

TWOSE

CHAIN MULCHERS

TWFKR150 / TWFKR150BF
Operation & Parts Manual

Publication 790

September 2014

IMPORTANT VERIFICATION OF WARRANTY REGISTRATION



DEALER WARRANTY INFORMATION & REGISTRATION VERIFICATION

It is imperative that the selling dealer registers this machine with Twose of Tiverton Limited before delivery to the end user – failure to do so may affect the validity of the machine warranty.

To register machines go to the Twose web site at www.twose.com, log onto 'Dealer Inside' and select the 'Machine Registration button' which can be found in the Service Section of the site. Confirm to the customer that the machine has been registered in the section below.

Should you experience any problems registering a machine in this manner please contact the Twose Office on 01884 253691.

Registration Verification

Dealer Name:
Dealer Address:
Customer Name:
Date of Warranty Registration:/...../..... Dealer Signature:

NOTE TO CUSTOMER / OWNER

Please ensure that the above section above has been completed and signed by the selling dealer to verify that your machine has been registered with Twose of Tiverton Limited.

IMPORTANT: During the initial 'bedding in' period of a new machine it is the customer's responsibility to regularly inspect all nuts, bolts and hose connections for tightness and re-tighten if required. New hydraulic connections occasionally weep small amounts of oil as the seals and joints settle in – where this occurs it can be cured by re-tightening the connection – *refer to torque settings chart below*. The tasks stated above should be performed on an hourly basis during the first day of work and at least daily thereafter as part of the machines general maintenance procedure.

TORQUE SETTINGS FOR HYDRAULIC FITTINGS

HYDRAULIC HOSE ENDS		
BSP	Setting	Metric
1/4"	18 Nm	19 mm
3/8"	31 Nm	22 mm
1/2"	49 Nm	27 mm
5/8"	60 Nm	30 mm
3/4"	80 Nm	32 mm
1"	125 Nm	41 mm
1.1/4"	190 Nm	50 mm
1.1/2"	250 Nm	55 mm
2"	420 Nm	70 mm

PORT ADAPTORS WITH BONDED SEALS		
BSP	Setting	Metric
1/4"	34 Nm	19 mm
3/8"	47 Nm	22 mm
1/2"	102 Nm	27 mm
5/8"	122 Nm	30 mm
3/4"	149 Nm	32 mm
1"	203 Nm	41 mm
1.1/4"	305 Nm	50 mm
1.1/2"	305 Nm	55 mm
2"	400 Nm	70 mm

WARRANTY POLICY

WARRANTY REGISTRATION

All machines must be registered, by the selling dealer with Twose of Tiverton Ltd, before delivery to the end user. On receipt of the goods it is the buyer's responsibility to check that the Verification of Warranty Registration in the Operator's Manual has been completed by the selling dealer.

1. LIMITED WARRANTIES

- 1.01. *All machines supplied by Twose of Tiverton Ltd are warranted to be free from defects in material and workmanship from the date of sale to the original purchaser for a period of 12 months, unless a different period is specified.*
- 1.02. *All spare parts supplied by Twose of Tiverton Ltd and purchased by the end user are warranted to be free from defects in material and workmanship from the date of sale to the original purchaser for a period of 6 months. All parts warranty claims must be supported by a copy of the failed part invoice to the end user. We cannot consider claims for which sales invoices are not available.*
- 1.03. *The warranty offered by Twose of Tiverton Ltd is limited to the making good by repair or replacement for the purchaser any part or parts found, upon examination at its factory, to be defective under normal use and service due to defects in material or workmanship. Returned parts must be complete and unexamined. Pack the component(s) carefully so that any transit damage is avoided. All ports on hydraulic items should be drained of oil and securely plugged to prevent seepage and foreign body ingress. Certain other components, electrical items for example, may require particular care when packing to avoid damage in transit.*
- 1.04. *This warranty does not extend to any product from which Twose of Tiverton Ltd's serial number plate has been removed or altered.*
- 1.05. *This warranty does not apply to any part of the goods, which has been subjected to improper or abnormal use, negligence, alteration, modification, fitment of non-genuine parts, accident damage, or damage resulting from contact with overhead power lines, damage caused by foreign objects (e.g. stones, iron, material other than vegetation), failure due to lack of maintenance, use of incorrect oil or lubricants, contamination of the oil, or which has served its normal life. This warranty does not apply to any expendable items such as blades, belts, clutch linings, filter elements, flails, flap kits, skids, soil engaging parts, shields, guards, wear pads, pneumatic tyres or tracks.*
- 1.06. *Temporary repairs and consequential loss - i.e. oil, downtime and associated parts are specifically excluded from the warranty.*
- 1.07. *Warranty on hoses is limited to 12 months and does not include hoses which have suffered external damage. Only complete hoses may be returned under warranty, any which have been cut or repaired will be rejected.*
- 1.08. *Machines must be repaired immediately a problem arises. Continued use of the machine after a problem has occurred can result in further component failures, for which Twose of Tiverton Ltd cannot be held liable, and may have safety implications.*
- 1.09. *If in exceptional circumstances a non Twose of Tiverton Ltd part is used to effect a repair, warranty reimbursement will be at no more than Twose of Tiverton Ltd's standard dealer cost for the genuine part.*
- 1.10. *Except as provided herein, no employee, agent, dealer or other person is authorised to give any warranties of any nature on behalf of Twose of Tiverton Ltd.*
- 1.11. *For machine warranty periods in excess of 12 months the following additional exclusions shall apply:*
 - 1.11.1. *Hoses, exposed pipes and hydraulic tank breathers.*
 - 1.11.2. *Filters.*
 - 1.11.3. *Rubber mountings.*
 - 1.11.4. *External electric wiring.*
 - 1.11.5. *Bearings and seals.*

- 1.12. All service work, particularly filter changes, must be carried out in accordance with the manufacturer's service schedule. Failure to comply will invalidate the warranty. In the event of a claim, proof of the service work being carried out may be required.
- 1.13. Repeat or additional repairs resulting from incorrect diagnosis or poor quality previous repair work are excluded from warranty.

NB Warranty cover will be invalid if any non-genuine parts have been fitted or used. Use of non-genuine parts may seriously affect the machine's performance and safety. Twose of Tiverton Ltd cannot be held responsible for any failures or safety implications that arise due to the use of non-genuine parts.

2. REMEDIES AND PROCEDURES

- 2.01. The warranty is not effective unless the Selling Dealer registers the machine, via the Twose of Tiverton Ltd web site and confirms the registration to the purchaser by completing the confirmation form in the operator's manual.
- 2.02. Any fault must be reported to an authorised Twose of Tiverton Ltd dealer as soon as it occurs. Continued use of a machine, after a fault has occurred, can result in further component failure for which Twose of Tiverton Ltd cannot be held liable.
- 2.03. Repairs should be undertaken within two days of the failure. Claims submitted for repairs undertaken more than 2 weeks after a failure has occurred, or 2 days after the parts were supplied will be rejected, unless the delay has been authorised by Twose of Tiverton Ltd. Please note that failure by the customer to release the machine for repair will not be accepted as a reason for delay in repair or submitting warranty claims.
- 2.04. All claims must be submitted, by an authorised Twose of Tiverton Ltd Service Dealer, within 30 days of the date of repair.
- 2.05. Following examination of the claim and parts, Twose of Tiverton Ltd will pay, at their discretion, for any valid claim the invoiced cost of any parts supplied by Twose of Tiverton Ltd and appropriate labour and mileage allowances if applicable.
- 2.06. The submission of a claim is not a guarantee of payment.
- 2.07. Any decision reached by Twose of Tiverton Ltd is final.

