Model JG Industrial Gearhead Jackshaft Door Operator Safety, Installation, and Service Manual



OSCO requires use of an electric edge or photoelectric control for pedestrian protection on all automatic or remotely controlled door operators.



Safety Information and Warnings

Read all of the following before beginning to install the Model JG operator:

- 1. Read the green "SAFETY INSTRUCTIONS" sheet provided with the operator information. It's extremely important that the safety warnings and precautions be understood and followed by the installing contractor. Leave all instructions with the end user.
- 2. Do not attempt to operate the machine unless it is completely installed as instructed.
- 3. The installation must be made in a neat and professional manner, observing all rules of good workmanship and personal safety.
- All electrical connections to the power supply must be made by a qualified and licensed electrician. All local and national codes must be observed.
- 5. A power-disconnect switch should be located within sight of the operator so that primary power can be turned off when necessary.
- 6. Do not remove the operator cover unless you are qualified to service this equipment and the power is turned off. There are no user-serviceable parts inside.
- 7. Install enclosed warning signs so as to be visible to all persons passing near or through the door.
- 8. Operate the door only when it is in full view.
- 9. Do not permit children to play on or around the door.
- 10. Never reach through or around a door frame to operate the door controls.
- 11. Install all recommended safety equipment.

Features

- Continuous-duty industrial C-face motor
- Heavy-duty right-angle gear reducer
- Dependable roller chain drive
- Magnetic disc brake standard
- Emergency disconnect for manual operation
- Chain hoist operation with precision machine-cut bevel gears
- Easily field converted to any mounting position

Electrical

Mechanical

- Easily adjustable rotary limit switches
- Heavy-duty 3-button control station
- Industrial across-the-line magnetic starter
- 24V control circuit
- · Electric disconnect when chain hoist is engaged
- Adapted for pull cord, radio control, or photoelectric control
- Adaptable for reversing door edge
- Available with adjustable plug-in timer to close

CAUTION

OSCO STRONGLY RECOMMENDS USE OF AN ELECTRIC EDGE OR PHOTOELECTRIC CONTROL FOR PEDESTRIAN PROTECTION ON ALL AUTO-MATIC OR REMOTELY CONTROLLED DOOR OP-ERATORS.

Children should never be allowed to play on, near, or around a motorized door. Any control devices should be placed so as to be inaccessible to small children.

The door should never be operated unless it is in visual sight of the user.

Warning signs must be installed on or near the door.

A pushbutton or keyswitch should not be installed within reach of the door or operator.

LIMITED ONE-YEAR WARRANTY

This electric operator is warranted for a period of one (1) full year from date of installation against defects in materials or workmanship. Any part, parts, or complete unit which fails because of such defects within this period shall, at the manufacturer's option, be repaired or replaced at no charge. The manufacturers will not be responsible for transportation and/or field service charges.

This warranty is in lieu of all other warranties, expressed or implied, and shall be considered void if visible evidence implies recommended installation procedures and maintenance instructions were not followed.

General Product Information

The Model JG gearhead jackshaft operator will electrically operate service doors, rolling grilles, sectional vertical-lift doors, and sectional high-lift doors (minimum 24" of high lift). The operator is equipped with a chain hoist mechanism for manual door operation in case of power failure. The mechanism is pre-installed and will operate in the vertical mounting position. The chain hoist assembly may be moved for right-hand or left-hand operation as desired. A disconnect cable is supplied for engaging the chain hoist from the floor level. This pull cable also electrically disconnects the control circuit.

Speed reduction is achieved by means of a heavy-duty wormgear in oil bath gear reduction unit, prelubricated at the factory. Output speed is 43 RPM. The motor may be removed from the gear reducer without affecting limit switch adjustment or chain hoist operation.

Limit switches are actuated by rotary motion of a shaft driving threaded limit nuts, fully adjustable over a wide range.

A standard operator is supplied with six feet of #40 roller chain, a 14-tooth drive sprocket, and a 24-, 36-, or 48-tooth driven sprocket. Other driven sprockets are available.

The standard operator is wired for control by an OPEN–CLOSE–STOP pushbutton station with momentary contact on the OPEN, CLOSE, and STOP buttons or can be controlled either open or closed by optional 24V three-wire radio, pull cord, or single-button station.



