

# Axial-Flow® Combines

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# Section 1002

## SPECIFICATIONS

1002

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## GENERAL SPECIFICATIONS

### Capacities 1640

Engine Oil (With Filter Change) .....	15 Litres	3.96 U.S. Gal
Engine Oil (Without Filter Change) .....	14.3 Litres	3.78 U.S. Gal
Cooling System .....	34.1 Litres	9.0 U.S. Gal
Transmission .....	8.5 Litres	2.2 U.S. Gal
Final Drive (Each Side) .....	5.2 Litres	1.37 U.S. Gal
Hydraulic Reservoir .....	30.3 Litres	8.0 U.S. Gal
Lower Unloader Gear Case .....	0.83 Litres	0.9 U.S. Quarts
PTO Housing .....	13.2 Litres	3.48 U.S. Gal
Feeder and Cleaning Fan Gear Case .....	2.6 Litres	2.7 U.S. Quarts
Rotor Gear Case .....	3.8 Litres	4.0 U.S. Quarts
Straw Chopper .....	3.1 Litres	3.28 U.S. Quarts
Fuel Tank Capacity .....	350 Litres	92.4 U.S. Gal

### Capacities 1660

Engine Oil (With Filter Change) .....	21 Litres	5.5 U.S. Gal
Engine Oil (Without Filter Change) .....	19 Litres	5.0 U.S. Gal
Cooling System .....	37.8 Litres	9.98 U.S. Gal
Transmission .....	18.9 Litres	4.99 U.S. Gal
Final Drive (Each Side) .....	12.3 Litres	3.25 U.S. Gal
Hydraulic Reservoir (Corn and Grain) .....	30.3 Litres	8.0 U.S. Gal
Hydraulic Reservoir (Rice Combines) .....	38 Litres	10 U.S. Gal
Lower Unloader Gear Case .....	0.83 Litres	0.9 U.S. Quarts
PTO Housing .....	13.2 Litres	3.48 U.S. Gal
Feeder and Cleaning Fan Gear Case .....	2.6 Litres	2.7 U.S. Quarts
Rotor Gear Case .....	3.8 Litres	4.0 U.S. Quarts
Straw Chopper .....	3.1 Litres	3.28 U.S. Quarts
Fuel Tank Capacity .....	350 Litres	92.4 U.S. Gal

### Capacities 1680

Engine Oil (With Filter Change) .....	21 Litres	5.5 U.S. Gal
Engine Oil (Without Filter Change) .....	19 Litres	5.0 U.S. Gal
Cooling System .....	37.8 Litres	9.98 U.S. Gal
Transmission .....	18.9 Litres	4.99 U.S. Gal
Final Drive (Each Side) .....	12.3 Litres	3.25 U.S. Gal
Hydraulic Reservoir (Corn and Grain) .....	30.3 Litres	8.0 U.S. Gal
Hydraulic Reservoir (Rice Combines) .....	38 Litres	10 U.S. Gal
Lower Unloader Gear Case .....	0.83 Litres	0.9 U.S. Quarts
PTO Housing .....	13.2 Litres	3.48 U.S. Gal
Feeder and Cleaning Fan Gear Case .....	2.6 Litres	2.7 U.S. Quarts
Rotor Gear Case .....	3.8 Litres	4.0 U.S. Quarts
Straw Chopper .....	3.1 Litres	3.28 U.S. Quarts
Fuel Tank Capacity .....	466 Litres	123 U.S. Gal

## Electrical Specifications

Type of System ..... 12 Volt, Negative Ground

### Batteries

Number of Batteries Required ..... 2  
Voltage of Battery ..... 12 Volt

### Starter Motor (fitted to the Navistar Engine)

System Voltage ..... 12 Volt, Internal Ground  
Rated Volts ..... 10  
Minimum AMPS ..... 140  
Maximum AMPS ..... 175  
Minimum RPM ..... 6,600  
Maximum RPM ..... 8,200  
Rotation ..... To Be Counterclockwise as Viewed from the Drive End  
Hold-In Winding Resistance ..... 16 to 20 Amps at 10 Volts  
Pull-In Winding Resistance ..... 24 to 29 Amps at 5 Volts  
Pinion Clearance ..... 0.254 to 1.778 mm                      0.010 to 0.070 inch

