

**SPICER**<sup>®</sup>  
TRANSMISSIONS

PRO-SHIFT  
18-Speed  
Parts Catalog

*Bulletin No. SPAP0140807*

*PSD0165-18A*

*PSD0185-18A*

*PSD0205-18A*

**TTC**  
TRANSMISSION  
TECHNOLOGIES  
Corporation

*"Technology in Motion"*

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October 2007



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## Contact Information

SPICER® transmissions and components are available exclusively through our authorized distributor network.

To locate the distributor near you, log on [www.ttcautomotive.com/distributors](http://www.ttcautomotive.com/distributors)

or call 1 734-456-3770



## About TTC

Transmission Technologies Corporation (TTC) designs, develops, manufactures, and markets transmissions, and related products globally for a wide variety of vehicles from high-performance passenger cars and light-duty trucks through Class 8 commercial vehicles. Brands include SPICER™ heavy-duty, SPICER™ medium-duty, and TREMEC™ light-duty transmissions.

This specification guide is for medium- to heavy-duty vehicle transmissions. In it, you'll find innovative products finely engineered and manufactured to optimize your vehicles' operation and your drivers' safety and job satisfaction. The product lines are:

### PRO-SHIFT™ Transmissions...

for medium-duty, heavy-duty, and vocational applications offer an exceptionally wide range of high torque-to-weight ratios.

### EASY-SHIFT™ Transmissions...

for medium-duty trucks, quietly provide smooth, positive gear engagement with an even shift feel, in 5- and 7-speed synchronized configurations.

### Auxiliary Transmissions...

provide maximum versatility for on-/off-highway applications.

PRO-SHIFT

P S

DOUBLE OVERDRIVE

D O

PSDO165-18A

TORQUE CAPACITY X 10

2 0 5 -

NUMBER OF GEARS

1 8 A

RATIO GROUP

PSDO185-18A

PSDO205-18A

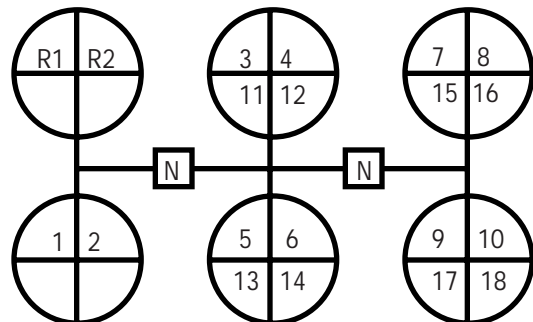
## GEAR RATIOS

Gear	Ratio	%Step
1st	14.89	20%
2nd	12.41	19%
3rd	10.40	20%
4th	8.66	18%
5th	7.32	20%
6th	6.09	21%
7th	5.05	20%
8th	4.21	19%
9th	3.54	20%
10th	2.95	19%
11th	2.47	20%
12th	2.06	18%
13th	1.74	20%
14th	1.45	21%
15th	1.20	20%
16th	1.00	19%
17th	0.84	20%
18th	0.70	
Rev. 1	15.64	
Rev. 2	13.03	

## GEAR RATIOS

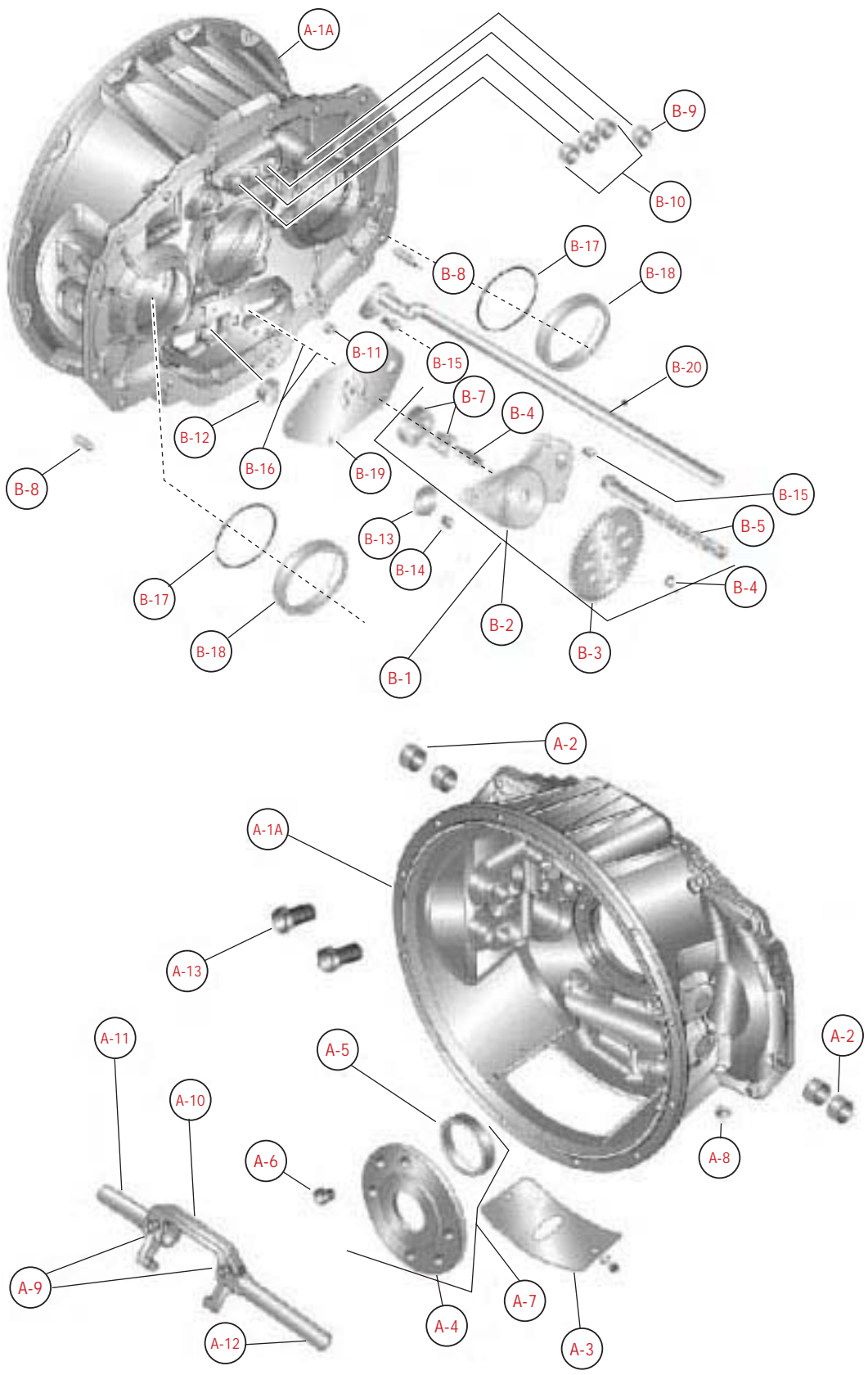
Ratio Coverage	21.3:1
Length	95.7 cm (37.7 inches)
Weight	365 Kg (804-7 lbs)
Input Shaft	50.8 mm x 10 Spline (2 inches)
End Yoke	SPL-250, 1810, RPL25
Clutch Housing	SAE #1 Aluminum (Standard or Nodal)
Clutch	15.5"
Oil Capacity	14 liters (29.58 Pints)
Speedometer	Electronic
PTO Openings	8 bolt left & 6 bolt right side
PTO Drive Gears	Both sides, 52 teeth 6 pitch gear. Both gears turn at .57 or .70 of engine speed

## SHIFT PATTERN



# Clutch Housing Sub-Assembly and Opti-Lube Pump

PRO-SHIFT 18 Speed Models (1,650-2,050 lb-ft)



## Clutch Housing Sub-Assembly and Opti-Lube Pump

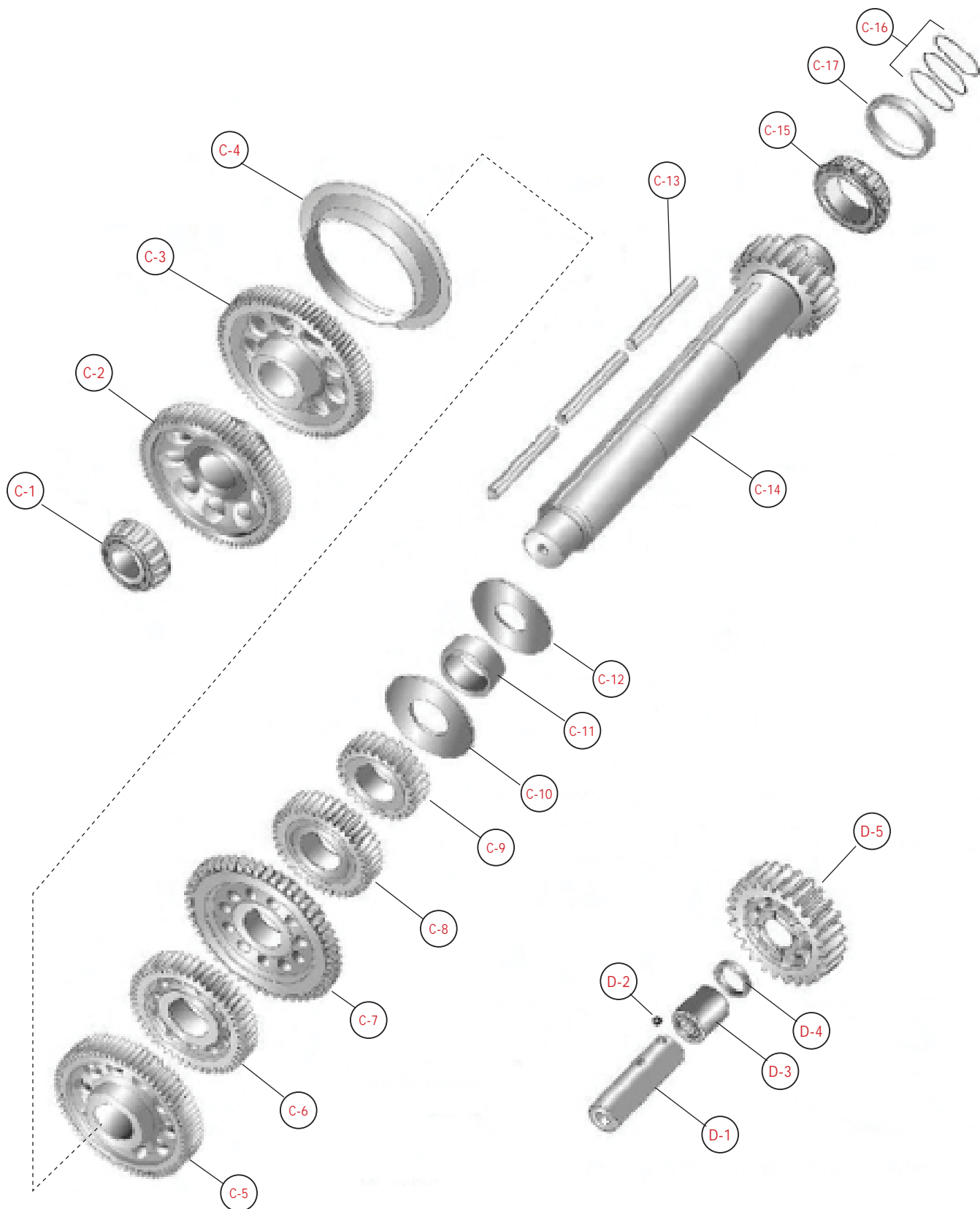
PRO-SHIFT 18 Speed Models (1,650-2,050 lb-ft)

