

Walter V-Drives

Independent Models

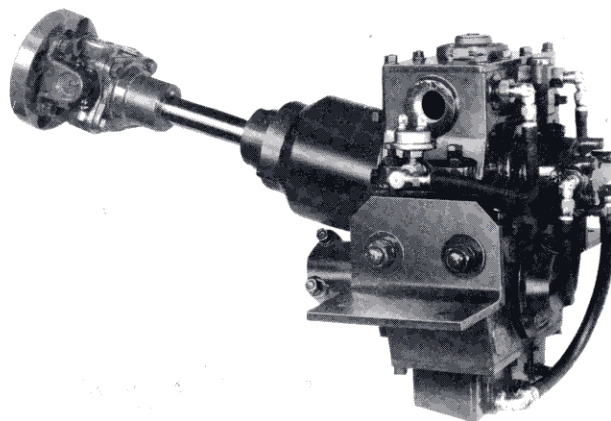
Installation, Operation and Maintenance Manual

Models RV-10, RV-20, RV-30, RV-40 & RV-48

• V-Driving is the most advanced method of boat propulsion. America's fastest cruisers are equipped with V-Drives. By placing the engines in the stern more usable space is provided for living quarters on pleasure boats and cargo space on work boats. The engine compartment becomes a very compact unit and can be bulkheaded from the rest of the boat reducing engine noise and increasing safety. It also results in easier installation and greater accessibility of the engines. V-Drives also make it possible to use inboard engines in small cruisers without sacrificing valuable cabin space.

• Only direct drive (1:1 ratio) reverse gears are required. All reduction gearing is incorporated in the V-Drive, eliminating the need for an additional unit on the reverse gear.

• Walter V-Drives are revolutionary. Conventional V-Drives use angle gears and housings to provide the V-angle. Walter V-Drives accomplish this by employing special coupled cardan type constant velocity needle bearing universal joints, fully encased and effectively lubricated by the gear drive lube system. The gears and shafts are parallel and a number of standard gear ratios are available for each size V-Drive.

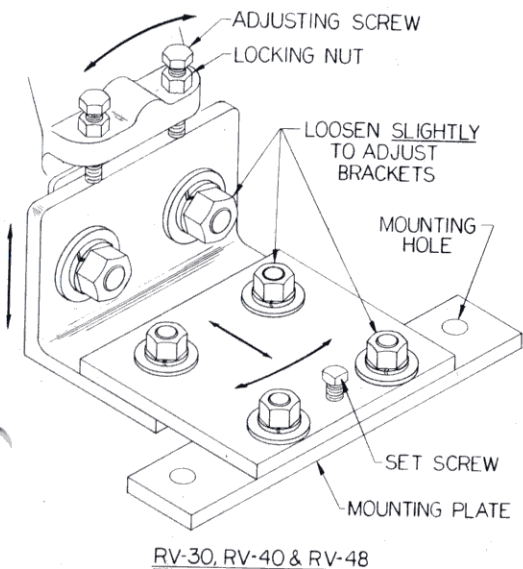
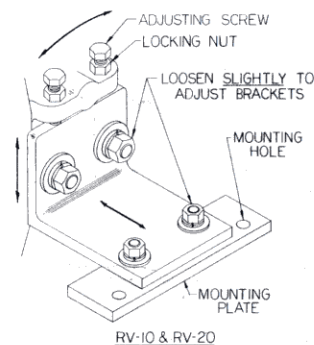
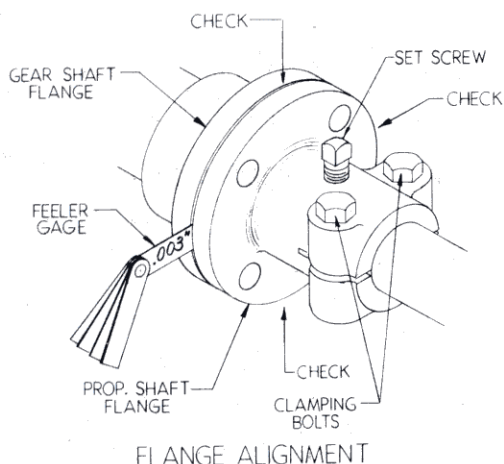


Flange Alignment

• Install the #25 propeller shaft flange on to the propeller shaft and tighten the two clamping bolts on the split hub (none on RV-10). A self-locking set screw is provided for the propeller shaft flange. Spot drill the propeller shaft and securely tighten the set screw.