### Starter Motor (fitted to the N.C.E. Engine)

Rated Voltage ..... 12 Volts  
Output ..... 5.3 hp    4.0 kwh  
Time Rating ..... 30 seconds  
Direction of Rotation ..... Clockwise from pinion end

### Alternator (fitted to the Navistar Engine)

Manufacturer ..... Motorola  
Output ..... 89 Amps at 5000 RPM  
Resistance of Rotor Winding ..... 2.3 to 2.4 Ohms

### Alternator (fitted to the N.C.E. Engine)

Manufacturer ..... Robert Bosch  
Output ..... 14 Volts at 110 Amps  
Resistance of Rotor Winding .....  $2.60 \pm 0.26$  Ohms  
Resistance of Stator Winding ..... 0.053 to 0.058 Ohms  
Minimum Brush Length ..... 5 mm    0.2 inch

## Steering Specifications

### Rear Axle

Toe-In for 406 mm (16 inch) Wheels ..... 7.6 to 10 mm                      19/64 to 13/32 inch  
Toe-In for 610 mm (24 inch) Wheels ..... 11 to 15 mm                      13/33 to 19/32 inch

### Steering Hand Pump

Type ..... Danfoss  
Rated Flow (1640, 1660) ..... 12.5 Litres/min                      3.3 U.S. gpm  
Rated Flow (1680) ..... 16 Litres/min                      4.2 U.S. gpm  
Rated Flow (1640, 1660 and 1680 German Models) ..... 12.5 Litres/min                      3.3 U.S. gpm  
Rotor - Stator Wear Limit ..... 0.178 mm                      0.007 inch

## Transmission Specifications

Foot-N-Inch Valve		
Relief Pressure of the Foot-N-Inch Valve		
with the Foot-N-Inch Pedal Down .....	4.14 bar Max	60 psi Max
1640, 1660 and 1680 Corn and Grain		
Relief Pressure (Foot-N-Inch valve setting)		
with the Foot-N-Inch pedal up .....	372 to 386 bar	5400 to 5600 psi
1660 and 1680 Rice Combines		
Relief Pressure (Foot-N-Inch valve setting)		
with Foot-N-Inch pedal up .....	407 to 421 bar	5900 to 6100 psi
Foot-N-Inch valve setting .....	441 to 455 bar	6400 to 6600 psi
Foot-N-Inch Valve Spring Specifications (Corn and Grain)		
Free Length .....	35.74 mm	1.407 inch
Wire Diameter .....	1.83 mm	0.072 inch
Outside Diameter .....	11.84 mm	0.468 inch
Inside Diameter .....	8.23 mm	0.324 inch
Total Number of Coils .....		10
Compression Strength .....	22.86 mm at 174 N	0.89 inch at 39 lbf
Foot-N-Inch Valve Spring Specifications (Rice Combines)		
Free Length .....	31.40 mm	1.236 inch
Wire Diameter .....	2.03 mm	0.080 inch
Outside Diameter .....	11.13 mm	0.468 inch
Inside Diameter .....	7.82 mm	0.308 inch
Total Number of Coils .....		10.5
Compression Strength .....	22.86 mm at 174 N	0.9 inch at 39 lbf
Hydrostatic Drive Pump		
Hydrostatic Pump Shaft to PTO Pulley Spline Backlash .....	0.094 mm	0.004 inch
Hydrostatic Pump Displacement at 2500 rpm (1640) .....	173 to 177 Litres/min	38 to 39 U.S. gpm
Hydrostatic Pump displacement at 2500 rpm		
(1660 and 1680 Corn and Grain) .....	200 to 218 Litres/min	52 to 57 U.S. gpm
Hydrostatic Pump displacement at 2500 rpm		
(1680 Rice ) .....	235 to 257 Litres/min	62 to 68 U.S. gpm
Hydrostatic Drive Motor (Single Speed)		
Clearance Between Slipper Retainer and Hold Down Plate .....	0.20 mm	0.008 inch
Pump Shaft End Play .....	0.05 to 0.18 mm	0.002 to 0.007 inch
Hydrostatic Drive Motor (2 Speed)		
Low Pressure Relief Valve Setting .....	11 bar	160 psi
Motor Displacement (Per Revolution) .....	88.5 cm <sup>3</sup>	5.4 in <sup>3</sup>
Pump Shaft End Play .....	0.05 to 0.18 mm	0.002 to 0.007 inch
Swashplate Breakaway Force .....	8.9 to 22.4 Nm	2 to 5 lbf
Transmission (1640)		
Pinion Shaft End Play .....	0.05 to 0.2 mm	0.002 to 0.008 inch
Differential Bearing Pre-Load .....	31 N	7 lbf
Transmission (1660 and 1680)		
Pinion Shaft End Play .....	0.05 to 0.2 mm	0.002 to 0.008 inch
Spool Gear End Play .....	1.5 mm max	0.591 inch max
Change Gear End Play .....	0.05 to 0.2 mm	0.002 to 0.008 inch
Shifter Rail Detent Springs		
Free Length .....	44 mm	1.7 inch
Number of coils .....		12
Outside Diameter .....	12.5 mm	0.05 inch
Wire Diameter .....	1.6 mm	0.06 inch