3. LIMITATION OF LIABILITY

- 3.01. Twose of Tiverton Ltd disclaims any express (except as set forth herein) and implied warranties with respect to the goods including, but not limited to, merchantability and fitness for a particular purpose.
- 3.02. Twose of Tiverton Ltd makes no warranty as to the design, capability, capacity or suitability for use of the goods.
- 3.03. Except as provided herein, Twose of Tiverton Ltd shall have no liability or responsibility to the purchaser or any other person or entity with respect to any liability, loss, or damage caused or alleged to be caused directly or indirectly by the goods including, but not limited to, any indirect, special, consequential, or incidental damages resulting from the use or operation of the goods or any breach of this warranty. Notwithstanding the above limitations and warranties, the manufacturer's liability hereunder for damages incurred by the purchaser or others shall not exceed the price of the goods.
- 3.04. No action arising out of any claimed breach of this warranty or transactions under this warranty may be brought more than one (1) year after the cause of the action has occurred.

4. MISCELLANEOUS

- 4.01. Twose of Tiverton Ltd may waive compliance with any of the terms of this limited warranty, but no waiver of any terms shall be deemed to be a waiver of any other term.
- 4.02. If any provision of this limited warranty shall violate any applicable law and is held to be unenforceable, then the invalidity of such provision shall not invalidate any other provisions herein.
- 4.03. Applicable law may provide rights and benefits to the purchaser in addition to those provided herein.



DECLARATION OF CONFORMITY

Conforming to EU Machinery Directive 2006/42/EC

We,

TWOSE of TIVERTON LIMITED,
6 Chinon Court, Lower Moor Way,
Tiverton Business Park, Tiverton, Devon, EX16 6SS, UK

Hereby declare that:

The Product; *Tractor Mounted Chain Cutters/Mulchers*

Product Code; *TFRA*

Serial No. & Date Type

Manufactured in; *United Kingdom*

Complies with the required provisions of the Machinery Directive 2006/42/EC
The machinery directive is supported by the following harmonized standards;

- BS EN ISO 12100 (2010) Safety of machinery – General principles for design – Risk assessment and risk reduction.
- BS EN 349 (1993) + A1 (2008) Safety of machinery - Minimum distances to avoid the entrapment with human body parts.
- BS EN 953 (1997) + A1 (2009) Safety of machinery - Guards general requirements for the design and construction of fixed and movable guards.
- BS EN 4413 (2010) Hydraulic fluid power. Safety requirements for systems and their components.

Signed  *Responsible Person*
CHRISTIAN DAVIES on behalf of TWOSE OF TIVERTON LIMITED

Status: *General Manager*

Date: *September 2015*

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GENERAL INFORMATION

Always read this manual before fitting or operating the machine – whenever any doubt exists, contact your dealer or the Twose Service Department for advice and assistance.

Use only Twose Genuine Service Parts on Twose Equipment and Machines

DEFINITIONS: The following definitions apply throughout this manual;

WARNING

An operating procedure, technique etc., which –
can result in personal injury or loss of life if not observed carefully.

CAUTION

An operating procedure, technique etc., which –
can result in damage to either machine or equipment if not observed carefully.

NOTE

An operating procedure, technique etc., which –
is considered essential to emphasis.

LEFT AND RIGHT HAND

This term is applicable to the machine when attached to the tractor and is viewed
from the rear – this also applies to tractor references.

Note: illustrations in this manual are for instructional purposes only and may on occasion not show some components in their entirety. In certain instances an illustration may appear different to that of your particular model; where this occurs general operating and/or maintenance procedures apply. E&OE.

MACHINE & DEALER INFORMATION

Record the Serial Number of your machine on this page and always quote this number when ordering parts. Whenever information concerning the machine is requested remember also to state the make and model of tractor to which the machine is fitted.

Machine Serial Number:	Installation Date:
Machine Model details:	
Dealer Name:	
Dealer Address:	
Dealer Telephone No:	
Dealer Email Address:	

MACHINE DESCRIPTION & PURPOSE OF USE

Two TWFKR150 and TWFKR150BF machines are three-point linkage tractor mounted Chain Mulchers primarily designed for the efficient clearing of shrubs, brush and small trees in scrubland and forestry type areas.

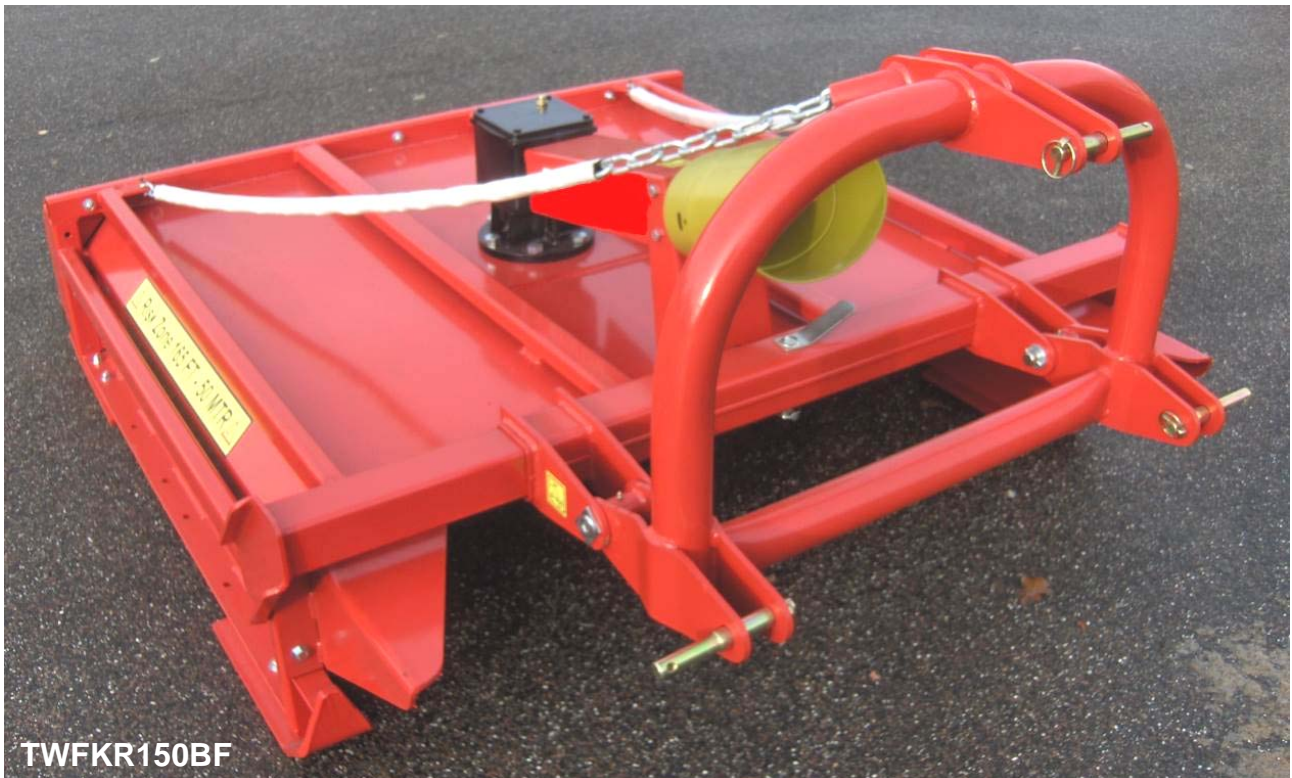
The TWFKR150BF is a 1.5m inline working machine and the TWFKR150 is a 1.5m offset working machine capable of operating at angles ranging from -90° to $+35^{\circ}$ with 1.0m of sideways adjustment and built-in collision protection system.

Robust build quality and low maintenance requirement make these mulchers the ideal machines for agricultural and forestry duties alike.

Note; these machines should only be used to perform tasks for which they were designed – use of the machines for any other function may be dangerous to persons and damaging to components and therefore not advisable.