REF.	PART NO.	DESCRIPTION	QTY.
<b>CLUTCH HOUSING GROUP</b>			
<b>A-1 or</b>	205-518-1-2X	Clutch Housing, Hand Hole Cover, and Bushings (SAE#1) (Aluminum) (includes: A-1A thru A-3) + B-9/B-10/B-17	1
<b>A-1</b>	205-518-5-2X	Clutch Housing, Hand Hole Cover, and Bushings (SAE#1 Nodal Mount) (Aluminum) (includes: A-1A thru A-3) + B-9 / B-10 / B-17	1
<b>A-1A</b>	N.S.S.	Clutch Housing	1
<b>NS</b>	201-39-1	Plug – Temperature Indicator	2
<b>A-2</b>	97-24-8	Bushing – Clutch Release Shaft	8
<b>A-3</b>	47-96-1-1X	S/Assembly Hand Hole Cover	1
<b>A-8</b>	500168-2	Grease Fitting	2
<b>A-9</b>	330231	Bolt – Clutch Release Yoke	2
<b>A-10</b>		Clutch Release Yoke (see Tabulated Bills of Materials on page 32)	1
<b>A-11</b>		Cross Shaft / Short (see Tabulated Bills of Materials on page 32)	1
<b>A-12</b>		Cross shaft / Long (see Tabulated Bills of Materials on page 32)	1
<b>A-13</b>	545001-1	Bolt – Clutch Housing to Main Case	16
<b>NS</b>	330969	Lift Hook	2
<b>NS</b>	10-30	Key – Clutch Release Yoke	1
<b>NS</b>	500356-9	Lock Washer	2
<b>FRONT BEARING CAP GROUP</b>			
<b>A-4</b>	N.S.S.	Bearing Cap	1
<b>A-5</b>	97-463-36-1X	S/Assembly – Oil Seal & Installation Sleeve	4
<b>A-6</b>	545002	Bolt	4
<b>A-7</b>	201-19-2-1X	S/Assembly Drive Gear and Bearing Cap (includes A-4 and A5)	1
<b>OPTI-LUBE PUMP GROUP</b>			
<b>B-1</b>	205-501-2-1X	S/Assembly OPTI-LUBE Oil Pump Housing (includes B-2 thru B-7)	1
<b>B-2</b>	N.S.S.	Pump Housing	1
<b>B-3</b>	N.S.S.	Drive Gear (Lube Pump)	1
<b>B-4</b>	N.S.S.	Snap Ring	1
<b>B-5</b>	N.S.S.	Inlet Oil Tube	1
<b>B-6</b>	N.S.S.	Shaft – Internal Oil Pump	1
<b>B-7</b>	N.S.S.	Gerotor Element – Internal Oil Pump	1
<b>B-8</b>	201-438-3	Dowel Pin	2
<b>B-9</b>	205-24-1-1	Bushing	1
<b>B-10</b>	205-24-1-2	Bushing	3
<b>B-11</b>	205-24-1-3	Bushing	1
<b>B-12</b>	201-501-13X	S/Assembly - Oil Bypass Valve	1
<b>B-13</b>	330934	Ceramic Magnet (Location is at Oil Pump)	1
<b>B-14</b>	545002-1	Bolt	1
<b>B-15</b>	545002-2	Bolt	2
<b>B-16</b>	500597-14	Alignment Pin	3
<b>B-17</b>	205-463-1	O-Ring	2
<b>B-18</b>	205-482-1	Bearing / Cup (Front Countershaft)	2
<b>B-19</b>	205-200-1	Pump Base	1
<b>B-20</b>	205-420-12-1X	Discharge Tube	1

NS= Not Shown

# Countershaft Sub-Assembly

PRO-SHIFT 18 Speed Models (1,650-2,050 lb-ft)





## Countershaft Sub-Assembly

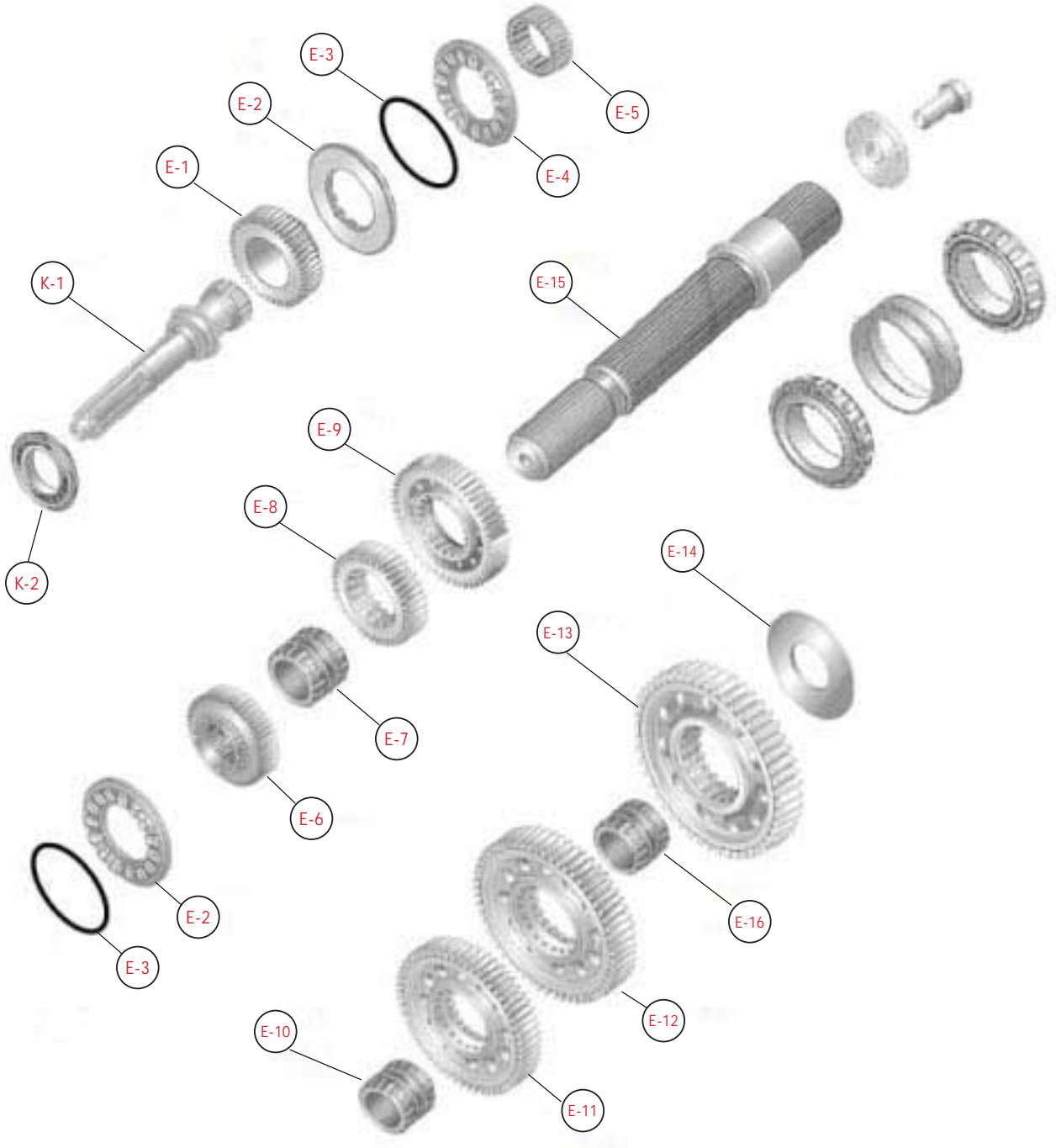
PRO-SHIFT 18 Speed Models (1,650-2,050 lb-ft)

REF.	PART NO.	DESCRIPTION	QTY.
<b>COUNTERSHAFT GROUP</b>			
<b>C-1</b>	205-482-2	Cone (Bearing - Countershaft [Front] Taper Cone)	2
<b>C-2</b>	205-196-2	C/S 4th Gear (71T)	2
<b>C-3</b>	205-196-1	C/S Drive Gear (75T)	2
<b>C-4</b>	205-47-2	Thrust Ring	2
<b>C-5</b>	205-196-3	C/S 5th Gear (81T)	2
<b>C-6</b>	205-196-4	C/S 3rd Gear (49T)	2
<b>C-7</b>	205-312-1	PTO Gear (49T)	2
<b>C-8</b>	205-196-5	C/S Gear (40T)	2
<b>C-9</b>	205-196-6	C/S Gear (26T)	2
<b>C-10</b>	205-47-4	Thrust Ring	2
<b>C-11</b>	205-37-2	Spacer	2
<b>C-12</b>	205-47-3	Thrust Ring	2
<b>C-13</b>	205-210-1	Key	6
<b>C-14</b>	205-30-1	Countershaft (22T)	2
<b>C-15</b>	550936	Bearing - Countershaft Rear Taper Cone	2
<b>C-16</b>	N.S.S.	Shim (included in Shim Kit 205-228-1X, see page 31)	
<b>C-17</b>	550935	Cup	2
<b>REVERSE IDLER GROUP</b>			
<b>D-1</b>	205-60-2	Shaft	2
<b>D-2</b>	500566-8	Ball	2
<b>D-3</b>	550886	Bearing	2
<b>D-4</b>	205-37-1	Spacer	2
<b>D-5</b>	205-5-1	Rev. Idler (26T)	2

AR = As Required

# Input & Mainshaft Sub-Assembly

PRO-SHIFT 18 Speed Models (1,650-2,050 lb-ft)



