

Tools for Electric Drives

Tools for Electric Drives..... 15-3

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314-8478 Lockwire Tool**Essential Tool**

SMCS Code: 1408-023, 1408-029, 1408-595

Model: 621G, 623G, 627G, 631G, 637G, 657G Motor Graders; D7E Tractor (electric drive)

Warranty: Manufacturer's

- Used to eliminate loose electrical connections by precisely twisting and tightening 5P-6029 Lockwire on 7D-1962 Connector
- Allows very precise twisting and cutting of wires in order to attain tight and dependable electrical connection
- Forged alloy steel with black oxide finish

Part Number	Description
314-8478	Lockwire Tool

**Generator and Motor Assembly Tools****Essential Tool**

SMCS Code: 1404, 4457, 5927

Model: D7E Track-Type Tractor (electric drive)

Warranty: Six Months

- Used to install electrical rotors into generator and final drive motors during assembly
- Rotor installer assembly fits into generator/motor housing
- Installer rings are made from light-weight, durable plastic to prevent damage to components
- Guide strips are made from UHMW Static-Dissipative Polyethylene Film for smooth rotor insertion and to protect windings from damage
- 333-9726 UHMW Polyethylene Film [61.0 x 63.5 cm (24 x 25 in)] is available to make replacement guide strips (one sheet makes four strips)

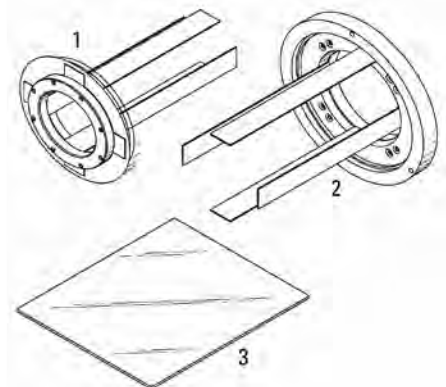
Reference

KENR5162, D7E Track-Type Tractor, Powertrain, Disassembly and Assembly

KENR5166, D7E Track-Type Tractor, Machine System, Disassembly and Assembly

Procedure to make tooling guide strips

1. Cut the 333-9726 UHMW Film into four equal strips 7.62 x 63.5 cm (3 x 25 in).
2. Loosen eight retainer ring bolts using a 5/16 inch Allen wrench.
3. Remove and discard old guide strips.
4. Install new guide strips by bending and slipping end between two rings. Guide strips must be equally spaced around ring.
5. Adjust guide strip length (bottom of large ring to lower end of guide strip) to 54.6 cm (21.5 in) on 320-9895 and 51.0 cm (20.0 in) on 320-9896.
6. Tighten eight bolts to $14 \pm 2 \text{ N}\cdot\text{m}$ ($124 \pm 18 \text{ in lb}$).



Item	Part No.	Description
1	320-9895	Prop Mod Tool Assembly
2	320-9896	Generator Tool Assembly
3	333-9726	UHMW Polyethylene Film, 61.0 x 63.5 cm (24 x 25 in)

326-9426 Rotor Alignment Pin

SMCS Code: 4457-011

Model: D7E Track-Type Tractor (electric drive)

Warranty: Six Months



- Used to prevent damage to electric drive generator rotor and stator when removing or installing
- Blunt end threads onto rotor shaft (use a 194-3553 Rolling Head Pry Bar or 292-9214 Spanner Wrench in 12.7 mm [0.5 in] cross-drilled hole to install or remove)
- Made of light-weight aluminum for easy handling and also corrosion resistance
- Weighs 11.8 kg (26.0 lbs)

Reference

KENR5162, Power Train Disassembly and Assembly

Part Number	Description
326-9426	Rotor Alignment Pin

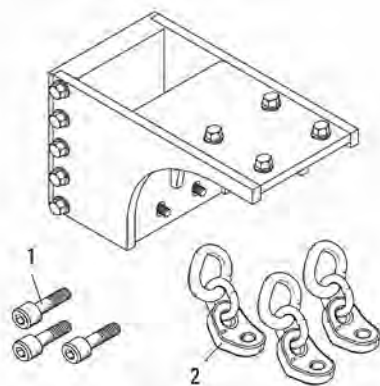
Adapter Assemblies

Essential Tool

SMCS Code: 1404-018, 5927-018, 4457-010

Model: D7E Track-Type Tractor (electric drive)