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Final Drive (1640)

Final Drive Rolling Torque (New Bearings) .....	19 to 23 Nm	14 to 17 lb ft
Final Drive Rolling Torque (With One New Bearing and One Old Bearing) .....	14 to 18 Nm	10 to 13 lb ft
Pinion Shaft End Play .....	0.05 to 0.15 mm	0.002 to 0.006 inch

Final Drive (1660 to 1680)

Final Drive Rolling Torque (New Bearings) .....	7 to 12 Nm	5 to 9 lb ft above rolling torque
Final Drive Rolling Torque (With One New and One Old Bearing) .....	4 to 7 Nm	3 to 5 lb ft above rolling torque
Pinion Shaft Rolling Torque .....	0.6 to 2.3 Nm	5 to 20 lb in

PTO Housing

PTO Driven Gear Backlash .....	0.102 to 0.203 mm	0.004 to 0.008 inch
Separator Drive Shaft Bearing Pre-Load .....	0.57 to 1.69 Nm	5 to 15 lb in

## Brake Specifications

Brakes

Master Cylinder Push Rod Clearance Measured at Pedal Seal Support.....	2 to 5 mm	0.08 to 0.2 inch
Brake Pedal Height Measured from Center of Stationary Pedal .....	102 to 127 mm	4 to 5 inch

Brake Assemblies (1640)

Actuating Disc Springs

Number of Coils .....		3.5
Free Length - Inside of Coils .....	24 mm	0.94 inch
OD .....	21 mm	0.81 inch
Wire Diameter .....	2.67 mm	0.105 inch
Extend to 27 mm (1.06 inch) .....	88.9 N	20 lbf

Brake Lever Return Spring

Number of Coils .....		11
Free Length - Inside of Coils .....	69,8 mm	2.75 inch
OD .....	19 mm	0.75 inch
Wire Diameter .....	3 mm	0.12 inch
Extend to 74.6 mm (2.93 inch) .....	156 to 200 N	35 to 45 lbf

Brake Cylinder Spring

Number of Coils .....		12
Free Length .....	62 mm	2.45 inch
OD .....	20.6 mm	0.81 inch
Wire Diameter .....	1.21 mm	0.047 inch
Extend to 44.5 mm (1.75 inch) .....	0.45 N	1 lbf

Brake Assemblies (1660 and 1680)

Actuator Disc Springs

Number of Coils .....		3.5
Free Length - Inside of Coils .....	27 to 28 mm	1.06 to 1.12 inch
OD .....	21 mm	0.84 inch
Wire Diameter .....	3 mm	0.105 inch
Extend to 32 mm (1.25 inch) .....	111 to 147 N	25 to 33 lbf