## Input & Mainshaft Sub-Assembly

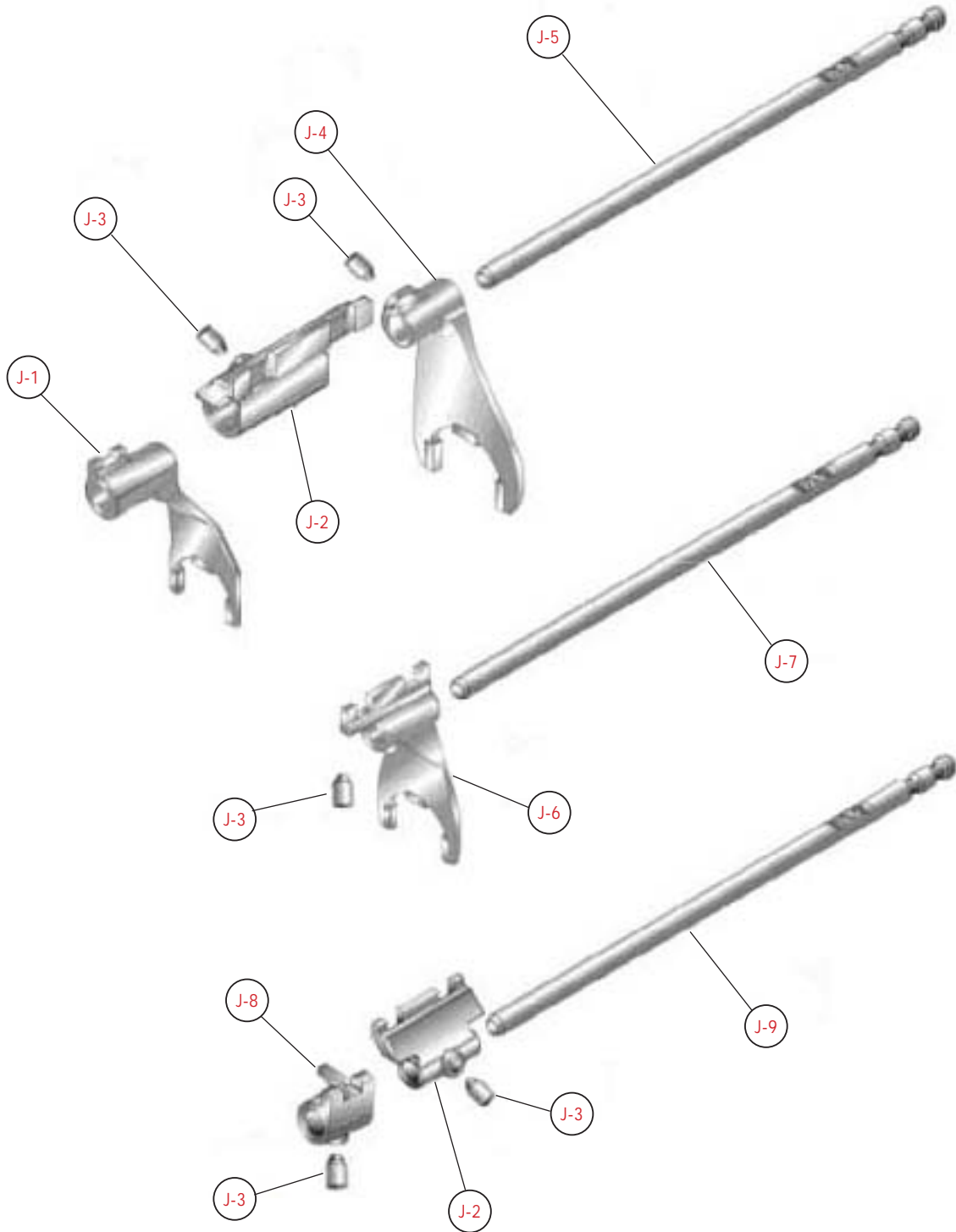
PRO-SHIFT 18 Speed Models (1,650-2,050 lb-ft)

REF.	PART NO.	DESCRIPTION	QTY.
<b>MAINSHAFT SUB-ASSEMBLY</b>			
<b>E-1</b>	205-8-7	Drive Gear (44T)	1
<b>E-2</b>	205-466-3	Splitter Clutch Ring	2
<b>E-3</b>	97-381-31	Snap Ring	2
<b>E-4</b>	97-465-26	Splitter Collar	1
<b>E-5</b>	97-466-17	Splitter Hub	1
<b>E-6</b>	205-8-12	4th Gear (50T)	1
<b>E-7</b>	205-465-6	Clutch Collar 4th - 5th	1
<b>E-8</b>	205-8-13	5th Gear (40T)	1
<b>E-9</b>	205-8-11	3rd Gear (50T)	1
<b>E-10</b>	205-465-7	Clutch Collar 2nd - 3rd	1
<b>E-11</b>	205-8-10	2nd Gear (58T)	1
<b>E-12</b>	205-8-2	1st Gear (54T)	1
<b>E-13</b>	205-8-1	Reverse Gear (48T)	1
<b>E-14</b>	205-47-1	Thrust Washer	1
<b>NS</b>	205-999-3X	Mainshaft Bearing Assembly	1
<b>NS</b>	205-362-1-1X	Kit - Mainshaft, Washer & Bolt	1
<b>E-15</b>	N.S.S.	Mainshaft	1
<b>E-16</b>	205-465-8	Clutch Collar 1st - Reverse	1
<b>NS</b>	205-205-2	Washer Mainshaft (see page 18)	1
<b>NS</b>	205-443-4	Bolt Mainshaft (see page 18)	1
<b>INPUT SUB-ASSEMBLY</b>			
<b>K-1</b>	205-35-1	Input Shaft (2.00" 10 Spline) #306 (1.180" dia Pilot)	1
<b>K-2</b>	313645X	Bearing (Input)	1

NS = Not Shown

# Shift Fork Assembly

PRO-SHIFT 18 Speed Models (1,650-2,050 lb-ft)



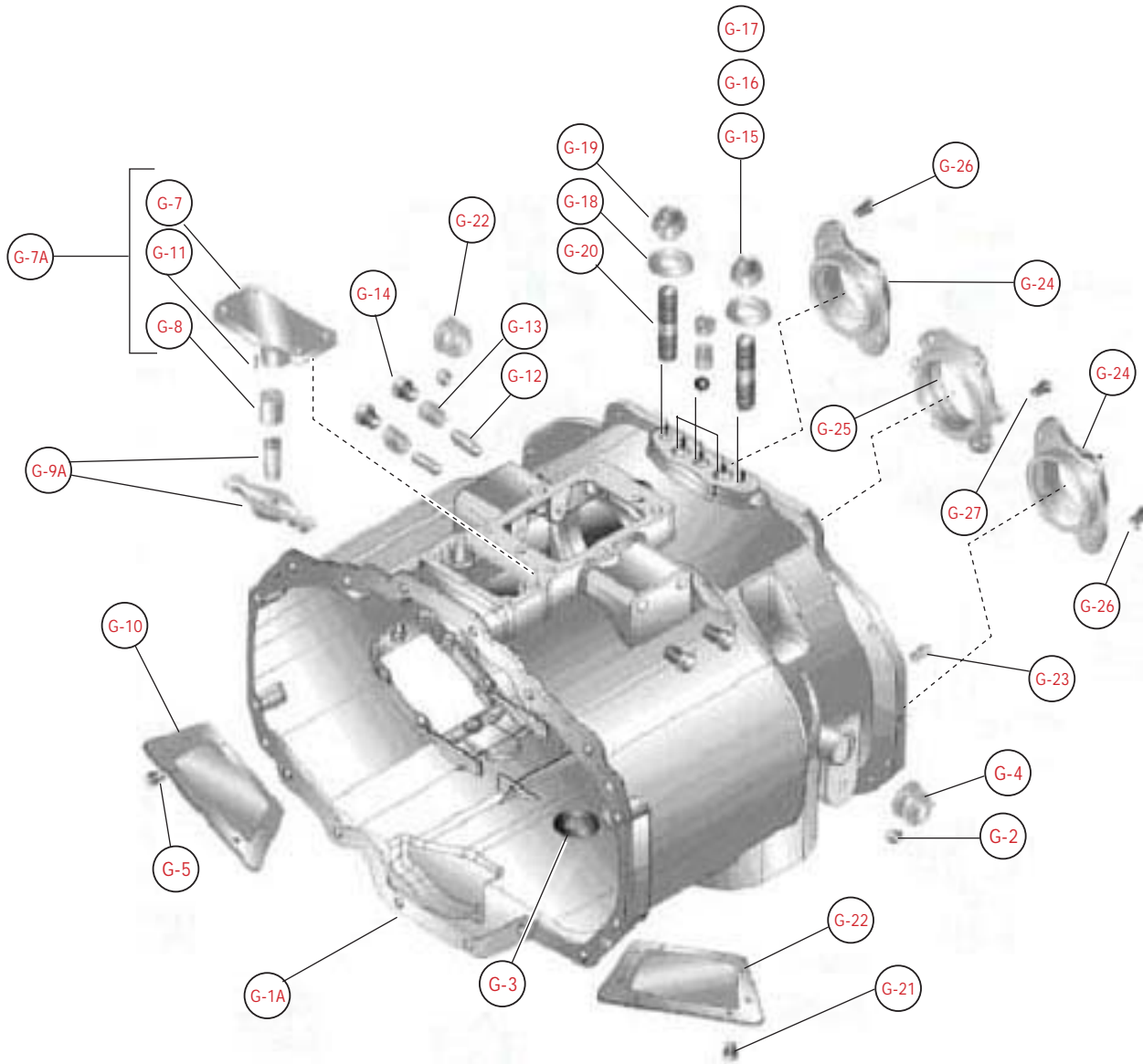
## Shift Fork Assembly

### PRO-SHIFT 18 Speed Models (1,650-2,050 lb-ft)

REF.	PART NO.	DESCRIPTION	QTY.
J-1	205-66-18	4th/5th	1
J-2	205-354-1X	Shift Bracket/with Set Screw	2
J-3	545011	Set Screw	5
J-3	LW-3-9	Wire	6
J-4	205-66-16	Shift Fork 1st/Reverse	1
J-5	205-67-1	Shift Rod 1st/Reverse	1
J-6	205-66-17	Shift Fork 2nd/3rd	1
J-7	205-67-2	Shift Rod 2nd/3rd	1
J-8	205-354-2	Shift Bracket 4th/5th	1
J-9	205-67-3	Shift Rod 4th/5th	1

## Main Case

PRO-SHIFT 18 Speed Models (1,650-2,050 lb-ft)



