

## **Pre Qualification criteria (PQC) Hydraulic Jacks (50 Tons and 100 Tons capacity)**

- 1) VENDOR SHOULD HAVE WELL ESTABLISHED MANUFACTURING PLANT FOR MANUFACTURING THE LOW HEIGHT, HEAVY DUTY LIFTING TYPE HYDRAULIC JACKS, CONSISTING OF AN INDEPENDENT LIFTING CYLINDER AND HYDRAULIC HAND PUMP CONNECTED BY A HIGH PRESSURE HOSE.
- 2) IN CASE OF INDEGENEOUS SUPPLY, THE APPLICATION SHOULD BE FROM THE PRINCIPAL / ORIGINAL EQUIPMENT MANUFACTURER, FAILING WHICH THE APPLICATION OF VENDOR IS LIKELY TO BE IGNORED.
- 3) VENDOR SHOULD HAVE THE EXPERIENCE OF MINIMUM 2 YEARS FOR MANUFACTURING THE HYDRAULIC JACKS AS ON THE DATE OF PUBLICATION OF THIS NOTICE.
- 4) VENDOR SHOULD HAVE SUPPLY EXPERIENCE OF SAME OR HIGHER CAPACITY HYDRAULIC JACKS TO REPUTED ORGANIZATIONS OPERATING IN POWER EQUIPMENTS MANUFACTURING & GENERATING COMPANIES. THE CERTIFICATE OF SATISFACTORY COMPLETION & ACCEPTANCE OF THE ORDER FROM SUCH COMPANIES MUST BE ATTACHED.
- 5) VENDOR SHOULD CONFIRM THAT SUPPLY OF HYDRAULIC JACKS WILL BE CONSISTING OF HYDRAULIC CYLINDER, PUMP AND HOSE WITH COUPLERS AS PER BHEL STD. RVST 35001. THE DIMENSIONS OF THE ITEMS MENTIONED IN THE SPECIFICATION ARE FOR REFERENCE. IN CASE EXACT SIZES ARE NOT AVAILABLE, NEAREST AVAILABLE SIZES CAN BE OFFERED WITHOUT COMPROMISING THE CAPACITY.
- 6) A DATA LOG SHEET (LOG SHEET –A) MENTIONING ALL THE REQUIRED PARAMETERS AS PER STD. RVST35001 REV.00 GIVEN BY BHEL, TO BE CONFIRMED & SUBMITTED BY THE VENDOR DULY FILLED AND SIGNED AS PER THEIR MODEL OF JACKS.
- 7) PRINTED CATALOGUE OF THE VENDOR/MANUFACTURER TO BE SUBMITTED ALONG WITH THE APPLICATION.
- 8) A GUARANTEE CERTIFICATE FOR MINIMUM 24 MONTHS OF TROUBLE FREE PERFORMANCE FROM THE DATE OF SHIPMENT OR MIN. 12 MONTHS FROM DATE OF COMMISSIONING WHICHEVER IS EARLIER TO BE CONFIRMED BY THE VENDOR.
- 9) BHEL RESERVES THE RIGHT TO VISIT THE VENDOR’S WORKS AT ANY TIME FOR VERIFYING THE MANUFACTURING FACILITIES AND ANY OTHER CREDENTIAL FURNISHED BY THE VENDOR. IN CASE THE INFORMATION FURNISHED WITH THE OFFERS FOUND TO BE FALSE /INCORRECT, THE APPLICATION SHALL BE REJECTED.
- 10) VENDOR SHOULD CONFIRM THAT THEY WILL GET THE FIRST JACK OF EACH CAPACITY, APPROVED FROM BHEL BEFORE STARTING THE BULK MANUFACTURING.

**IMPORTANT NOTE-** VENDORS WHO ARE ABLE TO COMPLY THE ABOVE PQC MAY LOGIN ON OUR WEBSITE [WWW.BHEL.COM](http://WWW.BHEL.COM) →SUPPLIER REGISTRATION→ REGISTRATION FORMS OR [WWW.BHELHERP.COM](http://WWW.BHELHERP.COM)→VENDORS RELATED INFORMATION→ VENDOR REGISTRATION FORM AND DOWNLOAD THE SUPPLIER REGISTRATION FORM AS APPLICABLE FOR INDIAN VENDOR/FOREIGN VENDOR FROM THE SAID WEBSITE & SUBMIT THE SAME DULY FILLED IN ALONG WITH ALL RELEVANT COMPETENCY DOCUMENTS TO US IN HARD COPY FOR ASSESSMENT WITHIN 30 DAYS FROM THE ADVERTISEMENT DATE.