TWFKR150



TWFKR150BF

TECHNICAL DATA

Technical Specifications

Specification	TWFKR150	TWFKR150BF
<i>Working Width</i>	1,5m (4' 11")	1,5m (4' 11")
<i>Transport Width</i>	1,0m (3' 3")	1,8m (5' 11")
<i>Working Speed</i>	6-10 kph (3,5-6 mph)	6-10 kph (3,5-6 mph)
<i>Power Requirement</i>	34 kW (45 HP)	34 kW (45 HP)
<i>PTO Speed</i>	540 RPM	540 RPM
<i>Number of Chains</i>	2	2
<i>Chain Gauge</i>	10mm (Std.) / 13mm (Option)	10mm (Std.) / 13mm (Option)
<i>Weight</i>	815 kg / 1830 lbs	500 kg / 1102 lbs

SAFETY INFORMATION

General safety rules:

- ▲ All operators must read this manual fully before attempting to use the machine.
- ▲ Never attempt to operate the machine without proper training.
- ▲ Do not allow others to operate the machine without proper training.
- ▲ Keep hands, feet and clothing clear of all moving parts on the machine.
- ▲ Both operators and the maintenance fitters should be familiar with the machine and fully aware of the dangers that surround improper use or incorrect repairs.
- ▲ Before starting, checks to both tractor and machine should be carried out with regard to functionality, road safety, and accident prevention.
- ▲ During checks and/or repairs, make sure nobody could start the machine by mistake.
- ▲ Never wear loose or fluttering clothes in close proximity to the machine.
- ▲ Never connect the power takeoff with the engine running.
- ▲ Do not enter the working zone of the PTO shaft; It is dangerous to approach any rotating parts of a machine.
- ▲ Keep the PTO shaft guard and machine safety guarding in good condition.
- ▲ Inspect the work area for dangerous items and objects before starting work.
- ▲ Beware of stones and other dangerous loose objects in the work area; these can be ejected from the machine at high speed over long distances.
- ▲ Ensure persons and/or animals remain at a minimum safe distance of 50 meters from the working machine at all times.
- ▲ The machine must only be started when it is in its lowered work position.
- ▲ Before starting, check the surrounding area for the likely presence of persons and/or animals. Do not use the machine if persons or animals are in close proximity.
- ▲ Stop the machine immediately if persons or animal enter the work area.
- ▲ The PTO shaft must be assembled and disassembled only with the engine stopped and the starting key removed.
- ▲ Before connecting the power takeoff, check that the speed and the rotational direction correspond to those of the machine.
- ▲ Immediately replace any missing or damaged safety decals.
- ▲ Never carry passengers on the tractor.
- ▲ Never carry passengers on the machine
- ▲ Before leaving the tractor with the machine attached, proceed as follows:
 1. *Disconnect the power takeoff,*
 2. *Put the machine steadily on the ground using the tractor's hydraulic lift.*
 3. *Apply the hand brake and, if the ground is steeply sloping, chock tractor wheels.*
 4. *Remove and pocket the starting key.*

Although the information given here covers a wide range of safety subjects, it is impossible to predict every eventuality that can occur under differing circumstances whilst operating this machine. No advice given here can replace 'good common sense' and 'total awareness' at all times, but will go a long way towards the safe use of your Twose machine.

FITTING THE MACHINE

Attaching Machine to Tractor

The machine is mounted and carried on the 3-point linkage of the tractor. Attachment of the machine to the tractor must always be performed on a firm level site; the procedure is as follows:

Attach the lower linkage points of the machine to tractor links using the linkage pins provided and fix in place with security pins.

Fit and adjust the top link to bring the machine into the vertical position ensuring the machine does not foul on tractor components when it is raised and lowered on the hydraulics.

Where applicable, connect hydraulic lines to suitable services on the tractor ensuring the hoses are carefully routed so they are not at risk of damage from chafing or stretching during normal operations.

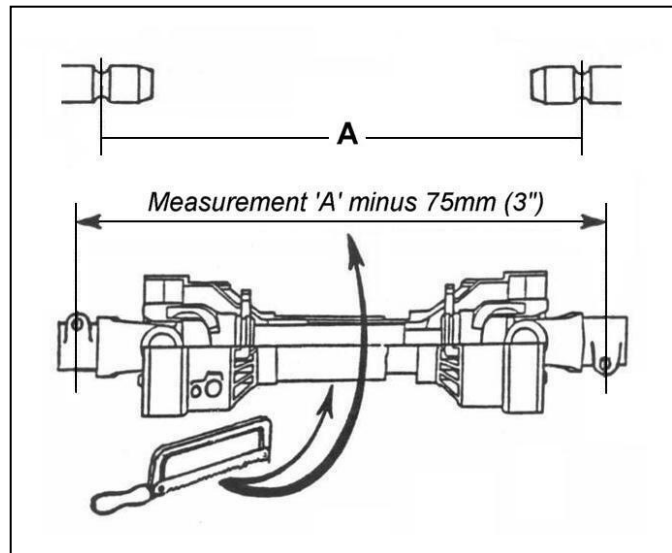
Fit PTO Shaft, check the length of the PTO shaft both in working and transport position and shorten if required – *refer to following paragraphs for details of measuring and cutting.*

PTO Shaft Measurement

Measure the PTO shaft and cut to the dimension shown; the finished length of the PTO shaft should be 75mm (3") less than the measured distance 'A' between tractor shaft and stub shaft of the machine to enable fitting.

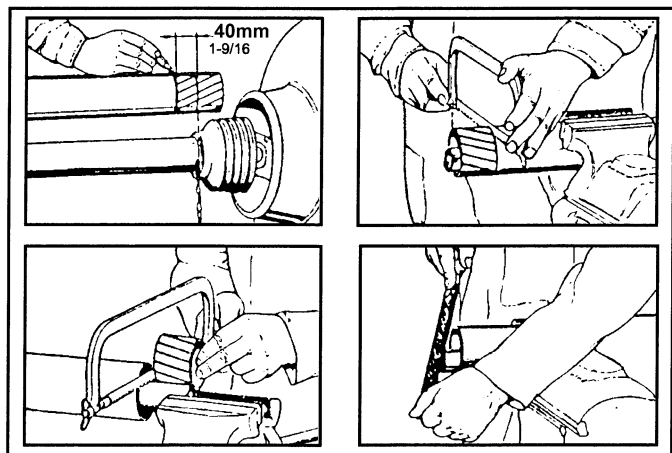
NOTE: For subsequent use with different tractors measure again, there must be a minimum shaft overlap of 150mm (6").

Fit PTO in position and attach the torque chains to a convenient location to prevent the shaft guards from rotating.



PTO Shaft Length Adjustment

1. Shorten outer plastic tube to 40mm less than the shortest envisaged shaft length.
2. Remove the marked tube.
3. Remove same length from inner plastic tube and metal shaft profiles (inner and outer).
4. De-burr all edges and remove 'swarf' to ensure smooth operation.



PRE- OPERATION & TRANSPORT

Pre-Operation Checks

- Check PTO speed of tractor and machine correspond.
- Check condition of linkage pins and ensure security pins are fitted.
- Check all guarding/protection is in good working condition and correctly installed.
- Check chains for signs of damage; replace if necessary.
- Check tightness of all nuts and bolt; re-torque if required.
- Check belt condition and tension (*if applicable*); replace and/or adjust if required.
- Check condition of hydraulic hoses and fitting (*if applicable*); replace if required.
- Check gearbox oil level; top up if required.
- Grease all lubrication points on a daily basis.

Transport Position - TWFKR150BF Model

For transportation the TWFKR150BF model must be raised from its working position on the tractors linkage to a suitable carrying height.

Transport Position - TWFKR150 Model

For transportation the TWFKR150 model the head must be raised from its horizontal working position into its vertical transport position using the machines hydraulics and secured in the transport position by closing the hydraulic lock valve on the lift ram.

The 'collision protection system' should be locked for transport by fitting its locking pin in the location indicated below.