Pre-Installation and Inspection

Unpack the carton, checking for possible damage during shipment. Damage claims must be filed with the freight carrier. The following parts (one each) are included in the carton:

Power Unit Hand-Operating Chain Hoist-Engagement Cable (attached to power unit) Cable Retaining Bracket Drive Sprocket (14-tooth, attached to output shaft) Driven Sprocket (includes set screws), one of— 24-tooth for sectional doors 36-tooth for vertical-lift doors 48-tooth for rolling-curtain doors Chain Wheel Chain Guide Assembly Shaft Collar for Door Shaft Sprocket Key #40 Roller Chain (6 feet) #40 Master Link 3-Button Control Station Wiring Diagram (in controller enclosure) Installation Manual Spreader Arm Shaft Collar for Operator Rope Clip Vent Plug

Check to make sure that the available power supply to be connected to the operator is of the same voltage, phase, frequency, and wattage as indicated on the operator nameplate.

Installation Instructions

Before installing the Model JG operator, read through the following steps and examine the drawings to help ensure a satisfactory installation.

Operator Mounting—Right/Left Conversion

The Model JG operator may be mounted on either the right or left side of the door (see drawings below and on Page 3).

LEFT-HAND INSTALLATION

RIGHT-HAND INSTALLATION



If it is necessary to move the chain hoist mechanism to the opposite hand, remove the shaft collar on the end of the disconnect shaft, move the chain guide assembly and chain wheel to the opposite side, and replace the shaft collar.

Wall Mounting

The operator should generally be installed below the door shaft and as close to the door as possible. The optimum distance between the door shaft and the operator output shaft is 12–15 inches. A greater distance can be allowed if conditions prevent installation as prescribed:

- 1. Using the center line of the door shaft as a reference point, locate four mounting holes as shown in the drawing and chart at right and below.
- 2. For a secure installation, the operator should be mounted using 1/2" through bolts. If the wall is of such construction as to prohibit the use of through bolts, lag bolts and shields of sufficient size may be used. At this point, bolts should be hand-tightened only.

DOOR SHAFT SPROCKET	
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⊕ ⊕ 	+
CHES	$13\frac{3'}{8}$
B ⊕	
25%	

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1

DRIVEN DOOR SHAFT SPROCKET

40 B 24

40 B 36

40 B 48

Attachment of Spreader Arm and Door Sprocket

- 1. Remove the drive sprocket from the JG operator drive shaft.
- 2. Slide the proper door shaft sprocket onto the door shaft, with the key inserted into the keyway.
- 3. Slide the spreader arm assembly onto the door shaft.
- 4. Make necessary adjustments in the spreader arm so the lower end will slide onto the operator drive shaft.
- 5. Slide the drive sprocket onto the drive shaft and tighten the set screw securely.
- 6. Position the door sprocket to be exactly in line with the drive sprocket. Tighten the set screw securely.
- 7. Slide the 1" shaft collar onto the door shaft. Tighten.
- 8. Connect the two sprockets with #40 drive chain. If the chain supplied is too long, shorten it to the proper length, using a chain tool or by driving out the necessary rivets with a punch. Lock the chain with the #40 master link. Adjust the chain so there is no more than 1/4" of slack when the chain is depressed between the sprockets.
- 9. Attach the wall retainer bracket onto the wall for securing the disconnect cable.



IMPORTANT

- 1. Power supply must be of correct voltage and phase.
- 2. Always disconnect power from operator before servicing.
- 3. Keep clear of door during operation.

Wiring Instructions

Read the section titled "Limit Switch Adjustment" on Page 7 before starting the following steps.

- 1. Consult local electrical codes for permanent wiring requirements at your installation site.
- 2. Remove the cover from the controller enclosure. Refer to the wiring diagram supplied inside for all electrical connections described below.
- 3. Bring the power supply to the controller and connect wires according to the wiring diagram. On three-phase machines, incorrect phasing of the power supply will cause the motor to rotate in the wrong direction (open when CLOSE button is pressed and vice versa). To correct this, interchange any two of the incoming three-phase leads.
- **NOTE:** This unit must be properly grounded. A green grounding wire is supplied for connection to the power supply grounding lead.

