Generic Gearbox Teardown

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Overview

- Generic Gearbox found in HF and other lower-cost drills (of all brands- some seem to dewalts use these)
- Built-in torque-limiting clutch with 21 torque settings
- Plastic housing
- Standard ⅜”-24 tapped output with M5 or 10-32 left-hand internal threading
- 1:24 reduction
- Variants exist in use; found others with 1:36 reduction

Layer 1

- Clutch Balls fit in 8 holes in the main housing
- First stage planets and pinion are both 15T
- First Stage Planet Carrier has 9T pinion on non-visible side
- Second Stage Planets are 18T
- Ring Rear is 45T
- Gears appear to be 0.7M, powdered metal

Ring gear- front and back

Clutch Adjustment Housing

Clutch Balls (16x total)

First Stage Planet Carrier

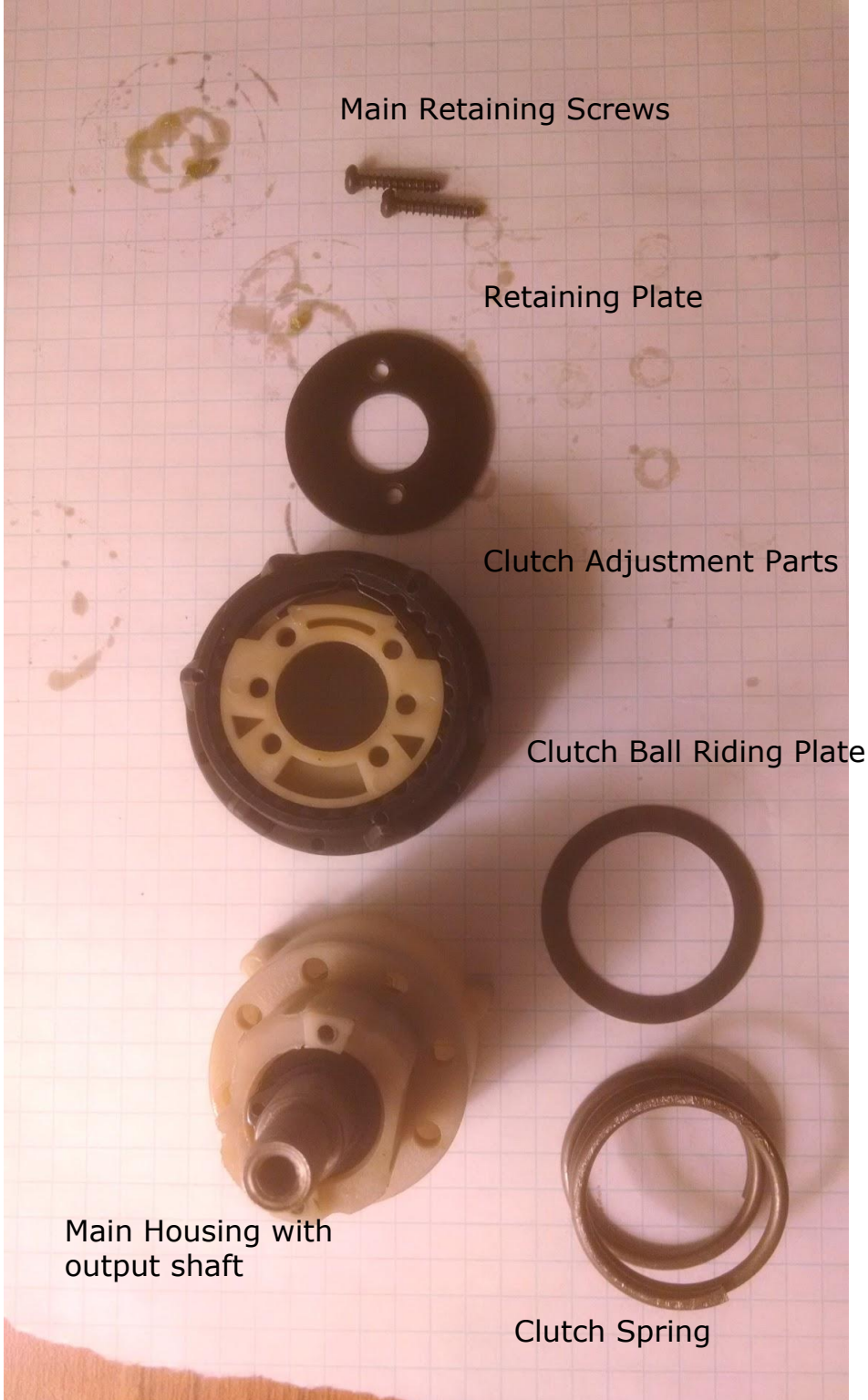
Second Stage Planets

Motor Plate
(suits RS550)

First Stage Planets and Pinion
(Pinion accepts a D shaft)

Layer 2

- Very high preload due to spring when taking this apart



Layer 2.1 - Clutch Adjustment Assy

- Spring Selector bolts to main housing, spring on end meets in with nubs on main adjustment grip
- Adjustment nut has external left-hand threads, so when the main adjustment grip is rotated, it slides in and out, adjusting the preload for the clutch.

Layer 2.2 - Main Housing and Output Shaft

- Main housing has a drill bushing pressed in
- Final Output shaft is 12mm in diameter
- A thrust bearing is used, since the majority of loads will be thrust.
- Gearbox is bad at taking side loads while running because the only support for it is a bushing