Warranty: Six Months



Reference

NEHS1086 Tool Operating Manual, 322-3968 Adapter Assembly, 322-3969 Adapter Assembly

322-3968 Adapter Assembly

- Used to support electric drive propulsion Module (EDPM)
- Must be used with 1U-5750 Engine Stand
- Allows component to be positioned for disassembly, assembly, and maintenance.
- Used with additional required hardware

Working load limit	1134 kg (2500 lbs)
Weight	64 kg (141 lbs)

322-3968 Adapter Assembly - Additional Required Hardware

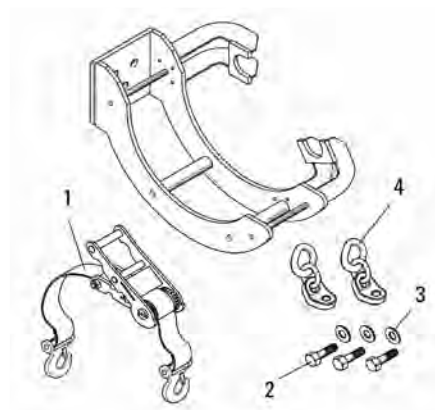
Item	Part No.	Description	Qty.
1	8L-6059	Socket Head Bolt, 1-8 x 63.5 mm (2.50 in) long	3
4	138-7574	Link Bracket	3
Not shown			
--	8T-9400	Bolt, 7/8 x 63.5 mm (2.50 in) long ¹	3
5	5P-8249	Hard Washer ¹	3

¹ Used to attach 138-7574 Link Brackets to D7E EDPM.

322-3969 Adapter Assembly

- Used to support generator
- Must be used with 1U-5750 Engine Stand
- Allows component to be positioned for disassembly, assembly, and maintenance.
- Used with additional required hardware

Working load limit	561 kg (1237 lbs)
Weight	38 kg (84 lbs)



322-3969 Adapter Assembly - Additional Required Hardware			
Item	Part No.	Description	Qty.
1	333-3761	Ratchet Strap	1
2	1D-4635	Hex Head Bolt, 1-8 x 63.5 mm (2.50 in) long	3
3	8T-5361	Hard Washer	3
4	138-7574	Link Bracket	3
Not shown			
--	8T-9400	Bolt, 7/8 x 63.5 mm (2.50 in) long ¹	3
5	5P-8249	Hard Washer ¹	3

¹Used to attach 138-7574 Link Brackets to D7E EDPM.

341-1462 Rollover Bracket Assembly

Essential Tool

SMCS Code: 1437-017, 3121-017
 Model: 795F AC Off-Highway Truck
 Warranty: Six Months

- Used to assist in disassembly and assembly of electric retarder (grid assembly) — moves electric retarder from a vertical position to a horizontal position
- Used with a suitable forklift and overhead lifting device
- Fork pockets allow transport of electric retarder after rollover procedure
- “Conduit” is stamped in flat mounting plate of tooling to indicate correct position of electric retarder on tooling
- Includes 309-2794 Hook Chain Assembly (not shown)
- Weight: 398.6 kg (884.9 lb)

Reference

KENR8727, 795F AC Off-Highway Truck, Machine Systems, Electric Retarder, Disassemble and Assemble



Part Number	Description
341-1462	Rollover Bracket Assembly

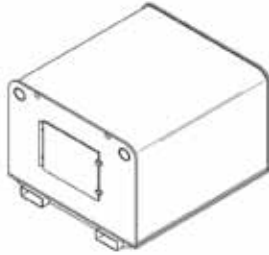
329-5130 Storage and Shipping Stand

Essential Tool

SMCS Code: 4351, 1405

Model: 795F AC Off-Highway Truck

Warranty: Six Months



- Used to ship and store the alternator and traction motor
- Covered container is designed to protect alternator or traction motor from dirt, debris and contamination
- Alternator or traction motor is bolted to brackets on base assembly
- Lifting points on cover are for removing or installing cover only (cover lift points are NOT to be used for lifting the entire stand assembly)
- Rectangular tubes provide easy lift and transport, using a suitable lift truck
- End panel door allows access for rotating alternator or traction motor per approved maintenance procedures, during long term storage
- A built-in desiccant pack provides humidity control