BHARAT HEAVY ELECTRICALS LIMITED  
BHEL HERP VARANASI  
TECHNICAL SPECIFICATIONS

RVST35001

Rev.00

FOR HYDRAULIC JACK

**1.0 INTENT OF SPECIFICATION:**

This specification is intended to purchase a set of low height, heavy duty lifting type Hydraulic jack, consisting of an independent lifting cylinder and hydraulic hand pump connected by a high pressure hose.

**2.0 FUNCTION:**

The Hydraulic jacks are foreseen to be used as an aid in carrying out the assembly and disassembly of steam turbine components, like leveling of turbine casings and bearing pedestals, assembly of barrel type of HP turbine etc. As these are high precision controlled operations, the hydraulic jacks to be used must be of precision grade and functionally reliable.

**3.0 DESIGNATION:**

A set of Hydraulic jack with size no. 002 with rated capacity 0 to 45 tons (max.) and comprising of cylinder, Pump and Hose shall be designated as:

**3.1 On Drawing:**

- (i) Drg. Column : RVST 35001.002
- (ii) Description column : HYDRAULIC JACK CAPACITY 50 TONS

**3.2 FOR PLACING  
INDENT ON  
PURCHASE**

- HYDRAULIC JACK 50 TONS WITH
- Cylinder
  - Pump
  - Hose with couplers

**4.0 SPECIFICATIONS AND GENERAL DIMENSIONS:**

The specifications and general dimensions for cylinder, Pump and hose shall be as per TABLE 1, 2, 3 & 4.

**5.0 GENERAL DELIVERY CONDITIONS:**

**5.1** The supplier shall give the following documents along with each set of hydraulic jack:

**5.1.1** Test Certificates:

AA  
PREPARED BY:  
ENGINEER (P&D)

APPROVED BY:  
MANAGER (P&D)



**5.1.2 Guarantee Certificate:**

A guarantee certificate for min. 24 months of trouble free performance from date of shipment, or min. 12 months from date of commissioning whichever is earlier shall be supplied.

**5.1.3 A list of recommended spare parts.**


**5.2 SPARES:**


The supplier shall supply one set of fast consuming spares with each set of hydraulic jack.

**5.3 PACKING & CONSERVATION:**

The set of hydraulic jack should be suitably packed and conserved to avoid damage during transit and prolonged storage. The following details should be given on the packing case:

- (i) Manufacturer's Name / Trade mark.
- (ii) BHEL order No.
- (iii) Product standard No. - RVST 35001
- (iv) Description with model No.

  
PREPARED BY:  
ENGINEER (P&D)

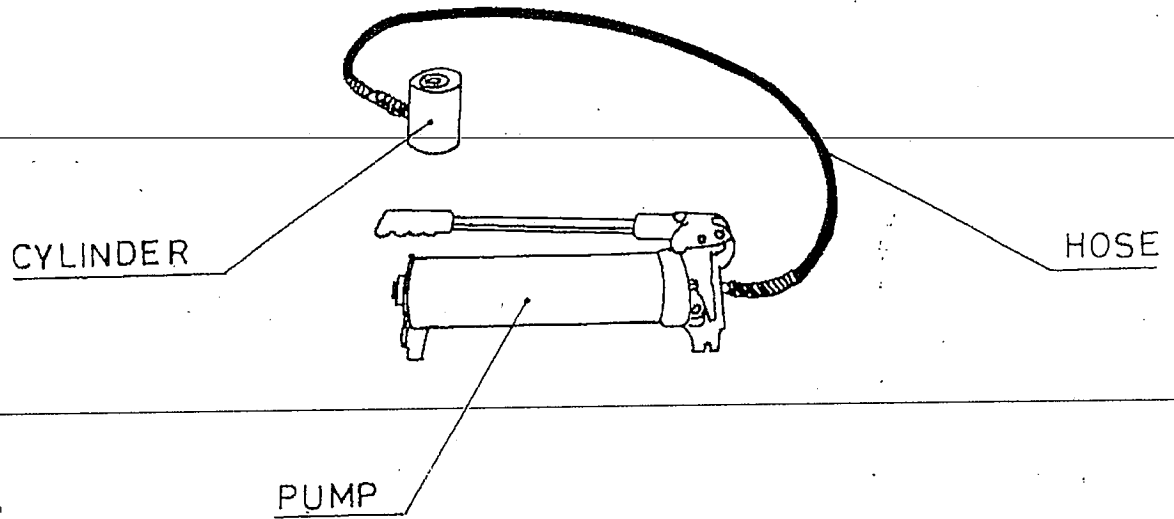
  
APPROVED BY:  
MANAGER (P&D)



