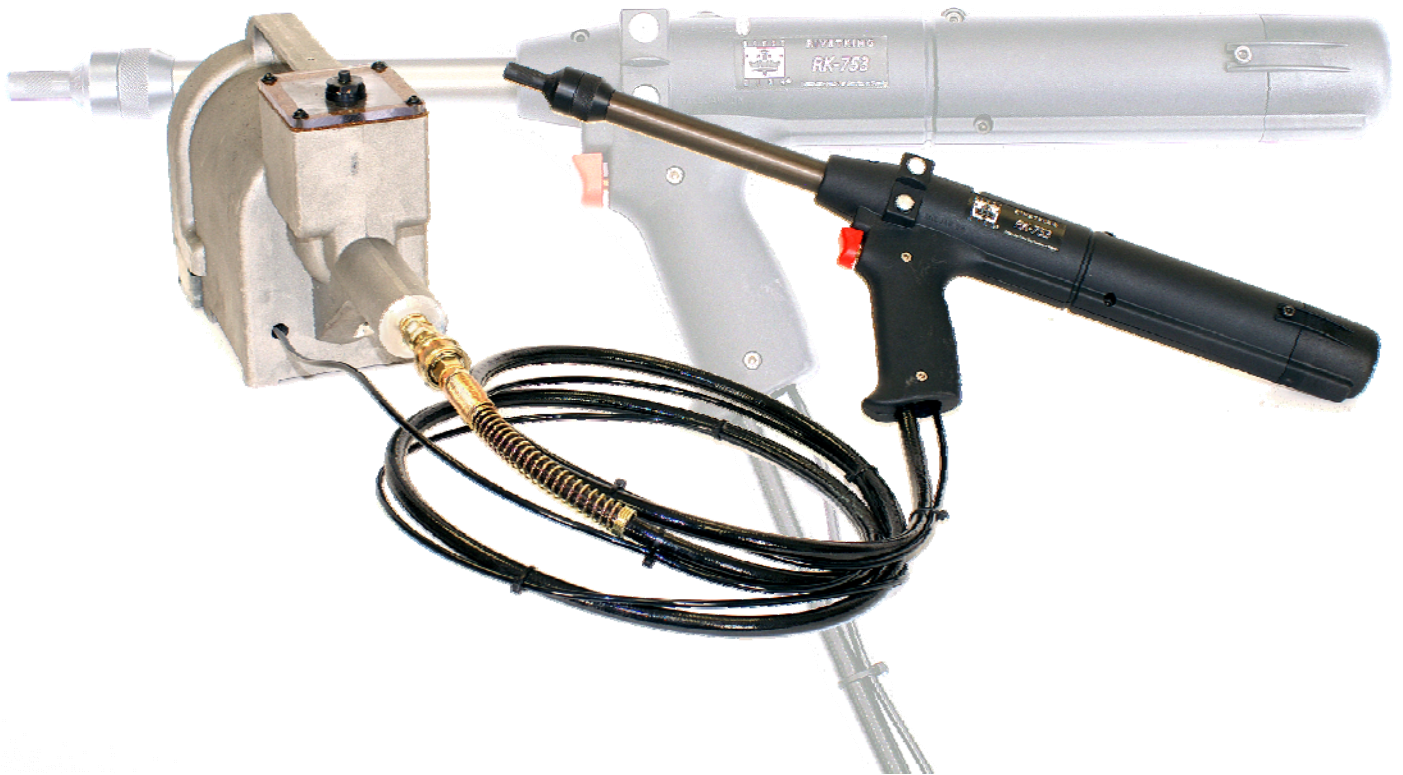


RK-753 Series QuickRivet® Tool
Model# RK-753-2



Operations Manual



Your Authorized Distributor:

**Industrial
Rivet &
Fastener Co.**





CONTENTS

Safety	Page 3
Specifications	Page 3
Preparing the tool for service	Page 4
Air supply	Page 4
Maintenance	
Daily	Page 5
Weekly	Page 5
Tail jaw cylinder	Page 6
Hydraulic body	Page 6
Intensifier	Page 7
Pilot valve	Page 7
Assembly Drawings	
Rivet tool	Page 8
Intensifier	Page 9
Troubleshooting	Page 10



SAFETY

- ➡ Do NOT USE EQUIPMENT WITH THIS TOOL THAT IS NOT RECOMMENDED OR SUPPLIED BY INDUSTRIAL RIVET & FASTENER Co.
- ➡ ALWAYS DISCONNECT THE AIR SUPPLY BEFORE ATTEMPTING ANY MAINTENANCE OR ADJUSTMENT/FITTING OF NOSE EQUIPMENT
- ➡ Do NOT OPERATE A TOOL THAT IS DIRECTED TOWARDS ANY PERSON(S)
- ➡ ALL MODIFICATIONS CARRIED OUT ON THE TOOL WITHOUT THE CONSENT OF INDUSTRIAL RIVET & FASTENER Co. SHALL BE DONE SO AT THE CUSTOMERS' SOLE RESPONSIBILITY
- ➡ REFER TO THIS MANUAL BEFORE ATTEMPTING ANY MAINTENANCE OPERATION
- ➡ AVOID EXCESSIVE CONTACT WITH HYDRAULIC OIL, AS SOON AS POSSIBLE WASH HANDS THOROUGHLY
- ➡ Do NOT EXCEED 7 BAR / 100 PSI INLET PRESSURE, THE USE OF A PRESSURE REGULATOR IS HIGHLY RECOMMENDED
- ➡ INSPECT THE MANDREL REGULARLY. WHILE SOME MARKING THROUGH USE IS NORMAL EXCESSIVE PITTING AND DISTORTION MAY CAUSE A MANDREL TO FAIL. A MANDREL THAT FAILS MAY FORCIBLY EJECT FROM THE TOOL. MANDRELS SHOULD BE INSPECTED BEFORE THE RECOMMENDED NUMBER OF PLACINGS BASED UPON THE BROACH LOAD OF THE PARTICULAR APPLICATION. IF YOU ARE UNSURE OF THE BROACH LOAD CONTACT YOUR INDUSTRIAL RIVET & FASTENER Co. REPRESENTATIVE WHO WILL HELP YOU DETERMINE WHAT THIS IS AND THE SAFE NUMBER OF PLACINGS TO EXPECT FROM THE MANDREL

SPECIFICATIONS

The specifications and information contained in this manual are applicable only to the tool with which it was supplied. Industrial Rivet & Fastener Co reserve the right to make any changes without notice as part of Industrial Rivet & Fastener Co policy of continuous improvement.