During transportation the machine should be fully folded within the confines of the tractor by operation of the arm extension ram.



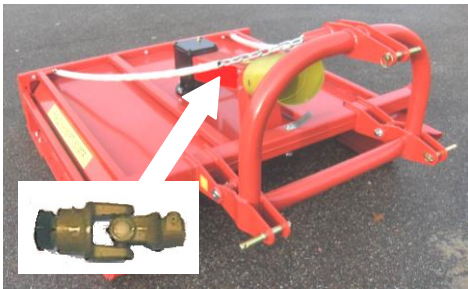
Machine Transportation

The following must be observed at all times when transporting the machine:

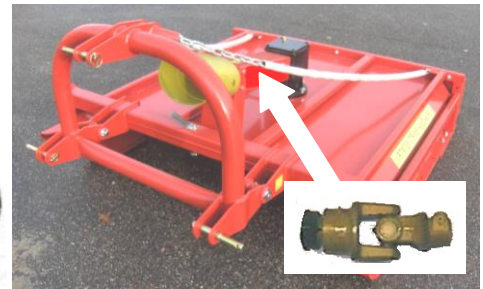
- Machine must always be switched off.
- Speed must be kept to a minimum especially on bumpy roads or terrain.
- Always abide with local laws and road regulations.
- Always be aware of the machines width and/or height during transportation.

OPERATION

TWFKR150BF Universal Joints



TWFKR150BF – Rear Mounted
Requires Universal Joint FD62207



TWFKR150BF – Front Mounted
Requires Universal Joint FD62208

TWFKR150BF Operation

Lower the machine to rest lightly on the ground, ideally with the front of the machine slightly higher than the rear; this will allow greater freedom for vegetation to enter the cutting unit.

Start the machine allowing it to reach the correct speed before starting forward movement. The forward working speed of the unit should be at a rate that provides efficient cutting and mulching of the particular vegetation.

At the end of the work area, switch off the machine and allow it to stop before attempting to raise it for manoeuvring or transportation to another area.

TWFKR150 Operation

Before starting work with the TWFKR150 it must be moved from the transport position to the work position; this requires release of the transport lock valve and removal of the pin that locks the 'collision protection system'. The machine can then be folded down and extended outwards to the desired work position.

Lower the machine to rest lightly on the ground, ideally with the front of the machine slightly higher than the rear; this will allow greater freedom for vegetation to enter the cutting unit.

Start the machine allowing it to reach the correct speed before starting forward movement. The forward working speed of the unit should be at a rate that provides efficient cutting and mulching of the particular vegetation.

The machine features parallel mounting arms providing approximately 1.0 metre of sideways movement for greater operating flexibility; always ensure that the PTO shaft runs freely in all operating positions, this is especially important when the machine is in the fully extended position.

At the end of the work area, switch off the machine and allow it to stop before attempting to raise it for manoeuvring or transportation to another area.

This model is capable of operating to the side of the tractor in a horizontal position at an angle of up to +35° and can also operate in the vertical position at approximately 90°. When operating the machine at steep angles it must always be started in the horizontal position to ensure lubrication is circulating correctly before raising the head vertically. Vertical operation of the machine should not exceed more than 30 minutes at any one time and should be followed by at least 30 minutes of horizontal operation.

WARNING!



Additional care must be adopted when moving a running machine from the horizontal position to the vertical position for work and must be avoided at all times if there is any form of risk to persons, animals or property.

Collision Protection System - TWFKR150 Models only

The offset working TWFKR150 machines feature a collision protection system designed to reduce the damaging effect of accidental impact with heavy or immovable objects. Ensure that the systems locking pin is removed at all times during work so that the two heavy duty springs are allowed freedom of movement to absorb any accidental impact.

CAUTION!



It must be noted that this feature does not replace the operator's responsibility to drive safely and avoid collisions with obstacles, but it may allow the operator additional time in which to react to dangerous or potentially damaging situations.

In the event of a collision forward movement must be halted immediately and the machine operated to move or lift it clear of the obstruction. Collision protection only works when driving forwards and therefore it may be necessary to reverse the unit in order to lift the machine clear of an obstruction.

Initial Operation with New Machine

On the first day of work with a new machine the tightness of all nuts and bolts should be checked after the initial first hour of work and on a regular basis thereafter. Gearbox oil must be changed after the initial 10 hours of operation – refer to maintenance section.

General Working Practice

Check tightness of all nuts and bolts on a regular basis and tighten as and when required. Inspect all machine components prior to work; replace any items that are damaged or incapable of performing their required task safely.

Inspect the work area prior to operation and remove any dangerous object such as glass, wire, rope etc. and mark any immovable hazards so that they can be avoided.

Ensure no persons or animals are in the work area before starting operations, if people or animals enter the area stop the machine immediately and do not re-start until they are at a safe distance.

Beware of stones, these can be ejected from the machine at great velocity over long distances; it is the owner/operators responsibility to ensure the safety of all persons, animals and property that is in the vicinity of the working machine.

Do not attempt to force the machine through tough or heavy vegetation; work only at a speed that effectively cuts and mulches the vegetation, this will provide efficient operation and also prolong the life of the machine.

Great care must be adopted when working with the machine on dry terrain as there is risk of causing sparks when the rotating chains come into contact with rocks or stones; in dry conditions this could start a fire.

MAINTENANCE

Grease Points

Lubricate all grease points on daily basis; decals are placed on the machine to indicate their locations. Machines should be lubricated fully before use and prior to storage.

Gearbox Lubrication

Gearbox oil must be changed after the initial 10 hours of operation, and thereafter at 100 work hour intervals or yearly, whichever occurs first.

Gearbox Capacity: 2.7 Litres

Lubrication Type: SAE W80/90 Gear Oil

Chain Replacement

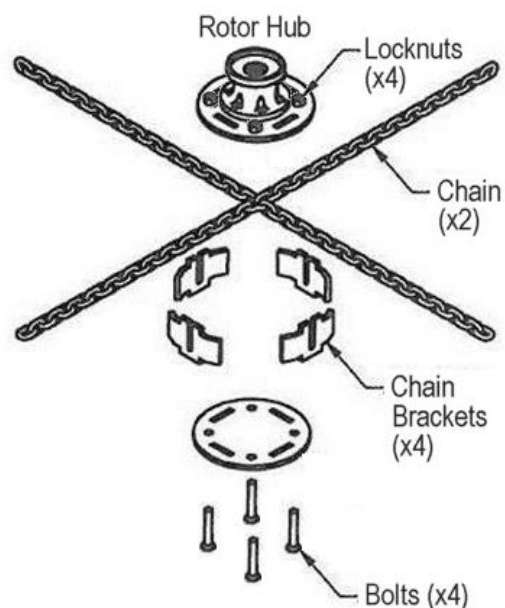
Machines are factory equipped as standard with 10mm chains; these can be replaced with 13mm chains. In order to fit 13mm chains the rotor hub chain brackets must be replaced with different brackets that are specifically designed to accept the larger diameter chain.

The procedure for replacing the chains is as follows;

1. Remove the 4 x Allen bolts & locknuts.
2. Remove lower plate, chain brackets & chains.
3. With the brackets located on the lower plate; replace the chains through the slots of the brackets ensuring all outer lengths are equal - *slots should locate over the 18th links on a 10mm chain and over the 13th links on a 13mm chain.*
4. Fit lower plate, brackets and chains to the rotor hub and secure in position using new bolts and locknuts.

Part Numbers for Wearing Rotor Components;

FD61125	- 10mm Chain
FD61164	- 13mm Chain
FD61132	- Chain Brackets for 10mm Chain only
FD61133	- Chain Brackets for 13mm Chain only
FD741130600	- Bolt (Allen)
FD740420016	- Locknut



CAUTION! It is vital that all chains extend out of their fixing brackets by an equal amount; failure to observe this will result in an unbalanced rotor which can cause damage to bearings and drive components.