All V-Drives are supplied with 3-way adjustable mounting brackets (2-way on the RV-10 and RV-20) as standard equipment. The brackets must face downward as shown in the illustration to properly absorb propeller thrust. The mounting plates can be removed and reversed to fit wider engine bed centers. Before installing the V-Drive, loosen all the nuts on the mounting brackets and check to see that the studs are in the center of the slots. Re-tighten the nuts. Place the V-Drive on the engine bed, lining it up "by eye" to the propeller shaft flange as closely as possible. Firmly bolt it down through the holes provided in the mounting plates. Loosen the locking nuts on the adjusting screws. Slightly loosen the nuts on the mounting brackets just enough to be able to move the V-Drive.

Many good installations are ruined by improper propeller shaft flange alignment. Accurate alignment will ensure a smooth operating drive train and eliminate many problems that arise due to misalignment. Final alignment should not be attempted until the boat has been allowed to "settle" in the water. Adjust the V-Drive until the pilot diameters of the gear shaft flange and the propeller shaft flange engage freely. Butt the flange faces together. Without rotating either flange, check with a feeler gage in at least four places as shown in the illustration. If the maximum feeler gage that can slip between the flange faces at any point is .003", the unit is properly aligned. If a thicker gage can be inserted at any point, the V-Drive must be readjusted until proper alignment is obtained. Turn the propeller shaft flange 1/4 of a turn without moving the gear shaft flange. Try inserting the .003" feeler gage as described above. The gap will not change if the propeller shaft is straight. If it increases, the shaft or flange is bent and must be removed and straightened. Rotate the propeller shaft flange in two more 1/4 turn increments and repeat the procedure. The pilot diameters must be rechecked to ensure that they still engage freely. Tighten the nuts on the mounting brackets and the locking nuts on the adjusting screws. Remove the set screws from the brackets (none on RV-10 or RV-20), spot drill and securely tighten. Recheck the flange alignment to make sure the V-Drive didn't move out of alignment. Secure the two flanges together with the heat treated bolts and special high collared lockwashers supplied.



PARTS LIST

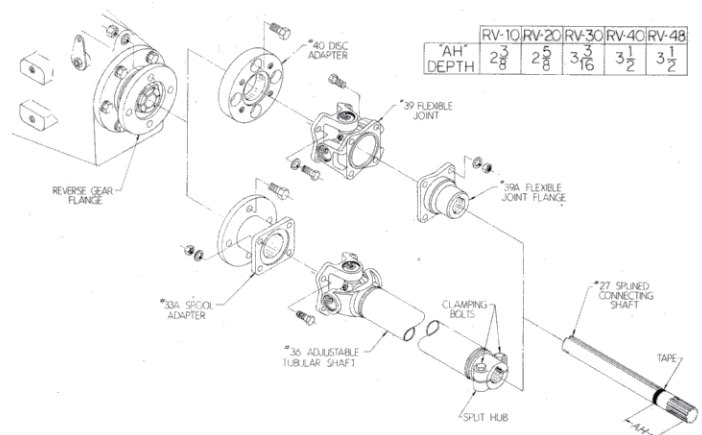
Advise serial number of V-Drive when ordering parts.
(A dash indicates a part is not used in that model.)