SPECIFICATIONS FOR RK-753™ RIVET TOOL

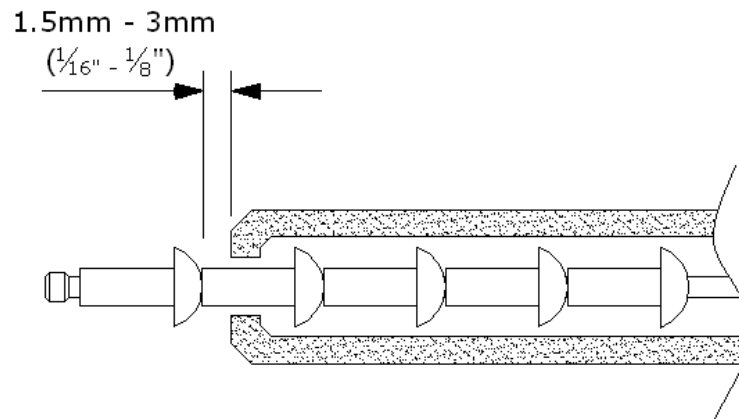
Air Pressure	Min/Max	□ 5 – 7 bar	□ 70 – 100 psi
Free Air Volume Required	@5.1 bar/75psi	□ 2.6 liters	□ .09 ft ³
Stroke	Minimum	□ 30 mm	□
Pull Force	@5.5 bar/80psi	□ 3.89kN	□
Cycle Time	Approximately	□ 1-1.5 seconds	□
Noise Level	Less than	□ 70 dB(A)	□
Weight		□ 1.2kg	□ 2.64 lb
Vibration	Less Than	□ 2.5 m/s ²	□ 8 ft/s ²

SPECIFICATIONS FOR RK-753™ INTENSIFIER / BOOSTER

Air Pressure	Min/Max	□ 5 – 7 bar	□ 70 – 100 psi
Intensification Ratio		□ 30 : 1	□

PREPARING THE TOOL FOR SERVICE

1. Check to see if a cursor is present in the barrel, fit a cursor into the barrel (1) if not present ensuring that the spring loaded plunger of the cursor is towards the front of the barrel
2. Fit correct nose assembly for the rivet being placed
3. Connect the hydraulic hose assembly from the tool to the intensifier
4. Connect the trigger/tail jaw supply line into the quick release collet on the pilot valve bolted to the intensifier
5. Connect the main air supply to the rear of the intensifier
6. Open the tail jaws (24) by switching off the air supply through the trigger/tail jaw assembly (38)
7. Load rivets onto mandrel by inserting the mandrel through the tail of the rivets and remove the paper strips
8. Place follower spring onto the mandrel
9. Open front jaw assembly and insert loaded mandrel through the nose assembly until a gap of approximately 1.5mm (1/16") - 3mm (1/8") between the head of the first rivet and the nose assembly is achieved



10. Close tail jaws (24) to grip the mandrel, the tool is now loaded and ready for use

AIR SUPPLY

- The rivet tool is powered by compressed air at an optimum pressure of 5.5 bar (80 psi)
- The use of a pressure regulator filter/lubricator unit within 3 meters of the tool is highly recommended to extend the life of the tool.

Dirt and/or water in the air supply can seriously impact the performance and durability of the tool; damage to the tool caused by contaminated air supply is not covered under warranty

MAINTENANCE

In order to maintain the tool in a safe working order it is important to carry out regular maintenance as prescribed by the manufacturer. A thorough inspection replacement of all seals within the tool should be carried out after 500,000 placings or annually, whichever is the sooner. Item numbers in parentheses refer to assembly drawing part numbers

Daily

- Check for air leaks, pay particular attention to the elbow connectors (21) supplying the tail jaws. Any damaged hoses should be replaced
- Lubricate the tool by pouring a few drops of light lubricating oil into the air inlet on the intensifier
- Inspect all mandrels for signs of wear or damage. Discard any mandrels that display signs of excessive pitting or distortion
- Remove front jaw nose assembly and inspect for cracks or other damage
- Inspect and clean the cursor assembly, lubricate with light oil and replace with the spring loaded end of the cursor toward the threaded end of the barrel. If the cursor is inserted the wrong way round, the tool will not feed rivets. Carry out the following steps to reorient the cursor
 - Loosen screws (35) and remove end cover (20)
 - Remove screw (18) seals (19) and cover (17) note there are two seals one either side of the cover
 - Remove circlip (15) rear plug (16) turret assembly (22) with jaws (24) spring (23) and jaw housing (25)
 - Insert a mandrel through the barrel nut (13) holding onto the bulb end and feed the mandrel up and through the barrel. The mandrel will pull the cursor out of the barrel to be inserted correctly.

Weekly

- Carry out procedures as per daily maintenance instructions above
- Clean and inspect the tail jaws for signs of damage or wear (groove running through the jaw serrations). Follow the instructions above to re-orient the cursor to access the tail jaws in the tail jaw cylinder. Reassemble the tail jaws with a light coating of grease on the outer face that contacts the jaw housing. Do not allow grease to contaminate the grooved inner face of the jaws as mandrel slippage may result.
- Check the oil level in the reservoir, the oil should be approximately 1/2" below the plexiglass cover plate fitted to the intensifier. If the tool requires topping up with oil on a regular basis check for leaking seals or damaged hoses and couplings

MAINTENANCE

Follow the instructions below to perform annual service and replacement of seals, item numbers in parentheses refer to assembly drawing part numbers on page 8.

Tail Jaw Cylinder

- Disconnect tool from air supply
- Disconnect rivet tool and hose assembly from intensifier
- Loosen screws (35) and remove end cover (20)
- Remove handle covers by removing (31,32) by removing retaining screws (33, 34)
- Disconnect tail jaw supply tube from elbow connector or using a small flat screwdriver remove the elbow connector complete taking care to retain the seals
- Remove screw (18) seals (19) and cover (17) note there are two seals one either side of the cover
- Remove circlip (15) rear plug (16) turret assembly (22) with jaws (24) spring (23) and jaw housing (25). Inspect all parts for signs of wear or damage and replace if necessary
- Using an 18mm A/F open ended wrench on the flats machined onto the barrel (1) and a 13mm A/F socket wrench, remove the barrel plug (13)
- Carefully slide tail jaw cylinder (10) with return spring (11) off the barrel. Clean and inspect tail jaw cylinder and spring for signs of wear/damage
- Replace all O ring seals and lubricate with a light coating of grease including the jaws as described in the weekly maintenance instructions
- Reassemble in reverse order

Hydraulic Body

- Carry out instructions above to dismantle the tail jaw cylinder
- Disconnect trigger supply line to the trigger assembly (38). Loosen screw securing the trigger assembly in position on the barrel and slide toward the front end of the barrel and set aside
- Remove the bleed plug assembly and seal (5, 6) a small amount of hydraulic fluid will run out of the tool and care should be taken to avoid excessive contact with skin and should be disposed of safely
- Unscrew the hydraulic hose and set aside over a suitable container to catch any fluid that may leak out
- Grip stroke limiter (9) in a vise across the flats machined and using a 32mm A/F wrench unscrew hydraulic body (8) from stroke limiter and remove piston (28)
- Pry out seals (2, 7) taking care not to damage internal bore of hydraulic body
- Clean all parts and check for signs of wear/damage, replace all seals lubricating with a light coating of grease and reassemble in reverse order.
- **Tip:** When inserting the barrel through the hydraulic piston and stroke limiter assembly place the tail jaw cylinder against the back of the piston (28) in order to help keep the dynamic seal in the correct orientation. If this is not done the seal can become dislodged and the tool will leak requiring another strip down!

MAINTENANCE

Follow the instructions below to perform annual service and replacement of seals, item numbers in parentheses refer to assembly drawing part numbers on page 9.

