No. IV-15019/1/2010-Prov(MT)
भारत सरकार/Government of India
गृह मंत्रालय/Ministry of Home Affairs
पुलिस आधुनिकीकरण प्रभाग/PM Division
संभरण-I/Prov. I Desk

26, Man Singh Road, Jaisalmer House
New Delhi, the 26th November, 2013

To,

DsG : AR (through LOAR), BSF, CISF, CRPF, ITBP, SSB, NSG & BPR&D.

Subject : Trial Directives for Skid Steer Loader.

Sir,

The Trial Directives in respect of Skid Steer Loader as per the Annexure have been accepted by the Competent Authority in MHA

2. Henceforth, all the CAPFs should trial evaluate the above items strictly as per the laid down Trial Directive and QRs/Technical Specifications issued vide letter No. IV-21011/14/2010-Prov.I dated 10-8-2011.

Yours faithfully,

(Smt. S. B. Nanda)
Under Secretary to the Govt. of India
Tel : 23381278

Encl : As above.

Copy forwarded to : SO (IT), MHA with the request to host the Trial Directives (being sent through email separately) on the MHA website (under the page of Organizational Set up-Police Modernization Division- Qualitative Requirements) along with QRs for Skid Steer Loader.

(R K Soni)
Section Officer (Prov.I)

Copy to : DDG(Procurement), MHA.
Copy for information to : PPS to JS (PM)

(3)

Appendix-'A'

DRAFT TRIAL DIRECTIVES FOR TRIAL OF SKID STEER LOADER MACHINE

Scope & Aim: -

The Paramilitary Forces such as CRPF, BSF, ITBP, CISF, SSB, Assam Rifles, NSG etc. have been continuously involved in the tasks of dealing with disaster management apart from their regular role of internal security, counter insurgency, counter terrorism and anti Naxal operations throughout the depth and breadth of the Country. For this purpose Regional Response Centers have been earmarked to keep the concerned forces & logistics ready & duly equipped. In this process MHA had authorized one Skid Loader Machine each for three RRCs of CRPF viz Allahabad, Mokamaghat and Hyderabad. The Skid Steer Loader Machines are required to clear landslides, break rocks and clear the rocky outcrops/burden as desired and to work on slopes of mountains.

QRs of Skid Steer Loader Machine has already been circulated by MHA vide MHA letter No. IV-21011/14/2010-Prov-I dated 10/08/2011. Now, for procurement of these Skid Steer Loader Machines, there is a need to frame a detailed and scientific guidelines to facilitate various inspections of the machine specially during tender sample stage. The Trial Directives placed below describes the acceptance criteria and test procedure in details. For a proper understanding of the trial directives, they need necessarily to be read in conjunction with the QRs.

(Dr. M.M. GOSAL) DY. SP, BPR&D

(SANJEEV SINGH) DC(PMT), CRPF

(PALLAV SHARMA) Team Comdr, NSG

(VIRENDER SINGH) DC, BSF

(DURGESH NANDAN) INSP/PM, ITBP

(N. K. YADAV) DIG (MT/CRD) BSF, CRPF

DRAFT TRIAL DIRECTIVES FOR TRIAL OF SKID STEER LOADER MACHINE

Date of Trial .....

Time of Trial .....

Place of Trial .....

GR of Trial Area .....

Temperature .....

Altitude .....

Weather Condition .....

(Clear/Cloudy/Partially Cloudy/ Hot and Humid/ Rainy/ Foggy and Humid)

Sl.No.	Specification	Parameters	Procedure suggested for trial	Result expected/ desired	Complied/ Not complied
1	**General**:	It should be employable for the following tasks with the use of suitable attachments:- a) Rock Breaking b) Limited Dozing Work (Back hoe loader). c) Snow Clearance	The attachments are to be physically checked as per the recommended specification using measurement tools / instruments.	The machine should be found to be actually provided with suitable attachments for desired purpose.	
2	**Characteristics** **a) Essential**	i) Small enough to be used in confined places for constructions of class 3/3.5 track/mule track upto 5 ft width in high altitude mountainous terrain and should be able to function upto temp (-)15 degree C.	The machine should be put on such real type conditions for testing its capability of constructing class 3/3.5 track/mule track upto 5 ft width in high altitude mountainous terrain and that within the temperature upto (-)15 degree C.	The machine should be found to be capable of constructing class 3/3.5 track/mule track upto 5 ft width in confined places.	