BHARAT HEAVY ELECTRICALS LIMITED  
BHEL HERP VARANASI

RVST35001  
Rev.00

## HYDRAULIC JACK SET



Set No.	Rated Capacity in Tones 0 to Max.	Cylinder Stroke mm	Cylinder Collapsed Height mm	Cylinder Class (Tons)	Pump Speed	Pump Ref. No.	Hose Ref. No.	Size No.
30	0 To 30	62	118	30	TWO	Table-3	Table-4	001
50	0 To 45	60	122	45	TWO	Table-3	Table-4	002
100	0 To 90	57	141	90	TWO	Table-3	Table-4	003

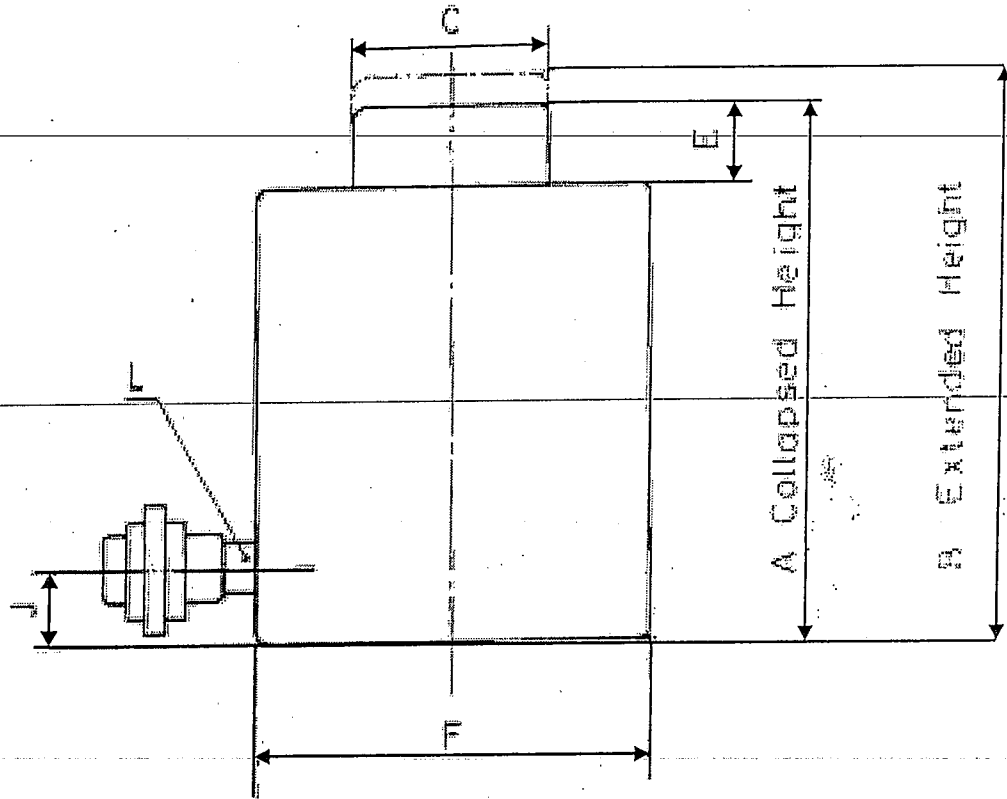
TABLE-1

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ENGINEER (P&D)

APPROVED BY:  
MANAGER (P&D)



## CYLINDER DETAILS



Cyl. Class (Tons)	Cylinder Max. Cap. (kn)	Stroke (mm)	Bore Dia (mm)	Cyl. Effective Area (cm <sup>2</sup> )	Oil Capacity (cm <sup>3</sup> )	Internal Pressure at Cap.	Carrying Handle	Saddle Dia (mm)	"A" Collapsed Height (mm)	"B" Extended Height (mm)	"C" Plunger Rod Dia. (mm)	"E" Rod Protrusion at Collapsed Height (mm)	"F" Cyl. Outside Dia. (mm)	"J" Base to Inlet Part (mm)	"L" Inlet Part Thread	Net Weight (kg)
30	287.5	62	73.0	41.87	259	700	NO	50.8	118	178	50.8	3.1	102	19	3/8-18NPT	6.1
45	426.1	60	88.9	62.06	374	725	NO	50.8	122	182	50.8	3.1	127	24	3/8-18NPT	10.3
90	899.0	57	127.0	126.71	724	720	YES	71.4	141	198	71.4	3.1	165	32	3/8-18NPT	20.7