Intensifier Unit

- Disconnect tool from air supply
- Disconnect rivet tool and hose assembly from intensifier
- Remove hydraulic coupler (1) and seals (2) holding unit over a suitable container to collect the hydraulic fluid
- Remove screw (18) together with cover plate (17), spacer (19) plate (16) and silencer (30)
- Using a flat bladed screwdriver pry out and remove spiral retaining ring (15)
- Screw item 18 back into end cap (20) and pull out the end cap (20), cylinder liner (10) and piston assembly (22).
- Using an intensifier spanner/wrench as detailed on page 10, unscrew and remove the seal plug (23)
- Carefully remove all seals (24, 28, 28), spacers (25, 29) and seal housing (27)
- Remove cover plate (7) and gasket (6) by removing the four retaining screws (32) and washers (33)
- Using the other end of the intensifier spanner/wrench remove the valve assembly (5)
- Clean and inspect all parts for signs of wear or damage
- Replace all O ring seals
- Reassemble in reverse order lubricating all seals with a light coating of grease

Pilot valve

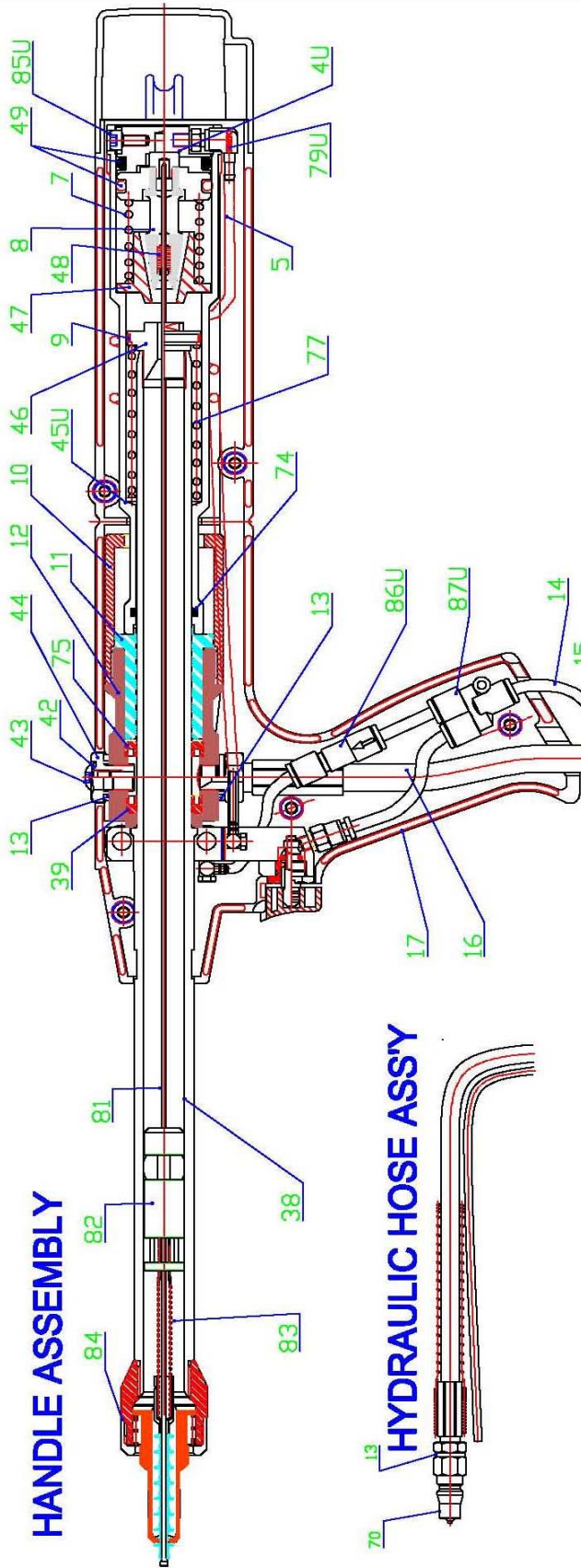
- Disconnect tool from air supply
- Remove pilot valve from base of intensifier by removing three retaining screws being careful to retain sealing rings
- Unscrew and remove end caps
- Remove pistons and valve spool, O rings & spacers, clean all items and check for damage
- Reassemble pistons with a light coating of grease.
- Lightly coat the spool with a small amount of light oil, wipe with a clean rag and replace into valve assembly
- If necessary; replace all o rings available as a service kit part number RK101-00010
- Reassemble in reverse order



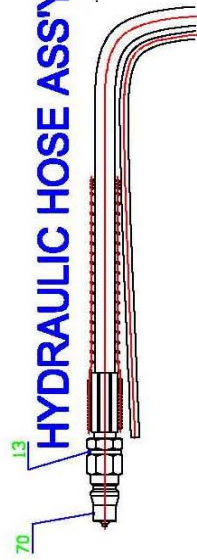
General Assembly RK7532 Standard Handle/Hose Assembly

RIVETKING[™] RK-753-2

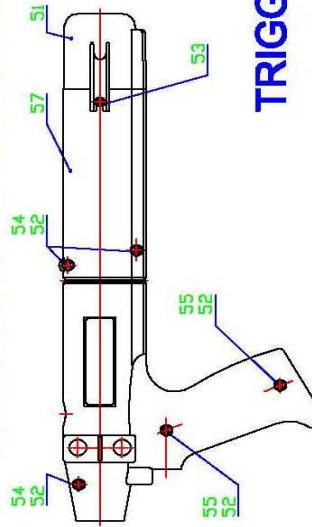
HANDLE ASSEMBLY



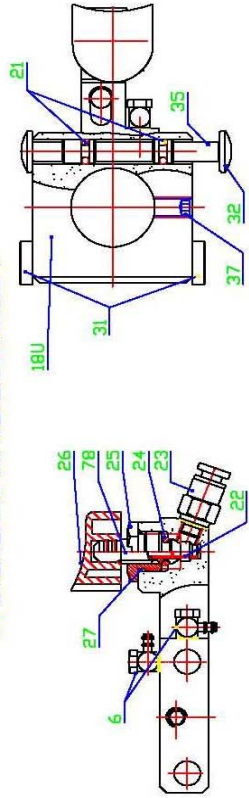
HYDRAULIC HOSE ASSY



HANDLE CASE MOLDING



TRIGGER ASSEMBLY



REV.	DESCRIPTION	DATE	DRAWN: SBS	DATE: 1-1-08	CHECKED: SBS	SHEET 1 OF 1
1	RELEASE	6-25-04				
2	MODEL RK-753-2	1-1-08				
DESCRIPTION: RK-753 QUICKRIVETER STANDARD MODEL						
LINER FINISH: UNLDR	FINISH: 4-GRIT	CONTOUR TO MATCH DRAWING				
STATED SURFACE TEXTURE: 1.6 (Ra)	STATED SURFACE TEXTURE: 1.6 (Ra)	STATED SURFACE TEXTURE: 1.6 (Ra)				
			Industrial Rivet & Fastener Co. 200 PARIS AVENUE NORTHVALE, NJ, 07647 TEL: (201) 750 1040 info@rivet.com			
DRAWING NUMBER: RK-753-HANDL	REV: 2					