OSCO Model JG Instructions

Wiring Instructions (Cont'd)

- 4. Connect the three-button control station using four wires, 14 GA or larger, to the terminal block in the controller as shown in the upper illustration at right. Connection of other types of control stations is shown in the lower illustration.
- 5. The methods of installation for any passive auxiliary control equipment, such as treadles or pull switches, are at the discretion of the installer. Interconnections between these devices and the operator should be to the terminal block inside the controller. For electrical connection points, refer to your wiring diagram.

Connection of an External Interlock Device

Circuitry is provided on all standard Model JG operators for the connection of a two-wire external interlock device that, when actuated, prevents the door from being electrically operated. This should be wired into the terminal block in the controller (see the upper diagram at right, as well as the wiring diagram).



2-BUTTON STATION KEYED LOCK-OUT MULTIPLE CONTROL WIRING KEY SWITCH | OPEN OPEN OPEN OPEN 1 0 0-CLOSE CLOSE - 1 CLOSE CLOSE -3 0 0 _7 0 STOP STOP STOP 2 -2 <u>OF</u>F 4 Δ Δ

OPTIONAL CONTROL WIRING

WARNING

TO PREVENT ENTRAPMENT DO NOT START DOOR

DOWNWARD UNLESS DOORWAY

IS CLEARED

Nonstandard Wiring

If your operator is supplied with a nonstandard wiring type (see "Wiring Specifications," on Page 13), for your particular application refer to your wiring diagram for connection of all control equipment. If the wiring diagram is missing or has been lost, call the factory for a replacement. Do not install any wiring or attempt to run this operator without consulting the wiring diagram.

IMPORTANT NOTICE

This operator is supplied with a 3-button control station (OPEN–CLOSE–STOP) accompanied by the precautionary sign at right.

It is vital that the 3-button station be mounted within sight but out of reach of the door and that the warning sign be mounted adjacent to the 3button station.

The 3-button station must be connected so the STOP circuit between terminals #2 & #4 is not bypassed. Also, if additional 3-button stations are to be connected, the STOP buttons must be wired in series.

NOTE: A STOP button must be used when the installation has radio controls or a single button.

Desired Function	
OPENING DEVICE	
STOP	
CLOSE	
OPEN & CLOSE	
SAFETY TO REVERSE	
24VAC POWER	

Connecting Terminals #1 & #4 #2 & #4 #3 & #4 #4 & #5 #1 & #6 #2 & #10

TURN OFF POWER TO THE OPERATOR BEFORE MAKING ADJUSTMENTS!

Limit Switch Adjustment

IMPORTANT: To avoid danger of possible damage to the door and operator, limit switches must be adjusted to their approximate positions **BEFORE** using the chain hoist to operate the door and **BEFORE** applying power to the operator.

- Open the cover of the controller enclosure. There are two limit nuts on the threaded shaft that move along the shaft as the operator opens and closes the door (see the drawing at right). When a limit nut nears the end of the shaft, it activates two switches. LSO-1 and LSO-2 are the open limit switches; LSC-1 AND LSC-2 are the close limit switches.
- **NOTE:** Auxillary limit switches to control other functions may also be present. These are on a mounting bracket and should not be confused with the open and close limit switches, which are mounted to the back of the controller enclosure and are partially hidden from view.
- 2. Manually raise the door to a nearly open position (see Page 8, "Manual Operation").
- **IMPORTANT:** In Steps 3 and 4 below, LSO-2 and LSC-2 must be actuated before LSO-1 and LSC-1. LSO-2 should be actuated three revolutions of limit shaft before LSO-1.



- 3. Depress the detent plate away from the slots in the limit nuts and manually rotate the left (open) limit nut until it depresses the open limit switch levers. (You can hear a switch click when the switch contacts transfer.) One complete turn will allow the door to move 4–6 inches. Release the the spring-loaded detent plate and be sure it is properly locked into both limit nuts.
- 4. Manually lower the door to a nearly closed position and repeat Step 3 with the right (close) limit nut.
- 5. Manually move the door to a middle position to avoid door damage due to incorrect power supply phasing. PLACING THE DOOR IN A MIDDLE POSITION NOW WILL PERMIT YOU TIME TO STOP THE OPERATOR IF YOU ENCOUNTER INCORRECT PHASING. On three-phase units, when power is applied the motor may run in the wrong direction, causing the door to open when the limit nuts are traveling in the direction of the close limit switch—or vice versa. In either instance, the limit nuts will travel past the limit switches, resulting in potential damage to both the door and the operator. See Step 3 of "Wiring Instructions," on Page 5 for correction of this problem.