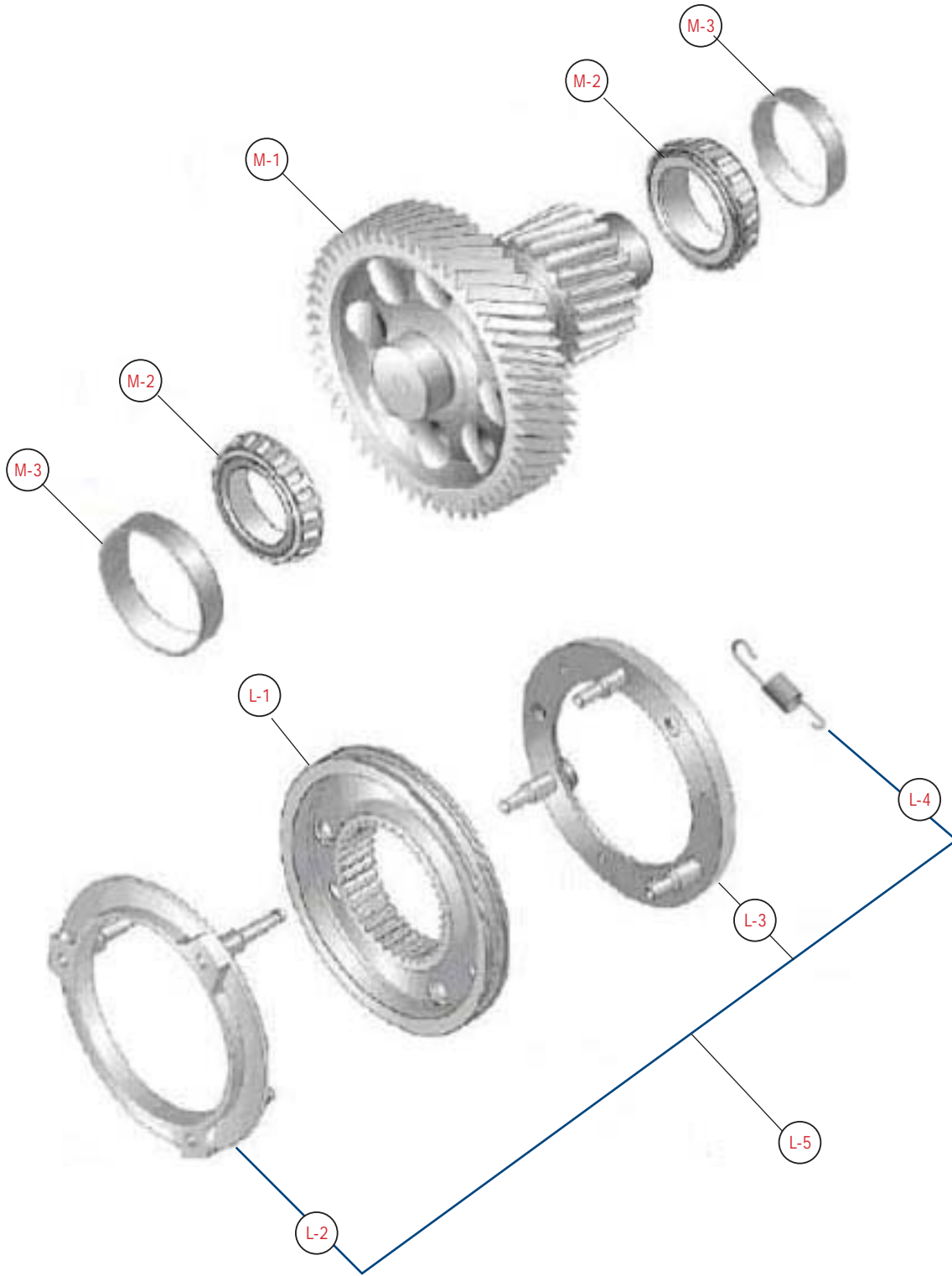
## PRO-SHIFT 18 Speed Models (1,650-2,050 lb-ft)

REF.	PART NO.	DESCRIPTION	QTY.
<b>MAIN CASE GROUP</b>			
<b>G-1</b>	205-15-1-1X	S/Assembly Main Case (iron) (includes G-1A thru G-4)	1
<b>G-1A</b>	N.S.S.	Transmission Case	1
<b>NS</b>	NP-97	Name Plate	1
<b>NS</b>	252-SP	Pin - Nameplate	4
<b>G-2</b>	201-39-1	Plug – Temperature Indicator	2
<b>G-3</b>	330934	Ceramic Magnet (Location is Bottom of Case)	1
<b>NS</b>	545107-2	Adhesive – Case Magnet Retaining	1
<b>G-4</b>	545123	Plug - Fill (magnetic)	2
<b>G-5</b>	330800-1	Bolt (for PTO cover)	6
<b>G-7A</b>	205-999-4X	S/Assembly Rocker Arm Support ( includes G-7, G-8 & G-11)	1
<b>G-7</b>	N.S.S.	Rocker Arm Support	1
<b>G-8</b>	205-187-1	Needle Bearing	1
<b>G-11</b>	500597-14	Pin - Alignment	1
<b>G-9A</b>	205-999-5X	S/Assembly Rocker (includes Rocker Shaft and Rocker Arm)	1
<b>G-10</b>	50-267-2	6 Bolt PTO cover	1
<b>G-12</b>	40-438-1	Plunger	2
<b>G-13</b>	201-72-6	Spring	2
<b>G-14</b>	545128	Plug	4
<b>G-15</b>	201-80-1	Ball	3
<b>G-16</b>	205-72-1	Spring	3
<b>G-17</b>	205-59-1	Plug	3
<b>G-18</b>	500365-43	Washer	2
<b>G-19</b>	500371-7	Nut	2
<b>G-20</b>	330360-7	Stud (.625-18NF-X 2.375")	2
<b>G-21</b>	545012	Bolt (for PTO Cover)	8
<b>G-22</b>	73-267-1	8 Bolt PTO Cover	1
<b>G-23</b>	201-483-3	Dowel Pin	2
<b>G-24</b>	205-360-1	Bearing Cup (Countershaft)	2
<b>G-25</b>	205-360-2	Bearing Cup (Mainshaft)	1
<b>G-26</b>	545002	Bolt	4
<b>G-27</b>	545002-4	Bolt	6
<b>N.S.</b>	545028-2	Bolt	4
<b>N.S.</b>	201-463-8	O-Ring	

NS = Not Shown

# PSDO205-18A

PRO-SHIFT 18 Speed Models (2,050 lb-ft)





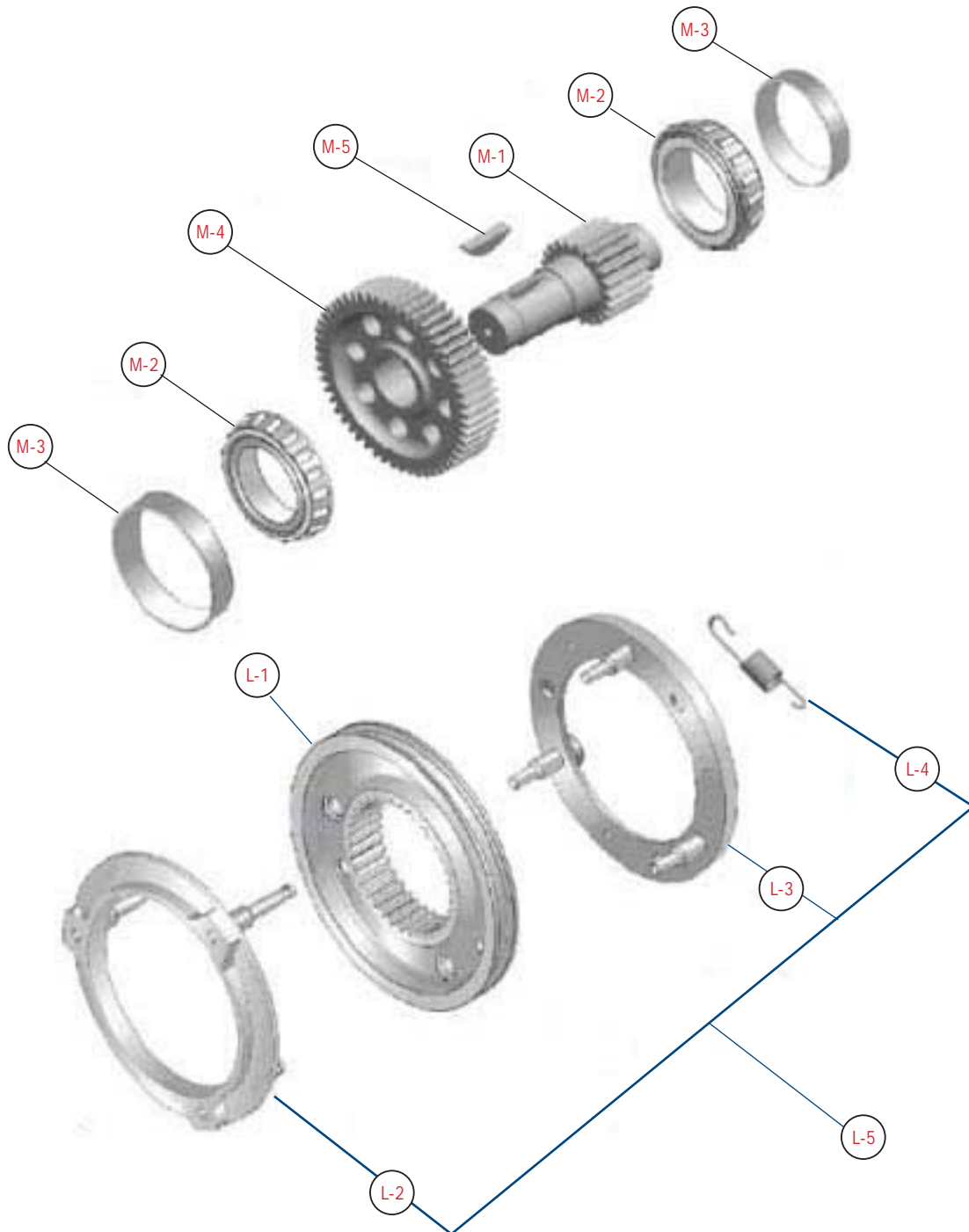
## PRO-SHIFT 18 Speed Models (2,050 lb-ft)

REF.	PART NO.	DESCRIPTION	QTY.
<b>RANGE COUNTER SHAFT</b>			
<b>M-1</b>	205-30-2	Range Counter Shaft (53T) (21T)	2
<b>M-2</b>	550935	Cone	4
<b>M-3</b>	550936	Cup	4
<b>NS</b>	N.S.S.	Shim (included in Shim Kit 205-228-1X, see page 31)	AR
<b>SYNCHRONIZER SUB ASSEMBLY</b>			
<b>L-5</b>	205-563-1X	S/Assembly Synchronizer Range (includes L-2 thru L-4)	1
<b>L-2</b>	N.S.S.	S/Assembly Synchronizer Range (High Range)	1
<b>L-3</b>	N.S.S.	S/Assembly Synchronizer Range (Low Range)	1
<b>L-4</b>	201-72-9-1X	Spring Extension (includes 3 Springs)	1
<b>L-1</b>	205-465-1	Clutch Collar Range	1