General Assembly RK7532 Standard Handle/Hose Assembly

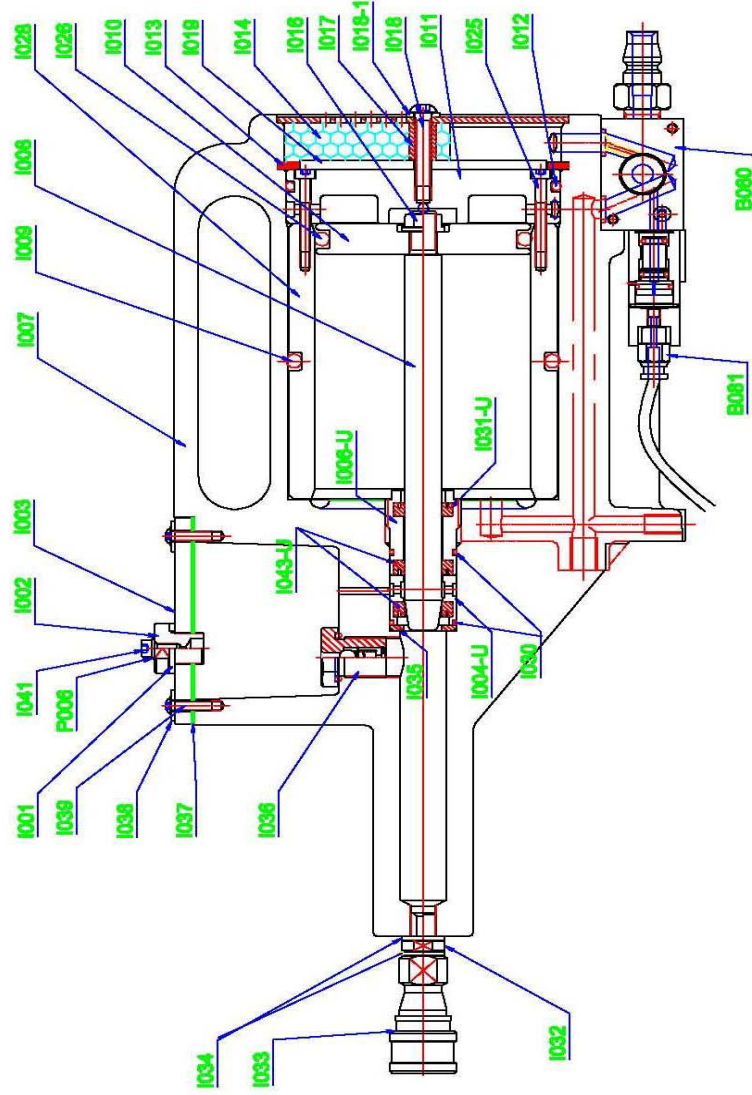
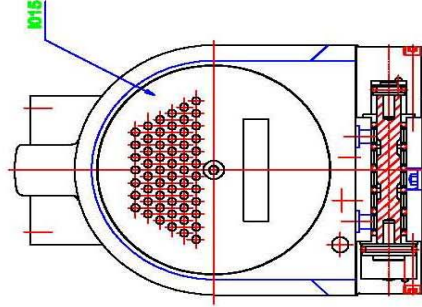
Parts List			
#	Part#	Description	Qty
4	TP-RK7532-H004UY	REAR PLUGE	1
5	TP-RK7532-H005Y	TAIL JAW TUBE	1
6	TP-RK7532-H006N	ELBOW CONNECTOR	2
7	TP-RK7532-H007Y	SPRING	1
8	TP-RK7532-H008Y	TAIL JAW PISTON ASS'Y	1
8	TP-RK7532-H008-1	TAIL JAW PISTON	1
8	TP-RK7532-H008-2	TURRET PLUG	1
9	TP-RK7532-H009N	RUBBING STRIP	1
10	TP-RK7532-H010N	STROKE LIMITER	1
11	TP-RK7532-H011Y	PISTON	1
12	TP-RK7532-H012N	BODY	1
13	TP-RK7532-H013Y	SEAL	3
14	TP-RK7532-H014Y	4MM AIR HOSE(2500MM)	1
15	TP-RK7532-H015Y	CABLE TIES (4"BLACK)	9
16	TP-RK7532-H016Y	HYDRAULIC HOSE ASS'Y	1
17	TP-RK7532-H017N	HANDLE MOULDING(RIGHT)	1
18	TP-RK7532-H018UN	VALVE AND TRIGGER ASS'Y	1
20	TP-RK7532-H020N	TRIGGER HOUSING	1
21	TP-RK7532-H021N	"O"RING	2
21	TP-RK7532-H021-1N	PACKING/"O"RING	1
22	TP-RK7532-H022Y	SPRING (SEE KIT# TP-RK7532-H120U)	1
23	TP-RK7532-H023Y	CONNECTOR	1
24	TP-RK7532-H024Y	"O"RING (SEE KIT# TP-RK7532-H120U)	1
25	TP-RK7532-H025N	RETAINER (SEE KIT# TP-RK7532-H120U)	1
25	TP-RK7532-H025-1N	"O"RING (SEE KIT# TP-RK7532-H120U)	1
26	TP-RK7532-H026Y	TRIGGER (SEE KIT# TP-RK7532-H120U)	1
27	TP-RK7532-H027N	BALL/SPOOL	1
28	TP-RK7532-H028N	SCREW	1
29	TP-RK7532-H029N	"O"RING	1
30	TP-RK7532-H030N	SEAL RETAINER	1
27	TP-RK7532-H027Y	"O"RING	1
31	TP-RK7532-H031Y	PLUG	2
32	TP-RK7532-H032N	WASHER	1
35	TP-RK7532-H035N	SPOOL	1
36	TP-RK7532-H036Y	SCREW	2
37	TP-RK7532-H037Y	SCREW	1
38	TP-RK7532-H038Y	BARREL	1
39	TP-RK7532-H039Y	SEAL	1
40	TP-RK7532-H040Y	BLEED PLUGE ASSEMBLY	1
41	TP-RK7532-H041Y	SEAL	1
42	TP-RK7532-H042Y	SEAL	1
43	TP-RK7532-H043N	SCREW	1
44	TP-RK7532-H044N	PLUG	1
45U	TP-RK7532-H045UN	TAL JAW CYLINDER	1
46	TP-RK7532-H046N	PLUGE	1

General Assembly RK7532 Standard Handle/Hose Assembly cont....