Brake Lever Return Spring			
Number of Coils .....			19.25
Free Length - Inside of Coils .....	68 mm		2.67 inch
OD .....	17 mm		0.67 inch
Wire Diameter .....	2.4 mm		0.095 inch
Extend to 81 mm (3.19 inch) .....	76 N		17 lbf
Brake Cylinder Spring			
Number of Coils .....			14
Free Length - Inside .....	68 mm		2.67 inch
OD .....	23 mm		0.88 inch
Wire Diameter .....	1.21 mm		0.047 inch
Extend to 44.5 mm (1.75 inch) .....	44 N		10 lbf

## Hydraulic Specifications

For Combines Prior to P.I.N.

1640 JJC0097190	1640E JJC0096095
1660 JJC0103800	1660E JJC0100280
1680 JJC0117060	1680E JJC0114165

Main Pump Flow (Steering and Valve Stack) .....	68 to 83 Litres/min	18 to 22 U.S. gpm
Primary Relief Valve Pressure .....	138 to 145 bar	2000 to 2100 psi
Secondary Relief Valve Pressure .....	152 to 159 bar	2200 to 2300 psi
Header Lift Flow .....	39.7 Litres/min	10.5 U.S. gpm
Power Steering Flow .....	14.4 to 20.8 Litres/min	3.8 to 5.5 U.S. gpm
Reel Lift Flow (minimum) .....	5.7 to 7.6 Litres/min	1.5 to 2.0 U.S. gpm
Reel Lift Pressure .....	124 to 131 bar	1800 to 1900 psi
Reel Drive Pump Flow .....	37.9 to 45.4 Litres/min	10.0 to 12.0 U.S. gpm
Unloader Auger Pressure .....	124 to 145 bar	1800 to 2100 psi
Accumulator Pressure .....	76 bar	1100 psi
PTO Drive Accumulator Pressure .....	6.2 to 7.6 bar	90 to 110 psi

PTO Drive Clutch Pressure:

Engine RPM	Separator	Pressure	Flow
High Idle (2700)	Off	14.4 to 16.2 bar 210 to 235 psi	0
High Idle (2700)	On	13.8 bar minimum 200 psi minimum	3.0 to 4.5 L/min 0.8 to 1.2 U.S. gpm
Low Idle (1000)	Off	13.1 bar minimum 190 psi minimum	0
Low Idle (1000)	On	12.4 bar minimum 180 psi minimum	3.0 to 4.5 L/min 0.8 to 1.2 U.S. gpm

Reel Drive Control Valve

Solenoid Limit Check at 1.1 Litres/min (0.2 U.S. gpm) out of the Work Port .....	250 to 280 Amperes
With Pressure at Work Port of 41.4 bar (600 psi) and 42.8 bar (1200 psi) and Work Port flow of 22.1 Litres/min (4.9 U.S. gpm), Solenoid Draw should be .....	0.4 to 0.6 Amperes
Differential Pressure Between Work Port and Tank Port .....	15.5 to 19 bar 225 to 275 psi
With Pressure at Work Port between 6.9 and 117.2 bar (100 to 1700 psi) and a maximum of 1.2 Amperes supplied, Work Port Flow should be .....	36.8 to 40.5 Litres/min 9.7 to 10.6 U.S. gpm

## Hydraulic Specifications

For Combines After P.I.N.

1640 JJC0097190	1640E JJC0096095
1660 JJC0103800	1660E JJC0100280
1680 JJC0117060	1680E JJC0114165

Specifications at 2700 Engine RPM and Oil temperature at 100°F (38 °C) or Higher.