Chains and rotor components must be checked on a regular basis during the working day for signs of damage and/or wear. If the chains are worn down by 2mm or more from their original size (10mm or 13mm) they must be replaced immediately. Chain fixing brackets must also be replaced when the chain slots are worn in excess of 2mm from their original size (10mm or 13mm).

Drive Belt - TWFKR150 Models only

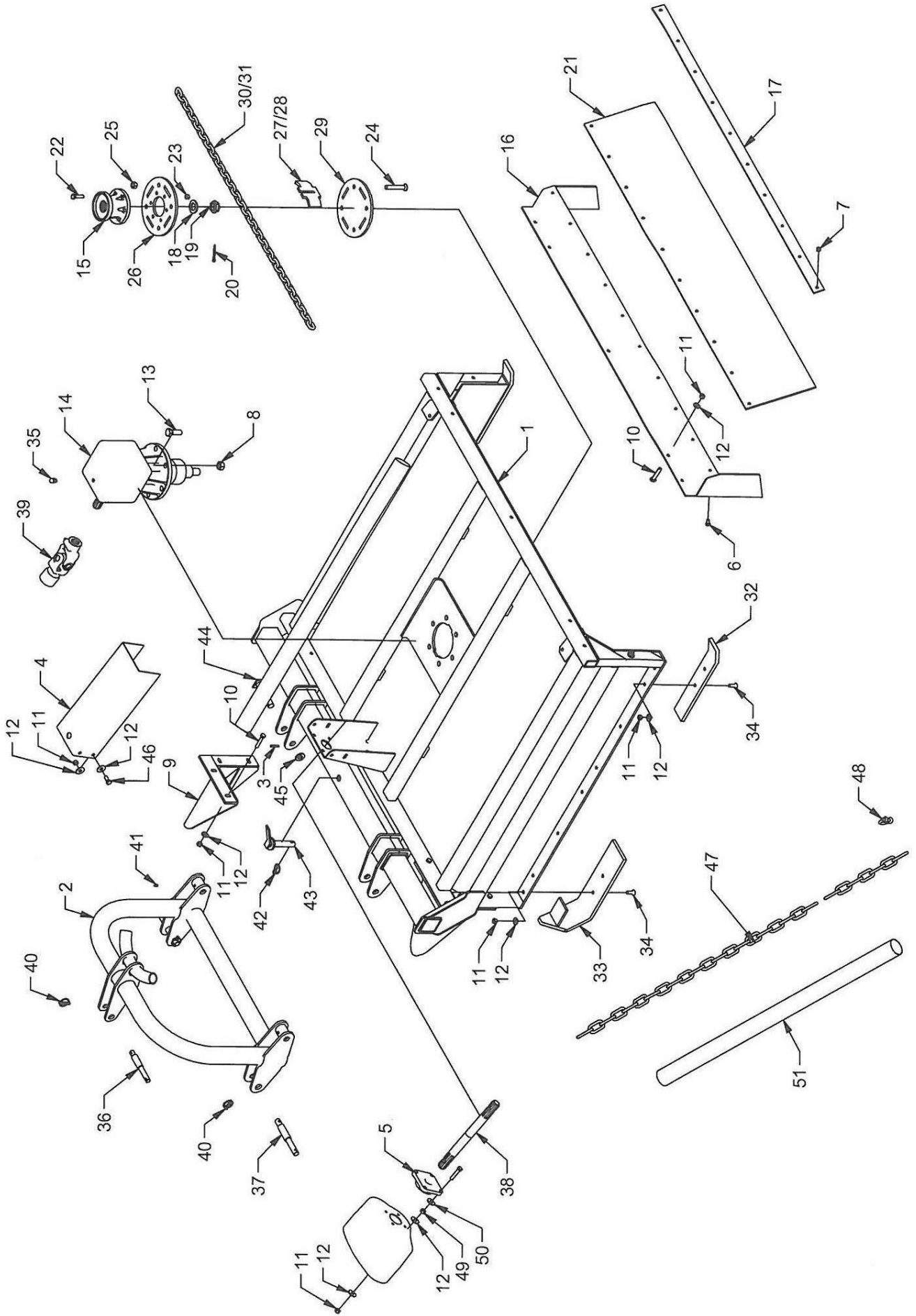
The drive belt should be checked on a regular basis for signs of wear or damage; if the belt is excessively worn or shows signs of damage it must be replaced immediately before attempting to use the machine.

Belt Tension

Belt tension should be checked on a regular basis and always prior to using the machine. The belt is correctly tensioned when it permits 20mm deflection (maximum) at the centre point of the belt run between the pulleys.

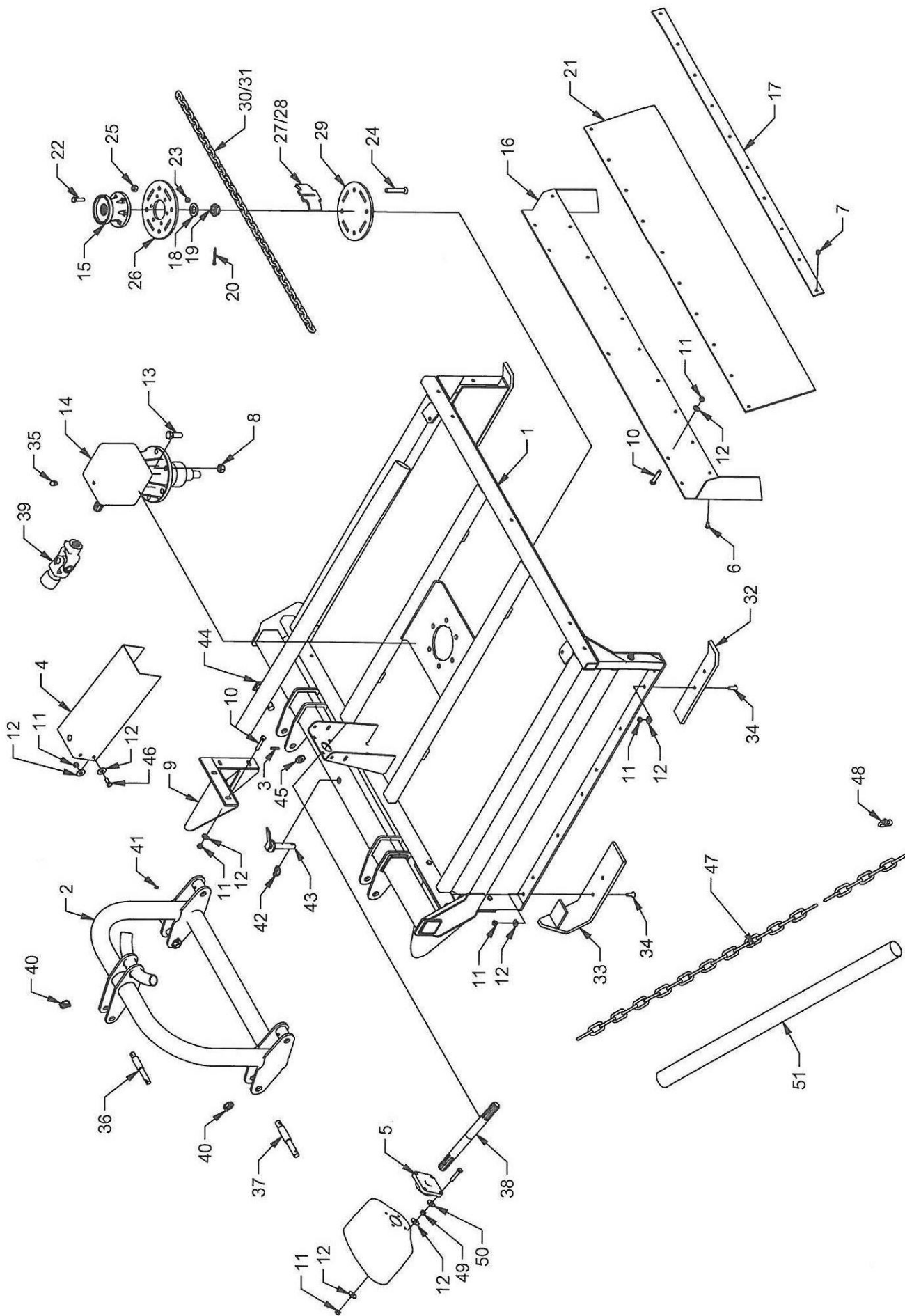
It is recommended that the belt is loosened before placing the machine into storage; this will help preserve the life of the belt.