Parts List cont....			
#	Part#	Description	Qty
47	TP-RK7532-H047Y	JAW HOUSING	1
48	ZRT-VJ	TAIL JAWS	2
49	TP-RK7532-H049Y	"O"RING	2
50U	TP-RK7532-H050UY	SCREW	2
51	TP-RK7532-H051N	END CAP	1
52	TP-RK7532-H052Y	NUT	7
53	TP-RK7532-H053N	SCREW	2
54	TP-RK7532-H054Y	SCREW	3
55	TP-RK7532-H055Y	SCREW	2
56	TP-RK7532-H056Y	LABEL	2
57	TP-RK7532-H057N	HANDLE MOULDING(LEFT)	1
70	TP-RK7532-H070N	QUICK RELEASE NIPPLE	1
74	TP-RK7532-H074N	"O"RING	1
75	TP-RK7532-H075Y	SEAL	1
77	TP-RK7532-H077Y	BARREL RETURN SPRING	1
78	TP-RK7532-H078Y	SPINDLE	1
78	TP-RK7532-H078N	SPINDLE	1
79U	TP-RK7532-H079UY	ELBOW CONNECTOR	1
81	See Catalog	MANDREL	1
82	ZRT-IC	CURSOR	1
83	See Catalog	M/F SPRING	1
84	See Catalog	FRONT JAW (SEE CATALOG FOR P/N)	1
85U	TP-RK7532-H085UY	SCREW	2
86U	TP-RK7532-H086UY	NON-RETURN VALVE	1
87U	TP-RK7532-H087UY	Y-FITTING	1
120U	TP-RK7532-H120U	TRIGGER ASS'Y KIY, 26, 78, 25, 25-1, 24, 22	1



General Assembly RK7532 Standard Intensifier Assembly



REV.	DESCRIPTION	DATE
1	RELEASE	6-25-04
2	MODEL RK-753-2	1-1-08

DRAWN: SRS	DATE: 1-1-08	CHECKED: SRS	SHEET 1 OF 1
DESCRIPTION: RK-753 QUICKRIVETER STANDARD MODEL			
UNITS: INCHES	DECIMAL: 4.000	CONVERSION TO METRIC: MILLIMETERS	CONVERSION TO METRIC: MILLIMETERS
UNLESS NOTED OTHERWISE	ANGLES: 16.1°	UNLESS NOTED OTHERWISE	UNLESS NOTED OTHERWISE
STARTED:	SURFACE TEXTURE: (R) (1.6)	UNLESS NOTED OTHERWISE	UNLESS NOTED OTHERWISE
		UNLESS NOTED OTHERWISE	UNLESS NOTED OTHERWISE

Industrial Rivet & Fastener Co.	RIVET KING	200 PARTS AVENUE NORTHVALE, NJ, 07647 TEL: (201) 750-1040 Info@rivetking.com
DRAWING NUMBER: RK-753-INTSIF	REP: 2	

RIVETKING™ RK-753-2

INTENSIFIER

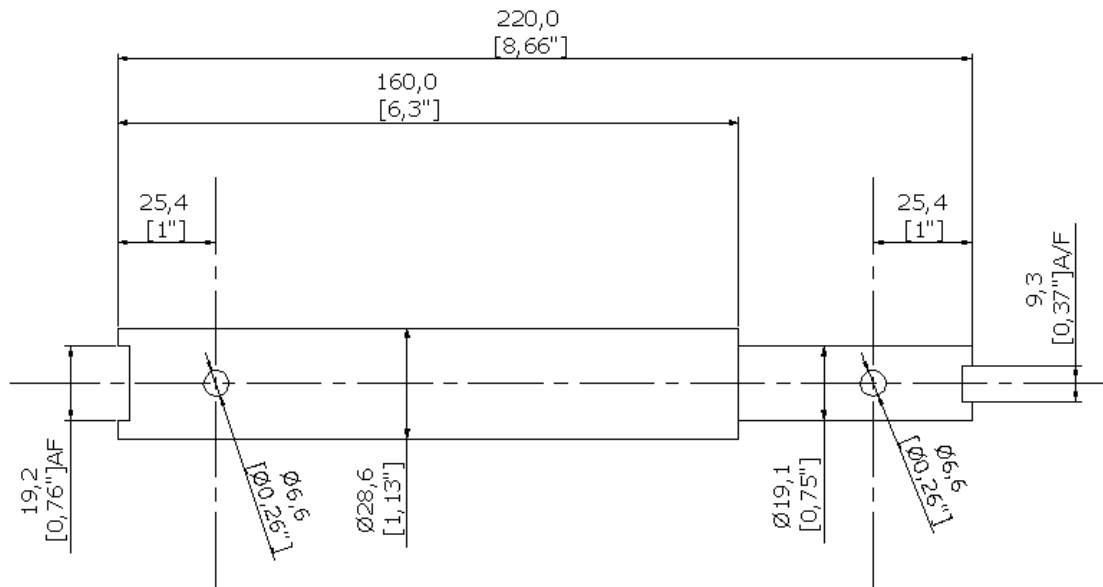
General Assembly RK7532 Standard Intensifier Assembly

Parts List			
#	Part#	Description	Qty
I001	TP-RK7532-B001N	"O"RING (SEE KIT#TP-RK7532-K082)	1
I002	TP-RK7532-B002N	SCREW (SEE KIT#TP-RK7532-K082)	1
I003	TP-RK7532-B003N	COVER PLATE (SEE KIT#TP-RK7532-K082)	1
I004-U	TP-RK7532-B004UY	SEAL HOUSING	1
I005-U	RP-RK7532-B005UY	SEAL	2
I006-U	TP-RK7532-B006UY	PLUG	1
I007	TP-RK7532-B007Y	BODY ASS'Y	1
I008	TP-RK7532-B008N	PISTON ROD	1
I009	TP-RK7532-B009Y	"O"RING	1
I010	TP-RK7532-B010N	AIR PISTON	1
I011	TP-RK7532-B011N	END COVER	1
I012	TP-RK7532-B012Y	"O"RING	1
I013	TP-RK7532-B013Y	RETAINING RING	1
I014	TP-RK7532-B014Y	SILENCER	1
I015	TP-RK7532-B015Y	SILENCER COVER	1
I016	TP-RK7532-B016N	LOCK NUT	1
I017	TP-RK7532-B017Y	SPACER	1
I018	TP-RK7532-B018N	SCREW	1
I018-1	TP-RK7532-B018-1N	WASHER	1
I019	TP-RK7532-B019Y	RETAINING PLATE	1
I020	TP-RK7532-BN	"O"RING	1
I025	TP-RK7532-B025Y	SCREW	2
I026	TP-RK7532-B026Y	"O"RING	1
I028	TP-RK7532-B028Y	SLEEVE	1
I029	TP-RK7532-B028Y	SEAL	1
I030	TP-RK7532-B030N	"O"RING	2
I031U	TP-RK7532-B031UN	SEAL	1
I032	TP-RK7532-B032Y	CONNECTOR	1
I033	TP-RK7532-B033Y	CONNECTOR	1
I034	TP-RK7532-B034Y	SEAL	2
I035	TP-RK7532-B035N	WASHER	1
I036	TP-RK7532-B036Y	VALVE HOUSING ASS'Y	1
I037	TP-RK7532-B037Y	GASKET	1
I038	TP-RK7532-B038Y	WASHER	4
I039	TP-RK7532-B039Y	SCREW	4
I041	TP-RK7532-B041Y	SCREW	1
I043	TP-RK7532-B043Y	SEAL	2
B080	TP-RK7532-B080N	PILOT VALVE ASS'Y	1
B081	TP-RK7532-B081Y	PILOT VALVE HOSE CONNECTOR	1
	TP-RK7532-K082	COVER PLATE ASS'Y 1,2,3,37,41	1
	TP-RK7532-RK01	HYDRAULIC OIL	1