### Auxiliary Pump Output

Front Section to Valve Stack (Minimum) .....	53 Litres/min at 69 bar	14.0 U.S. gpm at 1000 psi
Front Section to Steering .....	14.4 to 20.8 Litres/min at 34 bar	3.8 to 5.5 U.S. gpm at 500 psi
Rear Section (Reel drive) .....	40.9 Litres/min at 34 bar	10.8 U.S. gpm at 500 psi
		Minimum at the Couplers

### Hydraulic Oil Flows at the Header Couplers

Header Lift (minimum) .....	44.7 Litres/min at 69 bar	11.8 U.S. gpm at 1000 psi
Reel Drive (minimum) .....	37.8 Litres/min at 34 bar	10 U.S. gpm at 500 psi
Secondary Circuit .....	5.6 to 7.6 Litres/min at 34 bar	1.5 to 2.0 U.S. gpm at 500 psi

### System Relief Pressure

Steering .....	137 to 166 bar	2000 to 2400 psi
Auxiliary .....	137 to 145 bar	2000 to 2100 psi
Header Lift .....	169 to 176 bar	2450 to 2550 psi
Reel Drive .....	133 to 145 bar	1925 to 2100 psi

## Air Conditioner Specifications

### Air Conditioner Compressor

Type .....	5 horizontal pistons operating on a cam plate	
Manufacturer .....	SANDEN	
Model .....	SD 508 HD	
Bore .....	35 mm	
Stroke .....	28.6 mm	
Displacement Per Revolution .....	133 cc	
Clutch Voltage .....	12V	

### Compressor Lubrication

Type .....	Positive Pressure	
Lubricant .....	Suniso 5GS, Texaco Capella WF100, Shell Clavus 129	
Capacity .....	170 ml	

### Refrigerant

Type .....	R-12 to Case Specification B6	
Boiling Point at Atmospheric Pressure .....	-30°C	-22°F

Drive Belt Tension (New) .....	422 to 516 N	95 to 116 lbf
Drive Belt Tension (Used) .....	400 to 489 N	90 to 110 lbf

### High Pressure Switch

Location .....	Discharge Hose From Compressor	
Operation .....	Closed by Excessive Pressure	
Cut-Out Pressure .....	25.2 to 26.5 bar	

Low Pressure Switch	
Location .....	Evaporator Outlet in the Cab Roof
Operation .....	Closed by Low Pressure
Cut-Out Pressure .....	0.28 to 0.41 bar 4 to 6 psi
Temperature Control Switch	
Location .....	Cab Roof, Sensor in the Evaporator
Cut-Out Temperature .....	2°C 32°F
Cut-In Temperature .....	6 to 7°C and 16 to 21°C 43 to 45°F and 61 to 70°F

## Chassis Specifications

### Separator Drive Jackshaft

Jackshaft Rolling Torque Without Seals .....	0.6 to 1.1 Nm	5 to 10 lb in
Distance from Rotor Torque Sensing Pulley to Rotor Drive Pulley .....	95 mm	3.75 inch
Alignment of Rotor Torque Sensing Pulley to Rotor Drive Pulley - Within .....	1.52 mm	0.060 inch
Drive Pulley Trap Clearance .....	3 mm	0.125 inch

### Rotor Drive

Adjustable Pulley Half - Bushing Service Limit .....	Coated Material not Worn Through	
Distance Between Inner Surface of Rotor Driven Pulley Halves for Correct Belt Tension .....	10.4 mm	0.41 inch
Torque Sensing Spring Free Length .....	198 mm	7.8 inch
Torque Sensing Spring Free Length After P.I.N. 1640 JJC 0097190    1640E JJC 0096095		
1660 JJC 0100327    1660E JJC 0100280		
1680 JJC 0116411    1680E JJC 0114165 .....	229 mm	9 inch

### Rotor Gearbox

Input Shaft End Play (Maximum) .....	0.28 mm	0.011 inch
Output Shaft End Play (Maximum) .....	0.28 mm	0.011 inch
Input Shaft Rolling Torque (Maximum all Gears) .....	1.7 Nm	15 lb in
Roller Bearing to Output Shaft Hub Face Clearance .....	1.5 mm	0.060 inch

### Shifter Rail Detent Spring Specifications:

Free Length .....	47.02 mm	1.85 inch
Number of Coils .....		15
OD .....	10.72 mm	0.42 inch
Wire Diameter .....	1.588 mm	0.0625 inch
Compress to 31.75 mm (1.25 inch) .....	97 N	21.8 lbf

