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COMETS NEW 103 HPQ (High Performance Quad) **CLUTCH**

Comet Industries in Richmond, Indiana announces the introduction of a new high performance clutch for ATV'S. The new 103 HPQ clutch is specifically designed for use on the Polaris quad platform. Developed this past summer for Wolfe Brothers Racing, the 103 HPQ has already made a name for itself among enthusiasts of the sport. The 103 HPQ allows for a quicker shift out and a greater top end speed. Reported performance enhancements of 25% over the OEM clutch with performance kits is typical.

The Wolfe Brothers are local ATV dirt drag enthusiasts, promoting motorcycle and ATV racing throughout Indiana, Ohio and Kentucky. They also race their own team, and partnered with COMET INDUSTRIES to develop a high performance clutch calibrated for the rigors of drag racing. "The COMET clutch resulted in a 25% performance enhancement over the OEM the first time out," reports Dean Sproles Aftermarket Sales/Service manager for COMET INDUSTRIES. "Our engineering team did extensive calibration on this model, and we are obviously pleased with the results." COMET is a sponsor for the Wolfe Brothers team.

The transition from high performance snowmobile drive systems to ATV is a natural one for COMET, who is an industry leader in drive systems, and the largest manufacturer of Aftermarket clutches in the world. Snowcross and oval snowmobile racers have relied on COMET clutch superiority for years and COMET currently sponsors 3 snowmobile world-class race teams.

Success with the new COMET 103 HPQ on the ATV drag racing circuit was a piece of news that spread quickly. Distributors from outside the tri-state area have been making inquiries as to the availability of the new CVT drive clutch. Good news. The 103 HPQ was released to national and international distributors for the Polaris Sport and Utility quad market in the spring of 2003. COMET is currently working on similar high performance clutches for other quad manufacturer platforms.

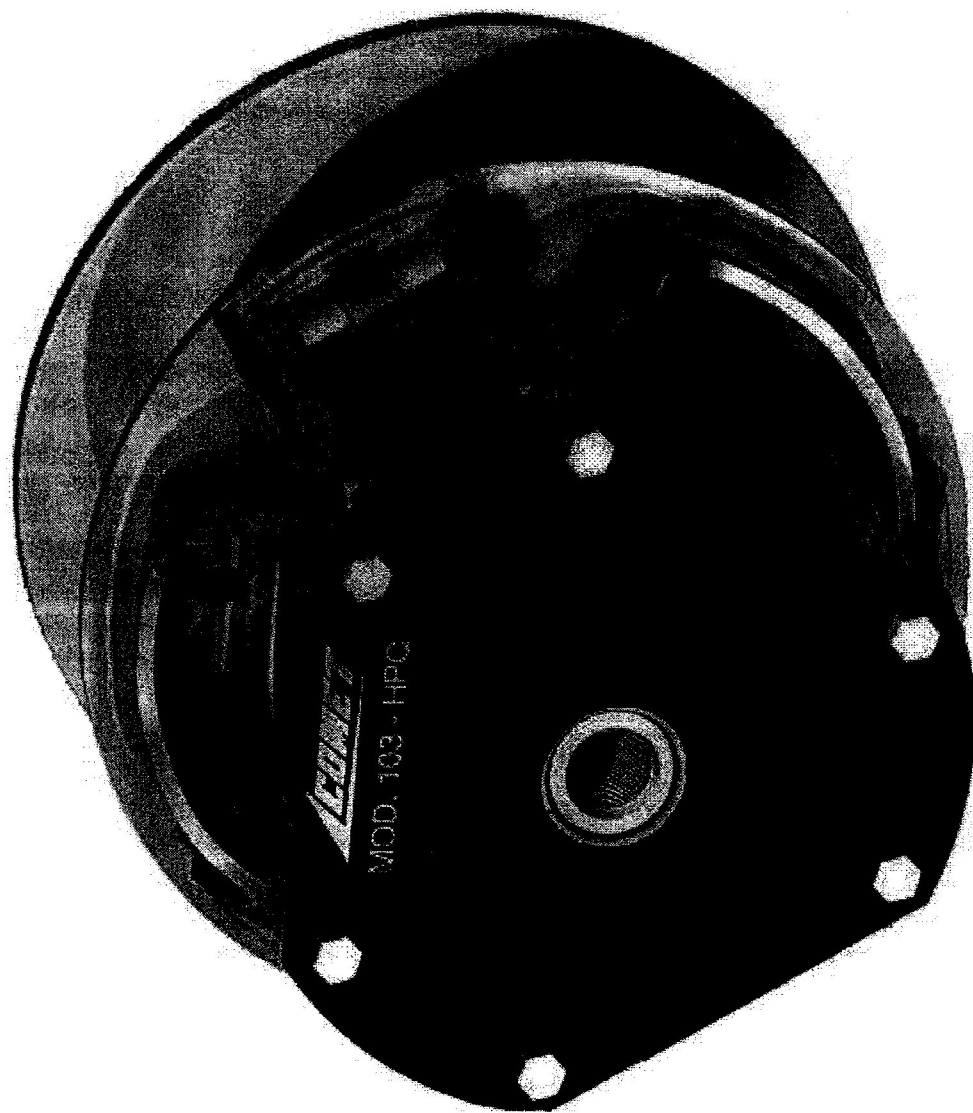
We would also like to offer a special thanks to:

Doug Morris-Director of ATV (All Terrain Vehicle Association)
www.ATVAonline.com

Randy Edley-President ATVDRA (All Terrain Vehicle Drag Racing Association)
www.atvdra.com

COMET INDUSTRIES is a division of HOFFCO|COMET INDUSTRIES INC. ISO 9001:2000 registered with over 50 years experience in design, development, manufacturing and design of superior power equipment components. Clutches, torque converters, geared transmissions; brake bands, drums, rotors and hubs are some of their products. Applications include snowmobiles, utility vehicles, golf carts, go-karts, mini bikes and concrete finishing equipment. (800) 999-8161
www.cometclutches.com

Superior Power Equipment Components





COMET 103 HPQ (HIGH PERFORMANCE QUAD) CLUTCH 218875A

The gains in the 103 HPQ ATV Clutch are in the larger diameter pulley and the greater sheave angles, giving more ratio and less wear on the belt and sheave faces. Greater degree angle of sheaves allows less resistance of moveable sheave allowing smoother up shift because moveable face is pushing belt instead of pinching belt to the outer diameter of the clutch. With greater degree of angle less cam arm weight is required, causing less wear on belt, pulley faces and cam arm bearings. Also faster back shifting which reduces sheave wear on the driven unit because you do not have as much torsional tension to over come the weights in the drive system.

The above results in a reported performance enhancement of up to 25%

POLARIS

Fits Models	Year
250 Trail Boss	85-99
250 Trail Blazer	90-03
250 Explorer 4x4	00-02
COMETS suggested calibrations:	
A-1 Cam Arm-Requires (3)	207689A1
Pink Spring	203473A
400 Sportsman 4x4	94-97
400 Explorer 4x4	98-01
COMETS suggested calibrations:	
A-54 Cam Arms-Requires (3)	214651A1
Pink Spring	203473A
400 Scrambler 4x4	95-02
400 Scrambler 2x4	00-01
400 Sport	95-02
COMETS suggested calibrations:	
A-54 Cam Arms-Requires (3)	214651A1
Black Spring	204115A

*Included is a partial listing of KNOWN, REASONABLE, CALIBRATIONS for models listed.

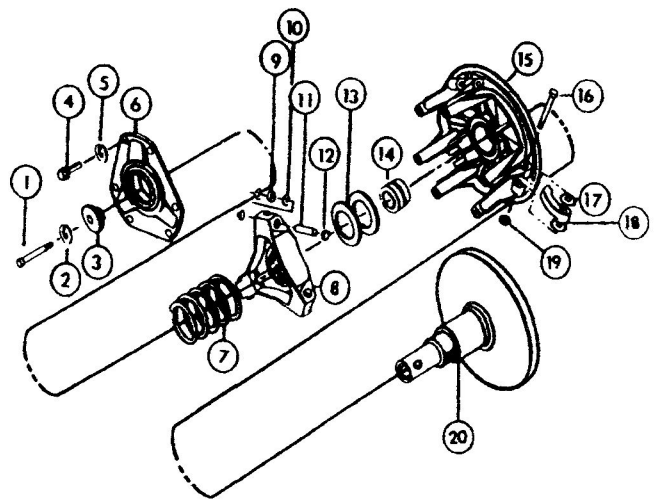
*Calibrations listed are not for High Altitude (above 4,000 ft.)

Superior Power Equipment Components

Model 103HPQ

NO. 218875A

30MM 1:10 Taper Bore



Fits: Polairs 250 and 400 Series ATVs.

Caution: Never operate engine and clutch without adequate guard in place and make sure guard doesn't make contact with clutch during operation.

Driven: This clutch is for use with most makes of driven units including COMET and SALSBUry.

Alignment: Your torque converter drive system **MUST** be properly aligned; consult your owner's manual or dealer for exact details.