Operating Instructions

Electrical Operation

The Model JG is designed to provide years of trouble-free electrical operation of your door. The door can be operated by means of the three-button control station or by other controls, when provided. If a reversing edge is wired into the operator, the door will reverse to the fully open position when it hits an obstruction during downward travel.

The motor contains a thermal overload protector to guard against motor overheating due to overload conditions. **DO NOT ATTEMPT TO BYPASS THIS UNIT**. The overload protector will trip only under abnormal conditions. An out-of-balance door or one that is binding in the tracks can produce such a condition. An incorrect installation may also cause such a problem. If a protector continues to trip, consult a servicer or the factory.

Manual Operation

The Model JG may be used to operate the door manually if necessary. An electrical interlock will disable the motor when the operator is used in such a fashion. To manually operate the door:

- 1. Pull the small disconnect cable to engage the hand chain and disengage the motor. This cable may be locked in position by slipping the end through the cable-retaining bracket mounted on the wall.
- 2. Operate the door with the hand-operating chain.
- 3. The cable must be released from the retaining bracket before the door will operate electrically.

Service and Troubleshooting

A properly installed gearhead jackshaft operator will operate for many years with minimal service and maintenance. It is important to note, however, that an improperly balanced or defective door can severely reduce the life of the operator. The door should be checked and lubricated periodically as recommended by the manufacturer.

All bearings of the Model JG are oil impregnated or lifetime sealed antifriction bearings. The motor is factory lubricated and requires no additional lubrication. A few drops of oil should be applied periodically to the moving parts of the manual disconnect mechanisms. The oil lever in the gear housing should be inspected annually. If oil level is low, add lubricant equivalent to Mobilube "C" 5AE140.

The following tips address common troubleshooting situations:

Motor does not run when OPEN or CLOSE button is pressed:

- 1. Building fuse blown or circuit breaker tripped. Replace fuse or reset breaker and check for cause.
- 2. Overload reset may be necessary. Check for cause.
- 3. Disconnect lever in position for manual operation. Return lever to position for electrical operation.
- 4. Check transformer secondary voltage. Check contactor coils for possible burnout. Check limit switches and interlock switch. Inspect control station and all field wiring.

Door closes when OPEN button pressed and limit switches do not function:

- 1. Three-phase power supply is connected out of phase. Interchange any two incoming power supply leads.
- 2. Operator is mounted upsidedown. Consult factory.

Operator does not shut off at fully opened or closed:

- 1. Limit nuts not porperly adjusted. See "Limit Switch Adjustment," on Page 7.
- 2. Limit drive chain broken or inoperative. Replace the chain and check the mechanism.
- 3. Limit switch damage. Check limit switch operation and replace if necessary.

Ordering Replacement Parts

Use the numbers shown in the lists on the following pages to order all replacement parts.

- 1. Supply the serial number of your operator.
- 2. Specify the quantity of pieces needed.
- 3. Order by part number and name of part.
- 4. State whether to ship by freight, truck, parcel post, UPS, or air express.
- 5. State whether transportation charges are to be prepaid or collect.
- 6. Specify name and address of person or company to whom parts are to be shipped.
- 7. Specify name and address of person or company to whom the invoice is to be sent.



