End connection		RF Flanged (ANSI)	RF Flanged (ANSI)
	Pressure Rating		Class 600	Class 150
	Design Pressure (MPa)		7	1.1
	Design Temperature (°C)		150	66
	Hydrostatic Test Pressure (MPa)		9	1.3
	Orientation		Horizontal	Horizontal
	Actuator Type		Self	Self
	Material of Construction (Body, Bonnet, Stem, Flanges, Plugs, Seat ring, upper/lower guides, Tubing/Fitting)		SS-304/SS-316	
	Fire Protection		IP-65	
02.	**Terms and conditions – documentation required**			
	i. 3.1 B Material test certificate. ii. Liquid penetrant Test. iii. Seat leakage Test iv. Standard QA certificate should be provided. v. Hydrostatic Test		vi. Fugitive Emission Test vii. Diagnostic Test viii. Compliance Certificate in accordance with API 602 ix. Relevant technical literature must be provided for all items along-with quotations	
03.	**Pre-Shipment Inspection**			
	Pre-shipment inspection by third party at the manufacturer's premises for all items must be ensures before dispatch of shipment. At least one/two pieces of each required item would be tested in accordance with international testing standards, especially ASTM, ASME & API 598, in respect of: • Material • Dimensions • Hydrostatic testing • Pressure & temperature rating and other technical parameters Supplier shall be responsible to provide all witnesses & non-witnessed test certificates /reports prior to dispatch of consignment.			
04.	**Make**		European/ American/Japanese	

Sr. No.	Description			
01.	**Needle Valves**			
	Type		Needle valve	
	Line Schedule		40S	
	Application		Fine Control	
	Ambient conditions		10 to 60 °C	
	Pressure Rating		**Class 600**	**Class 150**
	Physical State		Liquid	Liquid
	Fluid to be controlled		R-134a	DMW
	Specific Gravity		1.2	1.0
	Quantity w.r.t Line size and Class	DN 100	---	---
		DN 80	---	---
		DN 50	03	---
		DN 40	---	---
		DN 15	02	---
	End connection		RF Flanged (ANSI)	RF Flanged (ANSI)
	Pressure Rating		Class 600	Class 150
	Design Pressure (MPa)		7	1.1
	Design Temperature (°C)		150	66
	Hydrostatic Test Pressure (MPa)		9	1.3
	Orientation		Horizontal	Horizontal
	Actuator Type		Manual	Manual
	Material of Construction (Body, Bonnet, Stem, Flanges, Plugs, Seat ring, upper/lower guides, Tubing/Fitting)		SS-304/SS-316	
	Fire Protection		IP-65	

02.	**Terms and conditions – documentation required**	
	i. 3.1 B Material test certificate. ii. Liquid penetrant Test. iii. Seat leakage Test iv. Standard QA certificate should be provided. v. Hydrostatic Test	vi. Fugitive Emission Test vii. Diagnostic Test viii. Compliance Certificate in accordance with API 602 ix. Relevant technical literature must be provided for all items along-with quotations
03.	**Pre-Shipment Inspection**	
	Pre-shipment inspection by third party at the manufacturer's premises for all items must be ensures before dispatch of shipment. At least one/two pieces of each required item would be tested in accordance with international testing standards, especially ASTM, ASME & API 598, in respect of: • Material • Dimensions • Hydrostatic testing • Pressure & temperature rating and other technical parameters Supplier shall be responsible to provide all witnesses & non-witnessed test certificates /reports prior to dispatch of consignment.	
04.	**Make**	European/ American/Japanese

Sr. No.	Description			
01.	**Gate Valves (Welded)**			
	Type		Gate valve	
	Line Schedule		40S	
	Application		Normally Open or Close	
	Ambient conditions		10 to 60 °C	
	Pressure Rating		**Class 600**	**Class 150**
	Physical State		Liquid	Liquid
	Fluid to be controlled		R-134a	DMW
	Specific Gravity		1.2	1.0
	Quantity w.r.t Line size and Class	DN 20	---	12
	End connection		Welded	Welded
	Design Pressure (MPa)		7	1.1
	Design Temperature (°C)		150	66
	Hydrostatic Test Pressure (MPa)		9	1.3
	Fluid Entry		Bi-Directional	Bi-Directional
	Orientation		Horizontal	Horizontal
	Actuator Type		Manual	Manual
	Material of Construction (Body, Bonnet, Stem, Flanges, Plugs, Seat ring, upper/lower guides, Tubing/Fitting)		SS-304/SS-316	
	Fire Protection		IP-65	
02.	**Terms and conditions – documentation required**			
	x. 3.1 B Material test certificate. xi. Liquid penetrant Test. xii. Seat leakage Test xiii. Standard QA certificate should be provided. xiv. Hydrostatic Test		xv. Fugitive Emission Test xvi. Diagnostic Test xvii. Compliance Certificate in accordance with API 602 xviii. Relevant technical literature must be provided for all items along-with quotations	
03.	**Pre-Shipment Inspection**			
	Pre-shipment inspection by third party at the manufacturer's premises for all items must be ensures before dispatch of shipment. At least one/two pieces of each required item would be tested in accordance with international testing standards, especially ASTM, ASME & API 598, in respect of: • Material • Dimensions • Hydrostatic testing • Pressure & temperature rating and other technical parameters Supplier shall be responsible to provide all witnesses & non-witnessed test certificates /reports prior to dispatch of consignment.			
04.	**Make**		European/ American/Japanese	