Part No.	DESCRIPTION	RV-10	RV-20	RV-30	RV-40	RV-48	Part No.	DESCRIPTION	RV-10	RV-20	RV-30	RV-40	RV-48
1	Housing Main	1	1	1	1	1	19B	Stud, Nut & L'Wash	4	4	8	8	8
2	Adapter Plate	1	—	—	1	1	21	Oil Level Gage	1	1	1	1	1
3	Cover, no pump	1	1	1	1	—	22	Magnetic Plug	2	2	2	2	2
3SP	Cover, pump	—	1	1	1	1	23	Angle Housing	1	1	1	1	1
4	Cover, Seal	1	1	1	1	1	23B	Stud, Nut & L'Wash	4	4	4	4	4
5	Cover, Blank	1	1	1	1	1	24	Angle Housing Cover	1	1	1	1	1
6	Cover, Watercooled	1	—	—	—	—	24A	Seal, Angle Housing	1	1	1	1	1
6B	Cover, Plain Bottom	—	1	1	1	1	24C	O-Ring retainer	1	1	1	1	1
6D	Cover, top	1	1	1	1	1	24E	O-Rings	2	2	2	2	2
6E	Oil Cooling Coil	—	1	1	1	1	24F	Wavy Washer	1	1	1	1	1
6F	Coil Terminal and O-Rings	—	2	2	2	2	25	Prop Flange, complete	1	1	1	1	1
8	Seal, Gear Shaft	1	1	1	1	1	25B	H.T. Bolts & L'Wash	3	6	6	6	8
9A	Pinion Shaft only	1	—	—	1	1	26	Bearing, self-aligning	1	1	1	1	1
9AJ	Pinion Shaft and Yoke, 1 piece	—	1	1	—	—	27	Splined Connecting Shaft	1	1	1	1	1
9A-N	Locknut	—	1	1	1	1	28	Idler Gear	—	1	1	1	1
9A-W	Lockwasher	—	1	1	1	1	29	Idler Shaft	—	1	1	1	1
9B	Pinion Gear	1	1	1	1	1	29A	Idler Bushing	—	1	1	1	1
9C	Pinion Shaft Sleeve	—	—	1	1	1	29B	Idler Spacer & Shim	—	1	1	1	1
9F	Spacer Ring	—	1	1	—	—	30	Idler Bearing	—	2	2	2	2
9W	Spacer, Flat	—	1	—	—	—	31A	Alignment Gage	1	1	1	1	1
10	Driven Gear	1	1	1	1	1	33A	Spool Adapter	1	1	1	1	1
11A	Gear Shaft	1	1	1	1	1	34	Universal Joint, Double complete	1	—	—	1	1
11A-N	Locknut	1	1	1	1	1	34A	Joint Repair Kit	1	1	1	1	1
11A-W	Lockwasher	1	1	1	1	1	34J	Univ. Joint, less Yoke	—	1	1	—	—
12	Breather Cap	1	1	1	1	1	36	Adjustable Tubular Shaft	1	1	1	1	1
12A	Breather Elbow	1	1	1	1	1	39	Flexible Joint	—	1	1	1	1
13	Gaskets, complete set	1	1	1	1	1	39A	Flexible Joint Flange	—	1	1	1	1
14	Bearing, Pinion Shaft, yoke end	1	1	1	1	1	39D	H.T. Bolt & L'Wash	4	4	4	4	4
14A	Bearing, Pinion Shaft, closed end	1	1	1	1	1	39E	H.T. Bolt, Nut & L'Wash	4	4	4	4	4
15	Bearing, Gear Shaft closed end (P = Pair)	1	1	1 (P)	1 (P)	1 (P)	39F	H.T. Bolt, Nut & L'Wash	4	4	4	4	4
15A	Bearing, Gear Shaft, flange end	1	1	1	1	1	40	Disc Adapter	1	1	1	1	1
16	Mounting Bracket, complete	2	2	2	2	2	42A	Oil pump and Spring	—	1	1	1	1
17	Stud, Nut & Washers	4	4	4	4	4	42B	Pump End Cap	—	1	1	1	1
18	Stud, Nut & L'Wash	16	20	20	24	24	42T	Pump Drive Ring & Pin	—	1	1	1	1
19A	Screw & L'Wash	4	6	8	8	8	43F	Screen	—	1	1	1	1
							44	Hose & Hose Connections	—	1	1	1	1
							45	Spray Nozzle	—	1	1	1	1
							45C	Nozzle Holder	—	1	1	1	1
							49	Pressure Drop Switch	—	1	1	1	1
							49A	Warning Light & Plate	—	1	1	1	1

Drive System Assembly

• The V-Drive is connected to the reverse gear by a "floating" shaft assembly that eliminates strain between the engine and the V-Drive. It can move in and out and also angularly to take up slight (3° max.) engine misalignment. After the propeller shaft flange has been lined up, the #27 splined connecting shaft must be cut to the proper length. After cutting, tap it into the #39A flexible joint flange (do not tighten the set screw yet). Slip the spline shaft into the internal spline of the V-Drive to the proper depth ("AH" dimension — see table). If this length is shortened the spline can possibly run on the oil seal and/or O-ring and an oil leak may develop. A good method of maintaining this depth is to wrap a piece of tape around the shaft at the proper length before installation. Bolt the #40 disc adapter to the reverse gear flange. Install the #39 flexible joint between the joint flange and the disc adapter and bolt it in place. If the pilot diameters do not engage freely or if the faces do not fit flush, the engine must be preliminarily adjusted. Failure to do so may result in a bent spline shaft and/or internal damage to the V-Drive. The depth that the splined shaft enters the V-Drive ("AH" dimension) should be rechecked at this point. If it is not correct, the assembly must be removed. Tap the shaft either in or out of the #39A joint flange as required. Reinstall the entire assembly as described above and tighten the set screw in the joint flange.

