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EN

OPERATING INSTRUCTIONS

TRACKED MINIDUMPER CARRY 105 ELECTRIC POWER

serial numbers from nr.:

MZ*00010

(Original instructions)

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1) **DICHIARAZIONE "CE" DI CONFORMITÀ** (ORIGINALE)
(Direttiva 2006/42/CE, allegato II, 1A)

2) Fabbricante: **KATO IMER S.p.A.**

3) Indirizzo: localit  CUSONA - 53037 SAN GIMIGNANO (SI) - ITALY

4) File tecnico compilato da: Direttore tecnico **KATO IMER S.p.A.**

5) Indirizzo: localit  CUSONA - 53037 SAN GIMIGNANO (SI) - ITALY

6) Dichiaro che la macchina categoria: CRAWLER COMPACT DUMPER

7) Tipo: **CARRY 105EP**

8) Numero di serie: **MZ**

9) Potenza netta installata (kW/rpm): 2,2 / 2100

10)   conforme ai requisiti della Direttiva Macchine **2006/42/CE**, come modificata e alla legislazione nazionale che la traspone.

11)   conforme alle condizioni della Direttiva **2000/14/CE** modificata dalla **2005/88/CE** "emissione acustica ambientale delle macchine ed attrezzature destinate a funzionare all'aperto" e alla legislazione nazionale che la traspone. (Dlgs.262/2002)

- Categoria macchina: *Dumper annesso I n°18*

- Procedure applicate per le valutazioni di conformit : *controllo interno della produzione con valutazione della documentazione tecnica e controlli periodici, all. VI. (1ª procedura)*

- Ente notificato: *ECO S.p.A. - via Mengolina, 33 - 48018 Faenza (RA) - Italy*

- Livello di potenza sonora misurato: **L_{WA} 82 dB**

- Livello di potenza sonora garantito: **L_{WA} 85 dB**

12)   conforme alle condizioni della seguente direttiva: 2014/30/CE

13) Sono state applicate le seguenti norme armonizzate: EN ISO 12100; EN ISO 3744; EN 474 -1; EN 474 -6

14) Luogo/Data: San Gimignano..... -

15) Nome: **Tsutomu Kikuchi**

16) Posizione: Presidente **KATO IMER S.p.A.**

ENGLISH (Translation)

- 1) DECLARATION OF CONFORMITY
(Directive 2006/42/EC , Annex II, 1A)
- 2) Manufacture:
- 3) Address:
- 4) Technical file compiled by: KATO IMER S.p.A. Technical department manager
- 5) Address:
- 6) Hereby we declare that the machine category: DUMPER.
- 7) Type:
- 8) Serial number:
- 9) Net power installed (kW/rpm):
- 10) Is in conformity with the provisions of the <<Machinery Directive>> 2006/42/EC, as amended and the regulations transposing it into national law;
- 11) Also complies with the provisions "noise emission in the environment by equipment for use outdoors" directive 2000/14/EC and the regulations transposing it into national law
- Machine category: dumper, (Annex I 37)
- Conformity assessment procedure followed: internal control of production with assessment of technical documentation and periodical checking, annex VI. (1st procedure)
- The notified body :
- Measured sound power level:
- Guaranteed sound power level:
- 12) The following respective requirements fulfill:
- 13) Harmonized EN - standards taken:
- 14) Place/Date :
- 15) Name :
- 16) Position:

FRENCH (Traduction)

- 1) DECLARATION « CE » DE CONFORMITE
(Directive 2006/42/CE, annexe II, 1A)
- 2) Nom du constructeur:
- 3) Adresse:
- 4) Fichier technique rédigé par: Directeur technique KATO IMER S.p.A.
- 5) Adresse:
- 6) Déclare que la machine décrite ci-dessous désignée: TRANSPORTEUR.
- 7) Type du matériel:
- 8) Numéro de série:
- 9) Puissance net installée:
- 10) Est conforme aux dispositions de la directive « machines » 2006/42/CE modifiée et aux législations nationales la transposant :
- 11) Est également conforme aux dispositions de la directive « émissions sonores des équipements utilisés à l'extérieur des bâtiments » 2000/14/CE et aux législations nationales la transposant.
- Machine: transporteur, (annexe I 37)
- Procédure appliquée pour l'évaluation de la conformité : *procédure de contrôle interne de la production, avec évaluation de la documentation technique et contrôle périodique, annex VI.*
- Organisme notifié :
- Niveau de puissance acoustique mesuré :
- Niveau de puissance acoustique garanti :
- 12) Est également conforme aux dispositions de la directive suivantes :
- 13) Est conforme aux normes harmonisées suivantes:
- 14) Adresse /Date :
- 15) Signataire :
- 16) Qualité du signataire :

SPANISH (Traducción)

- 1) DECLARACION "CE" DE CONFORMIDAD
(Directriz 2006/42/CE, anexo II, 1A)
- 2) Fabricante:
- 3) Dirección:
- 4) Archivo técnico compilado por: Director técnico KATO IMER S.p.A.
- 5) Dirección:
- 6) Con el presente documento declaramos que la máquina categoría: TRANSPORTADOR.
- 7) Tipo:
- 8) Número de serie:
- 9) Potencia neta instalada:
- 10) Cumple la Directriz Maquinas 2006/42/CE, incluidas las modificaciones de la misma:
- 11) Cumple la Directriz 2000/14/CE sobre "emisiones sonoras en el entorno debidas a las máquinas de uso al aire libre" incluidas las modificaciones de la misma:
- Categoría máquina: transportador, (anexo I 37)
- Procedimiento de evaluación de la conformidad que se ha seguido: *control de la producción con evaluación de la documentación técnica y comprobaciones periódicas, anexo VI.*
- Organismo notificado:
- Nivel de potencia acústica medido:
- Nivel de potencia acústica garantizado:
- 12) Satisfacen la siguiente directriz:
- 13) Cumplen las normas armonizadas:
- 14) Dirección /Data
- 15) Nombre:
- 16) Puesto:

GERMAN (Übersetzung)

- 1) EG-KONFORMITÄTSERKLÄRUNG
(Direktive 2006/42/EG, Nachtrag II, 1A)
- 2) Hersteller:
- 3) Adresse:
- 4) Technische Datei erstellt von: Technischer Leiter KATO IMER S.p.A
- 5) Adresse:
- 6) Erklärt hiermit, dass die Maschine-Kategorie: TRANSPORTER.
- 7) Typ :
- 8) Seriennummer:
- 9) Installierte Nutzleistung
- 10) Konform ist mit den einschlägigen Bestimmungen der EG-Maschinenrichtlinie (EG-Richtlinie 2006/42/EG) inklusive deren Änderungen, und der nationalen Gesetzgebung, welche diese Bestimmungen umsetzt:
- 11) Konform ist mit den Bedingungen der EG-Richtlinie 2000/14/EG über «umweltbelastende Geräuschemissionen von zur Verwendung im Freien vorgesehenen Geräten und Maschinen», inklusive deren Änderungen.
- Maschine-Kategorie: Transporter, (Nachtrag I 37)
- Angewandtes Konformitätsbewertungsverfahren : *interne fertigungskontrolle mit begutachtung der technischen unterlagen und regelmässiger prüfung, Anhang VI.*
- Der beteiligten benannten Stelle :
- Gemessener Schalleistungspegel :
- Garantierter Schalleistungspegel :
- 12) Konform ist mit den folgenden Bedingungen der EG-Richtlinie :
- 13) Folgende harmonisierte Normen zur Anwendung gelangen:
- 14) Adresse /Datum :
- 15) Name :
- 16) Position:

DUTCH (Vertaling)

- 1) EG-VERKLARING VAN OVEREENSTEMMING
(EG-Richtlijn 2006/42/EG, Anhang II, 1A)
- 2) Fabrikant:
- 3) Adres:
- 4) Technisch bestand opgesteld door: Technisch directeur KATO IMER S.p.A.
- 5) Adres:
- 6) Hierbij verklaren wij dat onderstaande machines categorie: DUMPER.
- 7) Type:
- 8) Serie Nummer:
- 9) Netto geïnstalleerd vermogen:
- 10) Overeenstemmen met de gewijzigde richtlijn EG-Richtlinie 2006/42/EG en de naar nationale wetgeving transponerende regelingen.
- 11) Voldoet bovendien aan de bepalingen van de richtlijn 2000/14/EG „Geluidsemissie in het milieu door materieel voor gebruik buitenshuis” en de naar nationale wetgeving transponerende regelingen.
- Machines categorie: dumper, (anhang I 37)
- Overeenstemmingsbeoordelingsprocedure: *interne controle van productie met beoordeling van technische documentatie en periodieke keuring, bijlage VI.*
- Betrokken aangemelde instantie:
- Gemeten geluidsvermogensniveau:
- Gewaarborgd geluidsvermogensniveau:
- 12) De volgende respectievelijke eisen voldoen:
- 13) Geharmoniseerde EN-Standaarden:
- 14) Adres /Datum:
- 15) Naam:
- 16) Functie:

DANISH (Oversættelse)

- 1) OVERENSSTEMMELSESERKLÆRING
(EF-direktiv 2006/42/EF, bilag II, 1A)
- 2) Produktion:
- 3) Adresse:
- 4) Teknisk dossier udarbejdet af: Teknisk direktør KATO IMER S.p.A.
- 5) Adresse:
- 6) Vi erklærer herved, at maskinen i kategorien: GRAVEMASKINE.
- 7) Type:
- 8) Serienummer:
- 9) Nettoydelse:
- 10) Er i overensstemmelse med Maskindirektivet 2006/42/EF, som ændret og inkorporeret i national lovgivning
- 11) Er i overensstemmelse med EU-direktiv 2000/14/EF om "støjudslip i miljøet for udendørs udstyr" som inkorporeret i national lovgivning:
Maskinen i kategori: gravemaskine, (bilag I 37)
Procedure anvendt til vurdering af overensstemmelse: *intern kontrol af produktion med vurdering af den tekniske dokumentation og periodisk kontrol, bilag VI.*
- Bemyndiget organ:
- Mål støjniveau:
- Garanteret støjniveau:
- 12) Opfylder kravene i følgende direktiv
- 13) Følgende harmoniserede EN-standard er anvendt:
- 14) Adresse / Dato
- 15) Navn:
- 16) Stilling:

SVENSKA (översättning)

- 1) EG-FÖRSÄKRAN OM ÖVERENSSTÄMMELSE
(Direktiv 2006/42/EC , Annex II, 1A)
- 2) Tillverkare:
- 3) Adress:
- 4) Den tekniska filen har ifyllts av: den tekniska chefen vid KATO IMER S.p.A
- 5) Adress:
- 6) Det intygas att maskinen i kategorin: GRÄVSKOPA FÖR LASTNING
- 7) Typ:
- 8) Serienummer:
- 9) Installerad nettoeffekt (kW/rpm):
- 10) Överensstämmer med kraven i maskindirektivet 2006/42/EG, med ändringar, samt med den italienska lagstiftningen som införar direktivet.
- 11) Uppfyller villkoren som omnämns i direktiv 2000/14/EG "buller från maskiner och utrustning som är avsedda för utomhusanvändning", samt med den lagstiftning som införar direktivet: Maskinkategori: grävskopa för lastning (bilaga I 37)
Rutiner som har tillämpats för att bedöma överensstämmelsen: en intern kontroll av produktionen och en bedömning av den tekniska dokumentationen med periodiska kontroller, *bilaga VI*.
- Anmält organ:
- Uppmätt ljudeffektnivå:
- Garanterad ljudeffektnivå:.
- 12) Uppfyller villkoren som omnämns i följande direktiv:
- 13) Följande harmoniserade standarder har tillämpats:
- 14) Ort/Datum:
- 15) Namn:
- 16) Befattning:

NORSK (oversettelse)

- 1) SAMSVARSKLÆRING (ORIGINAL)
(Direktiv 2006/42/EF, vedlegg II, 1A)
- 2) Produsent:
- 3) Adresse:
- 4) Teknisk dokumentasjon utarbeidet av: Teknisk ansvarlig KATO IMER S.p.A.
- 5) Adresse:
- 6) Med dette erklærer vi at maskinkategorien: HJULLASTER
- 7) Type:
- 8) Serienummer:
- 9) Installert nettoeffekt (kW/rpm):
- 10) Er i samsvar med kravene i Maskindirektivet 2006/42/EF, med endringer og den nasjonale lovgivningen som gjennomfører disse;
- 11) Den er også i samsvar med Direktiv 2000/14/EF "Støyemisjon fra maskiner og annet utstyr til utendørs bruk" og nasjonal lovgivning som gjennomfører disse.
Maskinkategori: hjullaster (vedlegg I 37)
Prosedyrer brukt for samsvarsvurdering: intern kontroll av produksjonen med vurdering av teknisk dokumentasjon og periodisk kontroll, (vedlegg. VI).
- Teknisk kontrollorgan:
- Målt lydeffektnivå:
- Garantert lydeffektnivå:.
- 12) Den er i samsvar med kravene i følgende direktiv:
- 13) Følgende harmoniserte normer brukes:
- 14) Sted/Dato:
- 15) Navn:
- 16) Stilling:

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KATO IMER S.p.A.

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SCHEDULED MAINTENANCE

Correct maintenance is determined for guaranteeing the machine a long life span in excellent conditions For this reason KATO IMER has prepared a series of controls and interventions to perform at authorised after-sales centres.

CAUTION: The scheduled maintenance services are prescribed by the Manufacturer. Failure to carry out the same can lead to the warranty becoming null and void.

SCHEDULED INTERVENTIONS TABLE

INTERVENTION \ HOURS	HOURS									
	20/50	200	400	600	800	1000	1200	1400	1600	After operations have been interrupted for a long time
Inspection on the integrity of cables and batteries	•	•	•	•	•	•	•	•	•	•
Brushes inspection		•	•	•	•	•	•	•	•	•
Check / replace brushes				•			•			•
Data download to check battery status		•	•	•	•	•	•	•	•	•
Check and adjust belts tension	•	•	•	•	•	•	•	•	•	•
Replace hydraulic plant filter		•	•	•	•	•	•	•	•	•
Change hydraulic oil				•			•			•
Check continuity of earth cables	•									
Check integrity of guards for live parts	•									
Check emergency button operation	•									

FOREWORD

This manual contains safety, operation, maintenance, and adjustment information for the minidumper. The procedures are designed to provide the best performance of the machine in an effective and economical way. In order to obtain it, remember the next basic rules.


- *This manual must always remain on the machine in the relevant compartment.*
- *Before inspection, maintenance or operating the machine, read and understand this manual completely.*
- *Further abilities as an operator outside of descriptions in this manual can be obtained from the experience during normal operations and under proper supervision.*

It is possible that some illustrations in this manual do not coincide with your machine due to changes owing to technological development. Whenever a question arises regarding your machine, or this publication, please consult your local KATO IMER distributor for the latest available information.

SAFETY INFORMATION

We offer you basic and important rules and precautions for safe operations.

Read, understand, and observe them before starting operation. This is the most essential way to prevent accidents. Wrong operation, inspection, or maintenance can cause personal injury or death.

Throughout this manual and on the machine, precautions are provided with symbol  and classified by the words **DANGER – WARNING – CAUTION**, according to their extent of danger.

