TECHNICAL SPECIFICATIONS

NFL Nangal Case Ref. No.						**SPX/2024/83**
Quotation No. & Date						
Name of Bidder:						
Vendor's Complete Address :						
Vendor's Contact Details: Vendor may furnish E-Mail Id, Telephone / Mobile No. etc. alongwith complete Name & Address details of the firm for Clarifications / Placement of Order.						
Sr. No.	**NFL Requirement**					**Vendors Comment (Agreed / If not Agreed, Please Comment)**
1	**Sr. No.**	**Material Code**	**Description of Material**	**UOM**	**Qty. Required**	

	i.	7470091	**Manufacturing, Testing & Supply of Complete High Pressure Angle Stop Valves** **Service Conditions: Urea Carbamate Solution at 220 Kg/cm2 & 195Deg Celsius** **End Connections: Lens Face with Threaded Flange** **Operation Type: Handwheel** **Face to Face: 200mm** **Bore Size: 47.5mm** **Material of Construction:** **Wetted Parts (Valve Seat & Forged Block Valve): UNS S31050/25-22-2 with Exchangeable Seat** **Valve Spindle: Ferralium255** **Size: DN50 PN320** **Dimensionally interchangeable with Drawing NG-6464**	**No.**	1.000	

	ii.	7470111	**Manufacturing, Testing & Supply of Complete High Pressure Angle Stop Valves** **Service Conditions: Urea Carbamate Solution at 220 Kg/cm2 & 195Deg Celsius** **End Connections: Lens Face with Threaded Flange** **Operation Type: Handwheel** **Face to Face: 270mm** **Bore Size: 66.5mm** **Material of Construction:** **Wetted Parts (Valve Seat & Forged Block Valve): UNS S31050/25-22-2 with Exchangeable Seat** **Valve Spindle: Ferralium255** **Size: DN70 PN320** **Dimensionally interchangeable with Drawing NG-6464**	**NO**	1.000	

	iii.	7470131	**Manufacturing, Testing & Supply of Complete High Pressure Angle Stop Valves** **Service Conditions: Urea Carbamate Solution at 220 Kg/cm2 & 195Deg Celsius.** **End Connections: Lens Face with Threaded Flange** **Operation Type: Handwheel with Gear Actuator** **Face to Face: 330mm** **Bore Size: 82.5mm** **Material of Construction:** **Wetted Parts (Valve Seat & Forged Block Valve): UNS S31050/25-22-2 with Exchangeable Seat** **Valve Spindle: Ferralium255** **Size: DN90 PN320** **Dimensionally interchangeable with Drawing NG-6465**	**NO.**	1.000	

NOTE:	1. Valves shall be manufactured under Third party inspection of M/s LRQA/BV/TuV/PDIL/EIL. **Scope Third party shall include** : I) Witnessing of Test Certificate for Chemical Composition and physical properties for Forgings Raw Material as per EN10201 3.1. II) Witness of Hydrostatic Test Pressure for shell, seat & back seat as per NFL Drawings. III) Witness of Pneumatic Test Pressure for shell & seat as per NFL Drawings. IV) Verification of Certificate for Huey Test for Block, Seat & Spindle in Conformance to ASTM A262 Prac. C with acceptable limit as per Casale/Saipem latest specifications. V) Party shall supply Inspection Release Note duly signed and stamped by TPI. 2. Party shall also certify that the Material supplied by them is compatible for service in Urea Carbamate Solution at 220 Kg/ cm2 Pressure & 195 Deg. Celsius Temperature.	
Eligibility Criteria	Bidders shall agree to the **Eligibility Criteria** (Attached for the Tender and shall upload necessary documents (duly numbered) mentioned in it. Any offer which not meeting the Eligibility Criteria shall be rejected during Technical Evaluation.	