NS = Not Shown

# PSDO165-18A / PSDO185-18A

PRO-SHIFT 18 Speed Models (1,650-1,850 lb-ft)



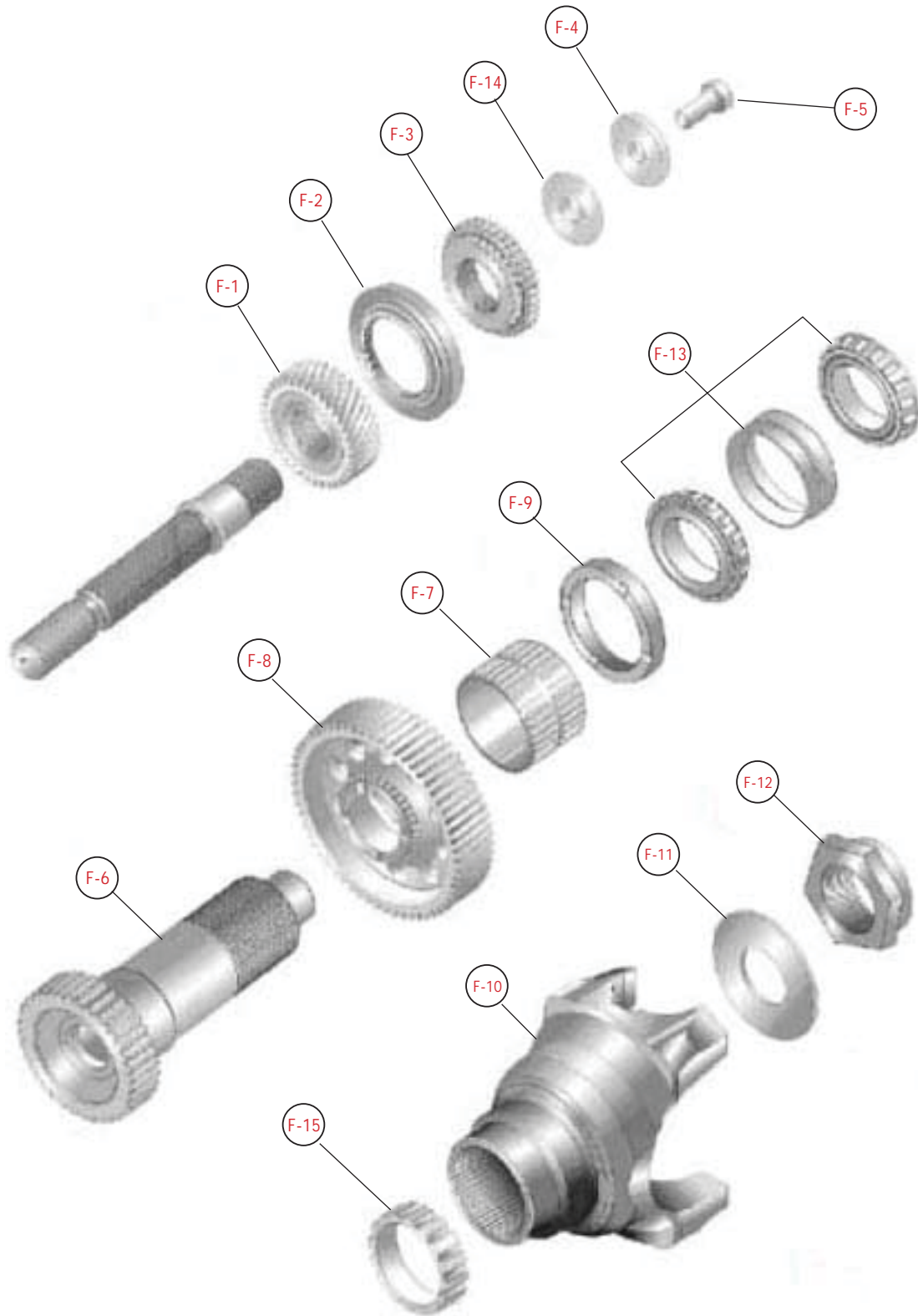
**PRO-SHIFT 18 Speed Models (1,650-1,850 lb-ft)**

<b>REF.</b>	<b>PART NO.</b>	<b>DESCRIPTION</b>	<b>QTY.</b>
<b>RANGE COUNTER SHAFT</b>			
<b>M-1</b>	205-30-5	Range Counter Shaft	2
<b>M-2</b>	550935	Cone	4
<b>M-3</b>	550936	Cup	4
<b>M-4</b>	205-196-13	Hohg Range Gear Aux Counter Shaft	2
<b>M-5</b>	500010-18	Key - Countershaft Drive Gear(Auxiliary)	2
<b>NS</b>	N.S.S.	Shim (included in Shim Kit 205-228-1X, see page 31)	AR
<b>SYNCHRONIZER SUB ASSEMBLY</b>			
<b>L-1</b>	205-465-1	Clutch Collar Range	1
<b>L-2</b>	N.S.S.	S/Assembly Synchronizer Range (High Range)	1
<b>L-3</b>	N.S.S.	S/Assembly Synchronizer Range (Low Range)	1
<b>L-4</b>	201-72-9-1X	Spring Extension (includes 3 Springs)	1
<b>L-5</b>	205-563-1X	S/Assembly Synchronizer Range (includes L-2 thru L-4)	1

*NS = Not Shown*

## Output Shaft Sub-Assembly

PRO-SHIFT 18 Speed Models (1,650-2,050 lb-ft)



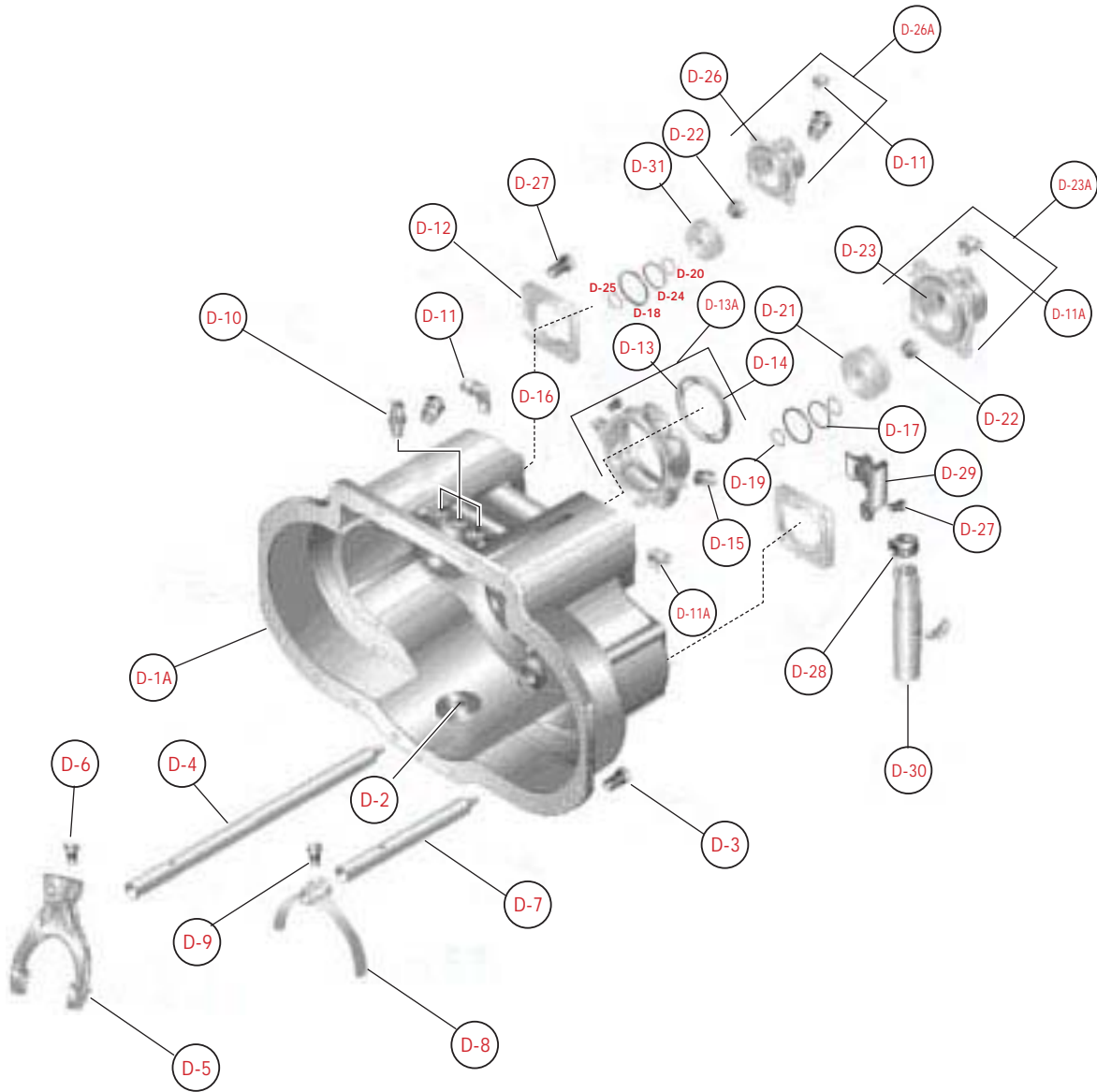
## Output Shaft Sub-Assembly

### PRO-SHIFT 18 Speed Models (1,650-2,050 lb-ft)

REF.	PART NO.	DESCRIPTION	QTY.
F-1	205-8-8	High Range Drive Gear (36T)	1
F-2	205-494-3	Synchronizer Cone	1
F-3	205-466-1	Clutch Drive Gear	1
F-4	205-205-2	Washer	1
F-5	205-443-4	Bolt	1
F-6	205-362-2	Output Shaft	1
F-7	550932	Bearing	1
F-8	205-8-9	Low Range Gear (60T)	1
F-9	205-37-3	Thrust Washer	1
F-10	250-4-901-1	Yoke Series SPL 250 1/2 Round	1
F-10	25WYS45-2	Yoke Series 25RP2	1
F-10	205-106-1	Yoke Series SPL 1810 Full Round	1
F-11	330734	Washer	1
F-12	545065	Nut	1
F-13	205-999-2X	Bearing Sub-Assembly	1
F-14	N.S.S.	Shim (included in Shim Kit 205-228-1X, see page 31)	1
F-15	205-452-1	Electronic Speedometer Signal Gear (16 Groves)	1

# Range Case and Related Parts

PRO-SHIFT 18 Speed Models (1,650-2,050 lb-ft)



