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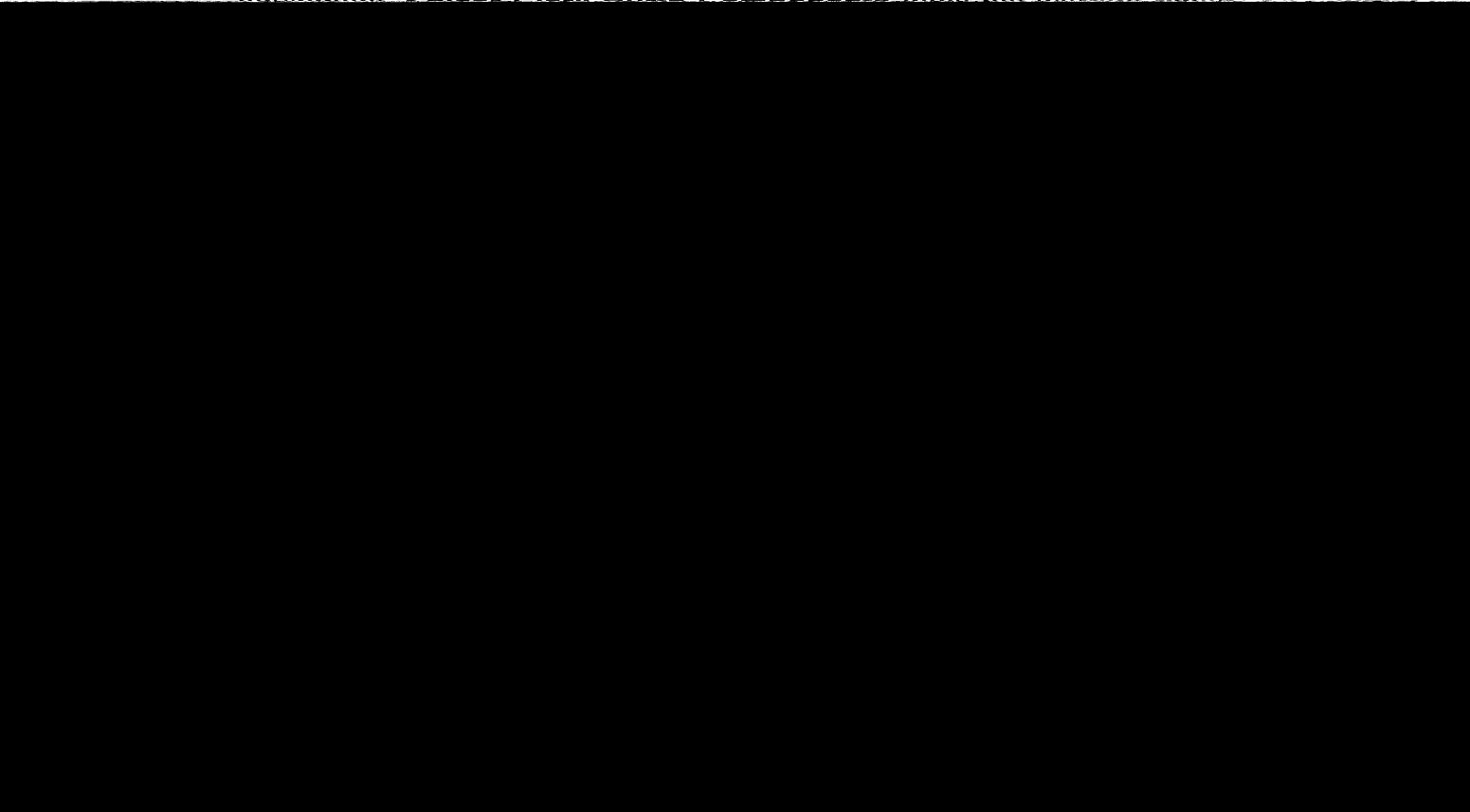
FOREWORD

This manual has been prepared to provide the customer and the maintenance personnel with information and instructions on the maintenance and repair of the **SPICER CLARK-HURTH OFF-HIGHWAY COMPONENTS DIVISION** product.

Extreme care has been exercised in the design, selection of materials and manufacturing of these units. The slight outlay in personal attention and cost required to provide regular and proper lubrication, inspection at stated intervals, and such adjustments as may be indicated will be reimbursed many times in low cost operation and trouble free service.

In order to become familiar with the various parts of the product, its principle of operation, trouble shooting and adjustments, it is urged that the mechanic study the instructions in this manual carefully and use it as a reference when performing maintenance and repair operations.