TROUBLESHOOTING

Problem	Possible Cause	Remedy
Tool will not cycle when connected to air supply	<ul style="list-style-type: none"> Low air pressure Pilot valve sticking 	<ul style="list-style-type: none"> Check air pressure and increase if necessary Remove pilot valve spool, clean and lubricate as detailed on page 7
Tool will not place fastener	<ul style="list-style-type: none"> High broach load Worn/dirty tail jaws Low air pressure Jaws not gripping mandrel Air in hydraulic system 	<ul style="list-style-type: none"> Check hole size, fastener and grip length to ensure correct fastener is being used in the application. Check for correct mandrel Clean/replace tail jaws Check air pressure and increase if necessary Mandrel worn or broken, replace with a new mandrel Re-prime tool
Tool feeds more than one rivet	<ul style="list-style-type: none"> Incorrect gap set between head of rivet and nose jaw Worn/dirty tail jaws Worn mandrel 	<ul style="list-style-type: none"> Re-set gap as to 1.5-3mm Clean/replace tail jaws Check/replace mandrel

INTENSIFIER SPANNER



Industrial Rivet & Fasteners Co. offers a comprehensive tool service and repair program, for details contact your local area sales representative or call direct:



200 Paris Avenue
Northvale, NJ 07647
Tel: (201) 750-1040



Fax: (201) 750-1219

MSDS for Mobile DTE SERIES PNEUMATIC OIL

1. PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: MOBIL DTE SERIES
SUPPLIER: EXXONMOBIL OIL CORPORATION
3225 GALLOWS RD.
FAIRFAX, VA 22037
24 - Hour Health and Safety Emergency (call collect): 609-737-4411
24 - Hour Transportation Emergency:
CHEMTREC: 800-424-9300 202-483-7616
LUBES AND FUELS: 281-834-3296
Product and Technical Information:
Lubricants and Specialties: 800-662-4525 800-443-9966
Fuels Products: 800-947-9147
MSDS Fax on Demand: 713-613-3661
MSDS Internet Website: <http://www.exxon.com>, <http://www.mobil.com>

2. COMPOSITION/INFORMATION ON INGREDIENTS

CHEMICAL NAMES AND SYNONYMS: PET. HYDROCARBONS AND ADDITIVES
GLOBALLY REPORTABLE MSDS INGREDIENTS:
None.
See Section 8 for exposure limits (if applicable).

3. HAZARDS IDENTIFICATION

Under normal conditions of use, this product is not considered hazardous according to regulatory guidelines (See section 15).
EMERGENCY OVERVIEW: Amber Liquid. Note: Pressurized mists may form a flammable mixture. DOT ERG No. : NA
POTENTIAL HEALTH EFFECTS: Under normal conditions of intended use, this product does not pose a risk to health. Excessive exposure may result in eye, skin or respiratory irritation.
For further health effects/toxicological data, see Section 11.

4. FIRST AID MEASURES

EYE CONTACT: Flush thoroughly with water. If irritation occurs, call a physician.
SKIN CONTACT: Wash contact areas with soap and water. Remove and clean oil soaked clothing daily and wash affected area.
INJECTION INJURY WARNING: If product is injected into or under the skin, or into any part of the body, regardless of the appearance of the wound or its size, the individual should be evaluated immediately by a physician as a surgical emergency. Even though initial symptoms from high pressure injection may be minimal or absent, early surgical treatment within the first few hours may significantly reduce the ultimate extent of injury.
INHALATION: Not expected to be a problem. However, if respiratory irritation, dizziness, nausea, or unconsciousness occurs due to excessive vapor or mist exposure, seek immediate medical assistance. If breathing has stopped, assist ventilation with a mechanical device or mouth-to-mouth resuscitation.
INGESTION: Not expected to be a problem. Seek medical attention if discomfort occurs. Do not induce vomiting.

5. FIRE-FIGHTING MEASURES

EXTINGUISHING MEDIA: Carbon dioxide, foam, dry chemical and water fog.
SPECIAL FIRE FIGHTING PROCEDURES: Water or foam may cause frothing. Use water to keep fire exposed containers cool. Water spray may be used to flush spills away from exposure. Prevent runoff from fire control or dilution from entering streams, sewers, or drinking water supply.
SPECIAL PROTECTIVE EQUIPMENT: For fires in enclosed areas, fire fighters must use self-contained breathing apparatus.
UNUSUAL FIRE AND EXPLOSION HAZARDS: Note: Pressurized mists may form a flammable mixture.



COMBUSTION PRODUCTS: Fumes, smoke, carbon monoxide, sulfur oxides, aldehydes and other decomposition products, in the case of

MSDS for Mobile DTE SERIES PNEUMATIC OIL (cont...)

incomplete combustion.

Flash Point C(F): > 200(392) (ASTM D-92).

Flammable Limits (approx.% vol.in air) - LEL: 0.9%, UEL: 7.0%

NFPA HAZARD ID: Health: 0, Flammability: 1, Reactivity: 0

6. ACCIDENTAL RELEASE MEASURES

NOTIFICATION PROCEDURES: Report spills/releases as required to appropriate authorities. U.S. Coast Guard and EPA regulations require immediate reporting of spills/releases that could reach any waterway including intermittent dry creeks. Report spill/release to Coast Guard National Response Center toll free number (800)424-8802. In case of accident or road spill notify CHEMTREC (800) 424-9300.

PROCEDURES IF MATERIAL IS RELEASED OR SPILLED:

LAND SPILL: Shut off source taking normal safety precautions. Take measures to minimize the effects on ground water. Recover by pumping or contain spilled material with sand or other suitable absorbent and remove mechanically into containers. If necessary, dispose of adsorbed residues as directed in Section 13.

WATER SPILL: Confine the spill immediately with booms. Warn other ships in the vicinity. Notify port and other relevant authorities. Remove from the surface by skimming or with suitable absorbents. If permitted by regulatory authorities the use of suitable dispersants should be considered where recommended in local oil spill procedures.

ENVIRONMENTAL PRECAUTIONS: Prevent material from entering sewers, water sources or low lying areas; advise the relevant authorities if it has, or if it contaminates soil/vegetation.

PERSONAL PRECAUTIONS: See Section 8

7. HANDLING AND STORAGE

HANDLING: High pressure injection under the skin may occur due to the rupture of pressurized lines. Always seek medical attention. No special precautions are necessary beyond normal good hygiene practices. See Section 8 for additional personal protection advice when handling this product.

STORAGE: Keep containers closed when not in use. Do not store in open or unlabelled containers. Store away from strong oxidizing agents and combustible materials. Do not store near heat, sparks, flame or strong oxidants.

SPECIAL PRECAUTIONS: Prevent small spills and leakages to avoid slip hazard.