Overall size (L x W x H)	2 x 1.8 x 1.5 m (79 x 71 x 61 in)
Weight	1164 kg (2585.6 lb)

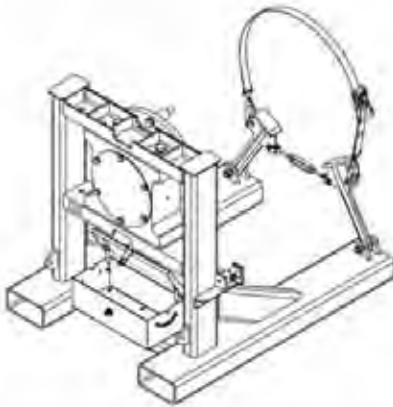
Part Number	Description
329-5130	Storage and Shipping Stand

360-7460 Traction Motor R&I Tool

SMCS Code: 1603-010

Model Usage: 793F AC and 795F AC Off-Highway

Warranty: Six Months



- Used to remove and install the electric motor of 793F AC and 795F AC Off-Highway Trucks
- Tool has fork tubes used during the remove and install procedure
- An adjustment screw allows for fine adjustment of motor in order to assure bolt hole alignment during assembly
- Tool is equipped with support tubes used during the transport of the traction motor to eliminate the possibility of damage to the motor
- Tool is equipped with a tool box for storage of the support legs when not in use

Reference

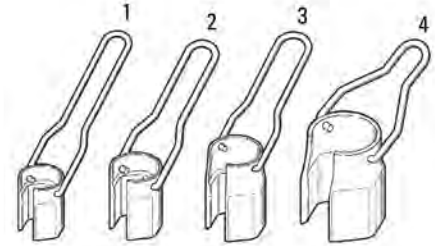
KENR8715, 795F Series AC Off-Highway/Tractor Disassembly and Assembly

Specifications	
Length	1776 mm (69.92 in)
Width	1372 mm (54.02 in)
Height	1460 mm (57.48 in)
Weight	1108.35 kg (2443.5 lbs)
Working Load Limit	4535.92 kg (10,000 lbs)

Cord Grip Wrenches

SMCS Code: 4822-10
 Model: 795F AC Off-Highway Truck
 Warranty: Six Months

- Used to remove cable gland nuts on electrical cabinet
- Split socket fits over cable bundle
- Swivel handle (bail) provides leverage to loosen and tighten gland nut
- Helps prevent damage to gland nut, cable, and electrical cabinet
- SW size marked on each socket for easy identification



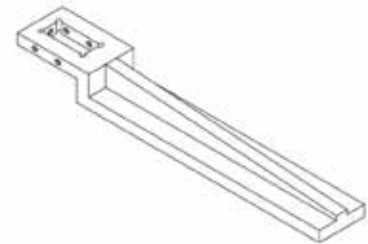
Item	Part No.	Description	ID Mark	Socket Hex Size	Socket Height	Height with Handle
1	345-2356	Cord Grip Wrench	SW-35	35 mm	60.5 mm	219 mm
2	349-7457	Cord Grip Wrench	SW-36	36 mm	60.5 mm	158.0 mm
3	345-2357	Cord Grip Wrench	SW-54	54 mm	98.8 mm	281.7 mm
4	349-7458	Cord Grip Wrench	SW-60	60 mm	98.8 mm	206.5 mm

330-7456 Reaction Arm

Essential Tool

SMCS Code: 4305-010, 4303-010
 Model: 795F AC Off-Highway Truck
 Warranty: Six Months

- Used to remove and install steering linkage nuts
- Used with Hydraulic Torque Wrench and 234-6041 Impact Socket (4-1/4 in)
- Five set screws secure tool onto torque wrench
- Prevents rotation of torque wrench under load when loosening or tightening steering arm linkage nuts
- Welded steel construction for long service life