(DR. M.M. GOSAL) Dy. SP, BPRED

(SANJEEV SINGH) DC(MT) CRPF

(PALLAV SHARMA) TEAM COMDR, NSG

(VIRENDER SINGH) DC, BSF

(DURGESH NANDAN) SMGP/MM, ITBP

(N.K. YADAV) DIG (MT/ORD) DTE, CRPF

Sl.No.	Specification	Parameters	Procedure suggested for trial	Result expected/ desired	Complied/ Not complied
			NOTE :- If the machine could not be taken to high altitude mountainous terrain for some justifiable reasons, the board should unanimously decide on taking it to some other similar low altitude terrain condition. But this should be an exception only. In such a case, for ascertaining its suitability at the given temp. range i.e. upto (-)15 degree centigrade required certificate to be obtained from OEM.		
		ii) Self propelled machine with capability to travel with a speed of 8 to 9 kmph X-country and high on site mobility.	The machine to be put on test drive to check its recommended speed i.e. 8 to 9 kmph on cross country as well as for checking its onsite mobility.	The machine should be found meeting the desired onsite mobility & speed.	
		iii) Maintenance-free positive gear meshed transmission / hydraulic transmission.	The functioning of gear box of the machine to be physically checked while putting the machine on drive.	The machine should comply with recommended specifications as per the self certification of OEM/ Manufacturer of the machine.	

(DR. M.M. GOSAI) Dy. SP, BRTC (SANJEEV SINGH) DC(MT), CRPF (PALLAV SHARMA) TeamCmdr. NSG (VIRENDER SINGH) DC, BSF (DURGESH NANDAN) INSP/MM, ITBP

(N.K. YADAV) DIG(MT/GRD), DTE, CRPF

Sl.No.	Specification	Parameters	Procedure suggested for trial	Result expected/ desired	Complied/ Not complied
		iv) It should have an excavator or a loader or excavator cum loader attachment, with single/dual-cylinder loader arm, fixed to the machine at any one time with capability to fit other attachments.	The attachments are to be physically checked. The provision to fix other attachments at the same time should also be checked physically.	The desired attachments should be practically found to be attached on the machine and the machine should be capable to perform alongwith its recommended attachments.	
		v) Weight with operating weight (weight with standard dirt bucket, full fuel, standard tyres and an 80 kg operator) not exceeding 3600 kg.	Weight of the machine to be taken at any weigh bridge. The machine should be loaded with its operating weight (weight with standard dirt bucket, full fuel, standard tyres and an 80 kg operator).	The machine should be able to withstand and function properly and its GVW should not exceed 3600 kg.	
		vi) Should be possible to operate the machine in High Altitude Areas upto 18000 ft above MSL and in slushy/water logged areas for track construction tasks.	The machine to be physically checked while operating it in high altitude areas as specified in QRs and in slushy / water logged areas for track construction tasks. **Note** :- If the machine could not be taken to high altitude mountainous terrain for some	The machine should be capable to perform on high altitude areas upto 18000 ft above MSL and in slushy/water logged areas. While operating so the machine should be able to perform the	

(CDR. M.M. GOSAL) Dy. SP, BPRED (SANJEEV SINGH) DC (MT), CRPF (PALLAV SHARMA) TEAM Comdt NSG (VIRENDER SINGH) DC, BSF (DURGESH NANDAN) INSP/MM, ITBP (N.K. [illegible]) DIG (MT/ORD) & Ex officio CRPF