The classification is as follows:



Indicates a hazardous situation which, if not avoided, could result in death or serious injury.



Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.



Indicates a potentially hazardous situation which, if not avoided, could result in minor or moderate injury. It may also be used to alert the operator against possible damage to the machine and its components.

We have made every effort to reduce the risks associated with correct use of the machine and, nonetheless, we cannot be held responsible for predicting every kind of danger in all unintended operating conditions.

It is the owner or user of the machine who is responsible for **ALWAYS** paying attention to operate the machine; as well as reading and understanding this manual enough to obtain the essential knowledge and skills fundamental to correct machine operation.



- **BEFORE INSPECTION, OPERATION, OR MAINTENANCE OF THE MACHINE, BE SURE TO READ AND UNDERSTAND THIS MANUAL.**
- **INCORRECT OPERATION OR MAINTENANCE OF THE MACHINE CAN CAUSE ACCIDENTS AND SERIOUS INJURY OR DEATH.**
- **ALWAYS KEEP THIS MANUAL ON HAND SO THAT IT CAN BE CONSULTED WHEN NECESSARY.**
- **IF IT SHOULD BE LOST OR DAMAGED, REQUEST ANOTHER COPY FROM YOUR DEALER.**
- **THERE ARE VARIOUS KINDS OF FEDERAL, STATE, AND LOCAL REGULATIONS THAT EFFECT CONSTRUCTION AND INDUSTRIAL MACHINERY. SINCE THE REGULATIONS ARE SUBJECT TO CHANGE, AND DIFFER FROM ONE COUNTRY TO ANOTHER, IT IS IMPOSSIBLE FOR US TO PROVIDE SUCH INFORMATION IN THIS MANUAL. IT IS THE RESPONSIBILITY OF THE OWNER OR USER TO BE FAMILIAR WITH THE REGULATIONS.**
- **SPECIFICATIONS AND COMPONENTS OF THE MACHINE ARE SUBJECT TO CHANGE WITHOUT ANY OBLIGATION ON THE PART OF THE MANUFACTURER.**
- **MAKE SURE THAT THE SUPPLIED OPERATING MANUAL CORRESPONDS TO THE FEATURES OF THE MACHINE, IN CASE OF DOUBT CONTACT KATO IMER ASSISTANCE SERVICE.**
- **KATO IMER RESERVES THE RIGHT TO CHANGE THE FEATURES OF THE MACHINE AND/OR THE CONTENTS OF THIS MANUAL, WITHOUT BEING REQUIRED TO UPDATE THE PREVIOUS MACHINE AND/OR MANUALS.**

1 SAFETY

1.1 GENERAL

**WARNING**

MAKE SURE NO ONE IS STANDING NEAR THE MACHINE BEFORE USING IT.

1. READ AND UNDERSTAND THE INSTRUCTIONS AND WARNINGS

This manual, plates and labels on the machine contain necessary instructions and warnings for safe operation. The user is supposed to read and understand them first. If the user ignores them, injury or death may occur. Do not leave what you do not understand as it is. Your KATO IMER distributor is happy to answer any additional question. If the manual, plate, or label is missing or damaged, contact your IHIMER distributor to replace it.

2. CHECK THE MINIDUMPER

Before starting the job, carefully check that there are not persons or obstacles in your working area.

3. HEALTH

Take special care of your mental and physical health and note that the operator of a complicated machine should be **PHYSICALLY FIT**. **NEVER** operate the machine under the influence of alcohol, medicines or drugs of any kind.

4. SNUG FITTING WORK CLOTHES

Your work clothing must be snug, without loose sleeves, rings or other jewelry, as they may become trapped in moving parts. Always wear the necessary clothes and accessories, including: helmet, safety gloves, visible clothing, safety boots and ear defenders.

5. BEFORE OPERATING THE MACHINE

It is **ESSENTIAL** to conduct warm-up **BEFORE** starting operations in order to run the hydraulic fluid smoothly. During the heating phase, the operator must check the correct functioning of the machine or the necessity for maintenance. Remember: the fundamental principle on which the hydraulics is based is the running of oil. If you hear a harsh noise, it means that there is insufficient lubrication of the pump due to oil cavitation, often caused by the presence of oil that is too dense or heavy. **DO NOT ACTIVATE** the machine in these conditions as serious damage could be caused to the pump.

6. ROTATING AND MOVING PARTS

DO NOT go near to moving parts. Do not allow any object to come near moving parts. This may cause serious injuries.

7. BE CAREFUL TO THE HOT MOTOR

NEVER touch the motor when the machine is on or right after it is stopped. It is very hot and may cause serious burns.

8. LIGHTING

The machine is designed to work in building jobsites and it does not have own lighting. It must be used in enough illuminated places.

9. STAND-BY PHASE

CARRY 105EP is an electric vehicle. After a certain amount of inactivity it switches to STAND-BY mode. The absence of any noise does not mean that the machine is off. Be very careful not to touch any control levers that could cause an uncontrolled start up of the machine.

1.2 USING THE MACHINE**1. CONDUCT EVERY OPERATION WITH GREAT CARE FOR SAFETY**

Conduct every operation with great attention. Activating the machine too unexpectedly can cause damage and dramatically reduce efficiency. Always remember the Standards that guarantee safety in the workplace.

2. DO NOT OVERLOAD

Do not forcefully conduct digging operation beyond the capacity, which may overload any cylinder and open its relief valves. This overload leads to an excessively high oil temperature, which affects the life cycle of the hydraulic components.

3. SECURE FOOTING FOR SAFE OPERATIONS

If a particular situation leads you to use of the machine on the side of the road or on a slope, check the level of the ground and balance of the machine, to prevent slipping or overturning.

4. MACHINE OPERATING LIMITS

The ground should be level and firm for safe operation. If you have to operate the machine on sloping ground, ensure the tracks are in the same direction of the sloping ground and not perpendicular to it. If you have to operate the machine on soft or unlevelled ground, it is essential to carefully operate the machine to prevent it from turning over.

The machine can be used exceptionally on water-covered surfaces up to a maximum depth of 5 cm.

5. TIPPING

Be careful, during the reversal of accessory the center of gravity of the machine can move, so the operation must be done on a stable and not yielding surface.

6. OPERATING TEMPERATURE

During both operating and battery charging phases, the machine can be used within a temperature range between -10 °C and +50 °C.

1.3 SAFETY

1. WORKING OPERATIONS

In normal circumstances (not emergencies) **ALWAYS** try to make slow turns as much as possible. Sudden turns or standing pivot turns may shorten the usable life of the machine and the tracks. Change the direction of travel slowly to avoid overloading the driving wheels, especially on unlevelled or rough ground.

2. MOVING THE MACHINE IN SPECIAL CONDITIONS

Travel slowly if the ground is rough or covered with chunks of rock. **NEVER** cause shocks to the tracks and the machine.

3. PAY ATTENTION WHEN DRIVING DOWNHILL

When using the machine on sloping ground, go uphill in reverse gear. Even minor bumps on the ground may cause the machine to jolt, leading to overturning.

DRIVE IN REVERSE, THE OPERATOR MUST ALWAYS BE UPSTREAM THE LOAD.



CAUTION

MAX. ADMITTED SLOPE WITH EMPTY VEHICLE 20° - 36%



CAUTION

MAX ADMITTED SLOPE WITH LOADED VEHICLE 11° - 20%

NEVER steer on a grade or unstable ground, which causes a turnover.

NEVER travel across a grade. When travelling on a grade, travel up and down in parallel with the grade. Be careful to travel on the frozen ground since the machine tends to skid or fall down.

1.4 LOAD AND TRANSPORTATION

1. CAREFULLY LOAD AND UNLOAD THE MINIDUMPER

ALWAYS load and unload the machine on the level ground.

ALWAYS use a ramp that has sufficient strength, width, length, and thickness.

Remove ice, snow, or slippery material from the ramp and truck deck before loading.

NEVER make a turn on a ramp.

2. TRANSPORTATION

Be sure to engage the swing lock.

1.5 PARKING THE MACHINE



WARNING

IN THE EVENT OF STANDSTILL ON SLOPING GROUND OR IF THE MACHINE IS PARKED TO INTERRUPT OPERATIONS, ALWAYS ENGAGE THE PARKING BRAKE.

IN THE EVENT OF PROLONGED PARKING ON STEEPLY SLOPING GROUND LOCK THE TRACKS WITH ADDITIONAL WEDGES.

1. PARKING ON BANKS AND SLOPES

NEVER leave the machine on or near any bank which may cave or on the edge of an excavation which might give way. Back the machine away from such areas which it is to be left idle or unattended for more than a brief period. Whenever possible, park on level ground.

2. PARKING THE MACHINE ON THE ROAD

If you have to park the machine on the road, use appropriate flags, barriers flares, and warning signals.

3. OPERATOR LEAVING MACHINE

ALWAYS stop the motor before leaving the machine unattended. Check that all the locks are engaged and the parking brake is engaged.



When the machine is not being used, always remove the key and press the emergency mushroom button.

1.6 BATTERIES

1. PRECAUTIONS WHEN USING THE BATTERIES



Do not access the battery compartment and do not remove the guards while the machine is in use.



WARNING

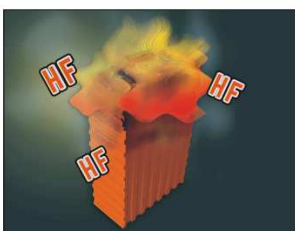
THE BATTERIES ARE DANGEROUS AND MUST BE HANDLED BY QUALIFIED STAFF. IN CASE OF A SHORT CIRCUIT THE BATTERIES CAN EXPLODE: DO NOT SHORT-CIRCUIT THEM FOR ANY REASON WHATSOEVER.



In case of failure or if the cell casing breaks corrosive liquids and/or explosive gases may leak out. Avoid direct contact with the parts of the cell that are not covered. If this should happen, wash the affected areas immediately with abundant clean water and soap.



In the event of electrolyte contact with eyes, rinse them with plenty of water for at least 15 minutes and immediately seek medical assistance.



DANGER

In the event of a fire, or temperatures higher than 150°C the battery may release substances which might endanger health.

If the battery catches fire or is exposed to extreme heat and emits smoke, clear people from the area, protect airways and extinguish the fire with water or other D-type fire extinguishing means (CO2 fire extinguishers)

If necessary, cover the cell completely with water.

2. BATTERY RECHARGE



WARNING

BEFORE CARRYING OUT ANY RECHARGING OPERATIONS MAKE SURE THAT THE MACHINE DOES NOT HAVE ANY DAMAGED PARTS THAT CAN COME INTO DIRECT CONTACT WITH THE LIVE PARTS.

IF GENERATORS ARE BEING USED TO RECHARGE THE BATTERIES, MAKE SURE THEY ARE ELECTRONICALLY STABILISED MODELS WITH A POWER OF AT LEAST 5 kVA.



Before connecting the vehicle to the electrical power supply, make sure the electrical system used complies with safety standards. Namely, the electrical power supply should be protected against overcurrent (e.g. with fuses or with a circuit breaker) and the differential protection device. If in doubt, contact your KATO IMER dealer or the local electricity company.



The electrical wiring must have an effective grounding system.



Before connecting the vehicle to the electrical power supply, make sure the technical features of shunt the are compatible with those required for the vehicle and indicated near the recharge socket. Only use connectors compatible with the vehicle's socket.

FEATURES OF THE ELECTRICAL CONNECTION:

Voltage 230V +/- 10% - 50-60Hz

Maximum absorbed current 15 A



The power supply cable should be suited for frequent handling and have a scratch-proof coating (for instance H07RN-F). If the cable is subject to wear or damage, replace it immediately.



Place the machine as close as possible to the electrical socket and avoid using long cables or extensions that may get in the way. Safety extend the power supply cable and avoid placing in such a manner that it may get in the way.



If using an extension or a multiple socket, check that they tolerate the overall amount of electricity required.



Ensure the machine is well ventilated and check that the ventilation grid is not clogged.



Avoid connecting the machine to the socket when the cable, the connections or the battery compartment on the machine are wet, and always follow the washing instructions.



Recharge the batteries in areas that are protected from the elements.



It is good practice to disconnect the vehicle from the charger once it has finished recharging. The word FINISH will appear in the screen when the batteries are fully charged.



Perform the complete recharge equalization at least once a month to avoid batteries deteriorating when the machine remains inactive for long periods.

3. PRECAUTIONS WHEN USING THE EXTENSIONS



Avoid using extensions twisted in a helical fashion on the drums. If the mobile plug-type socket outlets are positioned in transit areas, they should be adequately protected against mechanical damage. The table below lists the recommended lengths according to the section of the conducting cable.

Power supply voltage/model	Recommended cable section			
	Section (mm ²)	2,5	4	6
230V - 50-60Hz - 16A	Length (m)	0-15m	15-25m	25-40m

4. USING ELECTRICAL EQUIPMENT IN THE PRESENCE OF WATER

Avoid using the machine under heavy rain or water jets or if there is a large amount of water on the ground. Take the usual precautions when using electrical equipment.

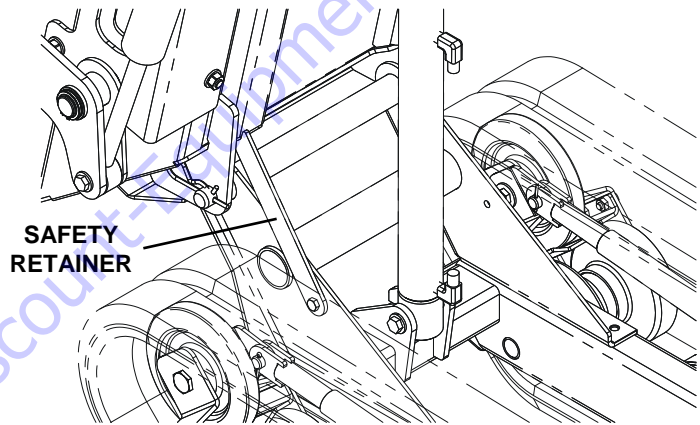
1.7 MAINTENANCE

1. ROUTINE MAINTENANCE

Maintenance work can be hazardous if not done in a careful manner. All personnel should realize the hazards and strictly follow safe practices.



Before undertaking any maintenance or repair work always consult the instruction manual. Before **ANY** maintenance work, stop the motor and engage the parking brake in order to prevent any movement that may cause damage to the operator. Lift the accessory and introduce the special safety retainer.



NEVER allow anyone to work on the undercarriage when the accessory is lifted and not properly blocked.

During maintenance operations, mark the control levers with labels. These labels can only be removed by aware personnel able to ensure that safety rules are fully observed.



Before working on the vehicle ensure it is disconnected from the electrical power supply and press the emergency button.



The protections of the battery pack and the electrical panel may be removed only by personnel authorised to do so, as even with the power supply cable disconnected from the electrical power supply, the battery may still be loaded and they may be live parts.

The machine and its metal parts are connected to the ground circuit via the network cable. When the network cable is disconnected the machine is isolated from the ground.



Namely, strong collisions or other accidents may cause the battery poles to come in contact with other metal parts of the machine, especially the protections. Should this happen, before any other operations, maintenance operators should always prevent this from occurring and check the potential of the protections.

2. CLEANING THE MACHINE

Maintain the machine clean for safe operation. Remove any dirt or grease, check the supplied equipment. Do not place anything flammable around the machine.