Sr. no.	Eligibility Criteria	Supporting Documents required.
1.	The bidder should be a manufacturer or authorised dealer of the Manufacturer	**In case of a Manufacturer** Bidder shall submit a copy of valid industrial license issued by statutory Authority / Govt Agency. **In case of a Dealer** Authorization letter from the manufacturer for participation in this specific tender alongwith copy of valid industrial license of the manufacturer issued by statutory Authority / Govt Agency.
2.	The bidder should have supplied similar item during the last seven years ending last day of previous month in which NIT has been issued. **Similar Item means:** Manufacturing/supply of High Pressure Valve in any Fertilizer Industry / petro chemical industry. **MOC of Valve Block & Seat:** SS-316 L Urea Grade /SS 25-22-2 or Higher Grade Material for urea carbamate service. **Size**: minimum 2" or DN 50 **Pressure**: Minimum PN 160	The bidder shall submit self-attested copies of Purchase Orders (PO) / Work Order and self-certified completion certificate for at least one of the following: a) Three completed PO / work orders for supply of similar item each having value not less than **Rs. 9.50 Lacs (inclusive of GST).** **OR** b) Two completed PO / work orders for supply of similar item each having value not less than **Rs 11.87 Lacs (inclusive of GST).** **OR** c) One completed PO / work order for supply of similar item having value not less than **Rs. 19.00 Lacs (inclusive of GST).** Copies of Purchase Orders / work orders in support of the above with full technical scope of work & commercial details including order value along with self -certified completion certificate indicating the executed value and date of completion.
3.	The average annual financial turnover of the bidder during the last three financial years i.e. 2020-21,2021-22 and 2022-23 should be not less than Rs.14.25 Lakhs.	Bidder shall submit self-attested copies of Audited Profit & Loss Account and Balance Sheet with UDIN number for the last three financial years i.e 2020-21, 2021-22 and 2022-23. In case, audited balance sheet / profit & loss account statement not available, turnover certificate duly certified by Chartered Accountant with UDIN as documentary evidence in support thereof.

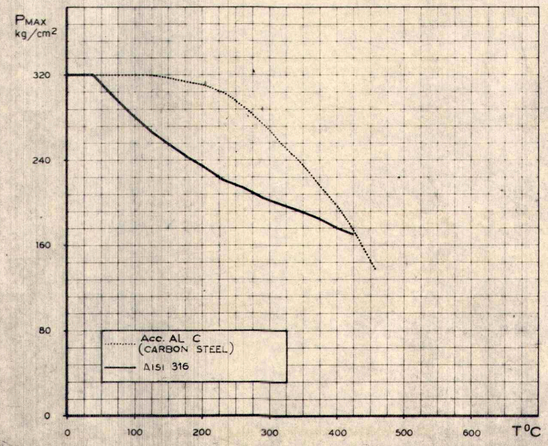
MATERIALI (MATERIALS)

PART Nº (PART No)	ESECUZIONE IN 18-10-2 (18-10-2 EXECUTION)	ESECUZIONE IN AISI 316 (AISI 316 EXECUTION)	ESECUZIONE IN ACC. AL C (CARBON STEEL EXECUTION)
1		AISI 316 *	ASTM A 105 gr. II
201			
203		AISI 316 *	ASTM A 182 gr. F6
3	ASTM A 216 WCB		
401			
403		AISI 316 *	ASTM A 182 gr. F6
405			
5		AISI 316 L **	Aq 34 UNI 3986
6	ALGOFLON		
7	/		
801	C40 UNI 5332-64		
802			
9	Fe 45-2 UNI 663-68		
10	ACCIAIO PER MOLLE		
11		AISI 316 *	ASTM A 182 gr. F6
12	ASTM A 351-CF8		
13	C40 UNI 5332-64		
14	GSQ 42/15 UNI 4544		
15	40 Cr Mo 4 UNI 5332-64		
16	ACCIAIO CADMIATO		
17	Aq 50 UNI 3985		
18	Aq 50 UNI 3985		
19	ITALPAK 26 (Cadirola - Milano)		
20	40 Cr Mo 4 UNI 5332-64		
21	40 Cr Mo 4 UNI 5332-64		
22	C30 UNI 5332-64		
23	Fe 50-1 UNI 5334-64		
24	40 Cr Mo 4 UNI 5332-64		
25	40 Cr Mo 4 UNI 5332-64		
26	40 Cr Mo 4 UNI 5332-64		
27	C K 3 COGNE		
28	40 Cr Mo 4 UNI 5332-64		
29	C40 UNI 5332-64		
30	C40 UNI 5332-64		

MATERIALI (MATERIALS)

PART Nº (PART No)	ESECUZIONE IN 18-10-2 (18-10-2 EXECUTION)	ESECUZIONE IN AISI 316 (AISI 316 EXECUTION)	ESECUZIONE IN ACC. AL C (CARBON STEEL EXECUTION)
31 *		AISI 316 L **	ASTM A 182 gr. F6
32	ALGOFLON		
33	Fe 50-1 UNI 5334-64		
34	/		
35	C40 UNI 5332-64		
36	Fe 00 UNI 5334-64		
37	C40 UNI 5332-64		
/	/		
/	/		
/	/		
61			STELLITE
62			STELLITE