EMPTY CONTAINER WARNING: Empty containers retain residue (liquid and/or vapor) and can be dangerous. DO NOT PRESSURIZE, CUT, WELD, BRAZE, SOLDER, DRILL, GRIND OR EXPOSE SUCH CONTAINERS TO HEAT, FLAME, SPARKS, STATIC ELECTRICITY, OR OTHER SOURCES OF IGNITION; THEY MAY EXPLODE AND CAUSE INJURY OR DEATH. Do not attempt to refill or clean container since residue is difficult to remove. Empty drums should be completely drained, properly bunged and promptly returned to a drum reconditioner. All containers should be disposed of in an environmentally safe manner and in accordance with governmental regulations.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

OCCUPATIONAL EXPOSURE LIMITS:

When mists/aerosols can occur, the following are recommended: 5 mg/m³ (as oil mist)- ACGIH Threshold Limit Value (TLV), 10 mg/m³ (as oil mist) - ACGIH Short Term Exposure Limit (STEL), 5 mg/m³ (as oil mist) - OSHA Permissible Exposure Limit (PEL)

VENTILATION: If mists are generated, use adequate ventilation, local



exhaust or enclosures to control below exposure limits.
RESPIRATORY PROTECTION: If mists are generated, and/or when ventilation is not adequate, wear approved respirator.
EYE PROTECTION: If eye contact is likely, safety glasses with side

MSDS for Mobile DTE SERIES PNEUMATIC OIL (cont...)

shields or chemical type goggles should be worn.
SKIN PROTECTION: Not normally required. When splashing or liquid contact can occur frequently, wear oil resistant gloves and/or other protective clothing. Good personal hygiene practices should always be followed.

9. PHYSICAL AND CHEMICAL PROPERTIES

Typical physical properties are given below. Consult Product Data Sheet for specific details.

APPEARANCE: Liquid
COLOR: Amber
ODOR: Mild
ODOR THRESHOLD-ppm: NE
pH: NA
BOILING POINT C(F): > 316(600)
MELTING POINT C(F): NA
FLASH POINT C(F): > 200(392) (ASTM D-92)
FLAMMABILITY (solids): NE
AUTO FLAMMABILITY C(F): NA
EXPLOSIVE PROPERTIES: NA
OXIDIZING PROPERTIES: NA
VAPOR PRESSURE-mmHg 20 C: < 0.1
VAPOR DENSITY: > 2.0
EVAPORATION RATE: NE
RELATIVE DENSITY, 15/4 C: 0.871
SOLUBILITY IN WATER: Negligible
PARTITION COEFFICIENT: > 3.5
VISCOSITY AT 40 C, cSt: 32.0
VISCOSITY AT 100 C, cSt: 5.3
POUR POINT C(F): < -18(0)
FREEZING POINT C(F): NE
VOLATILE ORGANIC COMPOUND: NE
DMSO EXTRACT, IP-346 (WT.%): <3, for mineral oil only
NA=NOT APPLICABLE NE=NOT ESTABLISHED D=DECOMPOSES
FOR FURTHER TECHNICAL INFORMATION, CONTACT YOUR MARKETING REPRESENTATIVE

10. STABILITY AND REACTIVITY

STABILITY (THERMAL, LIGHT, ETC.): Stable.
CONDITIONS TO AVOID: Extreme heat and high energy sources of ignition.
INCOMPATIBILITY (MATERIALS TO AVOID): Strong oxidizers.
HAZARDOUS DECOMPOSITION PRODUCTS: Product does not decompose at ambient temperatures.
HAZARDOUS POLYMERIZATION: Will not occur.

11. TOXICOLOGICAL DATA

---ACUTE TOXICOLOGY---
ORAL TOXICITY (RATS): Practically non-toxic (LD50: greater than 2000 mg/kg). ---Based on testing of similar products and/or the components.
DERMAL TOXICITY (RABBITS): Practically non-toxic (LD50: greater than 2000 mg/kg). ---Based on testing of similar products and/or the components.
INHALATION TOXICITY (RATS): Practically non-toxic (LC50: greater than 5 mg/l). ---Based on testing of similar products and/or the components.
EYE IRRITATION (RABBITS): Practically non-irritating. (Draize score: greater than 6 but 15 or less). ---Based on testing of similar products and/or the components.
SKIN IRRITATION (RABBITS): Practically non-irritating. (Primary Irritation Index: greater than 0.5 but less than 3). ---Based on testing of similar products and/or the components.
OTHER ACUTE TOXICITY DATA: Although an acute inhalation study was not performed with this product, a variety of mineral and synthetic



oils, such as those in this product, have been tested. These samples had virtually no effect other than a nonspecific inflammatory response in the lung to the aerosolized mineral oil. The presence of additives in other tested formulations (in approximately the same amounts as in the present formulation) did

MSDS for Mobile DTE SERIES PNEUMATIC OIL (cont...)

not alter the observed effects.

---SUBCHRONIC TOXICOLOGY (SUMMARY)---

No significant adverse effects were found in studies using repeated dermal applications of similar formulations to the skin of laboratory animals for 13 weeks at doses significantly higher than those expected during normal industrial exposure. The animals were evaluated extensively for effects of exposure (hematology, serum chemistry, urinalysis, organ weights, microscopic examination of tissues etc.).

---REPRODUCTIVE TOXICOLOGY (SUMMARY)---

No teratogenic effects would be expected from dermal exposure, based on laboratory developmental toxicity studies of major components in this formulation and/or materials of similar composition.

---CHRONIC TOXICOLOGY (SUMMARY)---

Repeated and/or prolonged exposure may cause irritation to the skin, eyes or respiratory tract. Overexposure to oil mist may result in oil droplet deposition and/or granuloma formation. For mineral base oils: Base oils in this product are severely solvent refined and/or severely hydrotreated. Chronic mouse skin painting studies of severely treated oils showed no evidence of carcinogenic effects. These results are confirmed on a continuing basis using various screening methods such as Modified Ames Test, IP-346, and/or other analytical methods. For synthetic base oils: The base oils in this product have been tested in the Ames assay and other tests of mutagenicity with negative results. These base oils are not expected to be carcinogenic with chronic dermal exposures.

---SENSITIZATION (SUMMARY)---

Not expected to be sensitizing based on tests of this product, components, or similar products.

12. ECOLOGICAL INFORMATION

ENVIRONMENTAL FATE AND EFFECTS:

In the absence of specific environmental data for this product, this assessment is based on information for representative products.

ECOTOXICITY: Available ectotoxicity data (LL50 >1000 mg/L) indicates that adverse effects to aquatic organisms are not expected from this product.

MOBILITY: When released into the environment, adsorption to sediment and soil will be the predominant behavior.

PERSISTENCE AND DEGRADABILITY: This product is expected to be inherently biodegradable.

BIOACCUMULATIVE POTENTIAL: Bioaccumulation is unlikely due to the very low water solubility of this product, therefore bioavailability to aquatic organisms is minimal.

13. DISPOSAL CONSIDERATIONS

WASTE DISPOSAL: Product is suitable for burning in an enclosed, controlled burner for fuel value. Such burning may be limited pursuant to the Resource Conservation and Recovery Act. In addition, the product is suitable for processing by an approved recycling facility or can be disposed of at an appropriate government waste disposal facility. Use of these methods is subject to user compliance with applicable laws and regulations and consideration of product characteristics at time of disposal.

RCRA INFORMATION: The unused product, in our opinion, is not specifically listed by the EPA as a hazardous waste (40 CFR, Part 261D), nor is it formulated to contain materials which are listed hazardous wastes. It does not exhibit the hazardous characteristics of ignitability, corrosivity, or reactivity. The



unused product is not formulated with substances covered by the Toxicity Characteristic Leaching Procedure (TCLP). However, used product may be regulated.