3. WASHING INSTRUCTIONS

Before washing the machine turn it off or disconnect it from the charger.

- make sure there are no damaged parts and that the guards are all in place;
- do not overuse the water jet on the dashboard, inside the motor compartment, through the grilles and in the battery compartments;
- use low pressure water and do not use solvents;
- after washing, compatibly with the weather conditions, wait for the machine to dry completely before turning it on or recharging it;
- it is possible to use compressed air, being careful to avoid directing it on the aforementioned devices.



If the washing instructions have not been followed, wait a couple of days before using it again.



It is good practice to re-grease the parts that require lubrication if you believe it was removed during the washing operations.

4. ADJUSTING HYDRAULIC PRESSURE

Only qualified person is allowed to gauge and adjust the hydraulic pressure following the specified procedure and using the correct gauge if necessary.

If there is no qualified person, consult your local distributor.

5. PREVENTING FIRE AND EXPLOSIONS



Do not expose the vehicle to excessive heat, especially during recharging operations.

The batteries may explode if the vehicle catches fire.

Keep away fuel, lubricants and coolants from any fire or heat. Most of them are very flammable.

Do not use the machine in fire-sensitive areas or explosive hazardous areas or in underground areas.



NEVER SMOKE while using the machine or during maintenance operations or in a place close to flammable objects.

5. MAINTENANCE OF THE HYDRAULIC SYSTEM

Before disconnecting hydraulic fluid lines on a hydraulic machine, be sure you:

- shut off motor;
- place the shovel, if any, on the ground;
- the accessory is lifted and the safety retainer engaged;
- always release any pressurised air on hydraulic tank (by opening the fill cap);
- move control levers and pedals repeatedly through their operating positions to relieve pressure in the cylinders.



Make sure all connections are tight and that lines, pipes, and hoses are in good condition before starting the motor.



If you are struck by escaping hydraulic fluid under pressure, serious reactions can occur if proper medical treatment is not administered immediately.



DANGER OF SHORT CIRCUIT. Remember that the batteries are supplied with energy and can generate a short circuit in any part of the machine.

1.8 "WARNING" SIGNS AND LABELS

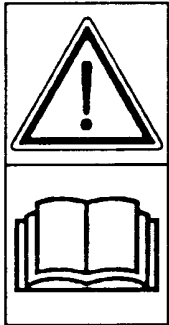
There are several specific safety signs on your machine. Their exact location and description of the hazard are reviewed in this section. Please take the time to familiarize yourself with these safety signs. Make sure that you can read all safety signs. Clean or replace these if you cannot read the words or see the pictures. When cleaning the labels use a cloth, water and soap. Do not use solvent, gasoline, etc. If a label is on a part that is replaced, make sure a new label is installed on the replaced part.

Symbol illustrated

Recommended explanation

Symbol Illustrated

Recommended explanation



1

Warning!
Read manual before operation, maintenance, disassembly, assembly and transportation.



2

The sign indicates the danger of burns due to contact with very hot surfaces. Avoid contact with hot surfaces when using the machine and for a prolonged period of time after the machine has been switched off or use adequate preventive means.



3

The sign indicates the risk of shearing by the injury caused by the loading shovel. Always keep hands clear of the arm of the loading shovel when this is in operation.



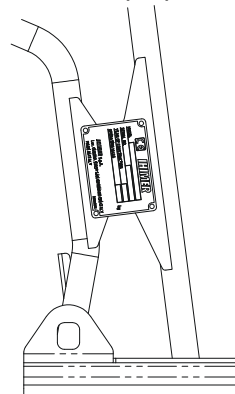
4

The signal indicates a hazard of being struck by objects travelling at high speed while the track is moving. Read the manual before using the machine for safe and proper handling.



5

The signal indicates a hazard of being crushed by unexpected movement of the accessory or, if any, the loading shovel. Keep a safety distance around the machine when this is being used. The accessory and the shovel should always be in a locked position before leaving the machine.

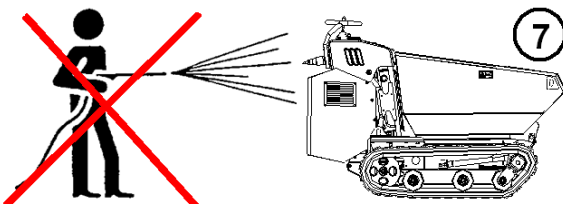


The identification plate placed on the frame contains the manufacturer's details the machine's serial number.



6

The signal indicates the presence of live parts. Do not remove protections featuring this symbol.



7

The signal indicates that only low pressure water must be used for washing.

1.9 "CHARGING OPERATION" SIGNS AND LABELS

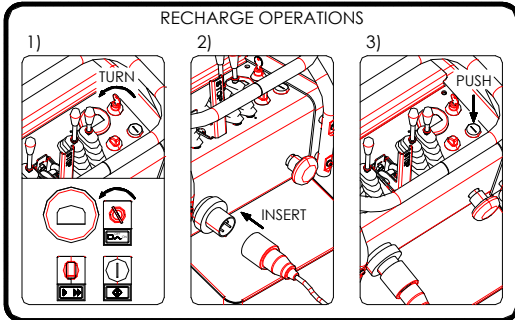
The labels provides indications for proper operation of batteries charging and equalization.

**Symbol
illustrated**

**Recommended,
explanation**

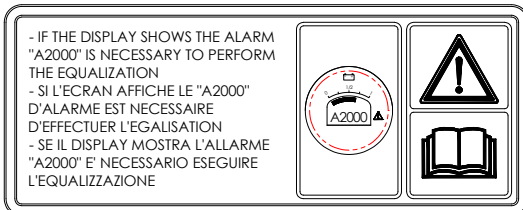
1 Charging instruction

The label indicates the correct sequence to start charging operations.



2 Alarm A2000

The label indicates that is needed an equalized full recharge when the machine's display shows the flashing message A2000.



2 DISPOSAL**2.1 DISPOSAL INSTRUCTIONS**

Waste should be disposed of in an authorised area strictly according to current regulations.

The machine is mainly formed of steel, aluminium, plastic and copper.

The machine contains hydraulic oil, which should be disposed of in accordance with each country's current regulations.

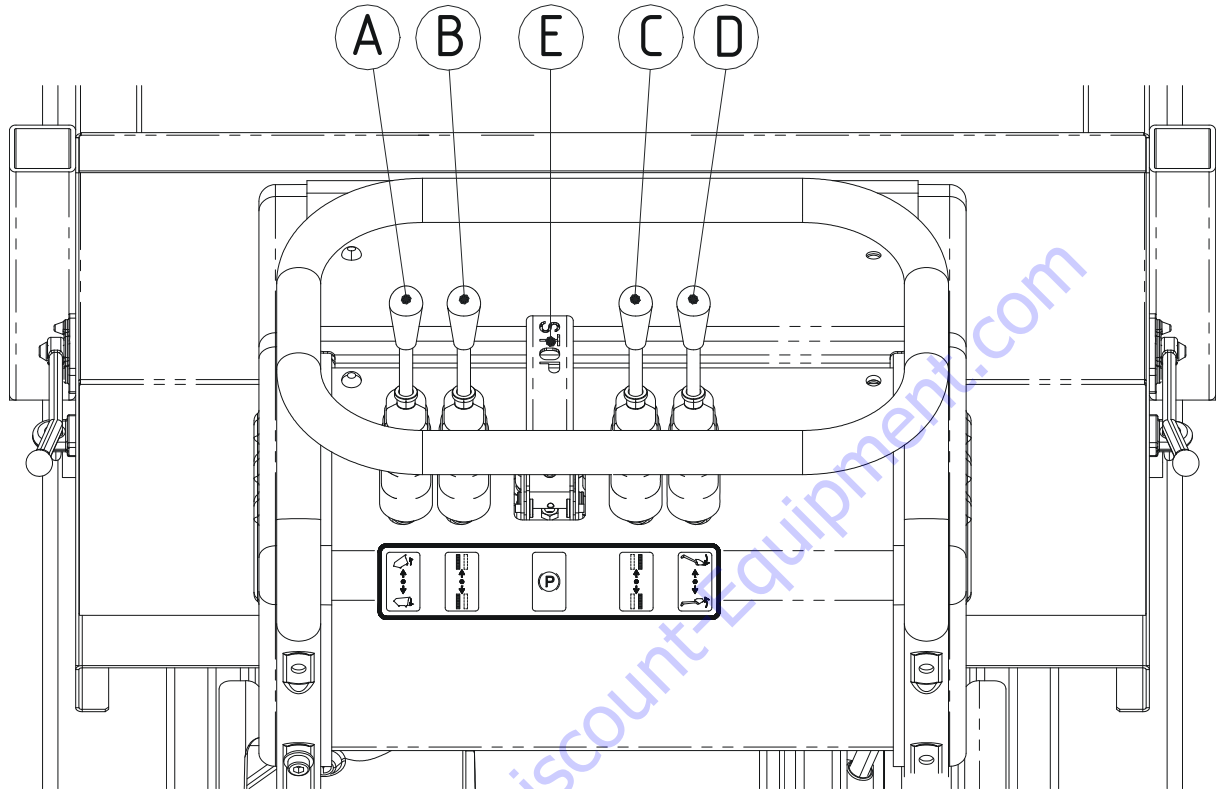
The machine contains lithium batteries. If handled by untrained personnel, these may cause electric shocks, high-current short-circuit and fires. This is why only expert technical personnel authorised by KATO IMER should proceed to remove the batteries

It is forbidden to dispose of batteries with normal solid waste. As batteries contain materials harmful to the environment and human health, they should be collected, disposed of/recycled as established by the 2006/66/EC directive and related regulations in each country. Their violation involves fines applied by the directive itself.

To order go to Discount-Equipment.com

3 USER INSTRUCTIONS

3.1 MACHINE CONTROLS



- (A) Lever to manoeuvre the accessory
- (B) Travel lever (left)
- (C) Travel lever (right)

- (D) Lever to manoeuvre the loading shovel
- (E) Parking brake lever

WARNING:

In some cases there may be a slight delay in switching on and switching off the power supply pump of the hydraulic circuit if these controls are made very quickly. This does not mean the vehicle is not working properly. On the contrary, this protects the system from transient current.

3.1.1 DRIVING THE MACHINE (Lever B and C)

1. Move the motor speed lever to the desired position.
2. Operate the RH and LH drive levers as follows.

STRAIGHT.

- FORWARDS

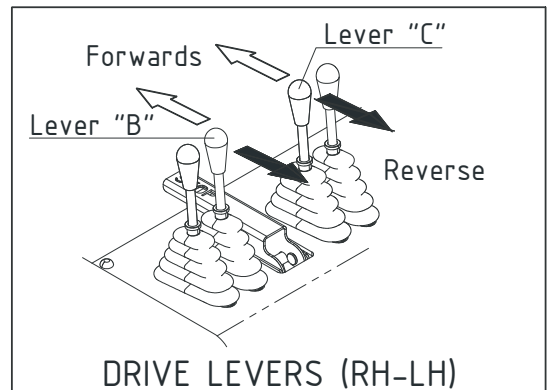
Gradually push both levers to drive forwards. The machine will move forwards.

- STOP

Slowly pull both levers back to the center position to stop the machine.

- REVERSE

Pull both levers back to drive in reverse. The machine will move backwards.

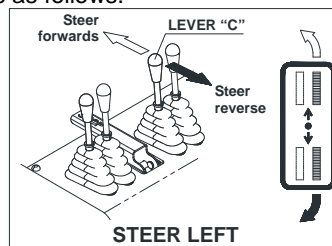


STEERING.

To steer, operate the levers as follows.

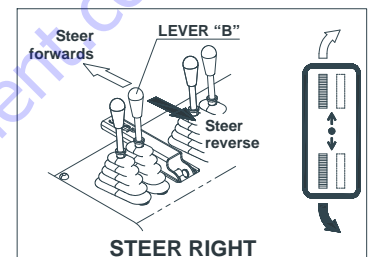
- Steer to the left.

Push the RH lever (C) forwards to steer to the left while driving forwards, pull it back to steer left in reverse.



- Steer to the right.

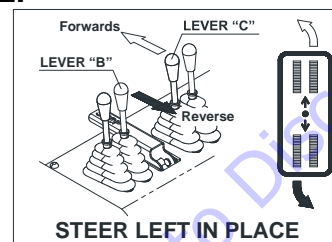
Push the LH lever (B) forwards to steer to the right while driving forwards, pull it back to steer right in reverse.



TURNING IN PLACE.

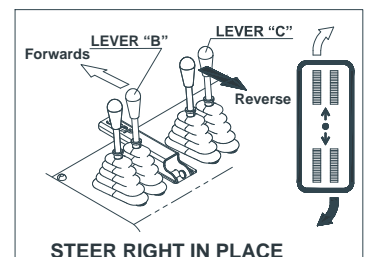
- Turn to the left.

Push the RH lever (C) forwards while pulling the LH lever (B) back. This turns the machine quickly in place towards the left.



- Turn to the right.

Push the LH lever (B) forwards while pulling the RH lever (C) back. This turns the machine quickly in place towards the right.

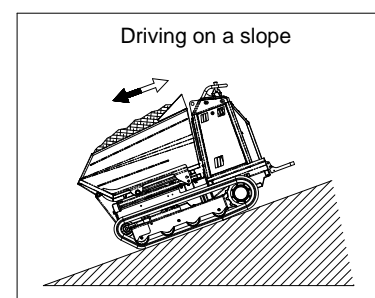
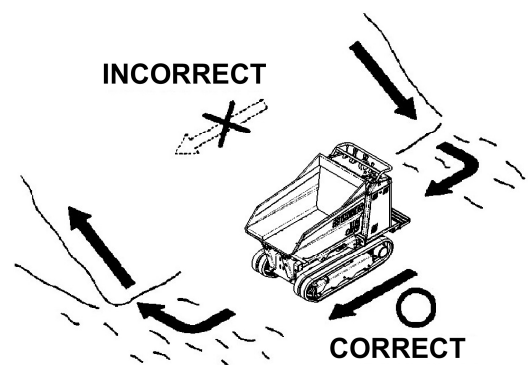


PRECAUTIONS WHEN DRIVING ON SLOPES



WARNING

- LOWER THE MOTOR SPEED.
- DO NOT CHANGE DRIVING SPEED.
- IF POSSIBLE, DRIVE WITH THE TRACKS POINTING UP OR DOWN HILL, NOT ACROSS THE SLOPE.
- DO NOT STEER ON SLOPES, AS THIS CAN CAUSE THE MACHINE TO TIP OVER OR SKID SIDWAYS.
- IF THE MACHINE IS EQUIPPED WITH A BUCKET, KEEP IT AS CLOSE TO THE GROUND AS POSSIBLE WHEN DRIVING ON SLOPES.