## Range Case and Related Parts

### PRO-SHIFT 18 Speed Models (1,650-2,050 lb-ft)

REF.	PART NO.	DESCRIPTION	QTY
<b>RANGE CASE GROUP</b>			
<b>D-1</b>	205-15-2-1X	S/Assembly Case Range (iron) (includes magnet, adhesive and fill plug)	1
	205-15-6-1X	S/Assembly Case range Neumatic	
<b>D-1A</b>	N.S.S.	Range Case	1
<b>NS</b>	545107-2	Adhesive – Case Magnet	1
<b>NS</b>	545123	Plug – Fill (Magnetic)	1
<b>D-2</b>	330934	Ceramic Magnet	1
<b>D-3</b>	545002-4	Bolt Range Case	18
<b>D-4</b>	205-65-5	Splitter Rod	1
<b>D-5</b>	205-66-19-1X	Splitter Fork	1
<b>D-6</b>	545119	Bolt	1
<b>D-7</b>	205-65-4	Range Rod	1
<b>D-8</b>	205-66-15	Range Fork	1
<b>D-9</b>	545119	Bolt	1
<b>D-10</b>	1000-140-013	Switch Neutral	3
<b>D-11</b>	545025-2	Fitting	2
<b>D-11A</b>	545025-1	Elbow - Piston Housing 90 Degree	2
<b>D-12</b>	205-22-2	Bearing Cap	2
<b>D-13</b>	N.S.S.	Bearing Cap Output Shaft	1
<b>D-13A</b>	205-19-3-1X	S/Assembly Bearing Cap Output Shaft (Australia)	1
<b>D-13B</b>	205-19-2-1X	S/Assembly Bearing Cap Output Shaft (Kenworth)	1
<b>D-13C</b>	205-19-4-1X	S/Assembly Bearing Cap Output Shaft (Freightliner) (for push in sensor)	1
<b>D-14</b>	201-463-8	Seal – Output Shaft Rear Bearing Cap	1
<b>D-15</b>	545021	Plug – Electric Speedometer	2
<b>D-16</b>	545002-6	Bolt	4
<b>D-17</b>	N.S.S.	O-Ring (included in O-Ring Kit 205-463-1X, see page 30)	1
<b>D-18</b>			2
<b>D-19</b>			1
<b>D-20</b>			2
<b>D-21</b>	201-136-7	Range Piston	1
<b>D-22</b>	545170	Nut	1
<b>D-23A</b>	205-501-1-1X	S/Assembly Splitter Piston Housing (includes: piston hsg, bushing reducer, clamp, bolt and elbow fitting)	1
<b>D-23</b>	N.S.S.	Piston Housing Splitter	1
<b>NS</b>	330944	Bushing Reducer	1
<b>NS</b>	330971	Clamp Tubing	1
<b>NS</b>	545002-1	Bolt	4
<b>D-24</b>	N.S.S.	O-Ring (included in O-Ring Kit 205-463-1X, see page 31)	
<b>D-25</b>			

NS = Not Shown

NSS = Not Sold Separately

## Range Case and Related Parts

PRO-SHIFT 18 Speed Models (1,650-2,050 lb-ft)

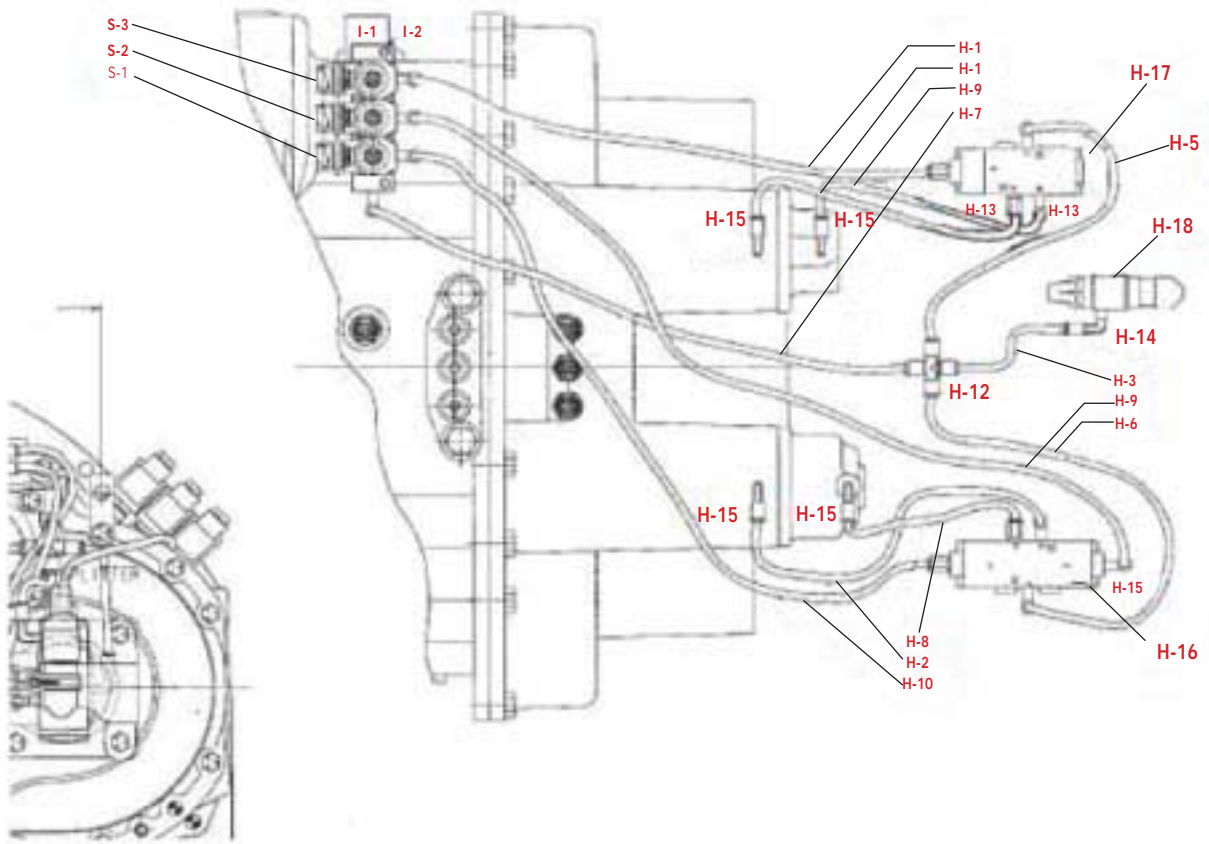
REF.	PART NO.	DESCRIPTION	QTY.
<b>RANGE CASE GROUP</b>			
<b>D-26A</b>	201-501-2-2X	S/Assembly Range Piston Housing (includes: piston hsg, bushing reducer, clamp, bolt and elbow fitting)	1
<b>D-26</b>	N.S.S.	Piston Housing Splitter	1
<b>N.S.</b>	330944	Bushing Reducer	1
<b>N.S.</b>	330971	Clamp Tubing	1
<b>N.S.</b>	545002-1	Bolt	4
<b>D-11</b>	545025-1	Fitting	1
<b>D-27</b>	545062-1	Bolt	16
<b>D-28</b>	330831	Clamp	1
<b>D-29</b>	97-411-2	Bracket	1
<b>D-30</b>	205-999-9-1	Filter Regulator	1
<b>D-31</b>	97-136-14	Splitter Piston	1
<b>N.S.</b>	545002-2	Bolt	3
<b>NS</b>	N.S.S.	Shim (included in Shim Kit 205-228-1X, see page 31)	AR
<b>NS</b>	545123	Oil Fill Plug / Drain Magnet	1
<b>NS</b>	LW-3-9	Wire	2
<b>NS</b>	545056	Sealant Anaerobic -50cc tube	1
<b>NS</b>	330969-4	Lift Hook	2

NS = Not Shown



# Direct Air Controls Diagram Electroneumatic

PRO-SHIFT 18 Speed Models (1,650-2,050 lb-ft)



## Direct Air Controls Electroneumatic

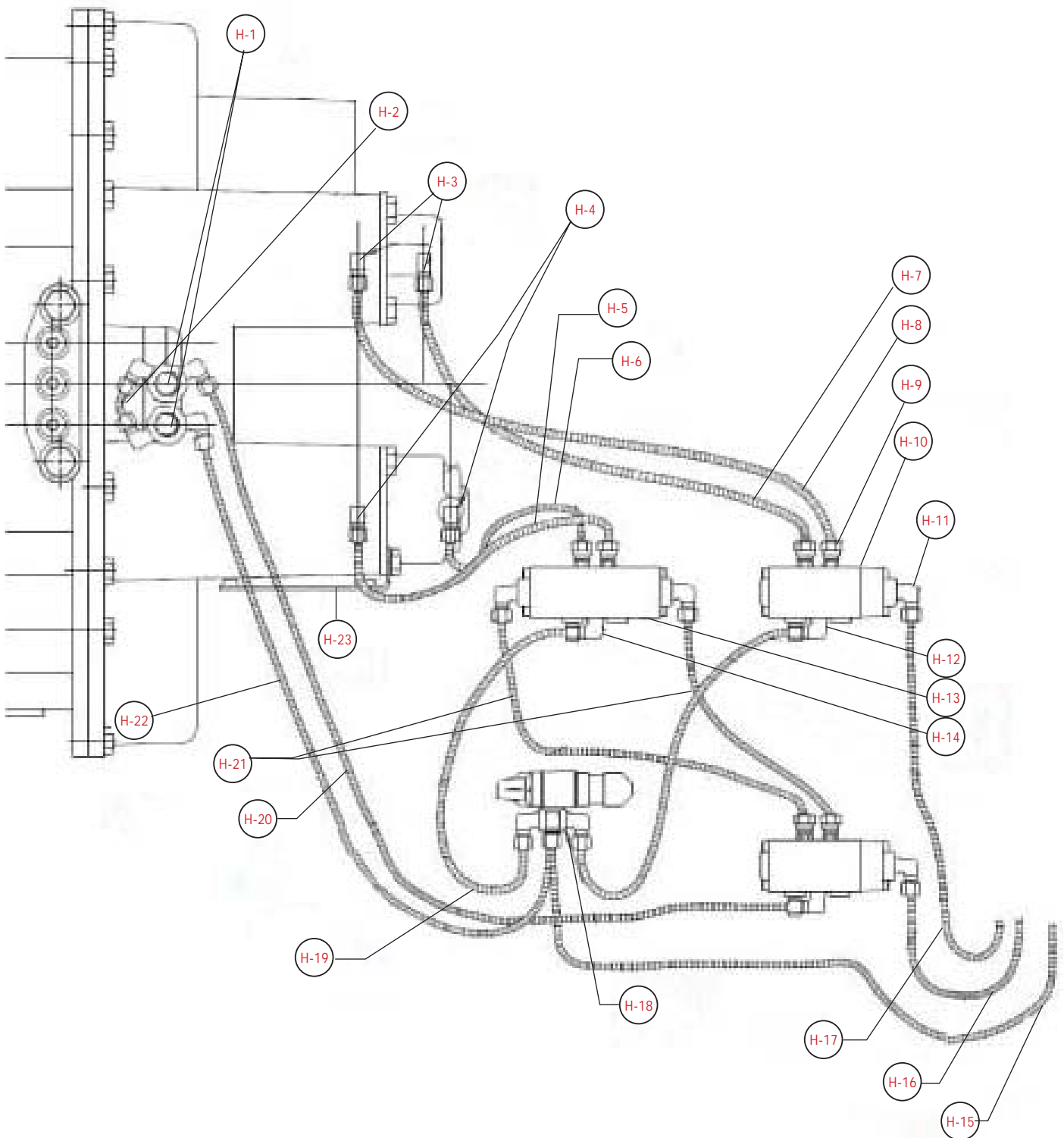
### PRO-SHIFT 18 Speed Models (1,650-2,050 lb-ft)