Model JG

Parts List #105 (Mechanical) OSCO Drawing #2120-122

Ref.	Dort No.	Description
<u>INO.</u>	Part NO.	
1	2100-849	Main Frame Channel
2	2100-050	Mounting Angle
4	2200-315	Badial Flance Bearing 3/4"
5	2110-629	Bracket with Flange Bearing, 1
6	2200-750	Gear Reducer, 40:1
8	2200-317	Sprocket, 40 B 14
	2500-033	Standard 3-Button Station
	2120-154	Spreader Arm Assembly
	2120-155	Miter Gear with Brake Disc
9	2100-852	Miter Gear, 5/8" Bore
10	2100-853	Brake Disc
11	2100-854	Brake Shoe Mounting Plate
12	2100-855	Clamp Channel
13	2400-247	HHCS, 1/4"-20 x 2 1/4"
14	2200-320	Spring
15	2100-789	Brake Shoe
17	2100-747	Brake Pad
18	2100-843	Brake Shim
19	2100-838	Solenoid Bracket
20	2500-178	Solenoid, 115V
	2500-177	Solenoid, 230V
	2500-1351	Solenoid, 460V
21	2500-030	Disconnect Limit Switch
22	2100-856	Brake Release Bar
23	2100-792	Pivot Bracket
24	2100-857	Activator Lever
20 27	2100-000	Simer Pawi Hoist Shaft
28	2200-321	Miter Gear 3/4" Bore
29	2200-318	Disconnect Spring
30	2400-253	Spring Pin, 5/16" x 1 1/2"
31	2400-222	Key, 3/16" x 3/16" x 1"
32	2200-210	Shaft Collar, 3/4"
33	2200-290	Chain Wheel
35	2120-131	Chain Guide Assembly
	2200-191	Hand Chain, per toot
50	2100-000	
58	2200-474	#40 Drive Chain, 6 #40 Master Link
54	2200-000	Limit Sprocket 18 B 20
55	2200-008	Limit Sprocket 48 B 10
52	2200-249	#48 Roller Chain. 24 Links
88	2200-010	#48 Master Link
		Motors
7	2500-2157	1/2 HP, 115/230 V, 1 Phase
	2500-1603	1/2 HP, 230/460 V, 3 Phase
	2500-2158	3/4 HP, 115/230 V, 1 Phase
	2500-1604	3/4 HP, 230/460 V, 3 Phase
	2500-2159	1 HP, 115/230 V, 1 Phase 1 HP, 220/460 V, 2 Phase
	2000-1000	1 11F, 230/400 V, 3 Filase
	2200-227	40 B 24 Sectional Door
	2200-376	40 B 36. Vertical-Lift Door
	2200-423	40 B 48, Rolling-Curtain Door



Models H, HB, JH, and JG Parts List #147 (Electrical) OSCO Drawing #2120-087

Ref.			Ref.		
No.	Part No.	Description	<u>No.</u>	Part No.	Description
	2520-231	Complete Controller, 115V, 1 Phase	21	2400-029	Push Nut
		(WD #2600-177)	22	1600-088	Bushing
1	2110-675	Controller Enclosure without Cover	23	2100-060	Spacer
2	2500-2084	Contactor, 24VAC, 4-Pole	24	2200-028	Detent Spring
3	2500-766	Transformer, 115/24VAC, 75VA	41	2400-001	S-Clip
4	2500-541	Relay, 24VAC, 3PDT	42	2100-1701	Controller Enclosure Cover only
5	2500-542	Relay, 115VAC, 3PDT		2500-442	Terminal Strip 3
7	2500-1366	Timer (optional)			- -
9	2500-001	Timer Switch (optional)		2520-232	Complete Controller, 208/230V,
10	2500-030	Open Limit Switch, SP			1 Phase, (WD #2600-178)
11	2500-440	Close Limit Switch, SP	3	2500-767	Transformer, 208/230/24VAC, 75VA
12	2500-071	Terminal Strip, 16-141	5	2500-543	Relay 115VAC
13	2300-052	Terminal Strip Label			
14	2100-339	Limit Switch Bracket		2520-233	Complete Controller, 208/230V,
15	2100-058	Limit Shaft Bracket			3 Phase, (WD #2600-144)
16	2100-056	Detent Plate	3	2500-767	Transformer, 208/230/24VAC, 75VA
17	2200-030	Limit Nut			
18	2100-057	Limit Shaft		2520-234	Complete Controller, 460V,
19	2200-029	Flange Bearing, 1/2"			3 Phase, (WD #2600-144)
20	2200-008	Limit Sprocket, 48 B 10	3	2500-768	Transformer, 460/24VAC, 75VA