Sl.No.	Specification	Parameters	Procedure suggested for trial	Result expected/ desired	Complied/ Not complied
			justifiable reasons, the board should unanimously decide on taking it to some other similar low altitude terrain condition. But this should be an exception only.	desired task of track constructions.	
		vii) Changing of attachments should be user friendly and should not exceed 10 minutes in field conditions.	Changing of all the attachments to be practically checked in field by removing the one and attaching the another. It should be done by the trained operator of the machine & equipment.	The changing of attachments should be found to be user friendly and completed within the recommended time limit of 10 minutes for each attachment.	
	b) **Desirable**	i) Should be able to clear landslides consisting of boulders upto 30 to 40 cm diameter (upto 300 Kgs weight).	The machine to be physically checked by putting it on work as per recommended specification.	The machine should be able to clean landslides consisting of boulders upto 30 to 40 cm diameter (upto 300 Kg weight)	
		ii) Should have a cabin to provide weather protection to operator.	The cabin of the machine to be physically checked by seating inside the cabin.	The cabin should be good enough and well protected to provide weather protection for the operator.	
3	**Excavation performance**	Excavator should be capable of excavating speedily in soft soil and to a limited capability in	The machine to be put on work under recommended conditions	The machine should be found capable enough to excavate	

(DR. M.M. GOSAL) Dy. SP, BPR&D (SANDEEP SINGH) DC (MT) CRPF (PALLAV SHARMA) TEAM Comdr, NSG (VIRENDER SINGH) DC, BSF (DURGESH NANDAN) SNSP/MM, ITBP (C. NIKHADAV) DIG (MT/ORD) HQ CRPF

Sl.No.	Specification	Parameters	Procedure suggested for trial	Result expected/ desired	Complied/ Not complied
		rocky areas. However, it should be able to break rocks and clear the rocky outcrops/burden as desired. It should be able to work on slopes of mountains.	and areas to check its capabilities as specified.	easily and speedily under recommended conditions and areas.	
4	**Dozing performance**	Should be capable of carrying out limited dozing of soft soil/loose rocks/loose earth.	The machine to be physically checked by letting it to carry out soft soil/ loose rocks/ loose earth as per recommended capacity.	The machine should be found capable to carry out dozing of soft soil, loose rocks and loose earth easily.	
5	**Performance of the equipment**	The performance of the skid steer should be:-			
		a) Dump Ht – Min 2000 mm	To be physically checked by operating it to the dump of min 2000 mm of height. Height to be measured with measuring tape.	The machine should be able to achieve its dump height of 2000 mm.	
		b) Rated Op Capacity – Min 600 Kg ± 10 Kg.	To be physically checked by operating & loading it with desired weight of 600 Kg ± 10 Kg.	The machine should be able to withstand at this load and operate smoothly.	
		c) Tipping Load – 1100 to 1300 Kg.	To be physically checked & weighed.	The machine should not be subjected to tipping when loaded between 1100 to 1300 Kg.	

(Dr. Mm. Gosal) Dy. SP, BPR&D
(SANJEEV SINGH) DC (MT) CRPF
(BALLAV SHARMA) Team Comdr, NSG
(VIRENDER SINGH) DC, BSF
(DURGESH NANDAN) IInSP/MM, ITBP
(N. K. YADAV) DIG (MT/ORD) Addl. CRPF.

Sl.No.	Specification	Parameters	Procedure suggested for trial	Result expected/ desired	Complied/ Not complied
6	**Attachments**	It should have capability of fitting and working with following attachments:-	The capability of the machine to be physically checked duly fitted with its recommended attachments separately as below.		
		a) Excavator buckets of capacities 300 mm, 450 mm, 600 mm.	The capacity of each Excavator buckets to be measured physically and separately during actual excavation.	The respective Excavator buckets should be of capacities of 300 mm, 450 mm, 600 mm.	
		b) Ripper Tooth with 5 teeth.	The Ripper Tooth to be physically checked for its specified teeth.	The Ripper tooth of the machine should be having 5 teeth joined together.	
		c) Ditch cleaning bucket Size – 550 mm – 700 mm	The size of the Ditch cleaning bucket to be measured by the measuring tape.	The Ditch cleaning bucket should be of Size 550 mm – 700 mm.	
		d) Rock Breaker, Hydraulic vibrating type	The Rock breaker to be attached with the machine and put on work i.e. by breaking the rock.	The Rock Breaker should be functional i.e. hydraulic vibrating type.	
		e) Stump grinder/tree cutter, operating height 24 inches, wheel diameter 20 inches	The wheel diameter of Stump grinder/ tree cutter to be physically measured with some	The Stump grinder/ tree cutter should be of operating height of 24 inches and	