REF.	PART NO.	DESCRIPTION	QTY
H-1	205-420-4-1	Air Tube Yellow .250" Dia	1
H-2	205-420-4-2	Air Tube Yellow .250" Dia	1
H-3	205-420-6-1	Air Tube Red .250" Dia	1
H-4	205-420-6-5	Air Tube Red .250" Dia	1
H-5	205-420-6-2	Air Tube Red .250" Dia	1
H-6	205-420-6-3	Air Tube Red .250" Dia	1
H-7	205-420-7-1	Air Tube Green .250" Dia	1
H-8	205-420-7-2	Air Tube Green .250" Dia	1
H-9	205-420-8-1	Air Tube Black .250" Dia	1
H-10	205-420-9-1	Air Tube Blue .250" Dia	1
H-11	205-420-5-1	Air Tube Orange .250" Dia	1
H-12	205-445-1	1/4" Union Cross	1
H-13	205-445-3	1/8" Air Fitting Connector	4
H-14	545025-1	Reducer Bushing	4
H-15	545025-2	Bushing 90 Degree	8
H-16	205-628-1	Range Valve	1
H-17	205-628-2	Splitter Valve	1
H-18	205-999-9-1	Filter Regulator	1
NS	205-420-13-1	Convolute Conduit	1
NS	205-420-13-11	Convolute Conduit	1
NS	205-420-13-3	Convolute Conduit	1
NS	205-420-13-4	Convolute Conduit	1
NS	205-420-13-5	Convolute Conduit	1
NS	205-420-13-6	Convolute Conduit	1
NS	205-420-13-7	Convolute Conduit	1
NS	205-420-13-8	Convolute Conduit	1
I-1	205-625-1X	Neumatic Control	1
I-2	545093	Cap Screw	2
NS	205-443-2	Screw	1
NS	330831	Clamp - Filter Regulator	4
NS	330971	Clamp	1
NS	205-411-1	Bracket Manifold	2

NS = Not Shown

# Direct Air Controls Diagram Pneumatic

PRO-SHIFT 18 Speed Models (1,650-2,050 lb-ft)



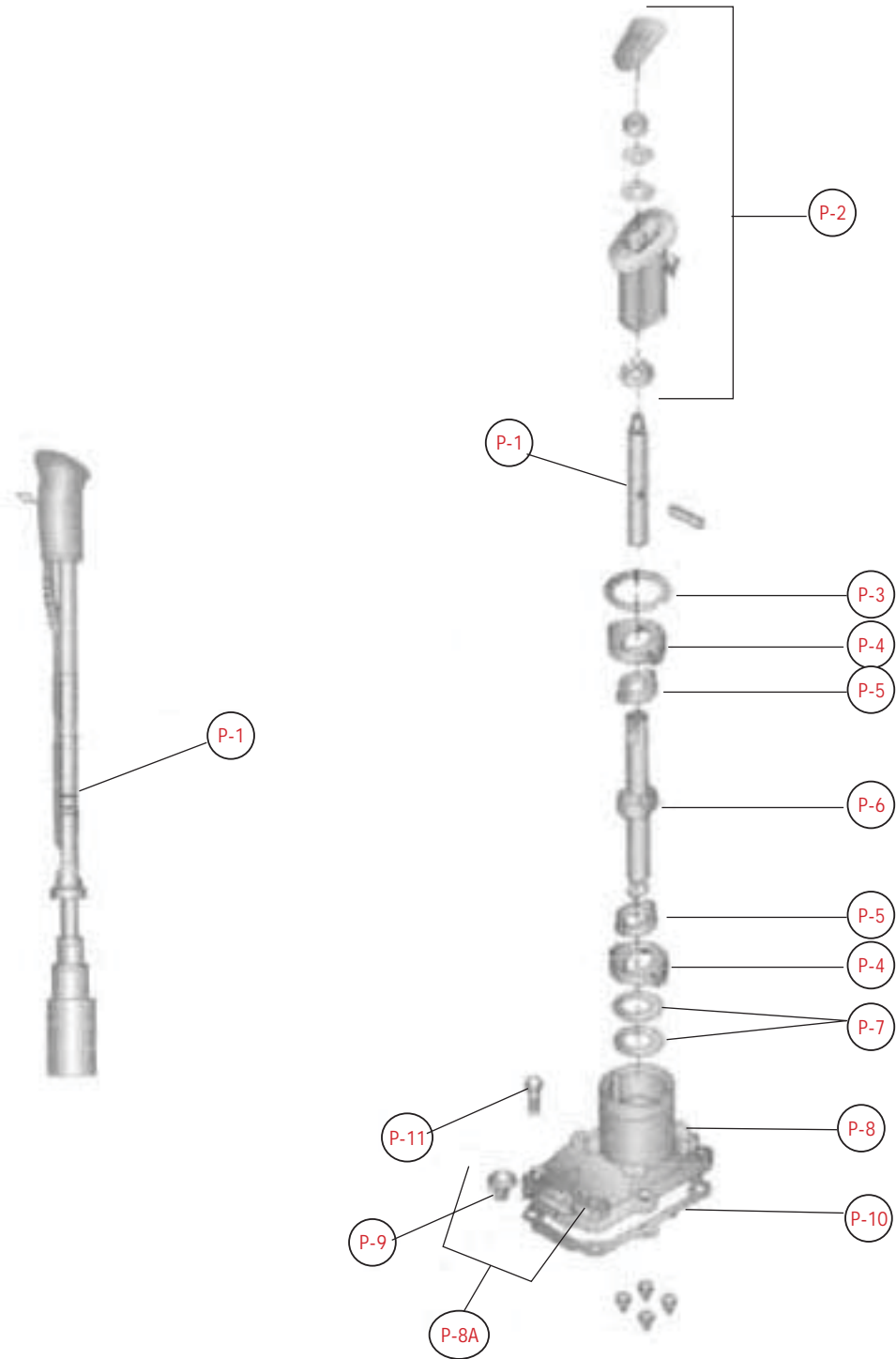
## Direct Air Controls Diagram Pneumatic

### PRO-SHIFT 18 Speed Models (1,650-2,050 lb-ft)

REF.	PART NO.	DESCRIPTION	QTY.
H-1	205-628-3	Sensing Valve	2
H-2	201-420-17-2	Tubing Red (6.00 in.)	1
	205-420-13-16	Convolute Conduit (6.00 in.)	1
H-3	545025-2	Elbow – 90 Degree	2
H-4	545025-1	Elbow - 90 Degree	1
H-5	205-420-4-4	Tubing Yellow (8.00 in.)	1
	205-420-13-14	Convolute Conduit (8.00 in.)	1
H-6	205-420-7-4	Tubing Green (10.00 in.)	1
	205-420-13-17	Convolute Conduit (6.00 in.)	1
H-7	205-420-7-3	Tubing Green (15.75 in.)	1
	205-420-13-15	Convolute Conduit (15.75 in.)	1
H-8	205-420-4-3	Tubing Yellow (15.75 in.)	1
	205-420-13-15	Convolute Conduit (15.75 in.)	1
H-9	205-445-3	Male Connector	6
H-10	205-628-2	Valve Splitter	2
H-11	201-449-1	Fitting - Elbow Swivel Air 1/8 Npt X 3/16 Odt	5
H-12	205-420-6-9	Tubing Red (8.00 in.)	1
	205-420-13-14	Convolute Conduit (8.00 in.)	1
H-13	205-628-1	Tubing	1
H-14	545025-2	Elbow – 90 Degree	8
H-15	201-420-17-1	Tubing Red (59.06 in.)	1
H-16	201-420-10-1	Tubing Green (59.06 in.)	1
H-17	201-420-11-1	Tubing Black (59.06 in.)	1
H-18	205-445-5	Pressure Distributor	1
H-19	205-420-6-8	Tubing Red (6.00 in)	1
	205-420-13-16	Convolute Conduit (6.00 in.)	1
H-20	205-420-6-7	Tubing Red (14.57 in)	1
	205-420-13-13	Convolute Conduit (14.57 in.)	1
H-21	205-420-8-2	Tubing Black (6.00 in)	2
	205-420-13-16	Convolute Conduit (6.00 in.)	2
H-22	205-420-6-6	Tubing Red (18.50 in)	1
	205-420-13-12	Convolute Conduit (18.50 in.)	1
H-23	205-411-2	Bracket Manifold	1

# Shift Tower and Related Parts

PRO-SHIFT 18 Speed Models (1,650-2,050 lb-ft)



## Shift Tower and Related Parts

PRO-SHIFT 18 Speed Models (1,650-2,050 lb-ft)

REF.	PART NO.	DESCRIPTION	QTY.
P-1	25Q-3106-1-1X	Upper Lever (Kenworth)	1
P-2	39Q-38-46-1X	Kit Pneumatic Shift Knob Model PSD018	1
	39Q-38-1X	Kit Electroneumatic Shift Knob Model PSD018	1
P-3	97-381-11	Snap Ring	1
P-4	34Q-8	Ring Outer	2
P-5	34Q-9	Ring Inner	2
P-6	25Q-3176-1X	Lower Lever (Kenworth)	1
	25Q-2844-5	Lower Lever (Australia)	1
P-7	201-72-3	Spring Disc	2
P-8A	201-17-2X	S/Assembly Tower Control (includes P-15 and P-16)	1
P-8	N.S.S.	Housing	1
P-9	312268	Breather	1
P-10	201-118-2	Gasket	1
P-11	N.S.S.	Bolt	
NS	201-200-1	Interlock Shifter Rail	6
NS	201-200-2	Interlock Retainer	1
NS	33Q-15-1	Tie Strap	1
NS	39Q-15-2	Tie Strap	1
NS	205-420-1	Harness	1
NS	201-17-2-102X	Shifter Assembly (Complete)	1
NS	312477-46X	Small Parts Kit (includes P-4, P-5, P-7)	