ITEM#	ORDER#	PKG'D IN QTY. OF	DESCRIPTION	MIN QTY. REQ.
1	(see kit)	1	Clutch Retaining Bolts (6-1/4" Length)	1
2	205836A	1	Lock Washer for Clutch Retaining Bolt	1
3	211255A	1	Pilot Washer for clutch Retaining Bolt	1
4	207296A	6	Cover Plate Retaining Bolt (1-3/4" Length)	6
5	200698A	6	Lock Washer for Cover Plate Bolt	6
6	218884A	1	Cover Plate & Upper Guide Bushing Assembly	1
7	-----	1	Engagement Spring (See Calibration Guide)	1
8	(see kit)		Spider	1
9	(see kit)		Roller w/ Bushing Insert	3
10	207327A	6	Thrust Washer	6
11	205200A	3	Polished Axle Pin for Roller	3
12	205432A	6	Contoured Guide Button	6
13	203150A	2	Spacer for Spider	2
14	213265A	1	Lower guide Bushing for Movable Face	1
15	(see kit)		Movable Face Casting	1
16	(see kit)		Pivot Bolt for Cam Arm	3
17	204203A	6	Steel Washer for Cam Arm	6
18	-----	3	Cam Arm (See Calibration Guide)	3
19	207953A	3	Loc Nut, Pivot Bolt	3
20	218874A	1	Fixed Face Casting & Stem Assembly w/fins	1

*Order numbers listed are packaged in minimum quantity required. You need only order one of a part no. to receive the amount required (i.e. order 1-205432 and you will receive a package of 6 buttons.

<u>SPIDER PARTS KIT</u>	<u>SPIDER ASSEMBLY KIT</u>	<u>PIVOT BOLT KIT</u>	<u>MOVABLE FACE KIT</u>	<u>RETAINING BOLT KIT</u>
#214920A Includes Item No's 9-10-11-12	#214917A Includes Item No's 8-9-10-11-12	#207869A Includes Item No's 16-17-19	#218881A Includes Item No's 4-5-14-15	#216018A Includes Item No's 1-2 7/16-20 X 6 1/4

NOTE: Pivot bolts are installed in all 103 HPQ clutches. The pivot bolts and cam arms should be inspected for wear after each race or at 100-150 mile intervals, whichever comes first.

Failure to follow pivot bolt installation instructions will void warranty.



CAUTION: Your drive clutch is turning at a very high speed. Failure to follow CLUTCH INSTALLATION PROCEDURES on the back of this literature, or failure to install any part of this clutch properly could cause extensive damage to your sled as well as the clutch and would void the warranty of the clutch.

Literature No. 218879A Rev A



IMPORTANT MESSAGE TO THE CONSUMER AND/OR OPERATOR

This symbol of safety will alert you to the possibility of injury. Don't expose yourself or others to danger. Carefully read each message that follows the Safety Symbol.

WARNING! READ INSTRUCTIONS! INSTALLATION & REMOVAL...OF TAPERED BORE 103HPQ

1. Consult the machine owner's manual or your dealer for guidelines in removing old drive clutch.
2. Inspect appearance 103 HPQ in general for signs of shipping damage, etc.
3. Inspect crankshaft PTO to insure that it will accept clutch satisfactorily, i.e., no rust or dirt present, not bent, etc.
4. Place a small quantity of Never-Seeze (Comet #201719A) or a similar anti-seizing compound on the clutch retention area of crankshaft PTO. Wipe, leaving a film.
5. After clutch is slipped on to tight position, rotate complete clutch assembly one revolution to make sure clutch is not contacting any obstruction such as engine bolts, fins, etc.



CAUTION! Disconnect spark plug wire before turning clutch!

6. Install pilot washer, lock washer and clutch retaining bolt – all supplied with new clutch.



CAUTION! To insure adequate clutch retention on crankshaft PTO, the threads in end of PTO Must pick up (mate to) at least ½" or more of the retaining bolt's threads. Likewise, do not use this bolt if it "bottoms out" on crankshaft PTO before tightening down solidly on clutch and retaining bolt washers – and instead use one somewhat shorter.



CAUTION! Use torque wrench (can be borrowed from most dealers) and tighten bolt in range only of between 50 to 55 foot pounds torque. Next, loosen and re-torque to 40 foot pounds.



CAUTION! Your torque converter drive system **MUST** be properly aligned; consult your owner's manual or dealer for exact details and/or for actual assistance in making certain your driven "T.C." unit is properly in line with this COMET 103 HPQ.



CAUTION! Never operate clutch without drive belt in place.



CAUTION! NEVER operate engine and clutch without adequate guard in place.

7. To pull this clutch from crankshaft PTO, follow same procedure as used to remove original clutch, always use a COMET clutch puller #216097A and never use a pipe wrench, chain wrench or similar tool that can scar the clutch's shaft and/or its faces.
8. Please Complete and mail the registration/Free Information Offer packed with this 103 HPQ. This information you will receive in return is worthwhile...and quite desirable!



CAUTION! Don't operate engine above 8500 R.P.M.

RACING APPLICATIONS AND/OR DISREGARD OF WARNINGS WILL RESULT IN TOTAL DISCLAIM OF WARRANTY OR ANY OTHER LIABILITY BY COMET IND.



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