3.1.2 LEVER TO MANEUVER THE ACCESSORY (Lever A)

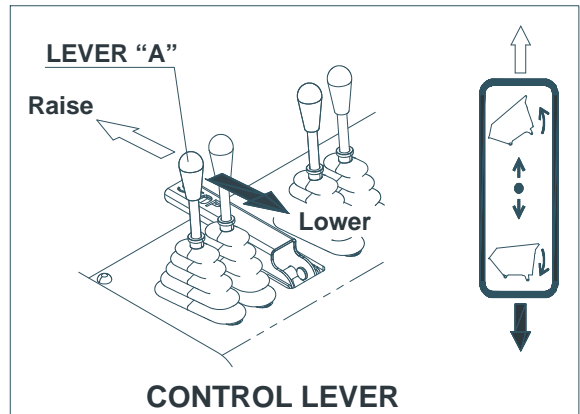


WARNING

BY PULLING THIS LEVEL BACK WHEN THE MOTOR IS ONE, THE ACCESSORY MOVES DOWN DUE TO ITS OWN WEIGHT.

Accessory lifting: Move the lever forward to lift the accessory.

Lowering the accessory: Move the lever back to lower the accessory blade.



3.1.3 LEVER TO MANEUVER THE LOADING SHOVEL (Lever D - optional)

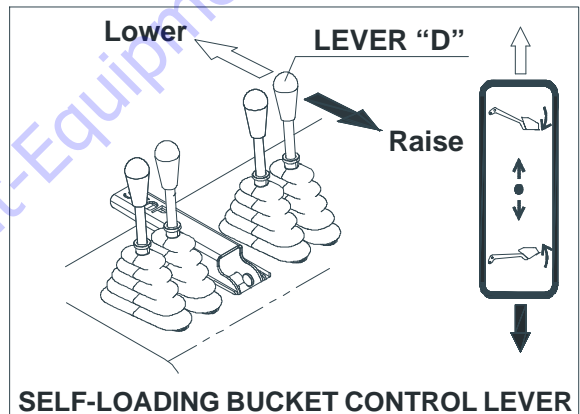


WARNING

BY PUSHING THIS LEVEL FORWARD WHEN THE MOTOR IS ONE, THE LOADING SHOVEL DOWN DUE TO ITS OWN WEIGHT.

Lower the shovel: move the lever forward to lower the shovel and use it to collect material.

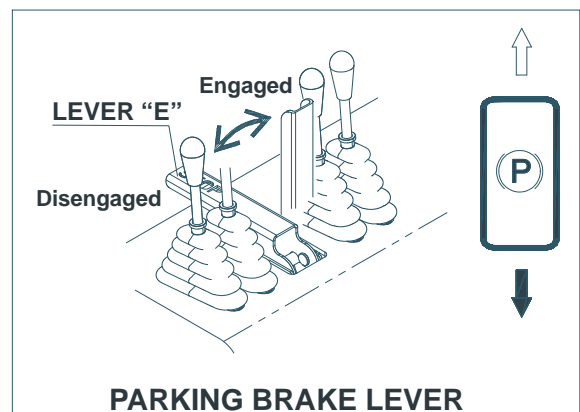
Lift the shovel: move the lever back to raise the shovel and place the material in the load body.



3.1.4 PARKING BRAKE LEVER (Lever E)

Inserting the brake: move the lever in a vertical position.

Releasing the brake: move the lever in a horizontal position.



3.2 USING THE ELECTRIC MOTOR

CHECKS TO CONDUCT BEFORE SWITCHING ON THE MOTOR.

Check hydraulic oil levels.

Refer to the Daily in the Maintenance Section for more detailed information.

This paragraph contains basic manoeuvres to switch on and switch off the motor.

3.2.1 STARTING UP THE MOTOR AND TRAVEL



1. Before switching in the motor, make sure the machine is disconnected from the electrical power supply and the power supply cable is connected to the machine.

2. Turn the key to the travel position (II).

RECHARGE/OFF/TRAVEL



3. Press the "Start" button and keep it pressed for about 2 seconds until the display turns on.

Once the display is turned on the machine will be in TRAVEL mode and ready to be manoeuvred by using the 4 control levers.

START



4. During movement it is possible to set the "NORMAL" or "FAST" mode using the special selector: The NORMAL mode involves moving at a slower speed compared to the FAST mode.

NORMAL/FAST



The display briefly shows initial E105, then the hour counter is displayed for 5 seconds indicating the total number of work hours in "START" mode, upon machine start-up.

In the event of partially flat batteries when the machine is moving, the system will automatically switch to the "ECONOMY" mode

If the batteries are completely flat, the machine will automatically switch itself off.

The machine's autonomy can be considerably reduced at temperatures below 0 °C.

MESSAGES ON THE DISPLAY WHEN USING THE MACHINE

WHEN USING THE MACHINE									
Operation	Messages	Batt.	Red Led	Wrench	Backlight	BMS R2 outlet	BMS R1 outlet	BMS SWMR Input	
Residual autonomy more than 20%	Run	Off	Off	Off	Off	open	closed	/	
Residual autonomy more than 10% less than 20%	Run	On	Off	Off	Off	open	closed	/	
Residual autonomy less than 10%	Run	On	On	Off	Off	closed	closed	/	
Residual autonomy equal to 0%	Stop	On	On	On	flashing	/	open	/	
In Alarm mode	A XXXX	On	On	On	flashing	/	open	Flashing code	

3.2.2 RECHARGE



Ensure the machine is well ventilated during recharge.

1. Turn the key to the "RECHARGE" position (I).
2. Connect the machine to the electric power supply with the current socket.
3. Press the "START" button for at least 2 seconds.

The display will turn and indicate the recharge status. All movements are inhibited during recharging operations. Very long recharge periods ensure a full recharge without compromising battery operations and duration. Make sure that the cooling fan for the battery charger is working smoothly.

**WARNING**

COMPLETE RECHARGE FORESEES A SUBSEQUENT EQUALISATION PHASE THAT MAY TAKE A FEW HOURS. WE RECOMMEND, WHEN POSSIBLE (E.G. AT NIGHT), PERFORM THIS OPERATION TO INCREASE PERFORMANCE AND TO PROLONG THE BATTERIES' LIFE. HOWEVER, COMPLETE RECHARGING MUST TAKE PLACE WEEKLY OR EVERY 15 EFFECTIVE HOURS OF WORK.

IF IS NOT PERFORMED EQUALIZATION FOR MORE THAN A 31 DAYS OR FOR MORE THAN 15 HOURS OF EFFECTIVE WORK THE DISPLAY SHOWS THE ALARM A2000 BOTH IN CHARGING PHASE AND IN WORK PHASE. THE ALARM DISAPPEAR WHEN THE FULL CHARGE EQUALIZATION IS COMPLETE (SEE PARAGRAPH 1.9).

AS THE BATTERIES' MANAGEMENT SYSTEM AUTOMATICALLY REDUCES CONSUMPTION TO MINIMUM LEVELS, LEAVING THE MACHINE IN CHARGE FOR MANY HOURS DOES NOT CONSUME MUCH ELECTRIC ENERGY.

MESSAGES ON THE DISPLAY WHEN RECHARGING THE MACHINE

IN RECHARGE MODE									
Operation	Messages	Batt.	Red Led	Wrench	Backlight Off	BMS R2 outlet	BMS R1 outlet	Input BMS	
Recharge	REC ON	Off	Off	Off	Off	closed	closed	/	
Equalization stage	EQUI	Off	Off	Off	Off	closed	closed	/	
End of recharge	Run	Off	Off	Off	Off	open	closed	/	
In alarm mode	A XXXX	On	On	On	flashing	open	open	Codificatie knippering	

3.2.3 SWITCHING OFF THE MACHINE

1. PARKED VEHICLE

To fully switch off the machine, turn the key to the OFF position (0).

This means the system is disconnected from the power supply and there will be no absorption from the batteries.

2. EMERGENCY STOP

The machine has an emergency stop button: at any time, regardless of the operating mode, it is possible to press the emergency button to disconnect the batteries or the power supply from the rest of the system.

If the machine is not used for prolonged periods of time it is recommended to leave the emergency button pressed.

3. SAFETY STOP

In the event of any anomalies related to the battery pack, the batteries' internal management system can automatically switch off the machine to protect the operator from any risks caused by using the machine in anomalous conditions.



3.3 PRE-HEATING THE MACHINE

With any piece of hydraulically operated equipment, it is extremely important that the hydraulic fluid be thoroughly warmed fluid-up before any work is begun.

A warm-up period is time well spent in preventive maintenance. Practice the following warm-up procedure before attempting full load operations.

1. Allow the motor to warm up at low idle for at least 5 minutes.
2. Activate the accessory's cylinder to heat the hydraulic components quicker.

3.4 LIFTING THE MACHINE



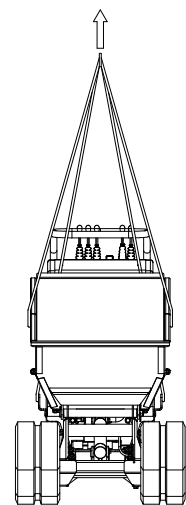
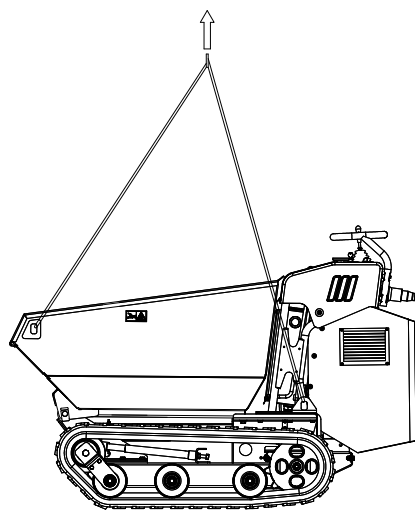
WARNING

- USE PROPER RATED CABLES AND SLINGS FOR LIFTING. LIFTING CABLES SHOULD HAVE SUFFICIENT LENGTH TO PREVENT CONTACT WITH MACHINE.
- POSITION CRANE FOR LEVEL MACHINE LIFT (POINT 5).
- NEVER LIFT THE MACHINE LOADED WITH ANY PERSONNEL.
- USE SIGNS OR SIMILAR TO DELIMIT THE LOAD AREA.
- BE SURE TO USE ARE WIRE ROPES AND OTHER DEVICES WITH A CAPACITY GREATER THAN 4 TONS.

LIFTING PROCEDURE

The machine has 4 anchorage points marked by special labels, two next the driving levers and the other two at the front of the machine.

1. Position the machine at level ground with the accessory in a lowered position and the shovel, if any, raised up high.
2. Stop the motor.
3. Connect the lifting straps to the 4 points using 4 shackles with an adequate capacity.
4. Attach the straps to the hook of the lifting vehicle.
5. Check there are no obstacles or persons around the machine.
6. Once the machine is lifted off the ground, check that the machine is well balanced.



3.5 LOADING AND UNLOADING THE MACHINE



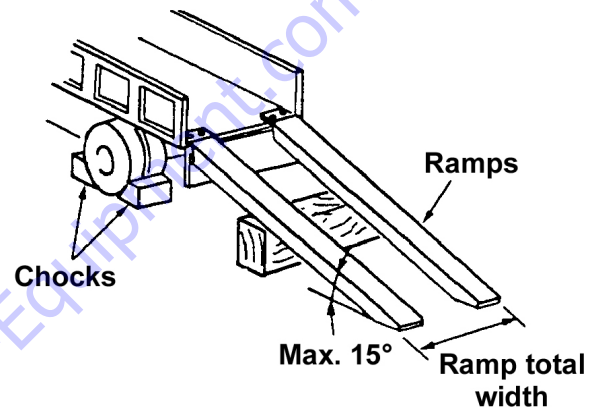
DANGER

- CHOOSE AS FLAT GROUND AS POSSIBLE FOR LOADING THE MACHINE.
- WHEN USING LOADING RAMPS, BE SURE THERE IS ADEQUATE LENGTH, WIDTH, FIRMNESS AND SLOPE.
- TO PREVENT THE MACHINE FROM SLIPPING WHILE LOADING OR SHIFTING TRANSIT, REMOVE ICE, SNOW OR OTHER SLIPPERY MATERIAL FROM THE LOADING RAMPS AND THE TRUCK BED BEFORE LOADING.
- NEVER OPERATE AT FULL SPEED WHEN LOADING OR UNLOADING THE MACHINE ON A TRAILER OR A TRUCK.
- NEVER MAKE A TURN ON A RAMP. TO MAKE A TURN, GET OFF THE MACHINE FROM THE RAMP FIRST.

MACHINE LOADING ONTO A TRUCK

To load and unload the machine **ALWAYS** use the ramps and carefully follow the procedure given below.

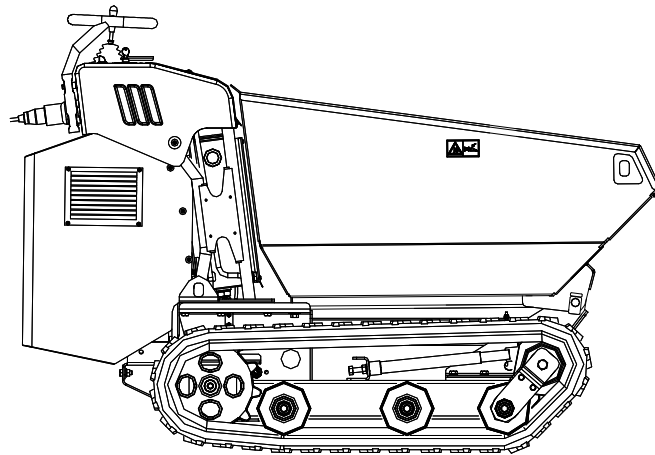
1. Block the lorry wheels before loading the machine.
2. Lower the sides of the lorry.
3. Attach the ramps safely to the lorry. Maintain the slope of loading ramps within 15 degrees. Position the machine so that it can be run straight on the loading ramps.
4. Position the machine with the front facing the means of transport with the tracks aligned with the loading ramps. Never operate control levers other than the travel lever while machine is on the lading ramps.
5. Maintain the machine balance point while travelling over the loading ramp joint areas.
6. Make sure the ramps are stable.