NS = Not Shown

NSS = Not Sold Separately

## PRO-SHIFT 18 Service Parts Overhaul Kits

PRO-SHIFT 18 Speed Models (1,650-2,050 lb-ft)

PART NO.	DESCRIPTION	QTY
<b>205-400-1X Major Overhaul Kit</b>		
205-210-1	Key Gear C/S	6
205-401-1X	Kit - Thrust Washer	1
205-429-1X	Kit - Shifter Small Parts	1
205-432-1X	Kit - Minor Overhaul	1
205-463-1X	Kit - Range/Splitter Piston HSG	1
330734	Washer - Mainshaft or Drive Gear Nut	1
545065	Nut - Mainshaft (1-3/4"-16 THD S.A.E.)	1
<b>205-432-1X Minor Overhaul Kit</b>		
201-118-2	Gasket - Tower Housing	1
201-381-1	Ring - Input Shaft Snap	1
201-463-8	Seal - Output Shaft Rear Bearing Cap	1
205-228-1X	Kit - Shim	1
205-463-1	O-Ring	2
2783	Bulletin - Mainshaft Nut (Loctite Application)	1
2824	Bulletin - Liquid Gasket	1
2863	O-Ring Installation Instructions	1
2879	Bulletin - Electronic Service Manuals	1
545080-1	Adhesive - M/S Nut Anaerobic Sealant (.05CC)	1
545168-2	Adhesive - Silicone Sealant (70CC)	1
97-381-31	Ring - Splitter Clutch Ring Snap	1
97-463-36-1X	S/Assembly - Oil Seal & Installation Sleeve	1
<b>Bearings Range Selections (included in Minor Overhaul Kit)</b>		
205-999-2X	Tapered Bearing Assembly	1
550932	Bearing - 1st M/S & Reverse Gear Needle Assembly	1
550935	Bearing - Countershaft Rear Taper Cup	4
550936	Bearing - Countershaft Rear Taper Cone	4
<b>Bearings Main Section (included in Minor Overhaul Kit)</b>		
205-482-1	Bearing Cup	2
205-482-2	Cone Tapered Bearing	2
205-999-3X	M/S Bearing Assembly	1
313645X	S/Assembly Bearing & Belleville Snap Ring	1
550886	(E) Bearing - Reverse Idler Gear Roller Assembly	2
550935	Bearing - Countershaft Rear Taper Cup	2
550936	Bearing - Countershaft Rear Taper Cone	2

## PRO-SHIFT 18 Service Parts Overhaul Kits

### PRO-SHIFT 18 Speed Models (1,650-2,050 lb-ft)

PART NO.	DESCRIPTION	QTY
<b>205-463-1X</b>	<b>Kit - Range/Splitter Piston Housing Repair (Included in Major Overhaul Kit)</b>	
183-463-6	O-Ring - Splitter or Range Piston	2
201-463-1	O-Ring - Range Shift Piston	1
201-463-2	O-Ring - Splitter Or Range Piston Housing	2
201-463-3	O-Ring - Range Piston Rod	1
2726	Bulletin - O-Ring Repair Lubrication Instruction	1
330895	Lubricant - O-Ring	1
545045	Nut - Self Locking	2
545170	Nut - Splitter or Range Piston Rod	2
97-463-4	O-Ring - Splitter Piston	1
97-463-5	O-Ring - Splitter Piston Rod	1
<b>205-429-1X</b>	<b>Kit - Shifter Small Parts (Included in Major Overhaul Kit)</b>	
201-72-6	Spring - 1st & Rev Plunger	2
201-80-1	Ball - Poppet	3
205-59-1	Plug	3
205-72-1	Spring	3
40-438-1	Pin - 1st & Rev Select Plunger	2
<b>205-401-1X</b>	<b>Kit - Thrust Washer (Included in the Major Overhaul Kit)</b>	
205-37-3	Thrust Washer Aux. Output Shaft	1
205-47-1	Spacer	1
205-47-2	Thrust Ring	2
205-47-3	Thrust Ring	2
205-47-4	Thrust Ring	2
<b>205-429-1X</b>	<b>Kit - Shifter Small Parts PSDO-18 (Included in the Major Overhaul Kit)</b>	
201-72-6	Spring - 1st & Rev Plunger	2
201-80-1	Ball - Poppet	3
205-59-1	Plug	3
205-72-1	Spring	3
40-438-1	Pin -1st & Rev. Select Plunger	2
<b>205-401-1X</b>	<b>Kit - Thrust Washer</b>	
205-37-3	Thrust Washer Aux. Output Shaft	1
205-47-1	Spacer PSDO-18	1
205-47-2	Thrust Ring	2
205-47-3	Thrust Ring	2
205-47-4	Thrust Ring	2



## PRO-SHIFT 18 Service Parts Overhaul Kits

### PRO-SHIFT 18 Speed Models (1,650-2,050 lb-ft)

PART NO.	DESCRIPTION	QTY.
<b>205-228-1X</b>	<b>Shim Kit (included in Minor Overhaul Kit)</b>	<b>1</b>
205-228-1-1	Shim M/S Aux. Output (.0055-.0045")	1
205-228-1-2	Shim M/S Aux. Output (.0110-.0090")	1
205-228-1-3	Shim M/S Aux. Output (.0165-.0135")	1
205-228-2-1	Shim Aux Countershaft Bearing (.0350-.0285")	1
205-228-2-2	Shim Aux Countershaft Bearing (.0055-.0045")	1
205-228-2-3	Shim Aux Countershaft Bearing (.0110-.0090")	1
205-228-2-4	Shim Aux Countershaft Bearing (.0165-.0135")	1
205-228-2-5	Shim Aux Countershaft Bearing (.0125-.0185")	1
205-228-4-1	Shim Mainshaft (.0280-.0260")	1
205-228-4-2	Shim Mainshaft (.0310-.0290")	1
205-228-4-3	Shim Mainshaft (.0340-.0320")	1
205-228-4-4	Shim Mainshaft (.0370-.0350")	1
205-228-4-5	Shim Mainshaft (.0400-.0380")	1
205-228-4-6	Shim Mainshaft (.0430-.0410")	1
205-228-4-7	Shim Mainshaft (.0460-.0440")	1
205-228-4-8	Shim Mainshaft (.0490-.0470")	1
205-228-4-9	Shim Mainshaft (.0520-.0500")	1
2880	Bulletin - C/S & M/S Shim	1
<b>205-53-5X</b>	<b>Kit Conversion of Pneumatic System</b>	
201-449-1	Fitting - Elbow Swivel Air 1/8 NPT x 3/16 ODT	5
205-411-2	Bracket Manifold	1
205-443-7	Socket Head Cap Screw	2
205-445-5	Pressure Distributor	1
205-628-2	Valve Splitter	1
205-628-3	Sensing Valve	2
2889	Bulletin	1
39Q-38-46-1X	Kit Pneumatic Shift Knob Model PSDO18	1
<b>205-53-4X</b>	<b>Kit Parts of Pneumatic System PSDO-18</b>	
205-445-5	Pressure Distributor	1
205-628-3	Sensing Valve	2

**PRO-SHIFT 18 Speed Models (1,650-2,050 lb-ft)**

TAB. NO.	USED BY	FOR USE WITH CLUTCH	CLUTCH HOUSING			MAIN DRIVE GEAR	DRIVE GEAR BEARING CAP	CASE ASSEMBLY FRONT
			S A E	ASSEMBLY NUMBER	REL. CODE			
<b>Model PSDO205-18A</b>								
<b>301745</b>								
-4	TTC Australia	Pulltype	1	205-518-1-1X	-	205-35-1	201-19-2-1X	205-15-1-1X
-6	Freightliner	Pulltype	1	205-518-1-1X	-	205-35-1	201-19-2-1X	205-15-1-1X
-7	TTC Australia	Pulltype	1	205-518-5-2X*	-	205-35-1	201-19-2-1X	205-15-1-1X
<b>Model PSDO 185-18A</b>								
<b>301762</b>								
-4	TTC Australia	Pulltype	1	205-518-1-1X	-	205-35-1	201-19-2-1X	205-15-1-1X
-6	Freightliner	Pulltype	1	205-518-1-1X	-	205-35-1	201-19-2-1X	205-15-1-1X
-7	TTC Australia	Pulltype	1	205-518-5-2X*	-	205-35-1	201-19-2-1X	205-15-1-1X
<b>Model PSDO165-18A</b>								
<b>301763</b>								
-6	Freightliner	Pulltype	1	205-518-1-1X	-	205-35-1	201-19-2-1X	205-15-1-1X
-7	TTC Australia	Pulltype	1	205-518-5-2X*	-	205-35-1	201-19-2-1X	205-15-1-1X
-8	Freightliner	Pulltype	1	205-518-1-1X	-	205-35-1	201-19-2-1X	205-15-1-1X
-23	Freightliner	Pulltype	1	205-518-1-1X	-	205-35-1	201-19-2-1X	205-15-1-1X
-24	Freightliner	Pulltype	1	205-518-1-1X	-	205-35-1	201-19-2-1X	205-15-1-1X

## PRO-SHIFT 18 Speed Models (1,650-2,050 lb-ft)

TAB. NO.	CASE ASSEMBLY REAR	MAINSHAFT REAR BEARING CAP ASSEMBLY	SPEEDOMETER GEARS		END YOKE OR COMPANION FLANGE	LEVER AND TOWER CONTROL ASSEMBLY
			DRIVE OR SIGNAL			
<b>Model PSDO205-18A 301745</b>						
-4	205-15-2-1X	205-19-3-1X	205-452-1		205-106-1	201-17-2-104X
-6	205-15-2-1X	205-19-4-1X*	205-452-1		205-106-1	-
-7	205-15-2-1X	205-19-3-1X	205-452-1		205-4-901-1	201-17-2-104X
<b>Model PSDO 185-18A 301762</b>						
-4	205-15-2-1X	205-19-3-1X	205-452-1		205-106-1	201-17-2-104X
-6	205-15-2-1X	205-19-4-1X*	205-452-1		205-106-1	-
-7	205-15-2-1X	205-19-3-1X	205-452-1		205-4-901-1	201-17-2-104X
<b>Model PSD0165-18A 301763</b>						
-6	205-15-2-1X	205-19-4-1X*	205-452-1		205-106-1	-
-7	205-15-2-1X	205-19-3-1X	205-452-1		205-4-901-1	201-17-2-104X
-8	205-15-2-1X	205-19-4-1X*	205-452-1		205-4-901-1	-
-23	205-15-2-1X	205-19-4-1X*	205-452-1		205-106-1	201-17-2-111X
-24	205-15-2-1X	205-19-4-1X*	205-452-1		205-4-901-1	201-17-2-111X



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