Wiring Specifications

- 1. Select from the chart at right the section corresponding to the phase, voltage, and horsepower of your operator.
- 2. The distance shown on the chart is measured in feet from the operator to the power source. **DO NOT EXCEED THE MAXIMUM DISTANCE**.
- 3. When large-gauge wire is used, a separate junction box (not supplied) may be needed for the operator power connection.
- 4. Select the gauge for control wiring from the top chart below. If a greater distance is required, our remote station interface is suggested. Call the factory.
- 5. Wire run calculations are based on the National Electrical Code, Article 430, allowing 5 percent voltage drop.
- 6. Supply voltage must be within 10 percent of the operator rating under load conditions.
- 7. Connect power in accordance with local codes.
- 8. The wire tables are based on standard copper wire. Wire insulation must be suitable to the application.
- **NOTE:** If the power run is over 500 feet, consult your power utility company about possible power drops overhead or underground.

Control Wiring				
Volts	Max Distance (ft)	Wire Gauge		
24V	250 350	14 12		
Over 350 ft, see interface chart.				

Control Wiring w/ Interface					
Volts	Distance Over (ft)	Wire Gauge			
24V	350	14			

USE COPPER WIRE ONLY

	Power Wiring							
	Volts & HP	<u>Max Dista</u> Single Unit	<u>ance (ft)</u> Dual Unit	Wire Gauge	Volts & HP	<u>Max Dist</u> Single Unit	<u>ance (ft)</u> Dual Unit	Wire Gauge
Single Phase	115V 1/3HP	120 190 305 485	60 95 150 240	12 10 8 6	208V 230V 1/3HP	475 760 1200 1915	240 380 600 960	12 10 8 6
	115V 1/2HP	125 200 315 500	60 100 160 250	12 10 8 6	208V 230V 1/2HP	370 585 935 1485	185 295 465 740	12 10 8 6
	115V 3/4HP	65 105 165 265	30 50 80 130	12 10 8 6	208V 230V 3/4HP	260 415 665 1055	130 205 330 600	12 10 8 6
	115V 1HP	55 85 140 225	30 45 70 115	12 10 8 6	208V 230V 1HP	225 360 570 910	115 180 285 455	12 10 8 6
Three Phase	208V 230V 1/3HP	650 1035 1645 2615	325 515 825 1310	12 10 8 6	460V 1/3HP	2850 4535 7210 11465	1425 2265 3605 5730	12 10 8 6
	208V 230V 1/2HP	620 985 1565 2485	305 490 780 1240	12 10 8 6	460V 1/2HP	2705 4305 6850 10895	1350 2150 3425 5445	12 10 8 6
	208V 230V 3/4HP	440 700 1115 1775	220 350 558 885	12 10 8 6	460V 3/4HP	1935 3075 4890 7780	965 1540 2445 3890	12 10 8 6
	208V 230V 1HP	345 545 870 1380	170 275 435 690	12 10 8 6	460V 1HP	1595 2535 4030 6405	795 1265 2015 3205	12 10 8 6
	208V 230V 1 1/2 HP	235 380 600 955	120 190 300 480	12 10 8 6	460V 1 1/2 HP	1040 1655 2635 4190	520 825 1315 2095	12 10 8 6
	208V 230V 2HP	180 290 460 730	90 145 230 365	12 10 8 6	460V 2HP	795 1265 2015 3205	400 635 1005 1600	12 10 8 6



Instructions for Optional Jackshaft Chain Hoist

The jackshaft operator's optional chain hoist is for use in case of power failure or malfunction of the automatic operator. When not in use, the chain and engagement cable should be held in the retainer bracket up against the wall and to the side of the doorway.

To use the optional chain hoist:

- Be sure the door and track are in good working order and not jammed.
- Remove the chain and engagement cable from the retainer wall bracket.
- Pull downward on the engagement cable to engage the chain hoist. This also disengages control power from the door operator.
- Place the engaged cable back in the wall retainer bracket. The pre-installed clamp on the cable should be slid under the bracket shelf to hold the chain hoist engaged.
- 5. Pull on the chain with a steady medium speed to raise the door. To avoid over-running the limit switches, be sure not to raise the door beyond the point at which it would normally stop if automatically powered.
- 6. To re-engage the operator, ;pull the disconnect cable down and out of the retaining wall bracket.