TABLE - 2

PREPARED BY:  
ENGINEER (P&D)

APPROVED BY:  
MANAGER (P&D)



BHARAT HEAVY ELECTRICALS LIMITED  
BHEL HERP VARANASI

RVST35001  
Rev.00

## HIGH PRESSURE HOSES WITH COUPLER

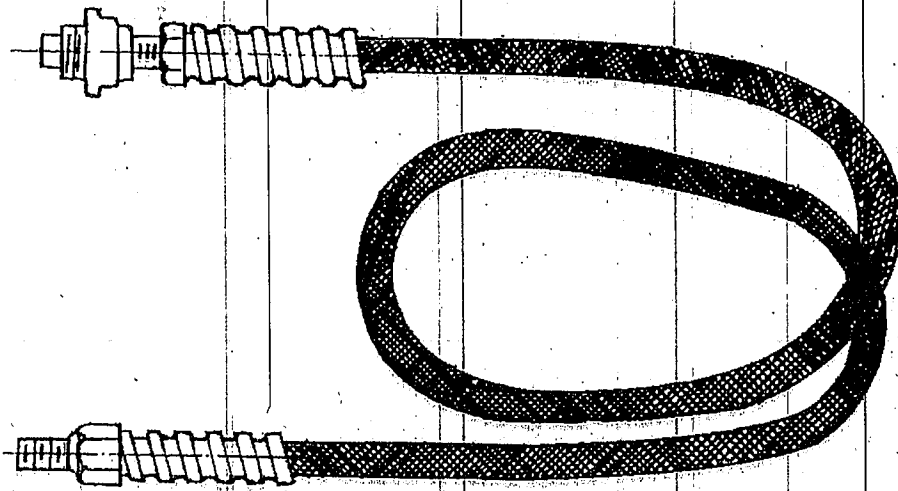


TABLE - 4

— HOSE SIZE — — —	$\frac{3}{8}$	HOSES AND HOSE ASSEMBLIES WITH HIGH FLOW COUPLERS
— HOSE TYPE — — —	4	
— HOSE THREAD (In) — — —	$\frac{3}{8}$	18 NPT
— EQUIPPED WITH — — —		
COUPLER		
— HOSE LENGTH (m) — — —	1-8	