 14. TRANSPORT INFORMATION

MSDS for Mobile DTE SERIES PNEUMATIC OIL (cont...)

USA DOT: NOT REGULATED BY USA DOT.
 RID/ADR: NOT REGULATED BY RID/ADR.
 IMO: NOT REGULATED BY IMO.
 IATA: NOT REGULATED BY IATA.
 STATIC ACCUMULATOR (50 picosiemens or less): YES

 15. REGULATORY INFORMATION

OSHA HAZARD COMMUNICATION STANDARD: When used for its intended purposes, this product is not classified as hazardous in accordance with OSHA 29 CFR 1910.1200.
 EU Labeling: Product is not dangerous as defined by the European Union Dangerous Substances/Preparations Directives. EU labeling not required.
 Governmental Inventory Status: All components comply with TSCA, EINECS/ELINCS, AICS, METI, and DSL.
 U.S. Superfund Amendments and Reauthorization Act (SARA) Title III: This product contains no "EXTREMELY HAZARDOUS SUBSTANCES".
 SARA (311/312) REPORTABLE HAZARD CATEGORIES: None.
 This product contains no chemicals subject to the supplier notification requirements of SARA (313) toxic release program.
 The following product ingredients are cited on the lists below:
 CHEMICAL NAME CAS NUMBER LIST CITATIONS *

 ZINC (ELEMENTAL ANALYSIS) (0.08%) 7440-66-6 22
 ZINC ALKYL DITHIOPHOSPHATE 68649-42-3 22
 (0.67%)

--- REGULATORY LISTS SEARCHED ---
 1=ACGIH ALL 6=IARC 1 11=TSCA 4 16=CA P65 CARC 21=LA RTK
 2=ACGIH A1 7=IARC 2A 12=TSCA 5a2 17=CA P65 REPRO 22=MI 293
 3=ACGIH A2 8=IARC 2B 13=TSCA 5e 18=CA RTK 23=MN RTK
 4=NTP CARC 9=OSHA CARC 14=TSCA 6 19=FL RTK 24=NJ RTK
 5=NTP SUS 10=OSHA Z 15=TSCA 12b 20=IL RTK 25=PA RTK
 26=RI RTK

* EPA recently added new chemical substances to its TSCA Section 4 test rules. Please contact the supplier to confirm whether the ingredients in this product currently appear on a TSCA 4 or TSCA 12b list.
 Code key:CARC=Carcinogen; SUS=Suspected Carcinogen; REPRO=Reproductive

 16. OTHER INFORMATION

USE: HYDRAULIC OIL
 NOTE: PRODUCTS OF EXXON MOBIL CORPORATION AND ITS AFFILIATED COMPANIES ARE NOT FORMULATED TO CONTAIN PCBS.
 Health studies have shown that many hydrocarbons pose potential human health risks which may vary from person to person. Information provided on this MSDS reflects intended use. This product should not be used for other applications. In any case, the following advice should be considered:

INDUSTRIAL LABEL
 Under normal conditions of intended use, this product does not pose a risk to health. Excessive exposure may result in eye, skin or respiratory irritation. Always observe good hygiene measures. First Aid: Wash skin with soap and water. Flush eyes with water. If overcome by fumes or vapor, remove to fresh air. If ingested do not induce vomiting. If symptoms persist seek medical assistance. Read and understand the MSDS before using this product.

 For Internal Use Only: MHC: 1* 1* 1* 1* 1*, MPPEC: A, TRN: 602623-00,
 ELIS: 400431, CMCS97: 970972, REQ: US - MARKETING, SAFE USE: L
 EHS Approval Date: 04NOV2002

 Information given herein is offered in good faith as accurate, but without guarantee. Conditions of use and suitability of the product for



particular uses are beyond our control; all risks of use of the product are therefore assumed by the user and WE EXPRESSLY DISCLAIM ALL WARRANTIES OF EVERY KIND AND NATURE, INCLUDING WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE IN RESPECT TO THE USE OR SUITABILITY OF THE PRODUCT. Nothing is intended as a recommendation for uses which infringe valid patents or as extending license under valid patents. Appropriate warnings and safe handling procedures should be provided to handlers and users. Alteration of this

MSDS for Mobile DTE SERIES PNEUMATIC OIL (cont...)

document is strictly prohibited. Except to the extent required by law, republication or retransmission of this document, in whole or in part, is not permitted. Exxon Mobil Corporation and its affiliated companies assume no responsibility for accuracy of information unless the document is the most current available from an official ExxonMobil distribution system. Exxon Mobil Corporation and its affiliated companies neither represent nor warrant that the format, content or product formulas contained in this document comply with the laws of any other country except the United States of America.

Prepared by: ExxonMobil Oil Corporation
Environmental Health and Safety Department, Clinton, USA

Warranty Statement:

Industrial Rivet & Fastener Co. Inc. and Zipp Tools (hereinafter "IRF"), hereby warrants to the initial retail customer and original distributor ("Warrantee") only that its products will be free from defects in material and workmanship for a period of 1 year from the purchase date, provided that the products are used in accordance with "IRF's" instructions as to maintenance, operation and use.

The said warranty does not extend to goods subjected to misuse, neglect, accident or improper installation or maintenance or which have been altered or repaired by anyone other than the seller or its authorized agents.

The warrantee's only remedy and IRF's only obligation in the event of a defect or failure in the products, is that IRF, at its sole option, repair, replace or rework the products, but in no case shall the cost of the foregoing exceed the invoice price of the products.

This warranty shall be void if any person seeking to make a claim for defective or failed products fails to notify IRF within 30 days of receipt of evidence that the product is defective or has failed, or if said person fails to provide IRF with such evidence as is reasonably requested concerning the effect or failure, including without limitation, evidence of the date of purchase and date of installation.

This warranty is in lieu of all other warranties, expressed or implied, including merchantability, or fitness provided for herein. Under no circumstance shall IRF be liable for incidental or consequential damages arising from the defect or failure in its products.

Seller's sole obligation under the foregoing warranty will be limited to, at Seller's option, repair or replacement of the tool (and shipping to the buyer with transportation charges paid to any place within the contiguous 48 states). Returned goods will be evaluated by our warranty repair department and a conclusion will be determined and classified as:

- a) Warranty Repair (free of charge)
- b) Abuse /Neglect (bench fee and/or hourly rate)
- c) Maintenance (Flat Fee)

Price Schedule as of 1/1/2007

Bench Fee: \$55.00

Hourly Rate: \$55.00 per hour

Flat Fee:

Level 1 - Adjustments and light repair \$35.00 + parts

Level 2 - Maintenance, Oil Change \$95.00 + parts

Level 3 - Overhaul, complete disassembly, change all seals \$155.00 + parts

If inspection by the seller of returned goods shows no breach of the forgoing warranty, Seller's regular conditioning charges (as stated above) apply. Upon this conclusion we will either repair the tool at no cost to you and return it postage paid, or call you to inform you of the repair cost. The repair will need to be approved in writing before any work is performed.

A comprehensive tool service and repair program, for details contact your local area sales representative or call:

Industrial Rivet & Fastener Co.
200 Paris Ave
Northvale, NJ 07647
1-800-BUY-RIVET