CHAIN MULCHERS
TWFKR150 & TWFKR150BF
Parts Manual



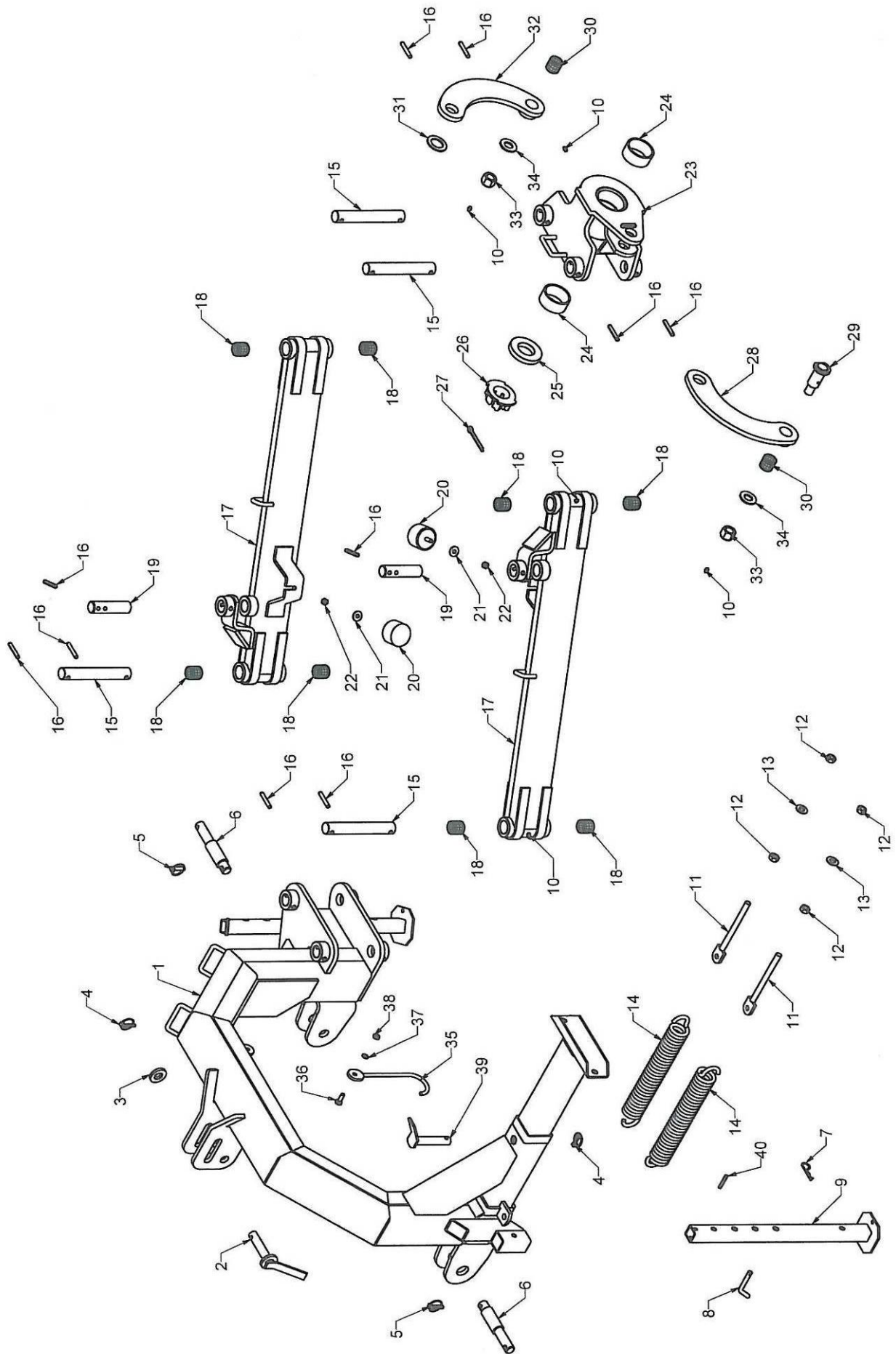
REF.	QTY.	PART No.	DESCRIPTION
		TWFKR150BF	MACHINE ASSEMBLY
1	1	FD62203	CUTTER HEAD
2	1	FD62201	THREE POINT LIFT
3	2	FD741190215	SPECIAL PIN
4	1	FD62212	BRACKET
5	1	FD52315	BALL BEARING
6	10	FD740205125	BOLT
7	11	FD740420010	LOCK NUT
8	6	FD740420020	LOCK NUT
9	2	FD61111	BRACKET
10	14	FD740211445	BOLT
11	26	FD740420012	LOCK NUT
12	22	FD301320	WASHER
13	6	FD740210650	BOLT
14	1	FD61150	HYDRAULIC MOTOR
15	1	FD61151	HUB
16	1	FD61124	FITTING
17	1	FD61121	FITTING
18	1	FD61153	WASHER
19	1	FD61154	NUT
20	1	FD741180270	PIN
21	1	FD61140	RUBBER GUARD
22	6	FD740279993	BOLT
23	6	FD740556012	LOCK NUT
24	4	FD741130600	ALLEN BOLT
25	4	FD740420016	LOCK NUT
26	1	FD61137	WASHER
27	4	FD61132	* FITTING - for 10mm chains only
28	4	FD61133	** FITTING - for 13mm chains only
29	1	FD61147	WASHER
30	2	FD61125	* CHAIN - 10mm
31	2	FD61164	** CHAIN - 13mm
32	2	FD61109	GUIDE SHOE
33	2	FD61118	GUIDE SHOE
34	8	FD741130395	BOLT
35	1	FD61145	PLUG
36	1	FD18006	TOWNING PIN
37	2	FD15536	TOWNING PIN
38	1	FD62205	SHAFT
39	1	FD62207	JOINT COMPLETE
39	1	FD62208	JOINT COMPLETE
40	3	FD1210010	SAFETY PIN

* Std. / ** Option



REF.	QTY.	PART No.	DESCRIPTION
		TWFKR150BF	MACHINE ASSEMBLY (Continued)
41	2	FD881500240	LUBRICATOR NIPPLE
42	1	FD1210080	SAFETY PIN
43	1	FD25413	BOLT
44	2	FD42403	BOLT
45	2	FD15530	WASHER
46	4	FD740210420	BOLT
47	1	FD713400009	CHAIN
48	2	FD713300010	ASSEMBLY JOINT
49	4	FD740390012	NUT
50	4	FD740600076	DISK
51	2	FD46555	TUBE