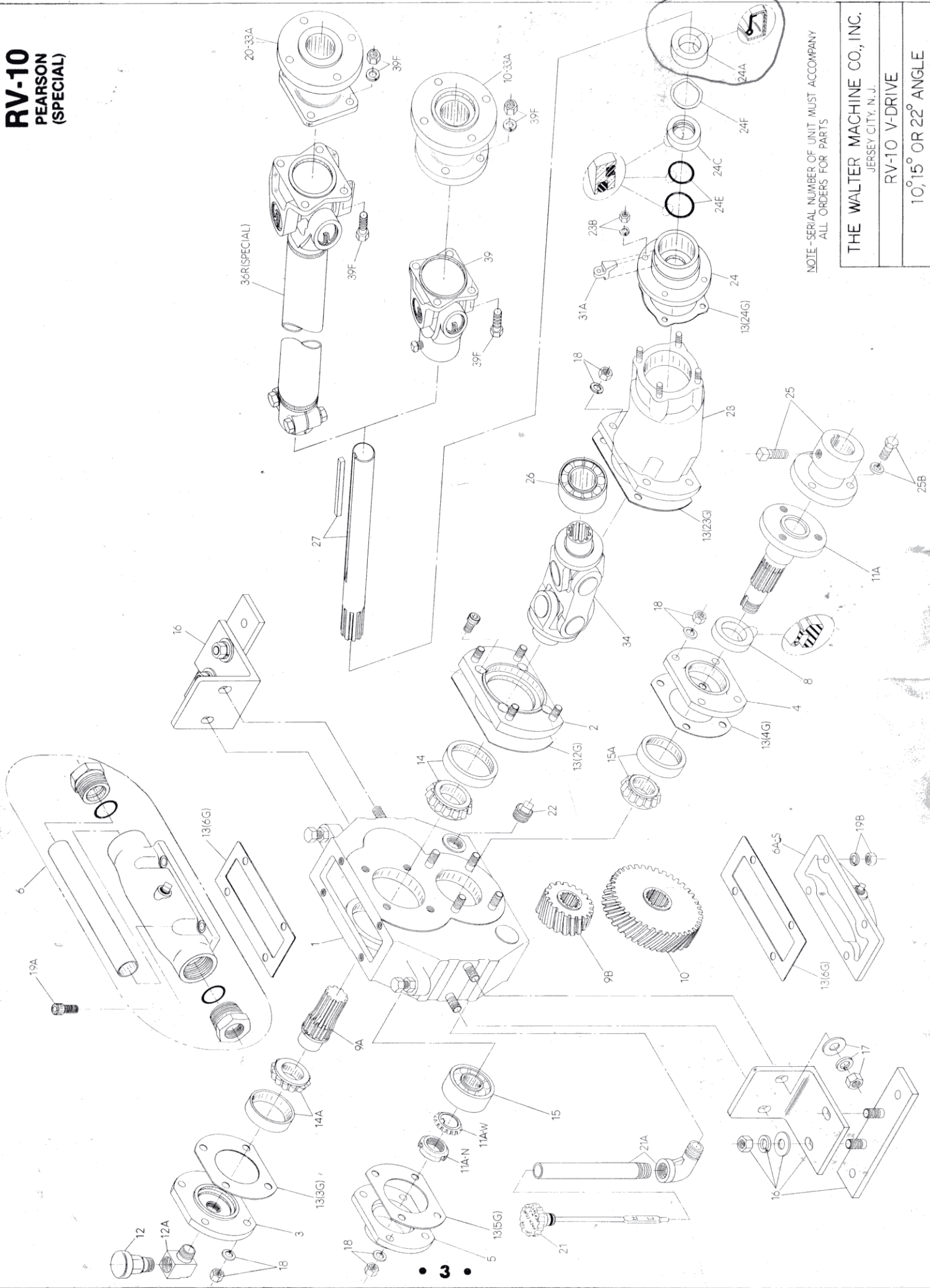
The #36 adjustable tubular drive shaft is used for long installations. Insert the #27 splined connecting shaft (it need not be cut) into the split hub to the proper depth and tighten the two



clamping bolts. Remove the #24 angle housing cover assembly, insert the splined shaft through it and into the internal spline of the V-Drive. Re-install the cover assembly to the V-Drive. Bolt the #33A spool adapter between the reverse gear flange and the flexible joint. Check the flange engagement and the "AH" dimension as described above.

On the RV-10 short installation only, the #39A joint flange and the #39 flexible joint assembly is one piece. Instead of the #40 disc adapter, a #33A spool adapter is used. Assembly is similar to the tubular drive shaft installation.

RV-10 PEARSON (SPECIAL)



NOTE - SERIAL NUMBER OF UNIT MUST ACCOMPANY ALL ORDERS FOR PARTS

THE WALTER MACHINE CO., INC.
JERSEY CITY, N.J.
RV-10 V-DRIVE
10°, 15° OR 22° ANGLE