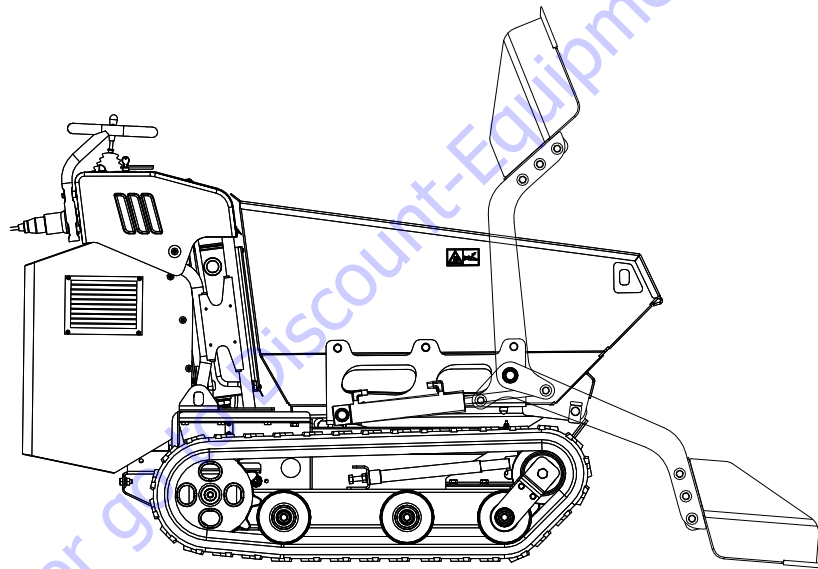
BLOCKING FOR TRANSPORT

1. Stop the motor.
2. Engage the parking brake.
3. Block the tracks and secure the machine with tie-downs.

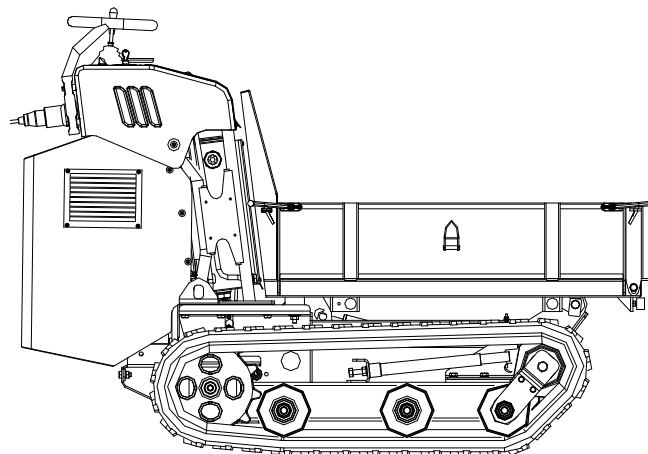
3.6 SET-UPS



LOAD BODY



LOAD BODY WITH SHOVEL



TRUCK BED

3.7 USE AND ACCESSORIES

3.7.1 LOAD BODY

The load body has a capacity of 0.22 m³ and is the best suited accessory to transport debris, soil, sand, gravel, various types of aggregate, conglomerates, concrete, lime and any material that may be used on the building site. The load body can be combined with the self-loading shovel. Once the load body has been filled, transfer the machine to the place where the material needs to be unloaded and carry out necessary manoeuvres as illustrated in 2.1.2.

If the machine is fitted with a self-loading shovel, raise the shovel as high as possible and make sure it does not interfere with any structure at the time of unloading.

3.7.2 SELF-LOADING SHOVEL



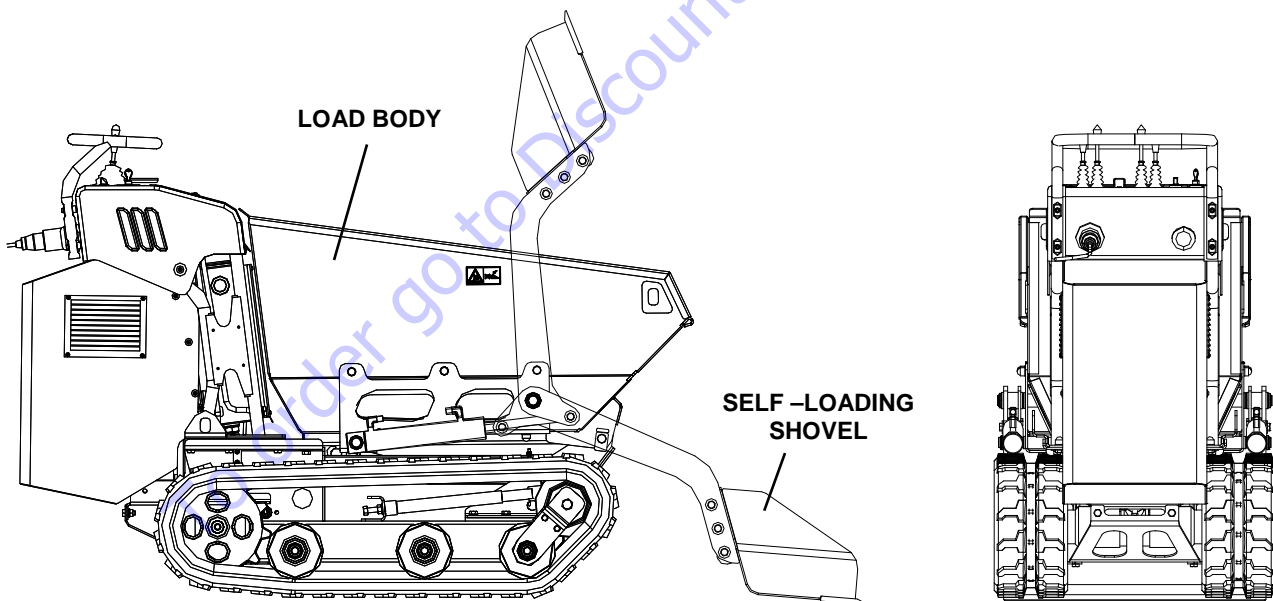
WARNING

CLEAR THE WORKING AREA OF PEOPLE BEFORE ACTIVATING THE SHOVEL.

The self-loading machines, attached directly to the load body, can be used to load debris or excavated material.

It is strictly **FORBIDDEN TO USE IT FOR EXCAVATING PURPOSES**. To load material:

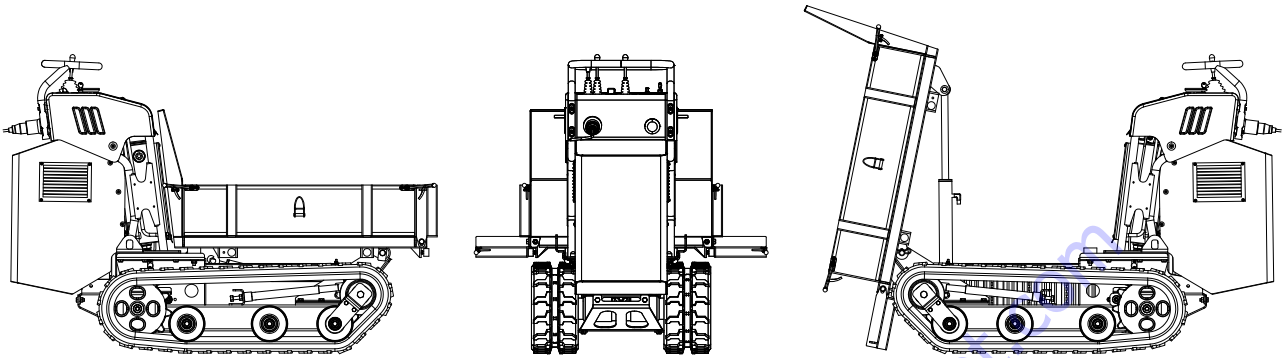
- Bring the shovel to the ground.
- Slowly move the machine closer to the heap, until it is full.
- Lift the shovel, slowing down the speed when the material starts to be unloaded in order to prevent the material from overflowing from the accessory and in the driving seat.



3.7.3 TRUCK BED

The truck bed is a multi-purpose accessory, suited to various transport uses in the building, agricultural, plant and civil sectors. The special structure of the sides in the "fully open" configuration allows to obtain a surface suited to transport large-sized slabs and panels.

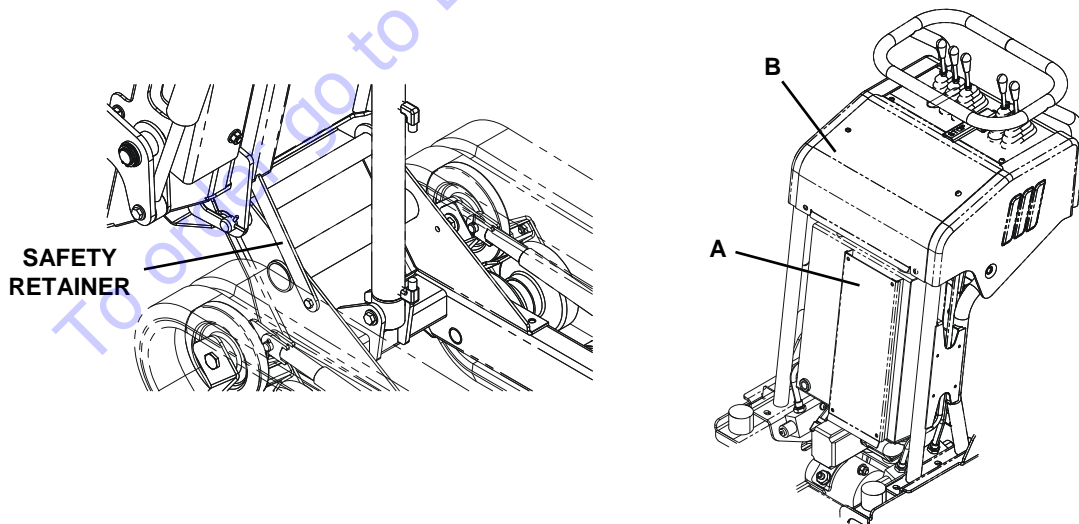
A spacious compartment located under the load surface is used to transport accessories such as belts, ropes and various tools.



3.7.4 ASSEMBLY INSTRUCTIONS FOR THE SELF-LOADING SHOVEL (OPTIONAL)

The assembly of the self-loading shovel is an operations that must be conducted in a fully equipped workshop by expert personnel with the necessary tools and equipment. Incorrect assembly could cause injury to the operator or damage to the machine.

- 1 Park the machine on the level and clean ground.
- 2 If the machine is already in use, thoroughly clean the load body and all the parts involved in the assembly of the new accessory.
- 3 Start the motor, lift the load body, engage the "safety retainer", stop the motor.
- 4 Remove the (A) and (B) protective covers of the hydraulic system.



- 5 Remove the screws (1) and nuts (2) located on the sides of the load body and apply the "lift and right support plates of the shovel's boom" (C-D) positioned on the side of the load body by blocking the screws and nuts removed earlier (lock them tightly).

Warning! Position the convex screw heads inside the load body.

- 6 Insert the "right and left booms of the shovel" (E-F) in the designated pins on the plates. Insert the d. 25 plain washer (3) and block with the relevant expansion ring (4).

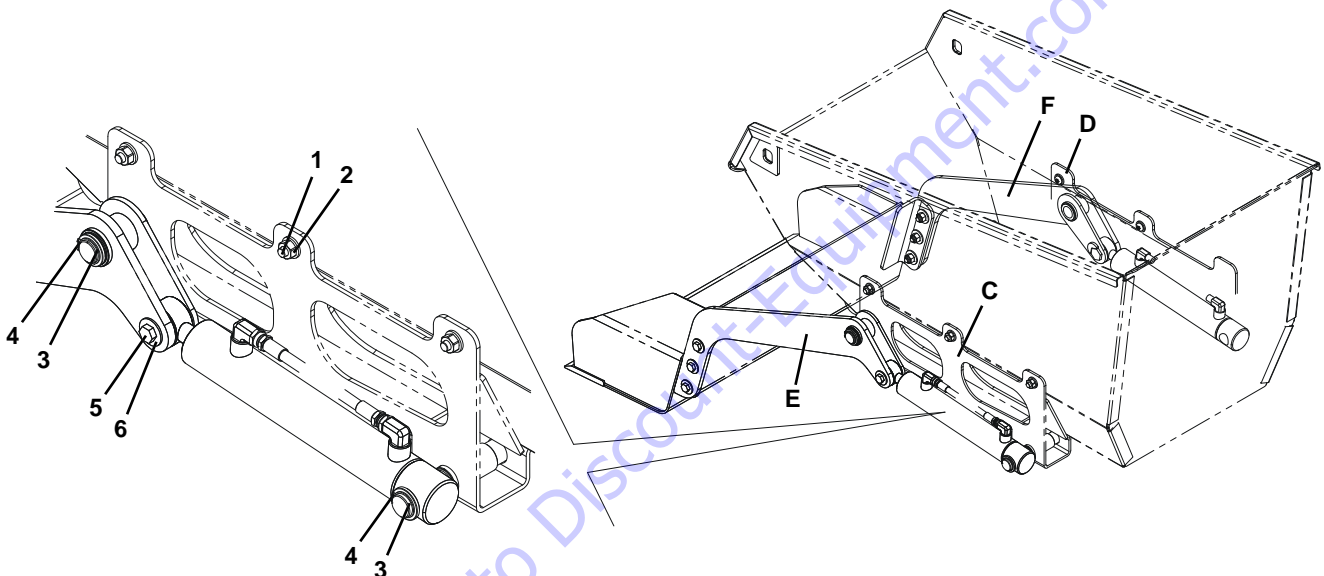
- 7 Insert the cylinders of the shovel's boom attaching the cap to the designated pins on the plates. Insert the d. 25 plain washer (3) and block with the relevant expansion ring (4).

Warning! Make sure that the fittings to connect the hydraulic pipes are positioned upwards.

- 8 Lock the cylinder heads to the shovel's booms with the designated pins. Fix the pins with the M10x25 screw (5) and the d 10 plain washer (6).

Warning! Insert the pins into the side fitted with a locking plate so that, once it is positioned, the head of the pin remains locked into place.

- 9 Bring the shovel to the ground. Fix the shovel to the booms using the M10x40 screws with the designated nuts and washers. Check the planarity of the blade and that the booms are properly coupled. Lock by tightening the screws fully home.



- 10 Remove the caps on the distributor after cleaning surrounding surfaces from any dirt.

- 11 Position the flexible pipes according to the sequence indicated in the diagram. Extend the pipes up to the shovel cylinders, making sure they do not overlap or get tangled. Lock the supplied collars into position.

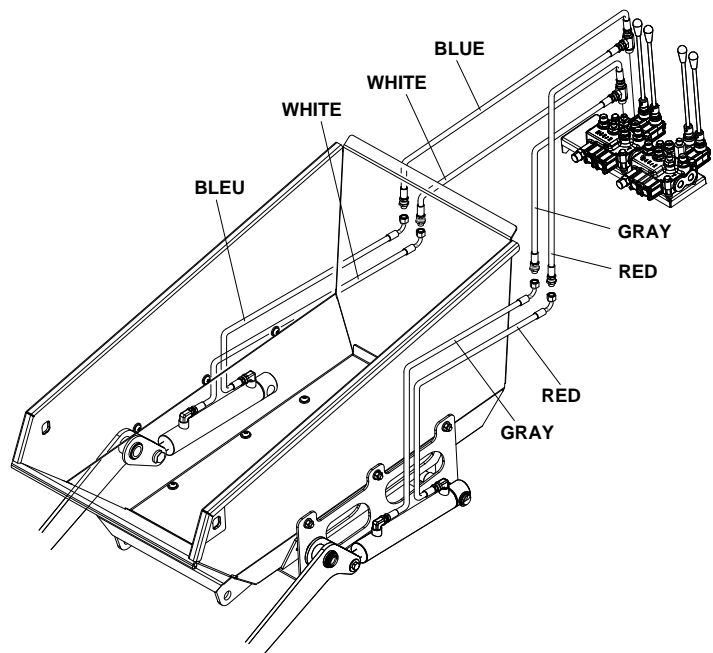
Warning! Make sure the protective gasket is in position in the side where the cylinders are coupled. Thoroughly inspect the correct assembly sequence.

- 12 Once the correct execution of the assembly has been verified, fully tighten all the fittings, pipes and locking collars.

- 13 Start the motor, remove the "safety retainer" and lower the load body, gently activate the shovel's hydraulic circuit, checking it is operating properly according to the operation conducted (point 2.1.3). If it is operating correctly, pressurise the circuit bringing the cylinders to end of travel.

- 14 Check there are no leaks in the couplings. Clean all surfaces from any traces of oil.