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TWO SPEED HAND PUMP

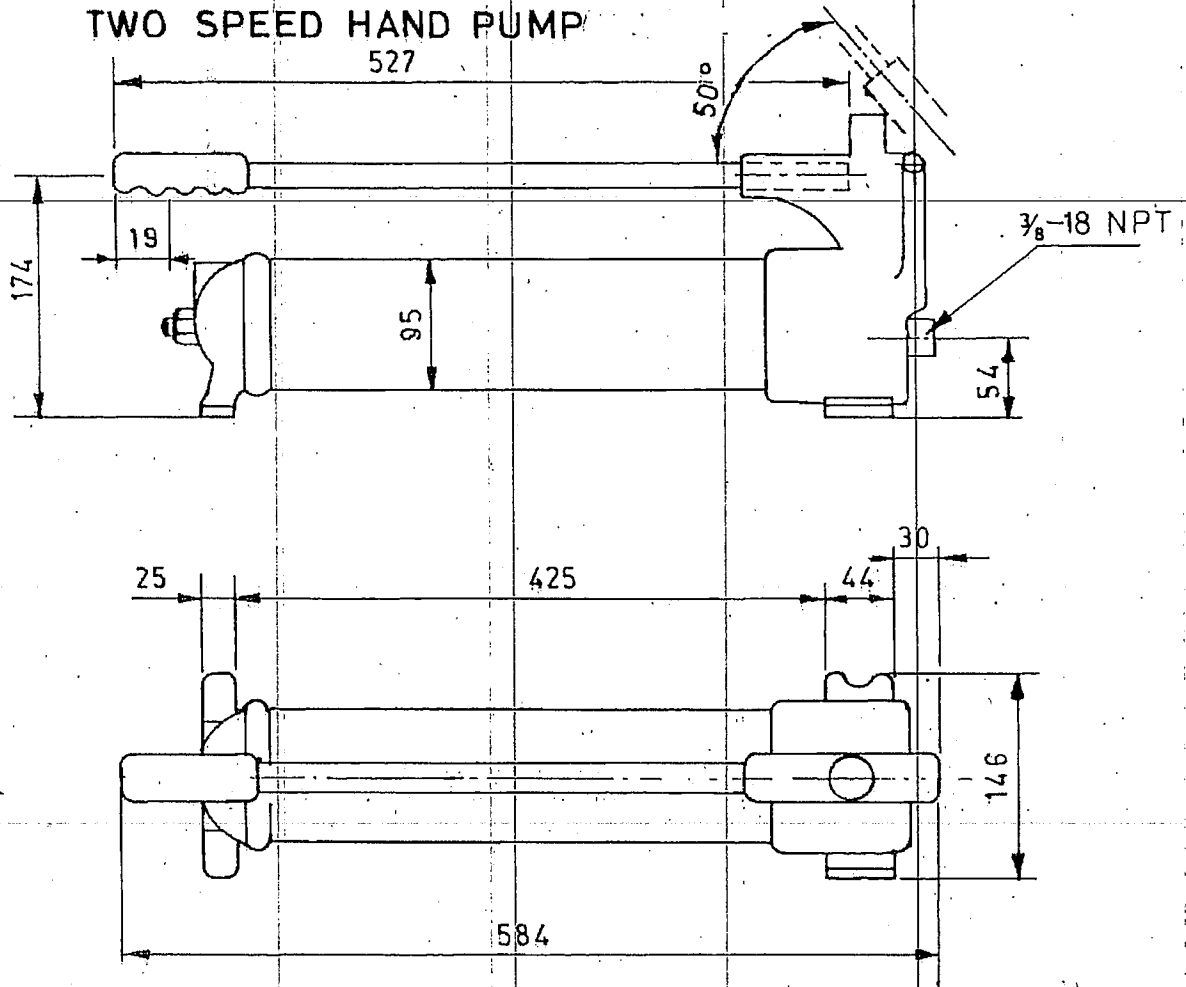


TABLE - 3

— PRESSURE RATING ———	700 bar
— RESERVOIR CAPACITY ———	2294 cm <sup>3</sup>
— USABLE OIL QUANTITY ———	2200 cm <sup>3</sup>
— PRESSURE 1st AND 2nd STAGE ———	0-25 bar (1st stage) 25-700 bar (2nd stage)
— OIL OUTPUT VOLUME PER STROKE ———	16.28 cm <sup>3</sup> (1st stage) 2.46 cm <sup>3</sup> (2nd stage)
— PISTON DIAMETER ———	28.6 mm (1st stage); 11.1 mm (2nd stage)
— PISTON STROKE ———	25.4 mm
— OIL OUTLET THREAD ———	3/8-18 NPT
— EXT LOAD RELEASE VALVE ———	YES
— SELECTION OF STAGES ———	AUTOMATIC
— HANDLE EFFORT AT MAX PRESS ———	55 kg
— WEIGHT (WITH OIL) ———	12 kg


AA  
PREPARED BY:  
ENGINEER (P&D)

APPROVED BY:  
MANAGER (P&D)

**TECHNICAL CHECKLIST  
FOR HYDRAULIC JACKS (RVST 35001)**

INDENT NO. - D301110309

SL. NO.	PARAMETERS	VENDOR COMMENT
1	HYDRAULIC JACKS STRICTLY SHOULD BE OF REQUIRED CAPACITY OF 50 TONS AND 100 TONS AS PER STD. RVST35001 AND SIZE NO. MENTIONED AGAINST RESPECTIVE ITEMS IN THE ENQUIRY	
2	ONE SET OF HYDRAULIC JACK WILL CONSIST OF FOLLOWING ITEMS - 1) CYLINDER 2) PUMP 3) HOSE WITH COUPLERS	
3	SUPPLIER WILL SUPPLY ONE SET OF FAST CONSUMING SPARES WITH EACH SET OF HYDRAULIC JACK ALONG WITH THE LIST OF RECOMMENDED SPARE PARTS	
4	DIMENSIONS IN THE STD. RVST 35001 ARE GIVEN FOR REFERENCE ONLY AND MAY VARY LITTLE BIT, WITHOUT AFFECTING THE WORKING PARAMETERS MENTIONED IN THE STANDARD	
5	PARTY WILL FURNISH THE DETAIL ABOUT THEIR PAST EXPERIENCE FOR MANUFACTURING AND SUPPLYING THESE ITEMS MENTIONING THE NAME OF THEIR CUSTOMERS	
6	TEST CERTIFICATES FOR THE HYDRAULIC JACKS WILL BE PROVIDED BY THE PARTY	
7	GUARANTEE CERTIFICATE FOR MIN. 24 MONTHS OF TROUBLE FREE PERFORMANCE FROM DATE OF SHIPMENT OR MIN. 12 MONTHS FROM THE DATE OF COMMISSIONING WHICHEVER IS EARLIER WILL BE PROVIDED BY THE PARTY	
8	THE SET OF HYDRAULIC JACKS SHOULD BE PACKED AND CONSERVED SUITABLY TO AVOID ANY DAMAGE DURING TRANSIT AND PROLONGED STORAGE.	