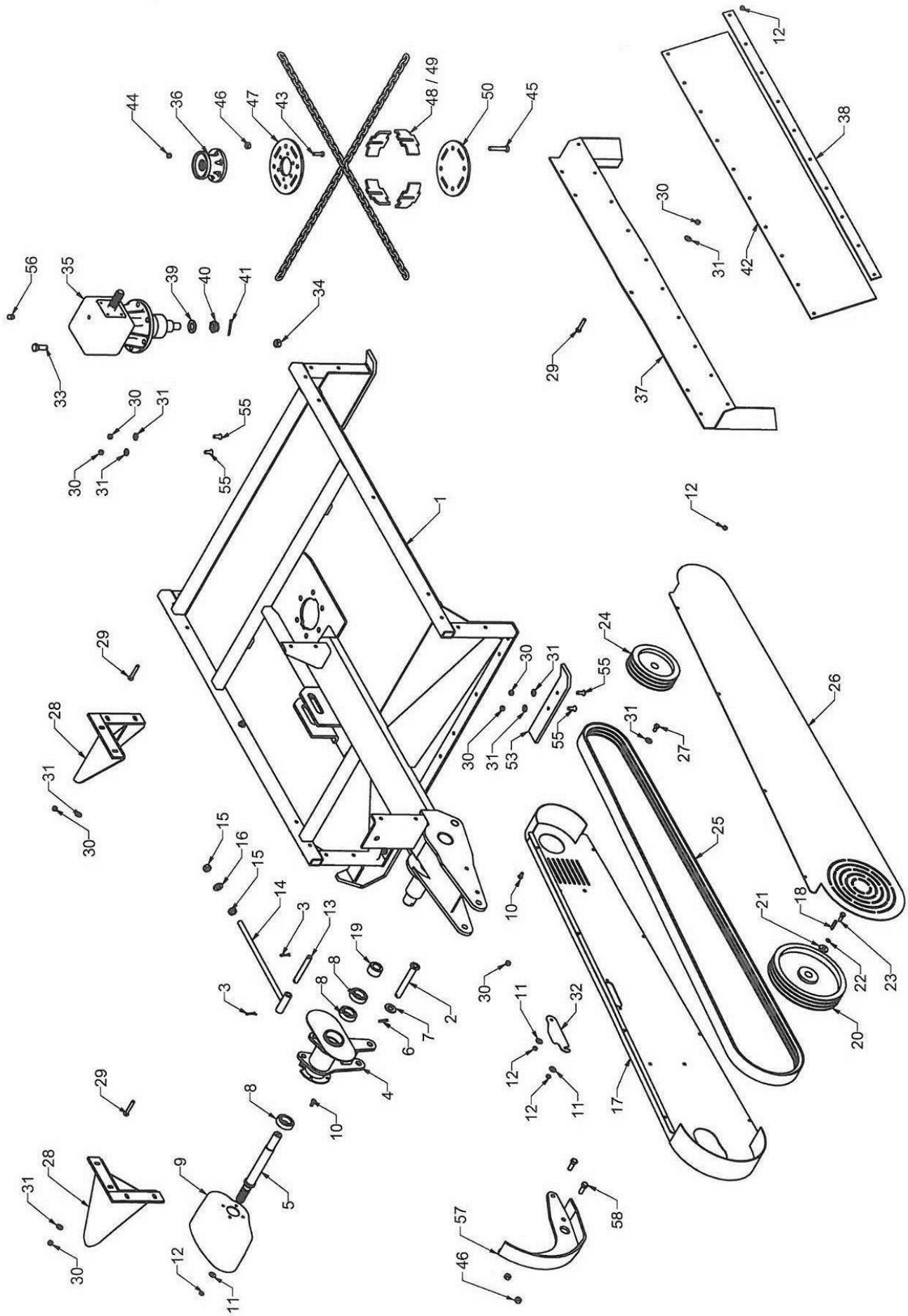
TWFKR150 Model – Frame Assembly



TWFKR150 Model – Frame Assembly

REF.	QTY.	PART No.	DESCRIPTION
		TWFKR150	FRAME ASSEMBLY
1	1	FD61105	THREE-POINT LIFT
2	1	FD25413	BOLT
3	1	FD522580	WASHER
4	2	FD1210080	SAFETY PIN
5	2	FD1210100	SAFETY PIN
6	2	FD43075	LINKAGE PIN
7	2	FD1220035	COTTER
8	2	FD15558	BOLT
9	2	FD61134	SUPPORT
10	10	FD881500240	LUBRICATOR NIPPLE
11	2	FD61143	FITTING
12	4	FD740320016	NUT
13	2	FD740600040	WASHER
14	2	FD61142	TENSION SPRING
15	4	FD61108	SHAFT
16	12	FD741190293	SPECIAL PIN
17	2	FD61107	PARALLEL BAR
18	8	FD10535	BUSH
19	2	FD61136	SHAFT
20	2	FD46048	SHOCK ABSORBER
21	13	FD221120	WASHER
22	17	FD740420010	LOCK NUT
23	1	FD61112	ROTATION BRACKET
24	2	FD26430	BUSH
25	1	FD61116	WASHER
26	1	FD61166	NUT
27	1	FD741180305	PIN
28	1	FD61117	STABILIZER
29	1	FD61149	BOLT
30	3	FD10537	BUSH
31	1	FD623940	WASHER
32	1	FD61115	STABILIZER
33	3	FD740400045	LOCK NUT
34	5	FD522640	WASHER
35	1	FD55001	PTO FITTING
36	1	FD740210315	BOLT
37	1	FD740750030	SPRING WASHER
38	1	FD740320010	NUT
39	1	FD42452	BOLT
40	2	FD741190225	SPECIAL PIN