- 15 Restore the (A) and (B) protective covers of the hydraulic system to their original position.



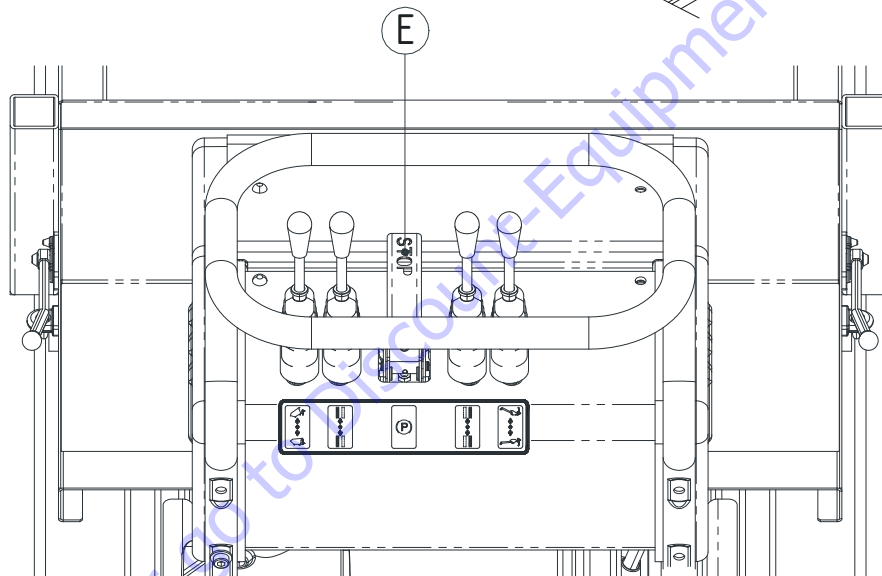
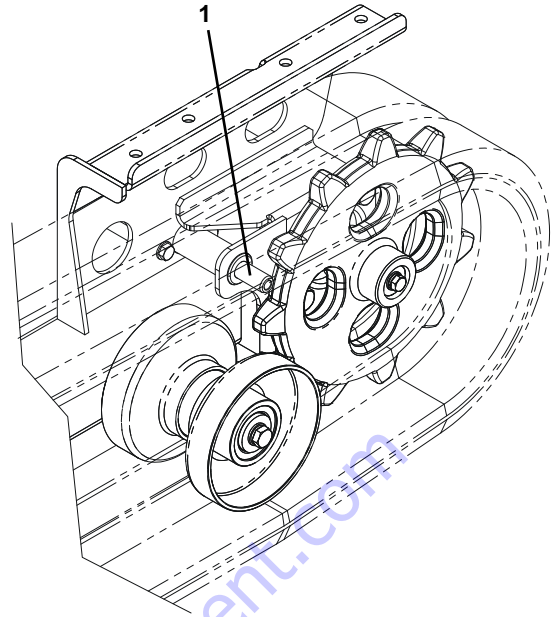
The machine is ready for use again.

3.7.5 PARKING BRAKE

The parking brake (1) is positioned on the frame of the left track and when it is activated it engages the teeth of the driving wheel.

Activation or deactivation is performed manually by means of the lever (E) positioned on the control console at the centre of the traction levers.

When the brake is engaged, the lever, as it is in a vertical position, prevents the operator from using traction levers correctly, forcing the operator to release the brake itself before moving the machine.



3.8 REPLACING THE ACCESSORY

3.8.1 RELEASING AND REMOVING THE ACCESSORIES

- 1) Position the machine on flat ground.
- 2) Engage the parking brake.
- 3) Lift the accessory by bringing the cylinder to end of travel. Carry out the opposite manoeuvre by bringing the cylinder back by 10-20 mm.
- 4) Stop the motor.
- 5) Adequate tools should be used for disassembly (mallet, spanners, etc).
- 6) using adequate lifting equipment with two tie-rods (minimum capacity 500kg), couple the accessory with the hooks in the designated holes (A) and slightly tighten the tie-rods.
- 7) Release the lifting cylinder by removing the pin (B) from its seat after releasing it from the retainer screw (1) and relative washers.

Warning! Hold the cylinder, as otherwise it may overturn. This would damage it or cause injury to yourself.

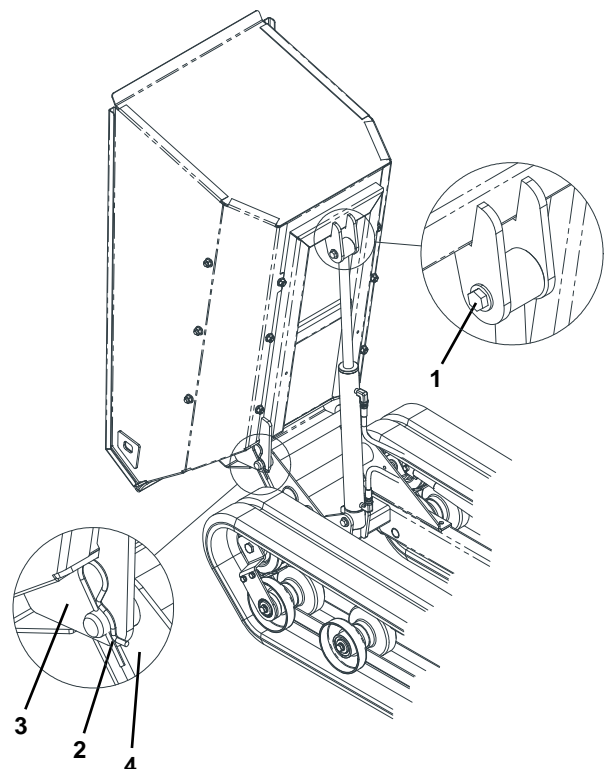
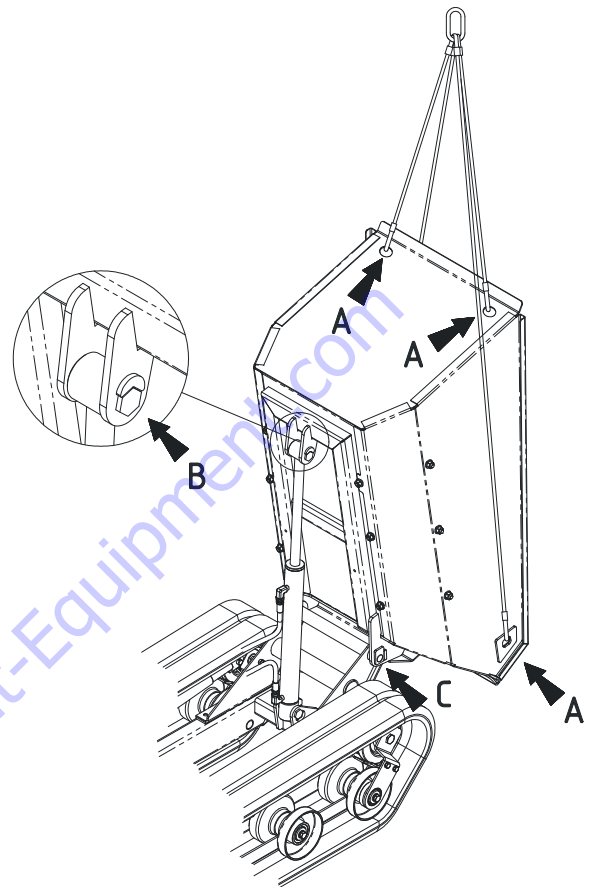
- 8) Lift the accessory by tightening the tie-rods once again.
- 9) Remove the pin (C) after removing the split pin (2).
- 10) Bring the accessory that has been released from its support to the ground and position it on the designated pallet.
- 11) Attach the new accessory using the two rear holes with the lifting equipment with two tie-rods.

Warning! Only use original accessories provided by KATO IMER and manufactured for the machine you are using.

- 12) Lift and move the accessories until the holes of the two tips (3) match the holes of the supporting bushing (4).

Warning! Before fixing the components, clean the holes and pin from any dirt or traces of oxidation.

- 13) Slightly lubricate the pin with grease or oil.
- 14) Position the pin (C), make sure it is placed on the side fitted with the anti-rotation plate.
- 15) Lock the pin with the split pin (2).
- 16) Slowly lower the accessory by rotating it towards the control console.
- 17) Move the lifting cylinder so that the fixing hole matches with the holes of the accessory's connections.
- 18) Insert the fixing pin (B) and lock it with the retainer screw (1) and relative washers.



- 19) Check all operations have been carried out correctly and check that each fixing element is in position and well attached.
- 20) Release the lifting equipment.
- 21) Start up the motor.
- 22) Slowly lower the accessory making sure there is no anomalous behaviour.

The machine is ready for use again.

Proceed to clean, check the structure, lubricate and store the disassembled accessory. If any damage to its structure is detected, proceed to repair it immediately. Following these simple instructions allows to maintain the accessories in conditions suited to use in compliance with safety standards.

To assemble a new accessory follow the reverse procedure.



CAUTION

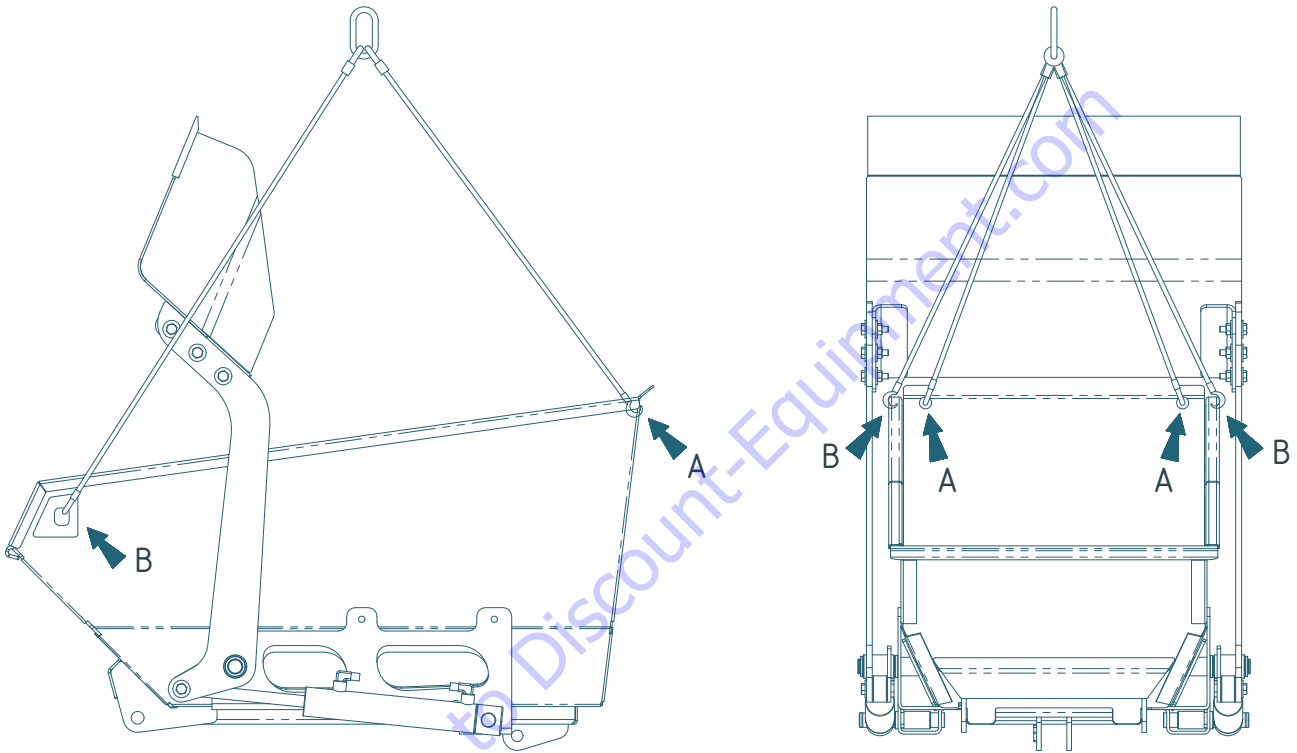
THE LOAD BODY AND TRUCK BED ACCESSORIES MAY BE REMOVED MANUALLY BY TWO PEOPLE.

To order go to Discount-Equipment.com

3.8.2 INSTRUCTIONS TO LIFT THE LOAD BODY WITH SHOVEL

USE STEEL CABLES WITH CAPACITY OF AT LEAST 500Kg.

**TO LIFT THE LOAD BODY
WITH SHOVEL FASTEN THE
LIFTING CABLES IN THE "A"
AND "B" POINTS.**



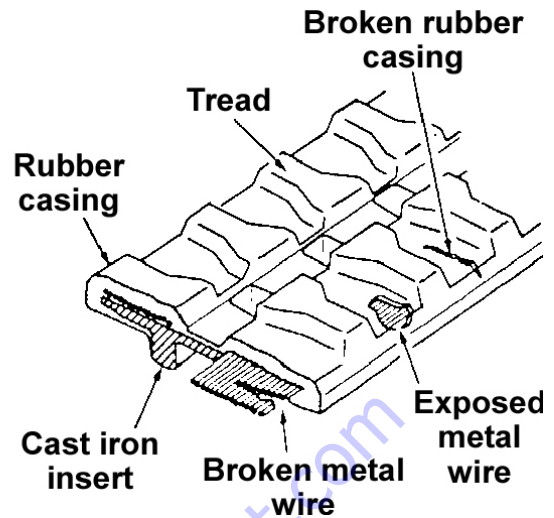
3.9 PRECAUTION ON USE OF RUBBER TRACK SHOE

STRUCTURE OF RUBBER TRACK SHOE



WARNING

IF A CRACK REACHES THE STEEL CORD, MAY BE RUSTED AND CUT OFF BY MOISTURE. WHEN ANY CRACK IS DETECTED, REPAIR IT IMMEDIATELY WITH VULCANIZER.



PRECAUTION ON USE

- Adjust the track often enough to keep proper tension:
 - Insufficient tension slips off the rubber track shoe and wears out the sprocket and iron core extremely;
 - Excessive tension increases travel resistance, which prevents proper travel force and speed. It also causes damages and extreme wear at undercarriage as well as over extension of the rubber track shoe.
- To prevent damages of the rubber track shoe, avoid the following in travel as much as possible:
 - Pointed rocks or quarry;
 - Steel rods or scraps;
 - Steel board or cornered objects of concrete;
 - Heat source such as acre;
 - Travel in contact with concrete path or wall.
- Wipe off spilt fuel, hydraulic oil, or grease on the rubber track shoe.
- Avoid sudden spot turns or pivot turns.
- Do not use for long (3 months or more). Store it to avoid direct sunlight or rain.
- Owing to the rubber's features, use the machine with temperatures between -25°C and $+55^{\circ}\text{C}$.

3.10 PARKING THE MACHINE

At the end of a day's work, following steps should be observed as the established machine shut-down procedure:

PARKING THE MACHINE

Park on a level surface, if necessary to park on a grade, block the tracks securely:

- Move motor throttle lever forward to reduce the motor speed.
- Release the travel levers to stop the machine.
- Lower the loading shovel (if any) to the ground and apply slight down pressure.
- Engage the parking brake.
- Stop the motor.
- Press the emergency button.

IN FREEZING CONDITIONS

If freezing temperature are expected, each crawler frame should be cleaned of mud and dirt and the machine parked on wood planks.