### Rotor

Clearance Between the Rotor Front Bearing Housing and the Rotor Impeller Blades .....	0.76 to 3.81 mm	0.03 to 0.15 inch
Clearance Between the Rotor Speed Sensor and the Rotor Speed Sprocket .....	0.356 to 2.286 mm	0.014 to 0.09 inch

### Feeder and Cleaning Fan

Gear Backlash .....	0.13 to 0.28 mm	0.005 to 0.011 inch
Bearing Pre-Load		
Input Shaft .....	0.34 to 1.34 Nm	3 to 12 lb in
Output Shaft .....	0.22 to 1.12 Nm	2 to 10 lb in
Input Shaft Pinion		
Mounting Distance .....	52.5 to 52.6 mm	2.067 to 2.071 inch

## Cleaning Fan Drive

Cleaning Fan Speed .....	450 to 1150 rpm
Slow Fan Drive Speed (If Equipped) .....	156 to 453 rpm
Fan Jackshaft Drive Belt Tension Adjustment .....	240 mm 9.5 inch

## Cleaning Fan

Drive Pulley Distance from Frame Rail to Center of Pulley .....	187 mm 7.34 inch
Blade Distance from End of Fan Blade to Side of Fan Housing .	6.5 to 12.5 mm 0.25 to 0.5 inch
Blade Distance from Tip of Fan Blade to Back of Fan Housing .....	3 to 6 mm 0.125 to 0.25 inch
Air Gap Between Cleaning Fan Speed Sensor and Cleaning Fan Sprocket .....	0.35 to 2.28 mm 0.015 to 0.09 inch
Maximum Distance Between Centerline of Cleaning Fan Sensor and Centerline of Sensor Sprocket .....	4 mm 0.156 inch

## Elevator Drive Jackshaft

## 1680 Combine Slip Clutch Spring

Free Length .....	76.2 mm 3.0 inch
OD .....	35.1 mm 1.375 inch
Number of Coils .....	8.25
Wire Diameter .....	6.67 mm 0.263 inch
Compress to 58.7 mm (2-5/16 inch) .....	2424 N 545 lbf

## 1620, 1640, 1660 Combine Slip Clutch Spring

Free Length .....	79.5 mm 3.125 inch
OD .....	24.8 mm 0.9686 inch
Number of Coils .....	11
Wire Diameter .....	5.26 mm 0.219 inch
Compress to 63.5 mm (2-1/2 inch) .....	1659 N 374 lbf

## Tailings elevator Drive Sprocket Distance

from Clutch Retainer Plate to Sprocket .....	196.85 mm 7.75 inch
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## Clean Grain elevator Drive Sprocket Distance from

Grain elevator Reinforcement Plate to Center of Sprocket Teeth ....	41.275 mm 1.625 inch
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## Slip Clutch Warning Horn Distance from

Clutch Retaining Plate to Horn Sensor .....	1.6 to 3.2 mm 0.0625 to 0.125 inch
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## Discharge Beater

Gap Between Shaft Speed Sensor and Sensor Magnet .....	3 mm 0.125 inch
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## Unloader Drive

Drive Chain Free Movement .....	25.4 mm 1 inch
Unloader Jackshaft Driven Pulley to Pulley Belt Guide Gap - Within Lower Left 45 Degree Quadrant .....	3 to 4.5 mm 0.125 to 0.1719 inch
Unloader Jackshaft Driven Pulley to Pulley Belt Guide Gap - Outside 45 Degree Quadrant .....	3 to 7 mm 0.125 to 0.2656 inch
Unloader Jackshaft Drive Pulley to Pulley Guide Belt .....	2.8 to 3.3 mm 0.1093 to 0.125 inch
Unloader Belt Tension Pulley Return Spring Length .....	177.8 mm 7 inch

## Straw Spreader Drive

Spreader Drive Belt Tension Spacer Length .....	165 mm 6.5 inch
Bevel Gear End Play .....	0.8 to 1.5 mm 0.0315 to 0.60 inch