DIAGRAMMA DELLA PRESSIONE PMAX AMMISSIBILE IN FUNZIONE DELLA TEMPERATURA DI ESERCIZIO
(DIAGRAM ALLOWABLE PMAX PRESSURE WITH REFERENCE TO OPERATING FLUID TEMPERATURE)



DIMENSIONI (DIMENSIONS) mm

DN	A	A1	B ⌀	C ⌀	G	H	H1	L	Q	R □	Ø S.STEEL EXEC.	Ø C.STEEL EXEC.	S	F	PESI (WEIGHTS) Kg
25	140	58	300	121	10	334	32	72	60	118		26.6	30	1 1/4 GAS	25
40															
50	200	93	425	195	20	497	51	120	92	185	47.6	51	50	WS 75x1/8	96
60															
70	270	115	650	245	25	620	60	150	116	230	66.5	69.5	70	WS 100x1/8	200

NOTE: (NOTES:)

- MI: ESECUZIONE PER VALVOLE D'INTERCETTAZIONE (Execution for stop valves)
- MRE: ESECUZIONE PER VALVOLE DI REGOLAZIONE A CARATTERISTICA EQUIPERCENTUALE (Execution for control valves having equal percentage characteristic)
- MRL: ESECUZIONE PER VALVOLE DI REGOLAZIONE A CARATTERISTICA LINEARE (Execution for control valves having linear characteristic)
- ◐ FLANGIA FILETTATA - NORME MONTECATINI DIS MI-F7975 FOGLIO 6 (Threaded flanges - Montecatini's standards dwg MI-F7975 sheet 6)
- ◐◐ GUARNIZIONE LENTICOLARE - NORME MONTECATINI DIS MI-F7975 FOGLIO 8 (Lens gasket - Montecatini's standards dwg MI-F7975 sheet 8)

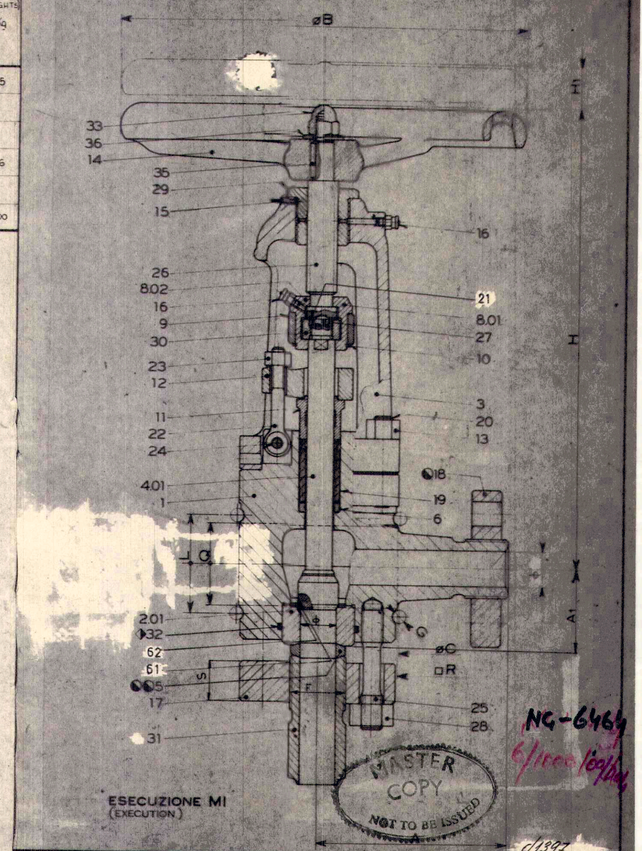
-Prima del serraggio della flangia partic. 17 predisporre sempre il partic. 401 in posizione di totale apertura (tutta aperta)

-Before tighting of flange partic. 17 always adjust particular 401 in a totally open position (all protruding)-

- PROVA IDRAULICA DEL CORPO E CONTROTENUTA: (Hydrostatic shell and back seat test pressure) 480 kg/cm²
- PROVA IDRAULICA DELLA TENUTA: (Hydrostatic seat test pressure) 320 kg/cm²
- PROVA PNEUMATICA DEL CORPO E DELLA TENUTA: (Air shell and seat test pressure) 0.5 ÷ 6 kg/cm²
- ◑ NON PREVISTO PER 1 DN 25 E 32 (Not supplied for DN 25 and 32)

- * AISI 316: (C max 0,05 - Cr 16,5 ÷ 17,5 - Ni 11 ÷ 14 - Mo 2,5 ÷ 3 - Mn max 2 - Si max 1 - P max 0,045 - S max 0,030)
- ** AISI 316 L: (C ≤ 0,035 - Cr 16,5 ÷ 17,5 - Ni 13 ÷ 15 - Mo 2,5 ÷ 3 - ferrite ≤ 0,6)