  
**विकास वर्मा /VIKAS VERMA**  
 प्रबंधक (प्रा.वि.) / Manager (P&D)  
 भारत हेवी इलेक्ट्रिकल्स लिमिटेड  
 Bharat Heavy Electricals Ltd.  
 हरप, वाराणसी  
 HERP, Varanasi

## LOG SHEET - A

PART NAME	SL	DESCRIPTION	VALUE AS PER STD.	OFFERED BY VENDOR
CYLINDER 50	1	CYLINDER MAX. CAP. (KN)	426.1	
	2	STROKE (MM)	60	
	3	BORE DIA (MM)	88.9	
	4	CYL. EFFECTIVE AREA (CM2)	62.06	
	5	OIL CAPACITY (CM3)	374	
	6	INTERNAL PRESSURE AT CAP.	725	
	7	CARRYING HANDLE	NO	
	8	SADDLE DIA (MM)	50.8	
	9	A' COLLAPSED HEIGHT (MM)	122	
	10	B' EXTENDED HEIGHT (MM)	182	
	11	C' PLUNGER ROD DIA (MM)	50.8	
	12	E' ROD PROTUSION AT COLLAPSED HEIGHT (MM)	3.1	
	13	F' CYL. OUTSIDE DIA (MM)	127	
	14	J' BASE TO INLET PART (MM)	24	
	15	L' INLET PART THREAD	3/8-18NPT	
	16	NET WEIGHT (KG)	10.3	
CYLINDER 100	1	CYLINDER MAX. CAP. (KN)	899	
	2	STROKE (MM)	57	
	3	BORE DIA (MM)	127	
	4	CYL. EFFECTIVE AREA (CM2)	126.71	
	5	OIL CAPACITY (CM3)	724	
	6	INTERNAL PRESSURE AT CAP.	720	
	7	CARRYING HANDLE	YES	
	8	SADDLE DIA (MM)	71.4	
	9	A' COLLAPSED HEIGHT (MM)	141	
	10	B' EXTENDED HEIGHT (MM)	198	
	11	C' PLUNGER ROD DIA (MM)	71.4	
	12	E' ROD PROTUSION AT COLLAPSED HEIGHT (MM)	3.1	
	13	F' CYL. OUTSIDE DIA (MM)	165	
	14	J' BASE TO INLET PART (MM)	32	
	15	L' INLET PART THREAD	3/8-18NPT	
	16	NET WEIGHT (KG)	20.7	
HOSE	1	HOSE SIZE	3/8 " HOSES AND HOSE ASSEMBLED WITH HIGH FLOW COUPLES	
	2	HOSE TYPE	4	
	3	HOSE THREAD (IN)	3/8-18 NPT	
	4	EQUIPPED WITH	COUPLER	
	5	HOSE LENGTH (M)	1.8	

HAND PUMP	1	PRESSURE RATING (BAR)	700
	2	RESERVOIR CAPACITY (CM3)	2294
	3	USABLE OIL QTY. ( CM3)	2200
	4	PRESSURE 1ST STAGE (BAR)	0-25
	5	PRESSURE 2ND STAGE (BAR)	25-700
	6	OIL OUTPUT VOL. PER STROKE 1ST STAGE (CM3)	16.28
	7	OIL OUTPUT VOL. PER STROKE 2ND STAGE (CM3)	2.46
	8	PISTON DIAMETER 1ST STAGE (MM)	28.6
	9	PISTON DIAMETER 2ND STAGE (MM)	11.1
	10	PISTON STROKE	25.4
	11	OIL OUTLET THREAD	3/8-18 NPT
	12	EXT LOAD RELEASE VALVE	YES
	13	SELECTION OF STAGES	AUTOMATIC
	14	HANDLE EFFORT AT MAX. PRESS (KG)	55
	15	WEIGHT (WITH OIL) (KG)	12