Imperial Oil Esso

MATERIAL SAFETY DATA SHEET

Date Prepared: February 02, 1996 Supersedes: January 07, 1995 MSDS Number: 225570

Cette fiche signalétique est aussi disponible en français

1. PRODUCT INFORMATION

Product Identifier: ESSO GEAR OIL GX 80W-90

Application and Use: Premium quality multigrade extreme pressure gear oil for use in automotive applications including some manual transmissions

Product Description:

A lubricating oil consisting of a mixture of saturated and unsaturated hydrocarbons derived from paraffinic distillate, and additives.

REGULATORY CLASSIFICATION

WHMIS:

Not a controlled product

CEPA: CANADIAN ENVIRONMENTAL PROTECTION ACT

All components of this product are either on the Domestic Substances List (DSL) or are exempt.

TRANSPORTATION OF DANGEROUS GOODS INFORMATION

Shipping Name:Petroleum Lubricating Oil Class: Not regulated f PIN Number: Not regulated (Packing Group: Not regulated Guide Number: 129

Please be aware that other regulations may apply.

TELEPHONE NUMBERS Emercency 24 hr. Technical Info. (519) 339-2145 (800) 268-3183

MANUFACTURER/SUPPLIER: IMPERIAL OIL Products Division 111 St Clair Avenue West Toronto, Ontario MSW 1K3 (416) 968-4111

2. REGULATED COMPONENTS

The following components are cefined in accordance with sub-paragraph 13(a) (i) to (iv) or paragraph 14(a) of the Hazarcous Products Act:

NAME

% CAS #

Not applicable

3. TYPICAL PHYSICAL & CHEMICAL PROPERTIES

Physical State: Liquid Specific gravity: not available Viscosity: 15.50 cSt at 100 deg C Vapour Density: not available Boiling Point: 229 to 600 deg C Evaporation rate: 2.01 (1 = n-butylacetate) Solubility in water: negligible Freezing/Pour Point: -27 deg C D97 Odour Threshold: not available Vapour Pressure: <0.1 kPa at 20 deg C Density: 0.88 g/cc at 15 deg C Appearance/odour: Dark brown liquid, petroleum hydrocarbon odour.

4. HEALTH HAZARD INFORMATION

NATURE OF HAZARD

INHALATION:

Negligible hazard at normal temperatures (up to 38 deg C). Elevated temperatures or mechanical action may form vapours, mists or tumes which may be irritating to the eyes, nose, throat and lungs. Avoid breathing vapours or mists.

EYE CONTACT:

Slightly irritating, but will not injure eye tissue.

IMPERIAL OIL Products Division

SKIN CONTACT:

Low toxicity. Frequent or prolonged contact may irritate the skin.

INGESTION:

Low toxicity.

ACUTE TOXICITY DATA:

Based on animal testing data from similar materials and products, the acute toxicity of this product is expected to be: Oral : LD50 > 5000 mg/kg (Rat) Dermal : LD50 > 3160 mg/kg (Rabbit) Inhalation : LC50 > 5000 mg/m3 (Rat)

OCCUPATIONAL EXPOSURE LIMIT:

ACGIH recommends: For oil mists, 5 mg/m3.

Local regulated limits may vary.

5. FIRST AID MEASURES

INHALATION:

Vapour pressure of this material is low and as such inhalation under normal concitions is usually not a problem. If overexposed to oil mist, remove from further exposure. Administer artificial respiration if breathing has stopped. Keep at rest. Call for prompt mecical attention.

EYE CONTACT:

Flush eyes with large amounts of water until irritation subsides. If irritation persists, get medical attention.

SKIN CONTACT:

Flush with large amounts of water. Use soap if available. Remove severely contaminated clothing (including shoes) and launder before reuse. If irritation persists, seek medical attention.