Whenever repair or replacement of component parts is required, only **Spicer Clark-Hurth Components**-approved parts as listed in the applicable parts manual should be used. Use of "will-fit" or non-approved parts may endanger proper operation and performance of the equipment. **Spicer Clark-Hurth Components** does not warrant repair



SAFETY PRECAUTIONS

To reduce the chance of personal injury and/or property damage, the following instructions must be carefully observed.

Proper service and repair are important to the safety of the service technician and the safe, reliable operation of the machine. If replacement parts are required the part must be replaced with one of the same part number or with an equivalent part. Do not use a replacement part of lesser quality.

The service procedures recommended in this manual are effective methods of performing service and repair. Some of these procedures require the use of tools specifically designed for the purpose.

Accordingly, anyone who intends to use a replacement part, service procedure or tool, which is not recommended by Spicer Clark-Hurth Components, must first determine that neither his safety nor the safe operation of the machine will be jeopardized by the replacement part, service procedure or tool selected.

It is important to note that this manual contains various 'Cautions' and 'Notices' that must be carefully observed in order to reduce the risk of personal injury during service or repair, or the possibility that improper service or repair may damage the unit or render it unsafe. It is also important to understand that these 'Cautions' and "Notices" are not inclusive, because it is impossible to warn of all the possible hazardous consequences that might result from failure to follow these instructions.

CLEANING AND INSPECTION

CLEANING

Clean all parts thoroughly using solvent type cleaning fluid. It is recommended that parts be immersed in cleaning fluid and moved up and down slowly until all old lubricant and foreign material is dissolved and parts are thoroughly cleaned.



CAUTION: Care should be exercised to avoid skin rashes, fire hazards, and inhalation of vapours

BEARINGS

Remove bearings from cleaning fluid and strike flat against a block of wood to dislodge solidified particles of lubricant. Immerse again in cleaning fluid to flush out particles. Repeat above operation until bearings are thoroughly clean. Dry bearings using moisture-free compressed air. Be careful to direct air stream across bearing to avoid spinning. Do not spin bearings when drying. Bearings may be rotated slowly by hand to facilitate drying process.

HOUSINGS

Clean interior and exterior of housings, bearing caps, etc., thoroughly. Cast parts may be cleaned in hot solution tanks with mild alkali solutions providing these parts do not have ground or polished surfaces. Parts should remain in solution long enough to be thoroughly cleaned and heated. This will aid the evaporation of the cleaning solution and rinse water. Parts cleaned in solution tanks must be thoroughly rinsed with clean water to remove all traces of alkali. Cast parts may also be cleaned with steam cleaners.



CAUTION: Care should be exercised to avoid inhalation of vapours and skin rashes when using

All parts cleaned must be thoroughly dried immediately by using moisture-free compressed air or soft, lintless absorbent wiping rags free of abrasive materials such as metal filings, contaminated oil, or lapping compound.

INSPECTION

The importance of careful and thorough inspection of all parts cannot be overstressed. Replacement of all parts showing indication of wear or stress will eliminate costly and avoidable failures at a later date.

BEARINGS

Carefully inspect all rollers, cages and cups for wear, chipping, or nicks to determine fitness of bearings for further use. Do not replace a bearing cone or cup individually without replacing the mating cup or cone at the same time. After inspection, dip bearings in Automatic Transmission Fluid and wrap in clean lintless cloth or paper to protect them until installed.

OIL SEALS, GASKETS, ETC.

Replacement of spring load oil seals, O-rings, metal sealing rings, gaskets, and snap rings is more economical when unit is disassembled than premature overhaul to replace these parts at a future time. Further loss of lubricant through a worn seal may result in failure of other more expensive parts of the assembly. Sealing members should be handled carefully, particularly when being installed. Cutting, scratching, or curling under of lip of seal seriously impairs its efficiency. When assembling new metal type sealing rings, same should be lubricated with coat of chassis grease to stabilize rings in their grooves for ease of assembly of mating members. Lubricate all O-rings and seals with recommended type Automatic Transmission Fluid before assembly.

GEARS AND SHAFTS

If magna-flux process is available, use process to check parts. Examine teeth on all gears carefully for wear, pitting, chipping, nicks, cracks, or scores. If gear teeth show spots where case hardening is worn through or cracked, replace with new gear. Small nicks may be removed with suitable hone. Inspect shafts and quills to make certain they are not sprung, bent, or splines twisted, and that shafts are true.

HOUSING, COVERS, ETC.

Inspect housings, covers and bearing caps to be certain they are thoroughly clean and that mating surfaces, bearing bores, etc., are free from nicks or burrs. Check all parts carefully for evidence of cracks or condition which would cause subsequent oil leaks or failures.