Header Cutter Bar Drive		
Knife Drive Assembly Clearances		
Trunnion Bearings End Play .....	0.05 to 0.10 mm	0.002 to 0.004 inch
Inclined Delivery Auger		
Sprocket Shaft Bearing Pre-Load .....	0.9 to 1.4 Nm	8 to 12 lb in
1000 Corn Head		
Single Clutch		
Spring Height Adjustment		
Top of Spring Washer to Bottom of Spring Retainer .....	43.5 mm	1.7 inch
Torque Required to Slip Clutch .....	312 to 407 Nm	230 to 300 lb ft
Double Clutch		
Spring Height Adjustment .....	16 mm	0.63 inch
Torque Required to Slip Clutch .....	340 to 440 Nm	250 to 325 lb ft
Stalk Roll Knife to Weed Knife Clearance .....	1.524 mm	0.060 inch
Auger Clearance to Stripper .....	8 mm	0.3125 inch
Auger Clearance to Trough .....	25 mm	1 inch
Stalk Roll Weed Knife Clearance .....	1.5 mm	0.0625 inch
Stalk Roll Knife Cutting Edge Clearance .....	0.8 to 2 mm	0.0312 to 0.0781 inch
Stalk Roll Stripper Shield Clearance		
Front .....	32 mm	1.250 inch
Rear .....	35 mm	1.375 inch
Gather Chain Adjustment Between Washer and Sleeve .....	3 to 6.5 mm	0.125 to 0.25 inch
Stalk Roll Alignment Between Knives .....	46 mm	1.8125 inch
Auger Slip Clutch Spring Height Adjustment .....	13 mm	0.50 inch
Stalk Roll Drive Lubricant Capacity .....	2.13 Litre	4.5 pt
Stalk Roll Drive Lubricant - Case 135 HEP 85W-140 Gear Lubricant		
Seal Installation Depth - Case to Face of Seal		
Main Shaft End Cap .....	10 mm	0.393 inch
Stalk Roll Housing .....	18.5 mm	0.73 inch
Gather Shaft .....	5 mm	0.196 inch
Anti Sieze Compound on Chain Tension Sliding Rods		
Permatex No. 2 on Oil Level Gauge Threads		
Loctite 515 on all Stalk Roll Drive Gasket and OD of Seals		
Stalk Roll Knife to Knife Adjustment .....	46 mm	1.1875 inch
Stripper Shield Clearance		
Front .....	32 mm	1.25 inch
Rear .....	35 mm	1.375 inch
Unloader Auger System		
Unloader Drive and Driven Chain Deflection .....	25.4 mm	1.00 inch
Unloader Jackshaft Driven Pulley to Pulley Belt Guide Gap		
- Within Lower Left 45 Degree Quadrant .....	3.0 to 4.3 mm	0.125 to 0.172 inch
Unloader Jackshaft Driven Pulley to Pulley Belt Guide Gap		
- Outside 45 Degree Quadrant .....	3.0 to 7.0 mm	0.125 to 0.226 inch
Unloader Jackshaft Drive Pulley to Pulley Belt Guide Gap .....	2.8 to 3.3 mm	0.109 to 0.125 inch
Unloader Belt Tension Pulley Return Spring Length .....	178 mm	7.00 inch
Bottom of Pin Hole in Upper Gear Shaft to		
Upper Gear Box Housing .....	41.11 to 42.71 mm	1.625 to 1.688 inch
Upper Gearbox Backlash .....	1.102 to 0.152 mm	0.004 to 0.006 inch
Lower Gearbox Backlash .....	0.152 to 0.914 mm	0.006 to 0.036 inch
Straw Chopper Drive Adjustment Spring Length .....	165 mm	6.5 inch
Swing Cylinder Wiper Installation Depth .....	0.76 mm	0.030 inch
Grain Tank Auger Cover Clearance		
Rear Auger .....	90 mm	3.5 inch
Front Auger .....	63.5 mm	2.5 inch
1620 Chopper Drive Belt Deflection With 54 to 67 N (12 to 15 lbf) .....	19 mm	0.75 inch