INGESTION:

If swallowed, DO NOT induce vomiting. Keep at rest. Get prompt medical attention

6. PREVENTIVE AND CORRECTIVE MEASURES

PERSONAL PROTECTION:

The selection of personal protective equipment varies, depending upon

The selection of personer protection of a personer protection of personer protections of use. In open systems where contact is likely, wear safety goggles, chemical-resistant overails, and chemically impervious gloves. Where only incicental contact is likely, wear safety glasses with side shields. No other special precautions are necessary provided skin/eye contact

shields. No other special preceduates are accurate and special preceduates of the occupational exposure limits given in Section 4 and where engineering, work practices or other means of exposure recuction are not accuuate, approved respirators may be necessary to prevent overexposure by inhalation.

ENGINEERING CONTROLS:

The use of local exhaust ventilation is recommended to control emissions near the source. Laboratory samples should be handled in a fumehood. Provide mechanical ventilation of confined spaces.

HANDLING, STORAGE AND SHIPPING:

Keep containers closed. Handle and open containers with care. Store in a cool, well ventilated place away from incompatible materials. Do not hancle or store near an open flame, sources of heat, or sources of ignition. Odorous and toxic fumes may form from the decomposition of this product if stored at temperatures in excess of 45 deg C for extended periods of time or if heat sources in excess of 121 deg C are used. Empty containers may contain product residue. Do not pressurize cut, heat, or weld empty containers. Do not reuse empty containers without commercial cleaning or reconditioning.

LAND SPILL

Eliminate source of ignition. Keep public away. Prevent additional discharge of material, if possible to do so without hazard. Prevent spills from entering sewers, watercourses or low areas. Contain

Please turn over

ESSO GEAR OIL GX 80W-90



MATERIAL SAFETY DATA SHEET

spilled liquid with sand or earth. Recover by pumping or by using a suitable absorbant. Consult an expert on disposal of recovered material. Ensure disposal in compliance with government requirements and ensure conformity to local disposal regulations. Notify the appropriate authorities immediately. Take all additional action necessary to prevent and remedy the adverse effects of the spill. effects of the spill.

WATER SPILL:

Remove from surface by skimming or with suitable absorbents. If allowed by local authorities and environmental agencies, sinking and/or suitable dispersants may be used in unconfined waters. Consult an expert on disposal of recovered material. Ensure disposal in compliance with government requirements and ensure conformity to local disposal regulations. Notify the appropriate authorities immediately. Take all additional action necessary to prevent and remedy the acverse effects of the spill.

7. FIRE AND EXPLOSION HAZARD

Flashpoint and method: 178 deg C COC D92

Autoignition: NA Flammable Limits: LEL: NA UEL NA

GENERAL HAZARDS:

Low Hazard; liquids may burn upon heating to temperatures at or above the flash point. Decomposes; flammable/toxic gases will form at elevated temperatures (thermal decomposition). Toxic gases will form upon combustion.

FIRE FIGHTING:

Use water spray to cool fire exposed surfaces and to protect personnel. Shut off fuel to fire.

Use foam, dry chemical or water spray to extinguish fire. Respiratory and eye protection required for fire lighting personnel. Avoid spraying water directly into storage containers due to danger of bollance bollover. A self-contained breathing apparatus (SCEA) should be used for all incoor fires and any significant outdoor fires. For small outdoor fires, which may easily be extinguished with a portable fire extinguisher, use of an SCBA may not be required. boilover

HAZARDOUS COMBUSTION PRODUCTS:

Smoke, carbon monoxide, carbon cloxide and traces of oxides of sulphur Alkyl mercaptans and sulfides may also be released.

8. REACTIVITY DATA

STABILITY:

This product is stable. Hazardous polymerization will not occur.

INCOMPATIBLE MATERIALS AND CONDITIONS TO AVOID:

Strong exidizing agents

HAZARDOUS DECOMPOSITION:

Smoke, carbon monoxide, carbon dioxide, oxides of sulphur and phosphorus. Alkyl mercaptans and sulfides may also be released.

9. NOTES

This msds has been revised in Section 3.

10. PREPARATION

Date Prepared : February 02, 1996 Prepared by: Lubricants & Specialties IMPERIAL OIL Products Division 111 St Clair Avenue West Toronto, Ontario M5W 1K3 (800) 268-3183

CAUTION: " The information contained herein relates only to this product or material and may not be valid when used in combination with any other product or material or in any process. If the product is not to be used for a purpose or under conditions which are normal or reasonably foreseeable, this

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