LEGEND SYMBOLS

	Disassembly of assembly groups
	Reassemble to from assembly group
	Remove obstruction parts
	Reinstall - remount parts which had obstructed disassembly
	Attention! Important notice
	Check - adjust e.g. torque, dimensions, pressures etc.
	T = Special tool P = Page
	Note direction of installation
	Visual inspection
	Possibly still serviceable, renew if necessary

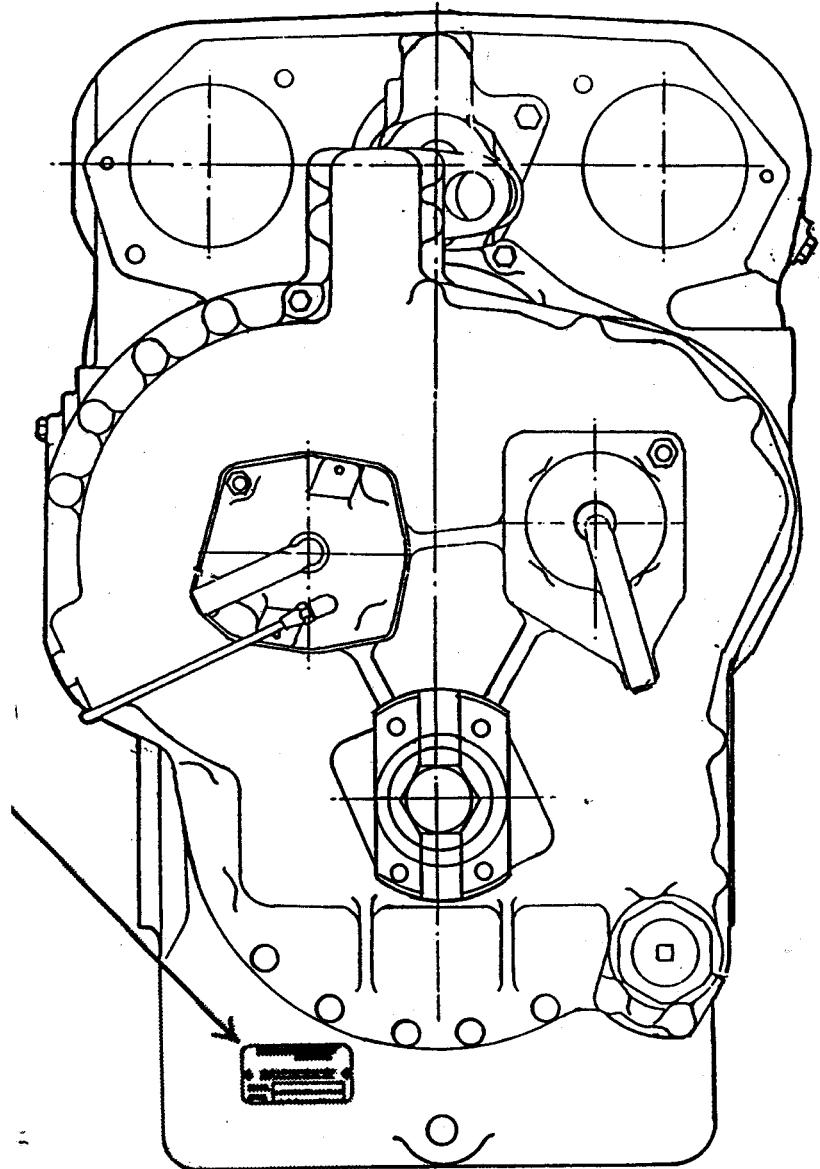
	Renew at each reassembly
	Unlock, lock e.g. split pin, locking plate, etc.
	Lock - adhere (liquid sealant)
	Guard against material damage, damage to parts
	Mark before disassembly, observe marks when reassembling
	Filling - topping up - refilling e.g. oil, cooling water, etc.
	Drain off oil, lubricant
	Tighten - clamp; tightening a clamping device
	Apply pressure into hydraulic circuit
	To clean

TRANSMISSION IDENTIFICATION

NAMEPLATE LOCATION ON REAR LEFT LOWER CORNER OF TRANSMISSION CASE

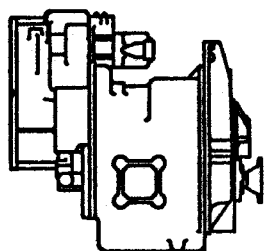
A. IDENTIFICATION OF THE UNIT

1. Model and type of the unit
2. Serial number



REAR VIEW

TRANSMISSION DRY WEIGHT - LB [Kg]



HR
MODEL

FEATURES

		<u>LOCKUP</u>	<u>FWD & REV</u> <u>CLUTCH</u> <u>MODULATION</u>	<u>PUMP</u> <u>DISC</u>	<u>BI-DIRECTIONAL</u> <u>PTO</u>
LB	1540	50	40	25	20
[Kg]	[698.5]	[23]	[19]	[12]	[10]