(Dr. M. M. Gusain) Dy. SP, BPR&D (SANJEEV SINGH) DC (MT), CRPF (PALLAV SHARMA) Team Comdr. MSG (NARENDER SINGH) DC, BSF (DURGESH NAMDEO) 2IC/MM, ITBP (N. B. YADAV) DIG (MT/ORD) HQ, CRPF.

Sl.No.	Specification	Parameters	Procedure suggested for trial	Result expected/ desired	Complied/ Not complied
			measuring tape/ruler by actually stump grinding / tree cutting.	wheel diameter of 20 inches.	
		f) Earth Auger, Auger bit size 300 mm	The size of bit of the Earth Auger to be measured with measuring tape.	The Auger bit should be found of size 300 mm.	
		g) Snow blower-Chain driving with rotating protrusion	The Snow blower to be physically checked duly fitted with the machine and by actually employing it for the purpose of snow blowing.	The Snow blower should be as per recommended OEM specification.	
		h) Back hoe loader, Cutting depth 2.5 m, Minimum horizontal reach 3.36 m.	The Back hoe loader to be physically attached with the machine and physically checked for cutting depth of 2.5 m and minimum horizontal reach of 3.36 m by actually putting it for digging etc. Digged area and the reach will be measured with measuring tape.	The Back hoe loader should be able to cut depth upto 2.5 m with minimum horizontal reach of 3.36 m.	
		i) Tracks Rubber, tracks as attachments should preferably be easily mountable over wheels	The mounting & de-mounting of rubber tracks over the wheels to	The rubber tracks should be found easy to mount and de-	

(Dr. M.M. Goyal, Dy. SP, BPR&D) (SANJEEV SINGH, DC (MT) CRPF) (PALLAV SHARMA, Team Commdr, MSG) (SURENDER SINGH, DC, BSF) (SURESH NANDAN, INSP/MM, ITBP) (N.K. YADAV, DEC (MT/DRD) 2i/c, CRPF)

Sl.No.	Specification	Parameters	Procedure suggested for trial	Result expected/ desired	Complied/ Not complied
		in field conditions.	be physically checked on site/ field by the trained operator.	mount over wheels in recommended conditions and should be as per OEM specification.	
7	**Mobility**	The machine should be self propelled with high on-site mobility and cross country performance.	The machine to be put on work in order to check its high on-site as well as cross country mobility.	The machine should be able to achieve high on site and cross country performance.	
8	**Night aids**	Luminous markers should be provided on the machine and attachment to enable the operator to gauge the depth of the trench and location of arm and bucket at night.	The machine to be put on work alongwith its attachments during night so as to check the desired functioning of its markers.	With the help of luminous markers, the operator should be able to gauge depth of trench and location of the arm and bucket at night.	
9	**Transportability**	Should be capable of being transported over a long distance:- a) By road in 5/7.5 ton class vehicle. b) By Air in IL-76 aircraft. c) On board/under slung in MI-26 helicopter in full or semi knocked down state. If	The transportation capability of machine and its attachments to be physically checked for the sub para- a. for sub para- b and c self certification to this effect from OEM to be obtained.	The machine should be easily transportable by the recommended transport means.	

(Dr. M.M. Goel) Dy. SP, BPR&D
(Sandeep Singh) DC (MT) CRPF
(Pallav Sharma) Team Comdr, NSG
(Virender Singh) AC, BSF
(Durgesh Nandan) SNSP/MM, ITBP
(Alok Yadav) IG (MT/ORD) Dte, CRPF