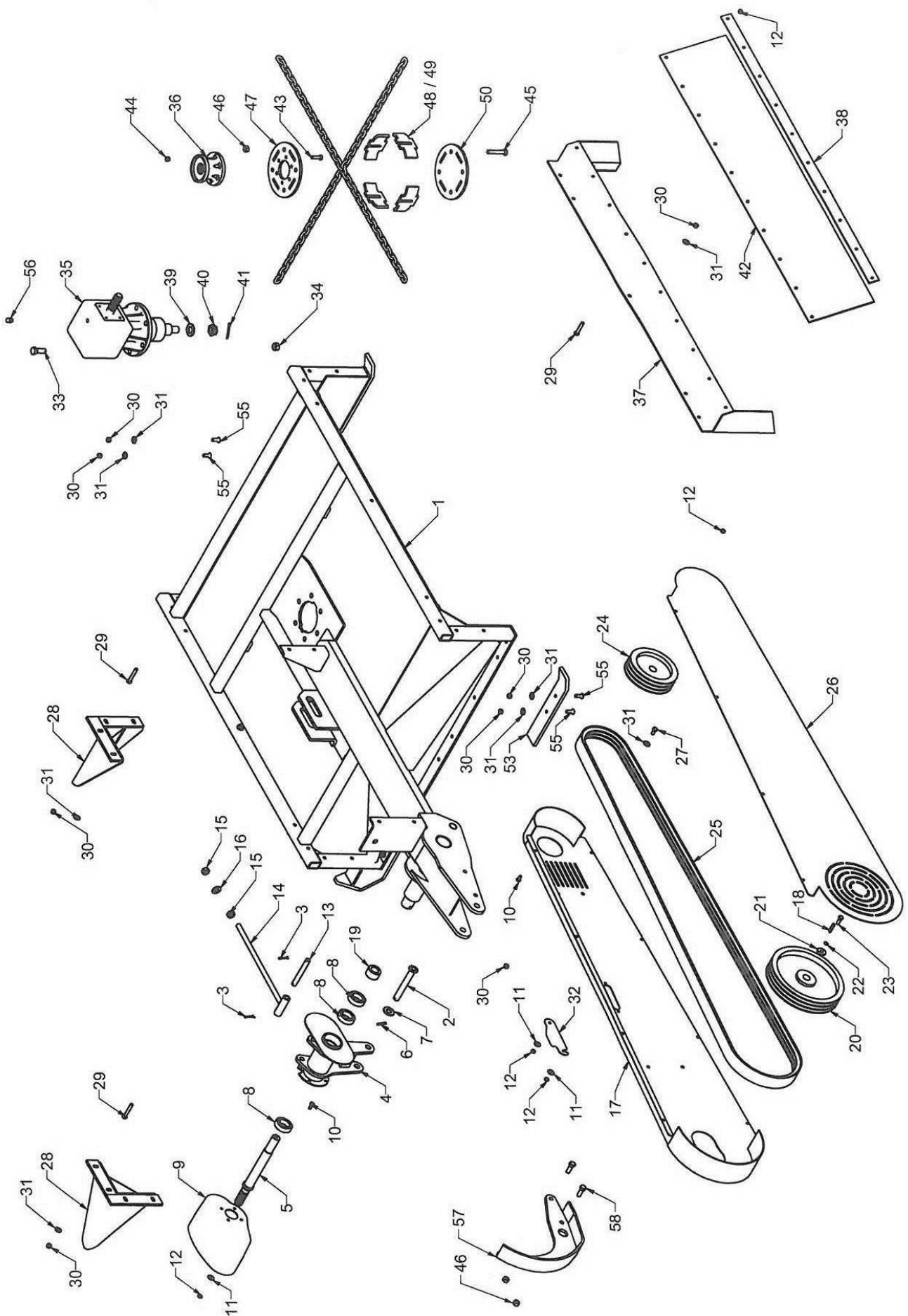
TWFKR150 Model – Head & Drive Assembly



TWFKR150 Model – Head & Drive Assembly

REF.	QTY.	PART No.	DESCRIPTION
		TWFKR150	HEAD & DRIVE ASSEMBLY
1	1	FD61110	CUTTER HEAD
2	1	FD61126	SHAFT
3	2	FD741180225	PIN
4	1	FD61113	PTO BRACKET
5	1	FD57156	SHAFT
6	1	FD741190225	SPECIAL PIN
7	4	FD522640	WASHER
8	3	FD1162080	BALL BEARING
9	1	FD1418510	PTO COVER
10	15	FD740205125	BOLT
11	6	FD740630020	WASHER
12	25	FD740420010	LOCK NUT
13	1	FD61127	SHAFT
14	1	FD61128	TIGHTENING BOLT
15	2	FD740320020	NUT
16	1	FD422120	WASHER
17	1	FD61130	GUARD
18	1	FD61106	FLAT KEY
19	1	FD61114	DISTANCE BUSH
20	1	FD61122	PULLEY
21	1	FD421350	WASHER
22	1	FD740770030	SPRING WASHER
23	1	FD740210405	BOLT
24	1	FD61123	PULLEY
25	1	FD61139	V-BELT
26	1	FD61131	GUARD
27	4	FD740210400	BOLT
28	2	FD61111	BRACKET
29	15	FD740211440	BOLT
30	23	FD740420012	LOCK NUT
31	14	FD301320	WASHER
32	1	FD61148	GUARD
33	6	FD740210650	BOLT
34	6	FD740420020	LOCK NUT
35	1	FD61150	ANGULAR GEAR
36	1	FD61151	HUB
37	1	FD61124	FITTING
38	1	FD61121	FITTING
39	1	FD61153	WASHER
40	1	FD61154	NUT

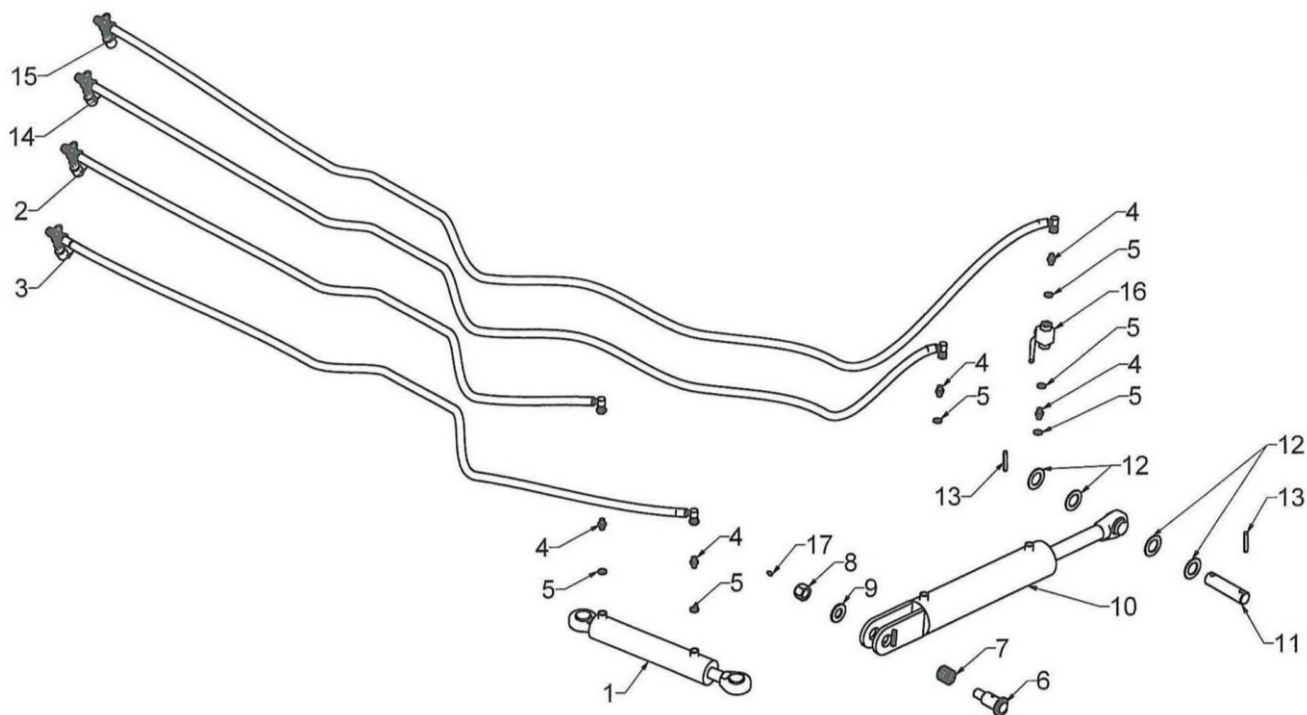
TWFKR150 Model – Head & Drive Assembly



TWFKR150 Model – Head & Drive Assembly

REF.	QTY.	PART No.	DESCRIPTION
		TWFKR150	HEAD & DRIVE ASSEMBLY (Continued)
41	1	FD741180270	PIN
42	1	FD61140	RUBBER GUARD
43	6	FD740279993	BOLT
44	6	FD740556012	LOCK NUT
45	4	FD741130600	ALLEN BOLT
46	6	FD740420016	LOCK NUT
47	1	FD61137	WASHER
48	4	FD61132	* FITTING - for 10mm chains only
49	4	FD61133	** FITTING - for 13mm chains only
50	1	FD61147	WASHER
51	2	FD61125	* CHAIN - 10mm
52	2	FD61164	** CHAIN - 13mm
53	2	FD61109	GUIDE SHOE
54	2	FD61118	GUIDE SHOE
55	8	FD741130395	BOLT
56	1	FD61145	PLUG
57	1	FD61167	FITTING
58	2	FD740210555	BOLT

** Std. / ** Option*



REF.	QTY.	PART No.	DESCRIPTION
		TWFKR150	HYDRAULIC INSTALLATION
1	1	FD61165	HYDRAULIC CYLINDER
2	1	FD10518	HYDRAULIC HOSE
3	1	FD61146	HYDRAULIC HOSE
4	5	FD61144	HEXAGON NIPPLE
5	6	FD42418	COPPER WASHER
6	1	FD61119	BOLT
7	3	FD10537	BUSH
8	3	FD740400045	LOCK NUT
9	4	FD522640	WASHER
10	1	FD61138	HYDRAULIC CYLINDER
11	1	FD61135	SHAFT
12	4	FD356040	WASHER
13	12	FD741190295	SPECIAL PIN
14	1	FD42448	HYDRAULIC HOSE
15	1	FD61101	HYDRAULIC HOSE
16	1	FD61141	LOCK VALVE
17	10	FD881500240	LUBRICATOR NIPPLE