4	MAINTENANCE	MINIDUMPER CARRY 105EP
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4 MAINTENANCE

4.1 MAINTENANCE INTERVALS

Tighten point	Item
When required	
Tracks	Check an adjust voltage
Daily check (8 Service hours)	
Hydraulic tank	Check the hydraulic oil level
Machine inspection	Check general condition
Every 50 Service hours (First perform previous service hour items)	
Cable inspection	Inspection of the integrity of the cables
Every 200 Service hours (First perform previous service hour items)	
Cable inspection	Inspection of the integrity of the cables
Protection conductors	Inspect the continuity of the earth cables
Guard for live parts	Check the state of the guards for the live parts (casings, plastic, etc.)
Emergency button	Make sure that the emergency button is working correctly
Motor	(*) Maintenance in the workshop: inspection and replacement of the brushes, if necessary
Batteries	(*) Maintenance in the workshop: Battery inspection
Batteries	(*) Data download to check battery status
Hydraulic system	Filter replacement
Every 600 Service hours (First perform previous service hour items)	
Hydraulic oil	Change oil
The proposed intervals are related to the type of area the machine is used in. Very dusty areas require more frequent maintenance	
WARNING: activities marked with a (*) involve the removal of protections and should be exclusively conducted by competent and qualified personnel	

4.2 TABLE OF RECOMMENDED LUBRICANTS

Locations	Refill capacities (approximate)	Lubricant features
HYDRAULIC OIL	Total amount 12 litres Tank capacity 10 litres	LONG LIFE HYDRAULIC OIL ISO N° 46

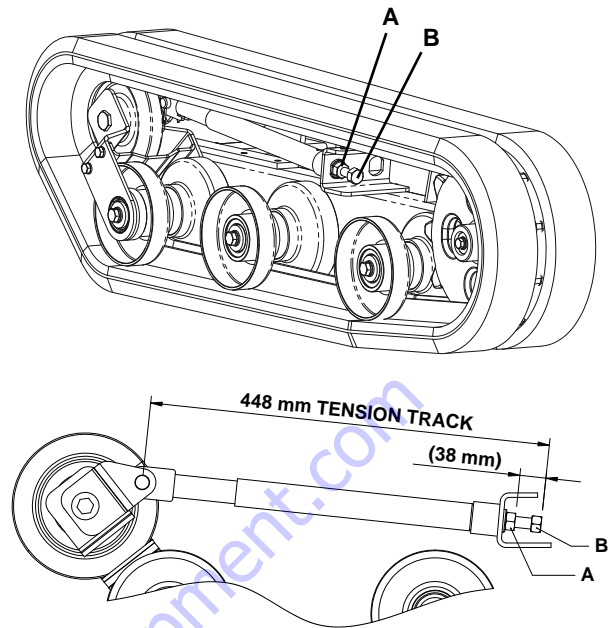
4.3 WHEN REQUIRED MAINTENANCE AND CHECKS

4.3.1 CHECKING TRACK TENSION

When the tracks show apparent signs of loosening or the teeth of the traction wheels are no longer engaged, it is necessary to check their tensioning.

4.3.2 ADJUSTING TRACK TENSION

1. Loosen the A counter-nut by turning it anti-clockwise, tighten the B screw until it reaches the measurement indicated in the figure between the head of the B screw and the pin of the track roller.
2. Tension both tracks of the machine.
3. To tension both sides equally, move the minidumper forwards and backwards and check again that both sides are equally tensioned.
4. To complete the operation, tighten the B counter-nut.
5. Finally, check that both tracks are tensioned equally.



4.3.3 RUBBER TRACK SHOE MAINTENANCE



WARNING

- RUBBER TRACK SHOE SHOULD BE REPAIRED OR REPLACED UNDER THE NEXT CONDITIONS.
- IF IS NECESSARY TO REPAIR OR REPLACE IT, CONSULT YOUR KATO IMER DEALER.

HEIGHT OF LUGS

The rubber track shoes can be used even if they are worn. However, if excessively worn, rubber track shoes are likely to be slippery and more travel force is required. If the remaining lug is equal to or less than 5 mm high, replace it with KATO IMER general spare parts.

EXPOSURE OF STEEL CORDS

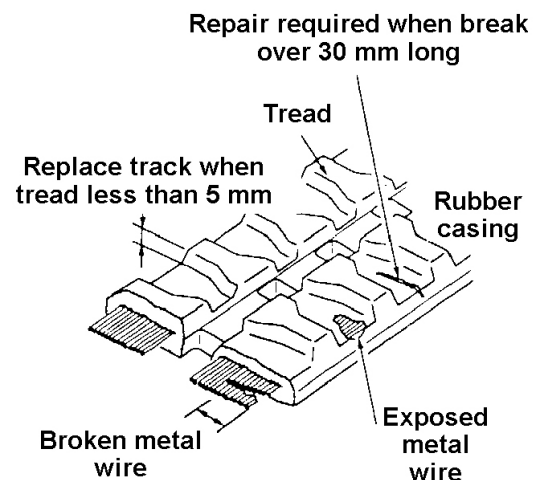
If steel cord is exposed because of weary rubber or damage, replace it with KATO IMER general spare parts.

CUTTING THE STEEL CORDS OF THE RUBBER TRACK SHOES

When break of steel cord is detected, replace it immediately. If you leave it as it is, the rubber track shoe can be break without expectation, which causes a serious accident.

CRACK OF COVERING RUBBER

If a crack is 30 mm or more long and 8 mm or more deep is detected, repair the cover immediately. If Steel cord appears even if a crack is small, repair it immediately. Otherwise, water may penetrate inside the crack, which may rust steel cords or break the track shoe.



4.4 DAILY MAINTENANCE AND CHECKS

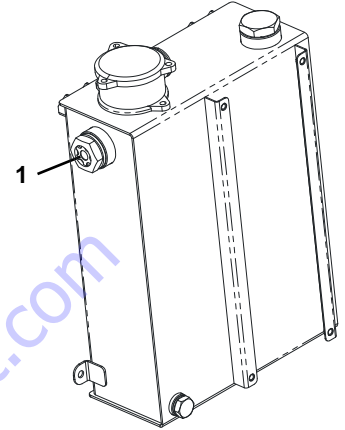
4.4.1 HYDRAULIC OIL LEVEL



CAUTION

- ALWAYS CLEAN AROUND FILL PLUG BEFORE REMOVING.
- DO NOT OVER FILL.
- NEVER USE THE MACHINE MOTOR WHEN OIL LEVEL IS ABOVE THE MAXIMUM OR MINIMUM MARKS.

1. Place the machine on flat ground with the accessory and, if present, self-loading shovel cylinders fully retracted.
2. Check that the level on the indicator (1) is at the maximum.
3. If necessary, add fluid (see paragraph "REPLACING THE HYDRAULIC OIL").



4.4.2 INSPECTING THE MACHINE

1. Check that all bolts are fully tightened down. Tighten down all loose fasteners and replace damaged ones.
2. Check for breaks where the cylinders are mounted. Repair damaged parts.
3. Check the cylinder mounts for breakage and wear. Replace/repair as necessary.
4. Check the hydraulic circuit for leaks. Check the hydraulic fluid reservoir, cylinder gaskets, lines, caps, unions and accessories. Repair any leaks.
5. Check the drive motor seals. Check them for oil leaks.
6. Thoroughly clean the engine. Check the integrity of the power supply cable.
7. After every use, at the end of the day, thoroughly clean all accessories (load body, truck bed, self-loading shovel, etc.).

4.5 200 HOURS MAINTENANCE AND CHECKS

4.5.1 INSPECTION AND REPLACEMENT OF THE BRUSHES



WARNING

- BEFORE REMOVING THE PROTECTIONS DISCONNECT THE MACHINE FROM THE ELECTRICAL POWER SUPPLY.
- THE OPERATOR MAY COME INTO CONTACT WITH LIVE PARTS (48V). TAKE THE NECESSARY PRECAUTIONS.

BRUSHES INSPECTION

Along with the running of the brushes, one needs to check that their length can ensure they operate properly. In any case it is recommended to replace the brushes once every 625 service hours.

INSPECTION OF THE STATUS OF THE MOTOR:

Leaving it in its housing, remove the clamp from the support on the collector side and blow with compressed air in order to remove carbon dust deposited on the internal surface of the support on the brushes' side. Inspect the collector, the length of the brushes and that they run properly in their housings.

Size	Maximum length	Minimum length
13 x 9	25 mm	13.5 mm
16 x 9	20 mm	7 mm
20 x 10	22 mm	8 mm

BATTERY INSPECTION

Check the positioning and the contacts. To download the data contact KATO IMER's authorised personnel.

4.5.2 REPLACE HYDRAULIC OIL FILTER

The filter is localised under the oil tank.

1. Relieve the internal pressure from the hydraulic tank by loosening oil fill plug (1).
2. Clean the area to keep dirt out of the filter base (2).
3. Position a suitable container under the filter to collect any oil leaks that may occur during the replacement of the filtering cartridge.

Note: always dispose of used oil and filters as established by local regulations.

4. Remove the screws (3), the cover (4) and pull out the filter cartridge (5).

Note: the filter cartridge must be replaced. A used cartridge cannot be used again.

5. Insert the new cartridge (5), manually press into position and then apply the cover (4) and place it into position using the screws (3).
6. Start and run the motor to fill the filter.
7. Pressurise the hydraulic tank: After extending all cylinders with the oil fill cap (1) open, close the cap.
8. Inspect for leaks on the filter cover (4).

4.6 600 HOURS MAINTENANCE AND CHECKS (or 1 YEAR)

4.6.1 REPLACING THE HYDRAULIC OIL



CAUTION

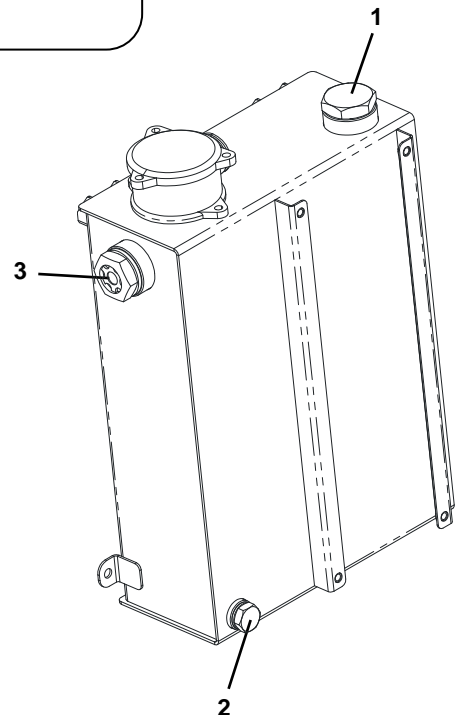
- HOT OIL AND COMPONENTS CAN CAUSE PERSONAL INJURY.
- AT OPERATING TEMPERATURE. THE HYDRAULIC TANK IS HOT AND CAN BE UNDER PRESSURE.
- TO RELIEVE THE PRESSURE FROM THE HYDRAULIC TANK, LOOSEN THE OIL FILL PLUG (1) ON THE HYDRAULIC TANK.
- RELIEVE THE TANK PRESSURE WITH MOTOR OFF BY REMOVING FILL PLUG SLOWLY TO PREVENT BURNS FROM HOT OIL.

1. Position the machine on flat ground with the cylinders of the accessory-holder and, if any, the loading shovel fully open.
2. Insert the safety catch against any accidental lowering and turn off the motor.
3. Clean the area to keep dirt outside the tank.
4. Relieve the internal pressure from the hydraulic tank by loosening the fill plug (1).

5. Remove the oil drain plug (2). Drain oil into a container.

NOTE: Always dispose of used oil as established by local regulation.

6. Clean the inside of the tank with the clean oil.
7. Clean and install the drain plug (2).
8. Fill the hydraulic tank with oil. See Recommended lubricant table.
9. Start and operate the motor at idling speed for 5 minutes.
10. Operate the control levers to allow the hydraulic oil to circulate through all hydraulic circuits.
11. Restore the machine to the original conditions and turn off the motor.
12. Check the amount of oil in the tank on the level indicator (3) and add oil, if necessary, to maintain optimal levels.
13. Pressurise the hydraulic oil tank with the cylinders of the accessory-holder and, if any, the loading shovel fully open. Remove the fill plug (1) and then install fill plug again.
14. Place the accessory on the frame, lower the loading shovel on the ground and stop the motor.



4.7 PARTICULAR USER CONDITIONS

Special problems in maintenance and operation are caused by unusual conditions such as extremes in heat, cold and humidity, high altitude, salt water, and dusty or sandy work sites. When operating under such conditions, special precautions must be taken to prevent machine damage, minimise wear, and avoid component deterioration.

Extreme Cold.

1. the wound field electric motor cannot work at temperatures lower than -10°C.
2. Special attention must be given to the hydraulic oil during very cold weather.

**WARNING**

BEFORE PERFORMING ANY JOB WITH THE MACHINE, HEAT THE OIL AS INDICATED IN PARAGRAPH 1.1.

3. At the end of the work period or if the machine should remain at a standstill for a long time, in order to prevent the formation of ice on the ground, park the machine on a dry and compact surface such as: wood, cement, asphalt or similar.

EXTREME HEAT

Like extreme cold, extreme heat requires that precautions be taken with respect to the battery and lubrication.

1. High temperatures necessitate the use of lubricants which are both more viscous and which resist deterioration at higher operating temperatures. Refer to the Lubrication Section and lubricate the machine using the lubricants recommended for the expected temperatures.
2. Keep air intake and exhaust openings clear of leaves, paper or other foreign matter which may restrict air flow.
3. Keep the motor clean of dirt, grease and other substances which inhibit heat dissipation.
4. Stop the motor if the machine is not being used.

SANDY OR DUSTY WORK SITES.

The presence of large amounts of sand or dust at the work site can contribute to accelerated component wear. Indeed, the particles that deposit on moving parts act as abrasives. This problem can be alleviated by increasing the schedule of lubrication and by servicing breathers and fillers at more frequent intervals.

1. Make sure that sand or dust cannot enter the hydraulic circuit, therefore keep the tank well closed and check the filter.
2. Before greasing with manual nipple, clean all traces of residual grease. Pump generous amounts of grease into all lubrication points, using the fresh grease to pump out old.
3. When working on sandy ground, a suitable support may be required for the crawlers. Make sure that the crawlers do not sink into the sand. To ensure support on the ground, it may be necessary to reverse and fill the soft area with more compact soil.

The frequency of maintenance interventions depend on the effective condition of use and can only be established on the basis of observations made on site, in relation to results of controls from which it can be seen when the accumulation of dust in the filters or intake devices has become excessive.

HIGH HUMIDITY OR SALTWATER.

In some locations, such as coastal areas, the machine may be exposed to the deteriorating effects of salt, moisture, or both. To protect exposed metallic surfaces, wiring, paint and other items, keep them dry and well lubricated where salt or high humidity are encountered.

1. Dry and paint exposed surfaces after rust and corrosion have been removed.
2. Where paint may not be applied, such as on polished or machined surfaces. coat the area with grease or lubricant to repel water.
3. Keep bearings and their surrounding surfaces well lubricated to prevent the entry of water.
4. Hose down the machine periodically when working in saltwater. If necessary, use an oil soaked cloth to clean moving parts.
5. Do not operate with track shoes immersed in water or mud. If the machine exceeds this limit, disassemble, clean and lubricate the lower.