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## SPECIAL TORQUES

Unloader Auger		
Unloader Auger Lower Gearbox Mounting Bolts.....	95 to 109 Nm	70 to 80 lb ft
Unloader Auger Swing Cylinder Piston Lock Nut .....	145 to 160 Nm	105 to 120 lb ft
Unloader Auger Swing Cylinder Mounting Bolts .....	119 to 120 Nm	80 to 90 lb ft
Unloader Auger Swing Cylinder Rod Mount to Tube .....	101 to 115 Nm	75 to 85 lb ft
Unloader Tube Elbow Keeper Bolts .....	101 to 115 Nm	75 to 85 lb ft
Corn Head		
Header Input Shaft Bearing .....	45 to 50 Nm	30 to 35 lb ft
Header Drive Shaft Bearing .....	110 to 120 Nm	80 to 90 lb ft
Header Input Shaft Sprocket .....	135 to 150 Nm	100 to 110 lb ft
Gatherer Shaft End Cap .....	45 to 55 Nm	35 to 40 lb ft
Stalk Roll Drive Bevel Gear Housing .....	45 to 55 Nm	35 to 40 lb ft
Gear Drive Mounting bolts - First .....	45 to 55 Nm	35 to 40 lb ft
Gear Drive Mounting Eyebolts - Second .....	110 to 120 Nm	80 to 90 lb ft
Gear Drive to Frame Allen head Screws .....	45 to 55 Nm	35 to 40 lb ft
Gear Drive to Frame Bolts .....	110 to 120 Nm	80 to 90 lb ft
Stalk Roll Point to Frame Bolts .....	110 to 120 Nm	80 to 90 lb ft
Stalk Roll Chain Sprocket .....	95 to 120 Nm	70 to 95 lb ft
Stalk Knife Bolts .....	115 Nm	85 lb ft
1010/1020 Header Cutter Bar Drive		
Yoke Assembly Bearing Retainer Bolts .....	14 to 16 Nm	10 to 12 lb ft
Wobble Shaft Spanner Nut .....	190 to 217 Nm	140 to 160 lb ft
Wobble Shaft and Pivot Bearing Nuts .....	43 to 48 Nm	32 to 35 lb ft
Wobble Shaft End Nut .....	203 to 230 Nm	150 to 170 lb ft
Driven Pulley .....	203 to 230 Nm	150 to 170 lb ft
Knife Head Bolts .....	325 to 339 Nm	240 to 250 lb ft
Cutter Bar Drive to Header bolts .....	298 to 325 Nm	220 to 240 lb ft
Header Auger Drive		
Auger Slip Clutch (New) .....	183 to 197 Nm	135 to 145 lb ft
Auger Slip Clutch (Used) .....	246 to 308 Nm	180 to 225 lb ft
Knife Drive Pulley Nut .....	108 to 122 Nm	80 to 90 lb ft
Elevator Drive Jackshaft		
Slip Clutch Bolts .....	45 to 50 Nm	33 to 37 lb ft
Sprocket Set Screws .....	45 to 50 Nm	33 to 37 lb ft
Jackshaft Bearing Nut .....	122 to 127 Nm	90 to 94 lb ft
Cleaning Fan Drive		
Fan Jackshaft Mounting Bolt .....	90 Nm	65 lb ft
Fan Drive Pulley Clamp Bolts .....	110 to 120 Nm	80 to 90 lb ft
Rock Trap		
Rotor Speed Sensor Sprocket Retaining Bolt .....	190 to 217 Nm	140 to 160 lb ft
Feeder and Cleaning Fan		
Gearbox Case Cover Bolts .....	45 to 50 Nm	33 to 37 lb ft
All Hub Assembly Bolts .....	45 to 50 Nm	33 to 37 lb ft
Output Shaft Lock Nut .....	253 to 342 Nm	185 to 250 lb ft
Rotor		
Speed Sensor Sprocket Retaining Bolts .....	190 to 217 Nm	140 to 160 lb ft
Speed Sensor Lock Nut .....	48 to 57 Nm	35 to 42 lb ft

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