TAG. No. GL/A-943



ESECUZIONE MI (EXECUTION)

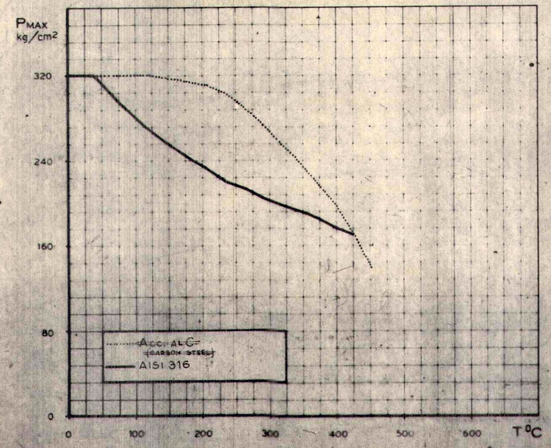
NG-6466
6/1000 16/04

MONTECATINI EDISON MILANO	VALVOLE AD ANGOLO (ANGLE STOP VALVES) DN 25÷70 PN 320	Data 23.11.72	NG 71760.00.00
COSM	CARATTERISTICHE (SPECIFICATIONS)	Scala 1/1	1

PART. Nº (PART No)	MATERIALI (MATERIALS) ESECUZIONE IN 18-10-2 (18-10-2 execution)	ESECUZIONE IN AISI 316 (AISI 316 execution)	ESECUZIONE IN ACC. AL C (carbon steel execution)
1		AISI 316 *	
2.01		AISI 316 *	
2.03			
3		ASTM A 216 WCB	
4.01		AISI 316 *	
4.03			
4.05		AISI 316L **	
5			
6	ALGOFLON		
7			
8.01	C40 UNI 5332-64		
8.02			
9	Fe 45-2 UNI 663-68		
10	ACCIAIO PER MOLLE		
11		AISI 316 *	
12	ASTM A 351 CF8		
13	C40 UNI 5332-64		
14	GSQ 42/15 UNI 4544		
15	40 Cr Mo 4 UNI 5332-64		
16	ACCIAIO CADMIATO		
17	Aq 50 UNI 3985		
18	Aq 50 UNI 3985		
19	ITALPAK 26 (Cadirola - Milano)		
20	40 Cr Mo 4 UNI 5332-64		
21	40 Cr Mo 4 UNI 5332-64		
22	C30 UNI 5332-64		
23	Fe 50-1 UNI 5334-64		
24	40 Cr Mo 4 UNI 5332-64		
25	40 Cr Mo 4 UNI 5332-64		
26	40 Cr Mo 4 UNI 5332-64		
27	EX 3 COGNE		
28	C40 UNI 5332-64		
29	C40 - UNI 5332-64		
30	C40 UNI 5332-64		
31		AISI 316L **	
32	ALGOFLON		
33	Fe 50-1 UNI 5334-64		
34	C30 UNI 5332-64		
35	C30 UNI 5332-64		
36	Fe 00 UNI 5334-64		
37	C40 UNI 5332-64		
44	40 Cr Mo 4 - UNI 5332-64		

PART. Nº (PART No)	MATERIALI (MATERIALS) ESECUZIONE IN 18-10-2 (18-10-2 Execution)	ESECUZIONE IN AISI 316 (AISI 316 Execution)	ESECUZIONE IN ACC. AL C (Carbon steel execution)
45	GSQ 42-15 UNI 4544		
46	GSQ 42-15 UNI 4544		
47	C60 UNI 5332-64		
48	Fe 42.1 - UNI 5863-64		
49	38 Ni Cr Mo 4 - UNI 5332-64		
50	C40 UNI 5332-64		
51	Acciaio per molle		
52	C30 UNI 5332-64		
53	Gamma "Geco P5"		
54	40 Cr Mo 4 - UNI 5332-64		
55	40 Cr Mo 4 - UNI 5332-64		
56	C40 UNI 5332-64		
57	C30 UNI 5332-64		
58	Fe 45-1 UNI 663-68		
59	Fe 45-1 UNI 663-68		
60	C30 UNI 5332-64		
61-62		Stellite	

DIAGRAMMA DELLA PRESSIONE P_{MAX} AMMISSIBILE IN FUNZIONE DELLA TEMPERATURA DI ESERCIZIO.
(DIAGRAM ALLOWABLE P_{MAX} PRESSURE WITH REFERENCE TO OPERATING FLUID TEMPERATURE)