Reference

KENR8727, 795F AC Off-Highway Truck, Machine Systems, Disassembly and Assembly, Steering Arm Remove and Install

Length	686 mm (27.0 in)
Width	102 mm (4.0 in)
Height	76 mm (3.0 in)

Service/Repair Parts

Part Number	Description
010-2597	Hex Socket Setscrew, 3/8 - 16 x 25.4 (1.0 in) long, qty. 5

795F AC Electric Motor Disassembly and Assembly Tools

Model Usage: 795F AC Off-Highway Truck
 Warranty: Six Months

- Used to disassemble and assemble the electric motor on the 795F Off-Highway Truck
- 331-1634 - used to remove and install lock nut
- 331-1635 - used to remove seal, bearing retainer and bearing
- 331-1636 - used to remove end bracket
- 331-1637 - used to remove and install main rotor and end bracket out of the housing
- 331-1638 - used to remove seal ring
- 331-1639 - used to remove bearing
- 331-1640 - used to remove seal ring

(Continued)

795F AC Electric Motor Disassembly and Assembly Tools (Continued)

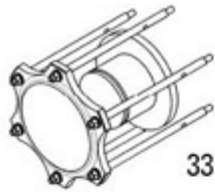
Model Usage: 795F AC Off-Highway Truck

Warranty: Six Months

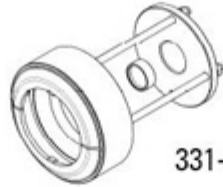
- 331-1641 - used to remove and install lock nut
- 331-1642 - used to remove and install main rotor and end bracket out of the housing
- 331-1643 - used to remove seal ring
- Consists of 2 spanner wrenches, 6 pullers and 2 tube assemblies
- Material: Steel
- Made as ordered (MAO)

Reference

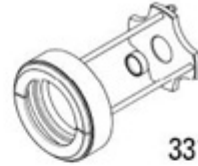
KENR8715, 795F Series AC Off-Highway Truck Power Train Disassembly and Assembly Manual



331-1636



331-1639



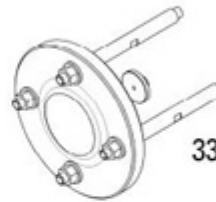
331-1640



331-1641



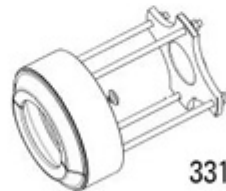
331-1642



331-1643



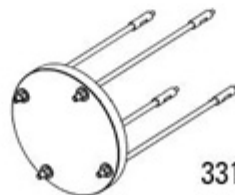
331-1634



331-1635



331-1637



331-1638

Specifications			
Part No.	Description	Dimensions	Weight
331-1634	Spanner Wrench	190 x 752 x 142 mm (7.48 x 29.61 x 5.59 in)	8.55 kg (18.85 lb)
331-1635	Puller	336 x 470 mm (13.23 x 18.50 in)	44.10 kg (97.22 lb)
331-1636	Puller	305 x 364 mm (12.01 x 14.33 in)	21.60 kg (47.62 lb)
331-1637	Tube Assembly	215 x 1530 mm (8.46 x 60.24 in)	140 kg (308.65 lb)
331-1638	Puller	200 x 320 mm 7.87 x 12.60 in)	5.50 kg (12.13 lb)
331-1639	Puller	288 x 424 mm (11.34 x 16.69 in)	34.30 kg (75.62 lb)
331-1640	Puller	308 x 488 mm (12.13 x 19.21 in)	34.30 kg (75.62 lb)
331-1641	Spanner Wrench	152 x 450 x 90 mm (5.98 x 17.72 x 3.54 in)	4.00 kg (8.82 lb)
331-1642	Tube Assembly	133 x 350 mm (5.24 x 13.78 in)	18.10 kg (39.90 lb)
331-1643	Puller	185 x 185 mm (7.28 x 7.28 in)	5.15 kg (11.35 lb)