Sl.No.	Specification	Parameters	Procedure suggested for trial	Result expected/ desired	Complied/ Not complied
		transported in semi Knocked down state, it should be possible to reassemble the machine in field with ease.	**Note** :- The machine to be loaded in truck physically. Requisition for IL-76 and MI-26 cannot be placed only for trial purpose. Hence, the area and dimension of inner space of MI-26 be obtained from GOI/MOD so as to check its transportability.		
10		The skid steer shall be simple to operate and simple to store and maintain.	The operation, storage and maintenance of the machine to be checked physically.	The machine should be simple and easy to operate, store and maintain.	
11		A user handbook giving complete operation and maintenance instructions shall be provided with the equipment. The skid steer also be provided with tool kit and fast running spares.	The user handbook to be perused thoroughly. The Tool kit and fast running spares of the machine and its attachments to be checked physically.	The user handbook should cover all the relevant details & instructions pertaining to the machine and its operation/ maintenance duly printed in Hindi and English languages. The tool kit should be complete as per its recommended tools and fast running spares.	

(DR. M. M. GOGOI) Dy. SP, BPR&D
(SANDEEP SINGH) DC (MT) CRPF
(PALLAV SHARMA) Team Comdr. NSG
(VIRENDER SINGH) DC, BSF
(DURGESH NANDAN) INSP/MM, ITBP
(C. N. KHADOR) DEG (MT/ORD) Delhi, CRPF.

Sl.No.	Specification	Parameters	Procedure suggested for trial	Result expected/ desired	Complied/ Not complied
12		The firm should be able to provide Skid Steer Loader (one number) for trial and evaluation on "No cost No commitment basis" at Sector Head Quarters (SHQ) Ladakh, ITBP immediately if required by a technical committee to be detailed by DG, ITBP.	The firm to be approached for providing one machine for its trial and evaluation on NCNC basis at specified destination.	The firm should consider the proposal for compliance.	

TECHNICAL SPECIFICATION

Sl.No.	Parameters	Specifications	Procedure suggested for trial	Result expected/ desired	Complied/ Not complied
1	Engine assembly	Four cylinders, Liquid cooled/ Power-min 60 hp deliverable at altitude 4500 mtr. or above, specifics of power to be certified by OEM. Capacity: min 2.60 Ltr.	The specification of engine assembly will be checked as per certificates supplied by OEM.	The machine should be found having four cylinders, liquid cooled/ power- min 60 hp deliverable at altitude of 4500 mtr or above and capacity of min. 2.60 ltr.	
2	Transmission	Hydrostatic 4x4 independent drive	The transmission of the machine to be checked mechanically by driving it and confirming it from the	The machine should be having hydrostatic 4x4 independent drive as per specification.	

(DR M.M. GOSAL) DY. SP, BPRD (SANJEEV SINGH) DC (MT) CRPF (PALLAV SHARMA) (TEAM COMDR. NSG) (VIRENDER SINGH) DC, BSF (DURGESH NANDAN) INSP/MM, ITBP (N.K. YADAV) DIG (MT/ORD) Addl, CRPF.

Sl.No.	Parameters	Specifications	Procedure suggested for trial	Result expected/ desired	Complied/ Not complied
			certificates supplied by the OEMs.		
3	Tyre	4 Nos, Pneumatic Tubeless 10-16.5 Standard duty	The tyres of the machine to be physically checked as per their make and standard and certificate supplied by OEM.	The machine should be found to be having 4 Nos. pneumatic tubeless 10-16.5 standard duty tyres.	
4	Power train	Through positive gear boxes, slip free drive through forged gears/hydraulic systems.	Power train will be checked as per the certification from OEM.	The machine should be found to be manufactured as per recommended OEM specification.	
5	Axle and suspension	Rigidly fixed, integrated into chassis	To be physically checked.	The axle & suspension of the machine should be found to be fixed rigidly and integrated into the chassis properly.	
6	Brakes	Hydraulically activated and released multiple fade free brakes forming integral part of the drive motor.	The machine to be put on drive and tested for its braking efficiency on site/road. Brake specification to be checked as per certification of OEMs.	The machine should be found capable enough to be stopped immediately as and when the brakes are applied and the brake specifications should be as per the certification from	

(Dr. RPM. Gosal) (Sanjeev Singh) (Pallav Sharma) (Virender Singh) (Durgesh Nandan)
Dy. SP BPR&D DC(MT), CRPF Team Comdr NSG DC, BSF JMSP/MM (ITBP)

(N.K. Yadav)
IG (MT/ORD) CRPF.