DIMENSIONI (DIMENSIONS) mm

DN	A	A1	G ø	H	L	M	R	T □	Ø S.STEEL EXEC.	Ø C.STEEL EXEC.	S	F	PESI (WEIGHTS) kg
80													
90	330	135	285	30	190		155	270	82,5	85	W5 1/2 x 1/6		370

NOTE: (NOTES)

_ MI: ESECUZIONE PER VALVOLE D'INTERCETTAZIONE
(Execution for stop valves)

_ MRE: ESECUZIONE PER VALVOLE DI REGOLAZIONE A CARATTERISTICA EQUIPERCENTUALE
(Execution for control valves having equal percentage characteristic)

_ MRL: ESECUZIONE PER VALVOLE DI REGOLAZIONE A CARATTERISTICA LINEARE
(Execution for control valves having linear characteristic)

◔ FLANGIA FILETTATA - NORME MONTECATINI MI-F 7976 FOGLIO 6
(Threaded flange - Montecatini's standards dwg MI-F 7976 sheet 6)

◔◔ GUARNIZIONE LENTICOLARE - NORME MONTECATINI MI-F 7975 FOGLIO 8
(Lens gasket - Montecatini's standards dwg MI-F 7975 sheet 8)

- Prima del serraggio della flangia partic. 17 predisporre sempre il partic. 4.01 in posizione di totale apertura (tutto aperto)
- Before tightin of flange partic. 17 always adjust particular 4.01 in a totally open position (all protruding)

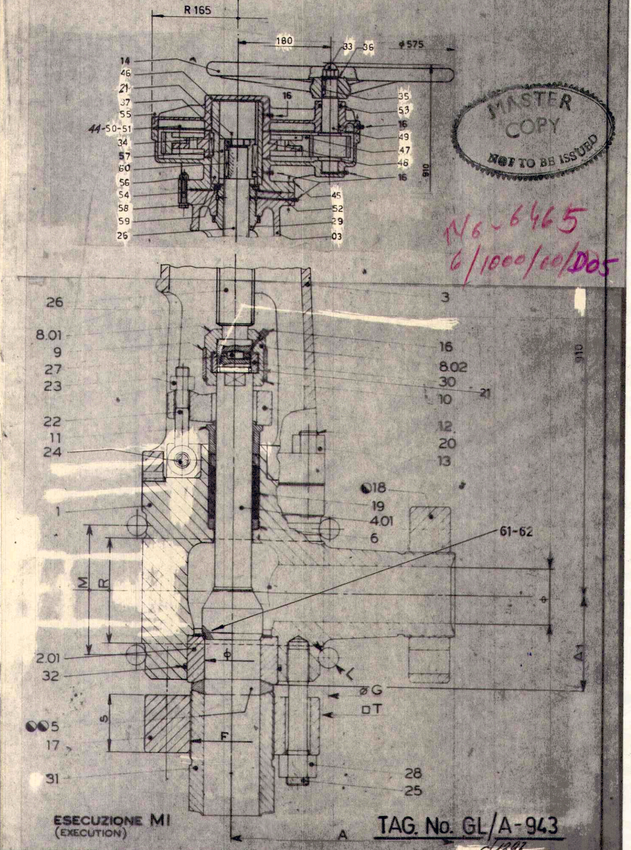
_ PROVA IDRAULICA DEL CORPO E CONTROTENUTA: 480 kg/cm²
(Hydrostatic shell and back seat test pressure)

_ PROVA IDRAULICA DELLA TENUTA: 320 kg/cm²
(Hydrostatic seat test pressure)

_ PROVA PNEUMATICA DEL CORPO E DELLA TENUTA: 0,5 ÷ 6 kg/cm²
(Air shell and seat test pressure)

_ * AISI 316 : (C max 0,05 - Cr 16,5 ÷ 17,5 - Ni 11 ÷ 14 - Mo 2,5 ÷ 3 - Mn max 2 - Si max 1 - P max 0,045 - S max 0,030)

_ ** AISI 316L : (C max 0,035 - Cr 16,5 ÷ 17,5 - Ni 13 ÷ 15 - Mo 2,5 ÷ 3 - Ferrite ≤ 0,6)



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NOT TO BE ISSUED

NG-6465
6/1000/00/D05

TAG. No. GL/A-943

MONTECATINI EDISON MILANO	VALVOLA AD ANGOLO (ANGLE STOP VALVE) DN 90 PN 320	Data	22/11/67
COSM	CARATTERISTICHE (SPECIFICATIONS)	Disegn.	
		Contr.	
		Approv.	
		Scala	
		Scale	
	NG 71780.00.00		