4.8 LONG STORAGE**WARNING**

CONDUCT WORK TO STORE THE MOTOR BY FOLLOWING THE INSTRUCTIONS REPORTED IN THE DESIGNATED MANUALS.

IF YOU HAVE TO OPERATE THE MACHINE INDOORS TO PREVENT RUST AND GAS POISONING, KEEP GOOD VENTILATION BY OPENING THE WINDOW OR THE ENTRANCE.

To store the machine from long term, follow the next procedures:

- Clean parts of the machine and store indoors. If you have to place the machine outdoors, choose a flat place and cover the machine.
- Apply grease on the exposed part of the hydraulic cylinder rods.

During storage, operate the machine once a month to maintain films of oil at the lubrication section. Recharge the batteries at least once a month to protect them from damage, leaving the machine connected to the electrical power supply until it is fully equalised. The word FINISH will appear on the screen. Ensure the machine is well ventilated during recharge and avoid covering it.

After storage:

- Wipe away grease on the hydraulic cylinder rods.
- inspect the filling level of the oil tank.

5 PROBLEMS AND SOLUTIONS

5.1 PROBLEMS AND SOLUTIONS TABLE

Detect the occurrence of anything unusual in its early stages by well getting hold of the normal performance and condition of the machine while at daily operation.

When detecting anything unusual, investigate the cause, and make the repair.

When keeping the operation continue by neglecting anything unusual, it is in danger of relating with further big trouble.

SYMPTOM	PROBABLE CAUSE	REMEDY
Operating lever is felt hard or does not return automatically.	<ul style="list-style-type: none"> Control valve damaged. 	<ul style="list-style-type: none"> Repair or replace.
No movement is possible or no power.	<ul style="list-style-type: none"> Low hydraulic oil. Hydraulic oil filter clogged. Pump or coupling damaged. Main relief valve pressure too low. Control valve damaged. 	<ul style="list-style-type: none"> Replenish hydraulic oil. Conduct maintenance of the oil filter. Repair or replace. Repair or replace. Repair or replace.
Travel of left, right, or both sides are inoperable.	<ul style="list-style-type: none"> Clogging foreign matter such as stone. Bad functioning of the traction motor. 	<ul style="list-style-type: none"> Remove foreign matter. Repair or replace.
Straight travel defective.	<ul style="list-style-type: none"> Clogging foreign matter. Shoe tension unequal. Defective pump. Inefficient travel levers. Defective traction motor. 	<ul style="list-style-type: none"> Remove foreign matter. Adjust to properly tension on both sides. Repair or replace. Repair or replace. Repair or replace.
Defective lifting force of the bucket.	<ul style="list-style-type: none"> Low hydraulic oil. Main relief valve pressure too low. Control valve damaged. Internal leakage of hydraulic cylinder. 	<ul style="list-style-type: none"> Replenish hydraulic oil. Repair or replace. Repair or replace. Repair or replace.

The electrical power supply is fitted with control and diagnostics circuits: any faults are marked on the display with an error code. Please use the table following to interpret the error codes:

SIGN	PROBABLE CAUSE	REMEDY
A-2083	EXCESSIVELY HIGH TEMP (AT START-UP).	Turn off the machine, let it cool and try again.
A-2055	EXCESSIVELY HIGH TEMP IN ONE OR MORE CELLS (MACHINE IN OPERATION).	Turn off the machine, let it cool and try again.
A-2058	EXCESSIVELY HIGH TEMP IN THE BMS (MACHINE IN OPERATION).	Turn off the machine, let it cool and try again.
A-2018	EXCESSIVELY HIGH TEMP IN ONE OR MORE CELLS (MACHINE IN RECHARGE MODE).	Turn off the machine, let it cool and try again.
A-2023	EXCESSIVELY HIGH TEMP IN THE BMS (MACHINE IN RECHARGE MODE).	Turn off the machine, let it cool and try again.
A-2244	EXCESSIVELY LOW NETWORK VOLTAGE.	Check the network voltage.
A-2248	INTERNAL TEMP OF THE BATTERY CHARGER EXCESSIVELY HIGH.	Turn off the machine, let it cool and try again.
A-2253	EXCESSIVELY HIGH NETWORK VOLTAGE.	Check the network voltage.
A-2000	EQUALIZATION IS REQUIRED.	Connect the machine in charge until the equalization end (The display shows the message FINISH).

For all the other alarms, contact the support service.

5.2 SPARE PARTS



WARNING

- REPLACE WORN OR DAMAGED PARTS WITH ORIGINAL KATO IMER SPARE PARTS.
- USING NON-ORIGINAL SPARE PARTS COULD CAUSE INJURY TO THE OPERATOR OR DAMAGE TO THE MACHINE.
- KATO IMER DECLINES ALL LIABILITY FOR ANY DAMAGE CAUSE BY NON-ORIGINAL PARTS THAT HAVE NOT BE EXPLICITLY APPROVED.



WARNING

- IT IS FORBIDDEN TO MAKE CHANGES OF ANY SORT TO THE STRUCTURE AND THE PLANT DESIGN OF THE MACHINE BECAUSE THIS MAY COMPROMISE ITS SAFE USE.

6 HYDRAULIC SYSTEM DIAGRAM

6.1 TECHNICAL DATA

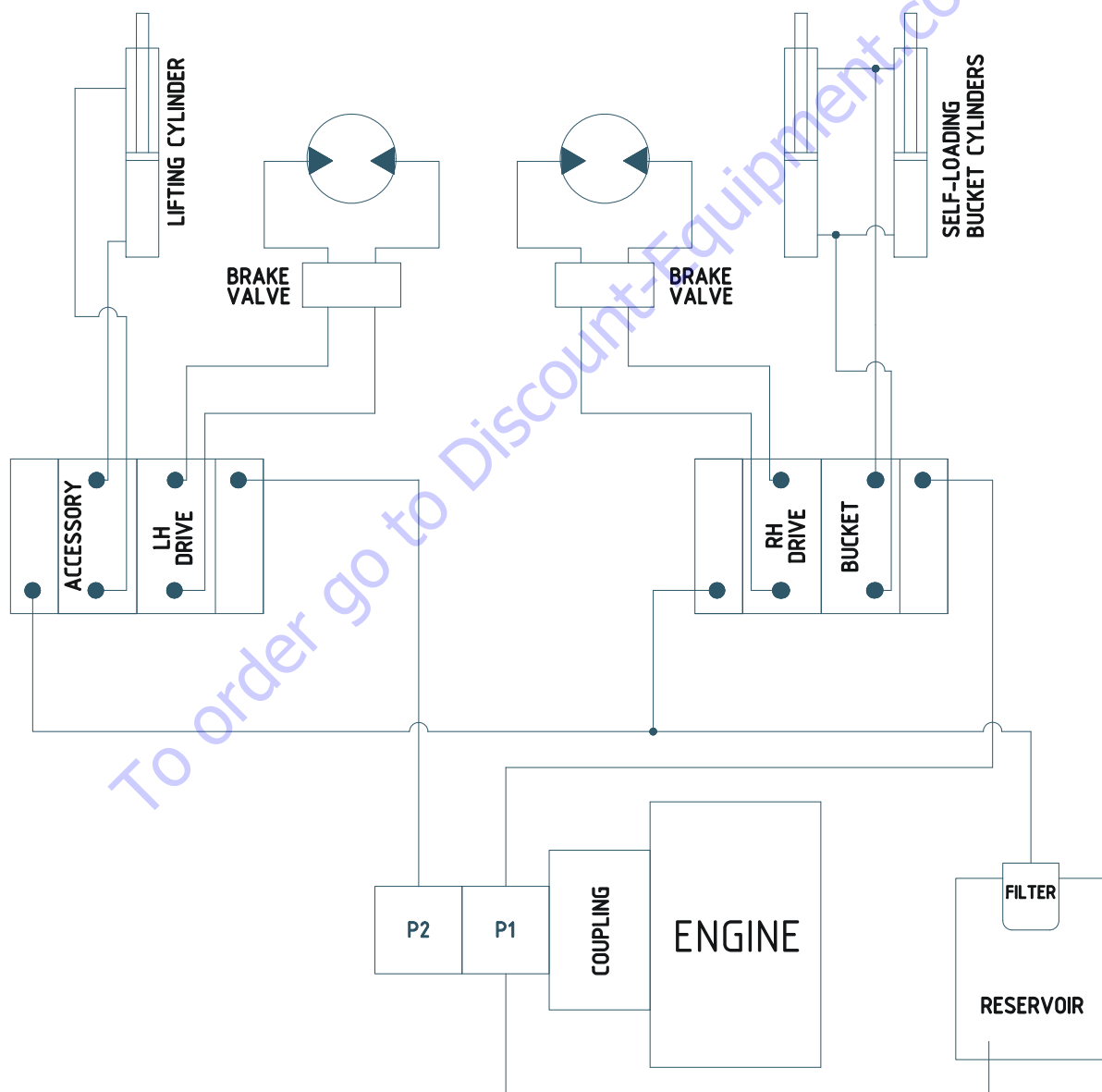
REF.	DESCRIPTION	PRESSURE	
		Mpa	Kgf/cm ²
MR1	Main relief valve P1 pump	13,7	140

Tank level capacity 10 litres.
System level capacity 12 litres.
P1-P2 pump flow rate: 2x10 litres/min.

6.2 HYDRAULIC SYSTEM LAYOUT

The 2 distributors with 2 elements are used:

- In the standard version, fixed crawler and with load body or truck bed with the possibility of fitting a loading shovel or other accessories.



7 TECHNICAL SPECIFICATIONS

7.1 GENERAL SPECIFICATIONS

BASE MACHINE PERFORMANCE

Travel speed	km/h	2,0
Gradeability	% (° Incl.)	36% (20°)
Gradeability with load	% (° Incl.)	20% (11°)
Capacity	Kg	400
Operating temperature range	°C	-10 / +50
Charge battery temperature range	°C	0 / +30
Autonomy	h	2,5
Full recharging time	h	6



ATTENZIONE

A FULL RE-CHARGE INCLUDES AN ADDITIONAL EQUALISATION PHASE THAT CAN REQUIRE A FEW HOURS. WHEN POSSIBLE (OVER NIGHT, FOR EXAMPLE) IT IS ADVISABLE TO CARRY OUT THIS OPERATION, WHICH EXTENDS THE LIFE OF THE BATTERY.

WEIGHT

Machine weight	Kg
Base	325
Load body/ Load body with loading shovel	50 / 105
Truck bed	50

The **weight of the machine** is determined by the weight of the standard version plus the accessory it is fitted with.

MOTORIZATION

MOTOR	Cima	2.2kW / 3HP	2100 / 2500 rpm
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BATTERY CHARGER

Max power absorbed	kW	2,2
Nominal capacity	A/h	90
Power supply voltage (50-60Hz)	V	230+/-10%
Operating voltage	V	from 33.6 to 48
Nominal voltage	V	39,6

NOISE LEVEL

Sound power level guaranteed	LwA	84 dB
Noise emission at the operator ear	LpA	74 dB

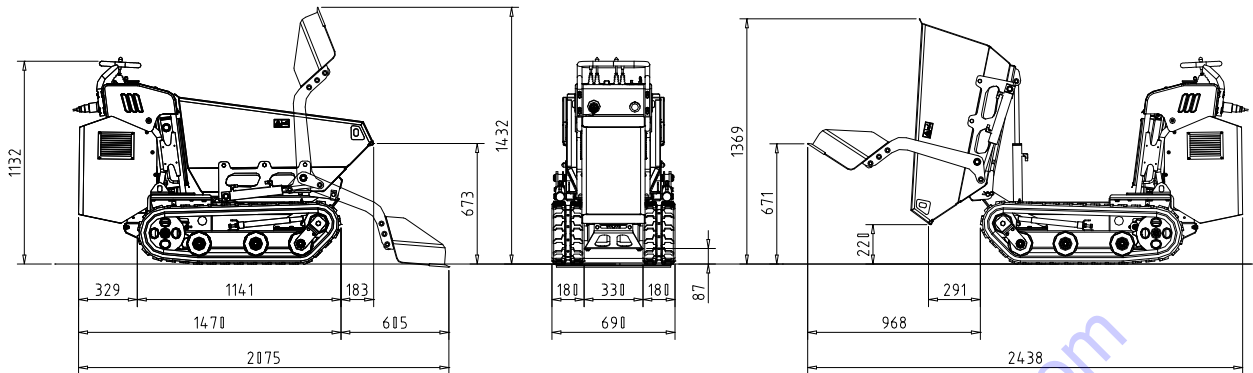
7.2 MACHINE DIMENSIONS

DIMENSIONS

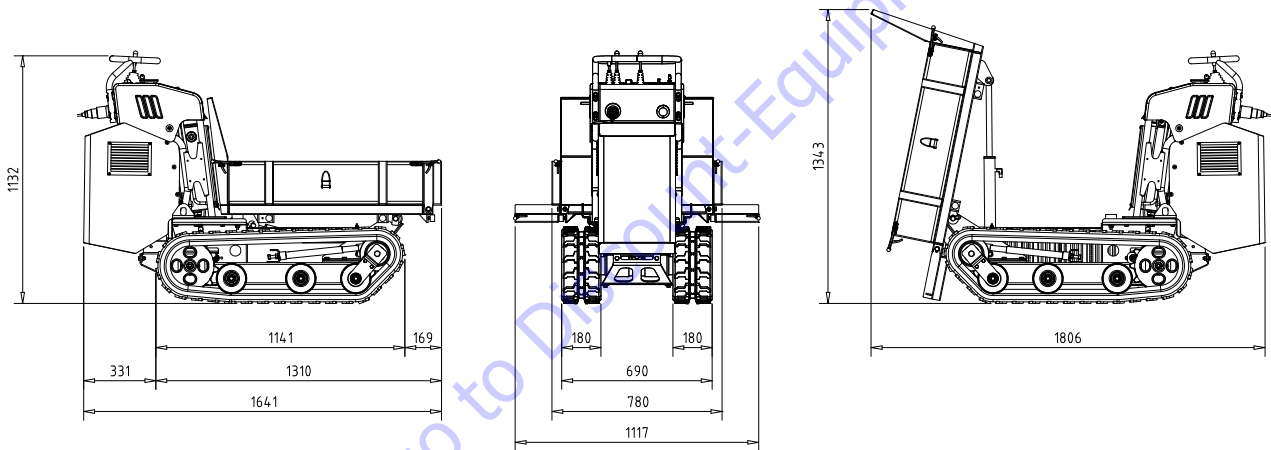
Description		Rubber shoe	
Shoe width		mm	180
Shoe length		mm	1120
Machine width		mm	690
Machine height at control level		mm	1120
Min. ground clearance		mm	80
Load body: Volume		m ³	0,22
Loading Truck Bed (Optional): Dimensions	Sides closed [length x width x height]	mm	920x590x200
	Sides open [length x width]	mm	1020x1180

7.3 MACHINE DIMENSIONS AND USE LIMITATIONS

LOAD BODY + LOADING SHOVEL



TRUCK BED



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