Sl.No.	Parameters	Specifications	Procedure suggested for trial	Result expected/ desired	Complied/ Not complied
				OEMs.	
7	Electric system	12/24 V 150 AH maintenance free automobile battery.	The machine to be turned on so as to test its battery capacity. Besides necessary certificate regarding its free maintenance and guarantee/warrantee should also be obtained from the manufacturer/supplier. There should be no leakage in the batteries.	The battery of the machine should be of 12/24 V 150 AH, maintenance free and should be capable to withstand the electrical load of the machine.	
8	Cooling system	Liquid cooled one pump one loop system. Coolant is Ethylene Glycol/water mixed (1.1)	The cooling system of the machine to be checked mechanically and also as per the certification of OEM/ Manufacturer.	The machine should be having effective cooling system with coolant – Ethylene Glycol/ Water mixed (1.1)	
9	Steel tracks	Manganese enriched steel with solid blocks.	To be checked as per the certification of OEMs.	The steel tracks of the machine should be of Manganese enriched steel with solid blocks.	
10	Back hoe	Cutting depth 2.5 m, Horizontal reach-minimum 3.36 m. Swing capacity 90 degrees either side, Cutting force 16.3 KN	To be physically checked as per recommended specification by	The machine should attain the recommended cutting depth of 2.5 m,	

Sl.No.	Parameters	Specifications	Procedure suggested for trial	Result expected/ desired	Complied/ Not complied
			putting it on work and by counting and scaling by using measurement tools / instruments. As the Cutting Force is very difficult to be measured by the trial team, the supplier/ manufacturer of the machine should certify in this regard.	Horizontal reach of minimum 3.36 m, Swing capacity of 90 degrees either side. Cutting Force – as per the self certification or through the Accredited Govt. Laboratory.	
11	Rock breaker	Hydraulic, vibrating type rock breaker	The machine to be physically put on rock braking work alongwith its specific attachment.	The machine should be found capable of braking the rocks as per desired standard.	
12	Snow blower	Chain driven with rotating protrusions	The machine to be physically put on drive alongwith its chain on the surface area covered with snow.	The machine should be found to blow the snow out of its way and should be able to clear the snowy tracks.	
13	Gross vehicle weight	Not exceeding 3600 kg	The machine to be weighed at any weigh bridge for checking its GVW.	The machine should be able to withstand and function properly, when loaded to its rated GVW.	

(CPR. M.M. GOSAIN) Dy. SP., BPR&D
(SANJEEV SINGH) DC (MT) CRPF
(PALLAV SHARMA) TEAM COMDR-TSG
(VIRENDER SINGH) DC, BSF
(DURGESH NANDAN) SW/MM, ITBP
(N.K. YADAV) DIG (MT/CRD) HQ, CRPF.

Sl.No.	Parameters	Specifications	Procedure suggested for trial	Result expected/ desired	Complied/ Not complied
14	Fitments	Each Skid Steer Loader should be fitted with cold starting provision/aids and lift hooks.	The cold starting provision/ aids and lift hooks should be physically checked. Cold starting should be checked during cold climatic conditions.	The machine should be found to be fitted with the provision of cold starting and lift hooks.	

(Durgesh Nandan), Insp / MM,ITBP, New Delhi.

(Pallavi Sharma), Team Comdr, NSG, Manesar, Guragaon.

(Dr. M. M. Gosal), Dy. SP,BPR&D, New Delhi.

(Virender Singh), Dy. Comdt,BSF, New Delhi.

(Sanjeev Singh), Dy. Comdt,CRPF, New Delhi.

(N K Yadav), DIG (MT),CRPF, New Delhi.

(Dr. N C Asthana, IPS), IG (PROV), Dte. Genl., CRPF, New Delhi.

(Pranay Sahay, IPS) Director General, CRPF.

प्रणय सहाय / Pranay Sahay
Director General, CRPF
के. का. परिसर, लोधी रोड
CGO Complex, Lodhi Road
नई दिल्ली / New Delhi